

A third framework which might be utilized focuses on the endogenous and exogenous character of the right hand side of the equation. In most Latin American countries foreign transactions must be accomplished through the offices of the central bank. The domestic bank credit variable G in equation (13) can then be thought of as under virtually total control of the monetary authorities since the central bank can effectively turn on or off the flow of foreign funds, change reserve requirements, cut the discount rate on reserves offered to banks or print high powered money giving the banks 'an offer they can't refuse' to expand domestic bank credit. Though Panama has banking regulations on the books, it is an economy without any instruments of monetary policy to set either the total volume of available legal reserves or to effectively alter legal requirements (see Appendix A). In Panama, then, all of G is endogenous.¹ Since the banks are not effectively controlled by monetary authorities, the situation might be better described as one in which all the banks were located physically outside of the country. The dollar circulates as legal local currency interchangeably with bank deposits so that all locally held money might be described as international reserves. In the sense that the entire domestic money supply is endogenous, the accounting framework to analyze the monetary system can be replaced by (14)

$$(14) \quad M^S = R'' \quad \text{where } M^S \text{ is an } M_1 \text{ concept of the money supply, and } D = 0.$$

Again the usefulness of this particular concept arises from the ineffectiveness of Panama's regulatory control over her monetary system, leaving nothing but fiscal policy and debt management to affect the domestic money supply even in

¹The domestic bank credit concept used here nets out the funds bankers are purchasing with local savings and time deposits to expand credit. That is, defining $C = \text{Total Bank Credit} - (\text{domestic time and savings deposits})$.

the short run (see Chapter VI for a short discussion of this tool). Defining a fully endogenous money supply in this manner focuses attention directly on those items of the balance of payments which affect the domestic banking system, emphasizing the absence of any exogenous component to the money supply.

All three concepts are "correct" in the sense that the accounting line drawn when aggregating the assets of the banking system is arbitrary. In terms of usefulness for analysis, however, the endogenous character of Panama's monetary mechanism seems best presented by proceeding as if the entire domestic money supply were international reserves. Clearly this does some violence to reality since foreigners may not be willing to accept and hold all the liabilities of Panamanian banks in payment for goods and services provided. Indeed payments in checks to foreigners are not likely to be merely a transfer of the ownership of the Panamanian bank's liability from domestic to foreign deposit holder as a U.S. dollar bill changes hands without being presented for payment to the original issuer. On the other hand the dollar liabilities of Panamanian banks are just like the dollar liabilities of any European bank in the sense that the holder of the dollar denominated claim is worried about the risk attached to the particular bank, not about foreign exchange rate risk. In this sense in terms of ease of marketability, Panama's entire domestic money supply could be treated as internationally liquid since the entire amount could be traded on New York markets without severe adjustment problems.

The end result is that an examination of the determinants of the flow supply of money is an examination of the components of the balance of payments. Measurement of the overall balance, however, is subject to the same arbitrary accounting procedures. Several alternatives are available in terms of where to draw the distinction delineating above the line and below the line items.

All, however, must deal with two separate complications. The one is the impact on the balance of payments of establishing the regional banking center, while the second is the treatment of foreign funds financing domestic credit expansion.

The Balance of Payments of a Banking Center

The complications of the banking center raise the possibility that its healthy expansion might cause balance of payments statistics to incorrectly indicate external imbalance if the line is improperly drawn. A country's balance of payments is its statistical record of all transactions taking place between its residents and the rest of the world, using the foreign exchange market as the frame of reference. By conventional measures, an economy exchanging short term debt to non-residents for claims on foreigners that are long term is said to be in external imbalance.

However, as an international banking center, Panama's banks are acting as intermediaries between foreign depositors and foreign borrowers and the volume of transactions between its residents (including the banks) and non-residents has grown much larger solely because of the growth in the foreign operations of the banks. Whether foreign intermediation is conducted out of the Bahamas branch or the Panamanian branch of an international bank should make little difference to Panama's domestic money market. The balance of payments measured must be designed so as to remove the influence of the international financial intermediation. A basic balance is inappropriate since banks expanding international operations seek short term debt (deposits) in order to acquire long term assets (loans) thus sending the basic balance into deficit and raising unfounded alarm. For similar reasons, a liquidity balance definition is also inappropriate, since the liquid liabilities flowing

into Panama's banks through the balance of payments capital accounts are not accommodating volatile capital that can be expected to flow out again soon, but are rather deposits of foreign banks and private non-residents which have exhibited extremely stable behavior over extended periods of time.- A country with a large group of banks operating across international boundaries then should be expected to develop a conventionally measured basic balance and liquidity balance deficit which should not be viewed with alarm. The accounting framework should place the entire impact of the intermediation process between foreign borrowers and foreign lenders "above the line."

The second problem arises to the extent that bankers channel foreign funds into the domestic economy. This net change in the money supply defined in (5) must be captured by the balance of payments.

The situation in some ways resembles that of the reserve currency countries since the consolidated banking systems' foreign liabilities are larger than their foreign assets. However, foreigners have voluntarily acquired the liabilities of the U.S. and the U.K. because they considered it useful to maintain working balances to use in foreign trade or in foreign exchange markets. Some liabilities of Panama's banks have been acquired with these motives, however the bulk of the claims of foreigners on Panama have not. Instead, these dollar liabilities have originally been acquired outside of the U.S. by foreigners placing their funds in Eurodollar markets which have then been purchased by Panamanian banks and shifted into Panama. They remain claims on the U.S. which gives them their desirability. The bulk of the funds in Panama's banks (over 85 percent in 1974) have been channeled abroad as loans to foreigners and these must be separated from those which have been directed by bankers into the domestic economy to expand local credit. Perhaps their

role, for balance of payments purposes, could best be visualized by treating them as bonds sold to foreigners. For though they are necessarily short term liabilities, they have the economic character of funds raised in foreign markets by bond sales. This net balance should then be included as the "above the line account." This leaves the money account comprising the total of changes in currency in the hands of the public and of deposits in banks. Table 6 summarizes the ideal balance of payments for Panama once it has become a banking center.¹

The Supply of Bank Credit

The integration of Panama into the world's capital markets vastly improved the capacity of Panamanian banks to meet the credit "needs" of their domestic customers. With access to international dollar flows they were no longer so tied to the stochastic process providing the exogenous flow of funds from the domestic economy and through the balance of payments. In an important sense, the domestic flow supply of credit became demand determined in that the determinants of the flow supply of domestic credit became those factors influencing the demand for banks loans at the rate of interest given to the economy by world capital markets. The source of funds supplied to meet the demand depended on variables influencing domestic savings. The simplifying assumption that the entire domestic money supply can be treated as international reserves permits the identification of the borrowed foreign savings with a modified version of the capital account of the balance of payments, generated by a domestic "savings gap." Since local stock markets and

¹Since debt service will include income received by banks on foreign loans, deposits and interest paid to foreign depositors, it will no longer be compatible with historical trends and so might be best presented separately from the normal current account.

TABLE 6

SUGGESTED BALANCE OF PAYMENTS FOR POST TRANSITION PANAMA

Imports of Goods and Services + Debt Service Payments to Foreigners (including payments for service of capital)	Exports of Goods and Services + Debt Service Payments from Foreigners
= Current Account Balance	
+ Securities imported by non-bank sector	+ non-bank securities sold to foreigners (both public and private sector)
= Basic Balance	
+ increase in reserve holdings of banking center against foreign deposit liabilities + new foreign loans and investments purchased by banking center	+ foreign deposits in Panamanian commercial bank (foreign non-bank and bank)
= Balance of Payments for Panama	
+ increase in deposits in foreign banks acting as reserves of banks against local deposits + increase in holdings of U.S. currency in hands of banks and public	+ reduction in deposits of foreign banks acting as reserves against local deposits + reduction in holdings of U.S. Currency in hands of banks and public
= 0	

non-bank financial intermediaries are virtually nonexistent, to a first approximation ~~the~~ banks comprise the entirety of the domestic capital market. Abstracting from all self-financing activities (from the rebuilt roof financed by the homeowner's own savings to the expansion of the refinery's capacity financed by the oil company's internal funds), a modified savings gap can be defined as the difference between the domestic flow supply of loan opportunities presented to banks (I'), and the domestic flow supply of financial savings flowing through financial institutions in Panama (S') and it is this residual that is financed through the capital account.

Explaining the Flow Supply of Savings

Though endogenous liabilities acquired from non-residents gave bankers a new source of funds to call upon once the banking center was in place, the traditional sources did not disappear. Domestic savings continued to provide funds to expand domestic banking activity. The expansion of the flow supply of bank credit can be partly accounted for by changes in the deposit liabilities of the banking system. The behavioral ratios of the public during the transition and post-transition period are presented in Figure 6 as annual moving averages. Again, the most striking change occurs in the time deposit relation. During this period, as opposed to the decade of the 1960's, the savings account relation and the time deposit relation are moving in opposite directions. The savings account relation had leveled off after 1967 (see Figure 2), stabilized, then began to decline more sharply after 1972. The decline in importance is due in no small part to the interest rate ceiling on small deposits in the face of rising inflation. Large savers (accounts above \$13,999), on the other hand, were able to obtain market rates equal to

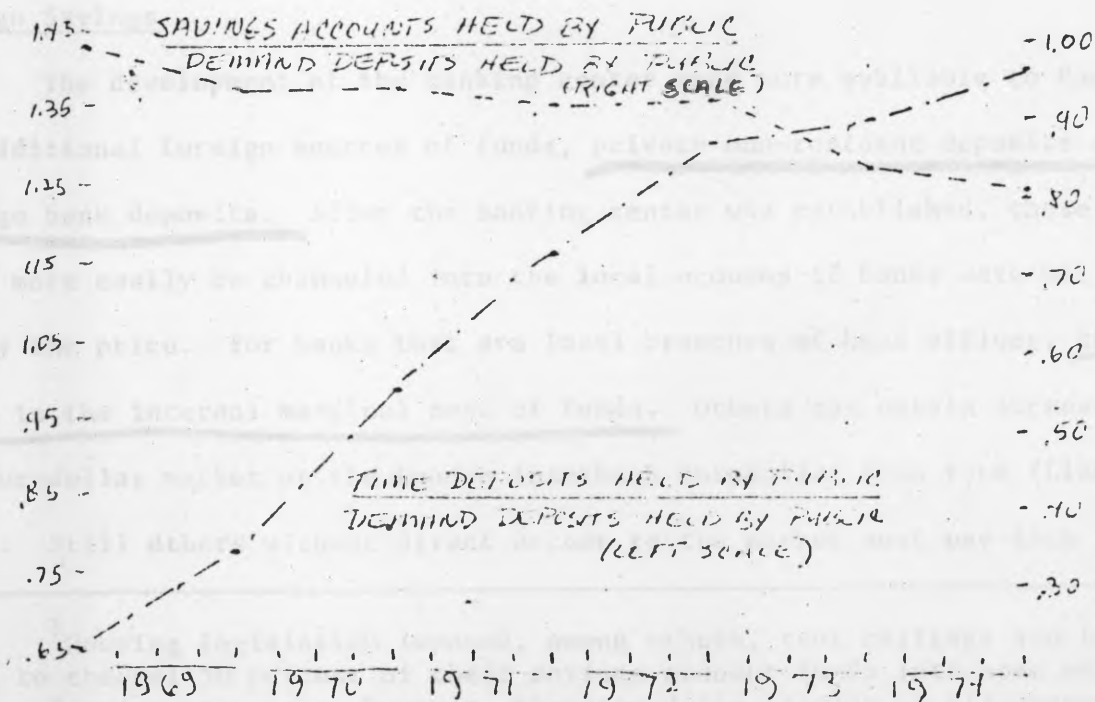


Fig. 6.--Savings ratios

Eurodollar rates on their accounts. These come closer to compensating them for the rates of inflation, as can be seen in Figure 7. In addition, rumors of impending legislation caused a shift in the public's desired portfolio composition away from domestic savings accounts in 1973.¹ The time deposit ratio continued to rise sharply through 1972, then tapered off. Much of the rapid growth experienced since 1969 resulted from residents bringing back funds previously invested abroad, because once the ceiling rates on large deposits had been lifted, Panamanians were more than willing to repatriate their savings and take advantage of the high rates of interest available locally. By the end of 1972, however, the growth in time deposits had to be obtained by generating new savings, not merely returning old savings to the domestic economy, and so the ratio's rise slowed. The important impact of the law was not the removal of the time deposit ceiling but rather the much more available supply of foreign funds.

Foreign Savings

The development of the banking center made more available to Panama two additional foreign sources of funds, private non-resident deposits and foreign bank deposits. After the banking center was established, these funds could more easily be channeled into the local economy if banks were willing to pay the price. For banks that are local branches of head offices, the price is the internal marginal cost of funds. Others can obtain access to the Eurodollar market at the London Interbank Eurodollar loan rate (LIBEL rate). Still others without direct access to the market must pay this rate

¹ Housing legislation imposed, among others, rent ceilings and forced banks to channel 50 percent of their savings account funds into home mortgages. Persistent rumors, however, threatened the freeing of all accounts and caused the public to shift into demand deposits and cash.

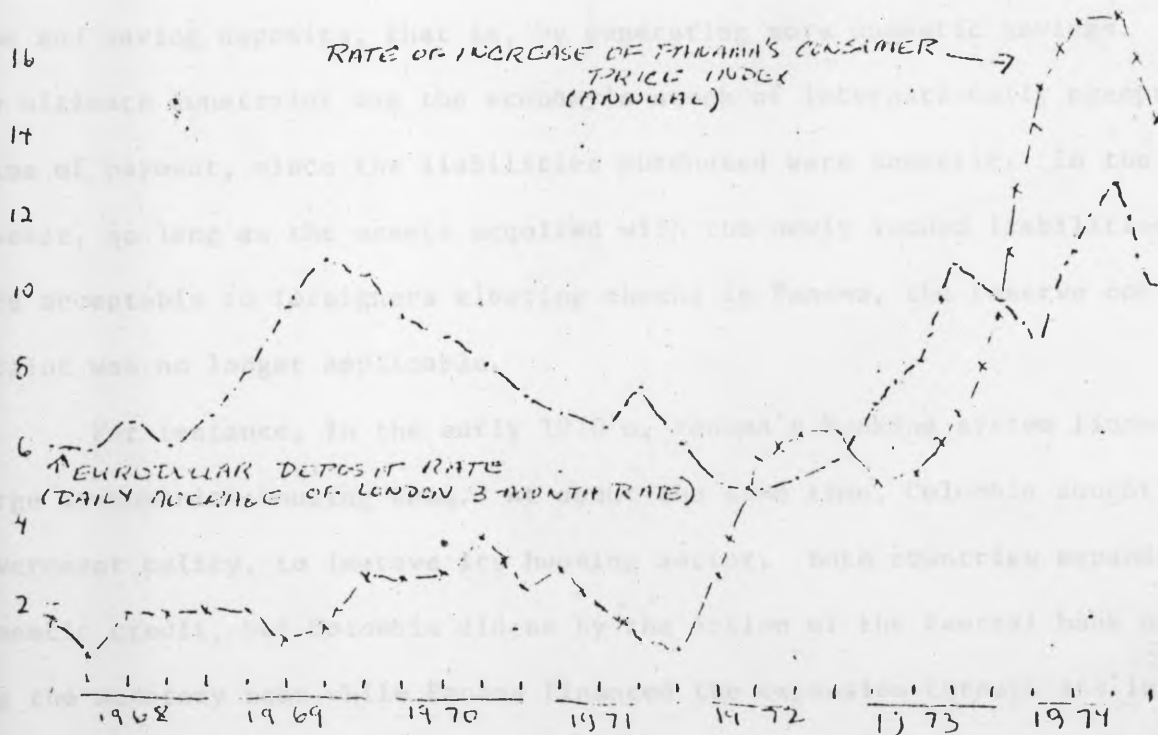


Fig. 7.--Inflation and interest on deposits

plus a transaction fee. The direct supply of funds flowing through Panama, the flow of "purchasable" foreign funds through Panama, began in earnest in 1969. As can be seen in Table 7, it was very strong by 1972. However, it is not the absolute level of foreign funds flowing into the banking system, but rather the volume of funds flowing into the local economy that affects the flow supply of bank credit. Not the total level of foreign funds in Panama's banks, but only those diverted into domestic loans affect I'-S'.

The use of foreign funds during the 1970's in one sense merely applied the lessons of the sixties to a larger market. As the ability to market their liabilities to domestic savers induced bankers to increase their loan to deposit ratios in the 1960's, so access to the international capital markets encouraged local banks to expand their loan portfolios in the 1970's. At the same time, however, a constraint was eliminated. In the 1960's, increased domestic credit demand was met primarily by banks attracting more time and saving deposits, that is, by generating more domestic savings. Then the ultimate constraint was the economy's stock of internationally acceptable means of payment, since the liabilities purchased were domestic. In the 1970's however, so long as the assets acquired with the newly issued liabilities were acceptable to foreigners clearing checks in Panama, the reserve constraint was no longer applicable.

For instance, in the early 1970's, Panama's banking system financed a large condominium housing boom. At about the same time, Colombia sought, via government policy, to improve its housing sector. Both countries expanded domestic credit, but Colombia did so by the action of the central bank expanding the monetary base while Panama financed the expansion through its international capital market connections. When domestic credit expanded sharply, Panama suffered no exchange rate problem even though at least half of the

TABLE 7

PURCHASABLE FOREIGN FUNDS
(in millions of dollars)

	1966	1967	1968	1969	1970	1971	1972	1973	1974
Foreign Non-bank Time Deposits	19.9	21.8	23.0	60.7	105.0	156.6	236.4	303.9	538.5
Foreign Bank Total Deposits	70.8	59.2	77.2	146.1	276.1	411.5	819.4	2232.8	4628.0
Total	90.7	81.0	100.2	206.8	381.1	568.1	1055.8	2536.7	5166.5

loaned funds were spent on imports. Colombia, on the other hand, based domestic credit expansion on domestic sources, and ran into exchange rate problems, forcing it to curtail the monetary expansion as its international reserve stock began to contract. Though its banking system had sufficient "domestic" bank reserves to clear checks, it could not meet the foreigner's demand to clear checks in international reserves. With credit expansion based on foreign borrowing, Panama faced no exchange rate implications. Foreigners acquiring deposit liabilities of Panama felt they were acquiring dollar claims on an international bank, which by chance happened to be based in Panama. They are thus concerned with the solvency and liquidity of the bank, not the country. Though there may be long run foreign indebtedness implications (see above, p. 9), there are no foreign exchange implications provoked by domestic credit expansion financed by foreign borrowing.

Integration into the world markets did impose a constraint on the freedom of action of domestic policy makers. Since Panama is a very small part of the world dollar system, it, in effect, faces an infinitely elastic supply curve at the world interest rate (symbolized throughout this thesis by the Eurodollar three month deposit rate). So long as the world rate and "country risk" factors are unchanged,¹ the flow supply of credit is determined by the supply to banks of credit-worthy opportunities. The international connection, however, constrains any governmental efforts to force banks to provide domestic loans at a lower rate, since imposing interest rate ceilings can only reduce the overall supply of loans. This can be seen in Figure 8.

¹There could be a change in the local market clearing rates due to a change in the world rate, or a change in the political risk feelings of the banks. In addition, individual banks may have geographical limits to the credit they grant to one particular area.

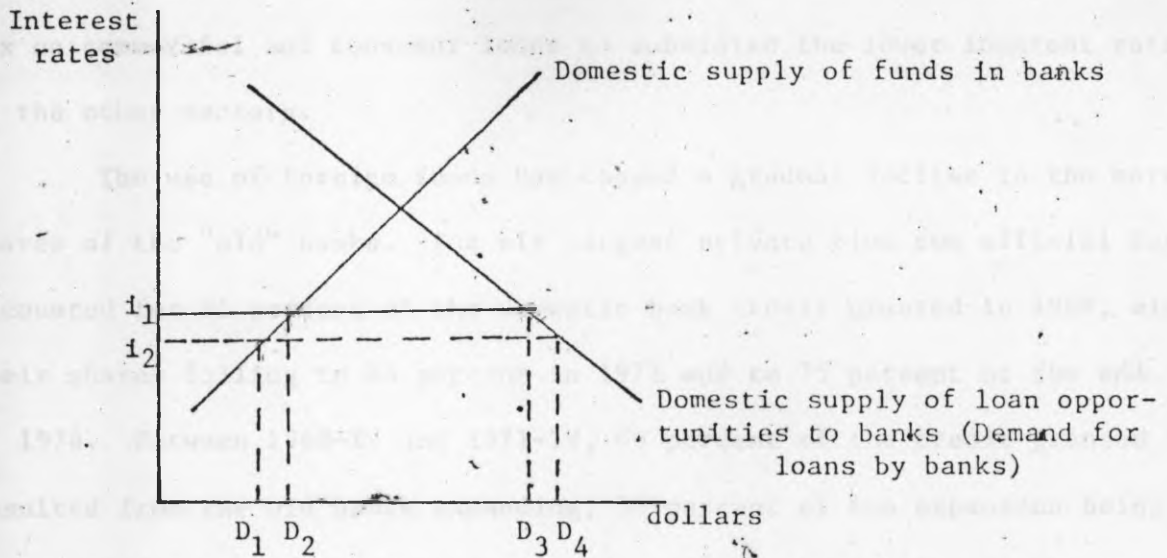


Fig. 8.--Demand and supply of loanable funds

If the economy originally imposes usury law ceilings on interest rates at level i_2 , the opportunities presented to banks are given by D_4 while those banks can meet are given by D_1 and the excess demand for loans (the rationing problem) is given by the distance D_1D_4 . If local rates are permitted to rise to the world rate i_1 , then loan opportunities presented to banks are contracted to D_3 , but all of them are met, D_2 by domestic sources and D_2D_3 by foreign funds available at the international interest rate. One of the impacts of the 1970 banking law removing virtually all interest rate ceilings then was to release the backlog of feasible lending opportunities. Similarly, one of the drawbacks of imposing an effective interest rate ceiling would be to cut off the foreign financed funds. This would be doubly complicated if the longer run result forced a reduction in the domestic deposit rate, sending all the local funds repatriated in the early 1970's back abroad in search of the market interest rate. Consequently, when the government wanted to reduce the cost of credit to the agricultural and

industrial sectors of the economy, in 1974, it was forced to institute a tax on commercial and consumer loans to subsidize the lower interest rates to the other sectors.

The use of foreign funds has caused a gradual decline in the market shares of the "old" banks. The six largest private plus two official banks accounted for 91 percent of the domestic bank credit granted in 1968, with their shares falling to 84 percent in 1971 and to 75 percent at the end of 1974. Between 1968-IV and 1971-IV, 86 percent of the credit granted resulted from the old banks expanding, 56 percent of the expansion being accounted for by four banks (15 percent by Citibank alone). It has not been the big new international banks expanding credit using their foreign deposit liabilities, but rather the older banks who have also been using liability management¹ (except for Banco Nacional which has had to depend upon growing interbank deposits since it does not have the international connections other banks have).

The post transition system then benefited from access to international capital markets which augmented domestic savings and let the expansion of domestic credit be demand determined. The expansion produced was not the direct result of new banks but rather a much more expensive participation by all banks in world capital markets. Table 8 and the lower portion of Figure 9 demonstrate the importance of foreign liability financed credit

¹It is possible that the competition to retain customers spurred the old banks on. Previously, due to limited market size, it just did not pay to open a branch in Panama, since not even the overhead could be covered. It is possible that somewhat of an oligopolistic situation developed. So long as foreign operations can be used to pay the bills, however, local operations can be profitable. Some of the banks view local loans as a necessary expense of doing business in Panama. Such forces have not provided the bulk of credit expansion, however, as the older banks became more aggressive. So long as it is foreign financed, such "agressive" behavior can persist.

TABLE 8

SHARE OF CREDIT GROWTH ACCOUNTED FOR BY D_T

	Average Annual Growth Rates		Shares	
	ABC	D_T	Growth in ABC Accounted for by D_T	Residual
1960-68	12.68	11.05	87.1	12.9
1969-74	24.38	19.03	78.1	21.9
1968-72	22.05	19.95	90.5	9.5
1972-74	22.77	14.25	51.3	48.7

expansion. Table 8 compares the average annual growth rate of domestic bank credit (ABC) to domestic deposits (D_T). Note that from 1960 to 1968 and again from 1968 to 1972, the bulk of the growth in ABC can be accounted for by the growth in domestic savings. After 1972, however, the residual, that is that finance by foreign funds, is much more important, as can be confirmed by the lower portion of Figure 9 where the larger divergences in 1964 and after 1972 between the two rates indicated the importance of foreign funds in domestic credit expansion.

The upper portion of Figure 9 traces the behavior of l' from equation (10). The stability of this ratio between 1960 and 1968, except for the sharp jump in 1964, made explanations with a credit multiplier useful. After 1968, however, the rising ratio of endogenous liabilities causes changes in the multiplier to offset changes in the base, and makes analysis of the flow supply of credit using a multiplier and a base considerably less useful, since the base no longer constrained credit expansion. In a similar sense, the money multiplier also lost its explanatory power.

The Republic of Turkey in 1974

During the transition period from the 1960s to the 1970s, the Turkish economy experienced significant changes. The government's policy of import substitution and the establishment of the Turkish Ministry of Economic Affairs in 1960 led to a rapid increase in foreign endogenous liabilities. This was primarily due to the expansion of the public sector and the growth of the manufacturing industry. The government's policy of import substitution and the establishment of the Turkish Ministry of Economic Affairs in 1960 led to a rapid increase in foreign endogenous liabilities. This was primarily due to the expansion of the public sector and the growth of the manufacturing industry.

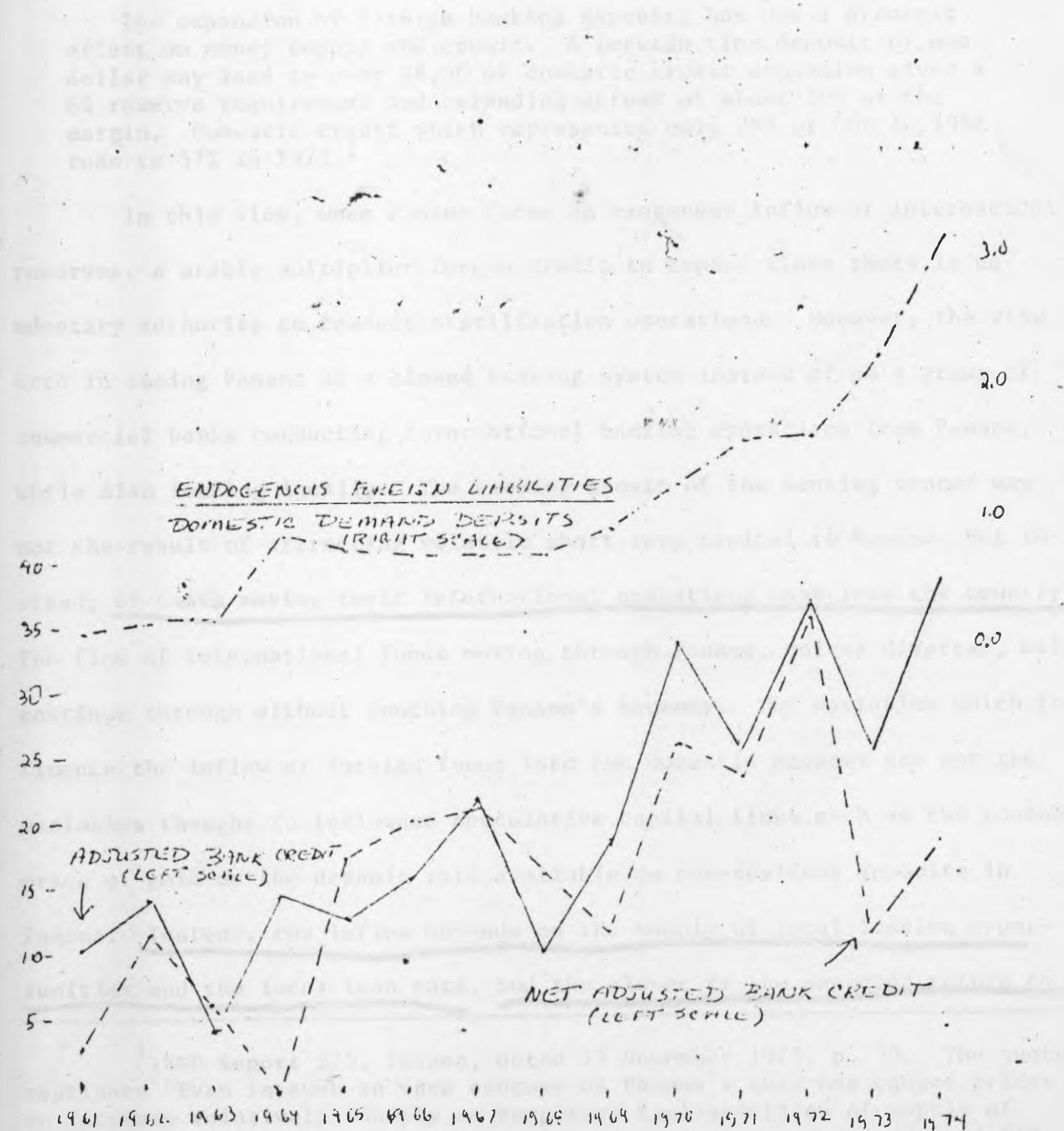


Fig. 9.--Foreign endogenous liabilities

The Supply of Money in Panama

During the transition period when new banks were moving to Panama and setting up operations, Panama was told by the World Bank that the credit boom could continue only if more and more foreign banks could be attracted to Panama to set up their operations.

The expansion of foreign banking deposits has had a dramatic effect on money supply and credit. A foreign time deposit of one dollar may lead to over \$8.00 of domestic credit expansion given a 6% reserve requirement and relending abroad of about 50% at the margin. Domestic credit which represented only 29% of GDP in 1968 rose to 57% in 1972.¹

In this view, when Panama faces an exogenous inflow of international reserves, a stable multiplier forces credit to expand since there is no monetary authority to conduct sterilization operations. However, the view errs in seeing Panama as a closed banking system instead of as a group of commercial banks conducting international banking operations from Panama, while also lending locally. The booming growth of the banking center was not the result of attracting volatile short term capital to Panama, but instead, of banks moving their international operations base into the country. The flow of international funds moving through Panama, unless diverted, will continue through without touching Panama's economy. The variables which influence the inflow of foreign funds into the domestic economy are not the variables thought to influence speculative capital flows such as the London price of gold or the deposit rate available on non-resident deposits in Panama. Instead, the inflow depends on the supply of local lending opportunities and the local loan rate, and the closer is the expected return to

¹ IBRD Report 275, Panama, dated 13 November 1973, p. 39. The quote continues "Even in such an open economy as Panama's this has caused prices to increase relatively sharply as temporary inelasticities of supply of certain commodities such as cement and some food, increases in demand for untradeable services and generally rising wage rates have taken effect."

the marginal cost of funds facing the banks, the less likely a foreign deposit moving into Panama will find its way into the domestic economy.

Indeed this is the fallacy of the rigid multiplier and foreign capital inflow approach. In a closed economy when the reserve requirement is 6 percent, the creation of fifty cents in reserves implies an \$8 credit expansion but these additional loans can be made only by bankers driving down the local interest rate. So long as the rate is fixed in foreign capital markets and given to the local economy, bankers always have the choice of placing the funds abroad at that interest rate. The logical consequences of the exogenous interest rate are not only a virtually infinitely elastic supply of funds at the world interest rate, but also an absolute cut off of funds at any rate below the world interest rate. So long as Panama remains integrated into world capital markets, the inflow of foreign funds represents no expansionary danger since the funds will all be placed abroad when the local rate reaches the alternative opportunity cost given by the world rate. The flow of funds into the local economy is not an exogenous process forcing banks to expand credit, but rather an endogenous process based on the demand for credit and the decision by the banker to divert the flow into the internal market. Consequently, focusing on assets and multipliers misses an important source of expansion.

. . . bank liquidity is a relative term even in a world of exogenous liabilities. And when endogenous liabilities are introduced, asset liquidity loses much of its crucial importance. Markets for . . . endogenous liabilities bear part of the burden of adjustment to exogenous deposit losses. Conventional measures of liquidity that focus on the share of liquid assets in the total portfolio tend to lose their significance.¹

¹Pierce, "Commercial Bank Liquidity," p. 123, was referring to endogenous liabilities in the U.S. domestic money market but for Panama the statement is even stronger.

Liquidity and the ability to expand the flow supply of money are as much influenced by the banks' ability to acquire endogenous liabilities as by the supply of base money. Again the difference arises because only a portion of the whole system is being considered. For the U.S. as a whole, the Federal Reserve's monetary policy restricts the total funds available. However, Chicago banks, for example, face an elasticity of supply of funds that is not perfectly elastic.

The rate paid by an individual bank is an increasing function of the average rate prevailing in the market, of the amount of C.D.'s that the bank has outstanding, and of the size of the new issue offered by the bank. Banks, like other borrowers, do not face perfectly elastic demand schedule for their liabilities.¹

Panama's position is similar to that of, say, Chicago banks in that while there are no Federal funds or capital markets, there are other international banks operating in dollars. As Panama became a regional banking center, its access to those dollar funds was vastly improved, so it should not be surprising to find that endogenous liabilities became a more important factor after the center developed.

The more complete integration of the banking system also helped complete the separation of the domestic stock of money from the stock of bank credit and, at least on a theoretical level, the separation of banks' deposit taking activities from the loan granting financial intermediation activities.² In a closed economy, banks are limited in their lending activity by the volume of resources made available by deposit taking. On the supply

¹Ibid., p. 121.

²See Milton Friedman, "A Monetary and Fiscal Framework for Economic Stability," Readings in Monetary Theory, ed. by Friedrich A. Lutz and Lloyd W. Mints (Homewood: Richard D. Irwin, Inc., 1951), p. 372 and Albert G. Hart, "The 'Chicago Plan' of Banking Reform," Readings in Monetary Theory, ed. by Friedrich A. Lutz and Lloyd W. Mints (Homewood: Richard D. Irwin, Inc.; 1951), p. 437.

side then the connection between the stock of money and the stock of credit is tight. However the public wants money to hold and credit to spend¹ so that on the demand side, at least to a first approximation, the demand for the stock of money can be considered totally unrelated to the demand for the stock of credit.

When foreigners are willing to lend to local borrowers as bankers divert funds into the local economy, the tight supply connection between the stock of money and that of credit is broken. While they can all on international dollar markets, banks no longer need rely on the deposit taking side of their activities for funds. Instead they could utilize endogenous foreign liabilities. It is not surprising to find a break in the parallel growth of money and credit, once easy access to world dollar markets is established.

Figure 10 measures the behavior of the stocks of domestic bank deposits and bank money over time, on an annual basis until 1966-III, then on a quarterly basis. Panama's banking system has relied upon foreign financing of local credit expansion for a long period of time so that the stock of domestic bank credit was above the money stock throughout the period. In 1964 the run on the local banking system (including a drawing down of privately held foreign deposits) was counteracted by an endogenous inflow of deposits from foreign banks which enabled adjusted bank credit to expand at an annual rate of 15 percent. Except for that year, until 1970 the two stocks moved in a parallel fashion. But after 1970, when integration was becoming more complete, the two stocks begin to diverge, doing so sharply

¹Except in Panama. As mentioned above on p. 45, some loans are granted to be held as time deposits due to the special tax treatment of, interest payments and receipts.

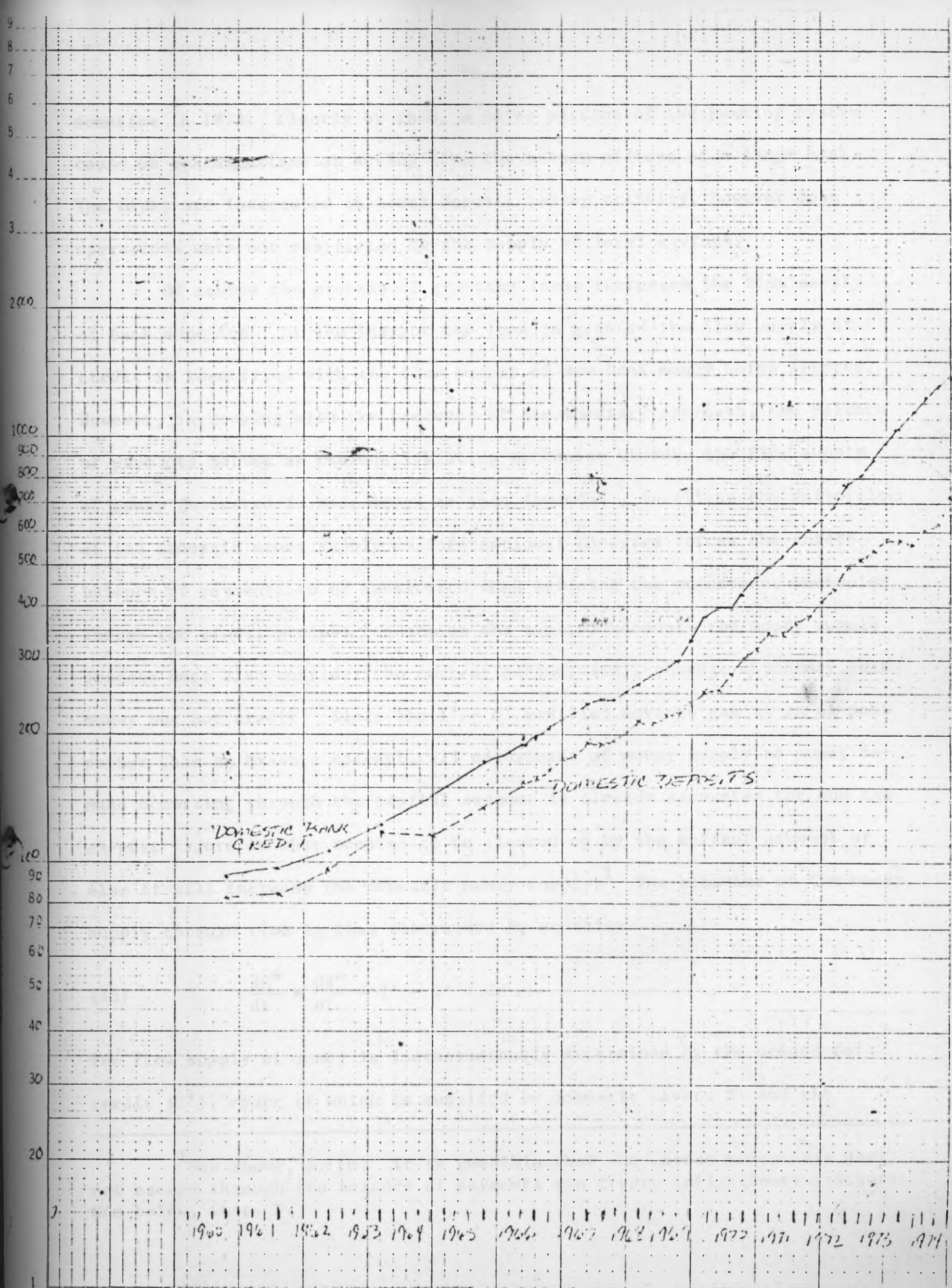


Fig. 10.--Bank deposits and bank credit (end of period)

sometime in 1973. Clearly by then, a major portion of the banking system could be characterized as acting like the branch offices of a large bank. The banks are interested in local deposit taking activity, however loan operations were not restricted to the supply of local savings.

Of course the process of granting loans increases the flow supply of bank deposits. At the instant the loan is granted the flow supply of credit is identified with the flow supply of new bank money being created. However, in keeping with the precepts of the monetary approach, the balance of payments serves as the equilibrating mechanism whereby the flow supply of money generated is made equal to that demanded. Recalling the definition of the domestic money supply as international reserves forces the entire balance of payments to be considered when defining the adjustment mechanism. Though the credit process focuses on the capital account, the money supply process must also consider the current account (CA), through which may leak money but not credit. Since the $I' - S'$ modified savings gap is an ex-post rather than an ex-ante concept, all adjustment of money supply to money demand occurring through the capital account is already accounted for and the ex-post figure is what remains to be cleared up by the current account or else it will increase the domestic money supply.¹ The behavior of the money supply through time is thus determined by equation

$$(15) \quad \frac{dM^S}{dt} = \frac{dR''}{dt} = I' - S' + CA.$$

The flow supply of money is instantaneously determined by the demand for credit (I'), a part of which is supplied by domestic savers S' and the

¹See above, p. 10. It is possible that the excess money that does not escape through the balance of payments can create inflationary pressure. See below, Chap. V.

residual by foreign credit inflows of $I' - S'$. The money market equilibrates through the current account (CA); though in a certain sense it also uses the capital account.¹

Bank Reserves and Multipliers

Once the domestic banking system has become fully integrated into the world dollar markets, the concept of a multiplier and a monetary base becomes somewhat fuzzy. Though prior to 1970, there were no controls on the global amount, in some sense the level of reserves available could be said to have been exogenously given to the economy by the balance of payments. Greater access to international capital markets, however, reduces the need to rely on liquid assets to meet unexpected demands since liquid assets can always be obtained by borrowing in the capital market. As always there is no clear cut situation but rather implications to be drawn from the extremes. Clearly not all banks have open-ended access to the capital markets; on the other hand, neither are all limited in their lending capacity by their ability to attract domestic deposits.

Both proxies for bank reserves (see Figure 11) show a downward trend in the deposit to reserve ratio through 1971. Thereafter the growth of wholesale banking passing on deposits to other banks (see p. 79) along with the dual role of deposits makes the ratio of currency plus deposits in foreign banks difficult to read. The general rising trend of interest rates during this period making the holding of liquid reserves more expensive contributes to the downward trend in the reserve ratio. Banks need no longer

¹Economic agents holding money in greater amounts than desired can also place them in time and savings accounts increasing S' , and reducing the inflow of foreign funds needed to meet the demand for local bank credit.

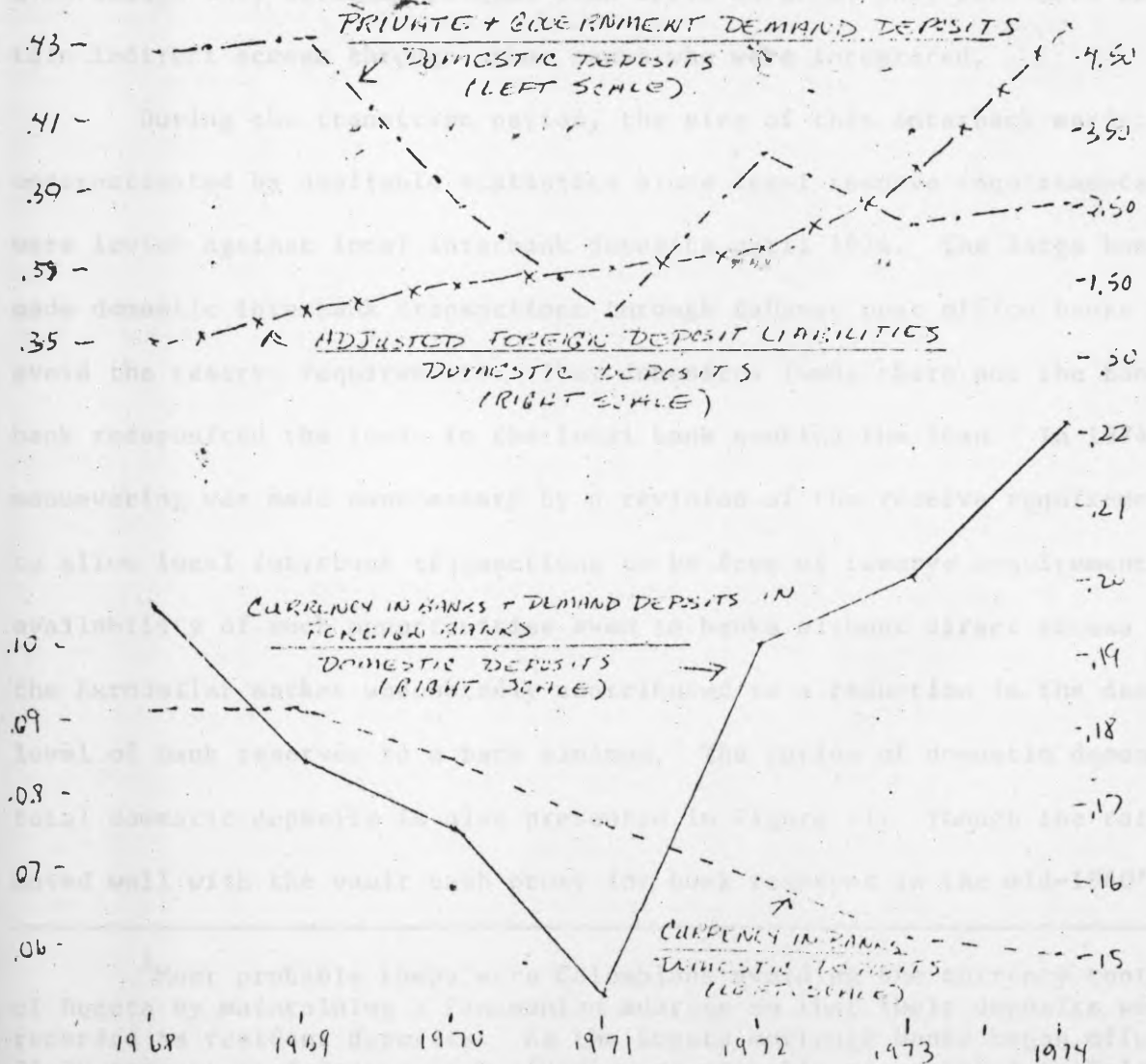


Fig. 11.--Reserve ratios

maintain a pool of liquid assets to meet their customers' unexpected needs but instead can expect to be able to buy funds in the international markets to support credit expansion. Those banks with more limited access to international markets can make use of the international connections of other local banks. In 1972 to late 1973 when the Colombian banks in Panama were heavily financing the local construction boom, they experienced an unexpected loss of deposits.¹ Instead of contracting credit they financed an even larger expansion by borrowing on the local interbank market. Even though they were ~~not~~ plugged into world markets, they were able to obtain indirect access through other banks who were integrated.

During the transition period, the size of this interbank market was underestimated by available statistics since legal reserve requirements were levied against local interbank deposits until 1974. The large banks made domestic interbank transactions through Bahamas post office banks to avoid the reserve requirements. They deposited funds there and the Bahamas bank redeposited the funds in the local bank seeking the loan. In 1974 this maneuvering was made unnecessary by a revision of the reserve requirements to allow local interbank transactions to be free of reserve requirements. The availability of such opportunities even to banks without direct access to the Eurodollar market undoubtedly contributed to a reduction in the desired level of bank reserves to a bare minimum. The ratios of domestic demand to total domestic deposits is also presented in Figure 11. Though the ratio moved well with the vault cash proxy for bank reserves in the mid-1960's,

¹Most probably these were Colombians avoiding the currency controls of Bogota by maintaining a Panamanian address so that their deposits were recorded as resident deposits. As the Bogota mortgage banks began offering 24-30 percent on deposits, some funds were probably repatriated to Colombia from Panama.

the ratios diverge after 1971, possibly an indication of the banking systems confidence in its ability to borrow to meet liquidity problems. By the same token though, the ratio of foreign deposits to domestic deposits was previously useful in explaining the divergent behavior of the two proxies; it is much less so now.

Consequently, the stable behavior of the ratio of vault cash to domestic deposits most likely represents the desire for a certain level of "working cash" by the banks, rather than being the result of the many new banks needing vault cash as the banking boom takes hold. The vault cash relation reflects the old banks maintaining their market share of domestic deposits, and the rise in their working cash requirements as their domestic deposits increase. On the other hand, over a third of the vault cash is held by Banco Nacional, a bank not necessarily facing the elastic supply of bank reserves.

The point to be made is that though reserves are not entirely immaterial they do need a different interpretation in the post transition period because some banks have access to reserves in very elastic supply from outside the system while others do not. Though a generalized drain on the banking system such as that experienced in 1964 would not be a trivial matter to a number of banks, the system would not be totally destroyed because the rest of the world stands available as a lender of last resort.¹ As was seen in the case of the Colombian banks, not all banks need have direct access to the international market for funds so long as a few or even one does, and so long as the criteria for "bankable" projects are common to

¹ So long as it is not the individual bank's solvency but rather the system's solvency that is the question, foreign depositors would be willing to hold dollar claims on the First National City Bank even though its branch office is in Panama.

most all banks. In that case the long run characteristics of the system are such as that the system is not limited by international reserves. Once this behavior is a close approximation to the situation, the money multiplier and base approach may be useful for description but not for analysis.

In the post transition period then the monetary process can be better explained by assuming demand determined credit supplied by funds provided by domestic savers and the residual by foreign borrowers. The domestic money supply then can best be visualized by focusing on the whole of the balance of payments and assuming that the domestic money supply is composed entirely of international reserves. In that case the flow supply of money created when loans are granted is equated to that demanded by the current account and by increased savings reducing the amount of foreign funds brought into the economy to meet the demand for loans. In the absence of any exogenous behavior, the whole monetary process becomes endogenous, as the mechanism is settled on top of the real factors in the balance of payments.

INTRODUCTION

PART II

PANAMA AND WORLD INFLATION

INTRODUCTION

Having set the stage with the monetary framework in Part I, Part II will take a closer look at Panama's inflationary experience between 1966 and 1974. The basic framework will be the manner in which a small country adapts to world inflation. Chapter IV describes the order of magnitude of Panama's inflation and presents some indicators of the size of the world inflation confronting it. The law of one price, that is that Panama's prices move with world prices, is examined at several levels of aggregation. Since it will be later argued that the nature of the transmission to Panama is such that perfect correspondence of changes in price indexes is not expected, a considerable amount of time will be spent looking at the timing and composition of changes in the price level. This is necessary to ensure that changes in relative prices and different weighting schemes are not responsible for differences in rates of inflation. Once evidence is developed that Panama's inflation is related to external forces, Chapter V proposes candidates for the international mechanisms of transmission and presents evidence on their relative importance at different points in time. Since evidence also indicates that Panama's adjustment to world inflation took time, Chapter V also examines the barriers that might delay the arrival of world inflation. Finally, Chapter VI discusses the room of autonomy. The room for the influence of government debt management policy, and some preliminary evidence on the response of Panama's monetary system to the shock of the oil crisis are considered.

CHAPTER IV

MEASURING INFLATION

For all intents and purposes, Panama has enjoyed a comparatively inflation-free history until recent times. This is especially so when compared to her Latin American trading partners where sustained rates of 20 to 30 percent are not unusual. Indeed, even as late as mid-1968 the economic bulletin of Banco Nacional spoke in glowing terms of Panama's price stability. However, at about that time, Panama's price indices began to rise at a non-negligible rate. The early 1970's spurt of inflation was especially alarming to Panamanians since their price stability had not been gradually eroded as in the United States. Though the U.S. rate of inflation first rose above 2 percent after 1965, Panama's price index was suddenly wrenched upward at some 6 percent and early grumblings about price rises quickly turned into a freeze on all prices in late 1972. This was soon modified to allow some prices to rise when it could be shown that costs were rising. In early 1973 cattle and beef prices were frozen at half the export price and an export embargo was imposed. Then in October 1973 rental rates of housing were rolled back to their December 1972 level. This provision too was later modified to freeze only rental rates on low income housing. In late 1973 a national wage-price commission was created and legislation approved in March 1974 decreed a wage increase averaging 12 percent¹ for all

¹The actual increase depended on salary level as the law was intended to be a correction for inflation and a method of income redistribution.

sectors of the economy, including those covered by collective bargaining contracts and minimum wage legislation. The increase was designed to restore the purchasing power of workers' wages eroded by inflation in exchange for an easing of the price freeze to allow price rises due to cost increases to move through the government bureaucratic procedures relatively quickly. By late 1974, early 1975, though quarterly bulletins on inflation were still being sent to the cabinet, recession had replaced inflation as the chief economic worry as the rate of increase abated very rapidly.

Though inflation in popular terms has come to mean rising prices, measuring it this way makes it more difficult to distinguish real from monetary disturbances. "Inflation is most conveniently defined as a sustained rising trend in the general price level, or, what is virtually the same thing, a rate of expansion of money income greater than the growth of real output."¹ Figure 12 shows the two rates moving through time with the shaded area, the difference between the rate of expansion of current dollar gross domestic product and constant dollar GDP, as the measure of inflation. Though some traces of price increases are evident between 1960 and 1968, the sustained differential appears sometime during 1968 and develops into a recognizable force in late 1970 to 1971.

Measuring inflation by the implicit GDP deflators has the advantage of picking up the broad price changes in the economy. National income accounts are available only on an annual basis, however, and the deflators are affected not only by price changes, but also by changes in the weights since constant dollar measurements of sectorial output are used to deflate

¹ Harry G. Johnson, Further Essays in Monetary Economics (Cambridge: Harvard University Press, 1973), p. 325.

200-

150-

100-

50-

CURRENT PRICE GROSS DOMESTIC PRODUCT

CONSTANT PRICE GROSS DOMESTIC PRODUCT

1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974

Fig. 12.--Inflation: Implicit deflators

current dollar figures. In addition the national income accounting treatment of government causes increases in some wage rates to be reflected as price rises.¹ Instead, price indexes usually serve as measures of inflation since not only are their weights fixed but they are available quarterly in Panama. The two indexes are the wholesale price index and the consumer price index. The former includes only commodities and often uses list as opposed to transaction price, thus missing price changes in services and those occurring when discounts or penalties are attached to list prices. The consumer price index comes closest to measuring transaction prices, but its coverage is limited to the expenditure patterns of low and middle income families in Panama City in 1961, which may or may not accurately reflect the economy's aggregate expenditure pattern. In addition, rather than merely treating the price of governmental output incorrectly, as the implicit deflators do, the consumer price indexes include virtually no measure of the price of government services.

An additional problem with price indices arises due to relative price changes. Since the objective is to investigate the problems of adjusting to world inflation, a monetary disturbance, the process is framed in terms of the homogeneity postulate. Markets disturbed by inflation return to equilibrium real price relationships as inflation involves no relative price changes. However, relative price changes have been taking place not by a rise in some prices and a fall in others to leave the overall index unchanged, but rather by some prices rising faster than others. A rising price index then does

¹These problems are common to all national income deflators. Panama's index contains large errors of measurement because it is a mixture of real quantities inflated and nominal quantities deflated. Too often the index used is the consumer price index, so the estimate is not independent.

TABLE 9

GROWTH IN COMPONENTS OF THE WHOLESALE PRICE INDEX

	Percentage Changes at Annual Average Rates during the Period			
	1966-I to 1970-III	1970-III to 1973-III	1973-III to 1974-IV	1966-I to 1974-IV
Total	1.70	8.18	24.05	6.78
By Sector				
Imports (including fuels)	1.87	7.97	28.73	7.40
Industrial	1.23	9.17	18.84	6.19
Agriculture	2.44	6.37	23.33	6.49
By Commodity				
Food	1.99	9.94	19.20	6.84
Manufactured Items	1.38	6.07	23.99	5.96
Transport equipment & Machinery	2.61	10.84	19.85	7.49
Beverages and Tobacco	1.10	4.66	19.63	4.80
Chemicals	1.15	4.69	28.93	6.08
Fuels	.07	9.09	58.49	10.65
Others	3.01	5.85	26.15	6.97

Source: Price bulletins of Controller General and Guidebook to Price Indexes.

not necessarily signal a pure monetary disturbance, a fact which becomes important in analyzing Panama's inflation relative to world inflation.

Relative price changes also complicate the inflation measurement problem due to varying speeds of adjustment. Though the homogeneity postulate predicts that all nominal variables, when subjected to a monetary disturbance, will not reach equilibrium until relative price relations are restored, it does not place any time limit on the adjustment period. Thus different sectors of the economy will perceive and adjust to the disturbance at different points in time and will move toward equilibrium at varying speeds. There is no assurance then that observing the components of a price index on a quarterly basis will find all relative price relations undisturbed even if an initial shock was a monetary disturbance.

The first task then is to insure that the rising price index does indeed fit the criteria of a generalized inflation. Table 10 presents the behavior of the wholesale price index as a measure of whether the increases

TABLE 10

GROWTH IN SUB-SECTORS OF CONSUMER PRICE INDEX

	Percentage Changes at Annual Average Rates During the Period				
	1960 to 1966-I	1966-I to 1970-III	1970-III to 1973-III	1973-III to 1974-IV	1966-I to 1974-IV
Total	.57	1.83	4.81	14.75	4.56
Food and Beverages	.78	2.32	5.73	19.91	5.78
Housing	.25	.77	3.00	8.86	2.63
Apparel	.62	.59	3.69	8.77	2.75
Miscellaneous	.54	2.30	5.04	12.07	4.51

in the price index are broadly based. Panama's inflationary experience was divided into three sub-periods, the first 1966-I to 1970-III, a period of low level price rises, while 1970-III to 1973-III saw prices climb more rapidly. The third period begins with 1973-IV to confine the effects of the oil price rise into one measurement period. The Panamanian index is divided into nine commodity categories for the import and industrial sector and those for the agricultural sector. These were combined (see Appendix D for methodology) to present an overall measure by commodity types (thus the food sector contains both imported and local industrial sector items). In addition fuels were considered an imported as opposed to a locally produced item since there is only one refinery providing the overwhelming bulk of fuel locally consumed. As can be seen in the last column, all three sectors' prices rose remarkably close together during the period as did the commodities, the former having a mean of 6.69 percent and a standard deviation of .26 percent, while the commodities mean without fuels is 6.35 percent and a standard deviation of .86 percent. With oil price effects included, the mean is 6.97 percent but the standard deviation is 3.39 percent. Over the three periods, however, movements are more widely dispersed, with industry lagging agriculture in the first period, leading it in the second, then lagging imports in the third period. A similar lagging, leading relation can be observed in the commodity groupings, especially with chemicals and fuels. Over the entire period, however, the general price rise dominates the relative price change at least as measured by the wholesale price index.

The information conveyed by the aggregate sub-categories of the consumer price index in Table 10 is not so clear; as the average growth rates of the four sub-categories have a mean of 3.92, but a standard deviation of 2.28.

Though there is a clear upward shift in each successive period, the individual categories cannot be said to be moving together as housing¹ and apparel lag well behind food and miscellaneous. This does not appear to be merely sluggish adjustment as the early lags are not followed by overshooting in later periods. Thus relative price changes are taking place. Comparing Tables 11 and 12, through 1970-III, the two indexes moved together. Though all prices rose more rapidly in the second and third periods, those at the wholesale level clearly outdistanced the price changes at the retail level during these two periods. Though not quite as marked, the same behavior can be found in the corresponding U.S. price indexes, and this will form part of the explanation of the transmission process in the next chapter. For now, however, it is not incorrect to characterize 1966-1974 as a generalized inflation even though the price indexes do not show all prices rising at the same rate over the period.

The monetary approach to the balance of payments emphasizes the global character of inflation.

Within a nation the different regions generally experience more or less the same rate of inflation as a consequence of the common currency in conjunction with the freedom of movements of goods, capital and labor among them . . . and it should be noted this occurs in spite of substantial differences in unemployment percentages among the regions. The assumptions that nations . . . still have significant independence with respect to both the causation and the remedification of inflation depends heavily on the assumption that the barriers to freedom of international movements of goods, labor, and capital, including money itself, are both high enough and variable enough by national economic policies to provide the requisite insulation for national economies against the impact of general influences emanating from the world economy. In the short run the existence of barriers provides some insulation . . . in the longer run, variability of barriers is necessary since the limits of insulation provided by given barriers will be exhausted.²

¹The sluggish housing behavior may be, to some extent, the failure of the index to capture the true transaction price, since the rent freeze of October 1973 came despite only moderate rises in the rent index.

²Johnson, Further Essays in Monetary Economics, p. 331.

It is the role of countries as price takers in world markets which causes changes in the relative prices of non-traded goods to be a transitory part of the mechanism restoring monetary equilibrium. It is the same law of one price for traded goods which causes wages in the individual country to adjust to comparative efficiency levels of wages in the world since domestic wages adjust across sectors to maintain real wages in the face of world inflation and while employers obtain world prices for their commodities, employees are rational enough to align wage increases with the increased marginal value product.¹ In the short run dynamics, however, there is market adjustment instead of market clearing in the stock markets for assets. Though flow equilibrium exists, stock adjustments take time. In addition, various real sector influences due to fluctuations in income and employment levels, differing rates of productivity increase in the traded and non-traded sectors which delays the transmission of inflation from tradeables to non-tradeables, or expectations that differ across national boundaries as economic agents are temporarily fooled or overcompensate, all can cause rates of inflation to temporarily diverge.

Figure 13 presents evidence for concurrent inflation using the U.S. price indexes as the measures of world inflation.² When the two consumer price indexes are compared, Panama is able to maintain a lower rate of inflation through 1971 except for the brief upward surge during the 1964 Canal Zone riots. However, after 1971-IV, Panama's consumer price index overcompensates until the two rates of change once again coincide in the first quarter of 1975. A comparison of the wholesale price indexes also shows Panama lagging from

¹Nobay, "International Aspects of the Economics of Inflation," p. 23.

²Since the wholesale price index for Panama has been collected only since 1966 its rate of change begins in the first quarter of 1967.

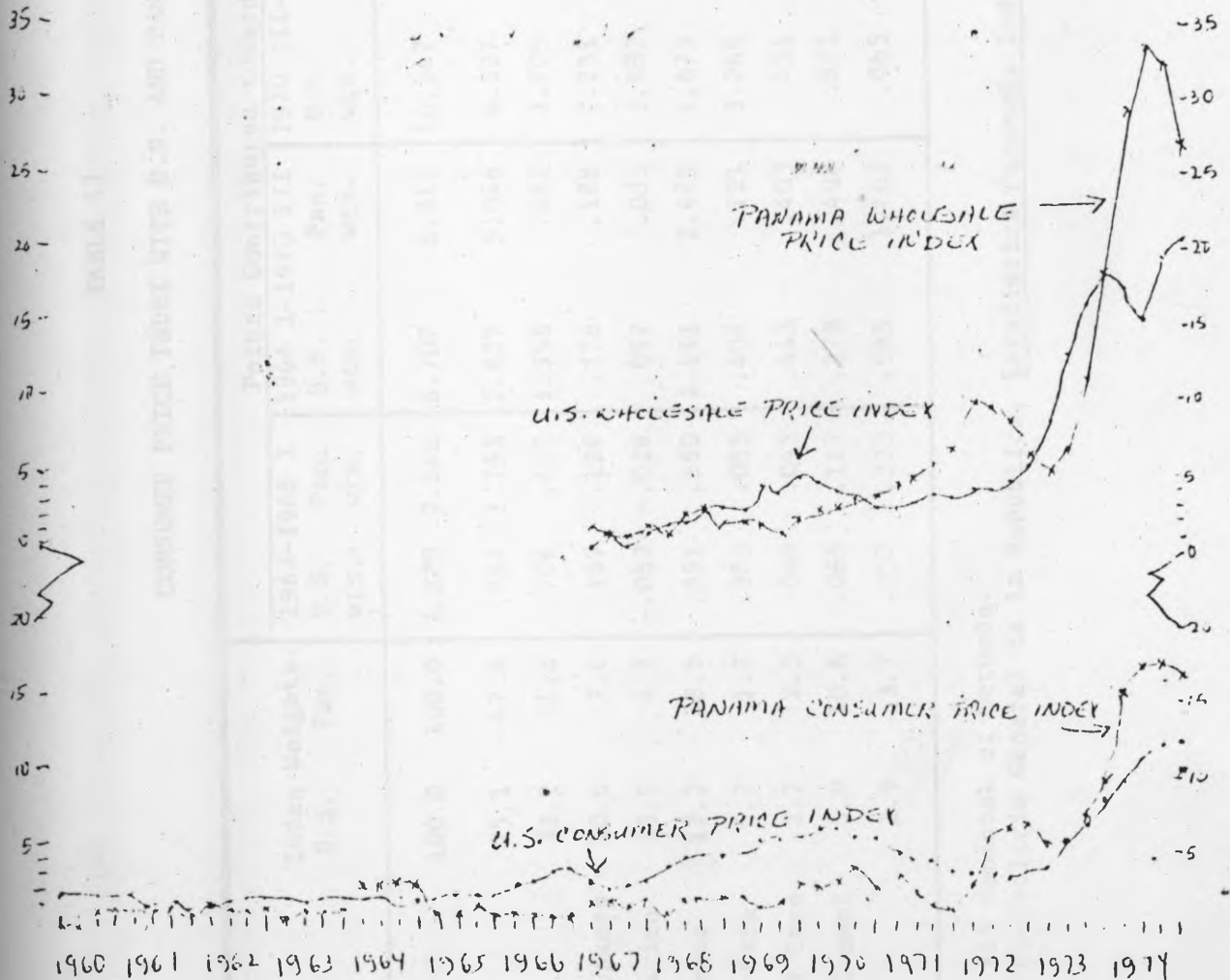


Fig. 13.--Inflation: Consumer and wholesale price indexes

TABLE 11

CONSUMER PRICE INDEX WITH U.S. AND PANAMA WEIGHTS

	Index Weights U.S. Pan.		Points Contributed toward Total Index during Period									
			1963-1966 I		1966 I-1970 III		1970 III-1973 III		1973 III-1974 IV		1966 I-1974 IV	
			U.S. wts.	Pan. wts.	U.S. wts.	Pan. wts.	U.S. wts.	Pan. wts.	U.S. wts.	Pan. wts.	U.S. wts.	Pan. wts.
Totals	100.0	100.0	2.320	2.848	6.707	8.814	16.347	15.372	17.855	20.768	46.260	51.481
Food	25.1	47.4	.857	1.753	2.827	5.046	4.327	8.406	6.386	13.552	15.614	31.874
Housing	33.2	21.8	.706	.419	1.396	.862	3.209	2.064	3.198	2.551	8.131	5.771
Apparel & Upkeep	10.6	7.6	.189	.124	.276	.188	1.251	.934	1.206	.883	3.026	2.179
Transportation	13.9	4.7	-.083	-.028	.097	.033	2.887	.978	4.872	1.650	8.939	3.027
Miscellaneous	17.2	18.5	.651	.580	2.111	2.685	4.673	2.990	2.193	2.132	10.550	8.630
Medical Care	5.7	1.7	.285	.085	.404	.121	3.266	.974	.855	.255	5.347	1.595
Personal Care	2.7	2.5	.049	.045	.443	.403	.451	.410	.478	.435	1.614	1.467
Entertainment	5.9	10.6	.065	.117	.279	.498	.891	1.590	.594	1.060	1.931	3.445
Others	2.9	3.7	.252	.333	.985	1.663	.065	.016	.266	.382	1.658	2.123

Sources: BLS Handbook of Methods.

Controleria General de la Republica, Estadistica Panameña Indice de Precios, various years.

1968 through 1970-III and again through the first three quarters of 1973. The overcompensation during 1974 is clearly evident as the twelve month rate of change for the first and second quarter goes above 30 percent. The aggregate evidence, then indicates a common trend, however a significant lag developed during the early period, which was overcompensated for during the latter part of the period.

Cross country comparisons of price index movements are made difficult by each country employment its own expenditure pattern as weights in the index. If all prices rose at the same rate, then different weighting patterns would cause no problem. However, even if arbitrage keeps prices of the same items moving together in both countries, different weighting schemes would show different rates of inflation for aggregated indexes if relative price changes occurred across sectors. In other words, if arbitrage keeps the price of food the same in both areas, and the price of clothes the same in both areas, but the relative price of clothes and food changes, then different weighting schemes could cause the aggregate indexes to show different inflation rates over the period. Since Table 11 presented evidence for relative price changes in Panama, so the influence of the different weighting schemes must be investigated.

Fortunately, the U.S. Bureau of Labor Statistics offered technical aid in the formulation of Panama's price indexes so that the categories for the two indexes are not widely dissimilar, only the weighting schemes. Table 11 presents the Panamanian consumer price index broken down into the U.S. subgroups. The weights of the subgroups are shown in column one for the U.S. and Panama respectively. The total contribution of each item toward the overall index is the weight times the change in the item's price index over the period. Total contributions were calculated on an item by item basis (see Appendix D

TABLE 12

WHOLESALE PRICE INDEX WITH U.S. AND PANAMA WEIGHTS

	Index Weights		Points Contributed toward Total Index during the Period							
			1966 I-1970 III		1970 III-1973 III		1973 III-1974 I		1966 I-1974 IV	
	U.S. wts.	Pan. wys.	U.S. wts.	Pan. wts.	U.S. wts.	Pan. wts.	U.S. wts.	Pan. wts.	U.S. wts.	Pan. wts.
Total	100.0	100.0	8.431	8.366	27.796	27.833	38.191	36.275	90.852	88.227
Food	24.2	37.9	2.396	3.752	8.494	13.303	6.607	10.347	21.514	33.693
Manufactured Items	37.2	28.1	2.492	1.883	7.440	5.620	13.132	9.919	27.268	20.597
Transport Equipment and Machinery	19.9	11.3	2.627	1.492	7.721	4.384	5.632	3.198	20.218	11.481
Beverages and tobacco	3.0	7.7	.159	.408	.450	1.155	.840	2.156	1.653	4.243
Chemicals	5.7	6.0	.319	.336	.866	.912	2.514	2.646	4.292	4.518
Fuels	7.3	5.9	.022	.018	2.307	1.864	8.410	6.797	13.439	10.862
Others	2.7	3.1	.416	.477	.518	.595	1.056	1.212	2.468	2.833

for detail) but only the principle subgroup totals are presented here. Columns 2 through 6 present the contribution in points toward the total index when both U.S. and Panamanian weights are used. For example, when U.S. weights are used instead of the Panamanian ones, the index rose only 46.3 points instead of 51.5 over the period 1966-I to 1974-IV. The total line shows then that it makes little difference to change the weights, for despite widely different weights, the growth in the indexes is virtually the same.

The heaviest contributor is the food sector not only because its weights are largest but also because its price increases were the greatest during the period. Housing has a higher weight in the U.S. but its slowly rising prices keeps the contribution small. The sharp rises in medical care costs in the third period and transportation in the last are weighted substantially differently with the greater impact falling on the U.S. index. As in housing, apparel prices rise too little to contribute much to the index no matter which weights are used.

The broad based rise in food prices is especially evident since despite widely different individual item weights within the category,¹ the overall contributions for the sub-category are roughly the same ratio as the overall weights. The same phenomenon occurs in housing. In the U.S. over half the expenditure on housing is for rent while in Panama it is only one-third. Nevertheless, the contributions for the whole sector also show roughly the same relation as the weights of the overall sub-sectors in the index.

In attempting to investigate the influence of different weighting

¹Meat and grain account for 43 percent of the food sector with Panama weights, 30 percent for U.S. weights.

schemes on the wholesale price index, the problems encountered are somewhat different. The concept of consumer expenditures across countries is somewhat similar despite quality differences in the two market baskets. The economy's structures, however, make wholesale markets quite different. Most of the wholesale markets in the U.S., a developed economy with a broad industrial base, do not exist in Panama, a developing service oriented economy. Panama's need is for finished goods so the wholesale markets are classified to be compatible with United Nations international trade statistics. It is thus impractical to put the Panamanian items into the U.S. classification with U.S. weights. Instead Panama's broad commodity categories were used and the U.S. subcategories fit into the Panamanian classification, then the weights summed. Instead of individual items weighted and summed, the broad commodity categories were given the two weights and the only difference in the contributions arises from the weights of the broad commodity groups. Even this caused no great differences as the first three categories comprise 81 percent of the U.S. weights and 77 percent of the Panamanian weights. Given the results of Table 9 where the index was shown to contain evidence of a broadly based general price inflation, it is not surprising to find that changing the weights makes little difference. Indeed, the largest difference of two points (5 percent) arises during the third period when the heavier weight given fuels and manufactured items coupled with the relative decline of food prices causes the U.S. weighted index to climb slightly faster. Over the whole period then the weight differences cause a divergent rise in the index of some 2-1/2 points out of 90.

The differences in the weighting schemes thus does little to account for the differences in the behavior of the consumer and wholesale price indexes as between the U.S. and Panama. Table 13 summarizes this information and

TABLE 13

GROWTH IN PRICE INDEXES OF THE U.S. AND PANAMA

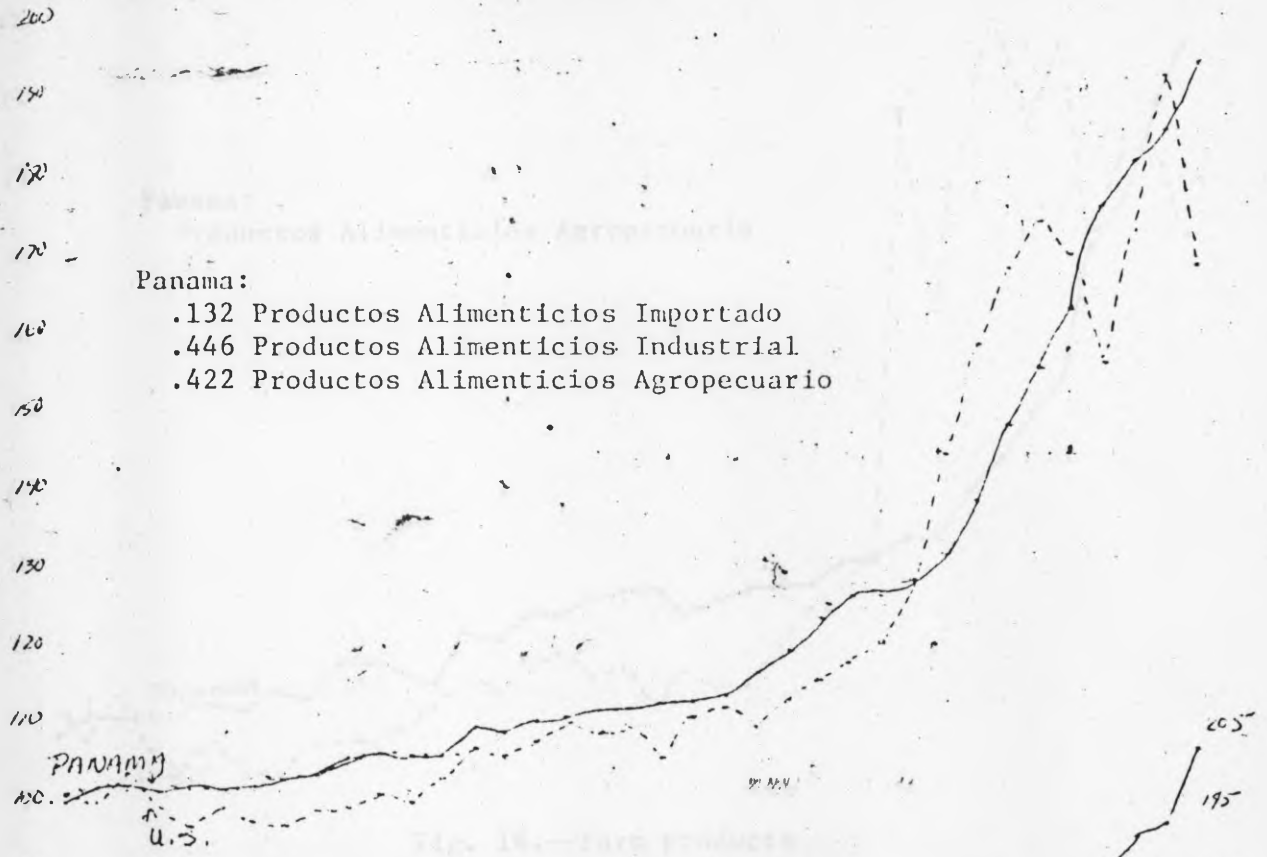
	Percentage Changes at Annual Average Rates during the Period				
	1960 to 1966-I	1966-I to 1970-III	1970-III to 1973-III	1973-III to 1974-IV	1966-I to 1974-IV
U.S.					
Consumer Price Index	1.15	4.17	4.62	11.07	5.19
Panama					
CPI w/Panama wts.	.57	1.83	4.81	14.75	4.56
Panama					
CPI w/U.S. wts.	.37	1.23	5.21	13.11	4.41
U.S.					
Wholesale Price Index	--	2.33	7.61	16.46	5.93
Panama					
WPI w/Panama wts.	--	1.70	8.18	24.05	6.78
Panama					
WPI w/U.S. wts.	--	1.70	8.13	25.65	6.97

compares the different measure of inflation by average annual growth rates during the three sub-periods and over the whole period. No matter whether U.S. or Panama weights are used, the lagging rates of inflation in Panama behind those in the U.S. are clearly evident between 1960 and 1970-III, though much more so in the consumer price index than in the wholesale price index. Between 1970-III and 1973-III, the measured rates of inflation in the two countries move on a more parallel basis, though reference to Figure 11 shows that the parallel average movement was achieved by a process of lagging then overshooting. The final five quarters of the period find Panama out in front to the U.S., though much more so when the wholesale price index is used. The final column shows that this last period over-compensation was not quite sufficient to allow the consumer price index to catch up while the wholesale indexes are now out in front to the U.S. rate for the entire period. Finally, no matter which weights are used, both in Panama and in the U.S., the wholesale price index lags behind the consumer price index until 1970-III. After 1970, however, the index measuring price changes in commodities leads the measuring growth in prices of goods and services from 1970 through 1974. That this phenomenon is invariant to changes in the weighting schemes will be important later on in explaining why Panama's price indexes did not rise as fast as the U.S. rates.

The final indications of whether Panama's prices move with world prices are contained in Figures 14 through 36. These figures compare graphically the movements of various sub-indexes of the wholesale price markets for Panama and the U.S. As mentioned above, Panama has a lot fewer goods sold in wholesale markets so individual items in the Panamanian index were compared to the closest items available in the U.S. index. Once again

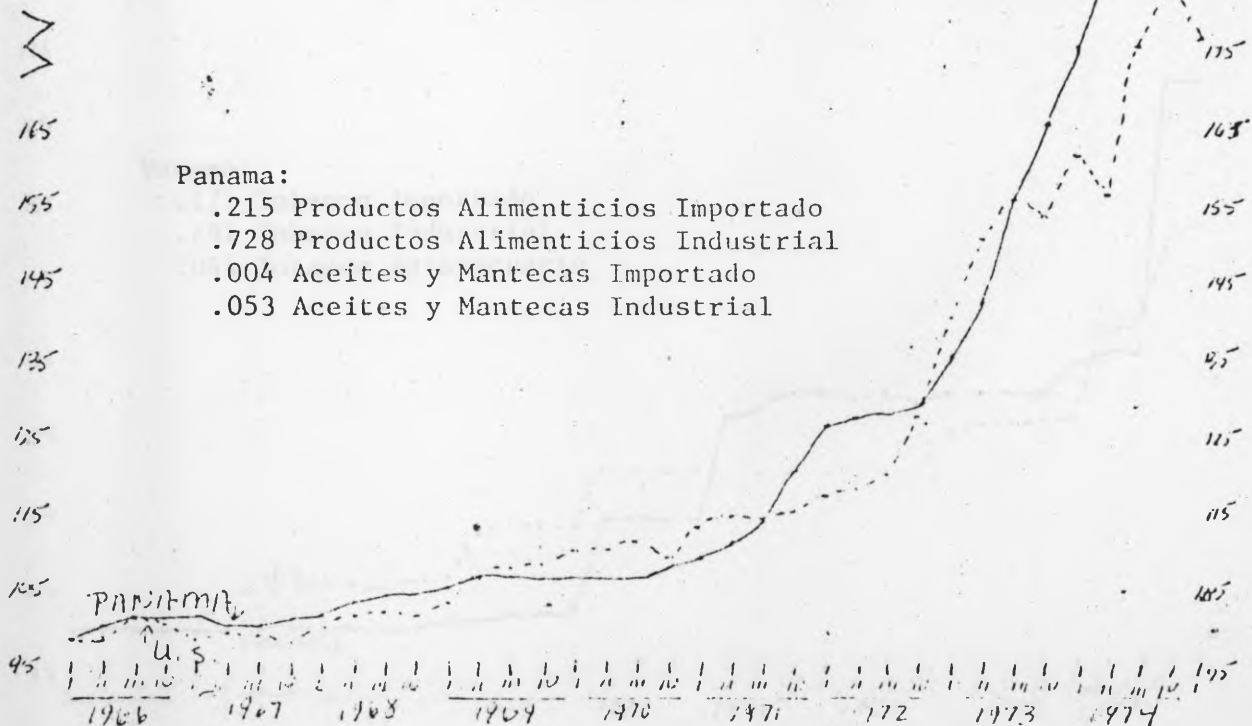
Panama:

- .132 Productos Alimenticios Importado
- .446 Productos Alimenticios Industrial
- .422 Productos Alimenticios Agropecuario



Panama:

- .215 Productos Alimenticios Importado
- .728 Productos Alimenticios Industrial
- .004 Aceites y Mantecas Importado
- .053 Aceites y Mantecas Industrial



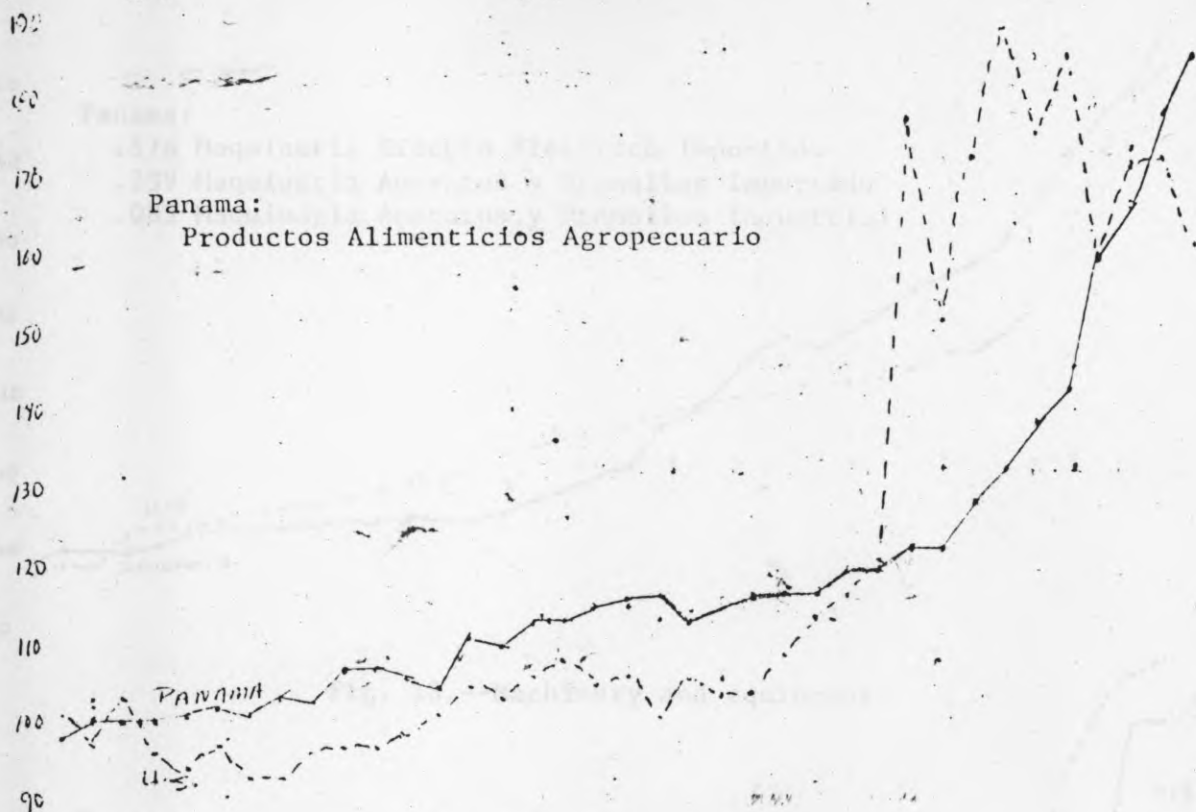


Fig. 16.--Farm products

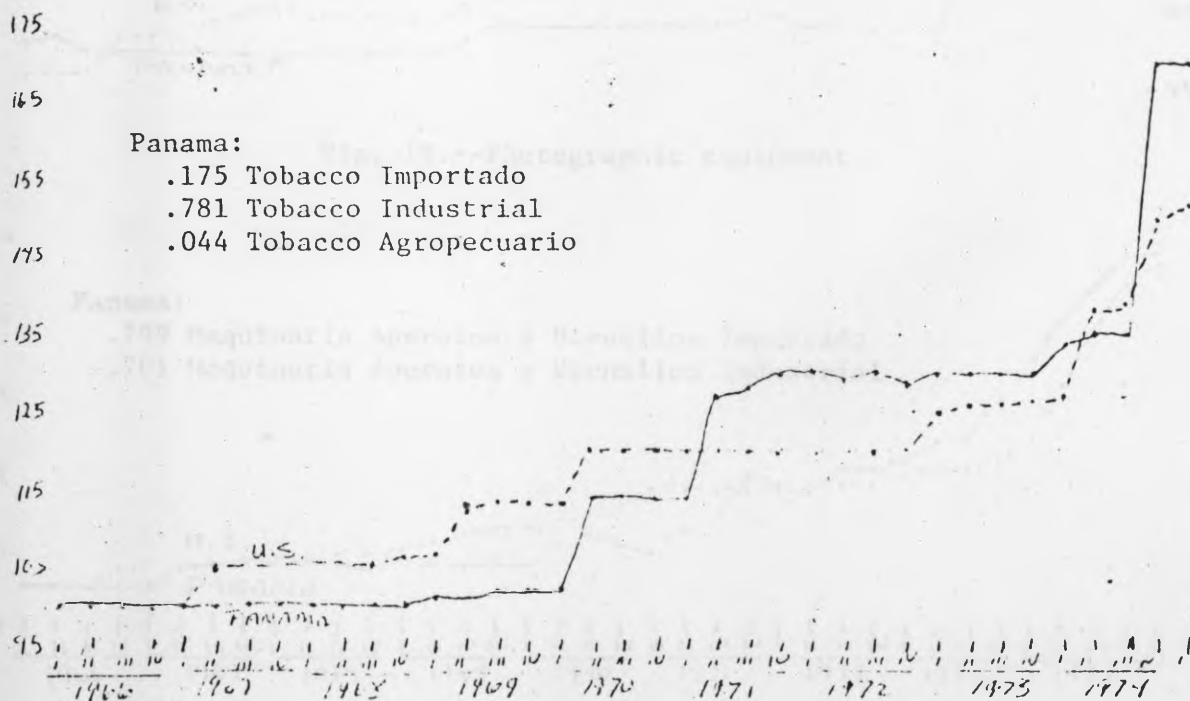


Fig. 17.--Tobacco products

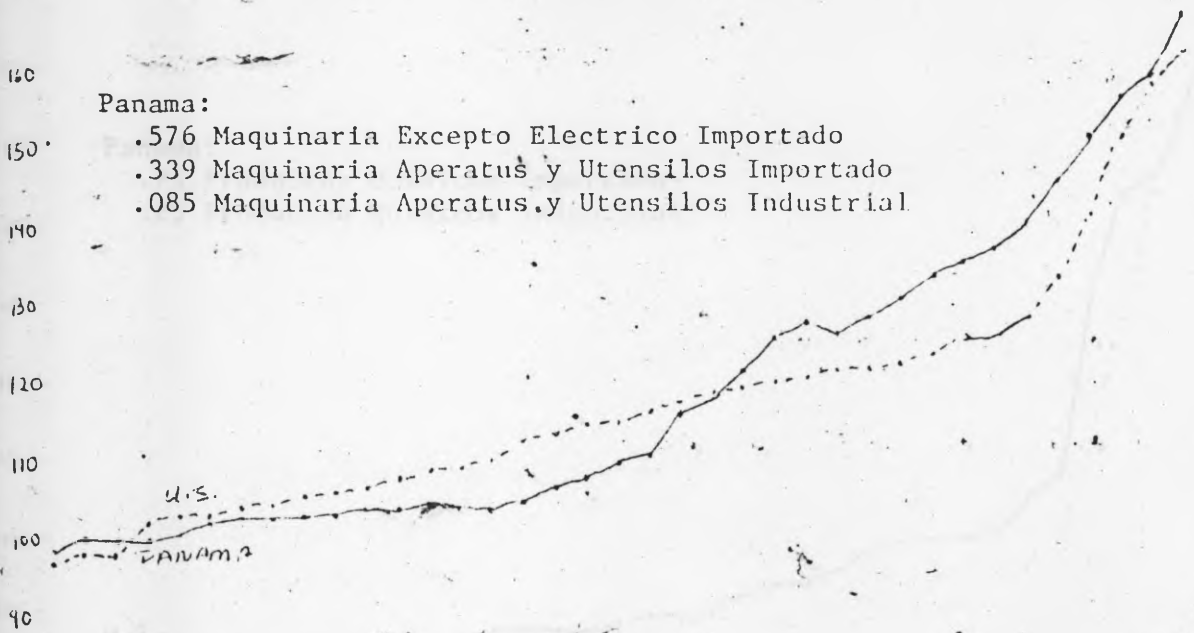


Fig. 18.--Machinery and equipment

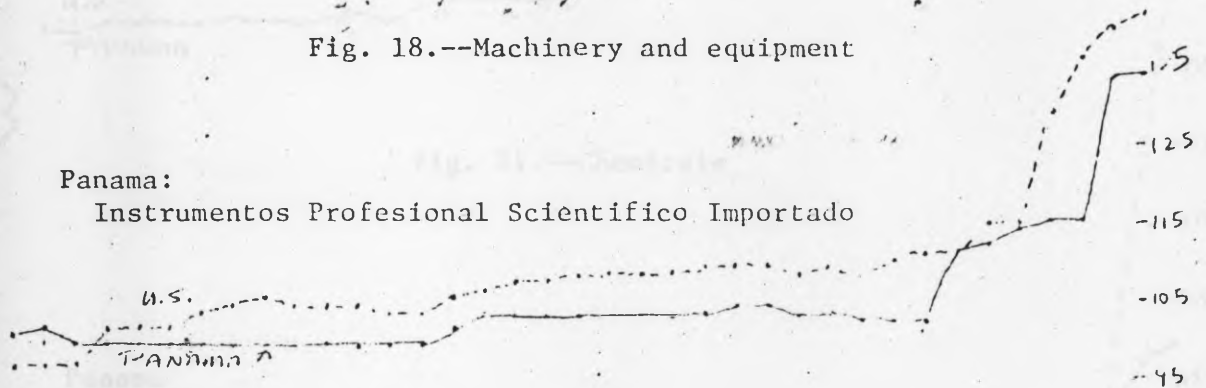


Fig. 19.--Photographic equipment

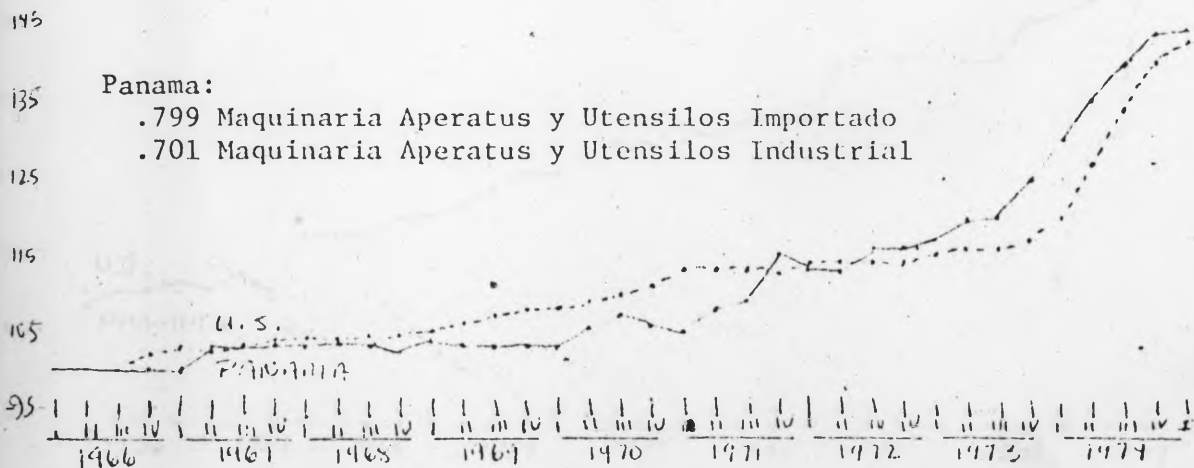


Fig. 20.--Electrical machinery and equipment

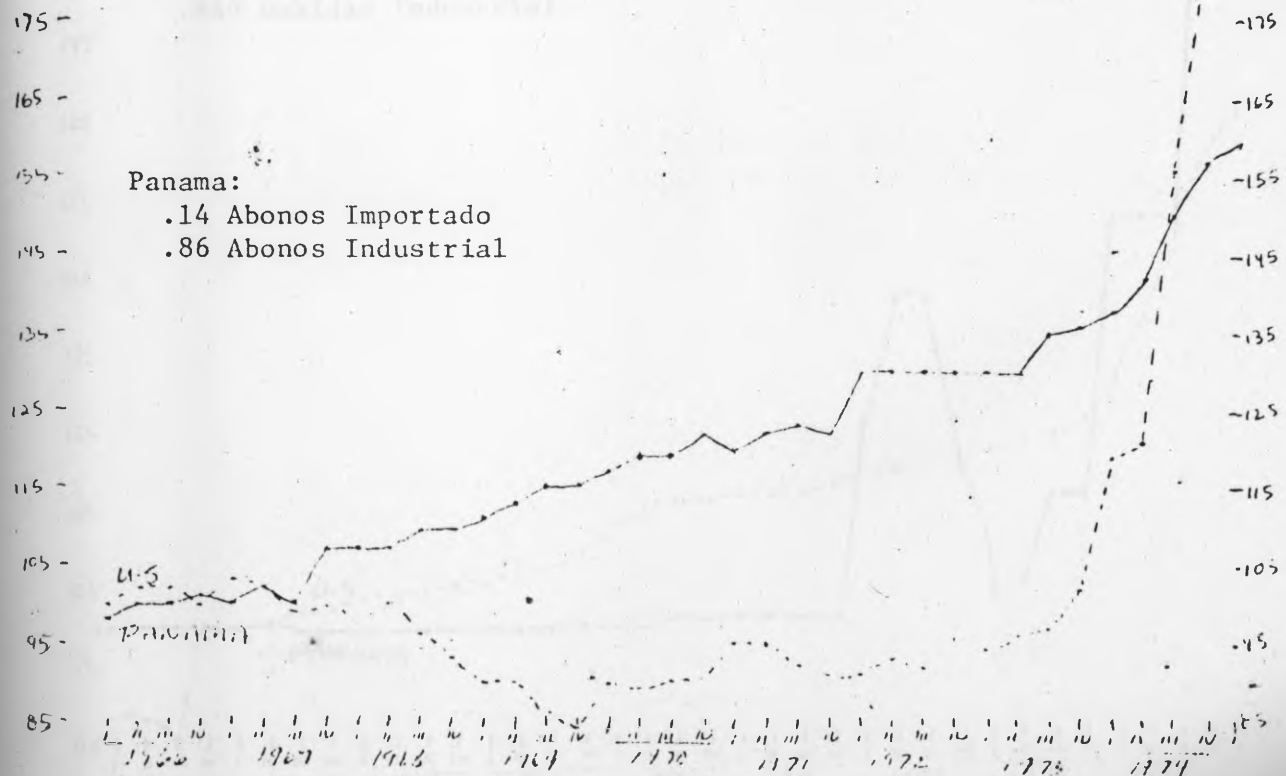
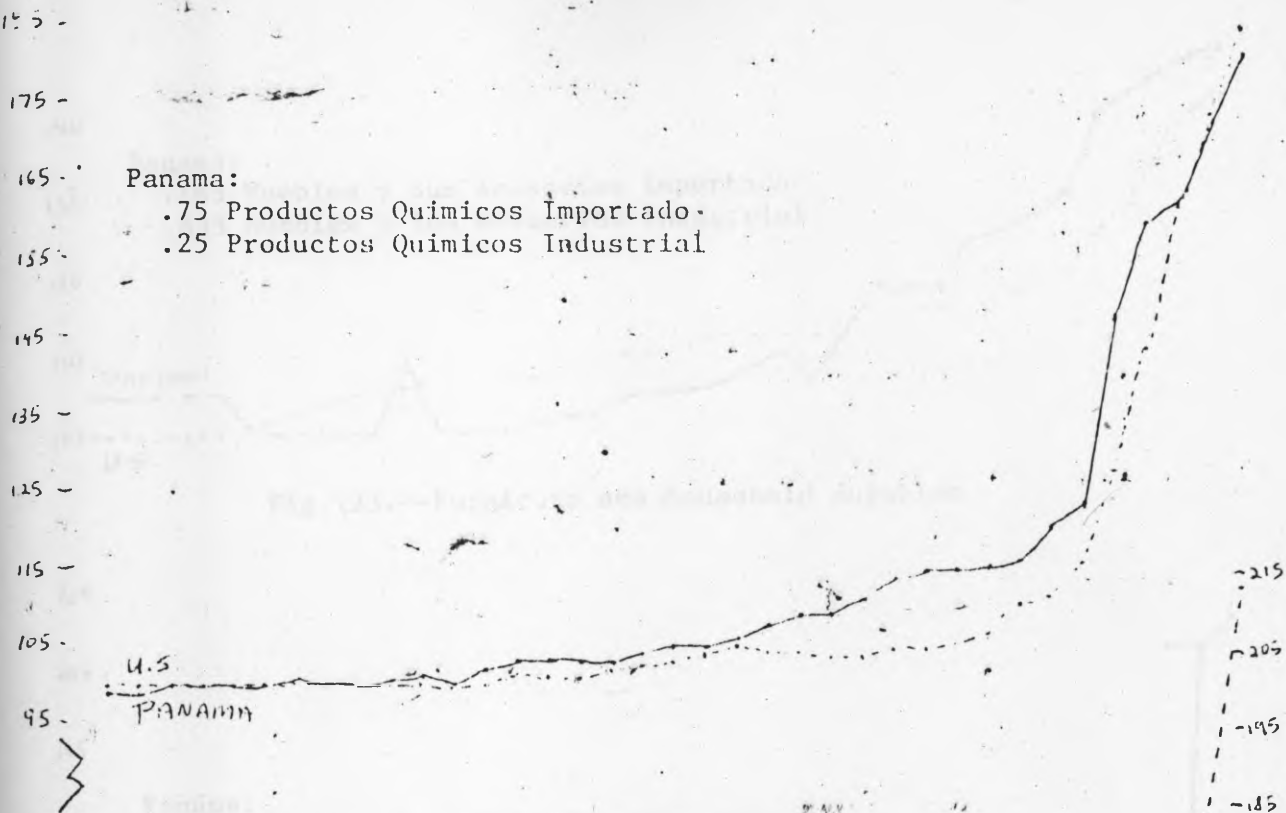




Fig. 23.--Furniture and household durables

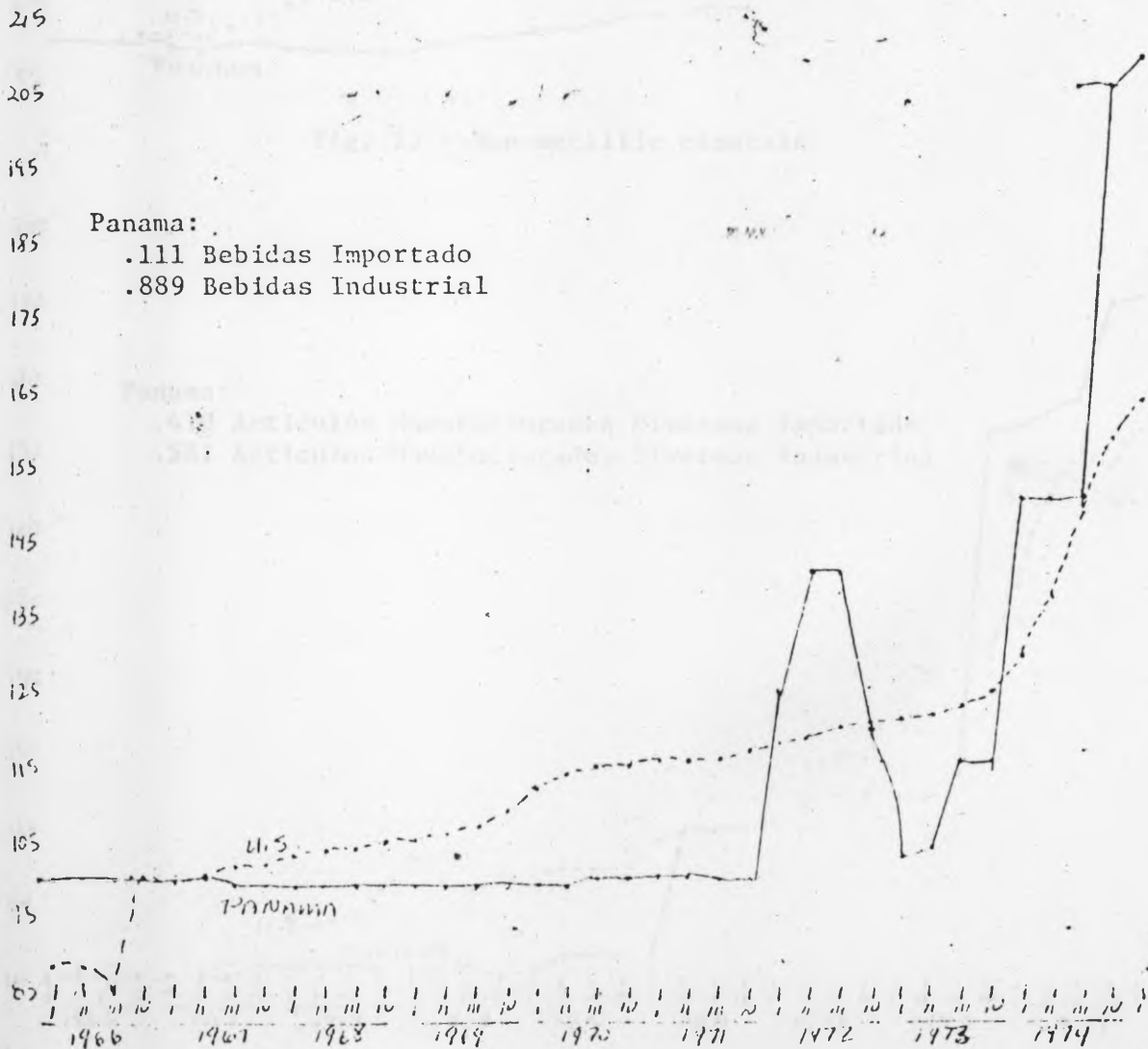


Fig. 24.--Beverages

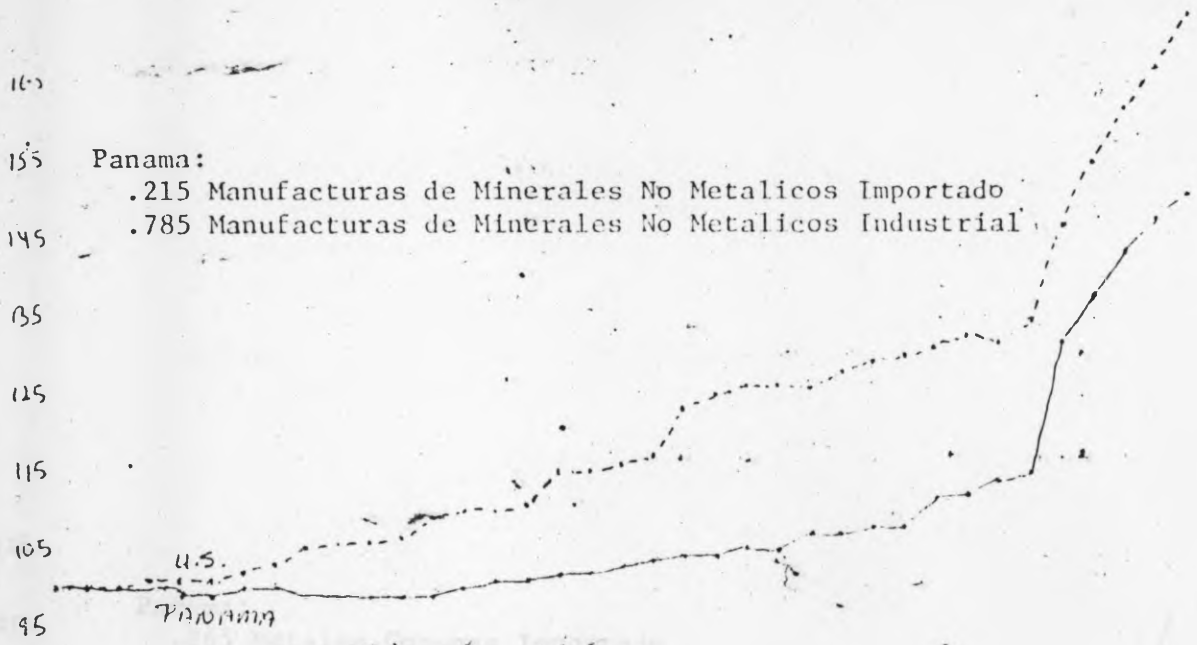


Fig. 25.--Non-metallic minerals



Fig. 26.--Construction material

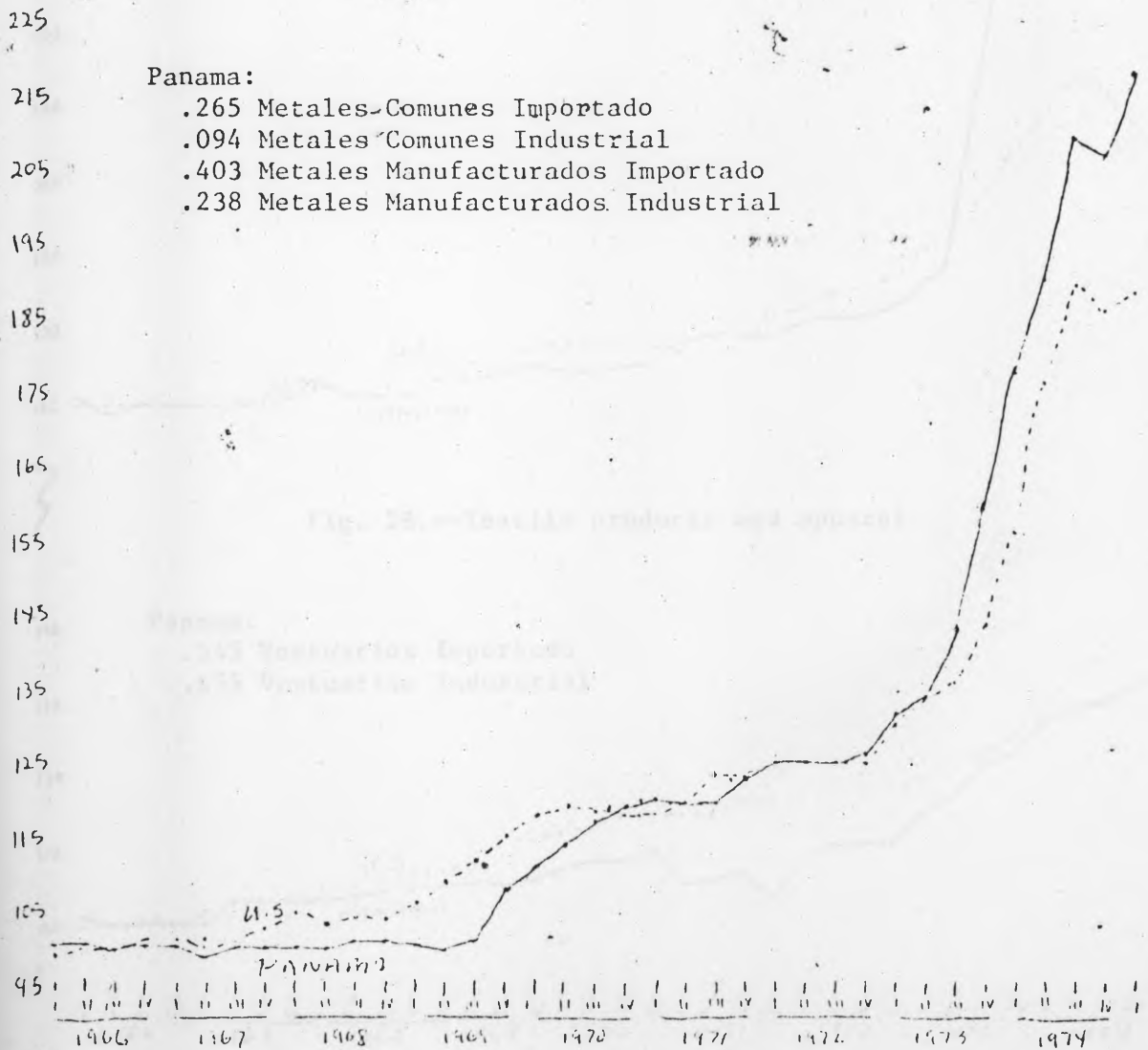


Fig. 27.--Metals and metal products

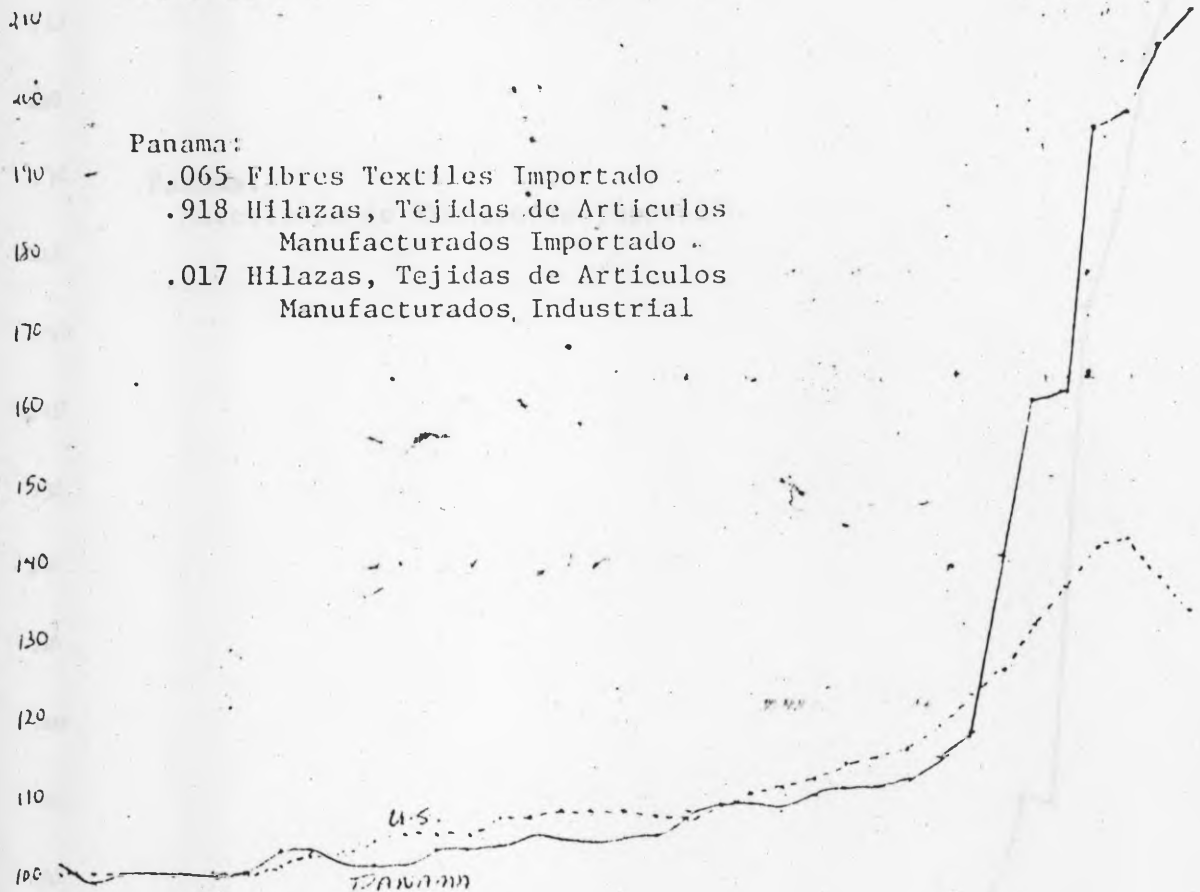


Fig. 28.--Textile products and apparel

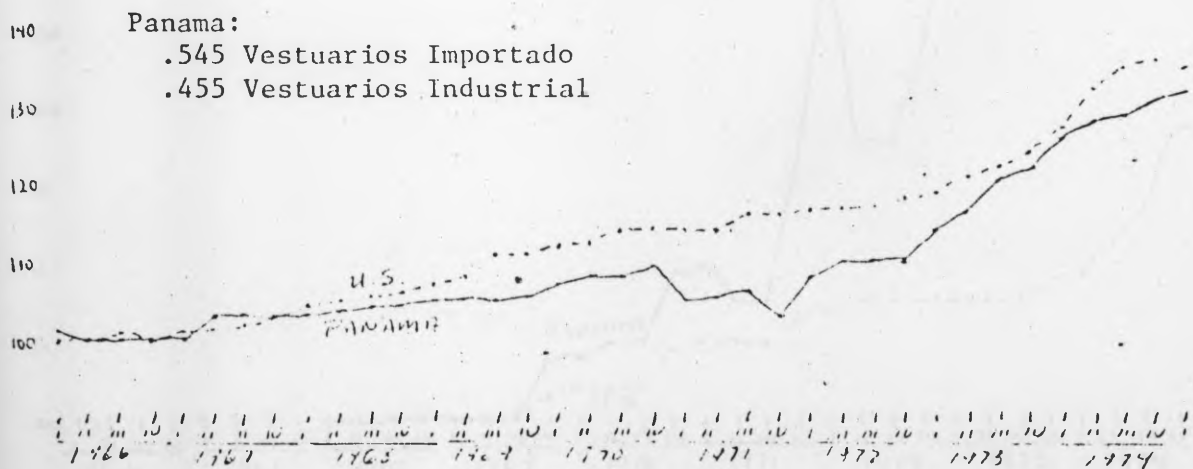


Fig. 29.--Apparel