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SAVINGS AND INVESTMENT FOR GROWTH RESUMPTION IN LATIN AMERICA: THE CASES OF ARGENTINA, BRAZIL AND COLOMBIA

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SAVINGS AND INVESTMENT FOR GROWTH RESUMPTION IN LATIN AMERICA: THE CASES OF ARGENTINA, BRAZIL, AND COLOMBIA[1]

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1. INTRODUCTION

This is an inquiry into the recent savings and investment performance of three Latin-American countries. It is based on

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[1] Synthesis paper for the research project on Savings and Investment Requirements for Growth Resumption in Latin America, coordinated by the Department of Economics of the Catholic University of Rio de Janeiro, and sponsored by the Interamerican Development Bank, in the context of the first round of projects of the Network of Applied Research Centers. For comments on a previous version I am indebted to Regis Bonelli, Dionisio Carneiro, Eduardo Lora, Jorge Sapoznikow, and Rogerio Werneck.

country studies by CEDES on Argentina, PUC-Rio on Brazil, and FEDESARROLLO on Colombia[2]. The bulk of the analysis is centered on the behavior of public sector savings, as this was anticipated to be a critical variable for growth resumption in the three countries.

The next section discusses the behavior of gross fixed investment in the 1970-90 period. Particular attention is paid to the interactions between public and private investment over this period.

The third section elaborates on some measurement problems involved in crossing over from investment (at constant prices) to savings (at current prices). This movement is shown to involve difficult data problems, related to the behavior of the relative price of investment goods and to the impact of inflation on measured savings. These price variables experienced considerable change in the 1970-90 period in the three countries, with important practical implications for the interpretation of the savings and investment capacity of these countries, which are not normally taken into account in other empirical studies.

The fourth section contains a synthesis of the main findings of the country studies on the behavior of public sector savings and its borrowing requirements in the 1970-90 period.

The fifth section provides an interpretative summary of the policy recommendations for savings and investment expansion in the 1990's. The emphasis is on policy suggestions which, at a

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[2] Cf. respectively Chisari, Fanelli, Frenekel, and Rozenwurcel (1992), Carneiro and Werneck (1992), and Sanchez and Lora (s/d).

macroeconomic level, would seem to make the most difference to turn the "decade of hope" into one of effective economic growth for Argentina, Brazil, and Colombia.

2. INVESTMENT BEHAVIOR: PUBLIC AND PRIVATE

In the three countries, as indicated in Figure 1, investment rates[3] are currently at very low levels, near or at the bottom of those observed since 1970. Argentina is the most dramatic case, with a gross investment rate as low as 7 per cent of GDP in 1990, nearly insufficient to cover capital depreciation. In Colombia and Brazil, investment rates are twice as high as in Argentina, but still, in the case of Brazil, at only 2/3 of the levels reached in the 1970's.

Colombia did not suffer a sharp decline in investment rates, as the other two countries did, but on the other hand it exhibits a traditionally low level of investment. The problem is aggravated by the fact that the trend in the composition of investment between public and private portrays a considerable weakening of the Colombian private sector's propensity to invest during the 1980's[4]. As indicated in Figure 2, whereas in the 1970's the average share of the private sector in total fixed investment was close to 65 per cent, in the 1980's it dropped to barely over 50 per cent. In Argentina, the private sector's share in fixed investment remained

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[3] Gross fixed investment rates at constant 1980 prices.

[4] The figures for investment shares are in current prices, because decompositions of investment at constant prices are not available.

relatively constant at 60 per cent of the total in the 1970-90 period.

In Brazil, yearly data is available only for the investment of federal public enterprises, which leaves the investment of local state and municipal enterprises to be computed in the private sector. On this basis, Brazil's private sector seems healthier than in the other two countries, as its share in total fixed investment increased from slightly less than 60 to over 70 per cent between the 1970's and the 1980's.

These varying patterns raise the issue of complementarity vs substitutability between private and public investment. Clearly, if domestic and foreign savings are unaffected by public investment, and this is exogenous, then an increase in public investment should be matched one-by-one by a corresponding decrease in private investment. At the micro level, crowding-out would occur as a consequence of an increase in the cost of capital - provoked by higher interest rates, lower credit availability, and higher investment goods prices.

Public investment may however succeed in inducing more private investment by the provision of complementary indivisible infrastructure (roads, ports, electricity, etc.) which reduces the capital costs of private investment projects. At a macro level, the higher expected rate of return on private investment, provoked by an increase in public investment in infrastructure, might induce more private and foreign savings, thus crowing-out consumption expenditures or net exports, rather than private investment. If the savings effect is sufficiently strong, private investment may end up being crowded-in by public investment.

Moreover, in a world of sticky prices and unemployment, additional public investment may succeed in raising both private savings and investment, through the mechanism of the Keynesian multiplier and the accelerator.

All this presumes that public investment is exogenous along the economic cycle. However, it may well serve as a countercyclical factor, which means that it will tend to be high when private investment is low, and vice-versa. A simple time series correlation between public and private investment, when the former is countercyclical, will on this account tend to show a negative association, but this does not necessarily mean that the crowding-out effect is stronger than the crowding-in effect.

This last consideration is particularly relevant for a discussion of the behavior of private and public investment in Colombia, for, as shown in Figure 5, in the 1970-90 period they are clearly negatively related. On the other hand, the Colombia paper shows that public investment in that country was deliberately countercyclical whereas private investment is strongly procyclical, which may explain the observed negative correlation even in the absence of a crowding-out effect.

The issue is clearly one to be tackled, at a macroeconomic context, with a simultaneous equation framework, and, at a sectoral context, with detailed case studies. For the time being, however, the research results relate only to single-equation regressions. On this basis, the Colombian paper tentatively concludes that private investment is not only negatively correlated with public investment, but also that the crowding-out coefficient is a very high -0.78,

which means that an additional unit of public investment raises total investment by merely 0.22 units[5].

In Argentina, the suggested correlation between public and private investment is strongly positive, as illustrated in Figure 3. For simulation purposes, the authors of the paper on Argentina use the results of simple regressions, which imply that an additional unit of public investment increases total investment by 2.3 units.

For Brazil, a graphic analysis suggest only a weak link between public and private investment, as illustrated in Figure 4. A more detailed econometric exercise (Studart, 1992) reveals that the relationship is negative, but much less so for infrastructure than for other public sector investment.

The preliminary results obtained in the country studies for the relationship between public and private investment are not entirely satisfactory, but they will have to do for the time being, while indicating an obvious need for more detailed studies with more

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[5] In a private communication, José Antonio Ocampo suggested that this statistical result may derive from the fact that, in the 1970s, there was a marked change in the nature of Colombia's growth, from the import substitution industrialization of 1950-70 - which was private sector intensive - to the mineral export-led industrialization of 1970-90 - which was public sector intensive. According to Ocampo, private sector investment declined because of the exhaustion of additional profitable opportunities for import substitution after 1970, and public sector investment expanded because it was entrusted with the development of the newly discovered oil and coal fields after 1970. Thus, there was not properly a crowding-out, but rather a change in the leading actors/sectors of economic growth. If these observations are correct, they have the policy relevant implication that the observed negative statistical correlation between private and public investment in the 1970-90 period should not be extrapolated to the future.

refined techniques to untangle this important public policy theme in Latin America.

2. FROM INVESTMENT TO SAVINGS: THE ROLE OF PRICES

The results of the previous section refer to gross fixed investment ratios at constant 1980 prices. Savings ratios, however, are normally measured at current prices. This raises a series of difficulties, related to the impact of relative prices changes on investment and savings, and to the measurement of savings rates in the presence of domestic inflation, which need to be tackled previously to a discussion of the role of public sector savings in the financing of domestic investment. These difficulties, although methodological in character, have important practical implications, and are discussed seriatim in this section.

2.1. Fixed investment at constant and current prices

The following national accounting identity prevails between the ratios to GDP of total domestic plus foreign savings (at current prices) and investment (at constant prices):

$$Z/PyY = (Pi/Py)I/Y, \qquad (1)$$

where Z is total (domestic plus foreign) savings at current prices; Y, GDP at constant prices; I, investment at constant prices; Py, the

implicit price deflator of GDP; and Pi, the implicit price deflator of investment.

This equation makes it explicit that a same savings ratio at current prices may be associated to different investment ratios at constant prices, I/Y, depending on the relative price of investment goods, Pi/Py.

The relevance of this general observation is that, in all three countries, but with particular strength in the cases of Argentina and Brazil, the relative price of investment goods increased significantly in the last part of the 1980's, as indicated in Figure 6. Two questions emerge: why did this happen and what are its consequences for investment ratios at appropriately measured constant prices ?

The last question was tackled only in the case of Colombia, and there it was found that a 10 per cent increase in the relative price of investment goods was roughly associated with an absolute decline of .36 percentage points of GDP in the aggregate constant-prices investment ratio[6]. This is not a very large effect, but one which, if valid for Brazil and Argentina, would have been responsible for a full one percentage point of decline in the investment to GDP ratios in the late eighties.

The fact that the investment ratio at constant prices is relatively insensitive to the price ratio has another important practical implication. And this is that the investment ratio at

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[6] This value is a simple average of the regression coefficients for Pi/Py in the equations explaining private and public investment in Colombia.

current prices, defined as PiI/PyY, goes up, when Pi/Py increases, even as the constant-price investment ratio, defined as I/Y, goes down following such relative price increase. As a consequence, illustrated in Figures 7-9, the investment ratios at current prices fail miserably to provide an adequate picture of the dearth of real investment in the three countries in the late 1980's.

As for the reasons of the substantial increase in the relative price of investment, the econometrics of the Colombian case point out to the exclusive responsibility of the real devaluation of the peso which was part of the process of economic adjustment of that country in the late eighties. This would fully explain the raise in the relative price of import intensive investment, and points out to an important negative consequence of real devaluations in developing countries.

The case of Argentina might also be explained by the real devaluations in the last couple of years of the 1980's, but the behavior of the relative price of investment series for this country in Figure 6 indicates that other factors may have been at play, as suggested in the Brazil paper. The observation is that the relative price of investment goods tends to increase in the wake of accelerated inflation following the demise of administrative price freezes, as happenned in Argentina after the last Peron administration (1973-75) and following the failure of the Austral plan (1985-88). In Brazil, the corresponding phenomenon would be the failure of the 1986 Cruzado plan.

Such price freezes tended to prohibit the indexing mechanisms previously facilitating the sales of capital goods, which means that the inflationary component of these typically long term

sales had to be made explicit in list prices, thus providing a possible explanation for the observed increase in the relative price of investment goods in Brazil in 1987-89, and in Argentina in 1976-77 and 1988-89.

The Brazil paper also suggests that the capital goods import substitution effort of the 1970's and the subsequent closure of the Brazilian economy to capital goods imports following the oil crisis of the mid 1970s may have played an important role in explaining the rise in investment good prices.

With a view to facilitating future research on this important topic, there follows a summary of four possible sources for the increase in the relative price of investment in the 1980s suggested in the country papers:

* Real devaluations which increased the relative price of investment as the most import intensive component of aggregate demand (this would explain the case of Colombia but not that of Brazil);

* Compensatory increases in list prices of domestically produced investment goods and construction contracts, to compensate for higher expected inflation, in the absence of appropriate indexation rules (provided that the expected inflation embedded in list prices is not higher than future observed inflation, this price compensation does not imply an increase in the real effectively paid price of investment goods, and hence need not imply a fall of real investment);

* Substitution of less efficient domestically produced capital goods for more efficient imported capital goods (which the

Brazilian authors suggest to have been part of the explanation for the investment price increases observed in that country);

* Oligopolist patterns of reaction of domestic capital goods producers, increasing relative prices when domestic demand decreases in order to preserve total profits through higher profit margins (which is another hypothesis of the Brazilian paper).

2.2. Savings rates at current and constant prices

The relative price change of investment goods in the late eighties also impacted on measured savings rates. As equation (1) makes it clear, provided that the elasticity of the investment ratio with respect to the relative price change is less than one in absolute value (and the econometrics of the Colombian case suggests that this is indeed the case), then, an increase in the relative price of investment goods will, by necessity of preserving the savings investment identity, raise the nominal savings ratio.

This, however, does not mean either that the domestic savings effort (in terms of reduced real domestic consumption per unit of real income) or the foreign savings effort (in the sense of higher real net transfers) have increase. To see this, note that the left hand side of equation (1) can more extensively be written as:

$$Z/PyY = [1 - (Pc/Py)C/Y] + [(Pm/Py)M/Y - (Px/Py)X/Y] \qquad (2)$$

where the first term in the right hand side is domestic savings and the second, net foreign transfers[7]. In this expression, Pc, Pm, and Px are respectively the implicit price deflators of consumption, imports, and exports; and C, M, and X are respectively domestic consumption, imports and exports at constant domestic prices.

If, for simplicity of the exposition, the law of one price is assumed to prevail, we can write Pm = eP*m and Px = eP*x, where e is the domestic currency/dollar exchange rate and P*m and P*x are respectively the dollar prices of imports and exports. In this case, (2) simplifies to:

$$Z/PyY = [1 - (Pc/Py)C/Y] + (e/Py)[P*m(M/Y) - P*x(X/Y)] \qquad (3)$$

where e/Py is the real exchange rate.

This expression indicates that the value of the domestic savings rate at current prices is negatively related to the relative price of consumption goods (provided that C/Y is relatively invariant to this price ratio); whereas the value of foreign transfers at current prices are positively related to the real exchange rate (provided, again, that foreign transfers are relatively invariant to this exchange rate). Now, the expectation is that the relative price of consumption goods is inversely related to

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[7] The argument could be developed in terms of national savings (instead of domestic savings) and foreign savings (instead of foreign transfers). The results would be the same, but the argument more tedious.

the relative price of investment goods[8], whereas the real exchange rate is positively related to such price ratio (because investment is the most import intensive item of aggregate demand).

Hence, in principle, increases in the price ratio of investment goods will tend to increase both the value of domestic savings and of foreign transfers at current prices, without necessarily implying a higher savings effort, either from domestic or foreign sources.

In the country papers, the analysis of the behavior of both private and foreign savings were done at current prices, hence much care needs to be exerted when interpreting some of the findings.

A typical case is provided in the Brazil paper where it is found that private savings increased enormously in the late eighties, following the increase in the relative price of investment goods. This does not mean that real private savings increased in this period, and it may in fact have declined (for the relative price of consumption goods must have gone down to compensate for the increase in the relative price of investment goods, and this should in principle raise real consumption). In Argentina, private savings at current prices also increased significantly following the increase in the relative price of investment goods in the 1988-89 period.

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[8] This can be proved with exactitude in the case of a closed economy, for which it is valid that PyY = PcC + PiI. Dividing through by Y, one obtains: Py = Pc(C/Y) + Pi(I\Y); which shows that in this case the implicit price deflator of GDP is a weighted average of the implicit price deflators of consumption and investment. From this, dividing through by Py, it follows that Pc/Py is negatively related to Pi/Py.

2.3 Nominal, operational, and primary savings rates

The previous subsection discussed why the finding of a significant increase in the relative price of investment goods in the late 1980's in the three countries not only plays havoc with investment measures done at current prices, but also requires much care in interpreting the recent evolution of the savings rates in these countries.

Apparently, however, the distorting impact of these relative price changes were minor on public sector savings, for this certainly did not increase in the late 1980's in Argentina and Brazil, suggesting that the relative price changes must have affected mostly private and foreign savings, which are not the main objects of this study.

If relative price variations did not seem to matter much for an adequate measurement of public savings, the same cannot be said about the effect of absolute price variations, i.e., domestic inflation rates.

High inflation rates as observed in Argentina and Brazil distort measured savings in the national accounts, basically because of the significant debt/credit relations which exist between the public and the private sectors. The point is simply that nominal interest has two components, i.e., a real interest part and a compensation for the inflationary erosion of capital values. When inflation is very high and the public sector is a large debtor (both vis-à-vis the domestic private sector and the foreign sector), then the inflationary component of interest payments on domestic and

foreign debt will be very large. On regular national accounting procedures, this inflationary compensation will add to private and foreign savings, and subtract from public sector savings.

If, however, the economic principle is adopted of computing savings as the increase in net wealth, then this inflationary component of interest payments should be excluded from the computation of savings, for it merely maintains previously existing wealth constant in real terms, not adding anything to it. Thus, instead of computing nominal savings, we should deduct from it the inflationary compensation embedded in net nominal interest receipts (which will be a positive value in the case of the public sector). The resulting value will be denominated operational savings[9].

Note that inflation accounting is not important for the measurement of foreign savings because, under regular national accounting procedures, the domestic currency value of foreign interest payments is calculated from their dollar values using average yearly exchange rates. This procedure automatically eliminates the domestic inflationary component of foreign interest payments[10].

The same however does not happen with interest payments on the domestic debt, which do in fact include an inflationary component and hence abnormally inflate private savings while unduly reducing government savings in published national accounts.

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[9] For a fuller discussion of "real" accounting procedures, see Simonsen and Cysne (1990, Ch. 3).

[10] This observation is correct up to an approximation which has to do with the difference between the domestic inflation rate and the foreign exchange devaluation rate.

One alternative to the use of inflation corrected savings (or operational savings) is to estimate primary savings, defined as savings less net interest receipts (or plus net interest payments). This corresponds to the net transfers concept for the foreign sector, and to the primary surplus concept (net of capital expenditures) for the public sector. One property of the primary savings concept is that it includes only variables which are supposedly under control of the public sector, as net interest payments are predetermined (at least when accounting is done on an accrual basis, as it happens in the national accounts). Hence, it provides an adequate measure of the "savings effort" in the public sector, although, admittedly, when inflation corrected interest payments increase, an additional savings effort in this sense will be needed to maintain the same level of investment[11].

In the next section, the savings-investment balance in the public sector will be studied using the concept of operational savings for Argentina and Brazil. For less inflation-prone Colombia, we felt that the inflation adjustment introduced more noise than information, and thus decided to keep the interest payment series in nominal terms.

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[11] The same reasoning does not apply when nominal interest increases (following a higher inflation rate), because in this case creditors, ceteris paribus, should be willing to hold more public sector debt (to compensate for the inflation erosion of previously held debt), and thus, additional financing will voluntarily be available at constant real interest rates to the government, thus do not requiring the subtraction of resources from investment.

3. TRENDS AND COMPOSITION OF PUBLIC SECTOR SAVINGS

This section and the next provide an overview of the most important aggregates entering the public sector budgets of Argentina, Brazil and Colombia, in the 1970-90 period.

The concept of public sector in these series includes all non-financial governmental entities, including central and local governments, special funds, social security, and public enterprises[12]. The generation of this data involved considerable research effort from the authors of the country studies, and represent their best judgment on information frequently fragmentary and of uneven quality, available from different sources, both national and international. They do not necessarily coincide with published data from official sources[13]

Figures 10-12 display for the three countries in the 1970-90 period (-88 in the case of Argentina) the evolution of public sector current revenue (mostly taxes, including social security, plus the primary surplus of state enterprises[14]), and the way in which this

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[12] The data for Colombia includes the National Coffee Fund. In the case of Brazil, only federal state enterprises are included, for the relevant information is not available on local state and municipal state enterprises.

[13] An important example is the exclusion, in the case of Brazil, of "other government current non-interest income" from the public sector income series, as the Brazilian authors felt that the quality of this series was not acceptable and its inclusion would significantly distort the computation of public sector savings particularly in more recent years.

[14] In the case of Brazil, the figures include the full current account surplus of federal state enterprises, as the interest payments of those could not be split from the original data.

revenue was distributed between savings (operational savings in the case of Argentina and Brazil, nominal savings in the case of Colombia), consumption expenditure (wages and salaries, purchases of goods and services, and non-interest transfers and subsidies), and interest payments (on an accrual basis).

Starting with public sector revenue, the first observation is that the average levels of the (broadly defined) tax burden is currently very similar in the three countries. This is so because Colombia, which had the lowest tax burden in the 1970's, managed to increase it significantly in the 1980's, whereas Brazil, which had the highest tax burden, took the opposite route. Argentina followed a more bumpy road, but in the end of the 1980's displayed more or less the same tax burden as in the early 1970's.

The burden of interest payments on these countries' government budgets[15] increased enormously from the early seventies to the middle eighties in the three countries, by a factor of three in Colombia, six in Brazil, and ten in Argentina. The novelty in these series is that, as a consequence of inflationary erosion, defaults and sequestrations in the latter part of the eighties, the burden of interest accruals is currently lower in Brazil and Argentina than in Colombia.

Of more interest, if only because it has been less in evidence in the literature, is the fact that, in both Argentina and Brazil, public sector consumption spending became distinctly higher

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[15] Figures for Brazil do not include interest payments of public sector enterprises.

in the eighties, by a hefty 5 percentage points of GDP when a comparison is made between the endpoints of this decade with the early 1970's. This is in absolute magnitude a more important factor than the increase in interest spending for the explanation of the observed public sector savings deterioration in these countries. In Argentina as in Brazil, increased public sector employment at lower levels of government seems to be a significant component of this expenditure expansion.

Colombia also experienced a considerable increase in government consumption in the early eighties, but then, through a major compression of purchases of goods and services, managed in the late eighties to reduce this item to even lower proportions than in the early seventies. The consequence is that in the late eighties Colombian public sector savings recovered from its troughs in the early 1980's, by means of both spending compression and tax increases. Some Colombian analysts however worry that the country could in the near future face fiscal problems not dissimilar to those affecting Argentina and Brazil, as a consequence of the decentralization which will take place as a consequence of the new 1991 Constitution, which allocated a large share of tax revenues to local administrations as well as redistributing some expenditure responsibilities[16].

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[16] On this see Coyuntura Económica, December 1991.

4. EVOLUTION OF PUBLIC SECTOR BORROWING REQUIREMENTS

This section discusses the evolution of public sector investment and of its financing, through public sector savings and borrowing.

Figures 13-15 portray the behavior in the 1970-90 period of public sector investment, operational savings, and of the resulting net borrowing requirements, as a proportion of GDP at current prices.

Starting with Colombia, Figure 15 indicates that the previously mentioned fiscal effort of that country in the late eighties was barely sufficient to compensate for the very significant public sector investment expansion occurring in that decade. As consequence, public sector borrowing requirements are currently at the same if not slightly higher levels than in the early 1970's.

The situation is immensely more dramatic in the other two countries. In Argentina, public sector operational savings have never been sufficient to cover its own investments, as indicated in Figure 13. The public sector operational borrowing requirements rose to over 10 per cent of GDP both during the military-boom of the late seventies and the military-boost of the early eighties, the first caused by excess (military related) investment, the second by a dearth of savings. The Austral plan of 1985-86 only temporarily managed to reduce the fiscal deficit, which rose again to extraordinary proportions as the price freeze gave way to a hyperinflation in the late eighties.

In Brazil, in the early seventies, the public sector used to generate more savings than necessary to finance its own investments; from then on, an impressive deterioration occurred in the public sector accounts. Tax collection dropped, either as a matter of policy to prop up the private sector and reduce cost pressures, or as a unwanted consequence of higher inflation. Public sector consumption spending also went up in the latter part of the eighties (after having been reduced in the earlier part of the decade). This was a consequence of the lack of fiscal responsibility marking the transition from centralized authoritarianism to decentralized democracy in the middle eighties.

The Collor-I Plan of 1990 managed to revert temporarily the chaotic situation of the Brazilian public sector accounts, but neither the observed increase in taxes nor the reduction in interest spending can be projected into the future. Brazil's pathetic fiscal situation is one in which a public sector, which was capable of saving some 8 per cent of GDP in the early seventies, strives today to maintain a zero savings rate. The consequence, as indicated in Figure 13, is that, in spite of a major drop of public sector investment, currently its borrowing requirements are a positive 5 per cent of GDP, whereas, in the early seventies, the public sector surplus was a positive 1 per cent of GDP. Interest expenditure, as the figures for 1990 make it clear, is not the most important chapter in this dramatic deterioration.

5. POLICY IMPLICATIONS FOR THE 1990's

In the country studies, consistency tests were performed with simple macroeconomic growth models to calculate the impact of alternative policy moves for growth resumption in the 1990's. This insures that their quantitative policy recommendations are consistent with the simultaneous achievement of external, savings-investment, and fiscal balances.

In this concluding section, we take a more qualitative path, attempting to derive some general policy lessons for growth resumption suggested by the findings of the country studies.

Clearly, we have three quite different cases to consider.

5.1. The Case of Colombia

Colombia is a country in which the fiscal accounts are broadly under control, except perhaps for a still excessive dependency of government revenue on commodity exports taxation. Maintaining its current fiscal stance, with continued prudent macroeconomic management, Colombia should be able to sustain its GDP growth rate in the 3 to 4 per cent range, with low inflation rates, and without major external disequilibria.

The Colombian country study did however uncover some puzzles which, if solved, could hopefully raise Colombian GDP growth rates to the 6-7 per cent range in the 1990s.

First, there is the suggested structural weakness of the Colombian private sector, which not only has been investing much

less than elsewhere, but also apparently interacting with public investment in a negative fashion. At the aggregate level at which this research was conducted the roots of this problem could not be tackled in a fashion which could be of direct use for policy makers.

One suggestion is however that domestic credit might be one the route through which public investment may crowd out private investment in Colombia. Such crowding out did not seem to have occurred in the 1950-70 period, partly because the public sector used to put less pressure on domestic financial markets for its own financing needs, as a consequence of easier access to foreign official finance. A return to such investment financing pattern is unlikely for the 1990's, but then the opening up of official sources of foreign finance for the Colombian private sector might be a component of a way out of the crowding-out dilemma in this decade.

Another structural problem uncovered in the Colombian paper was the dual role played by the real exchange rate, on one hand stimulating exports and raising public revenue, on the other, depressing import intensive investment activity. Simulations in the Colombian paper suggest that, all things considered, real exchange revaluations provide a positive growth stimulus, as long as additional foreign finance is made available.

Finally, the Colombia paper suggested that, in the past, apart from official sources, foreign finance played mostly a compensatory role in the financing of investment. As commodity booms faded, and government revenue decreased, foreign finance served as a temporary cushion while fiscal reforms were prepared. When a new commodity boom occurred and fiscal revenues blossomed, foreign finance would fade away. Colombia was rewarded for this prudent

management of foreign debt by maintaining the best growth performance in Latin America during the "lost decade" of the 1980's. The negative side of the story is however that, in between the ups and downs of the commodity sector, public investment was increasing steadily, at a time when foreign official sources of finance were shrinking. The result was the observed crowding-out of the private sector.

For the 1990's, a more creative and outward looking external financing perspective could be adopted. With the usual Colombian prudence, the private sector could be allowed to have more access to international private sources of finance than in the past. This would naturally require freer capital movements, which might induce capital flight (a problem which Colombia also successfully managed to avoid in the 1970's and 1980's), but this is perhaps a risk that the Colombian government will have to take in order to obtain a more vigorous investment attitude of the country's private sector.

5.2. The Case of Brazil

Brazil is in a sense an intermediate case between Colombia and Argentina. Its current economic situation is apparently the worst of the three countries, but the historical analysis reveals another picture: in the early seventies, Brazil's public sector could not only do without foreign finance but it was in addition capable of providing net savings for private sector investment.

But the country, then, overdid its own prowess, in the excesses of public investment and private sector subsidies of the late seventies; in the inattention to public sector adjustment of

the early eighties; and the blatant fiscal irresponsibility of the late eighties.

All this can be explained. In the 1970's, the country was too proud of its world's fastest one-hundred year growth record to bother with passing external difficulties. In the early 1980's, Brazil's public sector suffered the impact of both the debt crises and the external adjustment required by it. In the late 1980's, it was too busy getting democratic to pay attention to fiscal considerations. The explanations are all there, but now, with democracy consolidated and the debt crisis over, the timing is appropriate to go back to basics, and work out a consistent fiscal adjustment as required for both price stabilization and growth resumption.

The trouble is, however, that the required fiscal adjustment for 5 per cent GDP growth is very large: a full ten percentage points of GDP, as estimated by the country authors[17]. Not only are the quantities huge, but the quality of the adjustment very demanding. For, at stake, is a permanent fiscal adjustment, not a transitory one, as achieved by the Cruzado Plan in 1986 or the Collor-I Plan in 1990. Public sector employees and firms will need to be deprived of their privileges (guaranteed life employment and hefty pensions, for example) and constitutional monopolies, while fiscal discipline will need to be imposed on autonomous bodies

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[17] This result is apparently conditioned on the assumption that public sector interest payments are currently of the order of 3.9% of GDP, which seems to be on the high side.

(including the Legislative and the Judiciary) and local governments[18].

Price stabilization is a prerequisite for a permanent fiscal adjustment, but it cannot be counted on to redress the fiscal picture. In fact, if a lesson was learned from the failures of the Cruzado and Austral Plans, and the success of the 1987 Mexican Pact, it is that a convincing fiscal adjustment needs to precede the search for price and wages anchors, as it only then that inflationary expectations and inertial inflation may be expected to bend to such nominal anchors[19]. Once they do bend, sure enough, the Olivera-Tanzi effect works backwards, remonetization occurs, and growth resumes - all of these providing a fiscal bonus, but one which the country's political leadership needs to see in this light, as a fiscal bonus (which might be used to reduce the public sector internal debt or for additional social spending, for example), but not as a replacement for the required fiscal effort.

In search for means to reduce the required fiscal adjustment to a more reasonable 5.5 per cent of GDP, the Brazil authors center their attention on the possibilities of increasing the efficiency of investment through capital goods import liberalization. They presume that an increase from 15 to 30 per cent in the marginal import

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[18] The task is difficult, but not impossible: the last two administrations of the impoverished northeastern state of Ceara prove that fiscal-balance-cum-growth can be achieved, provided that an honest and competent government has the guts to fight privileged sectoral and regional interests (see "Hope from the North-East" in The Economist (1991, pp. 18-20)).

[19] For a careful documentation of the fiscal adjustment involved in the success stories of Bolivia, Chile and Mexico, see Amadeo (1991).

content of fixed investment would succeed in reducing from 3.5 to 3.0 the incremental capital-output ratio of the country.

This simulation is perhaps one step ahead of research results, as the Brazil authors were unable to provide an adequate documentation for their claim that the observed loss of efficiency of investment in the country in the late eighties was in fact causally related to the closure of the Brazilian economy to imported capital goods after the debt crisis. This hypothesis is however perhaps sufficiently compelling to justify the simulations, which, although not based on econometric results, are grounded on "stylized facts" broadly shared by students of the Brazilian economy.

Under this openness scenario, the conclusion is that Brazil could recover growth at 5.4 per cent per year (with a fiscal effort of 5.5 per cent of GDP), provided that, additionally, foreign savings to the modest tune of 1.7 per cent of GDP were made available.

5.3 The Case of Argentina

Argentina seems to be the most complex case of the three country studies.

Under status-quo conditions, all that can be anticipated is a meager 0.8 per cent per year average GDP growth rate in the 1990's. But even this modest growth path, if not accompanied by a increase of some 3 percentage points of GDP in public sector primary savings, might be cut short by a very rapid increase in the public sector domestic debt-to-GDP ratio.

Under unchanged economic structure, in order to contemplate growth rates in the order of 4 per cent per year, the fixed investment rate would have to rise above 22 per cent of GDP (from the rates lower than 10 per cent observed in the last few years !). This would require an increase of some 7 percentage points of GDP in public sector primary savings, plus a current account deficit of nearly 5 per cent of GDP. These are both very large magnitudes indeed.

The fiscal effort and the high hopes for increased foreign savings would be somewhat reduced, if the productivity of capital were increased by a major privatization program which succeeded in attracting new foreign direct investment[20].

It is in fact in the anticipation of being able to attract a substantial amount of foreign direct investment that would seem to lie the hope of Argentina to reach reasonable GDP growth rates in the 1990's. This would seem fanciful, were it not for the fact that a substantial part of this "foreign" investment could merely consist of a repatriation of part of the US$ 50 billion of capital flight which Argentines are estimated to hold abroad.

Complementary domestic efforts would include deep structural reforms in the subsisting state enterprises sector, the social security system, and the provincial administrations. The hope to capture additional private savings domestically would moreover

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[20] Numerical results of this poliy package are not available, as the authors of the Argentina paper simulated independently the consequences, first, of a 20% increase in the productivity of capital, and, second, of a privatization program set to generate yearly sales of 2.3% of GDP.

depend on the recreation of domestic financial intermediation, involving inter-alia a complete overhaul of the official banking system.

A tall order indeed, but one that befits a country which in the 1990's will need to make up for over fifty years of missed growth opportunities.

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GROSS FIXED INVESTMENT RATIO

CONSTANT 1980 PRICES

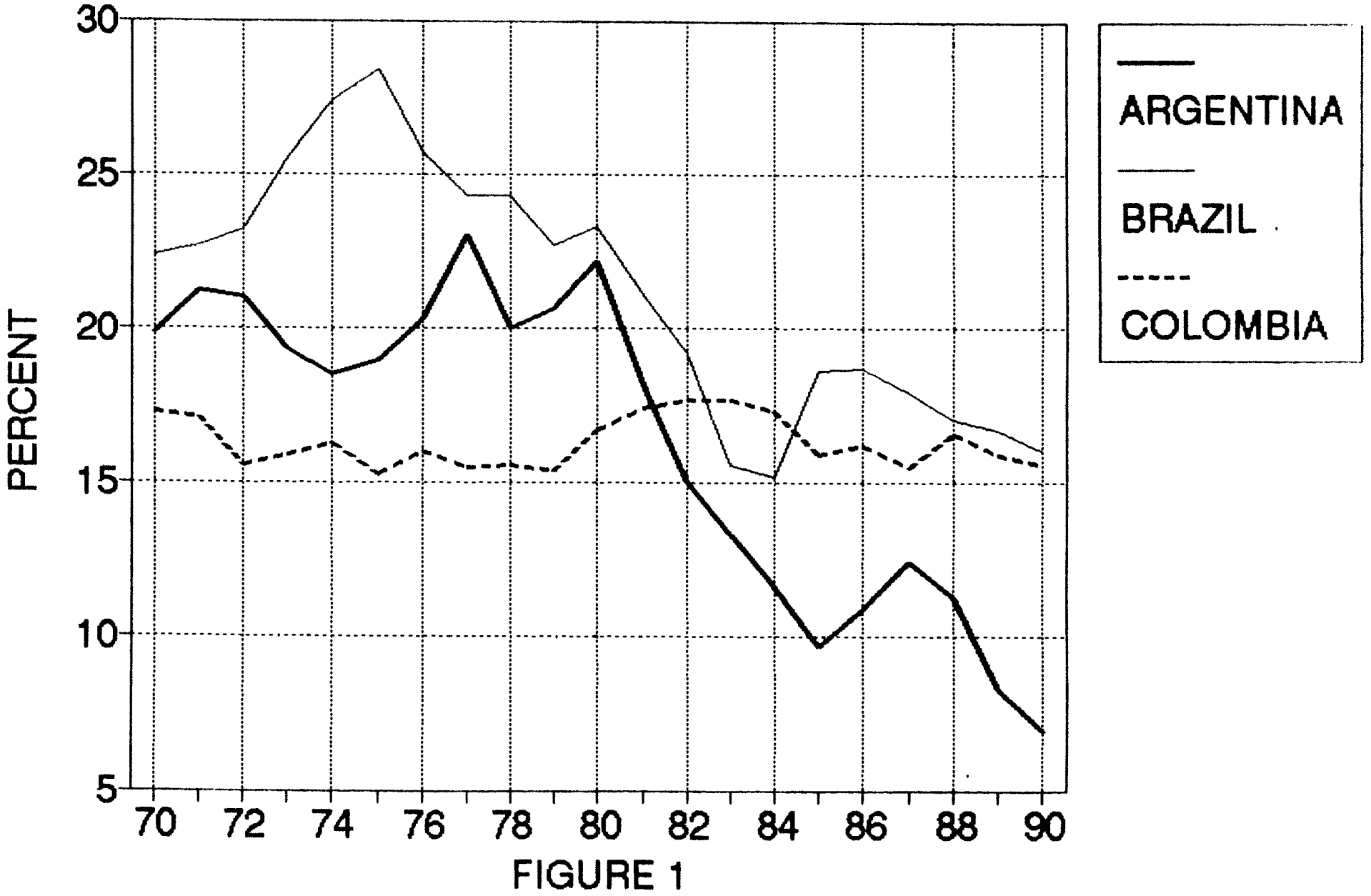

FIGURE 1

FIXED INVESTMENT - PRIVATE SECTOR SHARE

AT CURRENT PRICES

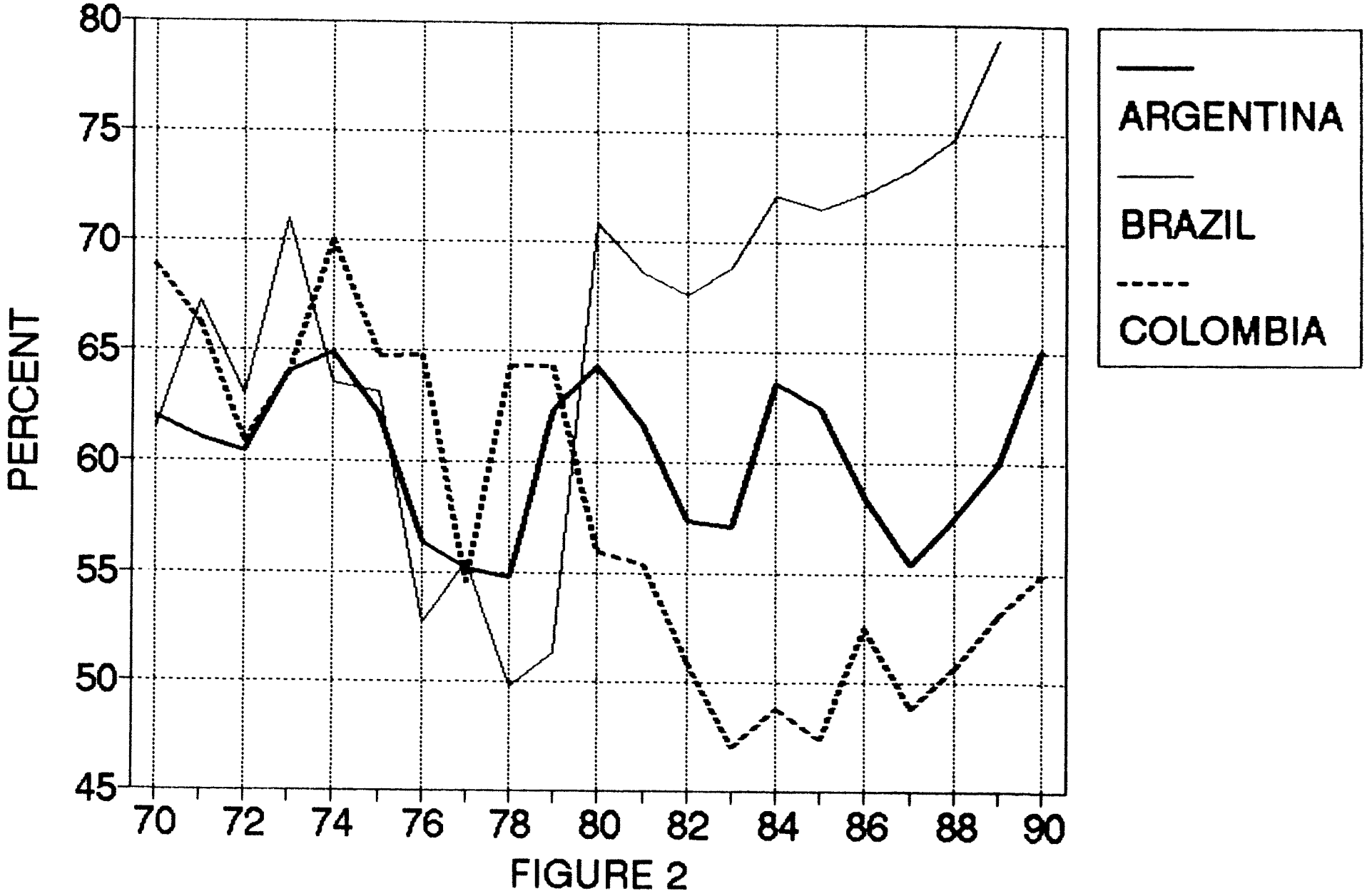

FIGURE 2

ARGENTINA: PUBLIC/PRIVATE INVESTMENT

GDP RATIOS AT CURRENT PRICES

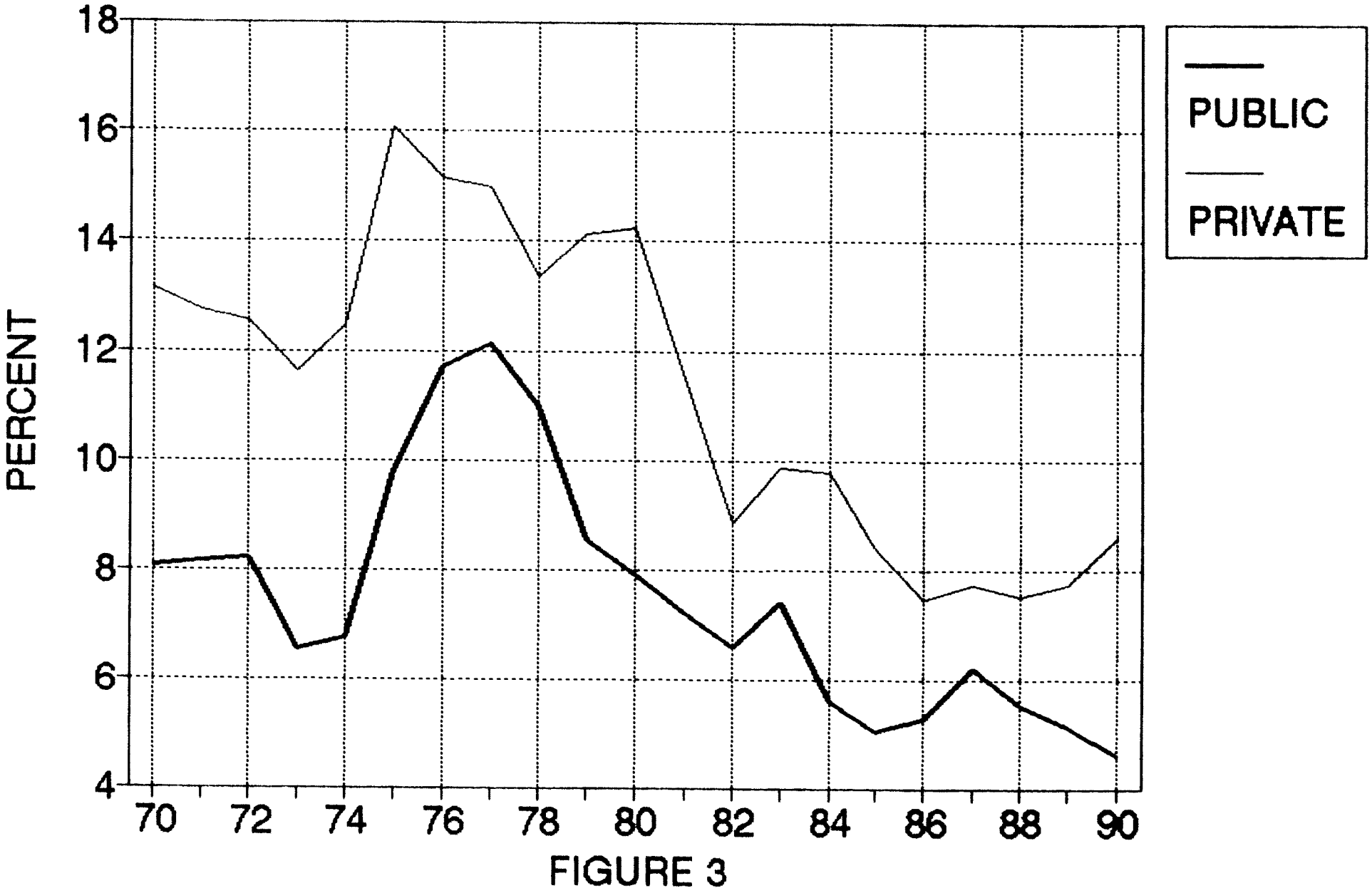

FIGURE 3

BRAZIL: PUBLIC/PRIVATE INVESTMENT

GDP RATIOS AT CURRENT PRICES

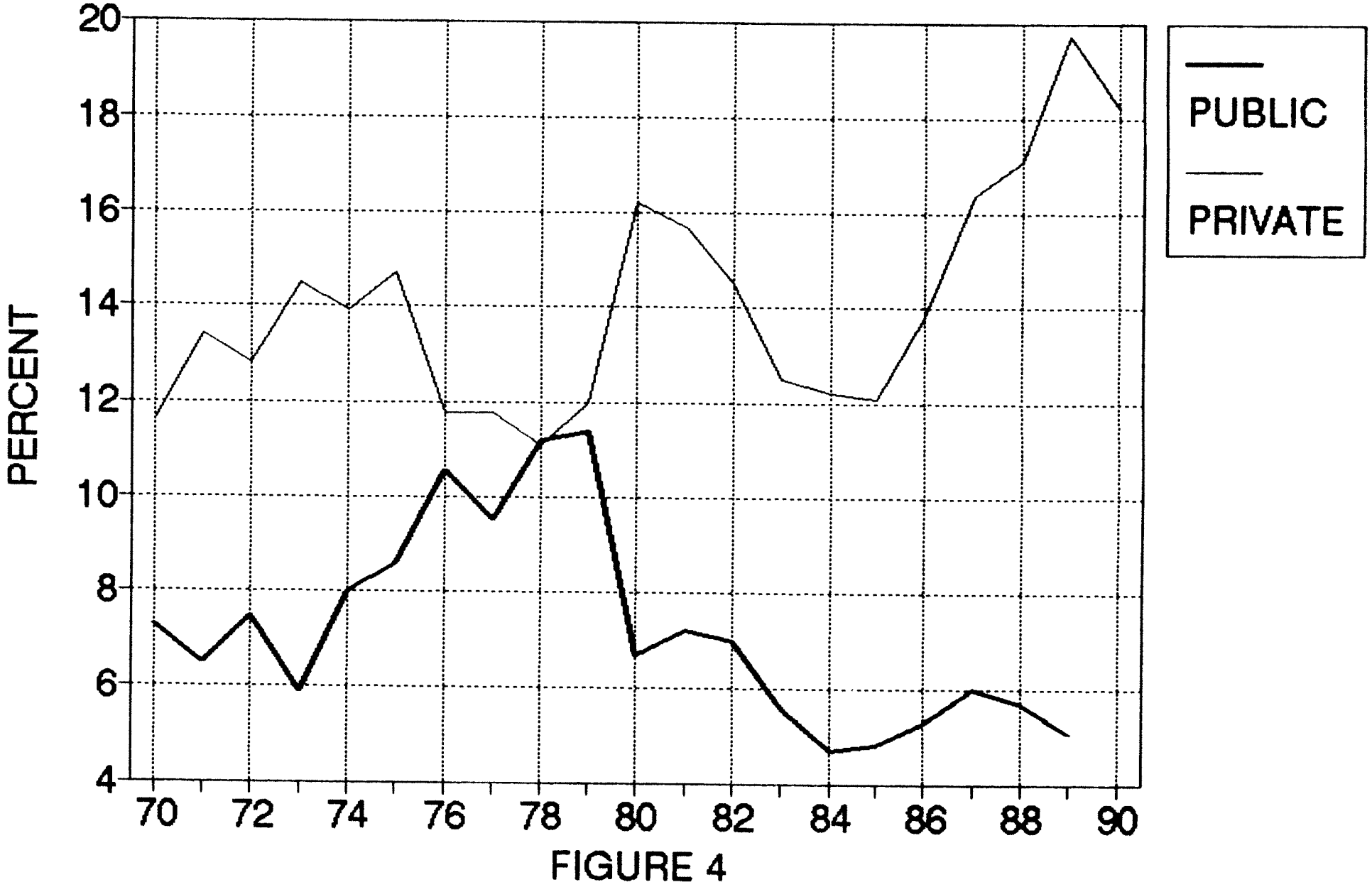

FIGURE 4

COLOMBIA: PUBLIC/PRIVATE INVESTMENT

GDP RATIOS AT CURRENT PRICES

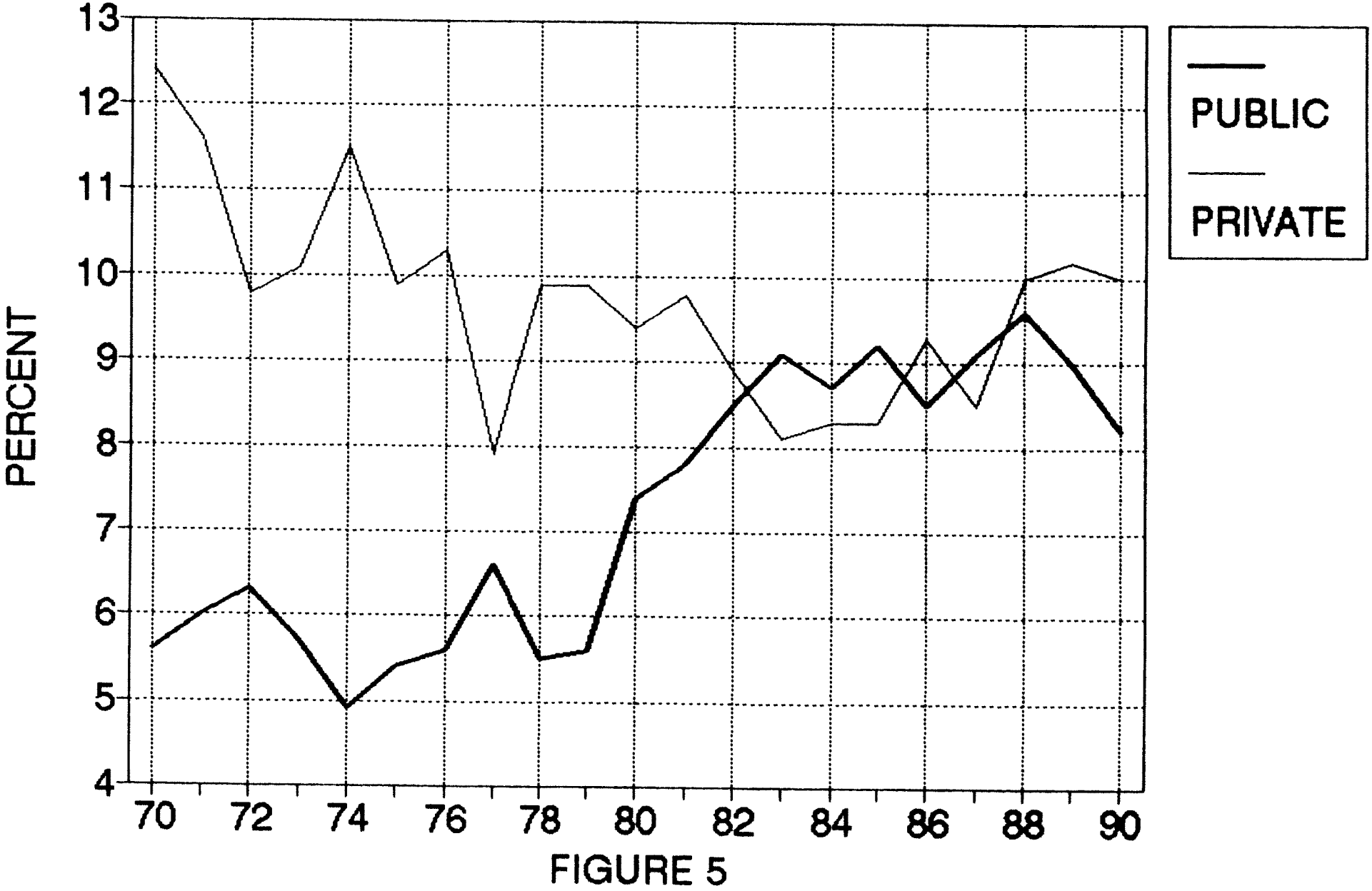

FIGURE 5

RELATIVE PRICE OF INVESTMENT

1980 = 100

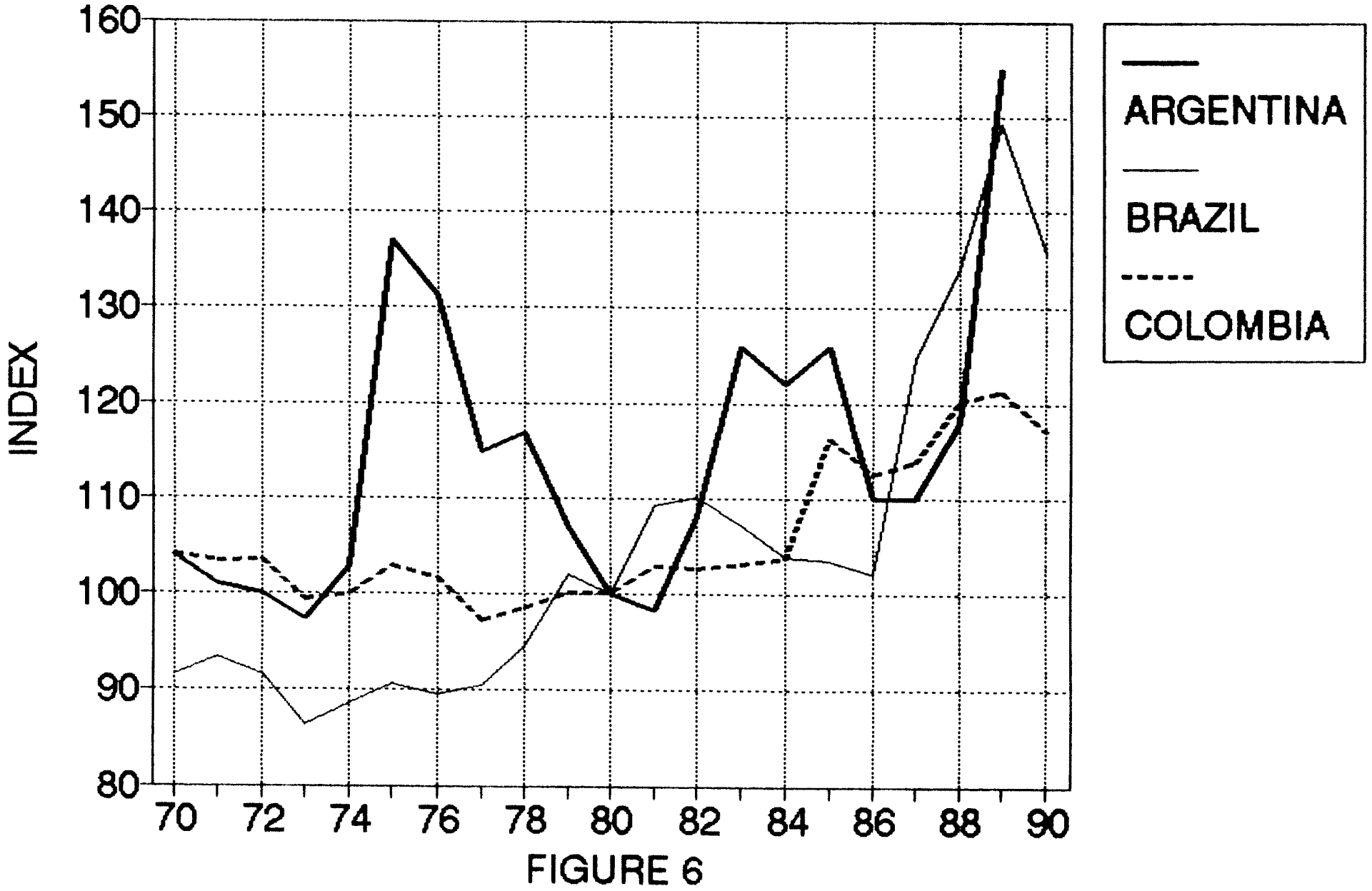

FIGURE 6

ARGENTINA: FIXED GROSS INVESTMENT RATIO

CURRENT AND CONSTANT 1980 PRICES

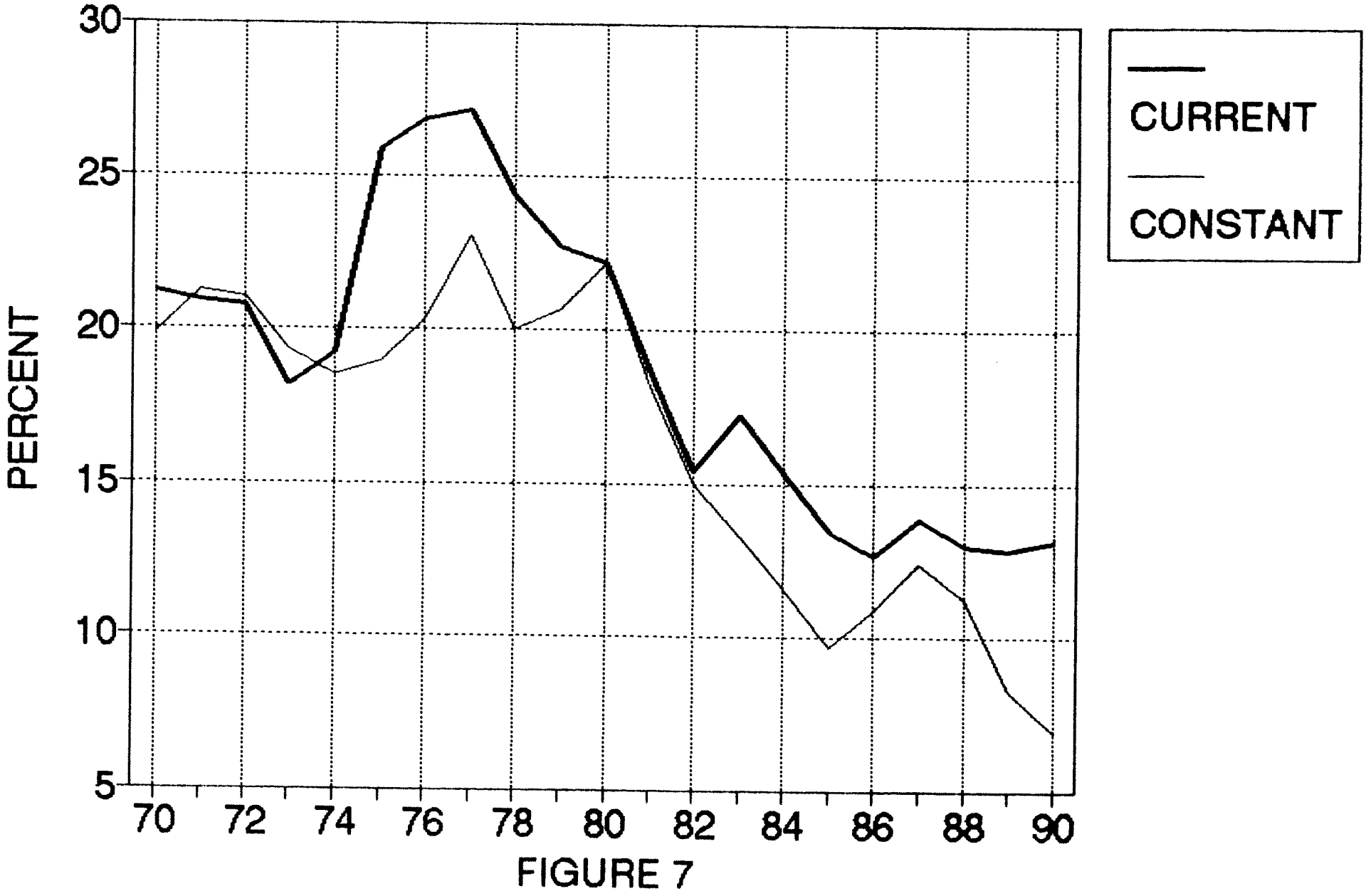

FIGURE 7

BRAZIL: FIXED GROSS INVESTMENT RATIO

CURRENT AND CONSTANT 1980 PRICES

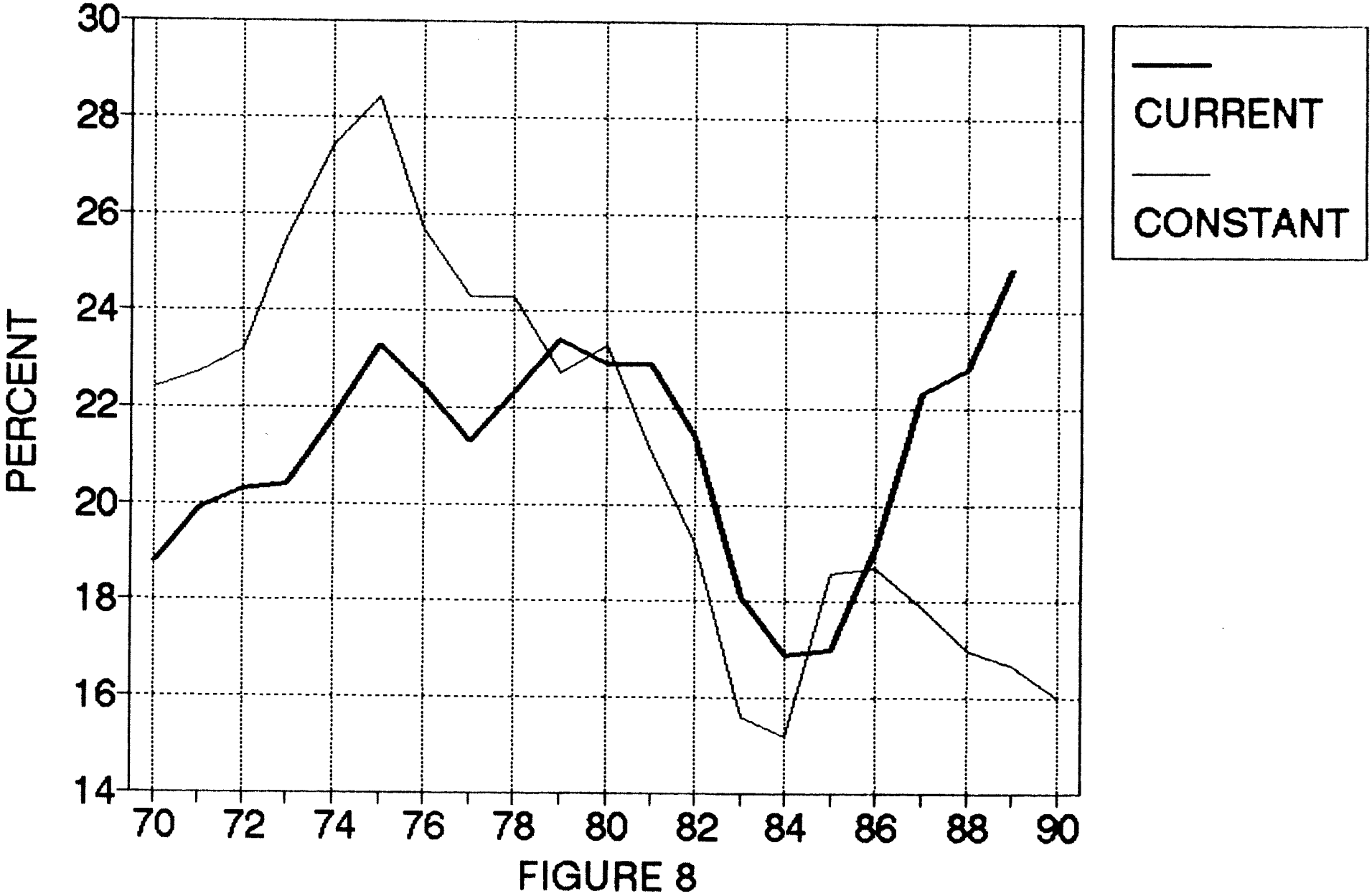

FIGURE 8

COLOMBIA: FIXED GROSS INVESTMENT RATIO

CURRENT AND CONSTANT 1980 PRICES

FIGURE 9

ARGENTINA: CURR. REVENUE&EXPENDITURE

RATIOS TO GDP AT CURRENT PRICES

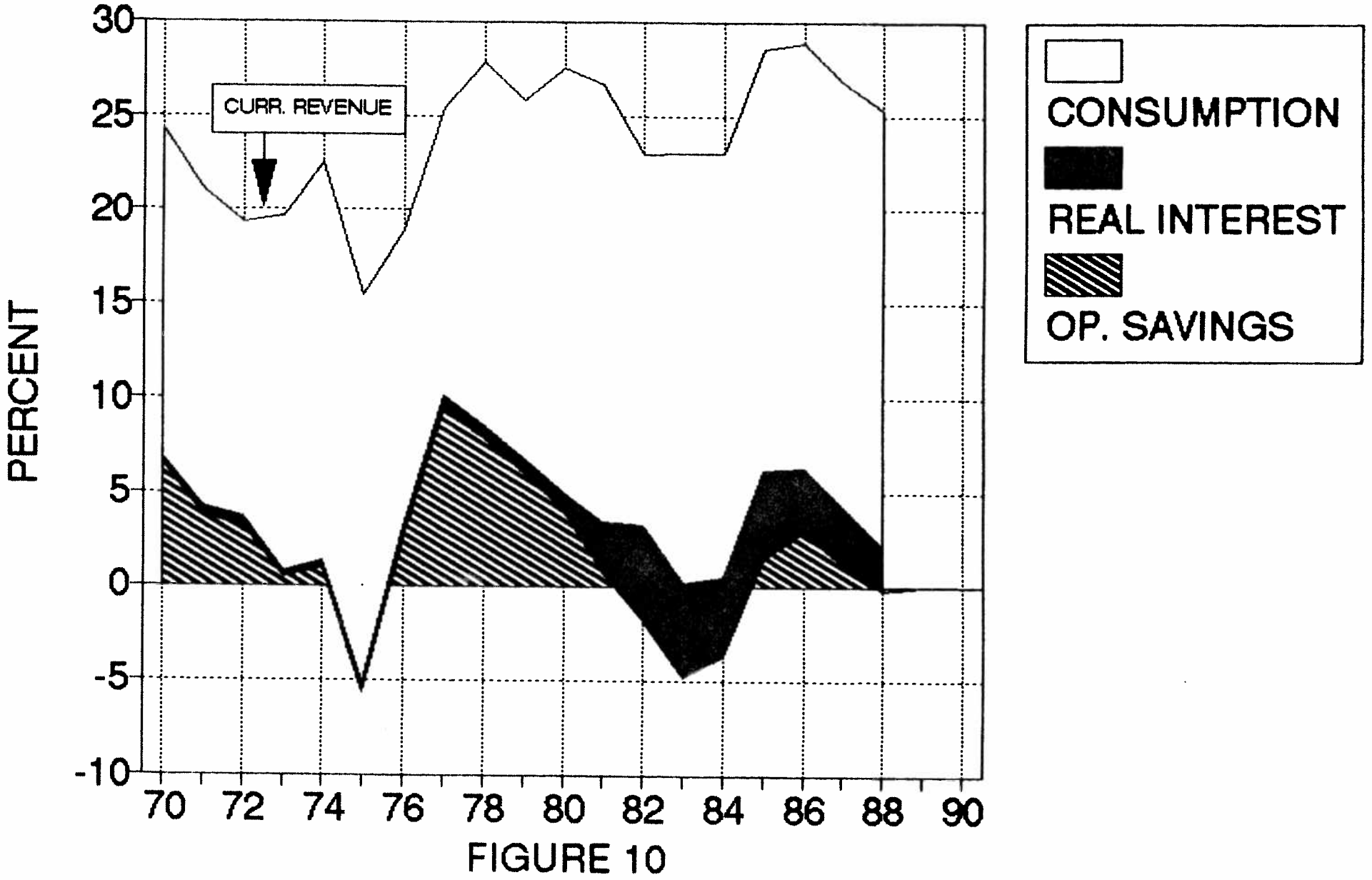

FIGURE 10

BRAZIL: CURR. REVENUE&EXPENDITURE

RATIOS TO GDP AT CURRENT PRICES

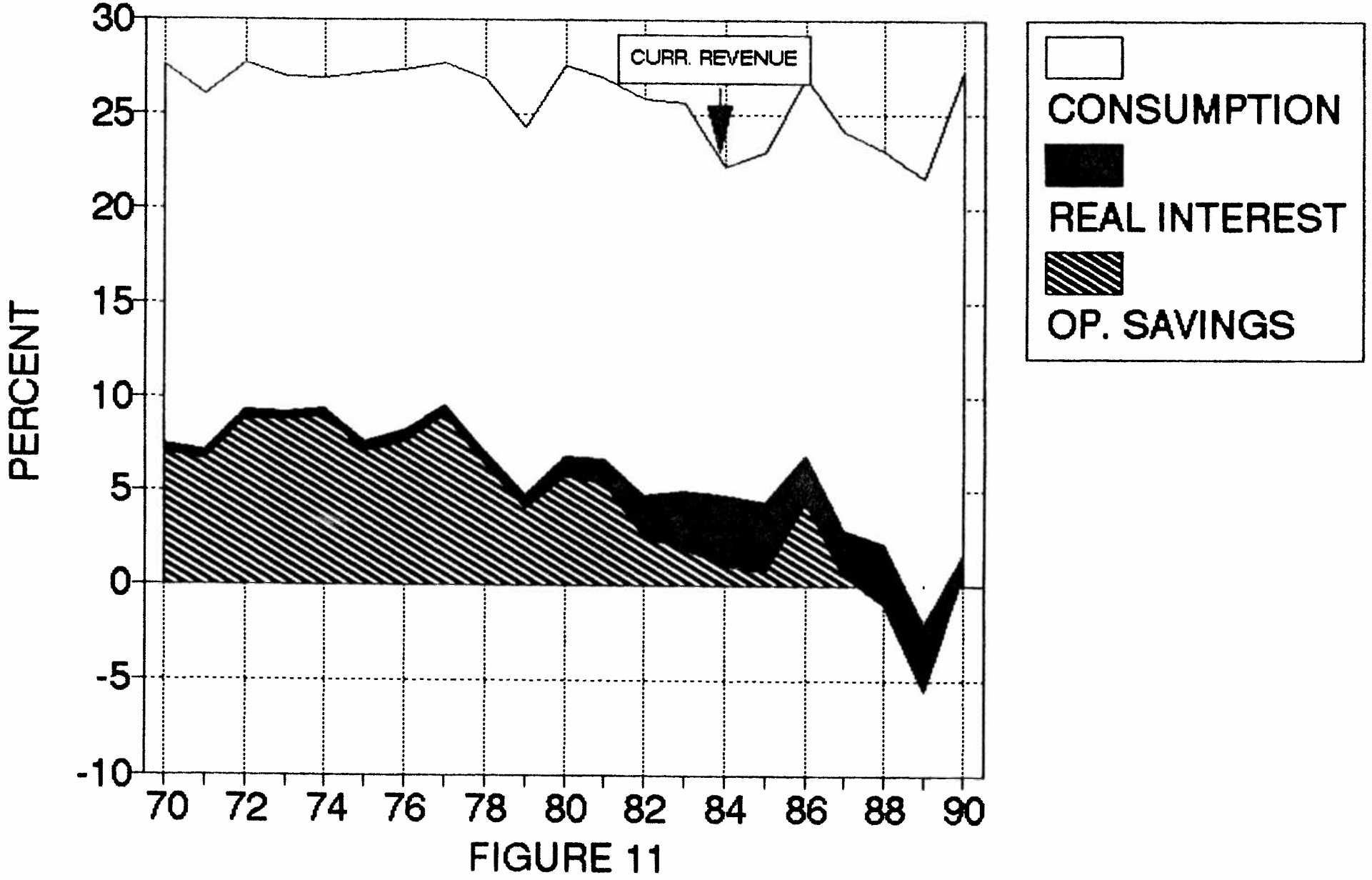

FIGURE 11

COLOMBIA: CURR. REVENUE&EXPENDITURE

POTENTIAL GDP RATIOS AT CURRENT PRICES

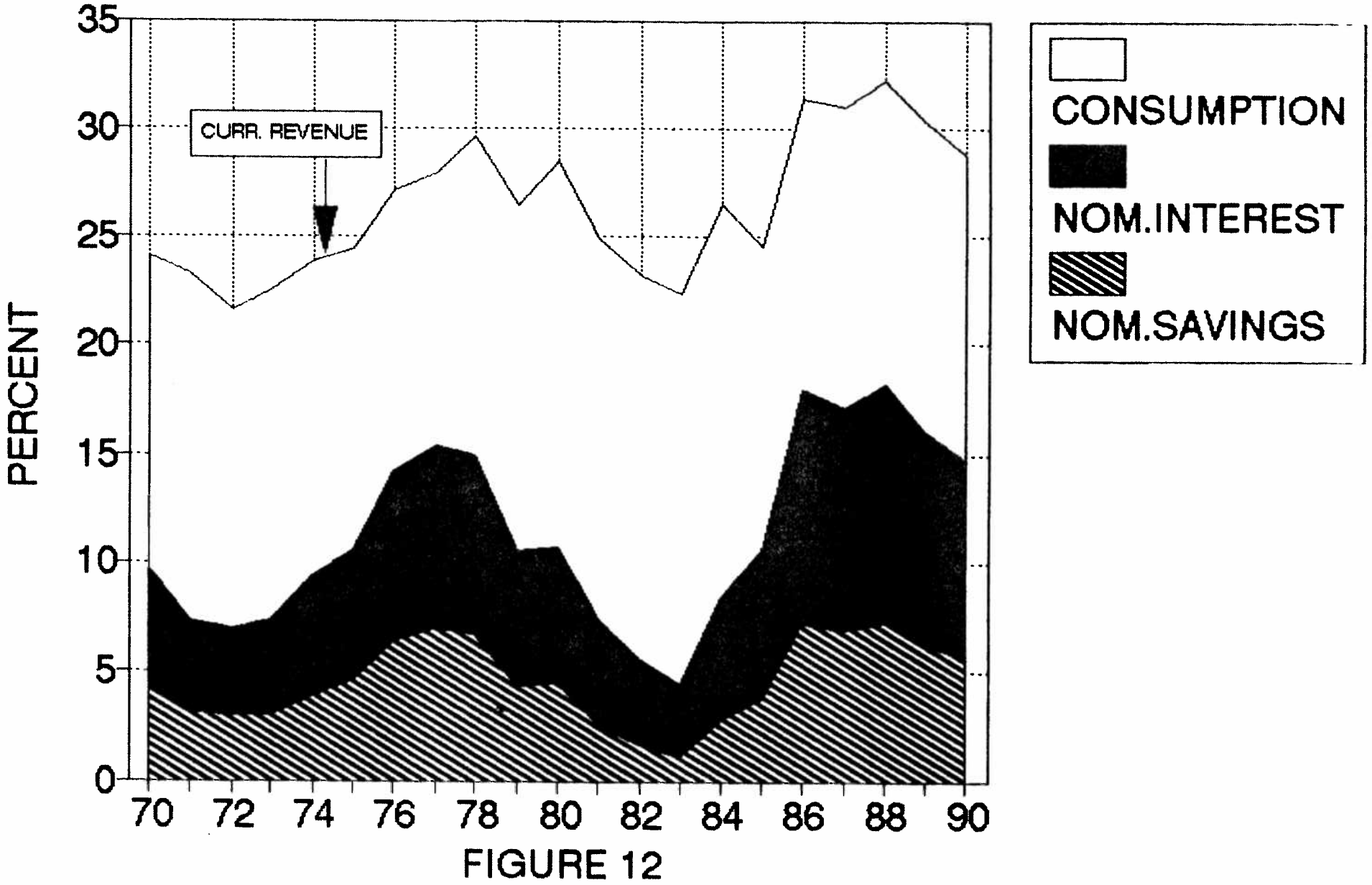

FIGURE 12

ARGENTINA:PUBLIC INVEST.& FINANCING

RATIOS TO GDP AT CURRENT PRICES

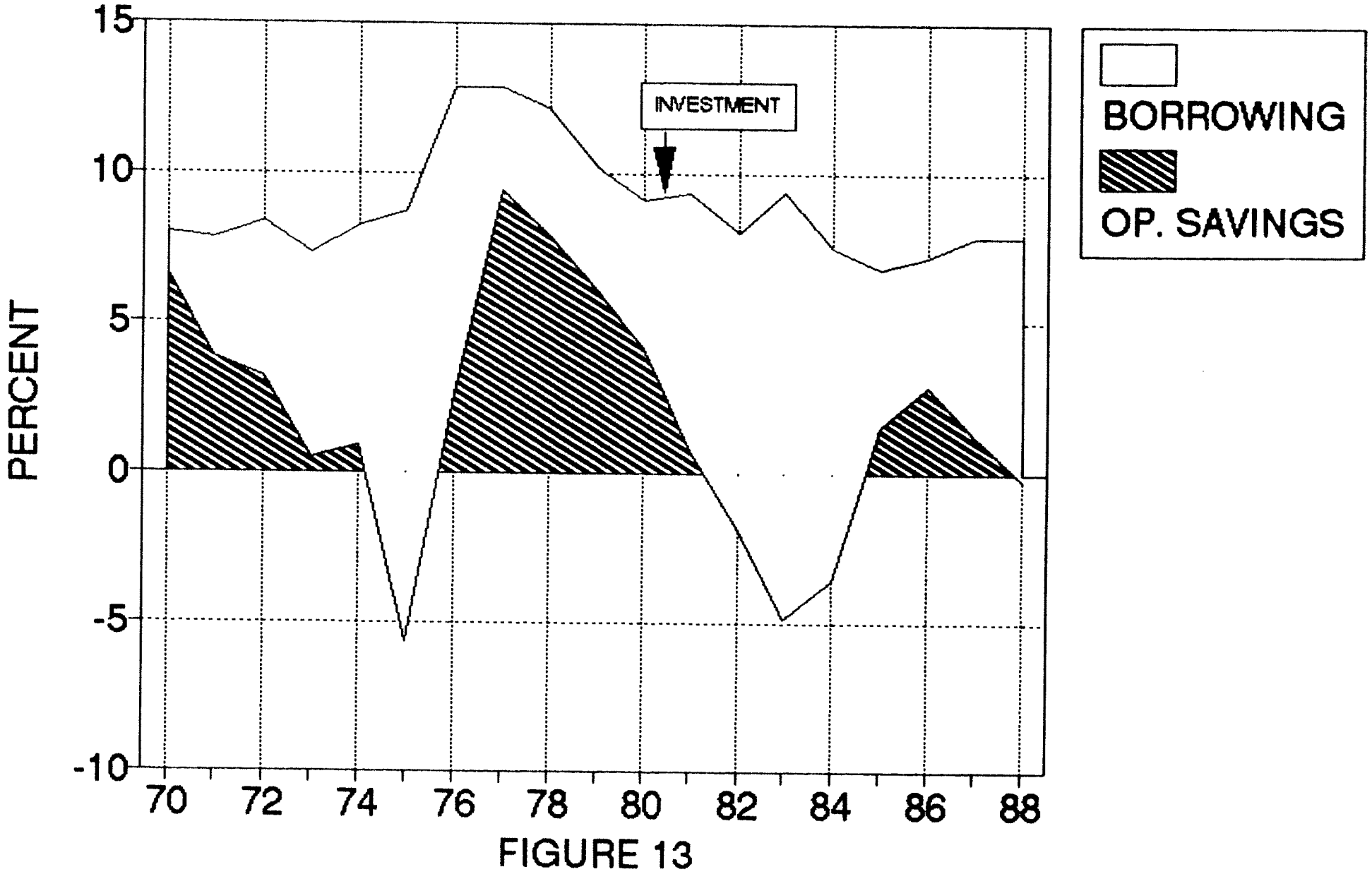

FIGURE 13

BRAZIL : PUBLIC INVEST.& FINANCING

RATIOS TO GDP AT CURRENT PRICES

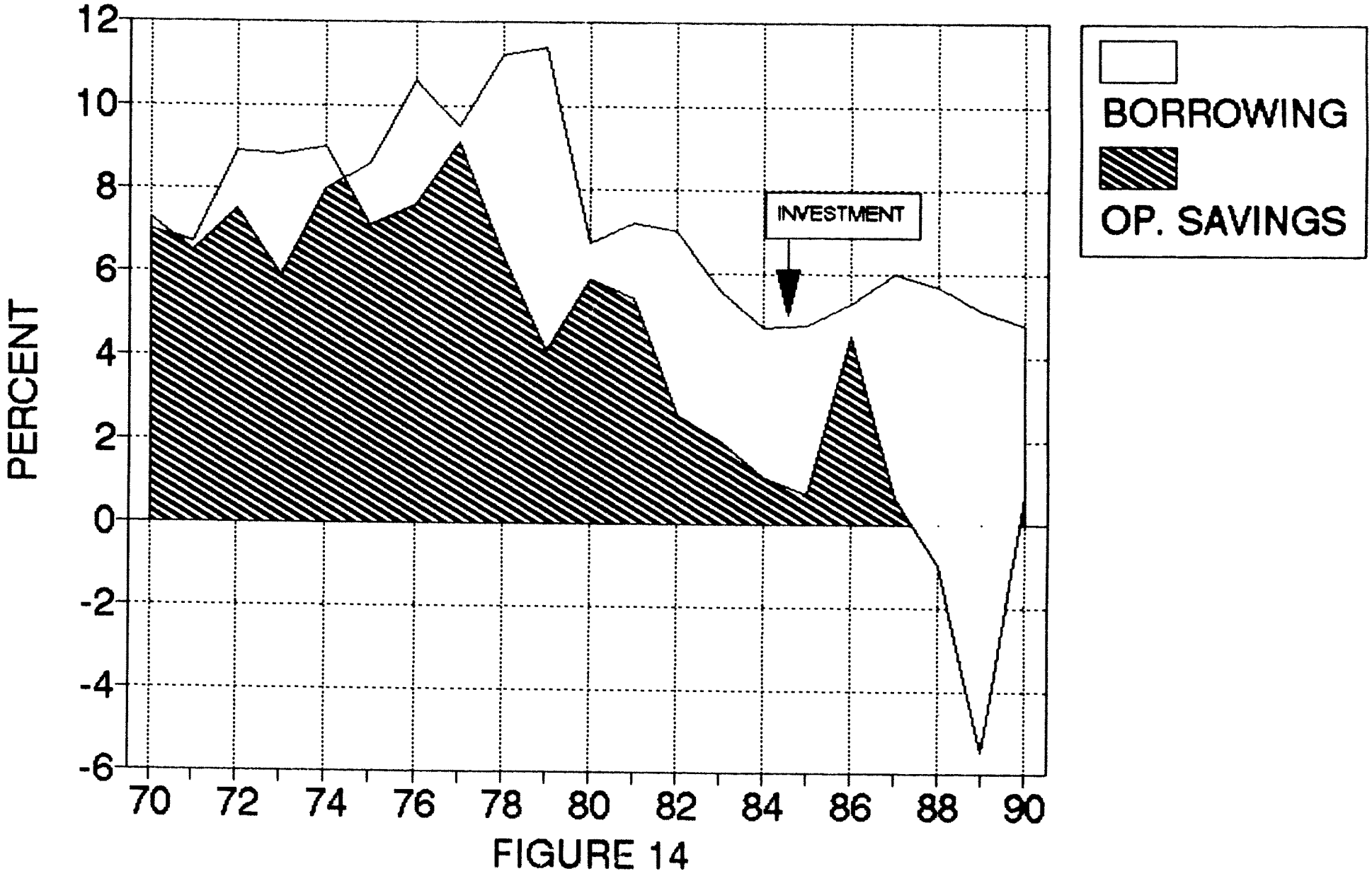

FIGURE 14

COLOMBIA : PUBLIC INVEST.& FINANCING

POTENTIAL GDP RATIOS AT CURRENT PRICES

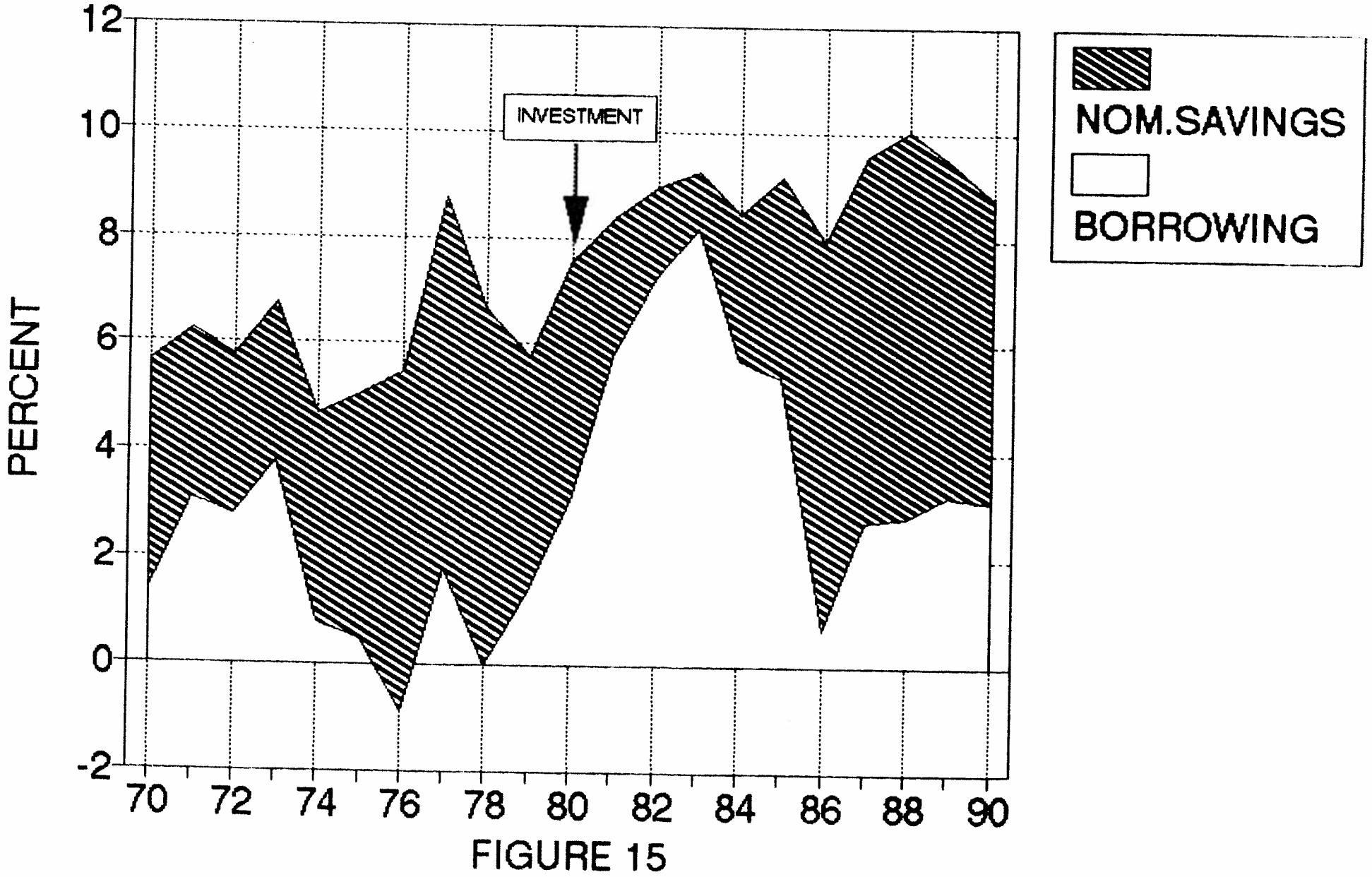

FIGURE 15

ABSTRACT

This is a synthesis paper for the IDB sponsored savings and investment research project, reviewing the savings and investment performance of Argentina, Brazil, and Colombia in the 1970-90 period. Particular attention is paid to the interactions between public and private investment, and to the behavior of public sector savings. Conceptual and statistical difficulties related to the measurement of investment and savings in current and constant prices are discussed. The paper concludes with a synthesis of policy recommendations for savings and investment expansion in the three countries in the 1990s.

RESUMO

Este é um texto síntese, do projeto de pesquisa sobre poupança e investmento patrocinado pelo BID, contendo uma revisão do desempenho da poupança e do investmento na Argentina, Brasil e Colômbia no período de 1950 a 1970. Dá-se particular atenção às interações entre investimento público e privado e ao comportamento da poupança do setor público ao longo do período. Dificuldades conceituais e estatísticas relacionadas à mensuração do investimento e da poupança em preços correntes e preços constantes são discutidas. O texto conclui com uma síntese de recomendações de política para a expansão da poupança e do investimento nos três países na década de 1990.

Textos para Discussão

267. Garcia, M., "The Formation of Inflation Expectations in Brazil: A Study of the Fisher Effect in a Signal Extraction Framework".

268. Fritsch, W. & G.H.B. Franco, "Trade Policy Issues in Brazil in the 1990s".

269. Garcia, M., "The Formation of Inflation Expectations in Brazil: A Study of the Futures Market for the Price Level".

270. Bonomo, M.A. & Garcia, R. "Can a well fitted equilibrium asset pricing model produce mean reversion?"

271. Amadeo, E.J. "Adjustment, stabilization and investment performance: Chile, Mexico and Bolivia"

272. Amadeo, E.J. "Causes for persistent unemployment and fluctuations in monetary economics"

273. Amadeo, E.J. & Camargo, J.M. "Liberalização comercial, distribuição e emprego"

274. Amadeo, E.J. & Landau, E. " Indexação e dispersão de preços relativos: análise do caso brasileiro (1975-1991)"

276. Amadeo, E.J.; Camargo, J.M.; Marques, A.E.S. & Gomes, C. " Fiscal crisis and assymetries in educational system in Brazil"

278. Bonelli, R.; Franco, G.H.B. & Fritsch, W. "Macroeconomic instability and trade liberalization in Brazil: Lessons from 1980s to the 1990s"

279. Abreu, M.P. "Trade policies in a heavily indebted economy: Brazil, 1979-1990"

280. Abreu, M.P. "O Brasil e o GATT: 1947-1991"

281. Bonomo, M. & Garcia, R. "Indexation, staggering and disinflation"

282. Werneck, R.L.F. "Fiscal federalism and stabilization policy in Brazil"

283. Carneiro, D.D. & Werneck, R.L.F. "Public savings and private investment: Requirements for growth resumption in the Brazilian economy"

284. Bonomo, M. & Garcia, R. "Consumption and equilibrium asset pricing: An empirical assessment"