MACROECONOMIC MANAGEMENT OF THE NEW OIL REVENUES

An Analysis of Stabilization Policy Alternatives for Colombia, 1993-2000

Eduardo Lora
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Final Report Presented to
British Petroleum Co.

Santafé de. Bogotá, August 1993.

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INTRODUCTION

The Cusiana and Cupiagua discoveries will generate abundant fiscal and foreign exchange resources for Colombia. These additional resources represent significant opportunities to speed up national economic development. The country will take advantage of these opportunities, to a greater or lesser extent, depending on the reaction of foreign exchange policy to the higher foreign exchange incomes, on the response of fiscal policy to the higher fiscal revenues and on the efficiency and composition of investment and additional expenditures financed by these revenues.

These factors will affect the evolution of macro-economic

aggregates in the short, medium and long run. Calculations presented in this report concentrate on short run effects under different macroeconomic policy options.

The macroeconomic model used is briefly described in section I and its detailed structure is presented in Annex I. The main results obtained are discussed in Section II. The analysis centers on the consequences of coordination or lack of coordination between fiscal and exchange policies, or, what is the same, on scenarios of cooperation and non-cooperation between the central Government and the monetary and foreign exchange authority (the Board of Directors of the Central Bank, Banco de la República).

This paper also includes a discussion of institutional aspects determining the credibility and stability of the suggested macroeconomic policy (Section III). In particular, it examines the convenience of legislatively establishing an Oil Stabilization Fund that could contribute to stabilize not only the real exchange rate, but also Central Government, Regional and Municipal expenditures.

A qualitative discussion of long run considerations is also included (Section IV). These refer, in particular, to the productivity of major public investments, the relationship between inflation and growth in the long run, externalities associated with the production of tradable goods and future risks.

These risks, associated with the future decline of Cusiana/Cupiagua, are analyzed based on the results of a behavioral econometric model of exploratory activity, allowing for a first approximation to the question of whether the surplus generated in the exploitation of Cusiana/Cupiagua should be handled as a transitory boom or, conversely, as a transition towards a permanent level of greater oil revenues. In this context, the inconvenience of using oil policy as a short run mechanism of macroeconomic policy is discussed.

Section V presents a summary of the paper's main conclusions.

I. THE MACROECONOMIC MODEL

The basic structure of the model used can be observed in Diagram 1, and a more detailed description is given in the Appendix. The macroeconomic model comprises a set of simultaneous equations that allow for the simulation of the annual performance of the economy until year 2000 under different exchange rate and fiscal policies.

The model is composed of six submodels. The first one corresponds to the accounts of sources and uses of the Cusiana projects's funds, which deal separately with the operations of foreign companies associated with Ecopetrol and those of Ecopetrol itself. From these accounts it is possible to obtain the direct

impact of the project on (a) aggregate production and the components of demand; (b) fiscal accounts, including Ecopetrol, and (c) the current account of the balance of payments. For the latter, it is assumed that the net cash flows of associated companies associated are adjusted with direct foreign investment when they are negative and with profit remittance abroad (which is part of the current account) when they are positive.

The second submodel determines GDP out of its demand components, and constitutes the spine of the model. Private consumption depends on private national disposable income (excluding revenues from Cusiana) and on consumption in the previous time period. Private investment depends on GDP (excluding revenues from Cusiana) and on the relative price of investment goods. Exports (in real terms) are divided into (a) oil; (b) other mining; (c) coffee; (d) minor agricultural, and (e) minor industrial. The first two are residual, considering production as exogenous and deducting national consumption based on fixed technical coefficients. Coffee exports are exogenous. Minor exports depend on world income and on the real exchange rate, both present and lagged. Imports are split into (a) consumption; (b) intermediate, and (c) capital goods. In each case, imports depend on a component of aggregate demand (private consumption, GDP without Cusiana revenues and total investment, respectively), and on the real exchange rate.

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The utilization of installed capacity is determined from capacity utilization in the previous period, investment in the previous period and GDP in the current period. This variable has an impact on inflation, as we will see below.

The third submodel determines inflation and relative prices. Inflation is defined as the variation of the index of consumption prices and is the result of indexing forces, costs and demand, as it depends on (a) inflation during previous period; (b) the rate of devaluation in the current period and (c) the level of utilization of installed capacity. The devaluation of the exchange rate is a policy variable. Combined with external import or export price indexes (which are exogenous) it determines prices in pesos for imported and exported goods. Each one of these, deflated by the index of consumption prices, becomes an indicator of the real exchange rate. Finally, the index of investment good prices is a weighted average of consumption and import prices. The model then calculates the GDP deflator and the GDP in current pesos from the prices of all the components of demand. In this price submodel, the parity interest rate is also determined, by combining the rate of devaluation with the external interest rate.

The fourth submodel deals with fiscal accounts. Current public expenditure is exogenous in real terms. Public investment may be treated exogenously or as a policy instrument. Apart from oil revenues, tax revenues originate from taxes on domestic

economic activity.

The current account of the balance of payments is calculated in the fifth submodel, from exports and imports expressed in real terms (demand submodel) and their respective external prices, the net balance of factorial services and transferences (which depends on GDP and the real exchange rate), and the remittance of Cusiana profits.

Finally, the model includes a monetary component which allows us to determine the levels of international reserves and external debt. Following a monetary approach to the balance of payments, international reserves are adjusted to satisfy the economy's primary liquidity needs, determined by a money demand equation (as a function of nominal GDP excluding oil revenues and the nominal interest rate) and an exogenous multiplier of the money supply. Combining the international reserves result with the current account balance and foreign investment in Cusiana, we obtain the level of the country's external debt (it is assumed that the remaining net foreign investment is zero).

The only policy variables used in the simulations are the rate of devaluation and the growth of public investment. Devaluation may be fixed exogenously (leaving the real exchange rate endogenous), or it may be used as an endogenous instrument to achieve a target real exchange rate. The growth of public

investment may also be fixed exogenously (leaving the fiscal deficit endogenous), or it may handled to achieve a target fiscal deficit.

II. SHORT RUN EFFECTS

In an average scenario, it is foreseeable that the oil production of Cusiana and Caño Limon will reach 600 thousand barrels per day (tbd) as of 1997 (see Graph 1)[2]. This will imply an increase of 140% in national crude production with respect to its present levels. Between 1993 and 1996 production will be limited by the transport capacity of the existing pipelines. In 1993 an initial module was put into operation with a capacity of 10 tbd. In 1994 and 1995 three additional modules will be set up with production capacities of 50 tbd each. In the meantime it will be necessary to invest in the transportation infrastructure in order to reach a level of 600 tbd in 1997. Thus, there will be two distinct phases in the project's development, each of which will have different macroeconomic effects.

A. The "Pure" Cusiana Effects

The first simulations aim to measure the "pure" effects of

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[2]   Section II.F below reports the main results obtained with alternative scenarios of 300 tbd and 900 tbd.

Cusiana, considering both the investments and expenditures in the development and setting up of the project and the greater oil production. This first scenario does not consider exchange rate and fiscal policy reactions, but it does include indirect effects through incomes and expenditures of the private sector.

To measure the "pure" contribution of Cusiana it is necessary to compare the results of simulations " with" and "without" Cusiana, under identical exchange rate and fiscal policies. Specifically, results are given for a constant real exchange rate policy and one in which current public expenditure and investment (other than Ecopetrol's investments in the development and setting up of the project) grow at fixed rates of 3 and 4.5%, respectively, which constitutes an estimation of the policy objectives the present Government had before the Cusiana discovery.

Results "without Cusiana" for period 1993-2000, given these assumptions, would be the following (Graphs 2 to 5 and Tables 1 to 3):

(1)   An average annual growth of GDP of 2.9%;

(2)   A stable inflation rate as of 1994 between 23% and 23.5%;

(3)   Progressive deterioration of the current account: an initial deficit of 0.8% of GDP in 1993 would become a deficit of 2.9% in the year 2000;

(4)   Increasing deterioration of public finances: the deficit

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would grow from 1.2% to 2.7% of GDP.

These precarious results originate from the assumed stagnation of coffee exports and in the major reduction of oil exports until their disappearance in the year 2000, due to the decline of the Caño Limón field, as these simulations do not consider new discoveries. In fact, they suggest that, without Cusiana, sooner or later it would have become necessary to undertake new tax reforms and devaluate the peso in real terms.

Without changing the exchange rate and fiscal policy assumptions, the following results are obtained when Cusiana is considered [3]:

(1) The GDP growth rate increases in 1.2 annual percentage points on average, to be stationed at 4% (or 3% if new oil revenues are excluded from calculations). In the period 1993-1996, higher growth is due mainly to the investment in the project; in the remaining years it results from the higher production, and consequently tends to disappear towards the end of the century.

It is important to note that the model includes the effects of permanent income on private consumption (via lagged consumption),

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[3] Detailed results of the alternative scenarios based on Cusiana-600 can be seen in the Appendix.

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but not the wealth effects. However, since new oil revenues do not belong to the national private sector but to foreign associate firms and to the Government, significant wealth effects are not to be expected.

(2)   The inflation rate will be stationed between 24 and 24.8% as of 1994 onward, which is more than one point higher than in the previous case.

(3)   Since we assume no adjustment of exchange rate policy or public expenditure (excluding investments and expenditures on the project), the 1997-2000 period will be characterized by surpluses in the current account close to 1.4% of GDP as well as fiscal surpluses close to 1.6% of GDP, which contrast with fiscal and foreign exchange deficits of more than 2% of GDP if Cusiana did not exist. The presence of a surplus suggests, of course, that major changes in fiscal and foreign exchange policy could take place. Nevertheless, it is important to note that fiscal and foreign exchange accounts would tend to deteriorate until 1996, due to the large investments required during the project's development phase.

B.   Two Scenarios with Different Priorities

The following simulations examine the potential impacts of

variations in fiscal and foreign exchange policy, in order to demonstrate the need for cooperation between the monetary authority and the Government. This topic is vital within Colombia's new institutional context, since the 1991 Constitution gave the monetary authority autonomy in determining monetary and foreign exchange policy, and posited price stability as its main responsibility.

Within the new context, it is valid to assume that the monetary authority will seek to take advantage of the foreign exchange margin provided by Cusiana in order to use the exchange rate as a nominal price anchor, with an aim at reducing inflation, and will exercise its full power of persuasion in convincing the Government to maintain fiscal discipline. As for the Government, it will be more interested in making use of the margin in fiscal accounts to increase the production public goods and services and accelerate the rate of economic growth. In achieving these objectives, the Government will try to persuade the monetary authorities to avoid revaluations of the real exchange rate. Thus, two alternative policy scenarios arise, which we will now proceed to analyze.

In the first of these cases (scenario B), we assume that the monetary authority reduces the devaluation rate to 10% in 1994, 8% in 1995 and 6% in 1996. From 1997 onwards, given the comfortable foreign exchange situation, the crawling peg system is eliminated

and a nominal exchange rate fixed. In accordance with the monetary authority's objectives, we also assume that it imposes a limit of 1% of GDP on fiscal deficits until 1996, and from then on demands total fiscal equilibrium. Results are as follows (Graphs 6 to 14 and Tables 1 to 3):

(1)   The real exchange rate revaluates 15.5% between 1992 and 1996 and an additional 17.5% between 1996 and year 2000.

(2)   The inflation rate is slowed down significantly, from over 22% in 1993 to 15% in 1996 and to 5% in the year 2000.

(3)   From 1997 onwards, the current account is weakened relative to the previous scenario, for there is a deficit of around 0.5% of GDP, instead of the 1.4% surplus (before 1997 changes are minor and favorable.) The deficit, however, is fully manageable, as is reflected in the behaviour of the external debt coefficient, which is reduced from 34.5% of GDP in 1993 to 29.8% in year 2000.

(4)   The main cost of this inflation reduction strategy is a reduction of economic growth, from an annual rate of 4% in the previous case to 1.3%. Excluding oil revenues, national production is completely stagnant (instead of the previous 3% annual growth). This is the result, on one side, of the noxious effect of the real revaluation on non-oil exports and

its positive effect imports, and on the other, of the fiscal adjustment, which demands that public investment (other than on Cusiana) grow at an average of only 1% per year (as opposed to 4.5%), because of the negative effect the revaluation has on the fiscal deficit.

It is important to point out that revaluation makes fiscal restrictions more severe as a result of (a) reduced oil revenues in pesos and (b) the fall of domestic tax revenues because of reduced productive activity. These adverse effects are not fully compensated by the reduced costs of public investment and of external debt[4] interest payments (See Graph 15).

As a result of the adverse effects of revaluation on public finances, public investment becomes completely stagnant in this scenario, aggravating the recessive effects of revaluation.

In the next we examine the effects of the policy that Government would prefer (scenario C). This would consist of maintaining the real exchange rate, in order to avoid adverse effects on economic growth, and a more flexible fiscal position, which we assume will result in a deficit of 2% of GDP until 1996 and of 1% onwards. Results would be as follows:

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[4]   A lower amortization cost is irrelevant so long as it is necessary to refinance debts, as would be the case under   a fiscal and foreign exchange deficit situation.

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(1) Public investment (excluding investment in Cusiana) would grow at an average annual real rate of 9.4%, as opposed to 4.5% in the initial scenario an 1% in the previous one. Even though we assume that the deficit would be reduced in 1997, that year would be marked by a sudden 35% increase in investment without Cusiana (or 28% including Cusiana investment).

(2) The annual growth rate of GDP would rise to an average of 4.3%, 3 points higher than in the previous revaluation case, but only 0.3 points more than in the initial case. In this manner, the multiplier effect of public investment would be very moderate.

(3) Inflation would increase to 25.8% in 1997, though it would subsequently fall as a result of the increase in capital stock, to be positioned around 22% in year 2000. As a result, inflation would, towards the end of the century, have a somewhat more favorable behaviour than in the initial case, but much less so than in the case of revaluation.

(4) The current account would be less favorable than in the initial case, and even less than in the revaluation scenario, but still manageable. In fact, from 1997 onwards deficits of around 1% of GDP would be registered.

C. Implications of a Non-cooperative Scenario

The two 15u described above represent situations which are dominated by the objectives of the monetary authority and the Government, respectively. In each case it is assumed that both policy instruments are handled according to the wish of one of the two economic authorities. It should be observed, however, that both scenarios are "responsible". The one in which Bank objectives hold sway (B), compensates the negative effects of revaluation on fiscal and foreign exchange deficits with extreme fiscal austerity. On the other hand, when the Government objectives dominate (C), it increases public investment only to the extent that it can avoid compromising fiscal and foreign exchange equilibriums. In other words, it saves part of the Cusiana surplus (about 0.5% of GDP) in order to reduce the fiscal and foreign exchange deficits that would have appeared in the scenario without Cusiana.

Nevertheless, the first of these would not be acceptable for the Government, as it would imply an excessive sacrifice of public investment (which would grow at a slower rate than in the Scenario without Cusiana) and the resulting economic growth rate would be unacceptable, especially in terms of employment (inferior to the one that would be obtained without Cusiana). As for the second, it would not be acceptable for the Central Bank, as it would lead to levels of inflation higher than in the case without Cusiana.

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Suppose now that each instrument were handled according to the objectives of the authority that controls it. The Bank handles the nominal exchange rate according to the revaluation scenario (B), while the Government raises public expenses according to the higher growth scenario (C). This absence of cooperation leads to the following results:

(1)   The average economic growth rate would be 2%, lower even than would be the case without Cusiana (2.9%) and higher only than in the revaluation scenario (1.3%).

(2)   The inflation rate is reduced even more than in the revaluation case, to 3.8% by year 2000.   Higher capital availability contributes to this result.

(3)   Nevertheless, tremendous imbalances would occur in both foreign exchange and fiscal accounts. On average, the current account deficit would be 4% of GDP in the 1994-2000 period, so that external debt would reach 46% of GDP in this last year (compared to 30.9% in the initial scenario, to 29.8% in the revaluation scenario and to 39.6% of GDP in scenario (C)).

(4)   As for the fiscal deficit, it would rise to 2.3% by 1994 and would continue to gradually increase, reaching 4.9% of GDP in the year 2000.   Such an imbalance could seriously compromise future economic stability, especially if large new

fields are not found to compensate for the subsequent decline of Cusiana (see Section IV).

It is worth pointing out that these effects result when each authority separately pursues "responsible" objectives, but acts under the assumption that the other authority pursues identical objectives, without coordinating their policies. Thus, these results demonstrate the urgent need for establishing mechanisms designed to prevent situations of conflicting foreign exchange and fiscal policies.

D. A Scenario of Cooperation

Suppose now that we have a hypothetic cooperation scenario in which both economic authorities agree to handle the instruments in their charge in such a way that results superior to those of the Scenario without Cusiana are achieved with regards to all short run objectives of macroeconomic policy: growth, inflation, fiscal and foreign exchange equilibrium. Scenario E is one out of many cooperation schemes that fulfills these conditions, and could consequently be a consensus scenario. In it, there is only one third as much revaluation as in scenario B, while public expenditure increase at a rate of two thirds that of scenario C. The results are as follows:

(1) An average annual growth during period 1993/2000 of 3.3% (3.5%

as of 1997), superior to the case without Cusiana in 0.5 points per year and to the confrontation case (D) in 1.3 points per year.

(2)   Inflation falls to 17% in year 2000.

(3)   The fiscal deficit rises to 1.6% of GDP between 1994/1996 and descends to an average of 0.4% for the remaining years.

(4)   The current account registers a deficit between 1.9 and 2.4% of GDP from 1994 and 1996, and falls to an average of 0.6% in subsequent years.   In this manner, external debt rises temporarily to 38% of GDP in 1996 and then stabilizes around 35/36% (public debt declines continually, reaching 22% of GDP).

As can be observed, this is the only Scenario in which better results are obtained with respect to all four short term macroeconomic policy targets than in the Scenario without Cusiana.

E.   A Graphic Representation of the Analyzed Scenarios.

The relationship between exchange rate and public expenditure policies, and fiscal and current account results can be observed in Graphs 16 and 17.   The axes correspond to the two above mentioned policy instruments, while the curves represent the ways these

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instruments can be combined to achieve the same level of fiscal deficit (DEF) or current account (CC) results. Both curves have positive slopes, which means that increases in public investment, which deteriorate both accounts, must be compensated with revaluations of the real exchange rate, which improve both accounts. The fiscal deficit curve is more sharply inclined because the effect of a higher (lower) real exchange rate is more favorable (unfavorable) on it than on the current account.

Graph 16 shows the situation in any year between 1994 and 1996. Point A corresponds to the scenario in which the real exchange rate is stable at its initial level (ITCRO) and public investment is exogenous (IGO). At this point there is a deficit in both fiscal accounts (DEF-) and the current account (CC-) during the period 1994-1996.

Point B represents policies desired by the <u>Banco de la Republica</u>, which imply a lower real exchange rate and a better fiscal situation than in point A. In this new situation it is necessary to cut back public investment (without Cusiana) severely, because, as we have seen, revaluations deteriorate fiscal accounts. This situation corresponds to what is currently taking place, and has led the Government to perform inconvenient "camouflage" operations on fiscal accounts, by employing financing procedures in Cusiana's development that may raise the project's costs, delay it and reduce the taxes paid by Ecopetrol and its

associates (leasing formulas) or the revenues obtained by Ecopetrol from its exploitation (capital shares).

Point C corresponds to the policies that the Government would prefer and, as can be seen, it would not substantially differ from scenario A in these initial years. Point D corresponds to the confrontation scenario, in which the real exchange rate is revalued according to the objectives of the Banco de la Republica while public investment is maintained at levels consistent with the Government's objectives. The resulting situation is above the two initial curves, implying a deterioration of both current and fiscal accounts.

In period 1993-1996, the cooperation scenario implies less revaluation, which temporarily deteriorates the fiscal situation (this will later improve with the revenues obtained from Cusiana), but not the current account.

Scenarios for the 1997-2000 period are represented in Graph 17. Fiscal and current account situations in scenario A are characterized by surpluses and thus provide margins for both curves to shift upwards. In the Central Bank scenario (B) it is possible to revalue and raise public investment, though the latter only modestly, while achieving fiscal equilibrium. In the Government scenario (G), with a deficit of 1% of GDP and a constant real exchange rate, their is a substantial increase in public

investment. As a result, the confrontation scenario would lead to serious short term fiscal and current account imbalances. Finally, in the assumed cooperation scenario (E), it is possible to achieve an intermediate fiscal and current account situation, between scenarios B and C.

F.   Result Sensitivity to Alternative Cusiana Scenarios

Both for analytic reasons and because of the uncertainty surrounding the size of the recently discovered Volcaneras field, it is valuable to discuss, albeit briefly, the sensitivity of the above results to changes in the levels of petroleum production. To this end, we consider two alternative scenarios: one in which the total production of the new fields reaches only 300 tbd by 1997, and another in which levels of production continue to grow after 1997, reaching 900 tbd in the year 2000. The country's expected production levels under each of these alternative assumptions appear in Graph 1. The following analysis will deal only with policy scenarios A and E, which is to say that of neutral policies and that of cooperation.

(1)   With regards to economic growth, every 300 tbd more, or less, of maximum production result in approximately 0.5 extra, or less, percentage points of average annual growth for the 1997-2000 period (chart 4). With a maximum production level of 900 tbd, under the neutral policy scenario, the average annual

growth rate would reach 4.6%. During the 1997-2000 period, the difference with the 600 tbd case would be a full percentage point (1%) of annual growth, for it is in these years that changes occur in the levels of production. With the high alternative, the average annual growth for the 1997-2000 period would be 5.2%. Changes in production have a similar impact in the cooperation scenario. The high alternative would result in an average annual growth of 3.9% for the 1993-2000 period and 4.7% for the 1997-2000. The lower rates of growth under the cooperation scenario are the result of the real revaluation it entails.

(2) With regards to inflation, result sensitivity is asymmetrical under the scenario of neutral policies. If production reaches only 300 tbd, average inflation over the 1993-2000 period drops one point with respect to the original (600 tbd) scenario. But if production rises to 900 tbd, the effect on average inflation is far lower (0.3 extra percentage points). This asymmetry results because the greater impacts on inflation come from the project's development phase and depend on the rate of investment, which is only significantly lower in the 300 tbd case. In the neutral policy scenario, average inflation over the 1993-2000 would be between 24.3% and 24.5% in the 600 and 900 tbd cases, and 23.1% in the 300 tbd case.

In the cooperation scenarios, average inflation over the

entire period, and over the two sub-periods, is not very sensitive to changes in the levels of production, as the assumed exchange policies are similar in all three cases. Only at the end of the period do significant differences materialize, and these favor the scenarios with greater levels of production. Thus, inflation would drop to 17% in the year 2000 in both of the higher production cases, and only to 18.5% in the 300 tbd case. This difference is the result of the cumulative effect of public investment on the capital stock, which, in the high scenarios, would permit a reduction in the levels of installed capacity utilization towards the end of the century.

(3)   In the neutral policy scenario, the 300 tbd case would result in an average fiscal deficit of 0.8% of GDP over the 1993-2000 period, as opposed to the equilibrium situation which the 600 tbd case resulted in. The 900 tbd case, in turn, would result in an average fiscal surplus of 0.3% of GDP over the same period. The fiscal improvement would take place as of 1997, for up until that point the average deficit would be 1.7% of GDP, very similar to that of the 600 tbd case.

In the cooperative scenarios, the fiscal situation would be less ample as of 1997 in every one of the three cases, for it is assumed that the margins which would materialize under the neutral scenarios would here be partially used to increase

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public investment and reduce the rate of devaluation. Under these conditions, any of the different production cases would result in an average fiscal deficit close to 1.5% of GDP over the 1993-1996 period, to then come down to somewhere between 0.5% and 0.3% between 1997 and 2000.

(4) As for the current account of the balance of payments, the neutral policy scenario would result in an average annual deficit of 1% of GDP in the case of lowest production, of 0.3% in the medium case and of equilibrium in that of greatest production. In the 1993-1996 sub-period, however, the current account deficit would be greater in the high production cases (2% of GDP) than in the low one (1.4%), as a result of the greater levels of production the first two imply. The situation would reverse in the 1997-2000 sub-period, which would be characterized by a deficit only in the low production case (0.5%), for in the other two there would be average surpluses of 1.4% and 2.1% for the 600 and 900 tbd cases, respectively.

The average current account deficit would be very similar for each of the three production cases under the cooperative scenario, between 1.2% and 1.3% of GDP. In the first sub-period, the current account would register an average deficit of 1.7% of GDP in the 300 tbd case and of 2% in the other two cases. In the second sub-period, these would drop to 0.85% of

GDP in the low case, 0.6% in the medium case and 0.4% in the high one. The differences between the different alternatives are not very significant under this scenario because of the way in which the cooperative scenario is defined, and all cases result in sustainable current account deficits.

G. Conclusions

(1) The Need for and Possibilities of Cooperation.

In synthesis, there exist cooperation scenarios that are clearly superior to the "non-development of Cusiana" with respect to all short run macroeconomic policy objectives. This should allow for the setting up of a cooperative consensus scenario in which "everybody wins" with the development of Cusiana.

This is not the case with any of the non-cooperative scenarios, as a result of which none of them may will lead to consensus. If either authority insists on carrying its individual objectives out individually (i.e. B, in the case of the Central Bank, or C, in the case of the Government), what will probably result is the Confrontation Scenario (D), which is inferior to the "non-development Cusiana" case with respect to three of the four short term macroeconomic policy objectives and leads to increasing macroeconomic imbalances unsustainable in the long run.

The actual dynamic could be as follows: the Government increases public investment at a rate higher than that desired by the Bank, generating inflationary pressures and deteriorating fiscal and external accounts; the Central Bank then revalues in an effort of counteract the greater investment's inflationary pressures; the revaluation accentuates the fiscal and foreign exchange imbalances and significantly reduces the rate of economic growth, which in turn leads the Government to not reduce public investment. Or the following: the Bank fixes the nominal exchange rate in order to rapidly reduce the inflation rate and asks the Government to maintain fiscal equilibrium; given the negative impact of the real revaluation on public finances, the Government would have to reduce the rate of growth of public investment to levels beneath historical trends, in a moment when expenditure pressures are increasing as a result of the oil boom and of the recession caused by real revaluation. Government refuses to reduce investment and we are again facing the Confrontation Scenario.

Consequently, one of the main virtues of the Cooperative Scenario is that it avoids the huge risks associated with the non-cooperative scenarios.

Cooperation scenarios, however, are not superior to non-cooperative scenarios with respect to all objectives. Thus, as is obvious, they imply a compromise on the part of each actor relative to what it would accomplish if it could independently handle all

policy instruments. Specifically, it is necessary to make a compromise with regards to the desired rates of growth and inflation , as there exists a clear conflict between both targets in the short term.

(2) The Central Role of Foreign Exchange Policy.

Apart from the urgent need for coordination of foreign exchange and fiscal policy, the above results lead to other important conclusions with regards to the exchange rate. Specifically, they show that the Colombian economy is particularly sensitive to the evolution of real exchange rate. The latter plays a crucial role in determining both inflation and the level of economic activity, counteracting the far more modest effect of public investment on both variables in the short run. Thus, the policy compromise should center on the target real exchange rate, avoiding a strong real revaluation.

Another important implication of the results is that, given the moderate magnitude of the boom, relative to the size of the Colombian economy and of its external sector, a significant appreciation, in principle, is not inevitable. If substantial appreciation occurs it will be due to policy reasons, since a rapid reduction of the nominal devaluation rate can have a significant effect on inflation rates. Nevertheless, it would achieve this reduction at very high short run economic growth costs and, due to

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its negative effects on public finances, it would necessitate an excessive effort to restrict public investments in order to keep the fiscal deficit under control.

III. INSTITUTIONAL ASPECTS, CAPITAL FLOWS AND CREDIBILITY OF THE COOPERATIVE STRATEGY

In synthesis, the macroeconomic effects of Cusiana in the short run will depend on the foreign exchange and fiscal policies. They will clearly be positive so long as an adequate coordination of objectives between the Central Bank and the Government, that is to say between foreign exchange and fiscal policy, is achieved.

In order to guarantee this cooperation, it would be convenient to develop institutional mechanisms through which the monetary authority and the Government could set their mutual commitments. A possibility would be the creation of an Oil Stabilization Fund to which a portion of the additional resources generated by Cusiana/Cupiagua and other eventual discoveries in the Piedemonte llanero could be destined. This Fund would be required to invest its assets abroad (so long as production in these fields does not begin to decline), it would not form part of the country's international reserves, administered by the Banco de la Republica, and could not be used as a guarantee in obtaining external financing. In this manner, authorities would be unable to use its

resources to excessively increase public expenditure or to "finance" a drastic revaluation of the peso.

An institutional solution of this sort would be important in guaranteeing that a cooperative strategy be implemented and in avoiding that the expectations of private economic agents operate against its objectives. Indeed, it is important that the latter be convinced that the monetary authority and the Government will follow a cooperative strategy such as the one mentioned above. Otherwise, they might bet on a greater revaluation, or a higher inflation rate, and speculate against the peso, leading to significant capital flows that would complicate the monetary and foreign exchange management. This reaction on the part of private agents, when facing a cooperative policy which lacks credibility, could wind up making the policy unimplementable, or affecting its results in a very negative way.

A policy's credibility depends on its coherence, sustainability and stability. The fact that the suggested cooperative policy leads to a relative equilibrium in the external fiscal accounts (moderate surpluses as of 1997) and to acceptable results in terms of growth and inflation makes it coherent and sustainable. This is an essential pillar of support for its credibility.

Nevertheless, so long as this policy is based on an agreement between entities (the monetary authority and the Government), that

Departments and Municipalities, via three channels: (1) The share of royalties assigned to oil producing Departments and Municipalities, and to ports, by law; (2) The allocation of the resources of the National Fund of Royalties; (3) Departments' and Municipalities' share in the National Government's current revenues. The National Planning Department estimates that about 40% of the surpluses will be transferred through these mechanisms.

Departments and Municipalities would also benefit from stabilizing their revenues from royalties and transferences, for the same reasons as the Central Government: it would allow them to avoid both overheating the regional and local economies during the boom period and wasting their resources through an inefficient selection of investment projects. The Fund would allow them to extend their revenues and investments, and, consequently, the benefits of the boom, over time.

The establishment of the Fund would, of course, require a broad political agreement between the parties and between the representatives of the National Government, the <u>Banco de la Republica</u> and the regions.

IV. LONG TERM EFFECTS

The quantitative analysis presented in section II does not

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incorporate long term effects.   There would be four distinct
aspects to consider:

A.   The Productivity of Public Investment

The principle one which must be considered regards the effects
of higher public investment and expenditures on education and
health, financed with resources from Cusiana, on the country's long
term growth. These effects are not taken into account by the
macroeconomic model described in Section I, which leads to an
underestimation of the positive effects of increases in public
investment and, consequently, of Scenarios C and E above.

The magnitude of these effects will depend critically on the
nature and quality of the investments that are made. Well selected
physical infrastructure projects (transportation, communications
and other public services) can have a significant impact on the
productivity of the private sector (in agriculture, industry and
services), increasing its international competitiveness,
facilitating conciliation between growth and inflation goals and
stimulating higher levels of private investment, all of which would
lead to greater economic growth in the future.

Similarly, resources invested in improving the quality and
increasing the coverage of efficient education and health programs
can lead to significant increases in labor productivity and in its

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Finally, there is a relationship between short and long term effects. If short term effects are positive (in terms of growth and stability), as would occur with a prudent and coordinated management of foreign exchange and fiscal policy, it will be more probable that new investments be properly planned and executed, and thus render better results.

B.   Inflation and Growth in the Long Run

Various studies suggest that price stability generates an environment conducive to higher investment levels and greater returns to investment. This consideration favors those scenarios that more rapidly reduce the rate of inflation. Its importance in the Colombian case, however, is limited, as the country has experienced moderate and relatively stable rates of inflation, and all the simulated scenarios resulted in a fall in inflation rates.

C.   Externalities associated with the tradable goods sector

Studies on the subject suggest that temporary deteriorations of the tradable goods and services sector, brought about by real revaluations, can have harmful long term effects, due to the loss of positive externalities (with regards to innovation, technical progress, etc), and to negative externalities (the costs of market entry and exit). These are the main arguments for commercial liberalization and for avoiding the "dutch disease" phenomenon

associated with natural resource booms and subsequent local currency appreciations.

D.   Future risks

Uncertainty about the future, particularly with respect to new oil field discoveries that could allow Colombia to compensate for the eventual decline of Cusiana and Cupiagua, leads us to place special value on those Scenarios in which it is possible to maintain fiscal and foreign exchange equilibrium in the long run and increase net international reserves.

The extent to which the surplus generated by Cusiana/Cupiagua should be saved to cover future risks in fact depends on how probable it is that future oil discoveries will allow Colombia to compensate for the decline in the production of these fields as of the year 2003. This section summarizes the results of projections on the expected value of future findings, recently made by Fedesarrollo (Perry and Barrera (1993).

Projections are based on the estimation and utilization of an econometric model with the following theoretic background.

A sedimentary basin, before the search for hydrocarbons commences, contains a definite number of fields with a fixed amount of reserves in situ. Based on a study of known sedimentary

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basins, it has been determined that the distribution of fields in terms of size approximately follows a normal log function. Parallely, the probability of finding a particular field within basin is directly related to the field's size. In conjunction, these two facts lead us to conclude that the expected size of new finds will get smaller over time.

The number of finds, in turn, depends on the number of exploratory wells drilled, which is itself determined by the number of standing contracts, the international price level and recent finds. Similarly changes in standing contracts depend on international price levels and recent finds.

In the oil industry, as in every economic activity, the foreseen evolution of international prices determines the expected returns of new investments and, consequently, their amount. In the case of oil exploration there is a further reason why present, or recent, prices, affect the behaviour of exploratory activity: prices determine oil companies' short run liquidity and, since exploration is a high risk activity, it is mostly financed with companies' own resources. Consequently, a fall in prices would force a reduction of global exploration levels by reducing the resources available to companies, even if there were no substantial variations in profit expectations.

Additionally, the results of past exploration affect the perception of an area's geological perspectives and, consequently, the levels of investment in exploration. Positive results raise future expectations and investment levels, while negative results have the opposite effect. The occasional big discoveries, such as Caño Limón and Cusiana, are more important in this respect, as the can significantly change the perception of a country's geological outlook.

Finally, changes in oil and tax legislation also affect investment behaviour.

Projections on the expected value of future reserves are presented in Graph 26. A projection of international oil prices based on an ARIMA model, estimated from an historical series, was used and a low level of direct exploration by Ecopetrol was assumed.

Average annual reserves discovered would amount to 159 million barrels, similar to the average level of the past decade. This would be the expected level of production in the long run. Since the present annual production is about 170 millon barrels, this expected level of new discoveries would allow Colombia to maintain the level of know remaining reserves it had before the Cusiana discovery, and thus, the present level of production in the long run.

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In other words, according to these results it is most probable that crude oil production will reach a maximum average level close to 300 million barrels between 1997 and 2002, and then decline and converge towards the present level of 160 million barrels. Naturally, a greater level of direct exploration by Ecopetrol than the one assumed here, new incentives to associate exploration, or the effect of a new large discovery, could result in future reserves which surpass these projections.

The same graph (26) compares the results obtained under the current situation with those which would have been obtained if Cusiana had not been a part of the prediction. Had Cusiana not discovered, not only would its reserves be unavailable, but the level of other discovered reserves - in terms of expected annual average - would have been 132 instead of 159 million barrels. Under these conditions it would have been impossible to maintain present production levels in the long run. It is worth noting that before Cusiana this model would have predicted that Caño Limon was a "temporary boom". This, in fact, was precisely the generalized perception which existed before the discovery of Cusiana.

These considerations demonstrate, in first place, the importance of maintaining an attractive climate for investments in oil exploration. Even more importantly, they indicate that a portion of the resources generated by Cusiana should be invested in new oil exploration: geological surveys of inactive basins (those

in which levels of oil exploration have been very low), transportation infrastructure and the strengthening of Ecopetrol's exploration capacity.

In the second place, as oil production will most probably decrease with the eventual decline of Cusiana, it is even more important that we save part of the surplus for the future.

Technical literature on the handling of transitory economic booms suggests the need for deciding:

(a) How much of the boom should be consumed while it lasts and how much should be saved.

(b) What proportion of the savings should be invested internally (and how much and in what) and how much should be invested abroad and how.

Risk and profitability considerations should guide these decisions. For one thing, there are decreasing marginal returns to investment at the domestic level, especially in the short run (because of investment opportunities, the availability of feasibility studies, etc.). Thus, resources should be invested domestically up to the point where marginal investments have rates of return equal to those of the country's international reserves.

The consideration of future balance of payments risks could lead us to limit domestic investment even more and save more abroad.

One form of saving would consist of leaving part of the oil in the subsoil. From the point of view of expected returns, the country would have to compare the expected growth rate of oil prices (discounted for risk) with the rate of return of international reserves. Under present conditions, a significant growth of real prices is not expected, so it would be best for the country to extract the greatest amount of crude possible and place those resources that are not invested domestically abroad. Moreover, a decision in this regard should be made in conjunction with associate firms, based on the consideration of mutual convenience, for, otherwise, it could have negative effects on exploratory investment levels and, consequently, on future discoveries.

Finally, part of the investment abroad could take the form of the advance payment of external debt. Opportunities in this area would be limited, considering the high incidence of multilateral debt in the country's external debt, and their profitability would not be as high as in countries whose external debt is subject to greater discounts. Risk considerations could limit this option even more.

None of these subjects, related to long run considerations,

has been examined quantitatively. Thus, the results presented in Section III should be carefully handled and, at least, complemented with these considerations, which until now are of purely qualitative character.

V.   CONCLUSIONS

The main conclusions of this study may be summarized in this way:

(1) The new oil discoveries will generate considerable fiscal and foreign exchange revenues for the country. Additionally, there will be a substantial inflow of capital in their development. These additional resources represent significant opportunities for accelerating national economic development. The country will use of these opportunities effectively, to a greater or lesser extent, depending on the reaction of foreign exchange policy to the greater foreign exchange incomes, on the reaction of fiscal policy to the greater fiscal revenues and on the composition and efficiency of the investments and additional expenses financed with them.

(2)   The Colombian economy is particularly sensitive to changes in the real exchange rate. It plays a crucial role in determining both inflation and the level of economic activity, easily counteracting the much more modest effect of public

investment on both variables in the short run.

(3)   Given the moderate magnitude of the boom, relative to the size of the Colombian economy and its external sector, a significant appreciation, in principle, is not inevitable.

(4)   A greater appreciation could be generated for policy reasons, as a rapid reduction in the nominal devaluation rate can have a significant effect on inflation rates. However, it would accomplish this at very high costs in short run economic growth. Additionally, because of the negative effects of real revaluations on public finances, it would demand an excessive effort in restricting public investment in order to keep the fiscal deficit under control, thus sacrificing long run growth possibilities. Furthermore, it could have other harmful long run effects, associated with the weakening of the sectors which produce tradable goods and services. Therefore, the main objective of short run policy should be the prevention of a strong real revaluation and, secondly, to avoid excessive public expenditure.

(5)   There is, however, a risk of an eventual lack of cooperation between the monetary authority (the Board of Directors of Banco de la Republica), which autonomously handles foreign exchange policy, and the Government, given the conflict which exists between economic growth and inflation targets and the fact that each economic authority pursues a different objective (the

Bank gives priority to controlling inflation while Government gives priority to economic growth). This lack of coordination is already becoming evident, and it may lead to delays, higher costs and the lower profitability of the development of Cusiana and Cupiagua.

(6) A lack of cooperation between the country's two economic authorities of the country would result in a strong revaluation, a fall in economic growth rates and the presence of increasing and unbearable fiscal and foreign exchange deficits. Economic results would be even be inferior to the trends previous to the Cusiana discovery. Conversely, there exist cooperative solutions in which both authorities could compromise and which would achieve superior results, in terms of all short term macroeconomic policy objectives, compared to the trends previous to the Cusiana discovery.

(7) It would be convenient to develop institutional mechanisms capable of guaranteeing the carrying out of a strategy of cooperation between Government and Bank, and thus prevent that the expectations of private economic agents operate against their objectives. The reaction of private agents to a cooperative policy which lacked credibility could wind up making it impossible, or affecting its results in a very negative way.

(8) Such a mechanism could be an oil stabilization Fund, established by Law, to which part of the resources generated by

Cusiana/Cupiagua would be destined and whose assets would have to be invested abroad (so long as the production of fields is not declining), not making part of the country's international reserves, administered by the Banco de la Republica, and not employable as a guarantee in obtaining external financing. In this manner, its resources could not be used to excessively increase public expenditure or to "finance" a drastic revaluation of the peso.

(9)   Since about 40% of the fiscal surplus generated by the new discoveries will be transferred to Departments and Municipalities, and since it would be convenient for them to stabilize their revenues and expenses from royalties and transfers as well, the Stabilization Fund should also save part of the resources destined to territorial entities.

(10) Cusiana's impact on long term economic growth rates will depend on the nature and quality of the additional public investments financed with the resources it generates.

(11)   This consideration reinforces the importance of preventing sudden increases in public investment, as these would most probably lead to a poor selection and preparation of new projects and programs. There, in fact, both macro and microeconomic arguments of both short and long run character in favor of increasing public investment levels gradually rather than abruptly.

(12) It also points to the necessity of intensifying efforts in the study and definition of investment project priorities, at a national, regional and local level. Investment projects and programs in oil producing Departments should be analyzed in the context of a plan for the development of the _Piedemonte Llanero_ and _Orinoquía_ regions. It would be convenient to begin strengthening this region institutionally and training its administrative and technical personnel as of this very moment.

(13) Future risks depend critically on how probable it is that new oil discoveries be made that allow Colombia to compensate for the eventual decline of Cusiana/Cupiagua (and Volcaneras). A recent study's results suggest that it is most probable that future finds will allow the country to maintain present production levels, but not the levels that will be attained when the recent discoveries reach their levels of maximum production.

(14) This consideration reinforces the problems that a lack of cooperation between Bank and Government would cause, particularly with regards to a significant revaluation.

(15) It also points to the importance of investing part of the new resources in the oil sector (new exploration and transportation facilities) and the inconvenience of using the oil policy as a short run macroeconomic policy instrument, due to consequences this could convey on exploration levels.

(16)   A greater dependance on oil makes the economy, and especially public finances, very vulnerable to variations in the international price of crude oil.   This consideration makes the creation of mechanisms or rules aimed at stabilizing public expenditures in the face of variations in oil prices very advisable.

Appendix
Model Structure

The model developed here is macroeconomic in nature; its central part is a real submodel, and it includes a small monetary submodel that permits us to determine the balance of international reserves and external debt. The main characteristic of the real submodel is that it is demand-determined, not considering long run supply factors.

The model has a reduced number of behavioural equations (consumption, investment, exports and imports, among others) and a complete system of macroeconomic identities.

I. The Model's Functions

A. Real Sector

The real submodel is in turn subdivided into five modules: the first determines Cusiana accounts, the second describes demand behaviour, the third generates the general price system, the fourth shows fiscal statements and the fifth determines the current account.

A.1. Cusiana Accounts.

There are two active agents in the Cusiana accounts: the companies associated in its exploitation and the Government (or Ecopetrol). This submodel gives us the net Government revenues from Cusiana and the effect of profit remittances and direct foreign investment of associate firms on the current account.

The main endogenous variables determined by this module are the taxes paid by associated firms, profit remittances, net Government revenue from Cusiana and Cusiana's gross production value.

The taxes paid by associate firms (TAXASOC) are determined by the following equation:

$$TAXASOC_t = tibp*(SURBP_t) + wt*0.5(QPET_t-QPETO_t*TCN_t)$$

In simple terms this equation states that the taxes paid by associates depend on two components, the rate of direct taxes (tibp, at a rate of 0.3) on the operational surplus (SURBP) plus a war tax (WT), of US$ 0.9 per barrel, assumed until 1995.

The pre-tax operational surplus of associate firms (SURBP) is given by the following equation:

$$SURBP_t = 0.4*VBP_t - COSASOC_t - INVASOC_t$$

In other words, 40% of associates' gross production value (VBP) minus their operation costs (COSASOC) and the investment they have established (INVASOC). The gross production value (VBP) is in turn given by the following equation:

$$VBP_t = (QPET_t-QPETO_t)*PPET_t*TCN_t$$

where QPET is total oil production and QPETO is total production excluding Cusiana. PPET is the price of oil in nominal terms, which is assumed to increase 3% annually.

The net cash flow of associate companies is determined by their operational surplus, less direct and war taxes: when it is positive is taken as direct foreign investment and as profit remittances if it is negative.

Finally, the public sector's gross oil surplus (in current value) is given by the following equation:

$$EXPET_t = 0.6*VBP_t+TAXASOC_t-(COSCUS_t-COSASOC_t)-(INVCUS_t-INVASOC_t)$$

In other words, 60% of the gross value from direct government exploitation plus taxes collected, minus investments and operational costs incurred by the government.

Both costs and investments are given exogenously in dollars, depending on real size of Cusiana, and are turned into pesos through the nominal exchange rate (see below).

A.2. Demand

Demand is given by aggregate consumption, private investment, export (agricultural and industrial) and import (consumption, intermediate and capital) functions, all determined in real terms.

Consumption is a function of personal income (excluding Cusiana revenues [5]) and consumption with a lag of one period, which allows us to capture the effect of permanent income on consumption (Clavijo 1989, Carrasquilla 1989). Personal income, in turn, is determined from national income, capturing the effects of terms of

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[5]   Cusiana's gross production minus its operating costs.

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trade (Clavijo and Fernandez 1989). Concretely, private consumption is given by the following equation:

$$CPRI_t = \alpha * (YP_t)^d * (CPRI_{t-1})^q$$

where alpha is a calibrating parameter [6]; CPRI= real Private Consumption; YP = real Personal Income (both deflated by the consumer price index); d= the elasticity of consumption to changes in personal income and q = the elasticity of consumption to lagged consumption. The values of these variables are taken from Easterly and Kongsamut (1991), and are: d= 0.72 and q = 0.28. In conjunction, these coefficients indicate that the theory of permanent income applies.

The private investment function used has a relatively simple function form, depending positively on National product (which accelerates investment) and negatively on relative investment prices:

$$IPRI_t = \alpha * PIBNP_t * IPI_t^e$$

where IPRI is private investment, PIBNP is GDP excluding Cusiana revenues and IPI are relative prices, defined as follows:

$$IPI_t = (1-o)*IPC_t + o*IPM_t$$

where o=0.34. The elasticity of investment to relative prices (e) is - 0.5 (calibrated from an Ocampo-Crane estimation, 1989).

Exports are divided into industrial, agriculture, oil, other mining and coffee. The function of for the first two is the same:

$$X_t = \alpha * YMUN_t^r * ITCR_t^g * ITCR_{t-1}^q$$

where X are exports, which depend on world income (YMUN) with an elasticity r = 3, on the present exchange rate (g=0.6) and on the lagged exchange rate (q=0.4). (Villar 1984, Ocampo-Villar 1992 and

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[6] From this point on, the alpha coefficient is a calibrating parameter, specific to each equation in which it appears. These parameters were used in each equation to calibrate the model to the economy's observed and estimated behaviour between 1991 and 1993.

Villar 1992). World income grows exogenously at 3% per year. The ITCR variable may be endogenous to the model or a policy target (see below). The use of lags reflects partial adjustment and "export experience" effects(Ocampo 1988). Though Villar (1992) uses lagged exports as a dependent variable, we decided to use the lagged real exchange rate due to algorithm computation limitations.

Total exports are the sum of industrial, agricultural, oil, coffee and mining exports, the latter two being exogenous to the model. It is assumed that coffee exports are 14.5 million from 1993 onwards. Mining production is assumed to grow at a sustained rate of around 7%, and exports are the residual between production and domestic consumption (fixed technical coefficient of 0.00195). Oil production is given exogenously: a sustained fall (around 11% annually) in the production of oil wells excluding Cusiana and three alternative scenarios for Cusiana (300,600, and 900 thousand daily barrels of oil) are assumed. Exports are residual, with national consumption being determined from a fixed technical coefficient of 0.042.

Imports are discriminated into consumption, intermediate and capital goods. The first two take the following form:

$$M_t = \alpha * PIBNP_t^i * ITCR_t^h$$

Income elasticity is 2.0 and 1.5 respectively, while price elasticity is -0.8 for both. Capital good imports have the same function form, but instead of depending on GDP (net from Cusiana revenues) they depend on investment (excluding Cusiana investment) with an elasticity of 1.5 and a price elasticity of -1.5. (Villar 1985 and Herrera-Alonso 1990).

Adding these three to the imports made in the development of Cusiana gives us total imports. It is assumed that 60% of the total investment in Cusiana is imported.

Taking Government investment as a policy variable, and taking the demand components described above, the model determines total GDP and GDP excluding Cusiana revenues. From current GDP, investment and the utilization of installed capacity in the previous period, we determine the present utilization of capacity (see below).

A.3. Prices

Three fundamental prices are determined by this submodel: the consumer price index (IPC) and the real foreign exchange indexes (ITCR) for imports and exports.

The IPC is taken from the initial IPC, that is, the IPC in the previous period, plus current inflation. Inflation depends on three components: the first reflects general indexation, the second is a cost element and the third a demand element. Concretely, inflation is determined by the following equation :

$$RIPC_t = u*RIPC_{t-1} + (1-u)RTCN_t + u2*CU_t$$

where RIPC is the inflation rate, which depends on lagged inflation (with an inertial coefficient u=0.85 (Carrasquilla, 1992)), on variations of the nominal exchange rate (with a 0.15 coefficient) and on the utilization of installed capacity during the current period (with a coefficient of 0.8). Utilization of installed capacity is defined the conventional way:

$$CU_t = rkp*(PIBNP_t/K_t)$$

where rkp is the capital-product relationship (equal to 2) and K is capital, itself the sum of capital lagged one period (multiplied by a capital depreciation coefficient equal to 0.056) and government and private investment (Villar, 1991).

The two real exchange rate indexes (imports-exports) have the traditional form:

$$ITCRX_t = IPX_t/IPC_t \quad ; \quad ITCRM_t = IPM_t/IPC_t$$

where IPX (IPM) is the external price index, defined as the world price index (for exports and imports, which are assumed to grow at around 2-3% annual) multiplied by the nominal exchange rate index.

Finally, the GDP deflator (IPIB) is deduced from the identity between nominal GDP and its demand components at current values.

A.4   Fiscal Accounts.

The fiscal deficit (or surplus) (in current terms) is given by the difference between government revenues and expenditures. There are two sources of income: general taxes (on economic activity, excluding Cusiana revenues) and oil revenues. Similarly, there are two types of expenditures discriminated in the model, investment and consumption. Concretely, the deficit equation is given by:

$$DEF_t = -v*(PIBNP_t) + (CGOB_t*IPC) + (IGOV_t*IPI) - EXPET_t$$

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where v is the tax rate, fixed at 16.9% from 1993 onwards. Government investment (IGOV) can be an endogenous variable or a policy objective. Government consumption is assumed to grow 3% per year in real terms.

A.5. Current Account.

The current account is given by total exports and imports, the balance of services and profit remittances from Cusiana:

$$CC_t = XTOT_t - MTOT_t + BZ_t - RB_t$$

The balance of services, in turn, is given by the following expression:

$$BZ_t = \alpha * PIBNP_t^{kz} * ITCR_t^{jz}$$

where kz=1.5 and jz=-1.1, values were chosen as being plausible, as available estimations (Correa, 1984) do not seem reasonable.

B. Financial Sector

The monetary submodel allows us to determine the balance of international reserves and external debt. Following a monetary approach to the balance of payments, international reserves are adjusted to satisfy the economy's liquidity needs, determined by a money demand equation (a function of nominal GDP without oil revenues and the nominal interest rate) and an exogenous multiplier of the means of exchange relative to the monetary base. Changes in the monetary base always reflect variations in international reserves (in pesos). Therefore, the nominal values of Banco de la Republica's net non-monetary operations with Government and the private sector are assumed to be constant. Combining the result for international reserves with the current account balance and foreign investment in Cusiana, we determine the country's external debt balance (we assume that the rest of net foreign investment is zero). The money demand equation used has the following form:

$$M1_t = \alpha * PIBNP_t^{n} * TI_t^{ni}$$

where TI is the internal interest rate, given by external interest rate parity (adjusted for devaluation). Income elasticity (n) is 1.0 and the elasticity to the interest rate (ni) is -0.4. (Lora 1990).

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Diagram 1
STRUCTURE OF THE MODEL

SUBMODELS	MAIN EXOGENOUS VARIABLES	MAIN PREDETERMINED VARIABLES	MAIN ENDOGENOUS VARIABLES
Cusiana Accounts	- Production (MB) - Oil prices (US$) - Operation costs (US$) - Investment (US$) - Tax rates - Association rules		- Gross product value - Taxes paid - Associates cash flow - Foreign remittances - Government cash flow

Demand	- International prices
	- World demand
	- Oil production
	- Coffee exports
		Past capacity utilization	- GDP and its components:
			  Exports
			  Imports
			  Investment
			  Consumption
			- GDP net of Cusiana
			
			- Current capacity utilization

Prices	- International prices - International interest rates	Past inflation	- Inflation - Nominal devaluation* - Real exchange rate* - Relative prices of demand components - Parity interest rates
Fiscal	- Tax rates - Growth of current public expenditure - Growth of public Investment *		Fiscal deficit (Target)
External Sector			Current account surplus/ deficit (target)
Financial	- Non - monetary operations of Central Bank with goverment and private sector - Base multiplier	Stock of: - External debt - International Reserves	- Money demand - International reserves and external debt

* May be used as a policy tool

Table 1

(Average 1993-2000)

	GDP Growth Rate	Inflation	Public Deficit*	Current Account*
Without Cusiana				
Scenario A	2.88	23.21	1.97	-2.04
Cusiana 600				
Scenario A	4.02	24.26	0.02	-0.31
Scenario B	1.28	13.43	0.50	-1.20
Scenario C	4.31	24.30	1.38	-1.57
Scenario D	1.99	13.21	3.31	-3.73
Scenario E	3.33	20.80	0.95	-1.31

* % of GDP

A = Neutral Scenario
B = Central Bank Scenario
C = Government Scenario
D = Non-Cooperative Scenario
E = Cooperative Scenario

Table 2

(Average 1993-1996)

	GDP Growth Rate	Inflation	Public Deficit*	Current Account*
Without Cusiana Scenario A	2.29	22.95	1.54	-1.50
Cusiana 600				
Scenario A	3.92	24.17	1.66	-2.00
Scenario B	1.38	16.38	1.01	-1.87
Scenario C	3.99	24.22	1.76	-2.08
Scenario D	1.86	19.40	2.40	-3.10
Scenario E	3.13	22.54	1.48	-1.98

* % of GDP

A = Neutral Scenario
B = Central Bank Scenario
C = Government Scenario
D = Non-Cooperative Scenario
E = Cooperative Scenario

Table 3

(Average 1997-2000)

	GDP Growth Rate	Inflation	Public Deficit*	Current Account*
Without Cusiana				
Scenario A	2.83	23.48	2.40	-2.57
Cusiana 600				
Scenario A	4.13	24.35	-1.60	1.40
Scenario B	1.18	7.99	0.00	-0.53
Scenario C	4.62	24.37	1.00	-1.05
Scenario D	2.11	7.33	4.23	-4.36
Scenario E	3.52	19.07	0.42	-0.63

* % of GDP

A = Neutral Scenario
B = Central Bank Scenario
C = Government Scenario
D = Non-Cooperative Scenario
E = Cooperative Scenario

Table 4

| | 1993-2000 | | | 1993-1996 | | | 1997-2000 | | |
	Cusiana 300	Cusiana 600	Cusiana 900	Cusiana 300	Cusiana 600	Cusiana 900	Cusiana 300	Cusiana 600	Cusiana 900
-Neutral Scenario									
GDP Growth	3.50	4.02	4.57	3.68	3.92	3.96	3.31	4.13	5.18
Inflation	23.06	24.26	24.56	23.63	24.17	24.09	22.48	14.35	25.04
Current Account	-0.96	-0.31	-0.01	-1.41	-2.00	-2.05	-0.51	1.40	2.08
Public Deficit	0.80	0.02	-0.30	1.28	1.66	1.68	0.32	-1.60	-2.23
-Cooperative Scenario									
GDP Growth	2.73	3.33	3.87	3.12	3.13	3.04	2.33	3.52	4.70
Inflation	20.82	20.80	20.82	22.42	22.54	22.35	19.23	19.07	19.32
Current Account	-1.30	-1.31	-1.22	-1.75	-1.98	-2.03	-0.85	-0.63	-0.41
Public Deficit	1.00	0.95	0.90	1.51	1.48	1.48	0.50	0.42	0.33

Graph 1

Oil Production Perspectives
(MB)

Graph 2

GDP Growth Rate (%)
Neutral Scenario

Without Cusiana ········ Cusiana 600

Graph 3

Rate of Inflation (%)
Neutral Scenario

— Without Cusiana ········ Cusiana 600

Graph 4

Current Account (% GDP)
Neutral Scenario

Graph 5

Public Deficit (% GDP)
Neutral Scenario

— Without Cusiana .... Cusiana 600

Graph 6

EXCHANGE RATE DEVALUATION
Cusiana 600

Legend:
- Scenario A
- Scenario B
- Scenario C
- Scenario D
- Scenario E

Graph 7

REAL EXCHANGE RATE
Cusiana 600

Graph 8

Public Deficit (Percent of GDP)
Cusiana 600

Graph 9

Public Investment-Without Cusiana-
Cusiana 600

Graph 10

GDP GROWTH RATE (Percent)
Cusiana 600

Graph 11

NON-OIL GDP GROWTH RATE (Percent)
Cusiana 600

Graph 12

Current Account (Percent of GDP)
Cusiana 600

Scenario A ⎯⎯⎯   Scenario B ··+··   Scenario C ⎯⎯⎯
Scenario D ··▣··   Scenario E ▲

Graph 13

Rate of Inflation (Percent)
Cusiana 600

Legend: Scenario A, Scenario B, Scenario C, Scenario D, Scenario E

Graph 14

Reserves (Percent of GDP)
Cusiana 600

Graph 15

Direct Effects of Real Devaluation
Over Public Fiscal Account

Legend: External Surplus ; + E.S + External Tax

Graph 16

Policy Instruments, Targets and Cooperation
1994 - 1996
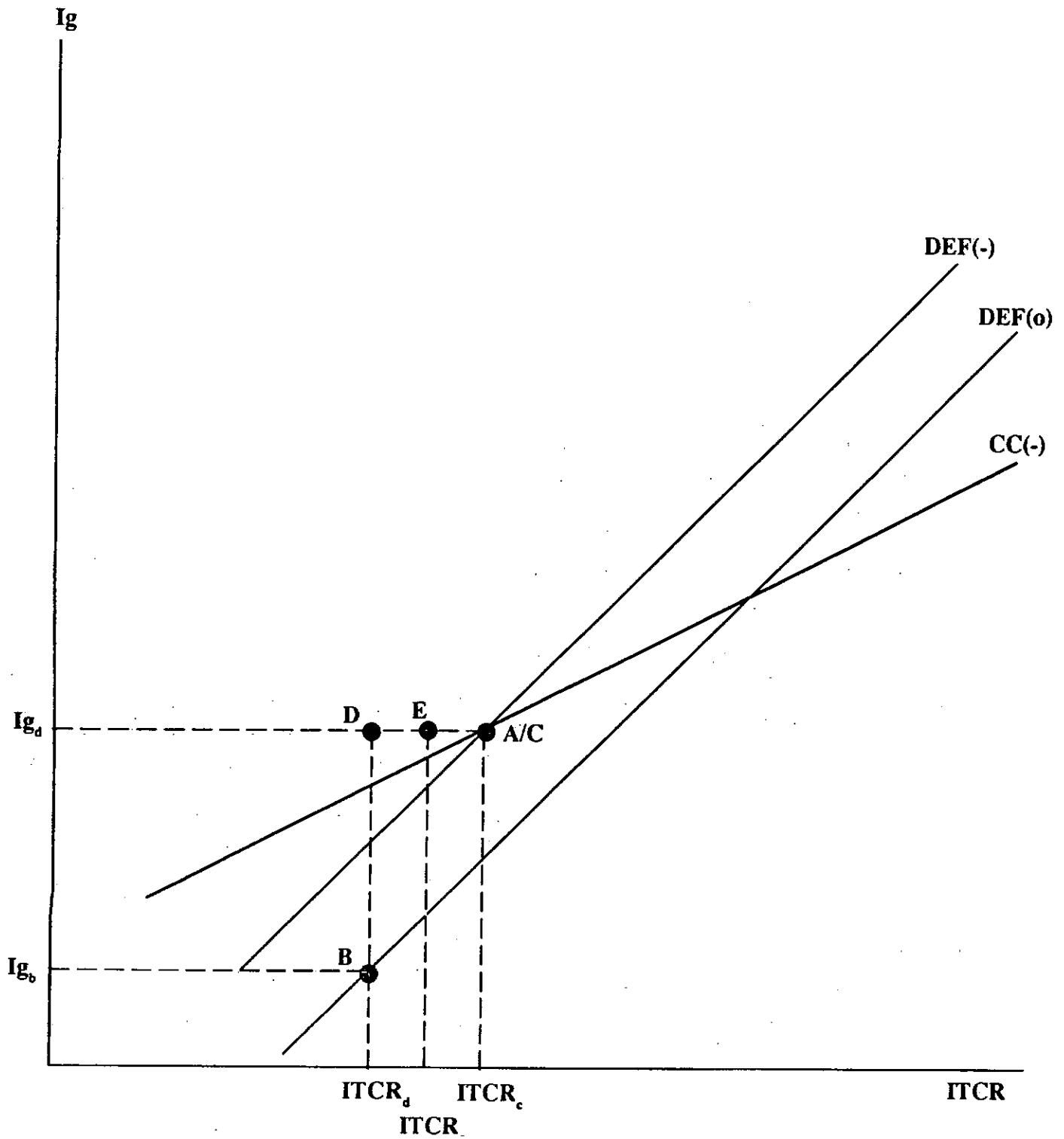
Graph 17

Policy Instruments, Targets and Cooperation
1997 - 2000

Graph 18

GDP Growth Rate (%)
Neutral Scenario

Legend: —+— Cusiana 300   ·········· Cusiana 600   ··□·· Cusiana 900

Graph 19

GDP Growth Rate (%)
Cooperative Scenario

Legend: —+— Cusiana 300 ·········· Cusiana 600 ··□·· Cusiana 900

Rate of Inflation (%)
Neutral Scenario

Graph 21

Rate of Inflation (%)
Cooperative Scenario

Legend: Cusiana 300, Cusiana 600, Cusiana 900

Graph 22

Current Account (% GDP)
Neutral Scenario

Legend: Cusiana 300, Cusiana 600, Cusiana 900

Graph 23

Current Account (% of GDP)
Cooperative Scenario

Graph 24

Public Deficit (% GDP)
Neutral Scenario

Legend: Cusiana 300 — Cusiana 600 — Cusiana 900

Graph 25

Public Deficit (% GDP)
Cooperative Scenario

Graph 26

Discovered Reserves
ARIMA(1,0,0) Prices Scenario
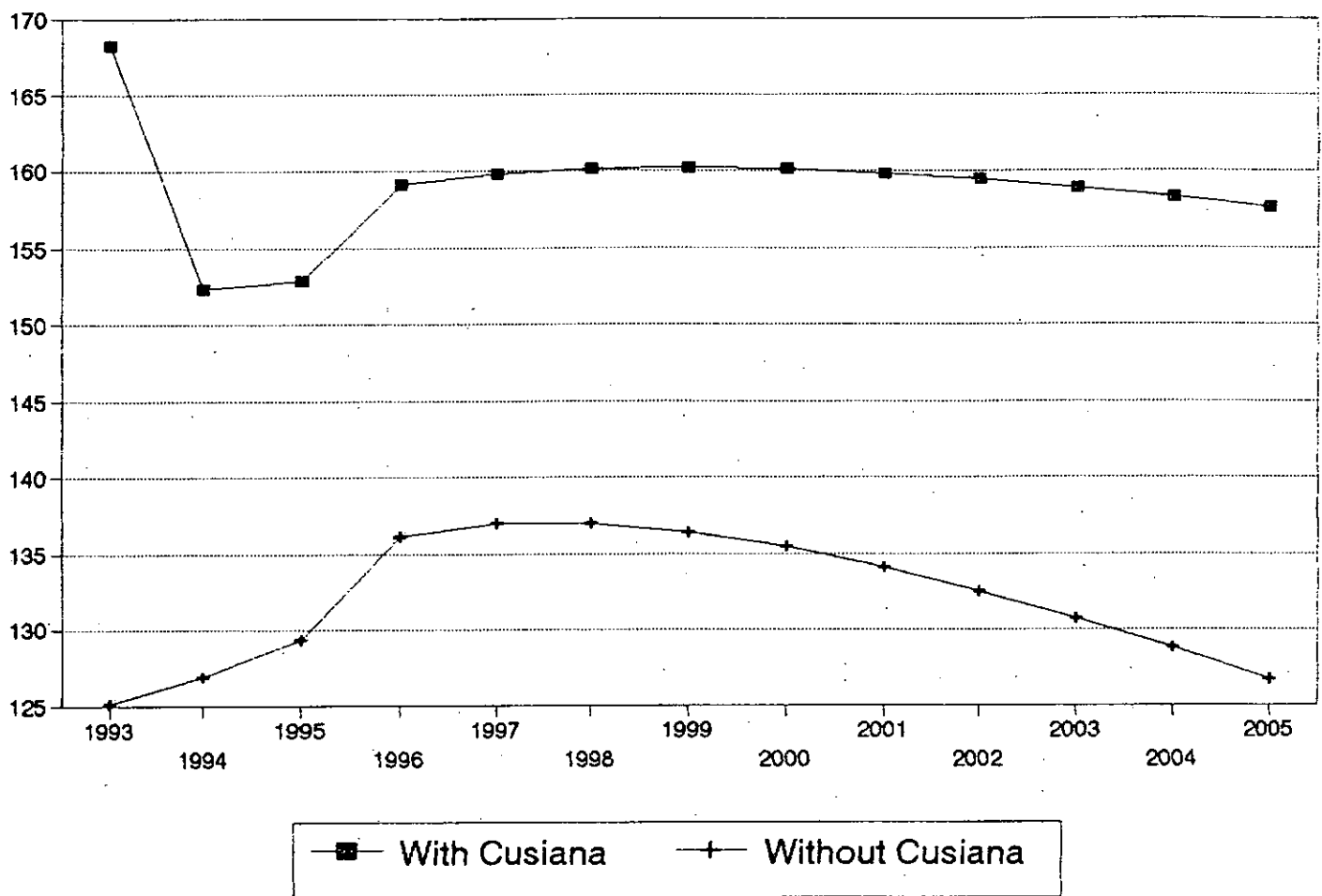
MODELO DE PROYECCIONES DE LA ECONOMIA COLOMBIANA
E X E C U T I N G
CUSIANA 600, CIERRE NEUTRO

---- 1049 PARAMETER RPIBS   TASAS DE CRECIMIENTO DEL PIB POR SECTORES

	CAFE	AGRIC	MINER	PETRO	INDUS	RESTO
1992	4.938	3.911	6.528	5.521	1.686	3.909
1993	-5.882	4.302	6.825	4.128	2.949	3.901
1994		4.615	6.780	2.513	3.005	3.650
1995		4.007	7.082	23.094	2.579	3.488
1996	-6.250	3.171	7.184	-4.159	6.006	2.464
1997		2.945	7.340	56.971	10.563	2.118
1998		3.668	7.532	6.441	5.954	2.971
1999		3.070	7.558	-4.034	5.570	2.217
2000		3.208	7.798	-4.175	5.357	2.370

+	NOEXP	TOTAL
1992	4.076	4.076
1993	4.067	4.204
1994	3.805	3.908
1995	3.635	4.816
1996	2.568	2.754
1997	2.207	7.426
1998	3.097	4.103
1999	2.310	2.452
2000	2.470	2.614

---- 1049 PARAMETER RPIBD   TASAS DE CRECIMIENTO DEL PIB POR DEMANDA

	ICUS	NOEXP	TOTAL	CPRIV	CGOBI	IPRIV-C
1992		4.076	4.076	4.521	4.000	15.061
1993		4.067	4.204	3.844	7.000	13.454
1994	46.333	3.805	3.908	3.667	3.000	7.167
1995	38.631	3.635	4.816	3.519	3.000	3.449
1996	-2.557	2.568	2.754	2.765	3.000	2.496
1997	-31.674	2.207	7.426	2.825	3.000	1.959
1998	5.695	3.097	4.103	3.292	3.000	3.039
1999	-50.125	2.310	2.452	2.790	3.000	2.345
2000	-48.744	2.470	2.614	2.755	3.000	2.500

+	IGOBI-C	IGOBI	IPRIV	EXPOR	IMPOR
1992	7.000	7.000	15.061	7.700	20.675
1993	8.000	8.028	26.470	5.575	22.130
1994	4.500	17.424	2.095	7.971	12.408
1995	4.500	12.448	2.109	12.085	10.164
1996	4.500	-2.640	7.547	3.662	3.996
1997	4.500	0.432	-1.098	22.805	1.774
1998	4.500	4.581	3.214	7.159	5.198

1049 PARAMETER RPIBD   TASAS DE CRECIMIENTO DEL PIB POR DEMANDA

+	IGOBI-C	IGOBI	IPRIV	EXPOR	IMPOR
1999	4.500	0.277	-1.029	3.124	1.954
2000	4.500	2.453	0.839	3.328	3.326

---- 1049 PARAMETER REXPO   TASAS DE CRECIMIENTO DE VOLUMENES DE
                                  EXPORTACIONES

	CAFE	PETR	MINE	AGRI	INDU
1992	20.000	7.665	6.731	5.014	5.014
1993	-3.333	4.215	7.047	7.981	7.981
1994		0.663	7.013	11.599	11.599
1995		51.804	7.344	7.864	7.864
1996		-10.936	7.522	7.666	7.666
1997		120.499	7.700	7.772	7.772
1998		8.239	7.827	7.773	7.773
1999		-7.284	7.891	7.578	7.578
2000		-7.930	8.119	7.447	7.447

---- 1049 PARAMETER RIMPO   TASAS DE CRECIMIENTO DE VOLUMENES DE
                                  IMPORTACIONES

	CONS	INTE	CAPI
1992	20.541	17.621	26.524
1993	15.660	13.377	24.873
1994	11.673	9.607	13.092
1995	10.229	8.279	8.701
1996	5.202	3.877	5.098
1997	4.464	3.329	4.655
1998	6.290	4.681	5.589
1999	4.674	3.485	5.015
2000	5.000	3.727	5.161

---- 1049 PARAMETER PRECIOS   VARIACIONES PORCENTUALES DE PRECIOS Y TASA
                                  INTERES

	IPC	UTILCAP	TCAMBIO	ITCRX	ITCRM	DTF
1992	21.028	0.806	8.973	87.788	91.300	19.601
1993	22.881	0.826	18.782	86.774	91.300	27.721
1994	24.065	0.840	20.059	86.078	91.300	27.862
1995	24.907	0.851	21.000	85.425	91.300	28.840
1996	24.838	0.851	21.051	84.812	91.300	28.893

1049 PARAMETER PRECIOS   VARIACIONES PORCENTUALES DE PRECIOS Y TASA
                              INTERES

	IPC	UTILCAP	TCAMBIO	ITCRX	ITCRM	DTF
1997	24.438	0.848	20.775	84.620	91.300	28.606
1998	24.702	0.852	21.136	84.438	91.300	28.981
1999	24.290	0.849	20.835	84.266	91.300	28.668
2000	23.969	0.846	20.616	84.174	91.300	28.441

+   DTFREAL

1992	-1.179
1993	3.938
1994	3.060
1995	3.149
1996	3.249
1997	3.349
1998	3.432
1999	3.523
2000	3.607

----   1049 PARAMETER MONEDA   TASAS DE CRECIMIENTO NOMINALES DE DINERO Y
                                    CREDITO

	DINERO	CUASID	CREDITO	CREDOM	RESBCOS
1992	30.791	28.262	23.471	40.733	30.791
1993	24.563	18.323	27.713	24.878	24.563
1994	28.729	15.615	28.551	21.524	28.729
1995	29.054	17.149	28.983	22.612	29.054
1996	28.022	16.115	27.863	20.888	28.022
1997	27.299	16.058	26.566	20.370	27.299
1998	28.414	20.150	28.419	24.075	28.414
1999	27.285	18.811	27.247	22.281	27.285
2000	27.121	19.495	27.106	22.595	27.121

----   1049 PARAMETER MONREAL   TASAS DE CRECIMIENTO REALES DE DINERO Y
                                    CREDITO

	DINERO	CUASID	CREDITO	CREDOM	BONOS	OMAS
1992	8.067	5.978	2.019	16.281	-17.374	-17.374
1993	1.368	-3.710	3.932	1.625	-18.621	-18.621
1994	3.759	-6.811	3.615	-2.049	-19.397	-19.397
1995	3.320	-6.211	3.263	-1.837	-19.941	-19.941
1996	2.551	-6.987	2.424	-3.164	-19.896	-19.896
1997	2.299	-6.735	1.710	-3.270	-19.639	-19.639

1049 PARAMETER MONREAL   TASAS DE CRECIMIENTO REALES DE DINERO Y
                            CREDITO

	DINERO	CUASID	CREDITO	CREDOM	BONOS	OMAS
1998	2.977	-3.650	2.981	-0.503	-19.809	-19.809
1999	2.410	-4.408	2.379	-1.617	-19.543	-19.543
2000	2.542	-3.609	2.530	-1.109	-19.335	-19.335

---- 1049 PARAMETER BALANCES   BALANCES MACROECONOMICOS EN PORCENTAJES
                                    DEL PIB

	FISCAL	EXTERNO	RESERVAS	DEUDAEXT	DEUDAPUB	DEUDAPRI
1991	-0.432	5.168	14.320	39.780	33.610	6.170
1992	0.937	2.376	14.739	34.834	30.600	4.233
1993	1.037	-1.439	15.404	34.486	29.460	5.026
1994	1.934	-2.303	16.312	35.879	29.421	6.458
1995	2.033	-2.011	17.066	37.147	29.322	7.825
1996	1.631	-2.227	18.009	38.757	29.341	9.415
1997	-1.551	1.384	18.114	35.566	25.088	10.478
1998	-1.548	1.456	18.724	33.571	21.889	11.682
1999	-1.675	1.425	19.500	32.155	19.083	13.072
2000	-1.613	1.318	20.212	30.885	16.469	14.416

---- 1049 PARAMETER CUSIANA   CUENTAS DE CUSIANA (EN MILLONES USD)

	VBP	COSTOS	INVES-BP	IMPUE-BP	EXCED-BP	REMESAS-BP
1993	79.200	20.246	591.248	1.980	-568.566	-33.546
1994	212.440	117.180	347.198	5.085	-335.315	-36.400
1995	961.350	325.784	283.465	22.185	-71.961	-46.146
1996	1106.350	376.057	610.283		-365.603	-72.603
1997	3850.750	385.577	422.587	180.327	601.090	420.763
1998	4796.100	747.611	453.365	320.578	1068.594	748.016
1999	4993.200	792.176	229.166	404.406	1348.020	943.614
2000	5212.200	847.598	119.026	454.799	1515.996	1061.197

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---- 1048 PARAMETER RPIBS   TASAS DE CRECIMIENTO DEL PIB POR SECTORES

	CAFE	AGRIC	MINER	PETRO	INDUS	RESTO
1992	4.938	3.911	6.528	5.521	1.686	3.909
1993	-5.882	4.302	6.825	4.128	2.949	3.901
1994		1.574	6.780	2.513	-2.036	0.608
1995		0.246	7.082	23.094	-3.516	-0.028
1996	-6.250	-0.356	7.184	-4.159	0.362	-0.790
1997		-0.844	7.340	56.971	4.828	-1.115
1998		-0.661	7.532	6.441	0.572	-0.985
1999		-0.236	7.558	-4.034	1.893	-0.896
2000		0.647	7.798	-4.175	2.947	-0.130

+	NOEXP	TOTAL
1992	4.076	4.076
1993	4.067	4.204
1994	0.633	0.740
1995	-0.029	1.198
1996	-0.823	-0.575
1997	-1.161	4.657
1998	-1.026	0.409
1999	-0.933	-0.492
2000	-0.136	0.270

---- 1048 PARAMETER RPIBD   TASAS DE CRECIMIENTO DEL PIB POR DEMANDA

	ICUS	NOEXP	TOTAL	CPRIV	CGOBI	IPRIV-C
1992		4.076	4.076	4.521	4.000	15.061
1993		4.067	4.204	3.844	7.000	13.454
1994	46.333	0.633	0.740	0.970	3.000	4.561
1995	38.631	-0.029	1.198	-0.151	3.000	0.377
1996	-2.557	-0.823	-0.575	-0.861	3.000	-0.300
1997	-31.674	-1.161	4.657	-0.610	3.000	-0.857
1998	5.695	-1.026	0.409	-0.603	3.000	-0.716
1999	-50.125	-0.933	-0.492	-0.614	3.000	-0.638
2000	-48.744	-0.136	0.270	-0.057	3.000	0.028

+	IGOBI-C	IGOBI	IPRIV	EXPOR	IMPOR
1992	7.000	7.000	15.061	7.700	20.675
1993	8.000	8.028	26.470	5.575	22.129
1994	-13.809	-0.881	-0.243	6.236	8.319
1995	-6.331	4.500	-0.811	9.058	7.410
1996	2.592	-6.089	5.157	0.672	2.911
1997	28.376	19.449	-3.875	20.075	7.264
1998	-6.988	-5.920	-0.260	4.189	1.156

1048 PARAMETER RPIBD   TASAS DE CRECIMIENTO DEL PIB POR DEMANDA

+	IGOBI-C	IGOBI	IPRIV	EXPOR	IMPOR
1999	-1.530	-6.171	-4.288	0.706	-1.301
2000	-2.648	-4.988	-1.847	1.494	-0.264

----   1048 PARAMETER REXPO   TASAS DE CRECIMIENTO DE VOLUMENES DE
                                     EXPORTACIONES

	CAFE	PETR	MINE	AGRI	INDU
1992	20.000	7.665	6.731	5.014	5.014
1993	-3.333	4.215	7.047	7.981	7.981
1994		5.202	7.261	7.758	7.758
1995		54.742	7.605	1.836	1.836
1996		-7.110	7.731	1.936	1.936
1997		111.854	7.875	0.407	0.407
1998		9.730	8.025	0.892	0.892
1999		-5.266	8.006	3.114	3.114
2000		-5.853	8.182	4.641	4.641

----   1048 PARAMETER RIMPO   TASAS DE CRECIMIENTO DE VOLUMENES DE
                                     IMPORTACIONES

	CONS	INTE	CAPI
1992	20.541	17.621	26.524
1993	15.660	13.377	24.873
1994	10.291	9.623	1.119
1995	7.659	7.368	2.037
1996	2.910	3.062	3.913
1997	4.789	4.969	20.806
1998	2.643	2.890	-2.584
1999	1.020	1.322	0.160
2000	1.562	1.522	-0.611

----   1048 PARAMETER PRECIOS   VARIACIONES PORCENTUALES DE PRECIOS Y TASA
                                       INTERES

	IPC	UTILCAP	TCAMBIO	ITCRE	ITCRM	DTF
1992	21.028	0.806	8.973	87.788	91.300	19.601
1993	22.882	0.826	18.782	86.774	91.300	27.721
1994	20.502	0.815	10.000	81.198	86.124	17.400
1995	18.020	0.801	8.000	76.122	81.357	15.320
1996	15.287	0.784	6.000	71.661	77.143	13.240

1048 PARAMETER PRECIOS   VARIACIONES PORCENTUALES DE PRECIOS Y TASA
                              INTERES

	IPC	UTILCAP	TCAMBIO	ITCRI	ITCRM	DTF
1997	11.896	0.764		65.835	71.033	7.000
1998	8.758	0.742		62.181	67.235	7.000
1999	6.417	0.723		59.980	64.987	7.000
2000	5.007	0.713		58.645	63.609	7.000

	DTFREAL
1992	-1.179
1993	3.938
1994	-2.574
1995	-2.288
1996	-1.775
1997	-4.375
1998	-1.617
1999	0.548
2000	1.898

---- 1048 PARAMETER MONEDA   TASAS DE CRECIMIENTO NOMINALES DE DINERO Y
                                  CREDITO

	DINERO	CUASID	CREDITO	CREDOM	RESBCOS
1992	30.791	28.262	23.471	40.733	30.791
1993	24.563	18.323	27.713	24.879	24.563
1994	25.422	4.595	20.383	9.086	25.422
1995	18.832	3.233	16.922	6.860	18.832
1996	15.174	0.719	13.778	3.866	15.174
1997	13.132	-3.690	8.772	-0.559	13.132
1998	7.643	-1.524	6.767	0.568	7.643
1999	5.424	-2.072	5.141	-0.387	5.424
2000	4.864	-1.028	4.648	0.512	4.864

---- 1048 PARAMETER MONREAL   TASAS DE CRECIMIENTO REALES DE DINERO Y
                                   CREDITO

	DINERO	CUASID	CREDITO	CREDOM	BONOS	OMAS
1992	8.067	5.978	2.019	16.281	-17.374	-17.374
1993	1.368	-3.710	3.932	1.625	-18.621	-18.621
1994	4.083	-13.201	-0.099	-9.474	-17.014	-17.014
1995	0.688	-12.530	-0.930	-9.456	-15.269	-15.269
1996	-0.098	-12.636	-1.309	-9.906	-13.260	-13.260
1997	1.105	-13.928	-2.792	-11.130	-10.631	-10.631

1048 PARAMETER MONREAL .   TASAS DE CRECIMIENTO REALES DE DINERO Y
                           CREDITO

	DINERO	CUASID	CREDITO	CREDOM	BONOS	OMAS
1998	-1.026	-9.454	-1.831	-7.531	-8.053	-8.053
1999	-0.933	-7.977	-1.199	-6.394	-6.030	-6.030
2000	-0.136	-5.747	-0.341	-4.281	-4.768	-4.768

----   1048 PARAMETER BALANCES   BALANCES MACROECONOMICOS EN PORCENTAJES
                                   DEL PIB

	FISCAL	EXTERNO	RESERVAS	DEUDAEXT	DEUDAPUB	DEUDAPRI
1991	-0.432	5.168	14.320	39.780	33.610	6.170
1992	0.937	2.376	14.739	34.834	30.600	4.233
1993	1.037	-1.439	15.404	34.486	29.460	5.026
1994	1.000	-1.974	15.893	34.757	27.890	6.867
1995	1.000	-1.762	15.942	34.840	26.450	8.390
1996	1.000	-2.284	16.023	35.438	25.580	9.858
1997		-0.626	14.957	32.440	22.210	10.230
1998		-0.549	14.445	31.135	20.505	10.630
1999		-0.536	14.137	30.476	19.416	11.060
2000		-0.403	13.868	29.821	18.478	11.342

----   1048 PARAMETER CUSIANA   CUENTAS DE CUSIANA (EN MILLONES USD)

	VBP	COSTOS	INVES-BP	IMPUE-BP	EXCED-BP	REMESAS-BP
1993	79.200	20.246	591.247	1.980	-568.565	-33.545
1994	212.440	123.544	356.418	5.085	-348.504	-49.589
1995	961.350	361.629	299.044	22.185	-106.578	-80.763
1996	1106.350	438.694	661.501		-449.777	-156.777
1997	3850.750	482.780	478.621	124.445	414.817	290.372
1998	4796.100	982.016	529.949	260.310	867.699	607.389
1999	4993.200	1072.935	273.609	346.407	1154.690	808.283
2000	5212.200	1169.761	144.199	395.951	1319.837	923.886

**** FILE SUMMARY

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OUTPUT C:\FELIPE\PE208.LST

EXECUTION TIME   =   8.400 SECONDS   VER: 386-EK-009

---- 1048 PARAMETER RPIBS   TASAS DE CRECIMIENTO DEL PIB POR SECTORES

	CAFE	AGRIC	MINER	PETRO	INDUS	RESTO
1992	4.938	3.911	6.528	5.521	1.686	3.909
1993	-5.882	4.302	6.825	4.128	2.949	3.901
1994		4.659	6.780	2.513	3.057	3.704
1995		3.952	7.082	23.094	2.524	3.421
1996	-6.250	3.401	7.184	-4.159	6.235	2.747
1997		4.200	7.340	56.971	11.641	3.680
1998		3.897	7.532	6.441	6.330	3.272
1999		3.203	7.558	-4.034	5.679	2.403
2000		3.183	7.798	-4.175	5.298	2.358

+	NOEXP	TOTAL
1992	4.076	4.076
1993	4.067	4.204
1994	3.861	3.964
1995	3.566	4.746
1996	2.863	3.045
1997	3.837	9.016
1998	3.411	4.380
1999	2.504	2.629
2000	2.458	2.600

---- 1048 PARAMETER RPIBD   TASAS DE CRECIMIENTO DEL PIB POR DEMANDA

	ICUS	NOEXP	TOTAL	CPRIV	CGOBI	IPRIV-C
1992		4.076	4.076	4.521	4.000	15.061
1993		4.067	4.204	3.844	7.000	13.454
1994	46.333	3.861	3.964	3.710	3.000	7.227
1995	38.631	3.566	4.746	3.477	3.000	3.376
1996	-2.557	2.863	3.045	2.982	3.000	2.804
1997	-31.674	3.837	9.016	4.146	3.000	3.658
1998	5.695	3.411	4.380	3.893	3.000	3.364
1999	-50.125	2.504	2.629	3.100	3.000	2.546
2000	-48.744	2.458	2.600	2.827	3.000	2.487

+	IGOBI-C	IGOBI	IPRIV	EXPOR	IMPOR
1992	7.000	7.000	15.061	7.700	20.675
1993	8.000	8.028	26.470	5.575	22.130
1994	5.480	18.404	2.149	7.960	12.713
1995	3.073	11.112	2.042	12.099	9.744
1996	10.309	2.133	7.842	3.611	5.641
1997	34.794	27.640	0.455	22.534	11.225
1998	4.826	4.868	3.516	7.124	5.773

1048 PARAMETER RPIBD   TASAS DE CRECIMIENTO DEL PIB POR DEMANDA

+	IGOBI-C	IGOBI	IPRIV	EXPOR	IMPOR
1999	5.462	2.235	-0.770	3.099	2.872
2000	3.431	1.953	0.866	3.332	3.233

---- 1048 PARAMETER REXPO   TASAS DE CRECIMIENTO DE VOLUMENES DE
                                 EXPORTACIONES

	CAFE	PETR	MINE	AGRI	INDU
1992	20.000	7.665	6.731	5.014	5.014
1993	-3.333	4.215	7.047	7.981	7.981
1994		0.583	7.008	11.599	11.599
1995		51.946	7.349	7.864	7.864
1996		-11.231	7.501	7.666	7.666
1997		118.976	7.586	7.772	7.772
1998		8.118	7.812	7.773	7.773
1999		-7.495	7.886	7.578	7.578
2000		-8.065	8.128	7.447	7.447

---- 1048 PARAMETER RIMPO   TASAS DE CRECIMIENTO DE VOLUMENES DE
                                 IMPORTACIONES

	CONS	INTE	CAPI
1992	20.541	17.621	26.524
1993	15.660	13.377	24.873
1994	11.794	9.696	13.837
1995	10.081	8.169	7.666
1996	5.809	4.326	9.242
1997	7.820	5.810	27.775
1998	6.938	5.159	6.245
1999	5.071	3.780	6.162
2000	4.976	3.709	4.512

---- 1048 PARAMETER PRECIOS   VARIACIONES PORCENTUALES DE PRECIOS Y TASA
                                   INTERES

	IPC	UTILCAP	TCAMBIO	ITCRI	ITCRM	DTF
1992	20.909	0.806	8.866	87.788	91.300	19.487
1993	22.778	0.826	18.682	86.774	91.300	27.616
1994	24.011	0.841	20.007	86.078	91.300	27.808
1995	24.775	0.850	20.872	85.425	91.300	28.707
1996	24.944	0.853	21.154	84.812	91.300	29.001

1048 PARAMETER PRECIOS   VARIACIONES PORCENTUALES DE PRECIOS Y TASA
                              INTERES

	IPC	UTILCAP	TCAMBIO	ITCRX	ITCRM	DTF
1997	25.659	0.862	21.960	84.620	91.300	29.838
1998	25.079	0.857	21.502	84.438	91.300	29.362
1999	23.790	0.845	20.349	84.266	91.300	28.163
2000	22.488	0.832	19.175	84.174	91.300	26.942

	+	DTFREAL
1992		-1.177
1993		3.940
1994		3.061
1995		3.151
1996		3.247
1997		3.326
1998		3.425
1999		3.532
2000		3.636

---- 1048 PARAMETER MONEDA   TASAS DE CRECIMIENTO NOMINALES DE DINERO Y
                                   CREDITO

	DINERO	CUASID	CREDITO	CREDOM	RESBCOS
1992	30.713	28.157	23.350	40.587	30.713
1993	24.452	18.264	27.606	24.800	24.452
1994	28.722	15.699	28.570	21.620	28.722
1995	28.862	16.892	28.752	22.317	28.862
1996	28.404	16.959	28.372	21.794	28.404
1997	30.142	21.971	30.032	26.470	30.142
1998	29.535	21.670	29.228	25.507	29.535
1999	27.364	18.758	26.995	22.084	27.364
2000	25.980	17.644	25.571	20.624	25.980

---- 1048 PARAMETER MONREAL   TASAS DE CRECIMIENTO REALES DE DINERO Y
                                   CREDITO

	DINERO	CUASID	CREDITO	CREDOM	BONOS	OMAS
1992	8.108	5.994	2.019	16.275	-17.293	-17.293
1993	1.363	-3.677	3.932	1.646	-18.552	-18.552
1994	3.799	-6.703	3.676	-1.929	-19.362	-19.362
1995	3.276	-6.317	3.188	-1.970	-19.855	-19.855
1996	2.770	-6.391	2.744	-2.521	-19.964	-19.964
1997	3.568	-2.935	3.480	0.646	-20.419	-20.419

1048 PARAMETER MONREAL   TASAS DE CRECIMIENTO REALES DE DINERO Y
                            CREDITO

	DINERO	CUASID	CREDITO	CREDOM	BONOS	OMAS
1998	3.563	-2.726	3.317	0.343	-20.050	-20.050
1999	2.887	-4.065	2.589	-1.379	-19.218	-19.218
2000	2.851	-3.955	2.517	-1.522	-18.359	-18.359

---- 1048 PARAMETER BALANCES   BALANCES MACROECONOMICOS EN PORCENTAJES
                                   DEL PIB

	FISCAL	EXTERNO	RESERVAS	DEUDAEXT	DEUDAPUB	DEUDAPRI
1991	-0.432	5.168	14.320	39.780	33.610	6.170
1992	0.937	2.376	14.735	34.830	30.600	4.230
1993	1.037	-1.439	15.395	34.477	29.460	5.017
1994	2.000	-2.358	16.296	35.907	29.471	6.437
1995	2.000	-1.988	17.053	37.165	29.355	7.810
1996	2.000	-2.539	17.966	38.999	29.656	9.343
1997	1.000	-0.841	17.947	37.578	27.493	10.085
1998	1.000	-0.937	18.572	37.794	26.610	11.185
1999	1.000	-1.160	19.329	38.683	26.187	12.496
2000	1.000	-1.260	20.002	39.605	25.818	13.786

---- 1048 PARAMETER CUSIANA   CUENTAS DE CUSIANA (EN MILLONES USD)

	VBP	COSTOS	INVES-BP	IMPUE-BP	EXCED-BP	REMESAS-BP
1993	79.200	20.246	591.248	1.980	-568.566	-33.546
1994	212.440	117.184	347.198	5.085	-335.318	-36.403
1995	961.350	325.780	283.465	22.185	-71.959	-46.144
1996	1106.350	376.144	610.283		-365.649	-72.649
1997	3850.750	386.223	422.587	180.068	600.225	420.158
1998	4796.100	749.030	453.365	320.353	1067.842	747.489
1999	4993.200	793.801	229.166	404.148	1347.159	943.011
2000	5212.200	849.323	119.026	454.524	1515.081	1060.556

**** FILE SUMMARY

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EXECUTION TIME   =   8.620 SECONDS   VER: 386-EK-009

----   1048 PARAMETER RPIBS   TASAS DE CRECIMIENTO DEL PIB POR SECTORES

	CAFE	AGRIC	MINER	PETRO	INDUS	RESTO
1992	4.938	3.911	6.528	5.521	1.686	3.909
1993	-5.882	4.302	6.825	4.128	2.949	3.901
1994		2.276	6.780	2.513	-1.334	1.513
1995		0.548	7.082	23.094	-3.188	0.415
1996	-6.250	0.048	7.184	-4.159	0.778	-0.258
1997		-0.172	7.340	56.971	4.902	-0.290
1998		0.212	7.532	6.441	1.336	0.049
1999		0.667	7.558	-4.034	2.838	0.123
2000		1.652	7.798	-4.175	4.113	0.940

+	NOEXP	TOTAL
1992	4.076	4.076
1993	4.067	4.204
1994	1.576	1.682
1995	0.432	1.646
1996	-0.269	-0.033
1997	-0.302	5.392
1998	0.051	1.373
1999	0.128	0.467
2000	0.980	1.273

----   1048 PARAMETER RPIBD   TASAS DE CRECIMIENTO DEL PIB POR DEMANDA

	ICUS	NOEXP	TOTAL	CPRIV	CGOBI	IPRIV-C
1992		4.076	4.076	4.521	4.000	15.061
1993		4.067	4.204	3.844	7.000	13.454
1994	46.333	1.576	1.682	1.706	3.000	5.667
1995	38.631	0.432	1.646	0.481	3.000	0.946
1996	-2.557	-0.269	-0.033	-0.146	3.000	0.358
1997	-31.674	-0.302	5.392	0.523	3.000	0.195
1998	5.695	0.051	1.373	0.780	3.000	0.534
1999	-50.125	0.128	0.467	0.744	3.000	0.510
2000	-48.744	0.980	1.273	1.247	3.000	1.141

+	IGOBI-C	IGOBI	IPRIV	EXPOR	IMPOR
1992	7.000	7.000	15.061	7.700	20.675
1993	8.000	8.028	26.470	5.575	22.130
1994	5.474	18.398	0.749	5.852	14.571
1995	3.073	11.112	-0.263	8.754	10.082
1996	10.309	2.133	5.700	0.475	5.638
1997	34.794	27.639	-2.863	20.115	12.545
1998	4.826	4.868	0.892	4.198	5.453

1048 PARAMETER RPIBD — TASAS DE CRECIMIENTO DEL PIB POR DEMANDA

+	IGOBI-C	IGOBI	IPRIV	EXPOR	IMPOR
1999	5.462	2.235	-3.070	0.867	2.091
2000	3.431	1.954	-0.674	1.884	2.229

---- 1048 PARAMETER REXPO — TASAS DE CRECIMIENTO DE VOLUMENES DE EXPORTACIONES

	CAFE	PETR	MINE	AGRI	INDU
1992	20.000	7.665	6.731	5.014	5.014
1993	-3.333	4.215	7.047	7.981	7.981
1994		3.852	7.187	7.432	7.432
1995		54.808	7.576	1.439	1.439
1996		-7.692	7.700	1.765	1.765
1997		113.152	7.831	0.435	0.435
1998		9.373	7.976	1.152	1.152
1999		-5.781	7.966	3.752	3.752
2000		-6.474	8.146	5.721	5.721

---- 1048 PARAMETER RIMPO — TASAS DE CRECIMIENTO DE VOLUMENES DE IMPORTACIONES

	CONS	INTE	CAPI
1992	20.541	17.621	26.524
1993	15.660	13.377	24.873
1994	12.851	11.618	16.056
1995	8.945	8.384	8.760
1996	4.125	3.985	10.188
1997	6.534	6.261	30.796
1998	4.562	4.268	7.032
1999	2.511	2.311	6.290
2000	2.798	2.250	4.167

---- 1048 PARAMETER PRECIOS — VARIACIONES PORCENTUALES DE PRECIOS Y TASA INTERES

	IPC	UTILCAP	TCAMBIO	ITCRX	ITCRM	DTF
1992	21.028	0.806	8.973	87.788	91.300	19.601
1993	22.881	0.826	18.782	86.774	91.300	27.721
1994	21.113	0.822	10.000	80.788	85.689	17.400
1995	18.392	0.807	8.000	75.500	80.692	15.320
1996	15.368	0.786	6.000	71.026	76.459	13.240

1048 PARAMETER PRECIOS   VARIACIONES PORCENTUALES DE PRECIOS Y TASA
                              INTERES

	IPC	UTILCAP	TCAMBIO	ITCRX	ITCRM	DTF
1997	11.790	0.765		65.313	70.469	7.000
1998	8.361	0.739		61.914	66.946	7.000
1999	5.587	0.714		60.193	65.217	7.000
2000	3.765	0.697		59.556	64.598	7.000

	+ DTFREAL
1992	-1.179
1993	3.938
1994	-3.065
1995	-2.594
1996	-1.844
1997	-4.285
1998	-1.256
1999	1.339
2000	3.118

---- 1048 PARAMETER MONEDA   TASAS DE CRECIMIENTO NOMINALES DE DINERO Y
                                  CREDITO

	DINERO	CUASID	CREDITO	CREDOM	RESBCOS
1992	30.791	28.262	23.471	40.733	30.791
1993	24.563	18.323	27.713	24.878	24.563
1994	27.238	6.784	22.228	11.745	27.238
1995	19.756	5.195	17.978	9.011	19.756
1996	15.899	3.161	14.713	6.374	15.899
1997	14.009	0.707	10.074	3.780	14.009
1998	8.416	3.996	8.009	5.789	8.416
1999	5.722	3.267	5.825	4.434	5.722
2000	4.781	3.753	4.865	4.624	4.781

---- 1048 PARAMETER MONREAL   TASAS DE CRECIMIENTO REALES DE DINERO Y
                                   CREDITO

	DINERO	CUASID	CREDITO	CREDOM	BONOS	OMAS
1992	8.067	5.978	2.019	16.281	-17.374	-17.374
1993	1.368	-3.710	3.932	1.625	-18.621	-18.621
1994	5.058	-11.831	0.921	-7.735	-17.432	-17.432
1995	1.153	-11.146	-0.349	-7.923	-15.534	-15.534
1996	0.460	-10.581	-0.568	-7.795	-13.321	-13.321
1997	1.984	-9.914	-1.535	-7.165	-10.547	-10.547

1048 PARAMETER MONREAL   TASAS DE CRECIMIENTO REALES DE DINERO Y
                           CREDITO

	DINERO	CUASID	CREDITO	CREDOM	BONOS	OMAS
1998	0.051	-4.029	-0.325	-2.374	-7.716	-7.716
1999	0.128	-2.197	0.226	-1.092	-5.291	-5.291
2000	0.980	-0.011	1.061	0.828	-3.628	-3.628

----   1048 PARAMETER BALANCES   BALANCES MACROECONOMICOS EN PORCENTAJES
                                    DEL PIB

	FISCAL	EXTERNO	RESERVAS	DEUDAEXT	DEUDAPUB	DEUDAPRI
1991	-0.432	5.168	14.320	39.780	33.610	6.170
1992	0.937	2.376	14.739	34.834	30.600	4.233
1993	1.037	-1.439	15.404	34.486	29.460	5.026
1994	2.325	-3.091	15.783	35.508	28.810	6.698
1995	2.849	-3.421	15.771	36.959	28.907	8.052
1996	3.386	-4.433	15.791	39.339	30.035	9.304
1997	3.366	-3.646	14.671	38.554	29.178	9.376
1998	4.117	-4.240	14.094	40.158	30.779	9.379
1999	4.579	-4.686	13.751	42.983	33.565	9.418
2000	4.865	-4.858	13.477	46.130	36.780	9.350

----   1048 PARAMETER COSIANA   CUENTAS DE COSIANA (EN MILLONES USD)

	VBP	COSTOS	INVES-BP	IMPUE-BP	EXCED-BP	REMESAS-BP
1993	79.200	20.246	591.248	1.980	-568.566	-33.546
1994	212.440	124.274	357.242	5.085	-349.784	-50.869
1995	961.350	365.365	300.222	22.185	-109.740	-83.925
1996	1106.350	444.385	664.455		-455.725	-162.725
1997	3850.750	490.635	480.639	120.682	402.275	281.592
1998	4796.100	998.742	531.202	257.273	857.576	600.304
1999	4993.200	1086.668	273.065	344.385	1147.951	803.566
2000	5212.200	1174.078	142.928	395.645	1318.816	923.171

**** FILE SUMMARY

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OUTPUT C:\FELIPE\PE208.LST

EXECUTION TIME   =   8.630 SECONDS   VER: 386-EK-009

---- 1048 PARAMETER RPIBS   TASAS DE CRECIMIENTO DEL PIB POR SECTORES

	CAFE	AGRIC	MINER	PETRO	INDUS	RESTO
1992	4.938	3.911	6.528	5.521	1.686	3.909
1993	-5.882	4.302	6.825	4.128	2.949	3.901
1994		3.647	6.780	2.513	1.388	2.686
1995		2.726	7.082	23.094	0.554	2.273
1996	-6.250	2.178	7.184	-4.159	4.374	1.585
1997		2.581	7.340	56.971	9.524	2.123
1998		2.485	7.532	6.441	4.641	1.925
1999		2.136	7.558	-4.034	4.524	1.349
2000		2.435	7.798	-4.175	4.640	1.601

	NOEXP	TOTAL
1992	4.076	4.076
1993	4.067	4.204
1994	2.800	2.903
1995	2.369	3.564
1996	1.651	1.854
1997	2.212	7.592
1998	2.006	3.113
1999	1.406	1.621
2000	1.668	1.881

---- 1048 PARAMETER RPIBD   TASAS DE CRECIMIENTO DEL PIB POR DEMANDA

	ICUS	NOEXP	TOTAL	CPRIV	CGOBI	IPRIV-C
1992		4.076	4.076	4.521	4.000	15.061
1993		4.067	4.204	3.844	7.000	13.454
1994	46.333	2.800	2.903	2.810	3.000	6.353
1995	38.631	2.369	3.564	2.266	3.000	2.377
1996	-2.557	1.651	1.854	1.703	3.000	1.778
1997	-31.674	2.212	7.592	2.566	3.000	2.199
1998	5.695	2.006	3.113	2.431	3.000	2.068
1999	-50.125	1.406	1.621	1.895	3.000	1.539
2000	-48.744	1.668	1.881	1.926	3.000	1.738

	IGOBI-C	IGOBI	IPRIV	EXPOR	IMPOR
1992	7.000	7.000	15.061	7.700	20.675
1993	8.000	8.028	26.470	5.575	22.130
1994	-1.000	11.925	1.365	7.400	11.222
1995	-0.100	8.771	1.091	11.102	8.852
1996	7.700	-0.645	6.951	2.665	4.586
1997	32.700	25.003	-0.951	21.740	9.723
1998	0.900	1.205	2.309	6.219	3.919

1048 PARAMETER RPIBD   TASAS DE CRECIMIENTO DEL PIB POR DEMANDA

+	IGOBI-C	IGOBI	IPRIV	EXPOR	IMPOR
1999	3.100	-0.531	-1.885	2.372	1.320
2000	1.400	-0.315	0.038	2.794	1.902

---- 1048 PARAMETER REXPO   TASAS DE CRECIMIENTO DE VOLUMENES DE
                                   EXPORTACIONES

	CAPE	PETR	MINE	AGRI	INDU
1992	20.000	7.665	6.731	5.014	5.014
1993	-3.333	4.215	7.047	7.981	7.981
1994		2.102	7.092	10.347	10.347
1995		52.949	7.436	5.905	5.905
1996		-9.762	7.580	5.870	5.870
1997		116.448	7.688	5.517	5.517
1998		8.716	7.887	5.808	5.808
1999		-6.652	7.932	6.347	6.347
2000		-7.230	8.148	6.721	6.721

---- 1048 PARAMETER RIMPO   TASAS DE CRECIMIENTO DE VOLUMENES DE
                                   IMPORTACIONES

	CONS	INTE	CAPI
1992	20.541	17.621	26.524
1993	15.660	13.377	24.873
1994	11.284	9.655	9.545
1995	9.212	7.844	5.635
1996	4.748	3.811	7.290
1997	6.676	5.386	25.371
1998	5.326	4.210	2.976
1999	3.679	2.908	3.981
2000	3.792	2.912	2.614

---- 1048 PARAMETER PRECIOS   VARIACIONES PORCENTUALES DE PRECIOS Y TASA
                                     INTERES

	IPC	UTILCAP	TCAMBIO	ITCRI	ITCRH	DTF
1992	21.028	0.806	8.973	87.788	91.300	19.601
1993	22.881	0.826	18.782	86.774	91.300	27.721
1994	22.915	0.832	16.731	84.475	89.600	24.401
1995	22.584	0.834	16.629	82.338	88.000	24.294
1996	21.800	0.830	16.227	80.446	86.600	23.876

1048 PARAMETER PRECIOS   VARIACIONES PORCENTUALES DE PRECIOS Y TASA
                             INTERES

	IPC	UTILCAP	TCAMBIO	ITCRX	ITCRM	DTF
1997	21.158	0.830	14.740	78.317	84.500	22.330
1998	19.822	0.819	14.743	77.039	83.300	22.333
1999	18.269	0.806	13.877	76.144	82.500	21.432
2000	17.084	0.795	13.365	75.692	82.100	20.900

	DTFREAL
1992	-1.179
1993	3.938
1994	1.209
1995	1.395
1996	1.704
1997	0.967
1998	2.095
1999	2.674
2000	3.259

---- 1048 PARAMETER MONEDA   TASAS DE CRECIMIENTO NOMINALES DE DINERO Y
                                  CREDITO

	DINERO	CUASID	CREDITO	CREDOM	RESBCOS
1992	30.791	28.262	23.471	40.733	30.791
1993	24.563	18.323	27.713	24.878	24.563
1994	27.694	12.012	25.903	17.465	27.694
1995	25.531	12.290	24.800	17.158	25.531
1996	23.978	11.548	23.505	15.929	23.978
1997	24.462	13.425	22.880	17.693	24.462
1998	22.225	14.238	21.846	17.781	22.225
1999	20.287	12.000	19.899	15.152	20.287
2000	19.247	11.998	19.029	14.818	19.247

---- 1048 PARAMETER MONREAL   TASAS DE CRECIMIENTO REALES DE DINERO Y
                                  CREDITO

	DINERO	CUASID	CREDITO	CREDOM	BONOS	OMAS
1992	8.067	5.978	2.019	16.281	-17.374	-17.374
1993	1.368	-3.710	3.932	1.625	-18.621	-18.621
1994	3.888	-8.870	2.431	-4.434	-18.643	-18.643
1995	2.404	-8.398	1.808	-4.426	-18.423	-18.423
1996	1.788	-8.417	1.400	-4.821	-17.898	-17.898
1997	2.727	-6.382	1.421	-2.860	-17.463	-17.463

1048 PARAMETER NOBREAL   TASAS DE CRECIMIENTO REALES DE DINERO Y
                          CREDITO

	DINERO	CUASID	CREDITO	CREDON	BONOS	OMAS
1998	2.005	-4.660	1.689	-1.704	-16.543	-16.543
1999	1.706	-5.300	1.378	-2.635	-15.447	-15.447
2000	1.847	-4.344	1.661	-1.935	-14.591	-14.591

---- 1048 PARAMETER BALANCES   BALANCES MACROECONOMICOS EN PORCENTAJES
                                DEL PIB

	FISCAL	EXTERNO	RESERVAS	DEUDAEXT	DEUDAPUB	DEUDAPRI
1991	-0.432	5.168	14.320	39.780	33.610	6.170
1992	0.937	2.376	14.739	34.834	30.600	4.233
1993	1.037	-1.439	15.404	34.486	29.460	5.026
1994	1.663	-2.221	16.177	35.535	28.949	6.586
1995	1.635	-1.877	16.723	36.404	28.376	8.028
1996	1.600	-2.384	17.403	37.824	28.251	9.573
1997	0.548	-0.647	17.096	35.857	25.608	10.249
1998	0.453	-0.589	17.449	35.516	24.309	11.207
1999	0.382	-0.668	17.952	35.743	23.421	12.322
2000	0.311	-0.620	18.415	35.944	22.571	13.373

---- 1048 PARAMETER CUSIANA   CUENTAS DE CUSIANA (EN MILLONES USD)

	VBP	COSTOS	INVES-BP	IMPUE-BP	EXCED-BP	REMESAS-BP
1993	79.200	20.246	591.248	1.980	-568.566	-33.546
1994	212.440	119.193	350.109	5.085	-339.481	-40.566
1995	961.350	336.768	288.245	22.185	-82.575	-56.760
1996	1106.350	394.597	625.430		-390.505	-97.505
1997	3850.750	413.446	438.391	164.384	547.946	383.562
1998	4796.100	811.579	473.914	304.236	1014.122	709.885
1999	4993.200	867.478	240.874	388.914	1296.379	907.466
2000	5212.200	932.073	125.506	439.405	1464.682	1025.277

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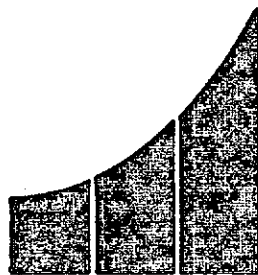
FEDESARROLLO

FUNDACION PARA LA EDUCACION SUPERIOR Y EL DESARROLLO

FEDESARROLLO es una entidad colombiana, sin ánimo de lucro dedicada a promover el adelanto científico y cultural y la educación superior, orientándolos hacia el desarrollo económico y social del país.

Para el cumplimiento de sus objetivos, adelantará directamente o con la colaboración de universidades y centros académicos, proyectos de investigación sobre problemas de interés nacional.

Entre los temas de investigación que han sido considerados de alta prioridad están la planeación económica y social, el diseño de una política industrial para Colombia, las implicaciones del crecimiento demográfico, el proceso de integración latinoamericana, el desarrollo urbano y la formulación de una política petrolera para el país.

FEDESARROLLO se propone además crear una conciencia dentro de la comunidad acerca de la necesidad de apoyar a las Universidades colombianas con el fin de elevar su nivel académico y permitirles desempeñar el papel que les corresponde en la modernización de nuestra sociedad.