Optimum currency area (OCA) theory originates from two seminal articles in the early 1960s by the economists Mundell (1961) and McKinnon (1963). These articles drew on contemporary debates about fixed versus flexible exchange rates, treating a common currency as the extreme case of a fixed exchange rate. At the time, under the Bretton Woods system of fixed exchange rates, the choice of exchange rate was seen as a theoretical rather than practical issue, and applicability of the OCA analysis to the choice of currency domain was limited by the almost universal one country–one currency rule (Pomfret 2005). The shift to generalized floating of the major currencies, however, and the move to European Monetary Union (EMU), which began in the early 1970s, generated practical interest in currency areas that has continued to grow.

Despite the huge subsequent literature and increased practical applicability, the theory of currency areas has remained centered on the Mundell-McKinnon approach of identifying the area within which the macroeconomic flexibility gains from having an independent currency are significant. This article focuses on OCA theory and the empirical evidence, while the complementary article on common currency analyzes actual experience with shared currencies.

**Variants of OCA Theory** In OCA theory the key issue is the extent to which macroeconomic policy can be effective in an open economy. An external shock, such as a recession induced by a drop in export demand, can be countered by cutting interest rates to stimulate investment. An economy with capital mobility and a fixed exchange rate does not have monetary policy independence, however, because the cut in interest rates will lead to capital outflows and an unsustainable balance of payments deficit. Mundell (1961) identified the point at which currency independence becomes worthwhile as the point at which factors cease to be mobile. The boundary of the OCA is set by breaks in factor mobility, that is, points at which the movement of labor or capital becomes more difficult.

The openness of an economy also can determine the effectiveness of exchange rate changes as a macroeconomic policy instrument. In very open economies, currency devaluation is ineffective because prices and wages immediately increase to remove any competitive advantage. Openness undermines the money illusion (or failure to distinguish nominal from real price changes) that permits the exchange rate to be an effective policy instrument. Larger economies have lower ratios of trade to gross domestic product (GDP), and currency devaluation can have a positive impact on output. Thus very open economies are suboptimal currency areas, but for a larger and less open economy the effectiveness of the exchange rate as a policy tool increases;
at some point the currency area becomes optimal (McKinnon 1963). In the decades following the original contributions of Mundell and McKinnon, subsequent writers lengthened the list of criteria that might be relevant to an assessment of the optimality of a currency area. Recent contributions have argued that the trade-off may be mediated by history and by geography (Alesina and Barro 2002). With multiple criteria a unique ranking of suitability for currency union is unlikely to exist and the theory becomes difficult to test, but the essential structure of OCA theory has remained remarkably robust since 1961.

OCA theory characterizes the choice of currency area as a cost-benefit analysis trading off microeconomic efficiency against macroeconomic flexibility (Krugman 1993). Microeconomic efficiency would be maximized with a global currency. Thus, sub-global OCAs imply the existence of distortions, such as nonclearing labor markets that lead to involuntary unemployment, whose negative effects can be reduced by macroeconomic policy. Another benefit of a larger currency area is that disturbances are likely to be offsetting, so that exchange rate changes are smaller, with less feedback on domestic prices. The greater price stability is usually ascribed to random shocks being offsetting, but other mechanisms include reduction in the impact of outliers in the consumer price index, or CPI (i.e., goods with a particularly large weight in a region’s consumption bundle), and reduction in the ratio of trade (or rather transactions denominated in potentially volatile foreign currencies) to GDP.

The cost-benefit perspective suggests an equal role for microeconomic and macroeconomic analysis, but the currency area literature has been dominated by macroeconomists, in part because the micro benefits of reduced transactions costs from a common currency are simple to visualize but difficult to measure. Although the benefit from a common currency (or fixed exchange rate) in terms of lower transactions costs has long been accepted as the overwhelming argument for mini states (such as Luxembourg or Brunei) not to have independent currencies, the argument becomes less potent as the currency area becomes large enough to have well-functioning foreign exchange (including forward) markets. Thus the increasing efficiency of financial markets becomes an argument for OCAs becoming smaller because it reduces the benefits via reduced transactions costs of a common currency. This may explain why it is feasible to have a small currency domain, as in countries such as Iceland or New Zealand, without incurring huge costs, but whether the trade-off between macropolicy flexibility and transactions costs is optimal for these small states is another question, and one which is impossible to answer without a good understanding of the nature and size of the transactions costs associated with independent currencies. Before the beginning of the 21st century little research had been done on the transactions cost benefits of a common currency, but this has changed since the controversial article by the economist Andrew Rose was published in 2000.

**Testing OCA Theory** The OCA literature has dominated the theoretical explanation of currency areas for almost a half century. There have, however, been few systematic tests of OCA theory and little positive support for OCA theory as a useful way of explaining the composition of existing currency areas or of predicting changes in currency domains. One empirical challenge was the rarity of changes in currency areas during the 1970s and 1980s. In the early 1990s it was argued that the stability of actual currency arrangements may be explained by switching costs (Dowd and Greenaway 1993), but the many changes in currency arrangements in Eastern Europe in the 1990s and the introduction of the euro in Western Europe suggest that the mechanics of changing currency arrangements are neither difficult nor especially costly.

With multiple OCA criteria, the theory becomes difficult to test: a small open economy has the biggest potential gain from joining a larger currency area in order to reduce transactions costs, but it may also be most vulnerable to external shocks and hence has the most to lose from giving up the exchange rate as a macropolicy instrument. The economists Kreinin and Heller (1974) synthesized the various criteria into the single question of whether a country could
better deal with external imbalance through devaluation or through adjustment of domestic demand. Their conclusion was that Italy, Sweden, and Switzerland were the three Organisation for Economic Co-operation and Development countries most likely to abandon their national currencies. Thirty years later only one of the three had done so, while ten of the “less likely” countries had abandoned their national currencies.

If currency areas become “optimal” ex post, then OCA theory may be untestable. A common currency might promote closer trade links and more synchronized cycles, both of which are OCA criteria; closer trade ties increase the benefit from a common currency, and synchronized cycles reduce the cost of giving up independent currencies. This is not a theoretical result but a hypothesis to be tested empirically because more bilateral trade could promote interindustry specialization and less synchronized cycles. Using various measures of bilateral trade intensity and cycle synchronization for 21 developed economies, Frankel and Rose (1998) find a robust relationship between the two variables, which they interpret as evidence that as a common currency promotes bilateral trade it also increases cycle synchronization. Thus actual currency areas fit OCA criteria better than potential currency unions, and the OCA criteria are endogenous.

The impact of currency union on bilateral trade flows has been the subject of a burgeoning literature initiated by the economist Rose (2000). Using a gravity model, Rose found that currency union has a large effect on bilateral trade, which he interpreted as evidence that a common currency substantially reduces transactions costs. Although it is plausible that a common currency reduces transactions costs and stimulates trade, the magnitude of the common currency effect is hotly debated. In Rose’s study the countries in currency unions are not from a random draw; several authors have shown that currency union members are smaller and more open than their natural comparators and that history (usually in the form of colonial background) matters.

The debate has been conducted with analysis of currency area changes over time. Analyzing time-series data for correlations between changing currency union status and bilateral trade flows, Glick and Rose (2002) estimated that dissolution of a currency union halves bilateral trade. Currency union breakup is, however, usually associated with other events that disrupt trade; out of some 60 cases of post-1947 currency union dissolutions in the Glick-Rose data set, more than two-thirds broke up within a decade of the end of a colonial relationship, and the end of the ruble zone, which is not in the data set, would increase the percentage still further. In tranquil currency union changes, notably Ireland’s secession from its currency union with the United Kingdom in 1979 and subsequent participation in the process leading to the euro, the impact on bilateral trade is unclear. The weaker the link between currency union and bilateral trade, the less convincing is the claim that OCA criteria become self-fulfilling ex post.

In practice, irrespective of whether the criteria may become endogenous, most of the literature on currency domains treats OCA theory as having predictive capability. Yet, the general track record of OCA theory in explaining the monetary history of the post-1945 international economic order has been miserable. Despite the increasing openness of national economies and increasing capital mobility, both unambiguous pressures for larger currency areas according to OCA theory, the number of currencies has increased substantially and the geographical size of currency domains has shrunk correspondingly. The sole significant exception is the introduction of the euro, but in Europe and the former Soviet Union as a whole there were more currencies in 2002 than a decade earlier. Globally, over the last half-century, the exogenous increase in the number of countries drove the number and size of currency areas, and the OCA criteria were irrelevant to explaining this pattern. In sum, although OCA theory has dominated the analysis of currency domains, the empirical support for the theory is weak.

See also Bretton Woods system; capital mobility; common currency; dollar standard; dominant currency; euro; European Monetary Union; exchange rate regimes; impossible trinity; multiple currencies
FURTHER READING

RICHARD POMFRET