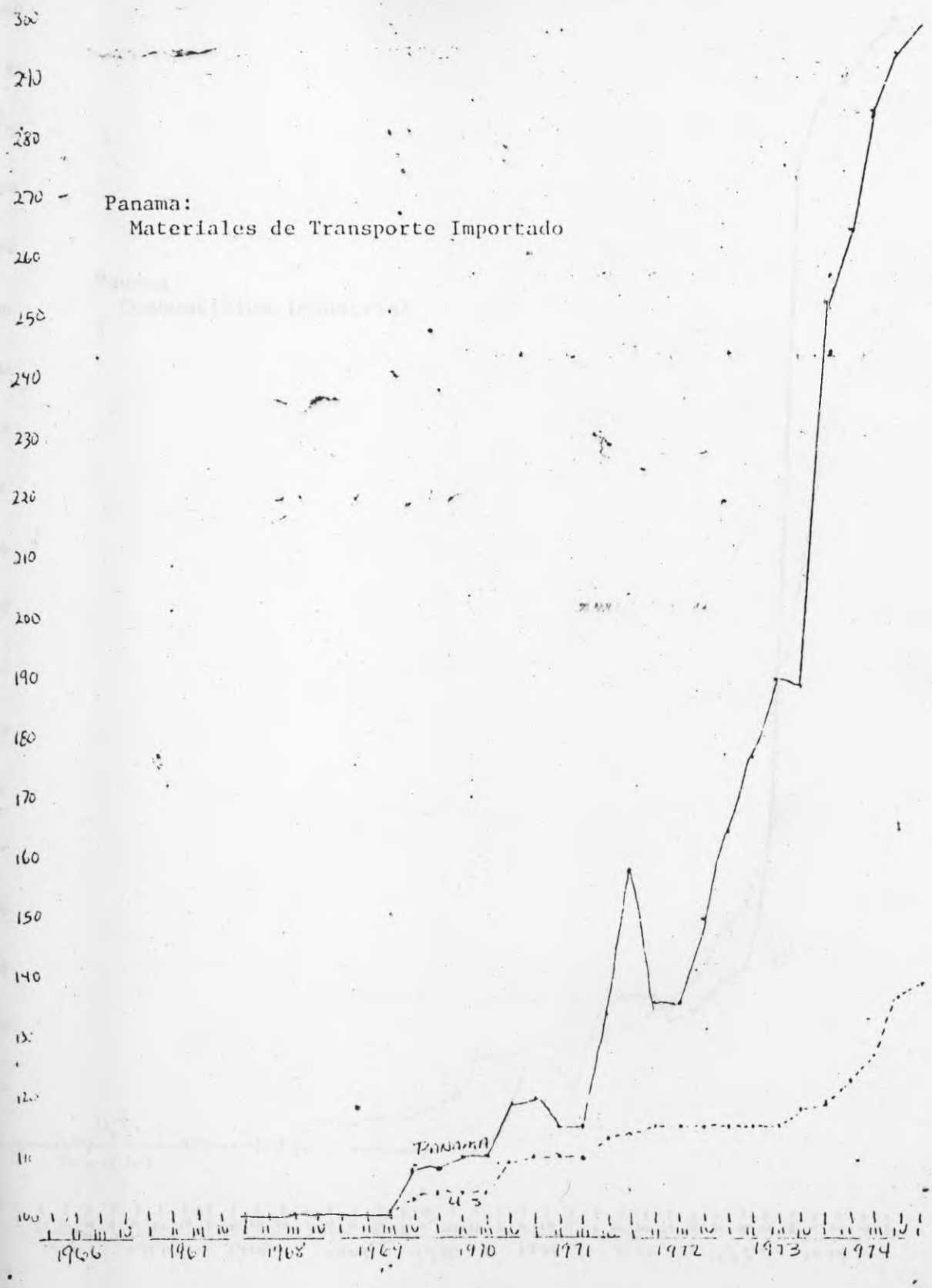

Fig. 30.--Transportation and heavy equipment

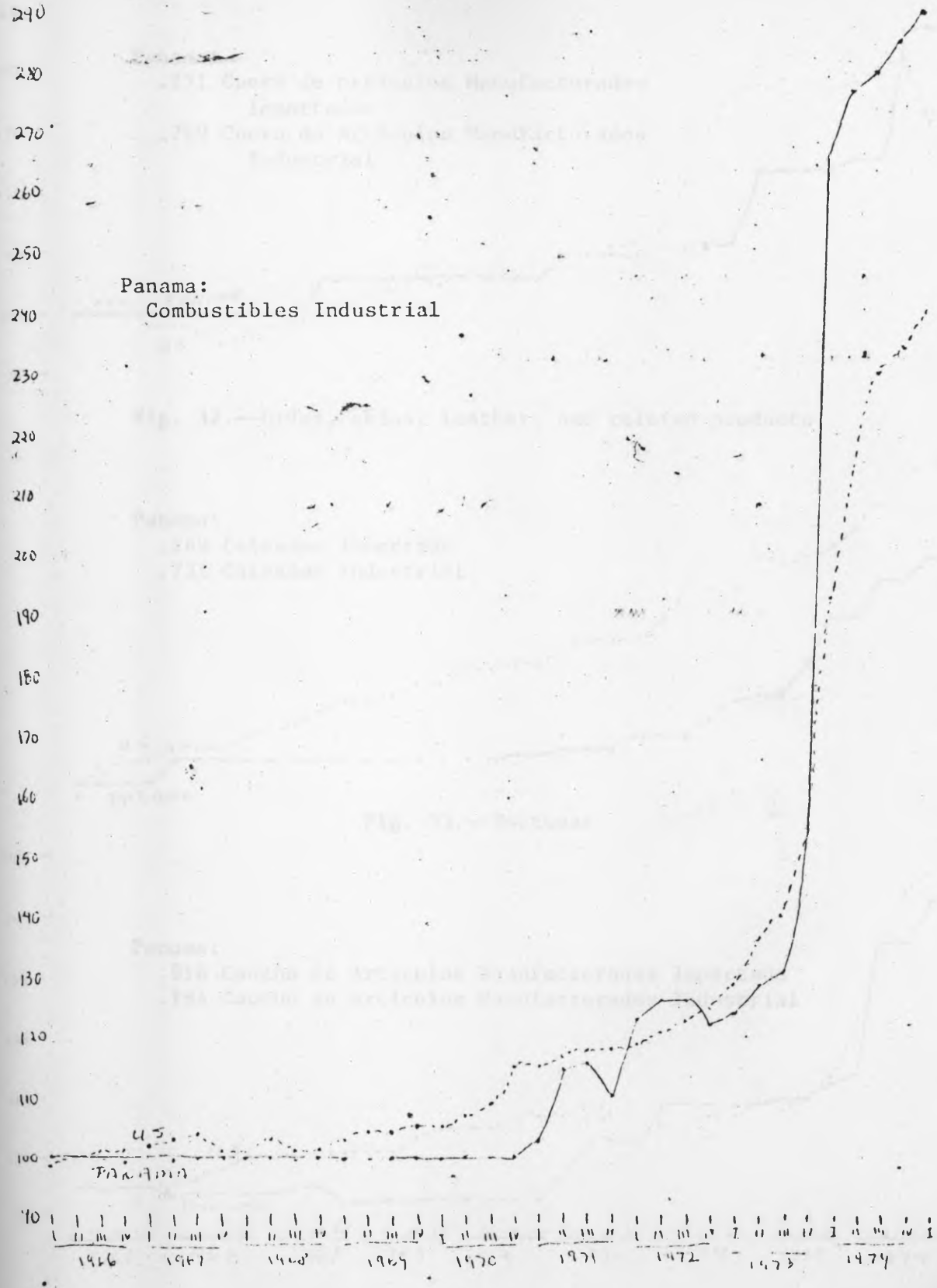
Panama:
Combustibles Industrial
240
230
220
210
200
190
180
170
160
150
140
130
120
110
100
90
U.S.
Panama
1966
1967
1968
1969
1970
1971
1972
1973
1974

Fig. 31.--Fuels

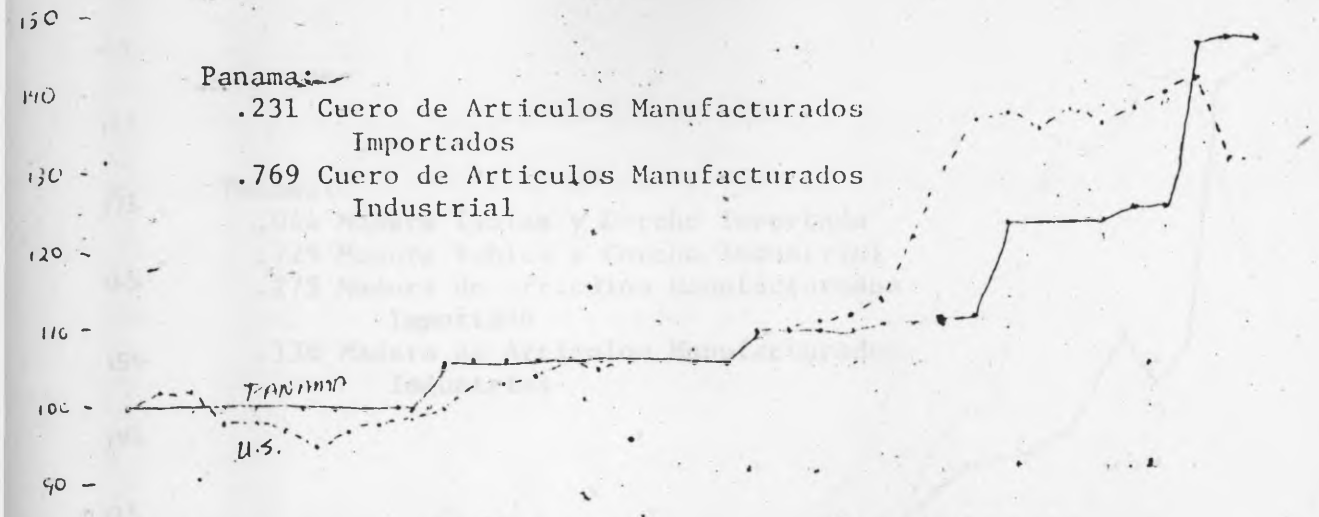

Fig. 32.--Hides, skins, leather, and related products

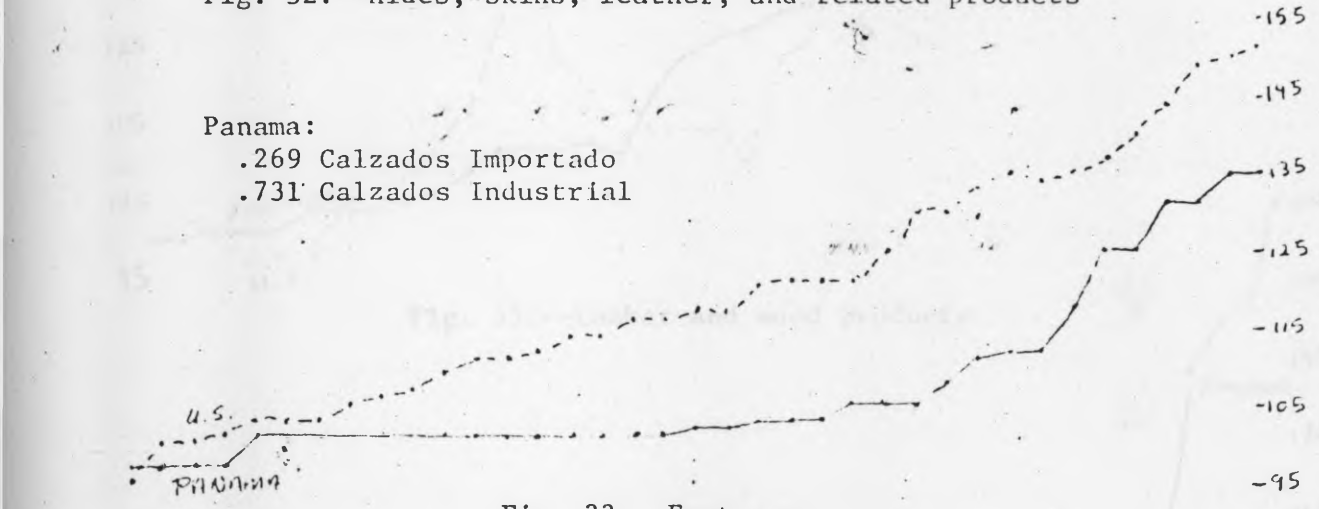

Fig. 33.--Footwear

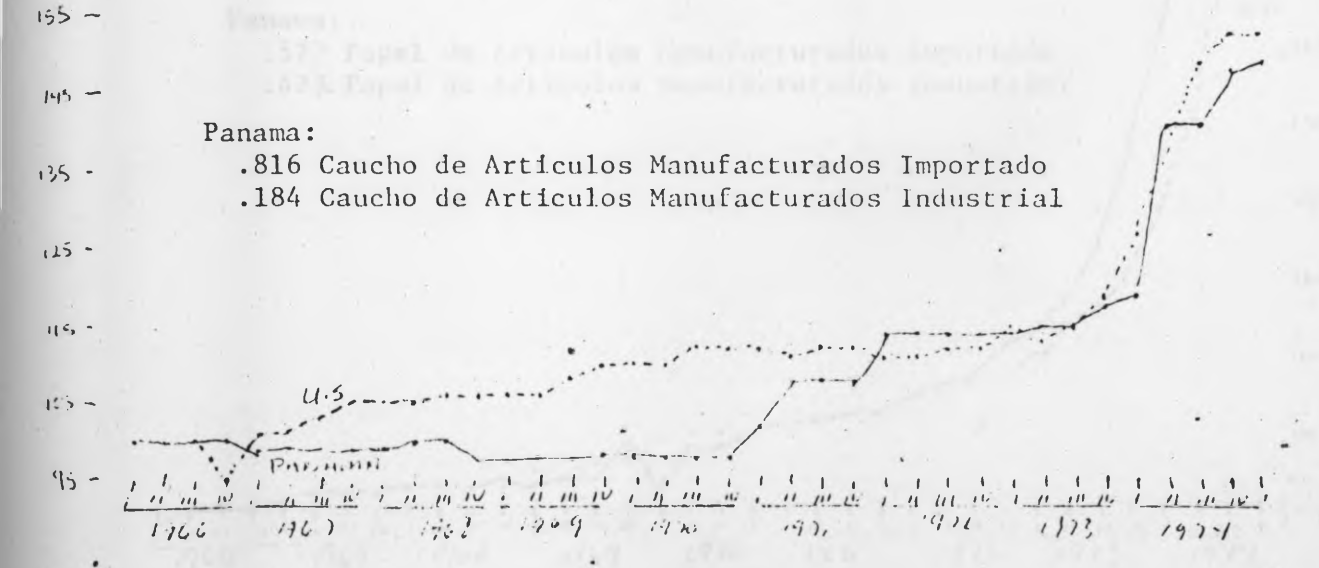

Fig. 34.--Rubber and plastic products

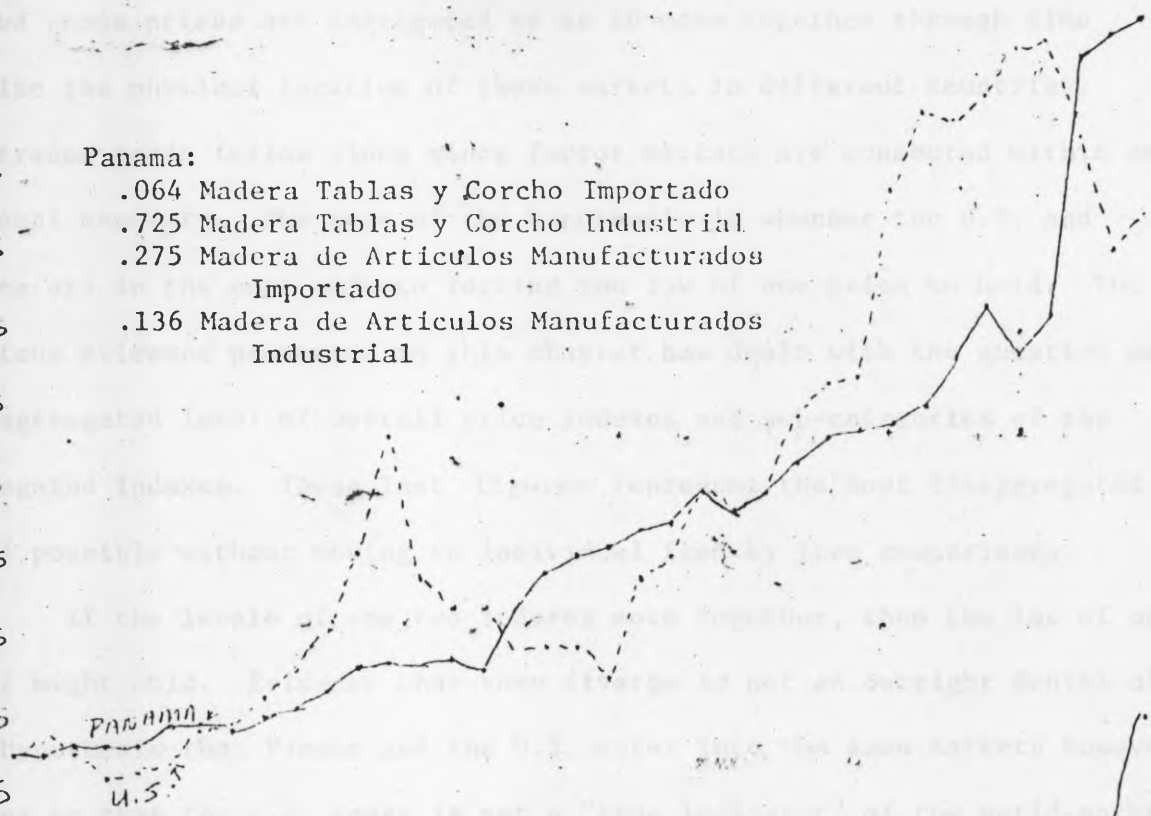

Fig. 35.--Lumber and wood products

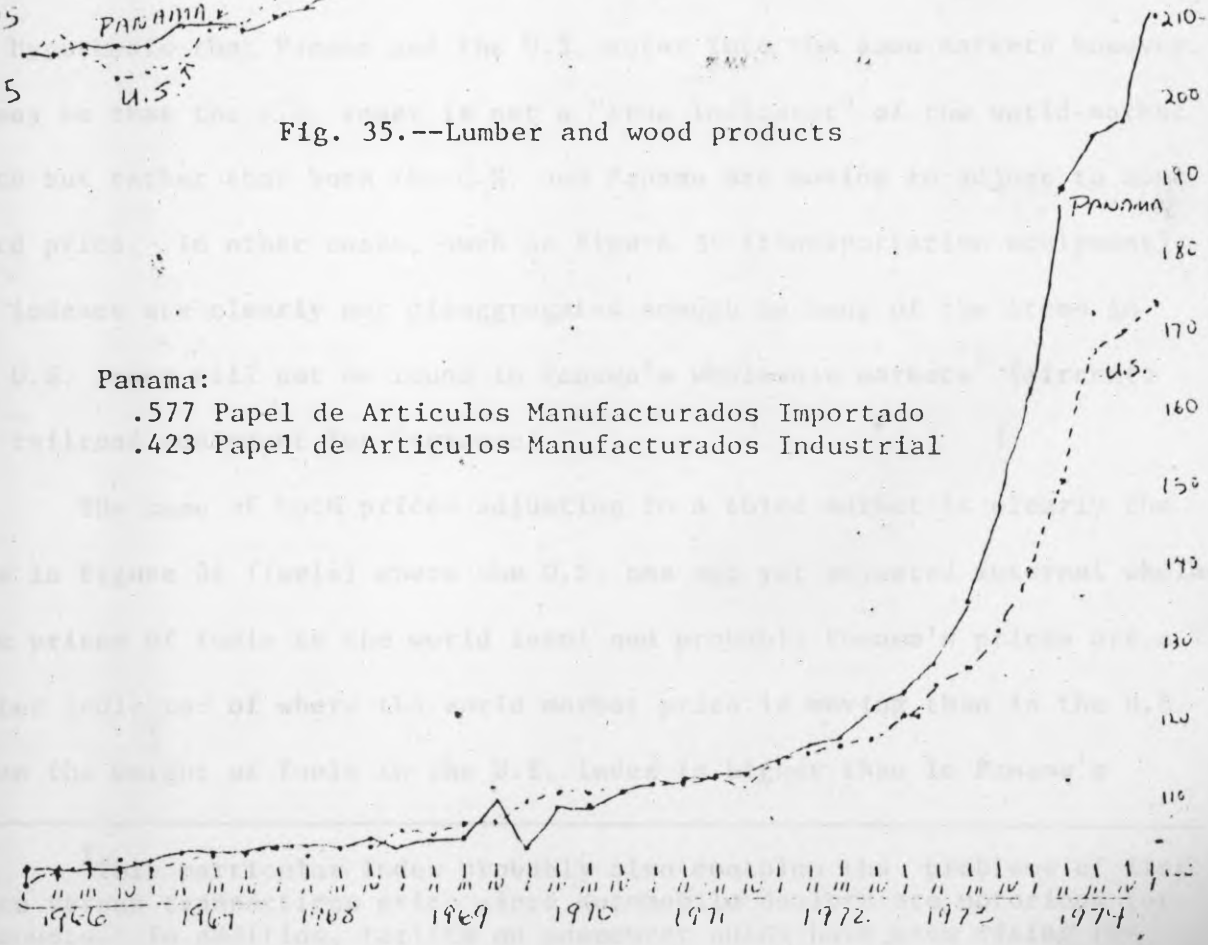

Fig. 36.--Pulp, Paper, and Allied Products

the proposition of the monetary theory of the balance of payments is that traded goods prices are aggregated so as to move together through time despite the physical location of these markets in different countries. Non-traded goods follow along since factor markets are connected within each national boundary. The test of the hypothesis is whether the U.S. and Panama are in the same markets forcing the law of one price to hold. The previous evidence presented in this chapter has dealt with the question on the aggregated level of overall price indexes and sub-categories of the aggregated indexes. These last figures represent the most disaggregated level possible without moving to individual item by item comparisons.

If the levels of the two indexes move together, then the law of one price might hold. Evidence that they diverge is not an outright denial of the hypothesis that Panama and the U.S. enter into the same markets however. It may be that the U.S. index is not a "true indicator" of the world market price but rather that both the U.S. and Panama are moving to adjust to some third price. In other cases, such as Figure 30 (transportation equipment) the indexes are clearly not disaggregated enough as many of the items in the U.S. index will not be found in Panama's wholesale markets[1] (aircraft and railroad equipment for instance).

The case of both prices adjusting to a third market is clearly the case in Figure 31 (fuels) where the U.S. has not yet adjusted internal wholesale prices of fuels to the world level and probably Panama's prices are a better indicator of where the world market price is moving than is the U.S. Since the weight of fuels in the U.S. index is higher than in Panama's

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[1]This particular index probably also contains the problems of list price versus transactions price since automobile dealers are notorious for discounts. In addition, tariffs on passenger autos have been rising recently as not only changes in ad valorem rates have accrued but also changes in administrative procedures have increased the effective rate.

(7.3 versus Panama's 5.9) this also has implications for the movement of the entire index. Though the impact of petroleum on other items in the index has been quite rapid (cement producers in Panama applied to the price commission for a 50 percent rise in price because petroleum costs were a high component of the overall process) it has had a substantial direct impact on the Panamanian index. As the accompanying Table 14 demonstrates, some of the gap between the two rates of change in wholesale price indexes can be accounted for by the different treatments of petroleum.

When the Panamanian fuel price index is substituted for the U.S. index, the direct impact of petroleum raises the 12 month rate of increase by an amount between .2 (in 1973-IV) to as much as 4.8 (1974-I) until 1975-I. The entire gap is not closed, however, at least in part because the secondary effects are not included as the U.S. now is exporting energy intensive items at below world market costs.

Most all of the figures presenting rates of change of price indices in Panama compared to rates of change of the indices of similar items in the U.S. show the small country sometimes leading, sometimes lagging the world lead. In some instances, as pointed out above (p. 4), this may be caused by the inappropriate choice of the U.S. index as a measure of world prices. Panama's petroleum prices no doubt reflect a more accurate measure of the world price than does those of the U.S. In the aggregate, however, the lead, lag relationship reflects the nature of the small country and its source of inflation. So long as the source of the inflationary impulse is external and adjustment is not instantaneous in all markets, the requirements of the homogeneity postulate will force overshooting to occur.

To see the nature of the adjustment required, an analogy can be drawn with the requirements for consistent expectations. As May has shown,

TABLE 14

IMPACT OF WORLD PETROLEUM PRICE RISES

(12 month rates of change)

	1973-III	1973-IV	1974-I	1974-II	1974-III	1974-IV	1975-I
Panama Wholesale Price Index	11.4	18.7	29.2	33.4	32.7	27.0	17.1
U.S. Wholesale Price Index I[a]	16.2	18.3	17.4	15.5	19.6	20.9	12.5
U.S. Wholesale Price Index II[b]	15.9	18.5	22.2	19.7	23.2	23.3	11.4

[a]Original index.

[b]Index replacing U.S. fuel prices by Panamanian fuel index.

such a set requires that equilibrium will be fully restored only when the expected rate of inflation is equal to the actual but also when the price level is equal to the actual price level.[1] A Cagan model of adaptive expectations finds the expected rate adjusting according to the discrepancy between the expected (π^E)

$$\dot{\pi}^E = \beta(\pi - \pi^E) \tag{16}$$

and actual rates of inflation (η). Setting the rate of change of the expected price level ($\dot{P}^E$) equal to the expected rate of change in the actual price level (π^E) does not yield a consistent set of expectations since once expectations have initially lagged, the actual price level stays ahead of the expected price level even though their rates of change coincide. Rather, May defines the rate of change in the expected price level as:

$$\dot{P}^E = \pi^E + \alpha(P - P^E) \tag{17}$$

The second term in (16) thus accommodates the overshooting needed to restore the equality of the levels, as an additional factor is added to the expected rate of inflation to take into account the discrepancy between the expected (P^E) and the actual levels, P, a factor whose behavior is that of a "stock adjustment."

The analogy rests in the distinction between traded and non-traded goods and the requirements of the homogeneity postulate that the same relative price relation between the level of traded and non-traded goods be restored when the economy's initial equilibrium is disturbed by world inflation, the

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[1] See Josef May, "An Adjustment Mechanism Based on Expectations in a Macro Model" (Ph.D. dissertation, University of Chicago, 1968).

lagged adjustment of non-traded prices is analogous to lag of the expected price levels behind the actual price level. This allows the formulation of the adjustment process in (18) similar to (17) where the rate of

$$\dot{P}_L = \phi \dot{P}_w + \alpha(P_w - P_D) \tag{18}$$

change of the economy's price index is equal to a fraction ϕ of the world rate P_w which reflects the share of traded goods in the local price index. There is also an additional factor, however, reflecting the disequilibrium in the relative price of traded and non-traded good (P_D) so that the local rate of inflation can rise above the world rate to restore the initial relative price ration of traded and non-traded goods. The behavior of rates of inflation in Panama first lagging then leading world prices is then a logical consequence of the need for local inflation to overshoot so as to restore the equilibrium relative price relation between the level of non-traded and the level of traded goods. The implications of equation (18), drawn by analogy to the consistent expectations model is that a simple correlation of rates of inflation--even with leads and lags--can be misleading since in principle the correlations could be low or even negative even though the law of one price is satisfied. In terms of a second analogy, it is well known that in economies behaving as if they were closed, the money supply's rate of change and rates of change in the price level have been poorly correlated despite good correlation of the money stock and the price level over longer periods of time. Both the analogy with the consistent expectations hypothesis and that with rates of change of money and prices are consistent with Panama's equilibrium price level being dictated by the world price level. Both the analogies emphasize the

importance of short run dynamics which imply that the actual Panamanian price level may be out of phase with the equilibrium price level.

Nevertheless, sufficient evidence has been developed to make the assumption that Panama's prices move with U.S. prices not an incorrect one. At the same time, there is substantial evidence that the lag of the Panamanian price index behind the increased registered in the U.S. indexes was a real phenomenon and so requires an explanation. As well as developing the transmission mechanisms by which world inflationary forces are carried to Panama, Chapter V will have to explain why some forces took their time in arriving, even to the point of being able to have consumer prices inflating at less than half the U.S. rate over a seven year period.

CHAPTER V

THE TRANSMISSION OF INFLATION

Chapter IV presented sufficient evidence to show parallel movement of Panama's prices with world prices. Clearly, so long as external inflation provides the main stimulus for domestic price rises, local and foreign price rises cannot be expected to be exactly synchronized as the rate of change of prices of those goods not fully arbitraged in international markets first lag then overshoots world rates of change. The task of this chapter, then, is to specify the transmission mechanisms which carry external inflation to the domestic economy, while at the same time describing those characteristics of Panama which could delay the impact of world inflation. Once again the small country character of the Panamanian economy causes the adjustment process to resemble not so much the interaction of two forces out of which a third equilibrium position emerges, but instead of a small country discovering the new equilibrium path defined for it exogenously. Investigating the transmission process then is an examination of how Panama becomes aware of the world monetary disturbance and the barriers thrown in the way of receiving the information and of moving toward equilibrium.

> Our basic proposition does not, then, predict that movements in Panamanian prices over a relatively short period of time will be identical in either magnitude or timing with those of her major trading partners. Developments within the Panamanian economy can themselves affect relative prices in Panama, and moreover the mechanism

> by which world inflation is transmitted to Panama is both highly complex and subject to lags and disturbances.[1]

Though the process is highly complex, three principle channels can be proposed and at various points in time, all three have carried the forces of world inflation to disturb the domestic equilibrium. At times the forces have been carried by an expansion of export demand associated with inflation in world markets, while at other times rising import prices have carried the pressures. Finally, an inflow of foreign capital expanding domestic liquidity can also serve as a source of inflationary pressure pushing Panama toward full adjustment to the equilibrium position defined in the world markets.

In most respects Panama's position is much like that of other small countries which, when faced with rising prices in world markets, may either adjust their domestic prices to the world's new reality or else begin a process of continually adjusting their exchange rates. One important difference for Panama compared to countries in every other way similar, is the absence of a central bank which makes Panama much more dependent on the balance of payments for the monetary adjustment to world inflation. Other countries may feel the direct impact of world inflation through the same channels as Panama, but adjust to rising world prices without monetary adjustments through the balance of payments. They can use their central banks to substitute domestic credit for international monetary inflows to support an adjustment to the new world market levels for prices, and comparative efficiency levels for wages. Indeed, domestic credit "will be so created if the authorities do not wish to accumulate

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[1] Larry A. Sjaastad, "Prices and Wages in Panama" (unpublished manuscript, Panama, September 1973).

large additional foreign exchange reserves."[1] So long as widely held expectations accurately perceive the world inflation, monetary authorities can alter the domestic flow supply of money so as to make large international reserve inflows unnecessary. As outlined in Chapters I to III, Panama's bankers as a whole also make decisions which increase the domestic flow supply of money so as to validate world inflationary pressures without the need for exogenous inflows of international reserves. The funds upon which they base this increase in Panama's domestic credit are not the increase in domestic legal reserves generated by a central bank however. Instead, they are borrowed funds, from within the dollar-banking system, but external to Panama. The difficulty is to differentiate the exogenous capital flow of causality from the endogenous flow of validation. Since they are foreign sourced funds, however, virtually all the evidence for monetary adjustment will be found in the balance of payments.

Export Expansion and World Inflation

In a closed economy, the channel for monetary and fiscal policy on domestic inflation is often via nominal income increases which raise aggregate demand for the economy's output of goods and services. Rising prices and/or output occur depending on expectations and the level of employment of the economy's resources. For an open economy, the impact of external inflation viewed from the Keynesian framework must come via increases in aggregate demand that are the result of increased demand for exports.[2] As

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[1] Johnson, Further Essays in Monetary Economics, p. 335.

[2] See William H. Branson, "Monetarist and Keynesian Models of the Transmission of Inflation," American Economic Review 65 (May 1975):117. "From the point of view of other countries (an expansion of the money supply in one country) will appear as normal imported inflation. Their exports and price levels will rise and they will register a payments surplus."

world inflation develops, countries whose prices have not yet risen face an increase in the demand for their traded goods. When the added international demand strikes an economy whose resources are reasonably fully employed, this pressure increases local factor prices, passing the price rise on to the non-traded goods sectors through factor markets. At the same time, the prices of exportables rise, substitution in consumption away from exportable toward non-traded goods increases demand pressure on factor markets. Full adjustment is then reached when the original relative prices are restored and all factors markets are adjusted to the comparative efficiency levels set by the rest of the world market. That is, when the economy's inflation rate adjusts to the world's.

Investigation into Panama's situation shows that such possibilities do exist. As can be seen from Table 15, a growing share of the expansion of GDP can be accounted for by export expansion, at least up until 1969. Similar to Germany's situation between 1966 and 1968[1] exports were a large share of the stimulus to the economy's expansion as their share of the expansion of aggregate demand exceeded the share of total aggregate demand. A closer look, however, raises doubts as to the viability of this method of transmission for Panama. For over most of the period (1963-1971) the bulk of exports could be accounted for by bananas and service exports to the Canal Zone. Indeed, as Table 16 shows, the bulk of the expansion of exports came through these channels which were not very responsive to increases in world inflation. The banana boom occurred not because of excess world demand pressures, but instead due to the decision by the banana company

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[1] See Samuel I. Katz, "'Imported Inflation' and the Balance of Payments," The Bulletin, Nos. 91-92 (October 1973):27-29.

TABLE 15

GROSS DOMESTIC PRODUCT AND EXPORTS

(In millions of dollars)

	GDP at Market Price	GDP % Change	Exports	
			Share of GDP	Share of GDP Expansion
1960	415.8	3.0	30.3%	87.9%
1961	463.7	11.5	30.4	30.9
1962	504.8	8.9	31.6	45.4
1963	559.5	10.8	29.2	6.6
1964	600.8	7.4	29.1	88.0
1965	659.9	9.8	30.4	2.4
1966	719.0	9.0	31.5	42.9
1967	800.7	11.4	32.4	40.5
1968	861.4	7.6	33.3	44.9
1969	945.4	9.7	33.4	32.4
1970	1045.8	10.6	33.0	27.1
1971	1157.0	10.6	32.6	28.2
1972	1297.8	12.2	30.0	8.8
1973	1472.5	13.5	29.2	23.2
1974	1740.2	18.2	27.6	18.9

to expand production in Panama.[1] In addition, banana production takes place as a virtual enclave industry in areas remote from the mainstream of

[1] Panama has the soil and climate most suitable for bananas, and thus the international banana company has always had extensive land holdings in Panama. It was not until the early 1960's, however, that "Panama disease" was successfully combated and large scale planting undertaken. Rather than a response to growing demand, the banana boom was the result of the transfer of the production site from outside of Panama to Panamanian soil.

TABLE 16

CONTRIBUTION OF BANANAS AND CANAL ZONE SERVICES TO EXPORT EXPANSION

	Share of Bananas and Canal Zone Services Contribution to		Unemployment Rate	Share of Employed Population in Agriculture
	Total Exports	Expansion of Exports		
1960	41.6%	95.0%	9.1%	49.8%
1961	44.2	66.1	8.0	49.0
1962	44.2	44.5	7.3	48.6
1963	50.8	(215.4%)[a]	5.8	48.3
1964	51.7	20.3	7.4	47.5
1965	53.1	(1063.1%)[a]	7.6	47.1
1966	52.3	46.2	5.1	45.2
1967	54.5	69.3	6.1	40.4
1968	57.7	87.7	7.1	39.0
1969	58.0	61.7	6.7	37.4
1970	53.4	3.4	7.1	36.5
1971	50.8	22.3	7.6	34.6
1972	49.8	18.5	6.8	33.9
1973	47.1	20.7	7.0	32.3
1974	40.9	-11.7	7.2	30.7

Source: Columns 1 and 2 calculated from various statistical bulletins of Controleria General, Panama. Columns 3 and 4 calculated from labor bulletins and Planning Ministry estimates.

[a]Because absolute change in exports was so small, changes in component series are without significance.

Panama's economic activity. Consequently, while the expansion of production of bananas brought about by increased foreign investment probably did attract some rural resources, it had a minimal impact on the factor markets in the main areas of Panamanian economic activity, as during the period of severe inflation, the unemployment rate climbed and the share of employment in agriculture declined.

Neither has the price of bananas been very responsive to world inflationary forces. The implicit price index increases less than half the amount as the increase in the measure of world inflation between 1966 and 1974.[1] Though increased banana production could have had an impact on the economy proceeding through the increased wages bill, it has not served as a communicating mechanism for world inflation.

Exports of services to the Canal Zone possess similar characteristics. As Table 18 shows, the increase in export revenue obtained from the Canal Zone resulted primarily from increased wages and salaries, not from increases in employment. Wage scales in the Canal Zone are set by the U.S. Congress as they set minimum wage legislation. During the early 1960's, the decision was made to raise the minimum wage paid Panamanian workers up to U.S. domestic levels in step fashion, an action completed by the late 1960's. Rather than from an increase in demand, the value of service exports to the Canal Zone has risen due to institutional decisions.

With over half of Panama's exports having not only their prices,

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[1]Most of Latin America's banana producing countries have domestic production controlled by multinational companies vertically integrated internationally, controlling international marketing as well as local production. The recorded prices then are accounting numbers for the company's books at various stages of production. The implicit price is obtained by dividing reported value by weight, since there is evidence that a "bunch" began to weigh more in the late sixties than in the early sixties.

TABLE 17

BANANA PRICES AND WORLD INFLATION (1963 = 100)

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
U.S. WPI Industrial	101	100	100	100	101	102	104	106	108	112	116	120	124	134	163
Banana Price Reported	85	82	94	100	95	100	99	102	103	93	92	85	85	85	85
Banana Price Implicit	100	100	100	100	125	147	144	140	158	167	162	163	173	186	184

Source: International Financial Statistics and Foreign Trade Bulletins of Controleria General, Panama.

TABLE 18

CANAL ZONE REVENUE

(In millions of dollars and thousands of men)

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
Total Sales of Services to Canal Zone	40.8	58.8	58.8	69.3	69.8	76.2	83.7	99.3	112.2	122.3	123.7	128.6	129.1	138.4	147.2
Wages and Salaries	30.4	33.6	39.8	43.0	48.6	53.1	58.1	63.8	70.0	77.5	79.3	89.0	86.8	96.0	101.6
Employees	16.3	19.0	19.0	20.0	20.0	20.0	22.0	20.0	22.9	22.3	22.4	23.6	22.5	23.0	23.5

Source: Balance of Payments bulletins of Controleria General, Panama.

but also their level of production set by institutional processes not generally responsive to world market pressure (or to demand due to world inflation), transmission of inflation by export prices and expansion appears to be weak. In addition, only sugar, shrimp, some light industry products exported to the Central American Common Market, and locally grown food sold to the Canal Zone are exports which are also consumed locally (totaling approximately 12 percent of exports in 1974). Such a minimal presence in the consumer's budget reduces the effect of any demand shift to transmit world inflationary pressures.

The structure of Panama's export trade then limits the use of exports as a transmission mechanism for world inflation. Even if the law of one price prevailing in internationally competitive markets holds for Panama, there will be little pressure in the non-inflating economy's exportable goods and thus no response in factor markets to convey the rising price pressure across the economy since a large share of her exports are not responsive to world inflation.

Import Channels

When inflation is viewed not in the context of a closed economy, but instead in the framework of a small country adjusting to the equilibrium path set exogenously by world market conditions, no initial expansion of aggregate demand need occur to stimulate inflation. Monetary flows need not instigate increments to aggregate demand but instead can serve as validating mechanisms permitting Panama's economic agents to adjust to the new world price levels. The more responsive are the passive forces of monetary validation to the impact of world inflations, the more rapidly will Panama's prices adjust to world prices. This monetary approach to the transmission of

world inflation is quite consistent with the behavior of the current world inflation which appears as a cost inflation within each country as traded goods' prices rise. Though in small countries with central banks the monetary adjustment can occur through either domestic credit creation or international reserve inflows, Panama's adjustment to world inflation must be validated by monetary movements through the balance of payments.

Rising import prices, rather than carrying the demand impact of increased exports, convey the impulse of world inflation by directly pointing out the disturbance to domestic equilibrium. The impact of world inflation is in many ways similar to that of a monetary devaluation.[1] The fall in the relative price of home goods in terms of traded goods causes substitution toward home goods on the demand side and away from home goods on the supply side. On the demand side, the rising prices for imported inputs have a direct impact on producers' costs, as do increased wage demands in countries which import much of the market basket of the average consumer. In addition, consumers attempt to substitute domestic for imported finished goods. On the supply side, factors of production move in the opposite direction as they seek out the higher returns in the importables. Besides the substitution in production and expenditure switching effects, however, there are the expenditure reducing effects as the rising in imported goods' prices has reduced the purchasing power of domestic savers' real cash balances forcing money holders to cut back on spending relative to income to

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[1] See two treatments of devaluation by Dornbusch, "Devaluation, Money and Nontraded Goods," p. 877, and Rudiger Dornbusch, "Real and Monetary Aspects of the Effects of Exchange Rate Changes," National Monetary Policies and the International Financial System, ed. by Robert Z. Aliber (Chicago: University of Chicago Press, 1974), pp. 73-74.

rebuild the level of their real cash balances.[1] (Since rising world prices are an increase in the rate of inflation, and so continuous as opposed to the once and for all impact of devaluation, a permanent reduction in the level of real cash balances will also occur.) The overall impact of rising world prices takes on the framework of a cost inflation, however, with "the institutional manifestations of the natural tendency to restore equilibrium real relative price relationships whose expression in monetary terms has been disrupted by the erosion of the real value of money through inflation."[2] Panama's use of the dollar as the domestic currency further enforces the immediate impact of a worldwide decline in the purchasing power of the international reserves since workers clearly see the forced reduction in their domestic money wages without any confusing veil of foreign exchange values.

Since the transmission process cannot be directly observed, the impact will be inferred by investigating the structural characteristics of the economy which would be considered in a devaluation, that is the propensities to import and the substitution possibilities in consumption and production, for the effectiveness of rising import prices as a transmission mechanism depends on the extent to which Panama's domestic markets are penetrated or penetrable by foreign goods.

Substitution in Production

The reasons mentioned in the section on exports and aggregate demand point out why it is difficult to imagine much factor substitution toward

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[1]Note the difference here between the real impact of a change in the terms of trade which reduces real income at the same time as it reduces the purchasing power of the cash balances with ambiguous results for savings, while the impact on rising world prices upon the economy which has not yet adjusted has no effect on real permanent income hence the demand for nominal money must rise so as to restore the real equilibrium relationship.

[2]Johnson, "Inflation and the Monetarist Controversy," p. 56.

traditional exportables. As a result, the bulk of expanded exportables due to world inflation raising the relative price of exports would have to come from non-traditional exports. Factors can also shift into importables to replace the more expensive imports with local substitutes. In Panama, possibilities for substitution were available in two sectors, industrial and agricultural.

The conventional measure of import substitution possibilities is the protection offered local value added through tariffs. Here Panama's barriers to trade appear very low by Latin American standards, since the implicit tariff fell from 11.1 percent in 1965 to 6.6 percent in 1973. Manufactured items, as Table 19 shows, have a fairly low rate of protection.

TABLE 19

IMPLICIT AD VALOREM TARIFF RATES

(In percentage rates)

	1965	1968	1970	1972	1973
Total	11.1	10.8	10.9	6.9	6.6
Food Products	16.2	16.0	13.9	8.2	7.1
Beverages and Tobacco	88.2	91.3	96.8	86.3	53.6
Raw Materials (non-edible)	9.9	39.2	41.0	16.0	14.4
Fuel	.6	.6	.6	.6	.5
Oils and Fats	27.9	39.1	5.0	6.0	4.7
Chemicals	15.1	13.9	14.0	5.2	5.5
Manufactured Goods	10.4	10.2	9.5	4.8	4.6
Machinery and Transportation Equipment	13.0	12.6	13.3	7.6	8.7
Diverse Manufactured Items	16.6	16.0	16.7	13.6	14.0

Source: Foreign Trade Bulletins of Controleria General, Panama.

The falling implicit rate is due to the use of specific tariffs on 688 out of 1499 classifications. In foods over 90 percent of the classifications are specific, thus world inflation has even reduced the implicit tariff barrier. Once again, however, the surface measure does not give a true indication of the economy's possibilities. As shown in studies elsewhere,[1] the primary instrument for protection in Panama's sector has been quotas which have raised high enough barriers to permit the domestic producer to control the lion's share of the market. Not even a large increase in world prices can expand local production once the local market is satiated since it is difficult to think of Panama exporting panties, for instance, while quotas keep the nominal rate of protection at 50 percent.

The agricultural sector presents some possibilities for substitution in production to the extent that world market prices are allowed to be reflected domestically. Since 1968, however, the government has followed a "cheap food" policy. In early 1972, it went so far as freezing the prices of food purchased by urban wage earners, putting export controls on meat, and keeping an artificially low support price for basic grains. The behavior of the food section of the CPI (see Chapter IV) pointed out that the policy was eventually unsuccessful; however, cheap food policies did reduce the incentives for factors to shift into this sector in response to rising world prices.

Finally, after the economy had experienced a decade of 8 to 10 percent growth during the 1960's, it is difficult to conceive of very many "free resources" around to instigate the inflationary pressure on the local economy

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[1] See Alan Rapoport, "The Protective Policies of Panama: An Empirical Study" (Ph.D. dissertation, University of Chicago, 1975).

with expanded local production. The higher the elasticity of substitution in production, the less "local inflation" created by a devaluation. The lack of substitution in production possibilities indicates a low elasticity, forcing inflationary pressure to find its release by raising prices instead of expanding output.

Substitution in Consumption: Expenditure Shifting

To the extent that demanders of imported goods and services can shift to home goods, the effects of world inflation can be mitigated. Evidence presented here, however, has to be careful to distinguish ex-ante from ex-post measurements. To the extent that rising direct imported input costs increased wage demands, or arbitrage and commonly held expectations caused home goods' prices to rise immediately, the ex-ante excess demand would be reflected in ex-post price rises. Since measured variables are ex-post, the relative price effects may have all but disappeared.

The traditional measure of a country's contacts with the rest of the world is the average propensity to import. Table 20 presents the behavior of the ratio of goods imports and total imports to gross domestic product over time. In addition, the share of the imported goods categories through time is presented.[1] As lines 2 and 11 indicate, some 26 percent of the

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[1]Two adjustments have been made to published import statistics. In 1962, an oil refinery was built in Panama which is now owned by Texaco. It is one of the largest in the Caribbean and only one fourth of its production is consumed in Panama; the rest is re-exported by tanker to other Central and South American countries, and to the U.S.; by direct sale to ships bunkering as they come through the Canal; and by direct sale to planes landing at Panama's international airport. Table 20 seeks to correct for registered-petroleum imports which are those of the entire refinery, not just for Panamanian consumption. In addition, exports of bunker oil to ships and planes are accounted for under services rather than registered goods exports. Table 20 thus includes my estimates for domestic consumption 1960-1970, those of the Planning Ministry 1970-72, and the Ministry of Commerce and Industry surveys

TABLE 20

IMPORTS ADJUSTED FOR PETROLEUM REFINERY IMPACT

	Year					1960-1974 Shares	
	1960	1965	1972	1973	1974	Mean	Std. Dev.
1. Imports of Goods (in millions of $)	109.2	164.3	354.6	385.1	531.3	--	--
2. Share of Goods Imports in GDP	26.3%	24.9%	27.3%	26.2%	30.5%	26.0%	1.7
Share of Goods Imports in							
3. Food	13.3	10.4	9.5	9.9	7.8	10.3	1.4
4. Manufactured Items	40.9	42.4	38.4	38.1	37.8	40.1	1.4
5. Transport Equipment and Machinery	22.1	24.3	31.8	31.4	25.7	26.7	3.4
6. Beverages and Tobacco	2.6	1.1	.8	.9	.8	1.3	.7
7. Chemicals	10.4	11.0	11.3	10.8	12.1	10.9	.6
8. Fuel	9.9	9.1	6.5	7.2	14.7	8.8	2.0
9. Other	1.9	1.7	1.7	1.7	1.1	1.8	.3
10. Total Imports of Goods and Services (in millions of $)	145.3	215.8	473.8	508.1	677.5	--	--
11. Total Imports ÷ GDP	34.9	32.7	36.5	34.5	38.9	34.2	2.0

Source: Foreign Trade and National Income Account Bulletins of Controleria General, Panama. Fuel imports were estimated from sources described in n. 1, p. 132.

economy's rise in imported goods' prices will have an immediate impact on the economy. The stability of the overall expenditure share was disturbed in 1974; however, if petroleum had grown at the same rate as other imports, the average propensity to import goods would have been 28.1 percent. The stability of the expenditure share on imports despite sharply rising import prices is one indicator that local goods' prices responded rapidly to ex-ante pressure given the limited response of home goods output outlined above.

The individual items have remained fairly stable, with fuels, transportation and machinery, and food showing the most variance. Fuels are obviously the result of the oil crisis, causing Panama's petroleum bill to be almost two and a half times what it would have been had petroleum imports rose at the same rate as all other imports. Food items have been steadily declining due in part to import substitution programs (with normal oil imports, foods' share in 1974 would have been 8.5 percent). The variability of transportation equipment and heavy machinery reflects the lumpiness of capital equipment and public transportation equipment imported under government investment programs in the early 1970's.[1] The stable shares of imported items despite sharp rises in world prices then are further indications that Panama did not avoid rising import prices by substitution.

A brief comparison of the preceding table with Table 21 shows why

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1973-74. Freight and insurance on the re-exported oil have also been removed from recorded figures ($2.5 million 1965-72, $10-14 million 1973-74). The second problem area arises in factor service payments to foreigners. This was excluded entirely from line 11 since the errors in the official figures were very large. (Interest payments received and paid by banks on foreign operations dominate the series after 1970, but no estimate for bank profits on foreign operations is included.)

[1]The primary items were buses, machinery for a sugar mill and electrical generators for a mammoth dam project, although military vehicles and heavy construction equipment were also large.

TABLE 21

PANAMA'S ECONOMIC STRUCTURE OF GROSS DOMESTIC PRODUCT
(Share of sectors in percentage of constant dollar expenditure)

	1960	1969	1974
Agriculture	23.0%	19.4%	15.5%
Industrial Manufacturing	13.4	17.5	16.0
Services	56.3	54.6	63.4
Canal Zone Activities	7.3	8.5	5.1
	100.0	100.0	100.0

substitution away from imports was difficult for Panama's economy. The overwhelming share of Panama's real expenditures falls on the service sectors, with a declining agricultural sector and a small manufacturing sector providing the only sources for substitution in imports. With two thirds of the value of imports falling in the manufactured items and heavy equipment categories, and the import substitution structure described above, it comes as no surprise to find the full impact of world inflation rapidly reflected in Panama's domestic prices.

Figure 37 then compares the rate of change of Panama's import prices with the proxies for world inflation of the U.S. Export Price Index and the U.S. Industrial Wholesale Price Index. Once again, the familiar pattern of early lagging then leading, then lagging, then leading emerges as Panama must overshoot to catch up.[1] Import prices then appear to have been a much

[1] As mentioned above in Chap. IV, U.S. prices are not necessarily the best measures of world inflation. Thus, both the export price index and the industrial price index are presented to moderate the impact of U.S. agricultural foods on the export index. The rapid increase in U.S. consumer prices in the early 1960's was not duplicated in Panama because it was not transmitted since the rate of increase of the U.S. wholesale price index is

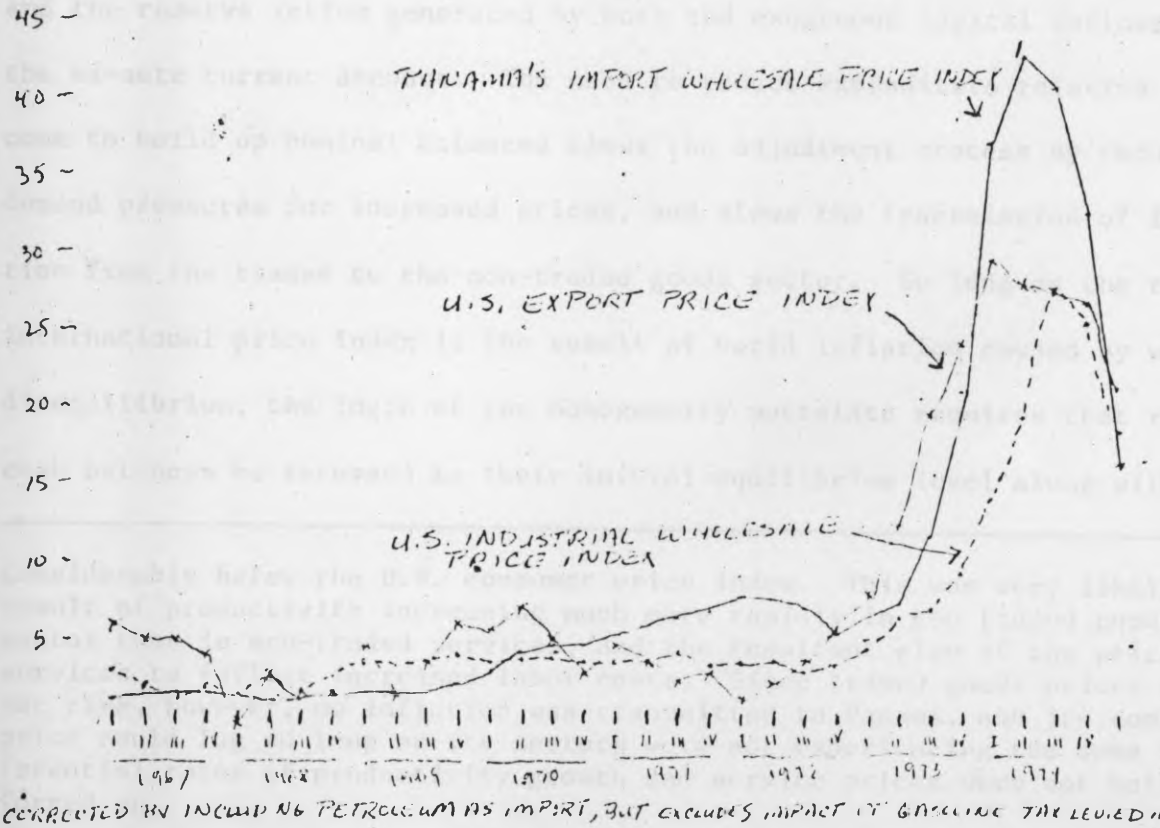

Fig. 37.--World inflation and percent change of import prices

more active transmitter of world inflation, and it is not surprising to find Panama with all the indicators of a cost inflation, so long as it must adjust to rising world prices reflected in imports.

Expenditure Reducing Impact

Just as devaluation imposes a capital levy on the small country's money stock, the rising import prices decrease the real purchasing power of the economy's money holdings. To rebuild the real value of their money holdings, the public is forced to cut back on expenditure relative to income to build up the nominal stock of money. In complying with the dictates of the homogeneity postulate, adjustment will not be complete until the same real value has been restored. Expenditure reduction occurs in any economy where the supply of bank credit is more intimately connected with the banking sectors deposit taking activity, and thus dependent on domestic savings, and the reserve inflow generated by both the exogenous capital inflows and the ex-ante current account. The need to reduce expenditure relative to income to build up nominal balances slows the adjustment process by reducing demand pressures for increased prices, and slows the transmission of inflation from the traded to the non-traded goods sector. So long as the rising international price index is the result of world inflation caused by world disequilibrium, the logic of the homogeneity postulate requires that real cash balances be returned to their initial equilibrium level along with the

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considerably below the U.S. consumer price index. This was very likely the result of productivity increasing much more rapidly in the traded goods sector than in non-traded services, and the resultant rise of the price of services to reflect increased labor costs. Since traded goods prices did not rise, however, no inflation was transmitted to Panama, and its consumer price could lag so long as its sectors were not experiencing the same differential rates of productivity growth and service prices were not being forced up.

relative price of traded and non-traded goods.[1] The only disturbance was the capital levy paid as money holders restore the level of their real balances. Whether they do so through the current account or the capital account depends on their access to world capital markets. Those without access must cut back on expenditure relative to income and pay for the increment to nominal balances with goods, while those with access may exchange bonds for money.[2]

Just as a country with a central bank can eliminate the impact of expenditure reducing effects with its domestic credit creation policy,[3] so, too, the small country can adapt to world inflation by expanding credit, avoiding the need for any expenditure reducing to rebuild the real value of money balances. Similarly, Panama avoids the deflationary pressure of expenditure reducing by a changing nominal money supply. Once the supply of bank credit becomes demand determined, the link between banks deposit taking activities and loan granting activities is broken. The passive nature of the monetary system permits more rapid adjustment as bankers finance projects which are viable at international prices, financing them through borrowed foreign funds. In a sense, bankers are following a real bills doctrine by almost automatically increasing nominal credit (and the flow supply of money) when world inflation occurs. These funds made available expand the "savings gap" (I'-S') permitting the expansion of local money balances until cleared through the trade gap (CA). The decision as to how

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[1]The evidence of substitution possibilities in production and consumption developed above indicates that this period should not be prolonged.

[2]Note this implies S' is defined exclusive of savings to build up real cash balances.

[3]Dornbusch, "Real and Monetary Aspects of the Effects of Exchange Rate Changes," p. 75.

much "escapes" through the balance of payments, however, is determined by the nominal balances demanded. In the post transition period then, the economy is better able to trade bonds (bank loans) for money and so may avoid the expenditure reducing impact of world inflation. The passive nature of the monetary system and its ability to call upon external markets for funds performs the same function as the central bank of the small economy undoing the monetary impact of devaluation. In a sense, Panama can be said to have "rented" the increase in the money supply by borrowing to buy the dollar inflow then paying interest on the borrowings, but not having to transfer the goods, so long as the borrowing continues to be rolled over. In the post transition period, then, the adjustment of the local economy to world inflation was much more rapid because it did not have to wait for the current account to pay for the increased money supply with goods and services.

Once again the requirements of the homogeneity postulate leave all real factors unaffected in the long run as there is no shift in the relative price of tradeables in terms of non-tradeables, hence no real impact on the current account. Since the economy's real variables were unaffected, credit demand remains the same. Once savings behavior has returned to its long run equilibrium, there is no real impact on the capital account, except that foreign funds have financed the inflation, have validated the economy's adjustment to the new external price level, and the economy has paid the capital levy, or at least interest on the capital levy, to foreigners.

Though the devaluation analogy is extremely useful, it does not convey the complete impact of world inflation. Adjusting to a new level of world inflation has those of a once and for all shift. This causes at least two complications to develop; one is a tricky adjustment problem involving

the speed of adjustment of expectations; the second involves the seigniorage tax. The adjustment problem occurs because world inflation, once expected, involves a movement along the demand for real cash balances curve as well as attempts to get back on it due to the shift in the level of real balances caused by rising prices. Since developing an expectations model for Panama is beyond the scope of this dissertation, it will only be mentioned that expenditure could theoretically rise or fall depending on how fast expectations adjust. The implications of the seigniorage tax can be more easily developed.

Just as in a closed economy, in Panama a continuous inflation imposes tax on the holdings of real cash balances. In the closed economy the tax is an internal transfer from holders to producers of money. In an open economy with no central bank the additional goods and services required to maintain the level of real balances must be transferred abroad. Since there is no reason to suppose that it comes entirely out of the economy's savings or out of consumption, it can be assumed that both the capital account and the current account feel the impact. Thus, not only does the savings curve shift to the left, forcing the capital account further into surplus, but also the reduction in consumption cuts back on imports and forces the current account into surplus as more goods and bonds are surrendered to foreigners to replenish the level of real cash balances. Though how much comes out at the expense of the capital account and how much at current is a-priori indeterminant, it is related, in the same way as the capital levy tax, to the access of money holders to capital markets. Though the larger corporations and wealthier individuals certainly have access to bank loans to build up their working capital, small deposit holders do not, since it is not worth the costs they must pay to establish a credit rating. Even with a well integrated

capital market then, some adjustment must still come through the current account.

Figure 38 presents the behavior of real money balances over the entire period. It is in index formed with 1971 = 100, using the consumer price index as a deflator.[1] Since it is not the level of real balances, but rather the excess of money over that demanded which creates inflationary pressure, the ratio of the average balances held over the period to the flow of domestic product is presented in the top part of the figure. Note the slightly rising trend in real balances and the gradually rising ratio of money to income through 1971 are consistent with other empirical evidence showing money holdings expanding as a country develops and a larger portion of the economy is "monetized" and moves into the market economy. There are some indications, however, that in late 1972 and into 1973, nominal money could be a causal as opposed to a validating force for inflation. During this period a construction boom in Panama was being financed by foreign borrowing, drawing in money through the capital account and rapidly expanding the supply of money. To the extent that the excess supply did not escape through the balance of payments, the inflows of money placed inflationary pressure on the local economy that did not directly arise from external forces.

In Figure 38, the behavior of real money balances in the latter part of 1972 and into 1973 shows a sharp upward movement. At the same time, the ratio of nominal money to nominal income also rises (see the upper part of Figure 38). Though the latter could be due to a rise in the consumer price

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[1] The consumer price index was chosen as best available index estimating the inflation striking all sectors since it moves generally with the GDP deflator and is available on a quarterly basis. As there is much seasonal shifting between demand and savings deposits, the sum of the two has been used to reduce the seasonality of the index.

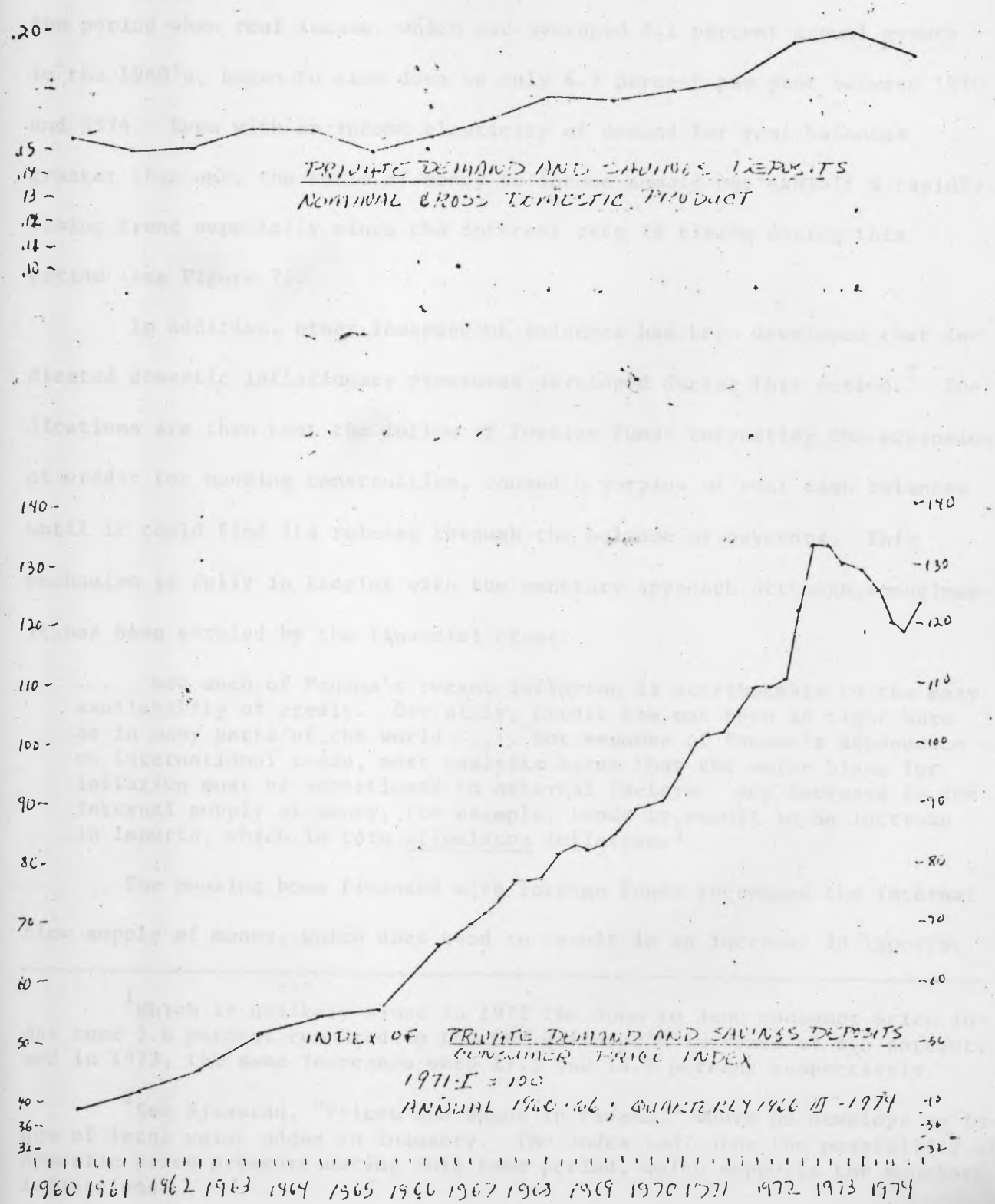

Fig. 38.--Money to income ratio and real money balances

index which was smaller than the increase in the GDP deflator,[1] it is also consistent with an excess stock supply of money in that period. This was the period when real income, which had averaged 8.1 percent annual growth in the 1960's, began to slow down to only 6.2 percent per year between 1970 and 1974. Even with an income elasticity of demand for real balances greater than one, the ratio of money to income should not exhibit a rapidly rising trend especially since the interest rate is rising during this period (see Figure 7).

In addition, other independent evidence has been developed that indicated domestic inflationary pressures developed during this period.[2] Indications are then that the inflow of foreign funds supporting the expansion of credit for housing construction, caused a surplus of real cash balances until it could find its release through the balance of payments. This mechanism is fully in keeping with the monetary approach although sometimes it has been garbled by the financial press:

> . . . how much of Panama's recent inflation is attributable to the easy availability of credit. Certainly, credit has not been as tight here as in many parts of the world . . . . But because of Panama's dependence on international trade, most analysts agree that the major blame for inflation must be apportioned to external factors. Any increase in the internal supply of money, for example, tends to result in an increase in imports, which in turn stimulates inflation.[3]

The housing boom financed with foreign funds increased the internal flow supply of money, which does tend to result in an increase in imports.

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[1] Which is unlikely since in 1972 the June to June consumer price index rose 5.6 percent compared to the GDP deflator's increase of 6.5 percent, and in 1973, the same increases were 17.3 and 14.2 percent respectively.

[2] See Sjaastad, "Prices and Wages in Panama," where he develops an index of local value added in industry. The index indicates the possibility of domestic price pressure during this same period, which supports the monetary indications.

[3] Financial Times, March 11, 1975, p. 19.

This, in keeping with the monetary approach, is the safety valve releasing inflationary pressures which would result in domestic price rises if no imports resulted. In terms of equation (15) on p. 76, the I'-S' has built up the local money supply faster than the C.A. term could clear it, temporarily creating local inflationary pressure. Except for this one period, however, there is no indication that the monetary mechanism has done other than validate the externally caused price rises, with the more complete integration of the banking system into world capital markets acting to ease the adjustment process by making it easier for Panama to rent the increase in the money supply rather than having to buy it with real goods and services.

Finally, Table 22 presents the behavior of Panama's balance of payments during the inflationary period. Though the current account items are probably not bad estimates, the openness of the economy and the nature of the banking system cause the capital accounts to contain very large measurement errors. The lack of even rudimentary numbers for currency in circulation severely hampers attempts to explain movements in the money supply by movements in the balance of payments. Consequently, a rough estimate of currency in circulation was constructed using a combination of currency to deposit and currency to GDP ratios similar to those of other developing countries.[1] Equally important from the point of view of measurement error is the volume of unrecorded capital account transactions, such as the monetary flows financing the refineries' expansion (for other sources of measurement errors in the balance of payments, see Appendix C). Consequently, the implied errors and omissions accounts are large and fluctuating. Nevertheless, the growing importance of the capital account, especially the funds brought

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[1] See Harberger, "Reflections on the Monetary System of Panama," and Appendix B for details.

TABLE 22

PANAMA'S BALANCE OF PAYMENTS

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	19
Current Account[a]	-18.4	-15.6	-10.9	-18.2	-17.3	-10.7	- 9.3	- 4.1	11.6	2.8	-30.4	-40.3	-84.6	-78.4	-19
Capital Account[b]	20.9	22.5	17.9	28.9	21.6	14.5	17.9	17.7	9.8	11.3	63.3	47.7	131.2	106.4	25
2a) Government (net)	6.6	2.0	3.6	19.0	3.9	4.4	7.6	5.6	8.7	31.4	34.9	39.9	93.3[c]	74.2	2
2b) Private (net)	6.8	25.2	15.5	2.7	- 1.1	2.4	- 2.8	-10.4	-14.8	- 5.5	14.8	- .8	-80.9[c]	-16.7	
2c) Banks (net)	6.5	9.1	.8	- 5.4	23.5	4.4	1.7	12.6	0	8.8	58.1	29.8	58.4	100.7	23
2d) Implied Errors and omissions[d]	1.0	-14.1	- 2.0	12.6	- 4.7	3.3	11.4	9.9	15.9	-23.4	-44.5	-31.2	60.4	-51.8	
Estimated Change in Imported Money Supply	2.5	6.9	7.4	10.7	- 4.3	3.8	8.6	13.6	21.4	14.1	22.9	7.4	46.6	28.0	5

[a]Trade balance (corrected for petroleum) + transfers (excludes service payments on foreign capital). (See Table 20.)

[b]All capital account items are the sum of those recorded in Balance of Payments Statistics of Controleria General plu ome from investment and debt service payments (see n. 1, p. 132).

[c]This sharp jump arises from the government expropriation of the public utility company.

[d]Estimated errors and omissions calculated by estimated change in money supply minus current account minus recorded ems on capital account,

[e]As no statistics on private holdings of currency are available, a series was estimated (see Appendix B) and combined h changes in domestic deposits in the hands of the public to give a money stock series. The changes in the levels of this imated money stock are given as line 3.

in via the banking system (endogenous capital flows symbolized by I'-S') is clearly indicated, as is the release of the excess flow supply of money through the current account.

Impact of Real Changes

Finally, the difference between real and monetary disturbance must be delineated. Near the end of the inflation, two sharp real disturbances struck the economy, the oil crisis and the collapse of the housing boom.

The construction boom and the acceleration in world inflation originated at about the same time, that is, in late 1971. By coincidence, it appears that the banking system was becoming fully integrated into the world capital markets at about the same time. There is no reliable data to help pinpoint the beginning of the large increase in the construction of housing and commercial buildings (nor the exact time when it began to collapse).[1] It was probably well under way by 1974-I. Indeed, as presented above (see p. 143) the housing boom not only helped to finance the increase in nominal balances demanded due to world inflation, but it probably helped to over-finance it, in the sense that the capital account brought in money faster than it could be absorbed by money demanders, or released through the current accounts.[2]

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[1] National income accounts use municipal construction permits as the indicator of domestic investment in construction, which probably lead the changes in activity. A drop off of permits would not then indicate that real activity had slowed down, as a jump in the value of permits issued would not indicate a concurrent rise in construction activity. (Neither are permits an infallable leading indicator, since the notoriously slow government bureaucracy has sometimes forced builders to begin without the permits.

[2] Note that the nature of the system had developed to the point where if the housing boom had not financed the adjustment, some other activity would have arisen to generate the credit demand so as to pull in the new real balances by domestic money holders to adjust to world inflation.

The collapse of the construction boom (which again is difficult to pinpoint precisely) was due to a variety of reasons.[1] However, its monetary impact was to reduce the demand for credit (in terms of Figure 1, the investment curve shifted to the left) and so slowed the foreign sourced increase in the supply of domestic credit. Simultaneously, the outflow of funds through the current account was also reduced, but by less than the full impact on the capital account since it can be safely assumed that some construction expenditure falls on domestic resources.

As far as can be determined, the impact of the oil crisis occurred at almost the exact same time as the collapse of the construction boom. The oil cartel drove up sharply the price of oil in late 1973, with the full impact falling in early 1974.[2] The available data is again not sufficient to evaluate the impact of everything happening at the same time, nevertheless, a consistent story can be told to explain the behavior of the data. (It is not, however, the only story.) The drop in real balances becomes very sharp in late 1973, and the series does not turn up again until late 1974. Though the initial decline appeared a little earlier in 1973, this is entirely consistent with the excess stock developing in 1972 that took time to be worked off through local price rises and the balance of payments.

Part, but not all, of the oil price rise was financed by savings (in the national income accounting sense) causing total expenditure to rise. When not all of the savings used were time deposits, demand and savings deposits,

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[1]The excess supply of upper income housing and a rent freeze imposed in October of 1973 are at least two reasons.

[2]Ministry of Planning estimates place the immediate impact of the oil crises at some $50 million (almost 3 percent of GDP) which was calculated by comparing 1974 consumption at 1973 prices. Domestic consumption FOB at the refinery was $27.9 million in 1973 and $76.1 in 1974.

portrayed in Figure 28, declined more sharply as the economy ran down its real balances. The expansion of domestic credit demand flowed out immediately through the increased cost of oil imports in the current account. The impact of the housing boom (contracting the capital account by more than the current account) forcing real money balances out of the system, was augmented by impact of the oil crisis as the domestic money supply staggered under the impact of the double squeeze.

Unlike the adjustment to monetary disturbances, the housing boom and the oil crisis leave lasting real effects. The impact of the fall in investment due to the collapse of the construction boom reduces expenditure on domestic as well as foreign goods, requiring a fall in the relative price on non-traded goods to clear the market.[1] The change in relative prices creates an enduring current account effect. The oil crisis generates an expenditure switching effect caused by the forced rise in the price of tradeables. However, because it takes time to readjust and substitute away from oil, an expenditure increasing impact must also be dealt with. The adjustment of expenditures over time can be temporarily financed out of savings and the slack taken up by foreign financing in the capital account. Once consumption patterns are adjusted as the expenditure increasing impact has worked itself out, the expenditure switching effect still remains, depending on the elasticity of demand for petroleum products over time.[2]

The primary differences between real and monetary disturbances then

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[1] In the short run, the impact may fall instead on employment. See Dornbusch, "Real and Monetary Aspects of the Effects of Exchange Rate Changes," pp. 75-77.

[2] Panama, with 95 percent of its electricity generated by imported diesel fuel, has a lower excess demand elasticity for oil than other countries since they can turn off the diesel generators and use more hydroelectric facilities when electricity demand falls off, while Panama cannot.

occur in the current account through changing relative prices of tradeables and non-tradeables, and in the capital account by altering the savings-investments relation. When Panama was adjusting to world monetary disturbances, no real change took place, except for the capital levy and seigniorage costs. The domestic money supply, along with all other nominal variables, followed the dictates of the homogeneity postulate. Unfortunately for Panama, two real changes that were non-compensating occurred at the end of the inflationary episode, the construction collapse which contracted the capital account inflow and the oil crisis which expanded the current account outflow. Real adjustments were then required.

CHAPTER VI

THE POSSIBILITIES FOR AUTONOMY

The previous chapters have taken advantage of the uniqueness of Panama's economy and the institutional arrangements of her monetary system to examine the adjustment of a small open economy to world inflation. Chapter III presented the endogenous character of the system, while its response to real and monetary disturbance was described in Chapter V. Though Panama's monetary monetary policy instruments have been described as ineffective at best in Chapters II, III and in the Appendixes, its fiscal policies do have a monetary impact. This chapter will discuss the monetary implications of fiscal policy, and their plausible use as a policy instrument to stabilize the economy against shocks.

Since one of the advantages of a central bank stems from the economy's ability to at least partially insulate the economy from external disturbances, Panama's immediate reaction to the oil crisis will be compared to Costa Rica's, a small open economy with a central bank. Finally, the chapter will close by offering some speculation as to the future course of Panama's banking system.

The monetary implications of Panama's fiscal and debt management policies are effected through the impact on the flow supply of credit of borrowing abroad and of building up or drawing down money balances at Banco Nacional, and through the impact on the domestic money supply of retiring or contracting more debt on local capital markets.

Since Panama does not have the option of printing money (forcing the central bank to buy bonds), any fiscal deficit must be covered by the sale of government bonds to private lenders. The limited size of the domestic capital market has caused Panama to sell obligations in the world markets of New York and London. Like Puerto Rico,[1] the government engages in deficit financing by placing bond issues in New York (or London). In this respect, deficit financing operations in external capital markets, acted on the domestic supply of credit in the same manner as the construction boom. By expanding the "savings gap" I'-S', the ex-ante flow supply of money expands, but the current account impact of government imports must be deducted to obtain net change on the domestic M^S. Table 23 presents public sector borrowing from abroad, along with the net annual recorded inflows on the capital account. Note that interest payments, commissions, and other debt servicing payments to foreigners have been deducted to obtain the net impact on the ex-ante domestic flow supply of money. In recent years the governmental contribution has been substantial, although its impact is overstated in 1972, since that portion of the government inflow financing the expropriation of the public utility company was matched by a private sector outflow, and in 1969, much of the foreign credit obtained was from suppliers which financed the direct imports of machinery and capital equipment by the public sector.

Counter cyclical policy should have called for an increase in this financing in 1974 to help offset the contractionary impact of the collapse of the construction boom. Instead, as seen in line 4, the net inflow

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[1] See James C. Ingram, Regional Payments Mechanisms: The Case of Puerto Rico (Chapel Hill: The University of North Carolina Press, 1962), p. 107.

TABLE 23

THE IMPACT OF GOVERNMENT BORROWING'S IMPACT ON THE BALANCE OF PAYMENTS[a]

(In millions of dollars)

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972[b]	1973	19
) Amount Received	7.8	3.6	8.0	22.6	9.3	10.3	14.7	13.5	17.6	42.6	66.6	82.3	144.2	162.0	14
a) Central Govt.	7.8	3.1	5.6	17.0	2.9	5.9	8.8	6.1	3.2	38.0	59.5	59.5	68.6	133.9	13
b) Decentralized Agencies	-	.5	2.4	5.6	6.4	4.4	5.9	7.4	14.4	4.6	7.1	22.8	75.6	28.1	1
) Amortizations Effected	.5	.6	2.6	1.2	2.4	3.0	3.4	3.9	4.6	6.4	25.6	29.4	32.2	63.0	8
a) Central Govt.	.5	.6	2.5	1.1	2.1	2.6	2.7	3.1	3.6	4.0	23.7	26.7	27.1	51.9	7
b) Decentralized Agencies	-	-	.1	.1	.3	.4	.7	.8	1.0	2.4	1.9	2.7	5.1	11.1	1
) Interest and Other Debt Service	.7	1.1	1.9	2.3	3.0	3.0	3.7	4.0	4.2	4.8	6.0	13.0	18.7	24.8	43
a) Central Govt.	.7	1.1	1.8	2.1	2.7	2.5	3.0	3.0	2.8	3.5	4.2	10.3	13.8	16.8	3
b) Decentralized Agencies	-	-	.1	.2	.3	.5	.7	1.0	1.4	1.3	1.9	2.7	5.0	8.0	1
-) Net Inflow due to Public Sector	6.6	2.0	3.6	19.0	3.9	4.4	7.6	5.6	8.7	31.4	34.9	39.9	93.3	74.2	2
) Net Inflow on Total Capital Account	20.9	22.5	17.9	28.9	21.6	14.5	17.9	17.7	9.8	11.3	63.3	47.7	131.2	106.4	25

ources: Bulletins of Controleria General and unpublished data from budget bureau of the Planning Ministry.

[a]Columns may not sum due to rounding error.

[b]Includes expropriation of public utility company financed by foreign bank loan.

[c]Estimated flows from mid year figures and end of year outstanding debt balances.

contracted to its lowest level since 1968, aggravating instead of alleviating the problem.[1]

It seems entirely plausible, then, for the public sector to counteract monetary shocks to the domestic bank system by a countercyclical government borrowing policy in foreign capital markets, a policy of "leaning against the wind" compared to private sector investment.

The public sector can also manipulate its deposit holdings to influence the behavior of the banking system. In a closed economy with a central bank, moving government deposits from the central bank to the commercial banks augments the domestic bank reserves, with an expansionary impact on the domestic money supply, while moving the deposits back to the central bank contracts the reserve stock. In Panama's post transition banking system, it makes little sense to speak of changing the monetary base of the banking system. However, since government deposits are held at the Banco Nacional, a bank less well integrated into world capital markets than many other banks (see above, p. 47), building up or drawing down government deposits can have an impact on the domestic supply of credit by changing the liabilities of Banco Nacional.

Public sector deposits can be treated in much the same manner as domestic time deposits since they increase the domestic deposit liabilities of the banking system, allowing the banks to acquire more assets without going into the international capital markets. Just as local U.S. banks are eager to obtain the working deposits of municipal governments, so, too, Banco

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[1] This overstates the contractionary impact of the government since part of its increased borrowing from the domestic banking system ($55.9 million in 1974) was financed by foreign borrowing. To the extent that private borrowing was "crowded out" of the local system, however, this too must be reduced.

Nacional would prefer the lower cost of funds from increased government demand deposits, to having to pay rates above Eurodollar rates on the local interbank market. Banco Nacional is a commercial bank making loans to the private sector and is one of the primary tools the government employs to influence the domestic allocation credit by sectors. As Table 24 shows, the increased level of government deposits and the greater volume of interbank deposits after the law change helped to compensate for the stagnating level of private deposits. Without the government and interbank deposits, Banco Nacional would have been forced to contract credit, and the effectiveness of Banco Nacional as a tool to influence the domestic allocation of credit would have been much reduced.

Finally, the government's debt management policy may have a local monetary impact. Similar to the operation of the national stabilization fund proposed by Harberger in 1967,[1] the sale or retirement of government bonds in the domestic capital market could have an impact on the monetary system. Using funds obtained abroad or running down deposits in Banco Nacional, retiring locally held government debt would increase the money supply and selling government bonds to the local capital market might act to "sop up" local excess liquidity.[2] During periods when the private sector is reducing expenditure to build up the level of nominal balances, the

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[1] See Harberger, "Reflections on the Monetary System of Panama," pp. 158-73.

[2] In the past, the government has forced contractors to accept government bonds instead of cash as payment for services performed. The contractors promptly raised their prices to reflect the discounted value of bond payments. In addition, the central government forced some bond issues into the Social Security portfolio. Most social security programs have large portfolios of government bonds, however, they also may print currency to pay off government debt, whereas Panama cannot. The local market for government bonds then is very thin.

TABLE 24

GOVERNMENT DEPOSITS

(In millions of dollars)

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
vernment Deposits n Banco Nacional	16.7	11.0	12.2	15.8	14.3	16.0	17.0	18.6	16.2	19.1	15.0	28.6	59.2	69.1	68.4
nterbank Deposits n Banco Nacional	--	.4	2.1	.4	.4	4.2	5.0	6.3	3.0	12.6	17.7	19.2	32.8	31.4	32.8
rivate Deposits n Banco Nacional	16.9	18.5	19.7	24.2	21.6	28.0	26.0	27.6	23.4	24.6	29.1	32.4	42.0	40.0	39.1
tal Domestic[a] eposits of the anking System	83.1	84.1	96.4	119.8	114.0	136.1	159.4	192.1	214.7	236.5	303.0	368.6	499.6	572.7	665.7

urce: Compiled from unpublished data of the Banking Commission, Panama.

[a]Excludes interbank deposits but includes savings and time deposits.

government using foreign borrowing or drawing down deposits at Banco Nacional to retire local bonds outstanding would be placing increased deposits directly in the hands of the public. If the sale of government bonds could attract some of the excess liquidity which apparently arose in 1972 (see Chapter V) then some of the local inflationary pressures could possibly be avoided.

The advantage Panama obtains from its fiscal policy impacts compared to other countries is the absence of some types of "crowding out" effects. When domestic capital markets are limited to domestic savings and a fixed nominal money supply, increased government bond sales drive out the private sector. So long as Panama faces a highly elastic supply curve of foreign funds in the Eurodollar markets, increased government borrowing comes at the expense of foreign borrowing, not at Panamanian private sector borrowing.[1] In addition, because of the absolutely fixed rate of exchange to the dollar there are no foreign exchange crisis fears, hence no crowding out of private sector borrowing due to lenders' fears that the debt service cannot be transferred from the local to international markets.

The monetary implications of fiscal policy have been brought out as a substitute for government policy in the absence of a central bank. Throughout this thesis the contrast has been drawn between Panama, a country without a central bank, and other small countries with central banks. It was shown how countries with central banks could expand domestic credit to adjust to world inflation and avoid the inflow of reserves. Without a central bank, but with an economy highly integrated into world capital markets,

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[1]To the extent that international banks put ceilings on their level of exposure in certain geographic areas, government borrowing could crowd out private sector borrowing.

Panama's adjustment to world inflation was made, with the seigniorage costs paid to foreigners. To the extent that the increase in nominal balances could be rented through the capital market (paying the interest costs but rolling over the debt) instead of through real goods and services, the adjustment was much easier.

The oft mentioned advantages of a central bank, however, are usually framed in terms of the adjustment to real international disturbances to the economy.[1] The oil crisis is an obvious example of such a real disturbance. Now Costa Rica is a small country similar in many ways to Panama except that it has a central bank. Though a myriad of other disturbances probably struck that economy during the same period, the behavior of a few Costa Rican variables will be presented to contrast the reaction of an economy with a central bank to the oil crisis on the assumption that OPEC's actions dominated the other disturbances.

The impact of the OPEC increase in oil prices is not inflation so much as a rise in the relative price of petroleum. The fall in the relative price of non-oil items has a negative effect on real income in oil importing countries. Panama's policy makers cannot delay the adjustment to the relative price change, so that any adjustment period in expenditure must be financed out of private savings while expenditure increasing effects are taking place. Costa Rica's monetary authorities, on the other hand, can increase domestic credit to offset the drain on domestic savings needed

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[1] See, for instance, Organization of American States, Domestic Efforts and the Needs for External Financing for the Development of Panama (Washington, D.C.: OAS, 1966), CIAP/31 Revision 2, dated 12 September 1966, pp. 131-47. The report of the CIAP subcommittee on Panama (OAS) recommended the establishment of a central bank to "facilitate the achievement of the economic objective of Panama . . . economic development in an environment of monetary stability . . . (for which) it will to have a monetary system that is under the control of its national monetary authorities" (p. 147).

to maintain old expenditure patterns at the new price of oil. The loss of international reserves still results, but central bank assets rather than those of the private sector are initially depleted.

Table 25 presents Costa Rica's rates of change in "Home and Imported Goods" prices, domestic credit and net international reserves. Panama's price-indexes did not rise as rapidly as Costa Rica's, though they peaked at the same time in the second quarter of 1974. Again from the aggregate level of the data it is difficult to judge the timing of the oil impact. Nevertheless the expansion of international reserves measured on a net basis slows markedly in late 1973 and the stock begins to fall in 1974-II.

TABLE 25

RATES OF CHANGE (OVER LEVEL TWELVE MONTHS EARLIER) IN CREDIT, NET INTERNATIONAL RESERVES, AND PRICES[a]

		Twelve Month Rate of Increase of		
		Domestic Credit	International Reserves	Prices
1972	IV	17.5	18.9	8.9
1973	I	14.6	10.8	9.5
	II	9.0	143.4	12.1
	III	10.0	109.4	18.0
	IV	10.2	46.0	25.1
1974	I	14.4	34.1	30.4
	II	21.7	- 14.0	44.8
	III	41.1	-123.2	44.2
	IV	50.4	-142.0	38.9

Source: International Monetary Fund, International Financial Statistics (Washington, D.C.: International Monetary Fund, 1960-75), Supplement 1973.

[a]Prices measured are home and import prices

In the last two quarters of 1974, net reserve levels are negative. It does not appear that Costa Rica increased domestic credit rapidly in immediate response to the oil crisis, though by 1974-II, she had done so, as the last two quarters of 1974 show extremely rapid rates of domestic credit expansion. It should also be noted that Costa Rica devalued by 37 percent during 1974-III. The rapid price rise and the net borrowing from foreigners is common to both countries despite the presence of the central bank.

Table 26 presents ratios of money to income and levels of real balances for Costa Rica, similar to those of Panama in Figure 28. Though again the non-availability of data raises timing questions, the data for Costa Rica is remarkably similar to Panama's in that the level of real balances slowed its rate of increase by the end of 1973 and dropped off sharply in 1974. Likewise, the ratio of money to income dropped off in 1974 as even the presence of a central bank did not avoid the fall in real balances brought

TABLE 26

COSTA RICA BEHAVIOR OF REAL MONEY BALANCES

	Money Divided by Income[a]	Level of Real Balances[b] (1970=100)
1971	15.1%	112.0
1972	15.8	127.5
1973	14.9	129.8
1974	12.7	109.9

Source: International Monetary Fund, International Financial Statistics.

[a]Currency plus demand deposits deflated by price index when divided by constant price GDP.

[b]Average stock of currency plus demand deposits divided by price index.

about by the impact of world inflation and the oil crisis. Once again, while the cursory nature of the comparison must be emphasized, it does not appear that the presence of a central bank alleviated the problem of the oil crisis.

Aside from delaying the impact of real disturbances arising abroad, a country with a central bank and control over its exchange rate retains the possibility of maintaining an independent rate of inflation. However, the management problem of separating world inflation from a change in relative prices persists. Panama was first confronted by world inflation in 1966, though it did not really begain to pay attention until 1970. As alluded to above, the initial driving force behind rises in consumer prices was the price of food, an area where Panama had strict price controls. In addition, virtually all of the rigid controls imposed in 1972 had first to be modified, then later abandoned. It is thus not at all clear that even if Panama had had a central bank and could have manipulated its exchange rate, that the authorities would have correctly read the signals. Since they initially attempted to rigidly fix prices it is not at all probable that they would have devalued away from world inflation, given the difficulties in reading the signals.

Without a central bank or exchange rate control, the bulk of governmental efforts have been devoted to setting up methods of living with inflation by easing the adjustment process. The policy has been one of ensuring that the changes in relative prices induced by the inflational process are minimized.[1] In this regard, in addition to all wages and salaries being

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[1]See Larry A. Sjaastad, "The Inflationary Process in Panama" (unpublished manuscript, Panama, August 1973). "A rational policy in this context requires that where short-run flexibility exists, there be a minimal amount of intervention . . . and that where (it) does not exist, the market process

adjusted to reflect inflation in early 1974, government contracts now often contain escalator clauses, the coverage of the Office of Price Regulation has been reduced, and there is a major effort to convert specific into ad valorem tariffs where possible.

Finally, some comments can be made concerning the establishment of the banking center as an instigating force for inflation.

> Spain was punished for the treasures she stole from the Americas by the ensuing inflation that shattered her economy. Today the flow of money through Panama, of which we see very little, is punishing us with inflation too.[1]

Though the unnamed Panamanian official blames the banks, the analysis presented in the previous chapters finds that the fears were unjustified, as instead the banking system acted as a force of validation, easing the adjustment to world inflation. Though local demand forces such as the housing boom (or government expenditure which grew from 15 percent of GDP in 1967-68 to 20 percent in 1973-74), when financed by foreign funds "validating" the inflation, may have temporarily increased aggregate demand, the inflationary pressures could not have been more than temporarily out of line with world inflationary forces.

Despite the evidence that Panama has not greatly suffered from the absence of a central bank, she seems determined to have one since the banking regulations were not all abolished in 1970 when the law was changed, leading one to believe that the only long run goal of the policy makers can be a central bank. In a sense, Panama may be in the state similar to the period when the British commonwealth countries changed over from currency boards to

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be modified to enhance the short run flexibility and . . . reduce changes in relative prices over time" (p. 184).

[1]Unnamed Panamanian official quoted in the New York Times, December 28, 1972, p. 98.

central banks. The success of offshore banking in Singapore has demonstrated the feasibility of maintaining both the forces of a strong central bank and of a regional banking center. Panama must counteract the feelings of international bankers that Latin American central banks have a demonstrated willingness to intervene in international finance transactions in an arbitrary manner. When the government's perceived need for deficit finance becomes greater than that to finance imported goods and services, there will be great pressure on the government to set up a central bank. However, even if more limited borrowing in international capital markets is deemed an appropriate risk to take, Panama must proceed with great caution since until a major shift in the production and consumption structure of the economy occurs, Panama has little room for local autonomy.

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APPENDIX A

RESERVES IN PANAMA

Panama has no central bank, but it does have legal reserve requirements in the U.S. tradition, though the values required and assets eligible are quite different. Generally, the "most important restrictions on the volume of bank deposit liabilities outstanding at any time are the fractional reserve requirements set by the monetary authorities and the stock of legal reserves that are available for these banks to hold."[1] Prior to 1970, law 101 of July 8, 1941, set reserve requirements at 20 percent against demand deposits and 10 percent against time deposits. The level of the available stock of legal reserves (the monetary base) was not set by a central bank nor by the exogenous inflow occurring through the balance of payments, since the eligible assets were vault cash and interbank deposits. While vault cash is a part of the commodity money "purchased" by Panama through the balance of payments accounts, it might be said to be exogenous, however, interbank deposits are not.

Allowing interbank deposits to be used as legal reserves exercises much the same effect on the local monetary system as do "swaps arrangements" between central banks on the international monetary system. "Swaps" are even-up trades at the existing exchange rate of currency deposits whereby

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[1] John T. Boorman and Thomas M. Havrilesky (eds.), Money Supply, Money Demand, and Macroeconomic Models (Boston: Allyn and Bacon, Inc., 1972), p. 4.

the German central bank deposits marks at the Italian central bank in exchange for lira deposits by the Italians at the German central bank. Both banks have increased their foreign assets, and in the absence of any offsetting sterilization, expanded the monetary base of the domestic economy. In Panama, when two commercial banks exchange deposits, they increase their liabilities and "create" legal reserves,[1] thus raising their own supply of reserves without reducing anyone else's. In this sense, the possibility arises for legal reserves in Panama above vault cash to be only "window dressing" and in no way acting as a constraint against money and credit expansion.

The IMF reports two candidates which might be used as proxies for the monetary base, International Reserves and Official International Reserves. Changes in the level of Official International Reserves are given by the balance of payments measured on the official settlements balance, and could be the appropriate measure of the foreign exchange market's influence on the money supply when it reflects foreign reserve conversions' pressure on the high powered monetary base. For Panama this figure is compiled not as the change in foreign assets of the central bank, but rather the gold and foreign currency, SDR's, IMF deposits, and deposits in foreign banks of the government's commercial bank, Banco Nacional. As this bank is just like any other commercial bank, except that it keeps all government deposits and the board of directors serves at the Cabinet's pleasure, there seems no reason to single

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[1]Note the difference between swaps and the transfer of ownership of a deposit at the Fed in the Federal Funds market, or of a gold stock in an international transaction. Deposits at the Fed and the gold stock are limited in supply so that only a re-distribution of an existing stock occurs, not the creation of a new stock. Swaps, on the other hand, permit banks to increase their liabilities and legal reserves at the same time.