

# Estimates of equilibrium exchange rates for sterling against the euro

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HM TREASURY

# EXECUTIVE SUMMARY

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**1** Short-term foreign exchange rate movements can often appear erratic, but economists generally believe that over the medium to long term there are basic forces (sometimes called ‘fundamentals’) which push a currency’s exchange rate towards an equilibrium exchange rate. Equilibrium exchange rates are defined in terms of the real exchange rate, which combines the nominal rate with measures of domestic and overseas prices. The equilibrium exchange rate (hereafter EER) can be thought of as a weak but steady attractor for the actual rate, gradually pulling the actual real exchange rate towards it.

**2** This study examines the determinants of the EER, and surveys attempts to examine the implications for sterling in the medium term. It also provides some new estimates based on a model specifically designed to calculate an equilibrium exchange rate for the euro sterling rate, and examines how sensitive the EER is to alternative assumptions.

**3** The concept of a medium-term EER is important in analysing possible entry into EMU. Under a flexible exchange rate system, deviations from the EER may be substantial and prolonged, but adjustment towards the equilibrium when it comes may be sudden, because the nominal exchange rate may move very quickly. Within EMU, the nominal euro sterling rate would be fixed. Consequently adjustment of the real exchange rate towards the equilibrium would have to take place through changes in prices, which may involve significant macroeconomic costs.

**4** The strength of the US dollar and the weakness of the euro over the last few years raises the following issue. Should the focus be on an equilibrium effective rate for sterling (i.e. a rate against the rest of the world) or should it be restricted to an equilibrium euro sterling rate?

**5** Only the euro sterling rate is fixed irrevocably if the UK joins EMU. If the UK entered the euro when sterling was overvalued against the euro, but the euro was undervalued against other countries, any subsequent correction in the euro rate against other countries as it adjusted to its EER would leave sterling overvalued against all currencies. It is therefore the euro sterling rate that is critical in relation to the UK’s possible entry into EMU.

**6** There are four main methods that have been used to calculate EERs. The most straightforward of these is PPP (Purchasing Power Parity), which compares the prices of goods produced in two countries, and calculates the exchange rate that would equalise these prices. There are strong theoretical reasons for questioning how useful PPP is as an estimate of the medium-term EER, but it does have more validity as a measure of the long-run EER.

**7** If PPP does not hold, the EER is likely to depend on a number of macroeconomic variables and relationships. The remaining methods of calculating EERs consider the real exchange rate as part of a complete macroeconomic system, which may be influenced by a number of macroeconomic forces:

- the first method examines a complete macroeconomic model, and its prediction for a medium-term equilibrium;
- the second focuses on one part of the macroeconomy – the determination of trade flows – and adds to this off-model projections for other key variables; and
- the third directly estimates a single exchange rate equation, and attempts to extract from this an estimate of the equilibrium rate.

**8** These methods differ not so much in the theory they embody, but instead in the techniques they use to implement this theory. None of these approaches appear to dominate the others.

**9** Taking a recent, well established example of each type of approach (including PPP) suggests a range for the euro sterling EER of 1.175-1.33 €/£. However, recent movements in both the exchange rate and current accounts throw some doubt on the estimates at the lower end of this range.

**10** This study confirms these doubts by presenting a new estimate, using a new model of bilateral rates for the US, the UK, the euro area and Japan. The model follows the second approach identified above. In particular, it inputs exogenous assumptions about sustainable current accounts, and calculates the exchange rates required in medium-term equilibrium to achieve these current accounts.

**11** On the assumption that the sustainable current account deficit is zero in the UK, 3.5 per cent of GDP in the US, and the euro area has a 1 per cent surplus, the model gives a medium-term EER for the euro sterling rate of 1.37 €/£.

**12** While the model suggests a higher estimate for the euro sterling EER than some earlier studies using a similar approach, it still implies that the euro sterling rate has been substantially overvalued in recent years. However, the model does provide some ingredients for a potential explanation for this overvaluation.

**13** Sensitivity analysis implies that capital inflows into the US, perhaps associated with productivity improvements, lead to significant upward pressure on the euro sterling rate. These flows are likely to have been larger in the past than they will be over the medium-term future. Combining this with short-term capital inflows into the UK associated with buoyant domestic demand, and relatively modest trade deficits as firms attempt to retain overseas markets, gives a possible explanation for the recent strength of sterling.

**14** Of course, considerable uncertainties are attached to any estimates of equilibrium exchange rates, particularly concerning possible shifts in trade relationships and evaluation of the sustainable current accounts that may be associated with private sector net savings behaviour. It is conceivable, for example, that some of the factors generating the strength of sterling relative to the euro in the last few years may turn out to be much more persistent than expected, implying that the EER itself has appreciated. However, all the different methods of calculating the EER, including PPP, provide estimates well below the levels that sterling has reached in recent years. So the possibility that the EER could have appreciated to these levels appears remote.