Short-Term International Capital Flows and the Effectiveness of Monetary Policy in an Open Economy: The German Case*

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I. Introduction

The effectiveness of monetary policy in an open economy under a system of fixed exchange rates is usually believed to hinge on the interest elasticity of international short-term capital flows. (See, for example, [10, pp. 250 - 262].) But attempts to estimate this elasticity by regressing capital flows on international interest differentials are subject to a simultaneous-equations bias when interest rates are not the main targets of monetary policy [8, p. 445; 9, p. 558]. Those studies using covered interest differentials to explain capital flows are subject to an additional bias due to the influence of exchange rate expectations [11, p. 44]. Furthermore, if monetary aggregates rather than interest rates are the main targets of monetary policy, policy-makers would still need to know the effects of their actions on interest rates if they are to use estimates of the interest, elasticity of capital flows to determine the response of capital flows to policy actions.

A new approach to the empirical estimation of capital flows was recently introduced by *Kouri* and *Porter* [8] in which capital flows are viewed basically as the mechanism by which a domestic excess demand for money is removed in an open economy under a system of fixed exchange rates. They derive a reduced form to estimate directly the effects on capital flows of policy actions which consist of changes in the domestic reserve base. But their theoretical model uses the assumption that, in the very short run, a change in excess demand for money affects only the bond market, with no adjustment taking place in the commodity market.

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This paper uses a different model to develop a reduced form similar to the one used by *Kouri* and *Porter*. The model uses the assumption that, in a period of short-run financial market equilibrium, a change in domestic excess demand for credit results in capital flows as domestic residents make substitutions between foreign and domestic financial assets or liabilities in their bond portfolios, and that these adjustments occur before adjustments among bonds, money and commodities. This approach stems from the view of the money supply process presented by *Brunner* and *Meltzer* in [2], later expressed in more detail by *Burger* in [3]. The model is applied to the German economy for the period from November, 1962 through May, 1971 after which Germany adopted a floating exchange rate. It attempts to determine the degree to which short-term capital flows prevented the authorities from pursuing an independent monetary policy under a system of fixed exchange rates. An "independent" monetary policy is taken to mean official discretionary control over the domestic money supply, which in turn is assumed to depend on the authorities' ability to control the domestic monetary base.

Monthly data are used in the empirical application of the model. Since an important tool of German monetary policy, changes in reserve requirements, are instituted only on the first day of the month, the use of monthly data helps resolve the problem of simultaneous-equations bias between policy-induced changes in the monetary base and offsetting short-term capital flows, and at the same time provides better evidence than the quarterly data used by *Kouri* and *Porter* as regards the direction of causality.

The next section describes the model to be used and derives an equation to estimate the effects of policy-induced changes in the monetary base on short-term capital flows to Germany. In section 3, the coefficients of this equation are estimated and conclusions drawn.

II. The Model

Policy-induced changed in the monetary base affect the supply of domestic bank credit available to domestic residents, and hence affect the domestic excess demand for domestic bank credit and the differential between foreign and domestic interest rates. This causes domestic residents (both bank and non-bank) to respond by changing their short-term borrowing or lending abroad. The resultant capital flows, under

a system of fixed exchange rates, tend to offset the policy-induced changes in the base. Hence net foreign credit obtained by domestic residents is determined simultaneously with the quantity of domestic bank credit supplied to domestic residents.[1] This suggests that a model used to analyze the effects of policy-induced changes in the monetary base on capital flows should include two markets; a market for net short-term foreign credit and a market for domestic bank credit.

In order to separate the influence of short-term capital flows on the monetary base from that of other factors, the sources of the monetary base[2] are divided into two components; $B^m - NFC$, and NFC[3] where B^m is the monetary base and NFC is the stock of net foreign short-term capital held by domestic residents. The quantity $(B^m - NFC)$ will be referred to as the "net" monetary base, denoted B^n.

1. The Behavioral Relationships of the Model

For a sufficiently small domestic economy, the supply of foreign credit to domestic residents and the demand for domestic credit by foreign residents may be taken as perfectly elastic at the foreign rate if we adopt the simplifying assumption that all exchange rate risks (or expected gains) are taken by domestic residents. Hence the quantity of foreign credit obtained by domestic residents is determined by the domestic demand function for foreign liabilities, and the quantity of domestic credit supplied to foreign residents is determined by the domestic demand function for foreign assets. The domestic market for

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[1] Of course, the actions of domestic non-bank intermediaries may dilute the impact of policy-induced changes in the supply of domestic bank credit (see [4]). But such non-bank credit sources are relatively minor in Germany because the domestic banking system includes almost all institutional credit sources, including private commercial banks, savings banks and their central institutions the giro banks, state banks, credit cooperatives, mortage banks, installment sales financing institutions, banks with special functions, and postal and giro postal savings banks offices. Therefore, in order to simplify the analysis, non-bank credit sources have not been included in the model.

[2] A detailed description of the sources of the monetary base in Germany is given in [12, pp. 17 - 43].

[3] Under fixed exchange rates, additions to the net stock of long-term foreign capital plus additions to the stock of net short-term foreign capital plus the surplus on current account plus net errors and omissions is equal to the increase in foreign reserves of the Central Bank. Subtracting the stock of net short-term foreign capital from the monetary base parallels the approach of *Brunner* and *Meltzer* [2]. They subtract bank discount borrowing from the U. S. monetary base in order to separate the influence of bank borrowing on the monetary base from that of other factors.

foreign short-term assets and liabilities and the domestic market for domestic bank credit may be specified by four behavioral relationships; the domestic demand for domestic bank credit, the supply of domestic bank credit to domestic residents, the domestic demand for foreign short-term assets, and the domestic demand for foreign short-term liabilities. The desired stock of short-term foreign assets (FA) is given by:

$$FA = f(i, i_f, Ex, R, OI, DW) \tag{1}$$

with $f_i, f_{Ex}, f_R < 0$; $f_{i_f}, f_{OI}, f_{DW} > 0$ where f_V denotes the partial of FA with respect to the variable V.

f = the domestic demand function for short-term foreign assets.

i = an index of interest rates on domestic bank credit.

i_f = an index of foreign interest rates.

Ex = exchange rate expectations (the expected future foreign currency value of a unit of domestic currency relative to its current spot price).[4]

R = risks associated with holding foreign as opposed to domestic assets (or liabilities) including exchange rate risks.

OI = official restrictions and incentives regarding international capital transactions.[5]

DW = the stock of domestic non-human real wealth.

The desired stock of domestic short-term liabilities to foreigners (FL) is given by:

$$FL = g(i, i_f, Ex, R, OI, DW) \tag{2}$$

$$\text{with} \quad g_i, g_{Ex}, g_{DW} > 0 \; ; \; g_{i_f}, g_R, g_{OI} < 0 \; .$$

g = the domestic demand function for foreign short-term liabilities.

The supply of domestic bank credit to domestic residents (BC_s) is given by:

$$BC_s = s(i, i_f, Ex, R, OI, k, b, NFC, B^n) \tag{3}$$

$$\text{with} \quad s_i, s_{Ex}, s_R, s_{NFC}, s_{B^n} > 0 \; ; \; s_{i_f}, s_{OI}, s_k, s_b < 0 \; .$$

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[4] The exchange rate will be defined here as units of domestic currency per unit of foreign currency. We shall say that exchange rate expectations are "positive" if a downward movement of the exchange rate is expected.

[5] The variables in the vector OI are constructed such that incentives to increase FA or restrictions on FL are positive, while incentives to increase FL or restrictions on FA are negative.

s = the supply function for domestic bank credit.

k = the ratio of cash to demand deposits held by the non-bank private sector.

b = the rate on bank borrowing from the Central Bank (Bundesbank).

NFC = the stock of domestically held net foreign short-term liabilities.

The domestic demand for domestic bank credit (BC_d) is given by:

$$BC_d = d\,(i, i_f, Ex, R, OI, DW, n, p, Y) \tag{4}$$

$$\text{with} \quad d_{i_f}, d_R, d_{OI}, d_{DW}, d_n, d_p, d_Y > 0\,; \quad d_i, d_{EX} < 0\ .$$

d = the domestic demand function for domestic bank credit.

n = the real rate of return on domestic capital.

p = the price level of current domestic output.

Y = transitory income.

The equations for the desired stocks of foreign assets and liabilities held in domestic portfolios are based on the conventional portfolio considerations of relative returns and risks, the level of domestic wealth, and the institutional structure of the market for foreign capital. The equations used to describe the market for domestic bank credit are based on those used by *Brunner* and *Meltzer* [2] (adapted here for an open economy) with the notable exception that the supply of bank credit is not assumed to be unitary elastic with respect to changes in the monetary base.

In our framework, changes in the domestic price level, transitory income, the real rate of return on capital, the level of bank reserves, or the discount rate are not included in the demand functions for foreign assets or liabilities. Rather, changes in these variables are viewed as influencing desired stocks of foreign assets and liabilities held in domestic portfolios through their effects on the domestic credit market and hence on international interest differentials. Although this specification is not necessary for the reduced forms used in the analysis, it simplifies the interpretation of the structural parameters.

A general expression for NFC, the desired stock of net short-term foreign credit, may be derived by subtracting (1) from (2) giving:

$$NFC = h\,(i, i_f, Ex, R, OI, DW) \tag{5}$$

$$\text{with} \quad h_i, h_{Ex} > 0\,; \quad h_{i_f}, h_{OI} < 0\ .$$

$h = g - f$ = the domestic demand function for net short-term foreign credit.

The influence of changes in R and DW on NFC are ambiguous in sign; the net effect depends on whether their influence is greater on FL or FA.

The period of analysis is that of short-run financial market equilibrium, so that domestic income, prices, real wealth, and the real rate of return on capital are taken as exogenous, as are the relevant institutional factors and policy-determined variables (i. e. OI and B^n).[6] Also, if the domestic economy is sufficiently small, the rates in international capital markets may be taken as exogenously given. Exchange rate expectations (Ex), risk evaluations (R) and the currency ratio (k) are also taken as exogenous. The quantity of domestic bank credit supplied and demanded, the quantity of net foreign assets demanded, and the domestic interest rate remain as the four endogenous variables that need to be solved for within the framework of the model.

2. *Solution of the Model*

The condition for equilibrium in the domestic market for domestic bank credit gives

$$BC_d = BC_s \tag{6}$$

Assuming that equilibrium is attained within each period, linear reduced forms may be derived from equations (3), (4), (5) and (6) in which the coefficients are marginal propensities. The reduced form for net short-term capital inflows is:

$$\begin{aligned}\Delta NFC = {} & a_1 \Delta i_f + a_2 \Delta b + a_3 \Delta k + a_4 \Delta Y + a_{5\,\Delta n} + a_6 \Delta p + \\ & a_7 \Delta DW + a_8 \Delta B^n + a_9 \Delta Ex + a_{10} \Delta R + a_{11} \Delta OI + u\end{aligned} \tag{7}$$

where "Δ" denotes monthly first-differences and u is a disturbance term.

The reduced form represented by (7) avoids the econometric problems discussed in the introduction which arise when international interest differentials are used to explain short-term capital flows. But a simultaneous-equations bias may still be encountered if changes in B^n occur within the month in response to short-term capital flows. *Kouri* and *Porter* [8, p. 454] show that if the authorities follow a policy of sterilization, the estimated coefficient of B^n will have a negative bias if the

[6] Problems of simultaneity which arise if various components of B^n are not exogenous with respect to short-term capital flows are dealt with below.

system is stable. The present study relies on a unique habit of the German monetary authorities to overcome this bias. An important tool of German monetary policy is changes in reserve requirements which are instituted on the first day of each month. Therefore, if monthly observations are used, changes in the domestic monetary base due to changes in reserve requirements may be taken as exogenous with respect to subsequent capital flows. The only necessary assumption is that the monetary authorities do not accurately predict future short-term capital flows and take such predictions into account when instituting changes in reserve requirements. Such behavior does not seem likely given the highly volatile nature of short-term capital flows.

III. The Empirical Results

The first task in the estimation of (7) is measurement of the variables. For lack of data, the variables for the domestic stock of non-human wealth and transitory income were replaced with a variable for actual domestic income, and the variable for the real rate of return on domestic capital was dropped. Also, preliminary experimentation showed that the variables for the discount rate on bank borrowing from the Bundesbank, the level of domestic prices and the variables used in an attempt to capture the effects of official incentives and restrictions[7] were insignificant in the regressions explaining changes in the domestic stock of net short-term foreign capital. Hence these explanatory variables were omitted from the final regressions. The variable for the discount rate was probably insignificant because discount borrowings are included in B^n, so that the effect of a change in the discount rate on capital flows was more accurately captured by the change it caused in B^n. In the absence of significant monthly fluctuations in domestic prices, the variable for prices may be expected to contribute little to monthly changes in short-term domestic interest rates and the stock of net short-term foreign capital held by domestic residents. Official incentives and restrictions were used by the German monetary authorities to control foreign capital transactions of domestic banks. However, these restric-

[7] The difference between the premium or discount offered by the Bundesbank to domestic banks and the prevailing market forward premium or discount was used as a variable to capture the effects of the "swaps" policy of the Bundesbank. The ratios of reserve requirements on foreign deposits to those on domestic deposits were used as variables to capture the effects of special reserve requirements on total foreign deposits or increments to existing foreign deposits (marginal reserve requirements).

tions on domestic banks may have been offset by international capital flows entering through transactions of non-bank residents.

Under the Bretton Woods System, so long as exchange rates remained within the margins around parity, an adaptive expectations model may have been applicable for estimating "expected" future rates. However, official exchange market intervention causes a discontinuity in speculative expectations when exchange rates are at the margins and there are expectations of a shift in parity. Since no reliable proxy for exchange rate expectations and risks has yet been found that overcomes this problem of discontinuity, it seems advisable to use dummy variables for periods in which evidence indicates definite exceptations of a shift in parity.[8] A major drawback of this procedure is that during such periods, the volume of capital flows are likely to have a strong influence on speculative expectations, so that the independent variables in (7) may have a greater influence on capital flows than during more "normal" times. Thus our estimated coefficients may not hold for those periods.

Regression (1) of table (1) presents the results for the application of the reduced form given by (7) to recorded monthly changes in the stock of net short-term foreign capital in Germany for the period from November, 1962 to March, 1971. DV1 is a dummy variable for the speculative episode of May - June, 1969. DV2 is a dummy variable for a change in the classification of some elements of reported net short-term foreign assets of domestic banks. (The data on the domestic stock of net short-term foreign capital prior to November, 1968 was therefore not directly comparable to the data for following periods.) Dummy variables were also used for the months of December and January (DV3 and DV4 respectively) since inspection of the data indicated a consistent seasonal pattern for these months for recorded short-term capital flows.

As noted in section 2, regression (1) may be subject to a simultaneous-equations bias since changes in B^n not caused by changes in reserve requirements may be endogenous. For example, the correlation between total changes in B^n and short-term capital flows may be due in part to actions taken by the authorities to sterilize the effects of capital flows on the monetary base. Therefore, in regression (2) B^n was broken into separate components, $(B^n - B^r)$ and B^r, where B^r is the reserve adjust-

[8] For an example of the adaptive expectations approach, see [1]. An excellent survey of prior attempts to quantify exchange rate expectations is given in [6].

ment used to derive the monetary base from the total reserve base.[9] The coefficient of the variable B^r in this regression is slightly lower, but not significantly different from the coefficients of the variable B^n in regressions (1) and (3). The coefficient of B^r in regression (2) may still be subject to a negative bias, however, since changes in $(B^n - B^r)$ may be endogenous.[10]

Other than differences caused by the simultaneous-equations bias, the variables $(B^n - B^r)$, B^n, and B^r should theoretically all have the same coefficients. The fact that the coefficients of these variables were not significantly different indicates that either the biases on these coefficients were all the same, or the biases were not significant. In either case, the estimated coefficients of these variables should represent an upper bound for the tendency of short-term capital flows to offset policy-induced changes in the monetary base, at least in the absence of widespread expectations of a shift in exchange rate parity. These estimated offset coefficients are significantly lower than those obtained by *Kouri* and *Porter* [8, p. 455] and *Kouri* [7, p. 31] using quarterly data, probably because monthly data reduced the problem of simultaneous-equations bias. Monthly data also provide stronger evidence on the direction of causality for the correlation between capital flows and other sources of changes in the monetary base. Regression (3) provides evidence that adjustment of the stock of net short-term foreign capital occurs within the month, since the coefficient of the lagged dependent variable was insignificant.

The coefficient of the variable for the ratio of cash to demand deposits held by the non-bank public (k) indicates some tendency for capital

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[9] B^r is given as the sum of the current and previous changes in required reserves occurring as a result of a change in reserve requirements, or

$$B_t^r = \sum_{T=t_0}^{t} (-\bar{r}_T + \bar{r}_{T-1}) D_{T-1}$$

where $\bar{r}_T$ is a row vector, each element being the reserve requirements of a given deposit classification at time T, and D_T is a column vector, each element being the total deposits in each deposit classification at time T. Each deposit classification refers to a type of bank liability, e. g. demand and time deposits. Each element of the vector $\bar{r}_T$ is the average of reserve requirements of a given deposit classification over all banks, since different banks may be subject to different required reserve ratios for deposits of the same deposit classification.

[10] The expression for this bias is difficult to derive because more than two explanatory variables are present in the regression. But it can be shown that this bias will be negative if the system is stable.

Recorded Short-Term International Capital Flows in Germany, November 1962 to March, 1971

Regression	Dependent Variable	constant	ΔEDR	Δk	ΔY	ΔB^n	ΔB^r	$\Delta (B^n - B^r)$	ΔNFC_{-1}	$DV1$	$DV2$	$DV3$	$DV4$	R^2	$\overline{S.E.}$	D. W*
(1)	ΔNFC	299	− 63	7017	426	−.590				3882	328	10	− 1737	.640	935	2.26
		(2.39)	(−.26)	(1.41)	(.40)	(− 7.75)				(5.80)	(1.52)	(.02)	(− 3.96)			
(2)	ΔNFC	299	− 60	7072	418		−.570	−.594		3881	338	− 6	− 1729	.636	940	2.25
		(2.37)	(−.25)	(1.41)	(.87)		(− 3.81)	(− 7.47)		(5.77)	(1.51)	(−.01)	(− 3.90)			
(3)	ΔNFC	293	− 78	6023	425	−.590			−.049	3874	354	− 5	− 1648	.638	938	2.18
		(2.33)	(−.32)	(1,16)	(.89)	(− 7.73)			(−.74)	(5.77)	(1.62)	(−.01)	(− 3.62)			

The functional form of all variables used in these regressions is monthly first-differences. The units for NFC, B^n, and B^r are millions of German marks. Recorded short-term capital flows were used as the most accurate representation of ΔFNC. EDR is the three-month Eurodollar rate. Y is the index of industrial net production, a proxy for domestic income. R^2 is adjusted for degrees of freedom. The figures in parentheses are t-statistics.

* The *Durbin-Watson* statistic is not applicable in regression (3). However, I applied a test for serial correlation when lagged dependent variables are present developed by *Durbin* [6] for large samples. The null hypothesis of zero autocorrelation was accepted at the five percent level against the alternative hypothesis that negative autocorrelation is present.

flows to occur in response to a loss of reserves by domestic banks when a shift from deposits to cash occurs. The coefficient of the variable used for domestic income (*Y*) was insignificant, as was the coefficient of the variable for foreign short-term interest rates (*EDR*) though both coefficients had the theoretically expected signs.

IV. Conclusions

The regression results reported in table (1) indicate that adjustments of short-term foreign capital stocks in Germany are substantially completed within the month, and that these stocks react to offset at most 57 to 59 percent of policy-induced changes in the monetary base. Since the offset is not complete, short-term international capital flows did not prevent the German monetary authorities from pursuing an independent monetary policy under a system of fixed exchange rates, though it is possible that occasional exchange rate parity adjustments were necessary if this independence was to be maintained when there were widespread expectations of a shift in parity. The coefficient of the variable for changes in reserve requirements provides strong evidence that the offset coefficients obtained in these regressions are due to the causal relationship running from changes in the monetary base to short-term capital flows.

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Zusammenfassung

Kurzfristige internationale Kapitalbewegungen und die Wirksamkeit der Geldpolitik in einer offenen Wirtschaft — aufgezeigt am Fall Bundesrepublik Deutschland

Dieser Beitrag entwickelt ein Modell, um die Fähigkeiten einer Währungsbehörde in einer offenen Wirtschaft zu bestimmen, diskretionären Einfluß auf die inländische monetäre Basis bei einem System fester Wechselkurse auszuüben.

Eine vereinfachte Gleichung wurde von dem Modell abgeleitet und dient zur direkten Schätzung der Auswirkungen geldpolitischer Eingriffe auf Kapitalbewegungen mittels Veränderungen in der inländischen Mindestreserve. Dem Modell liegt die Annahme zugrunde, daß in einer Periode kurzfristigen Kapitalmarkgleichgewichts eine Veränderung im inländischen Kreditnachfrageüberschuß, die durch eine Veränderung der Bankenliquidität verursacht wird, sich in Kapitalströme niederschlägt, da Inländer zwischen ausländischen und inländischen Finanzaktiva und -passiva in ihrem Wertpapierbestand substituieren. Diese Veränderungen in den heimischen Wertpapierbeständen treten wahrscheinlich vor den Veränderungen zwischen Rentenwerten, Geldbeständen und Gütern auf.

Das Modell wurde für die deutsche Wirtschaft für den Zeitraum von November 1962 bis Mai 1971 angewandt. Danach übernahm die Bundesrepublik Deutschland das System flexibler Wechselkurse. Monatliche Daten wurden bei der empirischen Berechnung des Modells zugrunde gelegt. Da ein wichtiges Instrument deutscher Geldpolitik — nämlich die Veränderung der Mindestreserveanforderungen institutionell nur am 1. eines jeden Monats zum Einsatz kommt, kann der Gebrauch monatlicher Daten das Problem des Simultangleichungs-Bias zwischen den geldpolitischen Veränderungen in der Geldbasis und den daraus resultierenden kurzfristigen Kapitalströmen lösen helfen. Monatliche Daten sind auch besser als Quartalsdaten für den Beweis der Wirkungsdichtung zwischen Kapitalströmen und geldpolitischen Veränderungen der Geldbasis geeignet.

Die empirischen Ergebnisse dieses Beitrages zeigen, daß Reaktionen der kurzfristigen internationalen Kapitalbewegungen auf geldpolitische Veränderungen in der Kapitalbasis größenteils innerhalb eines Monats beendet sind, und daß solche Kapitalströme reagieren, um zumindest 57 bis 59 Prozent der geldpolitischen Veränderungen der Geldbasis auszugleichen. Da der Ausgleich

nicht vollständig ist, werden die deutschen Währungsbehörden durch die kurzfristigen internationalen Geldströme nicht daran gehindert, eine unabhängige Geldpolitik in einem System fester Wechselkurse zu verfolgen, obgleich es möglich ist, daß gelegentliche Neubewertungen dann vorgenommen werden müssen, wenn diese Unabhängigkeit nur aufrecht erhalten werden kann, wenn es weitverbreitete Erwartungen einer Paritätsänderung gibt.

Summary

Short-Term International Capital Flows and the Effectiveness of Monetary Policy in an Open Economy: The German Case

This paper develops a model to determine the ability of the monetary authorities of an open economy to exercise discretionary control over the domestic monetary base under a system of fixed exchange rates. A reduced form equation is derived from the model and is used to estimate directly the effects on capital flows of policy actions which consist of changes in the domestic reserve base. The model uses the assumption that, in a period of short-run financial market equilibrium, a change in domestic excess demand for credit, caused by a change in bank reserves, results in capital flows as domestic residents make substitutions between foreign and domestic financial assets or liabilities in their bond portfolios. These adjustments of domestic bond portfolios are assumed to occur before adjustments among bonds, money and commodities.

The model is applied to the German economy for the period from November 1962 through May 1971 after which Germany adopted a floating exchange rate. Monthly data are used in the empirical application of the model. Since an important tool of German monetary policy, changes in reserve requirements, are instituted only on the first day of the month, the use of monthly data helps resolve the problem of simultaneous-equations bias between policy-induced changes in the monetary base and the resulting short-term capital flows. Monthly data also provides better evidence than quarterly data as regards the direction of causality between capital flows and policy-induced changes in the monetary base.

The empirical results of this paper indicate that the reactions of short-term international flows to policy-induced changes in the monetary base are substantially completed within the month, and that such capital flows react to offset at most 57 to 59 percent of policy-induced changes in the monetary base. Since the offset ist not complete, short-term international capital flows did not prevent the German monetary authorities from pursuing an independent monetary policy under a system of fixed exchange rates, though it is possible that occasional exchange rate parity adjustments were necessary if this independence was to be maintained when there were widespread expectations of a shift in parity.

Résumé

Les mouvements internationaux de capitaux à court terme et l'efficacité de la politique monétaire dans une économie ouverte — application au cas de la République Fédérale d'Allemagne

Cette étude développe un modèle ayant pour objet de déterminer les capacités des autorités monétaires placées dans une économie ouverte d'exercer une influence discrétionnaire sur la base monétaire intérieure dans un système de taux fixes de change.

Du modéle, l'on induit une équation simple qui sert à l'appréciation directe des effets d'actions de politique monétaire sur les mouvements de capitaux par le biais de variations dans les réserves minimales intérieures. Le modèle est fondé sur l'hypothèse qu'en période d'équilibre à court terme du marché des capitaux, une modification de l'excédent de demande de crédit, causée par un changement de liquidité bancaire, se répercute en flux de capitaux, car les résidents effectuent dans leurs portefeuilles-titres des substitutions entre actifs et passifs financiers étrangers et nationaux. Ces mouvements dans les portefeuilles-titres interviennent vraisemblablement avant toute variation entre les valeurs à revenu fixe, les avoirs monétaires et les produits.

Le modèle fut appliqué à l'économie allemande pour la période de novembre 1962 à mai 1971. La République Fédérale d'Allemagne adopta ensuite le système des taux de change flexibles. Des données mensuelles alimentèrent le calcul empirique du modèle. Comme un instrument majeur de la politique monétaire allemande — à savoir la modification des obligations de réserves minimales — n'intervient techniquement que le 1er de chaque mois, l'utilisation de données mensuelles peut contribuer à solutionner le problème de l'équation simultanée de Bias entre les changements de politique monétaire dans la base monétaire et les flux de capitaux en dérivant. Les données mensuelles sont aussi plus adéquates que les données trimestrielles pour démontrer la direction des effets entre flux de capitaux et modifications de la base monétaire.

Les résultats empiriques de cette étude montrent que les réactions des mouvements internationaux à court terme des capitaux sur les variations de politique monétaire dans la base financière prennent généralement fin dans le mois et que de tels flux de capitaux réagissent afin de compenser au moins 57 à 59% des modifications de la base monétaire. Comme la compensation n'est pas totale, les flux internationaux à court terme n'interdisent pas aux autorités monétaires allemandes de pratiquer une politique monétaire indépendante dans un système de taux fixes de change, encore qu'il soit possible que d'éventuelles réévaluations doivent intervenir lorsque cette indépendance ne peut se préserver que par une attente généralisée de la modification de la parité.