V. Discussion and conclusion

Using a model that replicates the structure of the economy as realistically as possible is a crucial prerequisite for delivering practice-relevant policy recommendations. Assuming that the capital stock is constant or inexistent undoubtedly poses significant restrictions on the plausibility of the results obtained. On the other hand, the benefits from the inclusion of endogenous capital and investment depend on the type of the specification chosen. In particular, some degree of inertia in the capital adjustment over time is needed to provide a satisfactory match to empirical business-cycle observations. This study opts for introducing capital adjustment costs as a means to limit the excessive volatility in capital that would have been the case otherwise. However, as seen in Chapter III, Section 2, other solutions to this modelling issue (such as firm-specific capital, for instance) would also be worth some consideration in terms of their policy design implications.

In the foregoing chapters I have based my study on a dynamic optimising IS-LM-type model that incorporates sticky prices and wages, endogenous capital and investment with capital adjustment costs. The framework includes an IS “sector”, which allows a more differentiated analysis of the individual aggregate demand components, as well as the impact of their determinants. The main purpose of this work has been to explore different simple interest-rate rule specifications in terms of the target variables included, by applying two criteria: the existence of a determinate rational-expectations equilibrium and the induced variable responses to shocks. Parallel to this analysis, I have presented the Taylor principle (the benchmark criterion for assessing monetary policy rules) and tested whether in the model under standard parameter calibration a more than one-on-one response to inflation (i.e. active policy) is still the only condition needed to ensure determinacy of rational-expectations equilibrium under endogenous capital. The second issue explored has been whether, determinacy notwithstanding, active policy with a sole inflation target actually yields the fastest and least distressful convergence of the economy to the steady-state level under shocks.

The results obtained in Chapters III and IV reveal a very interesting picture. In the first place, in the New Keynesian model with endogenous capital and investment and adjustment costs I use, an inflation response coefficient above unity does not necessarily imply determinacy of rational-expectations equilibrium. For an active rule with inflation-targeting only, adherence to the Taylor principle is a sufficient condition for determinacy of rational-expectations equilibrium only within a small interval of inflation coefficient values, associated with moderately active policy. For all other values, an output gap target is the solution needed to eliminate the indeterminacy problem. Under a passive rule, the equilibrium indeterminacy as implied by the Taylor principle is the case only
if inflation is the sole target; the inclusion of an output gap objective alleviates the occurrence of multiple equilibria. Thus, taking into consideration the output gap developments in the economy appears to be crucial for monetary policy design in order to guarantee stable, predictable adjustment path of the economy.

Building upon the insights gained by the determinacy analysis, I then concentrated on assessing the responses to shocks under different specifications of active and passive policy rules (with inflation-targeting only; with inflation and output-targeting; with inflation- and output-gap targeting and interest-rate smoothing). Within both groups of rules, the specification with inflation- and output-targeting was characterised by the best performance in terms of variable deviations and speed and path of the convergence. Thus the results from the determinacy analysis have been complemented by the finding that an output gap target is crucial not only for determinacy of rational-expectations equilibrium, but also for ensuring a less distressful adjustment of the economy after the occurrence of shocks. Both for active and passive policy, introducing a significant degree of interest-rate smoothing appears to be counterproductive, inducing longer-lasting convergence, relatively greater variable deviations and more frequent oscillatory adjustment paths for each shock.

The more significant differences between the active and passive specifications including identical variables are registered in the case of a supply (technological unit) shock. This results from the differing magnitudes of the nominal interest rate responses that induce negative real-interest rate deviations under active policy and positive real-interest rate deviations from steady state under passive policy. Thus, passive policy stance acts stabilising as the technology shock impact is countervailed by the real interest rate increase. By analogy, active policy boosts the shock impulse and contributes to larger deviations of investment, consumption and the output gap. The latter tendency can be at least partially offset by the introduction of an output target to the policy rule.