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Endogenous money and asset price inflation: reply

William Van Lear and Robert Stokes's (2001) reflections on my (1999–2000) paper provides a nice summary of its model and then makes six critical comments: (1) my model should include a bond market; (2) interest rate changes rather than equity price inflation is the equilibrating mechanism in the real world; (3) my model should include factors influencing company decisions on appropriate capital structures; (4) the impacts of a policy-induced rise in the interest rate on economic growth and on the funding decisions of firms amount to a distinction without a difference; (5) in the general case, firms do not refinance short-term bank loans with long-term liabilities or equity; and (6) empirically, there appears to be no strong link between equity prices and consumer good prices.

In my view, the first two comments raise the most important issues and so I will leave their response to the end of this note. The third comment is well taken. In Dalziel (1999–2000), the marginal debt-capital ratio is treated as a parameter, whereas in reality it must be affected by a number of factors impinging on shareholder wealth. I have addressed this criticism in Dalziel (2001), where chapter 8 develops the model to derive an optimal marginal debt-capital ratio assuming firms form rational expectations about future inflation and adopting Kalecki's (1937) principle of increasing risk for the behavior of nominal interest rates on bank advances. There are some important results from this approach, including a positive relationship between inflation and supply-side capacity growth in contrast to the neutrality results that have become standard in the current neoclassical literature.

With respect to the fourth comment, I think there is an important difference between my model's two transmission channels that Van Lear and Stokes overlook. Again there is a more detailed discussion in Dalziel (2001). My argument is that an increase in the real interest rate influences equity prices through two effects: first, it slows investment expenditure (and hence capacity growth); and second, it leads to changes in

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the optimal mix of investment funding between debt and equities. The two influences work in the same direction (to that extent we are in agreement), but the second effect encourages us to look for alternative policies that can affect the funding mix directly without the need to slow capacity growth. In chapter 10 of Dalziel (2001), for example, I consider the possibility that a tax on inflation-induced capital gains might be used for this purpose.

Van Lear and Stokes's fifth comment echoes an earlier debate in the journal between Tom Asimakopulos and Jan Kregel, with an authoritative commentary by Paul Davidson (1986). I agree with the observation that firms frequently draw on retained profits or issue new securities before embarking on new investment projects, but the question must be asked what this microeconomic behavior sums up to at the macroeconomic level. Once the fundamental point is accepted that investment must be *financed* in advance of being *funded* out of savings, then the aggregate level relationships identified in Davidson (1986) must hold. The strength of Davidson's approach, which is the basis of my own work, is that it is able to cut through the diversity of financial institutions (including the recent rise in importance of pension funds) to focus on the implications of certain key macroeconomic relationships for factors such as growth, monetary policy and (perhaps more controversially) equity price inflation.

I am grateful for the sixth comment, because it allows me to emphasize a point that was mentioned but not developed in Dalziel (1999–2000). The discussion is about equation (17) of that earlier paper, in which P^C, W^C, A^C, and Y^C are the price of output, the wage rate, average labor productivity, and the quantity of output in the consumption goods sector, ρ is a required rate of return on equities, Q is the unit price of equities, and E^C is the volume of equities issued by the consumption good firms:

$$(P^C - W^C/A^C)Y^C = \rho Q E^C$$

From this equation, if the price of equities, Q, rises by x percent, then the required rate of return can be achieved if P^C and W^C/A^C rise by x percent, also. Suppose, however, that high unemployment or antiunion legislation means that wage growth is kept below productivity growth, so that W^C/A^C falls over time. This can allow ρ to be maintained after a rise in Q without any increase in consumer prices, at the expense of productivity-adjusted wages. Thus, my model reflects the traditional Post Keynesian theory that inflation is due to income distribution conflict

between labor and capital, but derives it in a context in which consumer prices are being held constant by tight monetary policy.

Returning now to the first two points raised by Van Lear and Stokes. I acknowledge immediately that the standard Post Keynesian approach to monetary analysis, going right back to Keynes (1936), is to model two major financial assets termed money and bonds. Within such a framework, money has a zero nominal interest rate, so that the rate of return on bonds can be treated as the opportunity cost of holding the liquid asset, and the analysis presented by Van Lear and Stokes holds. My analysis based on two assets termed money and equities is therefore novel (although not entirely without precedent; see especially Davidson, 1972 and Minsky, 1976), and so may require further justification.

My first observation is that the distinction between noninterest-bearing money and interest-bearing bonds, which was so clear-cut in Keynes's day, has become much harder to maintain with the modern practice of paying interest on transaction account balances. Indeed, credit-money is now akin to what might be called an "intermediated bond," in the sense that advances borrowed by firms can be thought of as bonds sold to the bank and deposits can be thought of as those bonds sold on to the public at a suitably discounted interest rate. Recognizing this, Arestis and Howells (1996, 1999) and Howells (1995, 1997) have argued that the traditional theory can be preserved by rephrasing Keynes's argument in terms of changes in interest rate differentials, rather than in terms of changes in interest rates *per se*. Thus, people who find they have an excess supply of liquid bank deposits use the excess deposits to demand bonds. This raises the market price of bonds, which causes their return to fall relative to the return on deposits and hence equilibrium is restored. In my view, however, even this extension leaves the theory incomplete until the analysis is extended to describe what is also happening to equities.

It may have been possible early last century to assume that equities were a special type of bond, which differed from interest-bearing securities only in providing their return in the form of a fixed stream of dividend payments (related to the marginal efficiency of capital). This would justify the standard money-bonds framework. In my work, however, I argue that account must also be taken of the way in which the unit price of equities can rise and their rate of return *still be maintained* (in contrast to a fixed interest rate bond) if expected future returns also rise in nominal terms, either because wage growth is judged likely to be held below labor productivity growth or because consumption good prices

are expected to rise. This is why my model focuses its binary distinction on debt (money *and* bonds) and equity (shares). Not all readers will agree, of course, but on this matter I think Davidson's (1972) and Minsky's (1976) developments of Keynes's theory continue to have important lessons for more recent financial market innovations.

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