Optimal Currency Areas

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1 Introduction

An optimal currency area (OCA) is a domain within which exchange rates are fixed and monetary-fiscal policy best maintains: (1) full employment; (2) balanced international payments; and (3) a stable internal average price level.

This paper will outline the advances in OCA theory, highlight the benefits and costs associated with currency unions and present some of the challenges economists face in evaluating optimal currency areas.

2 Advances in OCA Theory

Although Friedman (1953) identified the importance of price and wage flexibility and Meade (1957) examined factor mobility and the balance of payments problem in a European context, the seminal contribution in OCA theory is Mundell’s (1961) *A Theory of Optimum Currency Areas*.

Mundell critiqued the use of flexible exchange rates. In his canonical example, Mundell illustrated how a demand shift in a two-region and two-good world, say from cars to lumber, given wage and price downward rigidity, would create excess supply in one region and excess demand in another. When regions are affected by asymmetric shocks, such as demand shifts arising from increased productivity, real exchange rates need to adjust or factors of production need to relocate to relieve unemployment and restrain inflation. Mundell argued that interregional factor mobility can substitute for changes in regional exchange rates and that the entire zone of labour mobility delineates the correct domain for a monetary union. World currencies, he argued, should be divided into regions of factor immobility - regions within which factors of production are mobile but between which factors of production are immobile.

Since Mundell’s work, a vast literature on OCA theory has developed. McKinnon (1963) noted that the size and degree of openness of a currency area facilitates inter-industry production shifts and should also be considered with
Mundell's geographic interpretation of factor-mobility. Extending these analyses, Kenen (1969) argued that the diversity in a nation's product mix, the number of single-product regions contained in a single country, could reduce the variations in employment and could be more relevant than labour mobility. Kenen also noted that countries that share a supra-national fiscal transfer system could redistribute funds to regions affected adversely by an asymmetric shock and reduce the need for nominal exchange rate adjustments. Various other contributions have also added to the debate. Mintz (1970) identified political will as the single most important condition for adopting a common currency and Fleming (1971) illustrated that similar inflation rates between countries reduce the need for nominal exchange rate adjustments.

Optimal currency areas are now evaluated according to these properties: (i) price and wage flexibility; (ii) the mobility of labour and other factors of production; (iii) the degree of economic openness; (iv) the level of diversification in production and consumption; (v) the degree of fiscal integration; (vi) the similarity in inflation rates; and (vii) the level of political integration.

3 Empirical Advances

Mundell (1961) wrote that “the concept of optimum currency areas... reduces to an empirical rather than a theoretical question (662).” However, in 1992 Emerson et al. published the *One Market, One Money* report and noted that, despite the early insights into OCA theory, “there [was] still no ready-to-use theory for assessing the costs and benefits of economic and monetary union.” Since 1980, many economists have sought to address this gap and provide empirical assessments of the merits of OCA properties using econometric models, or as Bayoumi and Eichengreen (1997) write, *operationalize* the theory of OCA. For a thorough review of this literature, refer to Mongelli (2002).
3 EMPIRICAL ADVANCES

3.1 Benefits

A common currency improves microeconomic efficiency by fostering competition and reducing price discrimination and market segmentation. Firms are better able to predict relative prices and lower accounting costs in regions where they conduct business. Transaction costs during currency conversion are eliminated. Although these fees are typically small, there is generally a high turnover in transactions. The European Communities Commission estimated in 1990 that transaction costs account for 0.25% to 0.4% of GDP, or roughly ECU 13 to 19 billion per year for the entire European community. Ghosh and Wolf (1994) provide a breakdown of these savings.

A common currency also improves trade. Using OLS and instrumental variation, Alesina et al. (2002) find significant positive effects of currency union on bilateral trade and price co-movements, but interestingly find an insignificant effect of currency union on output co-movements. They estimate that a border decreases trade between industrialized countries by 30 percent and between the US and Canada by 44 percent. Bayoumi and Eichengreen (1997) also find a significant effect of currency union on bilateral exports at a 1% confidence level. Rose (2000) reports that trade is 200% larger within a common currency area, although Alesina et al. (2002) caution that unobserved variables, such as legal compatibility, cultural links and tied bilateral transfers may give undue credit to a currency union. The authors extend Rose’s research using time-series variations and find that the benefit to trade ranges from negative -68% using fixed effects to 708% using a matching sample technique.

A common currency can also improve the credibility of an inflation-prone country. By issuing the currency of a credible central bank, the perturbed country can adopt, in addition to the change in relative price level, the inflation rate of the anchor country and a commitment with credibility.

A common currency improves macroeconomic stability by insulating cur-
currency unions from monetary disturbances and speculative bubbles, rendering fluctuations in real exchange rates unnecessary. Having a common currency reduces the need for foreign exchange reserves. External financing is also more readily available in open financial markets. The OCA benefits from an increase in overall price stability.

3.2 Costs

Countries that join a currency union lose the ability to respond to regional asymmetrical shocks with counter-cyclic monetary policy. While Emerson et al. (1992) optimistically report a low occurrence of asymmetric shocks at the national level in Europe, DeGrauwe and Vanhaverbeke (1993) find a large occurrence of asymmetric shocks at the regional level and caution that not all European regions, referring particularly to the southern nations of Italy and Spain, would profit from monetary union. Ghosh and Wolf (1994) estimate that a single currency in Europe costs 2.5% of GDP and that these costs fall below 1% of EU GDP in a system with six currencies. Similarly, they estimate that 2.6% of US GDP is sacrificed each year by maintaining a national monetary policy. If the US were split into five currency areas they argue, the cost in foregone GDP would decrease to 1.5%. The cost would be less than 1% of GDP if there were 15 currencies within the US.

Additional costs, including administrative, legal and hardware costs, such as re-denominating contracts and adapting vending machines, are incurred in transition to a common currency. Moreover, rights to seignorage revenues can be a contentious issue within the union.

4 Future Challenges

Despite the advances in empirical work over the last 20 years and the birth, as Tavlas (1993) writes, of a new optimum currency area theory, there remains no simple or clear-cut OCA test. Different currency areas can be defined by
appealing to different OCA criteria. Tavlas (1994) called this the “problem of inconclusiveness.”

Further, while most OCA studies are, by necessity, backward looking, Frankel and Rose (1998) argue that a naïve examination of historical data yields a misleading picture of a country’s suitability for entry into a currency union. OCA criteria, they contend, are endogenous and subject to the Lucas Critique. Using 30 years of panel data from 20 industrialized countries, Frankel and Rose (1998) find a strong positive relationship between the degree of bilateral trade intensity and cross-country bilateral correlation of business cycle activity. They conclude that an optimal currency area may only appear once a common currency has been adopted; criteria for entry may be satisfied \textit{ex post} even if they are not fully satisfied \textit{ex ante}.

Alesina et al. (2002) claim the next decade will see a rise in the number of multi-country monetary areas. Indeed, the European experience has been a catalyst for new research and has served as a highlight of the benefits, costs and limitations of OCA theory.

Yet an optimal currency area is neither static nor absolute. As political environments shift, as industries transform and as economies evolve, factor mobility, bilateral trade and business-cycle correlation will change among regions. In short, OCA properties will change, providing expansive room for new research.
5 References


5 REFERENCES


