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A monthly econometric model of the transmission of the Great Depression between the principal industrial economies

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Abstract

This article describes and estimates, with monthly data, a model of the economic interactions between the United States, the United Kingdom, France and Germany over the years 1927–1936. Despite the radically different economic environment, the model shows broadly similar qualitative and dynamic responses to policy instruments and other changes to those of multi-country models estimated on more recent data. The model is simulated to assess the causes of the Great Depression and the particular contribution of European and American policies to the slump. Optimum strategic policy equilibria are then computed. They point to the mismanagement of the US economy as the principal cause of the depression, although French and German policies were also harmful. British policymakers performed rather well, but their economy suffered because of the other countries' policy errors. © 2000 Elsevier Science B.V. All rights reserved.

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1. Introduction

There are several recent multi-country models available for simulating national policy spillovers and international co-ordination strategies (Whitley, 1992; Douvens and Plasmans, 1996). All of them are concerned with the rather benign international economy after 1960. The years between the world wars offer an altogether different test-bed for econometric models and a far more traumatic environment for international economic policy. The Great Depression, in particular, 'continues to be a challenge to economic doctrine' (Rothermund, 1996, p. 1). Estimation of structures similar to more recent international models over the inter-war period therefore offers insights into their properties and those of co-ordination exercises conducted with them.

As early as 1953, Neisser and Modigliani (1953) constructed the first multi-country model for these years, and there have been other excursions subsequently (for example Newell and Symons, 1988). Such econometric attempts to analyse this period have typically been hampered by the small number of annual observations. To increase the available degrees of freedom, the present model of the interplay between several economies utilises the abundant monthly data of the time. An additional advantage of these observations stems from the international financial crises that began with the onset of the Great Depression in 1929. Financial markets change rapidly and therefore, high frequency data may be valuable in understanding both their operation and their pathologies.

The present paper models the four principal industrial economies of the period: the United States, the United Kingdom, France, and Germany (G4), and their interactions between 1927 and 1936. Section 2 discusses their salient characteristics and Section 3 expounds the general specification of the national models. Section 4 outlines some implications of the individual equation estimates. Section 5 simulates the model to derive some properties and to investigate the causes of the Great Depression. Section 6 briefly outlines a number of policy co-ordination games simulated with the model. Appendices (available at http://scottie.stir.ac.uk/~yma01/interwar) describe the monthly national income estimates, the model equations in four national groups, a trade block, a capital movement and an exchange rate block, and some equations employed in an earlier version of the model (Foreman-Peck et al., 1992).

2. Linkages between the industrial economies

The inter-war world economy differed from that after 1960 or 1973 in a number of vital respects. Whereas world prices have tended to rise throughout the recent period, between the world wars they fell precipitately on occasion. Economic growth was comparatively slow and relations between the major states were bedevilled by disagreements over the Versailles Treaty of 1919 and about the world economic order. The structures of the League of Nations and the Bank for