

ADDITIONAL TOPICS CHAPTER 12

The forward-looking consumption model

Our analysis of the multiplier shows that it depends on the MPC. One reason there is uncertainty about the size of the multiplier is that the MPC seems to change in certain situations. Although the consumption function with a constant MPC gives an adequate prediction of people's behaviour in many situations, it sometimes works very poorly.

The forward-looking consumption model explains these changes in the MPC and identifies part of the uncertainty in the MPC. The forward-looking consumption model was developed independently and in different ways by two Nobel Prize-winning economists, Milton Friedman and Franco Modigliani. Friedman's version is called the permanent income model, and Modigliani's version is called the life-cycle model.

Consumption smoothing

The forward-looking model starts with the idea that people attempt to look ahead to their future income prospects when deciding how much to consume. They do not simply consider their current income. For example, if a young medical doctor decides to take a year off from a high-paying suburban medical practice to do community service at little or no pay, that doctor's income will fall below the poverty line for a year. But the doctor is unlikely to cut consumption to a fraction of the poverty level of income. Even if the doctor were young enough to have little savings, borrowing would be a way to keep consumption high and even buy an occasional luxury item. The doctor is basing consumption decisions on expected income for several years — making an assessment of a more permanent income, or a life-cycle income — not just for one year.

There are many other examples. Farmers in poor rural areas of Asia try to save something in good years so that they will be able to maintain their consumption in bad years. They try not to consume a fixed fraction of their income. In many cases the saving is in storable farm goods like rice.

As these examples indicate, instead of allowing their consumption to vary with their income, which may be quite erratic, most people engage in consumption smoothing from year to year.

The MPC for permanent versus temporary changes in income

Once people estimate their future income prospects, they try to maintain their consumption at the same level from year to year. If their income temporarily falls, they do not cut their consumption by much; *the MPC is very small, maybe about 0.05, in the case of a temporary change in income.* But if they find out their income will increase permanently, they will increase their consumption a lot; *the MPC is very large, maybe 0.95, in the case of a permanent change in income.* For example, if a new fertiliser doubles permanently the rice yield of a rice farmer's land, we can expect that the farmer's consumption will approximately double.

The difference between the forward-looking consumption model and the simple consumption function is illustrated in figure 12.1. In the right panel of figure 12.1, income is expected to follow a typical life-cycle pattern: lower when

young, higher when middle-aged and very low when retired. However, consumption does not follow these ups and downs; it is flat. The left panel shows the opposite extreme of the standard consumption function with a fixed MPC. In that case people live well when middle-aged but have a tough time when young or old.

Occasionally some people are prevented from smoothing their income completely because they have a liquidity constraint; that is, they cannot get a loan to consume more than their income. Such liquidity constraints do not appear to be important enough in the economy as a whole to thwart the forward-looking model completely. Of course not all people try to smooth their income; some people like to go on binges, spending everything, even if the binge is followed by a long lull.

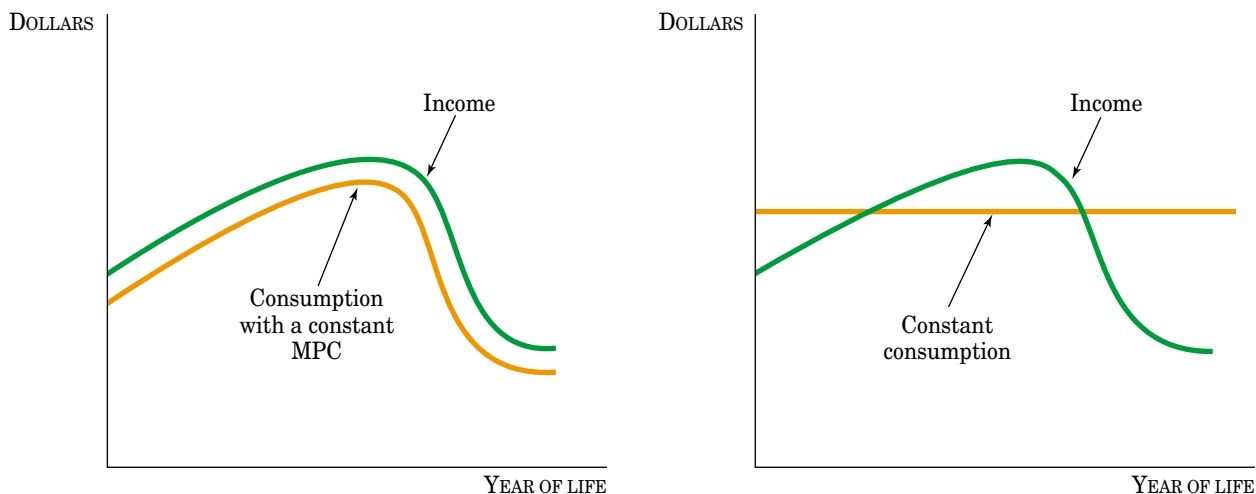


FIGURE 12.1

Two extreme forms of consumption behaviour

The right panel shows the future outlook of a young person or family described by the forward-looking model of consumption. The left panel shows the outlook of a young family with a constant MPC. The path of expected income (green line) is the same in both cases.

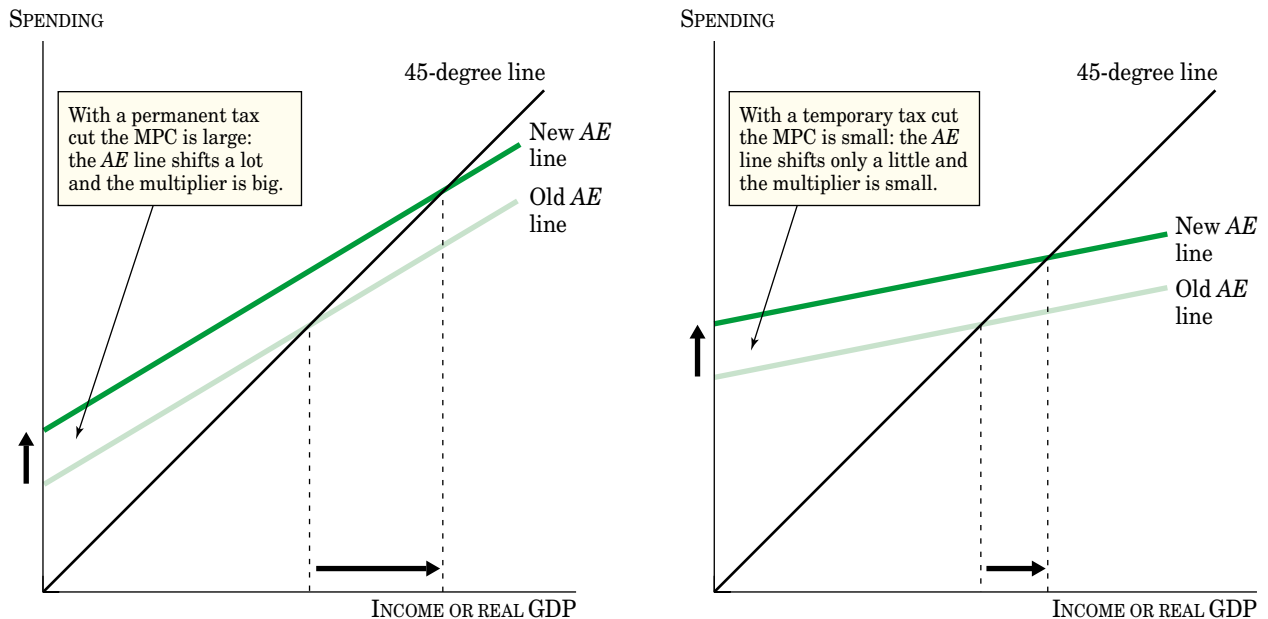
Tests and applications of the forward-looking model

Observations on consumption and income for the economy as a whole indicate that the forward-looking model significantly improves our understanding of observed changes in the MPC. For example, economists have demonstrated that the measured MPC for the economy as a whole is lower for temporary changes in income that occur during recessions and booms than for more permanent increases in income that occur as potential GDP grows over time. Studies of thousands of individual families over time show that the individual MPC for temporary changes in income is about one-third of the MPC for permanent changes in income.

Permanent versus temporary tax cuts

The forward-looking model is also the most promising explanation why the MPC is low when a tax cut is temporary (such as a one-time tax rebate, good for only one year) and high when the tax cut is permanent. The effects of a permanent versus a temporary tax cut are illustrated using the aggregate expenditure line in

figure 12.2. The left panel shows the effects of a permanent tax cut. With a permanent tax cut, the MPC is high, so the shift in the aggregate expenditure line (the MPC times the tax cut) is big and the multiplier is big. For a temporary tax cut, shown in the right panel, the MPC is low, the shift in the aggregate expenditure line is small, and the multiplier is small. In estimating the effects of various tax proposals on the economy, economic forecasters take these changes in the MPC into account.



Anticipating future tax cuts or increases

The forward-looking model changes our estimate of the impact of changes in taxes that are expected to occur in the future. For example, if people are certain of a tax cut in the future, they may begin to increase their consumption right away, before the tax decreases. In this case the MPC is technically huge, because consumption increases with little or no observed change in current income. Conversely, they may reduce their consumption in anticipation of a tax increase.

It is difficult to know how large these effects are because we do not observe people's expectations of the future. Estimates based on the assumption that people forecast the future no better or no worse than economic forecasters — this is the rational expectations assumption — suggest that the effects are large and significant. Because people's behaviour is affected by their expectations of the future, attempts to estimate the impact of a policy proposal like a change in taxes need to take these expectations into account.

FIGURE 12.2

A temporary versus a permanent tax cut

The left panel is for a permanent tax cut. Because people expect larger incomes over the long haul, the MPC is large, closer to 1. The right panel is for a temporary tax cut. The MPC is smaller because people's long-term income has not changed much.