Inflation Targeting and Financial Stability

Michael Woodford

Columbia University

Conference "The Future of Monetary Policy"
EIEF, Rome
September 30, 2010

Is it Time to Reconsider Inflation Targeting?

"Until [recently], the consensus view was that central banks should target inflation, and that's pretty much all they should do.... The credit crisis has unveiled the fallacy of this hands-off view."
— Paul DeGrauwe, 11/07

"This [inflation targeting] strategy failed in the United States.... The problems we now face are in large part due to this policy failure."
— Axel Leijonhufvud, 5/08

"Strict inflation targeting, which ignores financial fragility, can ... increase the likelihood of a financial crisis."
— Francesco Giavazzi and Alberto Giovannini, 7/10

Is it Time to Reconsider Inflation Targeting?

- But the crisis did not show that IT fails to achieve what it was supposed to achieve:

Is it Time to Reconsider Inflation Targeting?

- But the crisis did not show that IT fails to achieve what it was supposed to achieve:

  - stabilize inflation expectations

  - allow monetary policy to be used relatively aggressively for real stabilization purposes, without requiring sacrifice of price stability

  - eliminate instability resulting from wage-price spirals triggered by commodity price shocks

  - avoid a deflationary trap, in which deflation expectations become self-fulfilling

- The crisis did show that IT does not insulate a country from all possible misfortunes.

Is it Time to Reconsider Inflation Targeting?

- The crisis did show that IT does not insulate a country from all possible misfortunes.

- But to the extent that a new policy framework is needed for current conditions, it is important that it not throw out what has been gained from the experience of the previous quarter-century.

Is it Time to Reconsider Inflation Targeting?

- Can IT be adapted to also cope with the macroeconomic consequences of financial instability?

Is it Time to Reconsider Inflation Targeting?

- Can IT be adapted to also cope with the macroeconomic consequences of financial instability?

- I will separately discuss two aspects of this question:

    (1) the appropriate monetary policy response to financial crisis, after one occurs

    (2) whether monetary policy can reduce the likelihood of occurrence of a crisis, before the next crisis occurs

Monetary Policy During Financial Distress

- Certainly important to monitor financial conditions in making monetary policy decisions

  — because disruptions of the financial system affect the monetary transmission mechanism

  — in particular: single interest rate no longer an adequate measure of monetary conditions, when markets disrupted

Monetary Policy During Financial Distress

- Certainly important to monitor financial conditions in making monetary policy decisions

  — because disruptions of the financial system affect the monetary transmission mechanism

  — in particular: single interest rate no longer an adequate measure of monetary conditions, when markets disrupted

- For example, a simple Taylor rule provides an inadequate response to a disturbance to credit supply

- Cúrdia and Woodford (2010) show that an adjusted rule, that cuts the policy rate in proportion to increases in spreads, can be substantially better

Cúrdia-Woodford Model

- Generalizes basic (representative household) New Keynesian model to include

Cúrdia-Woodford Model

- Generalizes basic (representative household) New Keynesian model to include

  - Two types (b, s) with heterogeneous spending opportunities

  - costly financial intermediation $\Rightarrow$ competitive intermediaries don't lend to type b at same rate as are funded by type s

Cúrdia-Woodford Model

- Intertemporal IS relation:

$$\hat{Y}_t - g_t + s_\Omega \hat{\Omega}_t = E_t[\hat{Y}_{t+1} - g_{T+1} + s_\Omega \hat{\Omega}_{t+1}] - \bar{\sigma}[\hat{\imath}_t^{avg} - \pi_{t+1}],$$

where

$$\hat{\imath}_t^{avg} \equiv \pi_b \hat{\imath}_t^b + \pi_s \hat{\imath}_t^d$$

is an average of the two interest rates,

$$\hat{\Omega}_t \equiv \hat{\lambda}_t^b - \hat{\lambda}_t^s$$

measures the distortion of the composition of expenditure owing to credit frictions ("financial headwinds"),

and g_t is a composite exogenous disturbance to aggregate expenditure.

Cúrdia-Woodford Model

- Determination of the marginal-utility gap:

$$\hat{\Omega}_t = \hat{\omega}_t + \delta E_t \hat{\Omega}_{t+1},$$

where

$$\hat{\omega}_t \equiv \hat{\imath}_t^b - \hat{\imath}_t^d$$

measures deviation of the short-term credit spread from its steady-state value

Cúrdia-Woodford Model

- Determination of the marginal-utility gap:

$$\hat{\Omega}_t = \hat{\omega}_t + \delta E_t \hat{\Omega}_{t+1},$$

where

$$\hat{\omega}_t \equiv \hat{\imath}_t^b - \hat{\imath}_t^d$$

measures deviation of the short-term credit spread from its steady-state value

- Relation of $\hat{\imath}_t^{avg}$ to the policy rate

$$\hat{\imath}_t^{avg} = \hat{\imath}_t^d + \pi_b \hat{\omega}_t$$

also depends on the credit spread

Cúrdia-Woodford Model

- Determination of the credit spread: a supply of intermediation function

$$\omega_t = \omega_t(L_t),$$

where L_t is the volume of real lending by intermediaries, and $\omega'_t(L) \geq 0$

Cúrdia-Woodford Model

- Determination of the credit spread: a supply of intermediation function

$$\omega_t = \omega_t(L_t),$$

where L_t is the volume of real lending by intermediaries, and $\omega'_t(L) \geq 0$

- "Purely financial disturbances" can then be introduced: exogenous shifts in the $\omega_t(L)$ schedule

Spread-Adjusted Taylor Rules
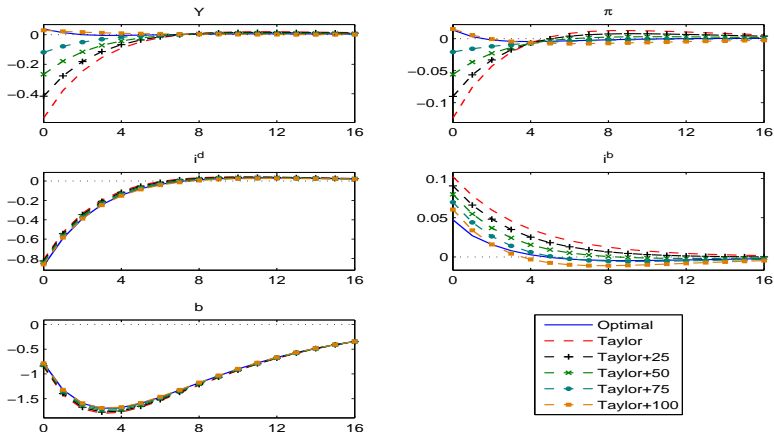
- Consider policy rules in the family

$$\hat{\imath}_t^d = \phi_\pi \pi_t + \phi_y \hat{Y}_t - \phi_\omega \hat{\omega}_t$$

for alternative values of the response coefficient

$$0 \leq \phi_\omega \leq 1$$

(Simple Taylor rule: case $\phi_\omega = 0$)

Responses to financial shock, under alternative spread adjustments

Implications for IT Regimes

- Response to changing financial conditions occurs automatically occurs under a forecast targeting procedure

  — CB chooses forward path for policy rate that implies projections for inflation and output that satisfy a "target criterion"
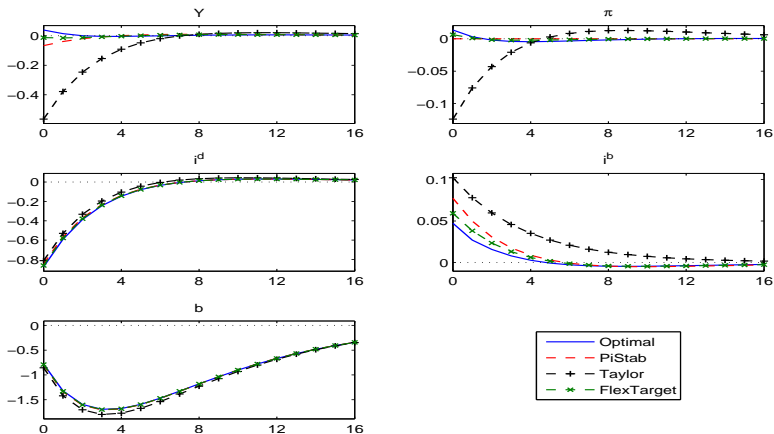
Implications for IT Regimes

- Response to changing financial conditions occurs automatically occurs under a forecast targeting procedure

  — CB chooses forward path for policy rate that implies projections for inflation and output that satisfy a "target criterion"

- Only necessary that CB use a model that takes account of macro implications of credit frictions in preparing its projections

  — may not need any change in the target criterion

Implications for IT Regimes

- Cúrdia and Woodford (2009) analyze optimal policy in DSGE model with credit frictions

  — commitment to same target criterion as for model with no fin. frictions (involving only projections of inflation, output gap) still a good approximation to optimal policy

  — even in response to purely financial disturbances

Responses to financial shock, under 4 monetary policies

Implications for IT Regimes

- Hence a completely conventional formulation of "flexible IT" remains appropriate, under the assumptions of CW (2009)

  — despite credit frictions, "financial disturbances"

Implications for IT Regimes

- Hence a completely conventional formulation of "flexible IT" remains appropriate, under the assumptions of CW (2009)

    — despite credit frictions, "financial disturbances"

- Only calls for the development of better CB models (that incorporate credit frictions), and accurate indicators of financial conditions (connected to state variables of model)

Implications for IT Regimes

- Hence a completely conventional formulation of "flexible IT" remains appropriate, under the assumptions of CW (2009)

  — despite credit frictions, "financial disturbances"

- Only calls for the development of better CB models (that incorporate credit frictions), and accurate indicators of financial conditions (connected to state variables of model)

- But: this treats arrival of "financial disturbances" as exogenous

  — what role for monetary policy in influencing their likelihood?

Monetary Policy and Crisis Prevention

(1) Can central banks legitimately ignore this issue, on the ground that crises can't be predicted in advance?

Monetary Policy and Crisis Prevention

(1) Can central banks legitimately ignore this issue, on the ground that crises can't be predicted in advance?

- A popular excuse....

- One needn't be able to predict exactly when crises will occur, only whether the risk of a crisis increases under certain circumstances.

Monetary Policy and Crisis Prevention

(1) Can central banks legitimately ignore this issue, on the ground that crises can't be predicted in advance?

- A popular excuse....

- One needn't be able to predict exactly when crises will occur, only whether the risk of a crisis increases under certain circumstances.

- Nor is the real issue whether assets are overvalued

  — rather, the degree to which the positions taken by leveraged investors pose a risk to financial stability.

Monetary Policy and Crisis Prevention

(1) Can central banks legitimately ignore this issue, on the ground that crises can't be predicted in advance?

- A popular excuse....

- One needn't be able to predict exactly when crises will occur, only whether the risk of a crisis increases under certain circumstances.

- Nor is the real issue whether assets are overvalued

  — rather, the degree to which the positions taken by leveraged investors pose a risk to financial stability.

- CB role, not because better forecasters, but because individual investors may not care about systemic risk.

Monetary Policy and Crisis Prevention

(2) Can monetary policy really influence the buildup of risks to financial stability?

Monetary Policy and Crisis Prevention

(2) Can monetary policy really influence the buildup of risks to financial stability?

- Loosening monetary policy increases leverage of intermediaries — making it easier for an unexpected shock to trigger crisis

  — exotic behavioral hypotheses not needed to link monetary policy and leverage: e.g., CW model

Monetary Policy and Crisis Prevention

(2) Can monetary policy really influence the buildup of risks to financial stability?

- Loosening monetary policy increases leverage of intermediaries
  — making it easier for an unexpected shock to trigger crisis

  — exotic behavioral hypotheses not needed to link monetary policy and leverage: e.g., CW model

- Real issue not controlling mis-pricing of assets, but deterring extreme leverage, maturity transformation

  — even modest changes in short-term rates can affect incentives for highly leveraged investing, excessive short-term funding

(3) Aren't there better ways to reduce the risk of a crisis?

Monetary Policy and Crisis Prevention

(3) Aren't there better ways to reduce the risk of a crisis?

- Monetary policy affects risk of financial crisis, but this doesn't mean it can or should be complete solution

  — not excuse for failing to improve regulation, capital requirements, develop other tools of "macro-prudential policy"

Monetary Policy and Crisis Prevention

(3) Aren't there better ways to reduce the risk of a crisis?

- Monetary policy affects risk of financial crisis, but this doesn't mean it can or should be complete solution

  — not excuse for failing to improve regulation, capital requirements, develop other tools of "macro-prudential policy"

- But similarly, existence of other methods doesn't justify complete neglect of the issue in conduct of monetary policy

  — would only if they could completely solve the problem

Monetary Policy and Crisis Prevention

(3) Aren't there better ways to reduce the risk of a crisis?

- Monetary policy affects risk of financial crisis, but this doesn't mean it can or should be complete solution

  — not excuse for failing to improve regulation, capital requirements, develop other tools of "macro-prudential policy"

- But similarly, existence of other methods doesn't justify complete neglect of the issue in conduct of monetary policy

  — would only if they could completely solve the problem

- Of course, CBs should support the development of other tools to reduce risks to financial stability
  — make the conduct of monetary policy easier

Monetary Policy and Crisis Prevention

(4) Isn't there a conflict between the use of monetary policy to control risks to financial stability, and the use of it to maintain price stability and stable real activity?

Monetary Policy and Crisis Prevention

(4) Isn't there a conflict between the use of monetary policy to control risks to financial stability, and the use of it to maintain price stability and stable real activity?

- Yes, almost inevitably

Monetary Policy and Crisis Prevention

(4) Isn't there a conflict between the use of monetary policy to control risks to financial stability, and the use of it to maintain price stability and stable real activity?

- Yes, almost inevitably

  — but no different, in principle, than the conflict between inflation stabilization and output gap stabilization, in the conventional theory of "flexible IT"

Monetary Policy and Crisis Prevention

(4) Isn't there a conflict between the use of monetary policy to control risks to financial stability, and the use of it to maintain price stability and stable real activity?

- Yes, almost inevitably

  — but no different, in principle, than the conflict between inflation stabilization and output gap stabilization, in the conventional theory of "flexible IT"

  — moreover, conflict likely to be pronounced only occasionally, when concerns about financial stability particularly strong.

Monetary Policy and Crisis Prevention

- A popular proposal to minimize the conflict: "CB automatically takes account of risks to financial stability under an IT regime, if the forecast horizon is long enough"

Monetary Policy and Crisis Prevention

- A popular proposal to minimize the conflict: "CB automatically takes account of risks to financial stability under an IT regime, if the forecast horizon is long enough"

    - Not convincing:

      — distortions due to financial disruption not limited to difficulties in achieving inflation, output stabilization goals during the crisis (CW 2009)

      — would be undesirable even if no problem using monetary policy to "mop up"

Monetary Policy and Crisis Prevention

- A popular proposal to minimize the conflict: "CB automatically takes account of risks to financial stability under an IT regime, if the forecast horizon is long enough"

    - Not convincing:

      — distortions due to financial disruption not limited to difficulties in achieving inflation, output stabilization goals during the crisis (CW 2009)

      — would be undesirable even if no problem using monetary policy to "mop up"

    - Really need to recognize financial stability as independent stabilization objective

Monetary Policy and Crisis Prevention

- It will be fortuitous if the interest rate policy that best serves traditional stabilization objectives is also always the one best for financial stability.

  — example: policy dilemma faced by the Fed in the mid-2000's

Monetary Policy and Crisis Prevention

- It will be fortuitous if the interest rate policy that best serves traditional stabilization objectives is also always the one best for financial stability.

    — example: policy dilemma faced by the Fed in the mid-2000's

- But one can introduce a financial stability objective into a flexible IT framework

Monetary Policy and Crisis Prevention

- It will be fortuitous if the interest rate policy that best serves traditional stabilization objectives is also always the one best for financial stability.

  — example: policy dilemma faced by the Fed in the mid-2000's

- But one can introduce a financial stability objective into a flexible IT framework

  - still provides a clear anchor for medium-term inflation expectations

  - financial stability considerations only affect the near-term transition path to that invariant medium-run inflation rate

A Simple Model

(Simplified version of Cúrdia-Woodford 2009)

- Aggregate supply: NKPC

$$\pi_t = \kappa y_t + \beta E_t \pi_{t+1} + u_t$$

A Simple Model

(Simplified version of Cúrdia-Woodford 2009)

- Aggregate supply: NKPC

$$\pi_t = \kappa y_t + \beta E_t \pi_{t+1} + u_t$$

- "Intertemporal IS relation" with credit frictions:

$$y_t - \Omega_t = E_t[y_{t+1} - \Omega_{t+1}] - \sigma(i_t - E_t \pi_{t+1})$$

where $\Omega_t =$ marginal-utility gap between credit-constrained and unconstrained purchasers

A Simple Model

(Simplified version of Cúrdia-Woodford 2009)

- Aggregate supply: NKPC

$$\pi_t = \kappa y_t + \beta E_t \pi_{t+1} + u_t$$

- "Intertemporal IS relation" with credit frictions:

$$y_t - \Omega_t = E_t[y_{t+1} - \Omega_{t+1}] - \sigma(i_t - E_t \pi_{t+1})$$

where $\Omega_t =$ marginal-utility gap between credit-constrained and unconstrained purchasers

  - measures distortion in allocation of expenditure due to credit frictions
  - in CW, also corresponds to a credit spread between long-term bond yields

A Simple Model

- Evolution of $\{\Omega_t\}$: assume a two-state Markov-switching model:

— low-credit-spread (normal) state $\underline{\Omega}$

— high-credit-spread (crisis) state $\bar{\Omega}$

$$\begin{aligned} \bar{\Omega} &\Rightarrow \underline{\Omega} &\quad \text{with prob.}\quad 1 - \delta \\ \underline{\Omega} &\Rightarrow \bar{\Omega} &\quad \text{with prob.}\quad \phi(L_t) \end{aligned}$$

with $\phi' > 0$, $L_t =$ fin. sector leverage

A Simple Model

- Evolution of $\{\Omega_t\}$: assume a two-state Markov-switching model:
  — low-credit-spread (normal) state $\underline{\Omega}$
  — high-credit-spread (crisis) state $\bar{\Omega}$

$$
\begin{aligned}
\bar{\Omega} &\Rightarrow \underline{\Omega} & \text{with prob.} \quad 1 - \delta \\
\underline{\Omega} &\Rightarrow \bar{\Omega} & \text{with prob.} \quad \phi(L_t)
\end{aligned}
$$

with $\phi' > 0$, $L_t =$ fin. sector leverage

- Dynamics of $\{L_t\}$:

$$
L_t = \gamma L_{t-1} + \xi y_t
$$

with $0 < \gamma < 1$, $\xi > 0$

A Simple Model

- Policy objective: minimize loss function

$$\mathrm{E} \sum_{t=0}^{\infty} \beta^t \left\{ \pi_t^2 + \lambda_y y_t^2 + \lambda_\Omega \Omega_t^2 \right\}$$

with weights $\lambda_y, \lambda_\Omega > 0$

A Simple Model

- Policy objective: minimize loss function

$$\mathrm{E} \sum_{t=0}^{\infty} \beta^t \left\{ \pi_t^2 + \lambda_y y_t^2 + \lambda_\Omega \Omega_t^2 \right\}$$

with weights $\lambda_y, \lambda_\Omega > 0$

- Additional term represents loss from inefficient composition of expenditure due to credit frictions

— micro-foundations in CW 2009

— provides a reason to wish to reduce incidence of financial crises

- Some important conclusions from the conventional theory of "flexible IT" continue to apply:

Observations

- Some important conclusions from the conventional theory of "flexible IT" continue to apply:

  - discretionary policy sub-optimal, can be improved by suitable policy commitment

    — because policy trade-off depends on expectations

Observations

- Some important conclusions from the conventional theory of "flexible IT" continue to apply:

    - discretionary policy sub-optimal, can be improved by suitable policy commitment

        — because policy trade-off depends on expectations

    - Crucial aspect of expectations that commitment should seek to modify: expected inflation

A Special Case

- Suppose we make the simplifying assumption that $\phi' = 0$: probability of a crisis independent of endogenous variations in leverage (case treated in CW 2009)

A Special Case

- Suppose we make the simplifying assumption that $\phi' = 0$: probability of a crisis independent of endogenous variations in leverage (case treated in CW 2009)

- Then $\{\Omega_t\}$ is an exogenous process

  — only terms in loss function that policy can effect are the conventional objectives: inflation, output-gap stabilization

A Special Case

- Suppose we make the simplifying assumption that $\phi' = 0$: probability of a crisis independent of endogenous variations in leverage (case treated in CW 2009)

- Then $\{\Omega_t\}$ is an exogenous process

  — only terms in loss function that policy can effect are the conventional objectives: inflation, output-gap stabilization

- Moreover, trade-off between these two objectives implied by structural relations is same as in basic NK model

  — additional IS terms affect path of policy rate required to achieve targets, but not the achievable paths of inflation, output

A Special Case

- Hence conclusions about the optimal evolution of inflation, output same as in the standard theory:

A Special Case

- Hence conclusions about the optimal evolution of inflation, output same as in the standard theory:

  - In absence of "cost-push shocks" $\{u_t\}$, inflation should be completely stabilized

A Special Case

- Hence conclusions about the optimal evolution of inflation, output same as in the standard theory:

  - In absence of "cost-push shocks" $\{u_t\}$, inflation should be completely stabilized

  - More generally, under optimal policy, should satisfy target criterion
    $$\pi_t + \varphi_y(y_t - y_{t-1}) = 0$$
    at all times ("flexible inflation targeting"), where $\varphi_y \equiv \lambda_y/\kappa > 0$

A Special Case

- Hence conclusions about the optimal evolution of inflation, output same as in the standard theory:

  - In absence of "cost-push shocks" $\{u_t\}$, inflation should be completely stabilized

  - More generally, under optimal policy, should satisfy target criterion

  $$\pi_t + \varphi_y(y_t - y_{t-1}) = 0$$

  at all times ("flexible inflation targeting"), where $\varphi_y \equiv \lambda_y/\kappa > 0$

  - Target criterion can alternatively be expressed in price level form:

  $$p_t + \varphi_y y_t = p^*$$

A Special Case

- Optimal policy can be implemented by forecast targeting:

  — for each contemplated forward path for policy, compute projected forward paths for inflation (or price level) and output

  — find policy path that implies projections consistent with the target criterion

A Special Case

- Optimal policy can be implemented by forecast targeting:

  — for each contemplated forward path for policy, compute projected forward paths for inflation (or price level) and output

  — find policy path that implies projections consistent with the target criterion

- In this case, not necessary to project any financial variables

  — these must, however, be monitored in order to produce accurate projections for inflation, output

A Special Case

- Optimal policy can be implemented by forecast targeting:

  — for each contemplated forward path for policy, compute projected forward paths for inflation (or price level) and output

  — find policy path that implies projections consistent with the target criterion

- In this case, not necessary to project any financial variables

  — these must, however, be monitored in order to produce accurate projections for inflation, output

- Essentially, the reason for the findings of CW (2009), when they abstract from endogeneity of financial distress

Optimal Policy with Endogenous Financial Distress

- When crises are endogenous, optimal policy commitment still equivalent to satisfaction of a target criterion

  — but this is now of the more general form

$$p_t + \varphi_y y_t + \varphi_X E_t \sum_{T=t}^{\infty} (\beta\gamma)^{T-t} X_T = p^*$$

where $\varphi_X \equiv \beta\xi/\kappa > 0$

Optimal Policy with Endogenous Financial Distress

- When crises are endogenous, optimal policy commitment still equivalent to satisfaction of a target criterion

  — but this is now of the more general form

$$p_t + \varphi_y y_t + \varphi_X E_t \sum_{T=t}^{\infty} (\beta\gamma)^{T-t} X_T = p^*$$

where $\varphi_X \equiv \beta\xi/\kappa > 0$

  — X_t is the rate at which the expected loss from financial crisis increases per unit increase in leverage:

$$X_t \equiv \phi'(L_t) \cdot E_t \Delta V_{t+1}$$

where ΔV_{t+1} is the increase in the continuation loss from occurrence of a crisis in period $t+1$.

Optimal Policy with Endogenous Financial Distress

- Implementation through a forecast targeting procedure:
  - simply necessary to produce projections of the path of X under contemplated forward paths for policy, alongside projections of inflation and output gap
  - target criterion now involves all three projections

Optimal Policy with Endogenous Financial Distress

- Implementation through a forecast targeting procedure:
  - simply necessary to produce projections of the path of X under contemplated forward paths for policy, alongside projections of inflation and output gap
  - target criterion now involves all three projections

- If $\phi(L)$ is strictly convex, $\phi'(L_t)$ is an increasing function of current leverage

  — but need not be a linear function of leverage: may be negligible until leverage above some threshold

  — and X_t also depends on the (time-varying) degree of damage that an increase in credit spreads will cause

Is This a Credit Target?

- The proposed procedure is related to calls for a target for credit growth, but

Is This a Credit Target?

- The proposed procedure is related to calls for a target for credit growth, but

    - what matters for the target criterion is leverage of intermediaries, not credit as such

Is This a Credit Target?

- The proposed procedure is related to calls for a target for credit growth, but

  - what matters for the target criterion is leverage of intermediaries, not credit as such

  - not solely a leverage target: target criterion still involves price level, output gap

Is This a Credit Target?

- The proposed procedure is related to calls for a target for credit growth, but

  - what matters for the target criterion is leverage of intermediaries, not credit as such

  - not solely a leverage target: target criterion still involves price level, output gap

  - what matters is marginal crisis risk, rather than leverage as such

  — except when there is nontrivial marginal crisis risk, procedure essentially reduces to conventional formulation of flexible IT

Is it What the ECB Already Does?

Is it What the ECB Already Does?

- Similarities to "two pillar strategy":

  - must track (and forecast) financial sector developments alongside projections of inflation and real activity
  - arguably, best accomplished by having two separate teams responsible for the two types of projections

Is it What the ECB Already Does?

- Similarities to "two pillar strategy":
  - must track (and forecast) financial sector developments alongside projections of inflation and real activity
  - arguably, best accomplished by having two separate teams responsible for the two types of projections

- But requires significant reformulation of the "second pillar":

Is it What the ECB Already Does?

- Similarities to "two pillar strategy":

  - must track (and forecast) financial sector developments alongside projections of inflation and real activity
  - arguably, best accomplished by having two separate teams responsible for the two types of projections

- But requires significant reformulation of the "second pillar":

  - the point should not be to assess long-run risks to price stability — rather, risks to financial stability

Is it What the ECB Already Does?

- Similarities to "two pillar strategy":

  - must track (and forecast) financial sector developments alongside projections of inflation and real activity
  - arguably, best accomplished by having two separate teams responsible for the two types of projections

- But requires significant reformulation of the "second pillar":

  - the point should not be to assess long-run risks to price stability — rather, risks to financial stability

  - the focus should not be on money growth, and on "components and counterparts" only to produce "corrected" M3 measure, — rather, on warning signs of systemic risk (leverage, maturity transformation, correlation of risks, ...)

Is Price Stability Sacrificed?

- Note this proposal maintains a commitment to a well-defined medium-run inflation target

  — in fact, the target criterion implies that the long-run price level should never change as a result of shocks

  — including variations in crisis risk, or occurrence of crises

Is Price Stability Sacrificed?

- Note this proposal maintains a commitment to a well-defined medium-run inflation target

  — in fact, the target criterion implies that the long-run price level should never change as a result of shocks

  — including variations in crisis risk, or occurrence of crises

- Inflation should be allowed to undershoot normal target in a period of elevated marginal crisis risk

  — but there should be a commitment to make up the insufficient inflation later, so that the long-run price level is unaffected

  — credible commitment of this kind would eliminate risk of deflationary spiral

Conclusions

- Inflation targeting frameworks can and should be adapted to take account of intermittent disruptions of financial intermediation

Conclusions

- Inflation targeting frameworks can and should be adapted to take account of intermittent disruptions of financial intermediation

    - role of financial conditions in inflation, output determination

    - effects of monetary policy on risk of financial instability

Conclusions

- Inflation targeting frameworks can and should be adapted to take account of intermittent disruptions of financial intermediation

    - role of financial conditions in inflation, output determination

    - effects of monetary policy on risk of financial instability

- This will require a new research program, to make the relationships sketched above quantitative

Conclusions

- Inflation targeting frameworks can and should be adapted to take account of intermittent disruptions of financial intermediation

  - role of financial conditions in inflation, output determination

  - effects of monetary policy on risk of financial instability

- This will require a new research program, to make the relationships sketched above quantitative

- But does not require change in fundamental structure of forecast targeting, or abandonment of commitment to quantitative definition of medium-run price stability