

DEVELOPMENT AID, SAVINGS AND GROWTH IN THE 1980s: A CROSS-SECTION ANALYSIS

Richard Reichel
University of Erlangen - Nürnberg

1. Introduction

At the beginning of the 1990s, the breakdown of the former centrally planned economies in Eastern Europe and the necessity of transforming those economies into market-oriented systems together with the mixed success of classical development assistance projects in the Third World revitalised the discussion on the effects of external assistance devoted to developing countries. As excess saving in the donor countries to finance such capital inflows is increasingly limited, policy-makers are forced to reallocate aid payments. Moreover, economists frequently recommend a gradual decrease or even a termination of development assistance donations. However, the empirical evidence is inconclusive. Studies yielding a positive overall impact contradict others which found detrimental effects (Agarwal et al., 1984). Several books, written to reformulate development aid theory (particularly with respect to political application) were published (Cassen, 1986; Mosley, 1987; Krueger and Michalopoulos, 1989). Unfortunately, these studies do not provide a broad empirical assessment of aid impact in the 1980s.

Therefore, the focus of this paper is to analyse the aid impact on growth and capital formation from domestic sources in developing countries in the 1980s and thus to provide additional empirical foundations for policymaking and aid allocation.

Our study is organised as follows. Section 2 reviews several critical topics concerning the impact of aid on savings and growth. Section 3 discusses the determinants of development aid. This will be a precondition for the evaluation of potential causal relations which are to be discussed in section 4. Here a small simultaneous equations model is presented to cover the macroeconomic effects of aid inflows. Section 5 estimates the model and section 6 summarises the main findings.

2. Griffin's Substitution Effect - Myth or Reality?

After a full decade of unequivocally accepted aid flows to Third World countries, in 1970 Keith Griffin challenged the view, that foreign aid is a complement to domestic savings. As the role of domestic capital formation as a necessary precondition for sustained economic growth cannot be denied, the outlook that aid may eventually act like a drug ("feel better at the moment, but die in the long run") caused confusion and a subsequent heated debate. Griffin's study was based on the savings data of 33 developing countries as reported in the 1965 issue of the United Nation's World Economic Survey. Correlating the domestic savings rate with the rate of capital inflow (as a percentage of gross domestic product) Griffin found a highly significant negative relationship between

both variables, thus indicating a severe displacement effect. In the following ten years the pros and cons of Griffin's statistical analysis and his theoretical arguments were discussed in detail (Stewart, 1971; Papanek, 1972; Griffin, 1973; Grinols and Bhagwati, 1976, 1979; Gulati, 1978, 1980; Ram, 1980). Nevertheless, a widely accepted conclusion could not be attained, in particular the question of causal relationships remained largely unanswered.

The discussion in the 1970s showed at least that the following three objections have to be considered carefully:

(1) The balance of payments deficit cannot be used as a proxy for development aid inflow, as capital inflows can consist of commercial credits, bilateral and multilateral aid, IMF credits, direct and portfolio investment (Papanek, 1973b; Gupta, 1975; Mosley et al., 1987). Throwing all those sources together would introduce a serious bias, thus invalidating any empirical analysis. Contrary to the 1960s, where reliable data on external development aid were largely unavailable, the data situation has improved markedly, so that researchers of our days can work with disaggregated World Bank or OECD data.

(2) Another shortcoming of a simple correlation between domestic savings and capital inflows is the built-in negative relationship resulting from the income accounting identity.

As $\frac{S}{Y} = \frac{I}{Y} - \frac{F}{Y}$, where $\frac{S}{Y}$ is the capital-import ratio, every increase in external inflows

results in a proportional reduction of the savings rate when the investment rate remains constant. This implies that the strength of the negative correlation depends on the variability of the investment rate in the sample under observation. If $\text{Var}(I/Y) \rightarrow 0$, then $\rho_{\frac{S}{Y}} \rightarrow -1$.

However, despite this tautological effect, it would be precipitous to deny a priori the existence of a behavioural relationship between savings and capital inflow. Even if an identical investment ratio is imputed, it still has to be explained why several countries rely heavily on foreign capital whereas others do not. An explanation based on neoclassical growth theory would stress the importance of the social rate of time preference. It can be argued, that a low domestic savings rate coinciding with a large balance of payments deficit simultaneously reflects a high rate of time preference, whereas domestic excess savings (net capital export) indicate a low rate of time preference.

(3) Besides statistical problems the question of the causality direction is largely unanswered. If a significantly negative correlation between domestic savings and development aid can be shown, which way is the direction of causality? Does it represent a displacement effect, as Griffin or Lord Bauer would argue? Or does causality run from low savings to high aid ratios (Thirlwall, 1974; Michalopoulos and Sukhatme, 1989)? What

about the role of third variables as per capita income, terms of trade movements or natural disasters that may affect domestic savings as well as aid inflows (Papanek, 1972)? It is obvious, that those questions can only be answered within a simultaneous equations framework, particularly when a cross section sample underlies the analysis. At present, only cross-country samples will be sufficiently large to perform the statistical analysis.

A second effect, which has to be analysed is the impact of aid on economic growth (Gupta and Islam, 1982; Singh, 1985; Mosley et al., 1987). It can be argued that a positive direct effect of aid may offset reduced savings efforts. This will be the case when external inflows lower the incremental capital-output ratio and shift the economy towards a path of sustained higher growth. Lower domestic savings rates in the short run will then be acceptable if the growing per capita income (due to aid inflows) increases capital formation from domestic sources in the long run. It is obvious that disentangling all those effects requires the specification and estimation of a simultaneous equations model with endogenised aid payments.

3. Determinants of the Development Aid Ratio

Before specifying our model, the determinants of a recipient country's aid-income ratio (official development assistance as a percentage of gross domestic product) have to be clarified. It is of particular interest, whether the aid ratio depends on poverty-related variables (one of which is the savings rate) or whether it is a function of political determinants or both. On a cross-country macroeconomic level the evidence for mainly politically determined aid flows is rather weak, as Mosley (1987) has argued convincingly.

Two variables prove to be the most important determinants of the aid ratio (AID/Y):

1) The level of per capita income (PCI). This variable captures the potential influence of social indicators to a large extent as those indicators are highly correlated with the income level.

2) The country size, measured either by the total population or the total income (Y), the latter being superior in empirical estimation, as the goodness-of-fit of the estimated regression equation improves markedly.

A cross-country OLS regression ($n = 74$ LDCs, data are for 1988) yields the following estimated equation based on a reciprocal model, as the relationships are highly non-linear (hyperbolic). T-statistics are given in parentheses.

$$\frac{AID}{Y} = -2,89 + 3040,4 \left(\frac{1}{PCI} \right) + 16518,6 \left(\frac{1}{Y} \right); \quad R^2 = 0,79$$

(8,77) (6,78)

According to this equation, nearly 80% of the aid ratio variability across countries can be explained by two factors. The poorer and the smaller a developing country is, the more aid it will receive. It may be surprising that the unexplained variance is relatively small. This gives additional support to Mosley's results but is also compatible with Lord Bauer's (1987) view of aid as a result of Western guilt feeling.

Next we shall assess whether there is an additional fraction of explained variance when the savings rate is included in the regression equation. If this would be the case, a bidirectional relationship between the aid ratio and the savings rate must be assumed. The following equation reports the result of the extended model specification:

$$\frac{AID}{Y} = 0,29 + 2697,2 \left(\frac{1}{PCI} \right) + 14699,6 \left(\frac{1}{Y} \right) - 0,13 \left(\frac{S}{Y} \right); \quad R^2 = 0,80$$

(6,94) (5,67) (1,84)

The regression coefficient of S/Y is significant at least at the 90% confidence level, so that the aid ratio's dependence on the savings rate is confirmed. As aid is also a major determinant of the savings rate, endogenisation of the aid ratio in our simultaneous model (section 4) is strongly required.

4. Aid, Savings, and Growth

The small model presented in this section should help to clarify the following questions:

1) Does aid really have a detrimental effect on domestic savings or is it low savings which causes increased aid payments? (The question of causality.) How does per capita income as a third variable influence the results?

2) Has aid been conducive to growth, i.e. is there a potential indirect effect on capital formation through higher growth rates?

These questions can be answered within a simultaneous equations model which

consists of three endogenous variables and several exogenous variables. The endogenous variables are

- the aid ratio, i.e. official development assistance expressed as a percentage of the recipient country's gross domestic product (AID/Y),
- the growth rate of gross domestic product (g), and
- the gross domestic savings rate (S/Y).

We do not use the gross national savings rate in contrast to Fry (1986), because movements of the gross domestic savings rate are likely to be more sensitive to economic policy measures of the recipient country.

Between the aid ratio and the savings rate a bidirectional relationship as discussed in sections 2 and 3 can be assumed. In a later stage, the results of the estimated model will enable us to decide which way the causality direction is. The growth rate and the savings rate are equally mutually interrelated, whereby the causality from S/Y to g can be founded on the simple Harrod-Domar growth equation. Contrary to standard neoclassical growth models (Solow, 1956), the recently developed "new growth theory" also stresses the long-run importance of the investment rate as a determinant of economic growth (Barro, 1991; Gundlach, 1993).

Even in poorer LDCs the largest part of capital formation comes from domestic sources (Fischer and Langhammer, 1986). But there is also a reverse causation. Post-Keynesian savings theories tell us that the savings rate is positively correlated with the growth rate of income (Yotopoulos and Nugent, 1976). The level effect, i.e. the representation of the Keynesian theory is hereby captured by the per capita income variable which occurs in the list of exogenous variables. Thus contrary to Gupta's (1975) model, our small system considers this important latent factor exogenous.

Let us now discuss our behavioural model. The aid ratio equation is specified as follows:

$$[1] \frac{AID}{Y} = f(S/Y, Y, PCI, MED),$$

whereby PCI is per capita income, Y is total GDP and S/Y is the savings rate. Besides PCI and Y a third exogenous variable, MED is included. This is a dummy variable, which in case

of the countries Egypt, Israel and Jordan takes the value "1", otherwise "0". MED (Middle East dummy) covers the well above average aid ratio of the three mentioned countries and accounts for the increased aid inflows due to the advancing peace process in this area.

The savings equation consists of two endogenous and five exogenous variables.

$$[2] \frac{S}{Y} = f \left(\frac{AID}{Y}, g, PCI, \frac{S}{Y}, X/Y, IR, OILD \right)$$

As the aid ratio and the growth rate of income have already been introduced, the remaining exogenous factors are the following:

PCI = per capita income.

The Keynesian absolute income hypothesis is empirically well supported for the developing world of today as well as for early industrial pioneer countries in the preceding decades (Clark, 1967; Thirlwall, 1974b; Aghevli et al., 1990). As the savings rate levels off in a more advanced stage of development a non-linear functional form is strongly required

X/Y = exports as a fraction of GDP

The importance of the openness of an economy as roughly measured by its export ratio was originally stressed by Maizels (1968) and has initiated a tremendous bulk of empirical research in the 70s and 80s. As exports are a fraction of total income, numerous models have been developed to study the effects of causality and built-in-correlations in order to uncover the "true" impact of export orientation on savings and growth (Salvatore, 1983; Jung and Marshall, 1985; Ram, 1987; Rana, 1987; Alam, 1991; Gyimah-Brempong, 1991; Greenaway and Sapsford, 1994; Love, 1994).

Although the econometric results often are far from clear-cut, the experience of LDCs, which have implemented substantial trade policy reforms toward greater openness of the economy mostly confirms the hypothesis of exports as an engine of growth (Chile, Ghana, Indonesia, China). In all these countries the savings rate increased more or less after the implementation of the trade reform package. Therefore, we include the export ratio as a possible determinant of the domestic savings rate. It should be noted however, that the export ratio itself is determined to a considerable extent by the size (population, area) of

a country, so that it is not an unambiguous indicator of its trade orientation. As data for the World Bank's "trade orientation" concept (World Bank, 1987) are not available for our large cross-country sample, we are nevertheless forced to use the simple exports/GDP-ratio.

XI = an index of export revenue instability.

Theoretically, the net effect of unstable export revenues on domestic saving is ambiguous. Considerations based on Friedman's permanent income hypothesis would predict a positive effect of large fluctuations, as transitory saving increases. On the other side, long run investment projects may be discouraged, as export instability creates uncertainty (Lim, 1980; p. 360). It is a matter of empirical investigation to isolate the net effect.

IR = the real interest rate on bank deposits.

The hypothesis of a positive interest elasticity of savings has been discussed extensively both from a theoretical as well as from an empirical viewpoint (McKinnon, 1973; Shaw, 1973; Fry, 1978; Fry, 1988; Galbis, 1982; Taylor, 1983; van Wijnbergen, 1983; Balassa, 1990). Unfortunately, empirical research has been unable to clarify the controversial theoretical positions. Several studies confirm the neoclassical hypothesis ("financial repression") of a positive interest elasticity (Fry and Mason, 1982; Fry, 1988), whereas others find an elasticity of approximately zero, thus supporting the neo-structuralist school (Giovannini, 1983, 1985; Khatkhate, 1988). It is interesting, that those studies supporting the former theory were mostly based on cross section samples of Asian countries, whereas studies supporting the latter often used larger samples. However, most empirical studies published in the 80s suffered from the fact of persisting (high) negative real interest rates in the majority of the countries under consideration (Khatkhate, 1988). It is an open question, whether one can test the interest sensitivity of the savings rate in a context of larger or smaller negative real interest rates, as it is unlikely that variations of the real rate between - 100% and - 10% do induce significant changes in savings behaviour. Fortunately, in the 1980s the number of countries with severely negative real rates decreased markedly, so that the data base for empirical testing has improved.

OILD = a dummy variable, which covers the relatively high savings rates of oil exporting countries

It is astonishing that empirical studies seldom have accounted for the significantly higher savings rates of oil exporting countries. As the oil sector in a developing country can be easily taxed or (mostly) is in state ownership, government saving may increase. Additionally, the domestic absorptive capacity for investment projects is rather limited, thus resulting in large balance of payments surpluses when export revenues are high.

Equation [3] refers to the determinants of income growth and is based on a modified, export-augmented neoclassical approach, as proposed in a recent IMF study (Otani and Villanueva, 1988, 1989). As two variables (expenditures on human capital, interest rate on foreign debt) were mostly insignificant, we decided to replace them by the inflation rate, which is assumed to exhibit a negative impact on growth as relative prices are distorted. The growth-retarding effect of a rapidly rising price level thereby comes primarily from a negative impact on capital productivity, whereas the rates of saving and investment remain largely unaffected (Dürr, 1977). Finally, two dummies (GD1, GD2) were included to control for a few extreme country outliers (the countries are reported in the appendix).

Thus, the growth equation can be specified as follows:

$$[3] \ g = f \left(\frac{S}{Y}, \frac{AID}{Y}, n, \frac{dx}{x}, p, GD1, GD2 \right)$$

The last five variables are considered exogenous:

- n = population growth rate
- dx/x = growth rate of exports
- p = inflation rate
- GD1,
- GD2 = outlier dummies

Our complete model therefore consists of three endogenous and twelve exogenous variables. The behavioural equations [1], [2], and [3] are overidentified and thus can be estimated.

5. Estimation Results

The estimation of the model is based on a cross section sample consisting of 83 developing countries using data from the 1980s. As pooling of cross-section and time-series data is not applicable because of missing (time-series) values for several variables, each country value is an average for the period 1980-89 in most cases. (Definitions and data sources are reported in the appendix.) The wide range of countries included is therefore considered representative for the developing world in the preceding decade. In order to provide comparability with previous studies, the estimation procedure applied is Two-Stage-Least-Squares (TSLS). As the sample is sufficiently large, a substantial TSLS-bias is unlikely.

Table 1 presents the estimation results for the aid function [1].

Table 1: $AID/Y = f(\dots)$ TSLS Estimation Results

Independent Variable	Regression Coefficient	t-Value	Significance Level	Standardized Regr. Coefficient
S/Y	-0.080	0.908	ns	-0.120
Y-0.6	695,729	8.503	99%	0.608
PCI-0.25	38,882	2.475	95%	0.254
MED	11,190	3.908	99%	0.264
Constant	-5,218	1.164	ns	
R ² = 0.745		F = 57.10 (99%-Sing. Level)		
ns= not significant				

These results are rather surprising. First, the savings rate does not exhibit any significant influence on the aid ratio, even if the TSLS results confirm the negative sign of the regression coefficient in our single equation. On the other hand, if an isolated OLS regression based on the same sample and showing a t-statistic of 3.21 is considered a reference, the usefulness of our simultaneous model for drawing conclusions on causality directions is demonstrated.

Consequently, the TSLS results do not point to an aid inflow induced by low savings rates. On the other hand, aid seems to be closely related to the poverty of the recipient country, as represented by the level of per capita income. Here, the positive regression coefficient reflects an inverse relationship between AID/Y and PCI , as the latter variable had to be transformed ($PCI^{-0.25}$) to capture the observed non-linearity. This result strongly contradicts the hypothesis of a mainly politically determined aid distribution. On the contrary, Mosley's (1987) findings are confirmed once again. More surprisingly, the

recipient country's size, as measured by its total income is of overwhelming importance. The smaller a country, the more (relative) aid will it receive, thus enabling a small economy to run larger balance of payments deficits than a richer one. Again, the functional form of the partial correlation is non-linear, as indicated by the negative power. As expected, the Middle East countries receive a considerably higher amount of external assistance. R^2 is fairly high, indicating that no important determinant had been omitted. Although the simple coefficient of determination has to be interpreted with caution in the context of a simultaneous model (Berndt, 1991), it still can serve as a rough goodness-of-fit indicator, particularly if the difference between R^2 (TSLS) and the corresponding R^2 (OLS) is not large, thus indicating the absence of specification problems (Maddala, 1988).

The following table reports the regression results for the savings rate equation.

Table 2: $S = Y = f(\dots)$ - TSLS Estimation Results

Independent Variable	Regression Coefficient	t-Value	Significance Level	Standardized Regr. Coefficient
AID/Y	-0.785	5.544	99%	-0.523
g	0.596	2.058	95%	0.142
1/PCP ²	-99708	1.946	90%	-0.134
X/Y	0.153	4.918	99%	0.303
XI	0.116	1.044	ms	-0.073
IR	0.139	2.139	95%	0.127
OILD	7.637	4.176	99%	0.254
Constant	15.928	9.139	99%	
R ² =0.759		F = 33.69 (99%- Sign. Level)		
ms = marginally significant (t-statistic >1)				

As all estimated regression coefficients are at least marginally significant and the coefficient of determination is nearly 0.76; this is a remarkable result too. The three most important determinants of the savings rate are the aid ratio, the outward orientation as approximated by the export ratio, and the existence of an exportable oil surplus. Contrary to the aid-savings relation in the aid equation, the negative impact of a large amount of external assistance here is both very strong and highly significant. A considerable substitution effect is thus indicated. Consequently our results indicate a causation which seems to run from aid to savings and not the reverse direction, a result, which is strongly in favour of Griffin's displacement hypothesis.

In a next step we have to assess, whether there exists a growth promoting effect of aid, which is independent of the (non-existing) positive accumulation effect. The following table

presents the estimation results of the growth equation.

Table 3: $g = f(\dots)$ - TSLS Estimation Results

Independent Variable	Regression Coefficient	t-Value	Significance Level	Standardized Regr. Coefficient
S/Y	0,043	1,526	ms	0,182
AID/Y	0,036	0,871	ns	0,100
n	-0,169	0,786	ns	-0,042
dX/X	0,246	10,337	99%	0,557
p	-0,610	3,834	99%	-0,227
GD1	4,289	6,839	99%	0,392
GD2	-4,219	5,979	99%	-0,319
Constant	3,256	3,051	99%	
$R^2 = 0,798$		$F = 42,34$ (99%-Sign. Level)		

Surprisingly, the savings rate as a major component of domestic investment is only marginally significant ($t > 1$), pointing to a rather limited role in explaining economic growth. As a single OLS regression reveals a t-statistic of 2,04 (indicating significance at the 95%-level) for the savings rate coefficient, the simultaneous approach shows, how misleading an isolated estimation would be.

The insignificant coefficient of the aid variable is even more astonishing. There is virtually no macroeconomic growth-promoting effect of development aid in the 1980s. Consequently, no indirect savings-promoting effect can be expected. On the other side, there is a remarkable impact of the policy-related variables dX/X and p. Thus, strong export performance and a stable price level, are conducive to economic growth. This result is confirmed if we look at the diverging experience with macroeconomic policies in the developing areas of the world. The Asian region experienced high growth but has received relatively little development assistance, Africa did not grow at all but was deluged with aid and Latin America stagnated, receiving a moderate amount of external assistance. On the other hand, the development strategy of most Asian countries was more or less outward-oriented, whereas the economies of Africa and Latin America remained relatively closed. Low inflation was maintained in Asia and most African countries but was missed in Latin America. Thus, the global picture confirms our findings from the estimated growth function.

6. Conclusions

This study uses a large cross-country sample to evaluate the effects of development aid on domestic savings and growth in the 1980s. The following conclusions can be drawn:

(1) A highly significant negative correlation exists between domestic savings and aid inflow. After having controlled for other variables, in particular the level of per capita income we uncover a causal direction running from aid to savings. Thus a severe displacement or substitution effect reveals confirmation. External aid does not stimulate or even add to domestic savings.

(2) The view of politicians and other aid advocates, that aid distribution is determined mostly by poverty-related indicators, is confirmed too. Political determinants seem to play a minor role, though several Middle East countries receive development assistance significantly above average. However, the most important single determinant of aid is the total income of the recipient country. Smallness is equal to high aid ratios. Consequently, the danger that aid may help to sustain false economic policies and interventionist regimes should not be considered as negligible.

(3) Our estimation results do not indicate that development aid may have indirect growth promoting effects through improvements in capital productivity.

DATA APPENDIX

S/Y: Gross domestic savings in as percentage of gross domestic product; (unweighted average 1980-1989); source: World Bank, World Tables 1991, Washington D.C.

g: Growth rate of real gross domestic product; (unweighted average 1980-1989); source: World Bank, World Development Report 1991, Washington D.C.

AID/Y: Total official development assistance as percentage of gross domestic product of the receiving country; (unweighted average 1980-1988); source: author's calculations based on OECD, Geographical Distribution of Financial Flows to Developing Countries, various issues, Paris.

PCI: Per capita income (1984) in US-\$; source: World Bank, World Development Report 1986, World Tables 1991, Washington D.C.

MED: Dummy variable (Israel, Egypt, Jordan = "1", otherwise = "0").

Y: Gross domestic product (1984) in US-\$, source: same as AID/Y (1983/86 issue).

OILD: Dummy variable (Cameroon, Congo, Gabon, Nigeria, Indonesia, Malaysia, Algeria, Egypt, Iran, Oman, Tunisia, Ecuador, Mexico, Peru, Trinidad and Tobago, Venezuela = "1", otherwise = "0"); source: author's compilation based on Brand 1989.

X/Y: Exports as percentage of GDP (unweighted average 1980-1989); source: author's calculations based on World Bank, World Tables 1991 (country tables).

XI: Export revenue instability (unweighted average 1980-1988); standard deviation of annual growth rate of exports; source: author's calculations based on World Bank, World Tables 1991 (country tables).

GD1: Outlier dummy variable; 6 positive outliers (Botswana, Somalia, Tanzania, China, South Korea, Oman) = "1", otherwise = "0".

GD2: Outlier dummy variable; 4 negative outliers (Iran, Guyana, Trinidad and Tobago) = "1", otherwise = "0".

IR: Real interest rate on bank deposits; source: IMF, International Financial Statistics, various issues, World Bank, World Tables 1991 (GDP deflator, if not reported in IFS); In most cases, IR is a period average of 1980-1989. In case of missing values for the nominal interest rate for the entire period, IR is based on the years available. If no deposit rate was reported, the discount rate or the bank rate was used as a substitute. If no or information on the nominal interest rate at all could be obtained, a 3% hypothetical rate was used. In order to avoid biasing effects of extreme inflation in such cases, the country values were replaced by the sample average.

dX/X: Growth rate of exports (unweighted average 1980-1989; source: World Bank, World Development Report 1991).

n: Growth rate of working age population (estimation for the period 1973-2000); source: World Bank, World Development Report 1986.

p: Transformed inflation rate (unweighted average 1980-1989); annual change of consumer price index transformed as follows: $p = \ln(7 + \text{inflation rate})$; source: World Bank, World Development Report 1991.

The sample includes the following countries:

Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Congo, Côte d'Ivoire, Ethiopia, Gabon, Gambia, Ghana, Kenya, Malawi, Madagascar, Mali, Mauritania, Mauritius, Mozambique, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, Somalia, Sudan, South Africa, Tanzania, Togo, Uganda, Zaire, Zambia, Zimbabwe, Bangladesh, India, Nepal, Pakistan, Sri Lanka, China, Indonesia, South Korea, Malaysia, Philippines, Papua-Newguinea, Thailand, Singapore, Hong Kong, Algeria, Egypt, Iran, Jordan, Morocco, Oman, Syria, Tunisia, Turkey, Greece, Portugal, Yugoslavia, Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Trinidad and Tobago, Uruguay, Venezuela, Israel.

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Abstract

The purpose of this paper is to analyse the impact of official development aid on savings and growth in developing countries during the 1980s. Based on a cross section sample of 83 countries, a three-equations simultaneous model with endogenous aid payments is applied to estimate the determinants of the aid/gdp-ratio, the gross domestic savings rate and the income growth rate. In particular, an attempt was made to model the causal relationship between the savings rate and the aid ratio. This problem has been subject to controversial discussions in the theoretical and empirical literature during the preceding two decades. Our statistical results suggest a negative causal impact of official development aid on domestic savings. As income growth rates are not significantly affected by aid payments, the overall effect of aid seems to be negative. On the other hand, our results indicate that domestic savings as well as income growth crucially depend on economic policies favouring outward-orientation and maintaining price level stability.

AIDE AU DÉVELOPPEMENT, ESPARGNES ET CROISSANCE DANS LES ANNÉES 1980: UNE ANALYSE EN SECTION TRANSVERSALE**Resumé**

L'objet de cet article vise à l'analyse de l'impact de l'aide officielle au développement sur les épargnes et la croissance dans les pays développants durant les années 1980. Basé sur un échantillonnage de 83 pays, un modèle simultané à trois équations avec paiements d'aide endogènes est appliqué pour évaluer les déterminants du ratio aide/PNB (produit national brut), le taux d'épargne national brut et le taux de croissance du revenu. En particulier, on a essayé de modeler une relation causale entre le taux d'épargne et le ratio d'aide. Ce problème a été soumis à des discussions controversées dans la littérature théorique et empirique pendant les deux décades précédentes. Nos résultats statistiques amènent à un impact négatif causal de l'aide officielle au développement sur les épargnes nationales.

Comme les taux de croissance ne sont pas matériellement influencés par les paiements d'aide l'influence totale de l'aide paraît négative. Par contre, nos résultats indiquent que les épargnes nationales aussi que la croissance du revenu dépendent essentiellement d'une politique économique dirigée vers une orientation à l'extérieur et au maintien de la stabilité du niveau des prix.