JOURNAL OF ECONOMIC DEVELOPMENT
Volume 12, Number 2, December 1987

Flexible Exchange Rates, Capital Mobility Control and Macroeconomic Policies*

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I. Introduction

In the 1970's, by means of imposing borrowing ceilings, discriminatory reserve requirements between resident and non-resident deposit, restriction of non-resident bank deposits... etc., a lot of countries have some been trying to have real control over the capital movements. Recently, Arellano; Chu, et al. have set out simple stochastic models of the determination of optimal capital mobility control from the point of view of domestic output stability. In addition, Phylaktis and Wood examines how exchange rate adjustment is affected by the imposition of these restrictions. While all of these analyses might be quite useful, to date there has been no systematic analysis concerning whether the policy of capital mobility control will enhance or weaken the effectiveness of macroeconomic policies, and this is why this paper is written.

The paper will proceed as follows. In section II the theoretical

* The authors would like to acknowledge helpful comments and suggestions from Yun-peng Chu, an anonymous referee and the editor of this journal. Any remaining errors are our responsibility.

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as customary that, $I_r<0$, $0<S_y<1$, $0<-B_y<1$, $L_y>0$, $L_r<0$, $B_e>0$[2], $K_r>0$.

Equations (1), (2) and (3) are the equilibrium conditions for the commodity market, money market and foreign exchange market respectively. The equation (3) deserves further explanation. Following Arellano, the government authorities completely prohibit capital movement if A = 0, and no restrictions are imposed on capital mobility if A = 1. In reality, an intermediate situation of some degree of control is more likely, i.e., $0<A<1$.

III. Comparative Statics

Equations (1)-(3) determine three variables: y, r, e. Without loss of generality, we assume that $e=P=P^*=1$ initially. Differentiating (1)-(3) and solving the system for y/ G and y/ M yield

$$(4)\quad (\partial y/\partial G)_{flex}=(AK_r wM-L_r B_e)/\Delta>0$$

$$(5)\quad (\partial y/\partial M)_{flex}=B_e(AK_r-I_r)/\Delta>0$$

where *flex* denotes a flexible exchange rate system and

$$\Delta=-B_e\{S_yL_r+L_y(I_r-AK_r)\}+wM\{AK_r(S_y-B_y)+I_rB_y\}>0$$

Next, differentiating of $(\partial y/\partial G)_{flex}$ and $(\partial y/\partial M)_{flex}$ with respect to A gives

$$(6)\quad \partial\{(\partial y/\partial G)_{flex}\}/\partial A=(B_eL_r-wMI_r)(B_eL_yK_r-B_yK_rwM)/\Delta^2$$

$$(7)\quad \partial\{(\partial y/\partial M)_{flex}\}/\partial A=-(B_eL_r-wMI_r)B_eS_yK_r/\Delta^2$$

It follows apparently from (6) and (7) that

$$(8)\quad \operatorname{sgn}[\partial\{(\partial y/\partial G)_{flex}\}/\partial A]=-\operatorname{sgn}[\partial\{(\partial y/\partial M)_{flex}\}/A]=\operatorname{sgn}(B_eL_r-wMI_r)$$

[2] $B_e>0$ indicates that the Marshall-Lerner condition is assumed to be satisfied.

sion, the effectiveness of monetary expansion will be weakened and *vice versa*.

The economic reasoning regarding equation (10) can be interpreted as follows: for any macroeconomic policy x, it can be demonstrated that

$$(11)^5\ (\partial y/\partial x)_{flex} = (\partial y/\partial x)_{fixes} + (\partial y/\partial e)_{fixs} \cdot (\partial e/\partial x)_{flex} \quad ; x = G, M$$

This equation indicates that the macroeconomic policy efficacy under *flex* can be decomposed into two parts: (i) the impact effect, i.e., the effectiveness of macroeconomic policy under *fixs;* and (ii) the exchange rate induced effect, i.e., the induced effectiveness of macroeconomic policy via exchange rate changes.

Next, by differentiation of (11) with to A, and since $(\partial y/\partial x)_{fixs}$ and $(\partial y/\partial e)_{flex}$ are independent of A,[6] it follows that

$$(12) \qquad \partial(\partial y/\partial x)_{flex} / \partial A = (\partial y/\partial e)_{fixs} \cdot \partial(\partial e/\partial x)_{flex} / \partial A.$$

A monetary expansion will result in a decrease in the interest rate and capital outflow under flexible exchange rates. When the authorities weaken their control on capital mobility, the capital outflow will increase. For the purpose of restoring balance of payments equilibrium, the magnitude of exchange rate depreciation will be increased $\partial(\partial e/\partial M)_{flex}/\partial A > 0$. As for the fiscal expansion, the opposite result will occur since it will result in an increase in the interest rate $\partial(\partial e/\partial G)_{flex}/\partial A < 0$. Putting these knowledge into (12), equation (10) can then be immediately derived.

IV. Concluding Remarks

This paper examines an important issue: whether the policy of capital mobility control will enhance or weaken the effectiveness

[5] Lai and Chen (1985) uses this relationship to explain two propositions offered by Fleming.

[6] See footnote 4.