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Coffee, economic fluctuations and stabilisation: an intertemporal disequilibrium model with capital market imperfections

Jesús G. Otero *

Facultad de Economía, Universidad del Rosario, Apartado Aereo 9316, Bogotá, Colombia

Abstract

This paper develops a two-period disequilibrium model of a small open economy under Keynesian unemployment to analyse the effects of temporary, anticipated, and permanent coffee price shocks. The model includes a government sector that administers a commodity price stabilisation fund, and allows for capital market imperfections. The type of capital market imperfection makes an important difference to the results of the model. In particular, when the government borrows on more favourable terms than individuals, the coffee price stabilisation fund reduces the multiplier effects of temporary and permanent shocks not only in the first, but also in the second period. By contrast, when individuals face an upward-sloping supply of capital curve, the stabilisation fund shifts some of these effects from the first to the second period. © 2000 Elsevier Science B.V. All rights reserved.

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1. Introduction

The Colombian economy has been characterised by the importance of the coffee sector as one of the main sources of foreign exchange, employment, and

* Tel.: +571-344-57-50 ext. 661; fax: +571-3445763.
E-mail address: jotero@claustro.urosario.edu.co (J.G. Otero).

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value added. Since 1927, the National Federation of Coffee Growers, a private non-profit organisation of coffee producers, has been charged by the government with directing coffee policy. Among other functions, the Federation administers the National Coffee Fund (NCF), a public account originally created, in 1940, with the purpose of purchasing excess production over the international export quota arrangement between the United States and the main Latin American producers. Since the 1950s, the Federation has been using the NCF as a price stabilisation device, keeping the variations in the domestic price paid to farmers proportionally lower than the variations in the world price.

Several studies have identified coffee as the primary driving force of the business cycle in Colombia. [1] Cárdenas (1991) presents evidence that the business cycle in Colombia is highly correlated with the business cycles in Costa Rica, Ivory Coast and Kenya, which are also coffee producers. Further, he finds that economic fluctuations tend to be less pronounced in Colombia, and argues that this can be explained by the degree to which the domestic coffee price is stabilised, and by the countercyclical response of government expenditure. The NCF thus helps prevent a highly procyclical output response during a coffee boom, as it generates surpluses (deficits) when the world coffee price is higher (lower) than the internal price.

Despite the extensive empirical evidence, relatively few studies have attempted to formalise the theoretical relationship between the world coffee price and the business cycle. Cárdenas (1991) presents two models of export-led business cycles. The first model focuses on the real aspects, and is based on the Keynesian view of macroeconomic fluctuations. The distinctive feature of the model is that government expenditure responds endogenously to external shocks; the response of the government is thus crucial in the model, since a procyclical (countercyclical) government expenditure reinforces (reduces) the effect of a coffee price shock on output. The second model, a modified version of the models used by Eastwood and Venables (1982), Neary and Van Wijnbergen (1984, 1986), and Edwards (1986), focuses on the effects of foreign exchange accumulation on the money supply, and emphasises the role of the real exchange rate in determining the production structure of the economy. Another theoretical model is that of Montenegro (1991), who addresses the effects of external shocks and stabilisation policy measures on the allocation of resources (more precisely labour) in a small open economy, which is assumed to have some of the characteristics of the Colombian economy. Montenegro's starting point is the (static) tradables–non-tradables model with microeconomic foundations, in both its flexible and fixed

[1] See Díaz-Alejandro (1976), Carkovic (1986), Cuddington (1986), Ocampo (1989) and Gaviria and Uribe (1993).