Discussion of Quint and Rabanal
"Should Unconventional Monetary Policies Become Conventional"

Matteo Iacoviello
Federal Reserve Board

NBER EFSF / Philly Fed
October 6, 2017

Summary

Yes

This Paper

- How large are the benefits of unconventional monetary policy (UMP) in normal times?

- Consider estimated new-keynesian model with price and wage rigidities and: (a) banking sector frictions and (b) long-term private and public debt.

- Benefits of UMP are large. In economy hit by financial shocks, optimal UMP entails welfare gains that are equivalent to 1.45% of ss consumption.

- Benefits would be much smaller
  - ▶ absent financial shocks
  - ▶ or if the estimated Taylor rule were replaced by an optimal price and wage targeting rule

My Main Comments

- Other papers have already shown that "QE" works in models of this kind.

- Other papers – including Gertler and Karadi (JME, 2011) – have already performed similar welfare calculations.

- New elements in the paper are (i) second-order solution and (ii) estimation.

- Paper should clarify how and why (i) and (ii) update our priors based on earlier papers.

My Main Comments

- Other papers have already shown that "QE" works in models of this kind.

- Other papers – including Gertler and Karadi (JME, 2011) – have already performed similar welfare calculations.

- New elements in the paper are (i) second-order solution and (ii) estimation.

- Paper should clarify how and why (i) and (ii) update our priors based on earlier papers.

Welfare Gains Seem too Large to be True

- Absent distortions from inflation, standard Lucas calculations suggest that individuals should be indifferent between

$$\Delta\mu = 1.45\% \text{ lower consumption} \qquad (1)$$
$$\Delta\sigma = (2 \times 0.0145)^{0.5} = 17 \text{ ppt rise in stdev of C} \qquad (2)$$

- For the benefits of UMP to be large, it must be the case that financial shocks have particularly large negative effects.

- Is this the case? No

# Welfare Gains are Large but the Effects of Financial Shocks Look Small

- Financial shocks do little to move consumption or inflation around.
- Perhaps the mere presence of financial shocks lowers mean consumption growth by 1.45% in consumption equivalent terms in the stochastic steady state.
- As mean annual consumption growth is about 1.5% in the model, financial shocks should be enough to kill growth in the model. Is it the case? Why? You should discuss.

Table 6: Shock Decomposition

Variable	TFP	Inv	Pref	Fin	Mark-ups	Govt	Mon
GDP Growth	40.7	9.7	19.0	15.8	2.6	3.8	8.6
Consumption Growth	47.9	1.6	39.4	0.9	1.6	4.5	4.1
Investment Growth	21.2	14.5	25.2	28.4	2.0	0.6	8.0
Wage Growth	28.7	6.8	56.9	3.2	2.2	1.1	1.2
Inflation	39.3	3.9	46.1	3.3	4.2	1.9	1.3
Federal Funds Rate	24.1	4.1	41.4	3.5	2.5	1.9	22.6
Hours	9.1	8.3	50.3	18.2	2.9	9.3	2.0
Spread BAA-FFR	2.5	0.2	1.5	85.5	0.4	0.1	9.9
Spread 10Y Bond-FFR	2.5	0.2	1.4	85.6	0.4	0.1	9.8

Welfare Gains are Large but UMP does not seem very powerful

- Welfare gains appear unreasonable also in light of small UMP effects
- Consider shock to CB assets of 10% of GDP. Estimated macro effects are in Euler equation error territory. They are so small that one needs to strain his arithmetic abilities to make sense of their magnitude.
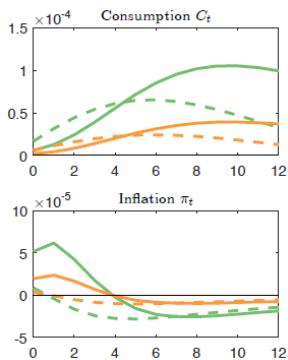
Are these Welfare Gains Reasonable?

- I suppose **most** of the welfare gains derive from changes in the stochastic mean induced by a particular policy.

- If this is the case, it seems pointless to present impulse response around the steady state. This is not where the welfare gains are.

- To show what these policies do, it would be useful to decompose welfare gains in mean and volatility effects.

- Spoiler alert: here is the moment when the discussant goes off on a tangent about his own paper

Are these Welfare Gains Reasonable?

- I suppose **most** of the welfare gains derive from changes in the stochastic mean induced by a particular policy.

- If this is the case, it seems pointless to present impulse response around the steady state. This is not where the welfare gains are.

- To show what these policies do, it would be useful to decompose welfare gains in mean and volatility effects.

- Spoiler alert: here is the moment when the discussant goes off on a tangent about his own paper

Decomposing Welfare Gains

- In Iacoviello, Nunes and Prestipino (in progress), we decompose the welfare gains of a particular policy of responding to the state of the economy (a tax on housing purchases) into mean and volatility effects.

- Even if the policy does not change the steady–state volatility of consumption by much, there are large welfare gains from higher steady-state housing prices, which in turn result in higher consumption and investment in steady state.

- Perhaps something to this effect is going on in Dominic and Pau's paper, but it would be of fundamental importance to flesh it out.

Decomposing Welfare Gains

- In Iacoviello, Nunes and Prestipino (in progress), we decompose the welfare gains of a particular policy of responding to the state of the economy (a tax on housing purchases) into mean and volatility effects.

- Even if the policy does not change the steady–state volatility of consumption by much, there are large welfare gains from higher steady-state housing prices, which in turn result in higher consumption and investment in steady state.

- Perhaps something to this effect is going on in Dominic and Pau's paper, but it would be of fundamental importance to flesh it out.

Decomposing Welfare Gains

- In Iacoviello, Nunes and Prestipino (in progress), we decompose the welfare gains of a particular policy of responding to the state of the economy (a tax on housing purchases) into mean and volatility effects.

- Even if the policy does not change the steady–state volatility of consumption by much, there are large welfare gains from higher steady-state housing prices, which in turn result in higher consumption and investment in steady state.

- Perhaps something to this effect is going on in Dominic and Pau's paper, but it would be of fundamental importance to flesh it out.

Some Technical Points (1)

- Impulse responses are plotted in magnitudes that are impossible to understand. What's on the axes?

- Around which ss point is the approximation computed? One with low central bank assets?

- In Figure 1, an increase in the CB stock of assets of 10% of GDP lowers spreads by 0.00008 (basis points?) and increases GDP by 0.0003 (percent?). Are these magnitudes worth an extra check?

- In Figure 2, a net worth shock that lowers output by 0.2 percent can be offset by a policy that increases the stock of central bank assets from 0 to 100 percent of GDP. Seems laughable for a quantitative model. Assuming linearity, a shock that causes a modest recession (2% of GDP) requires an increase of central bank assets of 200 trillion dollars.

Some Technical Points (2)

- Paper finds that a policy of targeting both price and wage inflation with very large coefficients is already optimal.

- If that is the case, this policy must also entail welfare gains of 1.5% of consumption.

- These numbers appear way outside the range of standard new-keynesian models, with and without frictions.

  - SGU (2005): welfare gains from optimal rule are 0.003% of consumption.
  - Carlstrom, Fuerst and Paustian (2016): welfare gains from responding to spreads about 0.1%
  - Kiley and Sim (2016): welfare gains from Ramsey optimal policy relative to Taylor rule about 0.3%
  - Gertler and Karadi (2011): one-year welfare gains of 8%, that is 0.3% lifetime gains.

Some Technical Points (3)

Perhaps mention of:

- ZLB;
- conditions under which banker's incentive constraint remains tight;
- what numbers you would get if you did everything first-order, except welfare calculations. Second-order only captures one aspect of precautionary behavior, but the solution method ignores other potentially important nonlinearities.

Main Suggestions

Great start. However,

1. Make sure impulse responses are understandable and reasonable.

2. Place effects of QE in the context of empirical literature. E.g. increase in CB assets of 10% of GDP (around $2 trillion) should lower yields on domestic private assets by 20–50 basis points. See e.g. Table 5 in Engen, Laubach, and Reifschneider, 2015.

3. Make sure you can clarify where the welfare gains are coming from: are price rigidities too large? is it because of long-term debt or because of the GK equity constraint? is it the steady-state effect only or is there something in the model dynamics worth discussing?

Main Suggestions

Great start. However,

1. Make sure impulse responses are understandable and reasonable.

2. Place effects of QE in the context of empirical literature. E.g. increase in CB assets of 10% of GDP (around $2 trillion) should lower yields on domestic private assets by 20–50 basis points. See e.g. Table 5 in Engen, Laubach, and Reifschneider, 2015.

3. Make sure you can clarify where the welfare gains are coming from: are price rigidities too large? is it because of long-term debt or because of the GK equity constraint? is it the steady-state effect only or is there something in the model dynamics worth discussing?

Main Suggestions

Great start. However,

1. Make sure impulse responses are understandable and reasonable.

2. Place effects of QE in the context of empirical literature. E.g. increase in CB assets of 10% of GDP (around $2 trillion) should lower yields on domestic private assets by 20–50 basis points. See e.g. Table 5 in Engen, Laubach, and Reifschneider, 2015.

3. Make sure you can clarify where the welfare gains are coming from: are price rigidities too large? is it because of long-term debt or because of the GK equity constraint? is it the steady-state effect only or is there something in the model dynamics worth discussing?

References

1. Engen, E. M., Laubach, T., & Reifschneider, D. (2015). The macroeconomic effects of the Federal Reserve's unconventional monetary policies.

2. Gertler, Mark, and Peter Karadi (2011). "A model of unconventional monetary policy." Journal of monetary Economics 58.1 (2011): 17-34.

3. Iacoviello, Matteo, Ricardo Nunes and Andrea Prestipino (2017). "Optimal Credit Market Policy in an Infinite Horizon Model", mimeo

4. Kiley, Michael, and Jae Sim (2017), "Optimal Monetary and Macroprudential Policies: Gains and Pitfalls in a Model of Financial Intermediation"

5. Schmitt-Grohé, Stephanie, and Martin Uribe (2004). Optimal operational monetary policy in the CEE model of the US business cycle. No. w10724. NBER wp.