Comment

Christophe Chamley

These three remarkable papers span a wide set of fascinating issues on the management of government debt and interest rates. Even if we leave aside the volumes that have been written on the subject, one can only add here a few short remarks which should be viewed as complementary. The common ground between the papers is the management of the government debt and its impact on the yield curve and in particular on the long-term interest rate. The papers provide essentially a broad and stimulating historical perspective, from World War I until shortly before the current crisis, that is overwhelmingly rich in the description of the events, the policies and the evolution of policy thoughts.

There is a theoretical problem that is not mentioned by the authors. In the world of the Modigliani-Miller theorem (MM), which does not require complete markets, a change of the composition of the government debt through trading has no impact on the real allocation of resources. Private agents undo the trading of the government.

Of course, the neutrality of MM does not hold when the financial policies entail transfers or when there are liquidity constraints, two issues that will be discussed here. However, MM provides a stylised benchmark that is a useful warning for the analysis of the management of the public debt, either by the government or by monetary policy. One should also emphasise that according to MM, a change of the composition of the debt has a first order effect on the price of assets with different maturities. But that first order effect does not translate into an impact on real allocations, ie aggregate investment. The argument should also serve as a reminder that one may not consider only the relation between investment and the long-term interest rate. For example, the short-term rate has an impact on the opportunity cost of delay, which matters when firms under uncertainty choose the timing of their investment (Chamley and Gale, 1994).

Some changes in the composition of the debt have real effects because they are not restricted to trading and entail transfers. An example, which is considered in the papers of Allen and of Tily, is the conversion in mid-1932 of the third war loan that was issued in 1917 at 5 percent, which had been redeemable since 1929 (Internal War Loans of Belligerent Countries, 1918), into a long-term bond at 3.5 percent. The move was supported by Keynes, as described by Tily. That policy took advantage of the low level of the interest rate and the opportunity to refinance the public debt at a lower interest rate. The practice had been standard in England since the 18th century. If we first neglect the uncertainty on interest rates, the policy entails a transfer from the rentiers (who hold the high interest rate debt) to the tax payers, who benefit from the reduction of the cost of the public debt. That significant change in transfers explains why such a policy is always resisted by a lobby and deemed as risky (Chamley, 2011). Indeed, the pressures on financial institutions to facilitate the conversion (Allen) are just a manifestation of the power game that takes place.

The conversion of a callable war loan to a long-term bond that is not callable for another 20 years also alters the maturity of the government debt and its risk properties. As emphasised by Allen, the old loan has a price that cannot rise much above the par because agents are aware of the redeemability of the loan. The “anchor” of the par provides a stability in the price and the old debt, although it can be extended perpetually, has a price behaviour that is similar to that of a short-term bond (at least if the short-term interest rate is low, as in the 1930s).

As highlighted by the three papers, the management of the government debt through trading is done by the fiscal and by the monetary authorities, with no clear separation. As shown by

Allen, sometimes the two authorities work together, sometimes they pursue different objectives. And the MM critique applies as well to the portfolio theory of monetary policy of Tobin (1969) (Chamley and Polemarchakis, 1984).

As is well known, MM is not valid when agents are trade-constrained. These constraints may arise because of habitat (Vayanos and Vila, 2009), or because of liquidity. Liquidity has more than one definition, especially today. For example, the refinancing of the public debt in long-term bonds makes its price more sensitive to changes in long-term expectations, but that does not affect the neutrality of MM. However when this change of composition affects the reserve requirements of financial institutions, as emphasised by Allen, then there is no neutrality. That issue is especially important today with the evolution of the Basel rules on financial institutions.

In the "real world" with constraints on transactions, the composition of the government debt may have an impact on investment. Ignoring the previous caveat on the determination of investment from both the long-term and the short-term rates, it is then natural to focus on the long-term interest rate. It would be good to have more quantitative evaluations of past experiences, although such evaluations are notoriously difficult. One should not forget that the long-term rate depends also on expectations about real activity in the future, especially without future markets for goods (Chamley, forthcoming). As Keynes was well aware (Tily), low expectations of future activity depress future rates, and future expectations depend very much on current fiscal and monetary policies.

A number of empirical studies have tried to measure the impact of debt management policies on the yield curve. They have been surveyed recently by Krishnamurthy and Vissing-Jorgensen (2012). See also Turner (2010), D'Amico and King (2010), Gürkaynak and Wright (forthcoming).

Tily describes how Keynes emphasised the impact of monetary management on expectations about the long-term interest rate. This effect is documented and analysed in Krishnamurthy and Vissing-Jorgensen (2012). They take five announcements by the Federal Reserve implementing QE1, from 25 November 2008 (intent to purchase $500 billion of MBS and $100 billion of debt) to March 2009. The impact on the forward market of the federal funds rate does show a lowering of the entire yield curve, in the span of 3 to 24 months, which is limited by the existence of the forward markets. The measured effect is small, less than 0.5 percent. Note that this effect is in general equilibrium: bond holders may expect the policy to generate a positive impact on future activity which would dampen the decrease of the rate.

The trading of government assets by a policy maker can be a useful commitment device to a future policy. As discussed by Allen, when the Federal Reserve purchases long-term assets (as in QE1), it constructs a portfolio that would suffer a capital loss if rates were to increase in the future. There are a number of examples to be found in past policies. In the 1980s, Margaret Thatcher advocated inflation indexed bonds as "inflation policemen". Indeed, the private sector did not believe in the commitment of the government to reduce inflation, and bought these bonds at a high price that generated a handsome profit for the government.

In a similar experience, the private sector bought war bonds during the war of the Austrian succession in 1744-1748 under the expectation that interest rates would be high for a long time. But the war did not last as long as expected and the government earned a profit in the early conversion to a low rate such that ex post its rate during the war was about the same as during the peace, at 3 percent (Chamley, 2011).

References

Bordo, M. D. and E. N. White (1993). "British and French finance during the Napoleonic Wars", in M. Bordo and F. Capie, eds, *Monetary Regimes in Transition*, Cambridge University Press.

Chamley, C. (forthcoming). "The Paradox of Thrift in General Equilibrium Without Forward Markets", *Journal of the European Economic Association*.

——— (2011). "Interest Reductions in the Politico-Financial Nexus of 18th Century England", *Journal of Economic History*, 71, 555-589.

Chamley, C. and D. Gale (1994). "Information Revelation and Strategic Behavior in a Model of Investment", *Econometrica*, 62, 1065-1085.

Chamley, C. and H. M. Polemarchakis (1984). "Assets, General Equilibrium and the Neutrality of Money", *Review of Economic Studies*, 51, 129-138.

D'Amico, A. and T. B. King (2010). *Flow and Stock Effects of Large Scale Treasury Purchases*, Finance and Economics Discussion Series 2010–52, Washington: Federal Reserve Board.

Gürkaynak, R. S. and J. H. Wright (forthcoming). "Macroeconomics and the Term Structure", *Journal of Economic Literature*.

Internal War Loans of Belligerent Countries (1918), The National City Company: New York.

Krishnamurthy, A. and A. Vissing-Jorgensen (2012). "The Effects of Quantitative Easing on Interest Rates: Channels and Implications for Policy", *Brookings Papers on Economic Activity*, Spring.

Swanson, E. T. (2011). "Let's Twist Again: A High-Frequency Event-Study Analysis of Operation Twist and Its Implications for QE2", *Brookings Papers on Economic Activity*, Spring, 151-188.

Tobin, J. (1969). "A General Equilibrium Approach to Monetary Theory", *Journal of Money, Credit and Banking*, Vol 1, 15-29.

Turner, P. (2010). "Fiscal Dominance, the Long-Term Interest Rate and Central Banks", in *What is a Useful Central Bank?* Proceedings of a Norges Bank symposium in honour of Svein Gjedrem. Norges Bank Occasional Papers, No 42.

Vayanos, D. and J.-L. Vila (2009). *A Preferred-Habitat Model of the Term Structure of Interest Rates*, Working Paper No 15487. Cambridge, Mass.: National Bureau of Economic Research.