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Raymond Lubitz*

Since the oil shock of 1973 the Italian economy has experienced one of the highest inflation rates in the OECD area; also, over this period, the exchange rate of the lira has depreciated sharply. In 1974 and 1976 Italy suffered two severe external payments crises which resulted in exceptional policy measures, external financial assistance, and the external imposition of economic policy conditions.

Thus, measured by inflation and the external situation, Italy's performance has been among the worst of OECD countries. This pattern of inflation and depreciation has led Italy to be categorized as a vicious circle country, and it is the industrialized economy most often singled out for this distinction.

The vicious circle hypothesis (VCH) itself is open to question, and in this paper I would like to discuss the VCH in general and assess its applicability to Italy in particular. Since Italy experienced two crises (1974 and 1976) after the oil shock, the discussion will shed some light on why Italy's record in the 1970s was disappointing. It will be argued later in the paper that Italy probably entered the oil shock era already in dis-equilibrium, that the oil shock and other, domestic, events, intensified it, and that the two crises (as well as the country's subsequent troubles) stem from its inability to contend with its structural problems. I shall contend that these structural problems are at the root of the Italian economy's difficulties, and that the flexible exchange rate regime did not generate vicious circles or worsen significantly the performance of the Italian economy.

* This paper represents the views of the author and should not be interpreted as reflecting the views of the Federal Reserve System or other members of its staff. I would like to thank Richard Freeman, David Howard, Peter Isard and Larry Promisel for their helpful comments.

In this paper I focus on the dis-equilibrium produced by the real wage, but I do not mean to exclude other structural issues as causes of the Italian economy's difficulties. These include, above all, the large public sector deficit which reflects, to a large extent, a huge increase in public sector consumption and transfers, and which has contributed to a lowering of investment. I have discussed some of these issues elsewhere (Lubitz, 1978).

I.

The Vicious Circle Hypothesis

Introduction - Types of Vicious Circle Arguments

Any discussion of the VCH is bedevilled with conceptual and definitional problems since the hypothesis has been formulated in a variety of ways; moreover, the historical or behavioral experiences needed to establish Italy, or any other country, as a VC country are not the subject of agreement.

The empirical pattern which is the basis for the VCH is well-known. An exchange-rate depreciation raises import prices, and consequently domestic prices, offsetting the competitive gains the depreciation initially achieved and leading to further depreciations and price increases. However, a fuller discussion of the VCH should deal with the following issues (at least):

- the cause of the initial depreciation, and in particular whether it is exogenous.
- the domestic policies required for a VC process to continue.
- whether an alternative exchange-rate system and domestic policies, for an economy with a given structure, would produce an outcome superior to the alleged VC produced by flexible rates.

Critics of the VCH have stressed the importance of these questions. They have pointed out that even if one observes a temporal sequence in which exchange-rate depreciation precedes import and domestic price increases, one cannot infer causation running from the exchange rate to prices. Thus, Bilson has constructed a model in which a monetary expansion initiates a process of depreciation followed by price increases. The critics also argue that a continuation of a vicious circle requires monetary accommodation; as Bilson points out, price increases reduce real money balances, so that further depreciation requires further monetary expansion. A common response to this argument is that whatever the origins of the depreciation-inflation cycle, accommodation is forced on the authorities. Dornbusch argues that because of wage indexation (whether formal or informal) the failure to accommodate would lead to unacceptable levels of unemployment. Thus, according to Dornbusch, the true problem is not monetary accommodation, but real wage resistance.

In order to keep the discussion manageable, and at the risk of oversimplification, I shall group the vicious-circle arguments considered here into two categories. In the first, the VCH in its purest form, the flexible-exchange rate system is assigned an independent role in inflation. The strongest version of such a position would argue for permanently fixed exchange rates. The second and weaker versions of the VCH recognize the need for exchange rate changes, but would either argue for discrete adjustments because of destabilizing tendencies under a pure flexible system, or would assert that, with certain types of conditions and objectives, a fixed rate combined with proper monetary and fiscal policy will produce a superior output-inflation outcome compared to a flexible-rate system.^{1/}

^{1/} There is a third type of VCH -- to be found in Basevi-deGrauwe and Wallich-Gray -- which generates VC's from the policy rules or objectives followed by the authorities. I shall have something to say about the Wallich-Gray version at the end of this paper.

Fixed Real Wages

An important feature of VC countries is real wage resistance and Italy, in particular, has a high degree of wage indexation. My discussion of the VCH shall assume complete or very high wage indexation, so that the real wage implied by the nominal contractual wage is nearly, or completely fixed. Before discussing the types of VCH, it is useful to point out the implications for a closed economy of a fixed real wage.

A fixed real wage under the usual neo-classical assumptions, with given technology and capital stock, implies an equilibrium level of employment. This might be thought of as a natural rate; Modigliani-Padoa-Schioppa do not use a neo-classical approach, but derive a non-accelerating-inflation rate of unemployment on the basis of a given real wage and some common assumptions about firm behavior. The equilibrium level of employment need not be full employment (as long as it is not defined to be such) and aggregate demand measures cannot permanently raise employment above this level.

Suppose for a closed economy the authorities attempt to lower the unemployment rate below the equilibrium level. A wide variety of macro models predict that an inflationary process would be generated by these attempts. One might even observe a "vicious circle" of wage and price changes. The cause of the vicious circle is clearly the attempt to achieve an unemployment rate below the equilibrium level, and obviously is not the outcome of an exchange-rate system.^{1/}

^{1/} This reasoning is in terms of a one-sector model. For two or more sectors the situation is more ambiguous, although the general point remains -- manipulation of aggregate demand will not remove unemployment consistent with equilibrium in the real economy.

In the case of an open economy with a fixed real wage we would still expect that the attempt to reach an unemployment rate lower than the equilibrium rate would generate either an inflationary process and/or external disequilibrium. The VCH, in its most general form, could be understood as the proposition that, given the real wage constraint, the inflationary process resulting from attempts to achieve full employment would be worse under a flexible rate system than under an alternative exchange-rate regime or policy, or, put somewhat differently, that real wage rigidity and exchange-rate flexibility combine to frustrate, or make more difficult, what would otherwise be attainable policy objectives.

On the assumption of a rigid real wage, I shall turn to the two categories of VCH indicated above.

The VCH as an Argument for a Fixed Exchange Rate -- Gold-Standard or Unlimited Financing

The most extreme versions of the VCH, the first category, are essentially arguments for exchange-rate rigidity; this version requires the specification of a set of rules concerning adjustment and financing in the event of external disequilibrium. There are two polar cases -- a gold-standard-type system and unlimited financing. Under a gold standard, a country would be forced (after the depletion of its gold reserves) to accept the equilibrium employment and price level, and inflation could not persist. Although such a system would probably have a lower inflation rate than a flexible-rate system with monetary accommodation, most economists today reject it for well-known reasons.^{1/} (Of course, if the monetary authorities would refuse to accommodate a vicious circle under a flexible rate system the inflationary process would also cease.)

^{1/} However, there are present-day supporters of a gold-standard system, and it would be perfectly logical for them to maintain the VCH, in the sense of saying the present system has an inflationary bias, and support the gold-standard. But, they would still have to show that a gold-standard system would not buy its lower inflation rate at the cost of an unacceptably higher unemployment rate; otherwise, they have not proven that a gold-standard system dominates a flexible-rate system.

An extreme alternative to the gold standard is access to unlimited financing. As Modigliani-Padoa-Schioppa show, financing an external disequilibrium associated with an unemployment rate below NAIRU, would also permit price stability. Essentially, the disequilibrium engendered by the real wage is pushed abroad and financed by unrequited imports. The goods supplied from abroad maintain domestic price stability. This is perhaps more clearly seen in terms of the absorption approach; the real wage, and other factor claims, are satisfied by foreign goods. Although unlimited financing is nice while it lasts, it does not appear to be a realistic alternative.^{2/}

The VCH as an Argument for Limited Exchange-Rate Variability

The second category of VCH covers a very wide spectrum, and is more realistic. These versions argue that under a flexible-rate system either unnecessary rate changes will occur or, when an adjustment is needed to correct a long-run disequilibrium, this adjustment might be better brought about with a discrete change.

In its "purest" form this type of VCH assigns to flexible exchange rates an independent role in inflation -- stemming from exogenous exchange rate changes that could be avoided (permanently) if rates did not float freely. These exchange rate movements then set up a cycle of inflation and further depreciation with monetary accommodation forced upon the authorities by real wage resistance. The most common version of this argument is that a pure (and reversible) speculative disturbance permanently forces a floating rate away from what was a feasible level.

Another form of the VCH is based on the argument that even where a depreciation is justified by fundamental factors, it may be excessive under a flexible rate system. Thus, suppose fundamental disequilibrium exists, and that the authorities devalue the exchange-rate by the amount just needed to off-

set the disequilibrium. At the new rate, the exchange rate might continue under short-run downward pressure. In such circumstances a flexible exchange rate system would generate too large a depreciation, and the authorities should intervene to maintain the new rate. And, if wages are indexed, the overly-depreciated exchange rate would be validated by a new round of wage and price increases. Thus it is preferable to change the exchange rate in discrete steps.

Several considerations are advanced to support the view that downward pressures might persist -- temporarily -- at the new "proper" exchange rate. First, "pure" speculative (downward) pressures might exist at the new rate. Second, overshooting à la Dornbusch (1976) might occur. In the Dornbusch model the exchange-rate depreciates to an extent sufficient to make its expected future appreciation offset the lower domestic interest rate brought about by an initial monetary expansion. The increase in prices subsequent to the depreciation increases the demand for money balances so that the interest rate and exchange-rate rise. Third, the J-curve -- temporarily increasing the trade deficit -- might cause downward pressures to persist.

I shall discuss the relevance of these arguments to the Italian economy in Part II. At this point, I turn to a related form of the VCH which places it in the context of optimal policy choice. This version of the VCH is based on the argument that under specified conditions the optimal policy response is to peg the exchange rate and use some combination of monetary and fiscal policy. This argument has been spelled out in work by Henderson and Dornbusch-Krugman. In both papers the arguments are linked to the VCH, but the link is fairly loose, especially in Henderson. The latter's model demonstrates that in response to certain types of shocks monetary policy, accompanied by sterilized intervention, will achieve the

same output target with less price variability than if the authorities allowed the exchange-rate to depreciate. The Dornbusch-Krugman article is more directly related to the concerns of this paper and will be discussed at greater length.

The Dornbusch-Krugman Version

Although Dornbusch and Krugman discuss a range of issues concerning flexible exchange rates in the short-run, much of their discussion bears on the vicious circle issue and they endorse the VCH. They argue that economic policy objectives would (often) be better achieved with exchange-rate pegging and the use of fiscal-monetary policy mix, with external financing if necessary. Specifically they contend that the Fleming-Mundell prescription to use monetary expansion and a flexible exchange rate to increase output is likely to be ineffective. They recommend instead fiscal expansion, with monetary accommodation, and a pegged exchange rate. According to Fleming-Mundell, monetary expansion will lower interest rates, causing the exchange-rate to depreciate, stimulating net exports and output. Dornbusch-Krugman argue that, in the short-run, the output effects of the exchange-rate depreciation will be small or, perhaps, negative, because the J curve effect worsens the trade balance in the short-run.^{1/} In addition, the exchange-rate depreciation directly raises prices through several channels, the most significant of which is probably the rise in the price of imported inputs. Thus, monetary expansion under flexible rates has little or no effect on quantity, but significant effects on price.

One difficulty with this argument is that it takes as given the objective of expanding output and employment, but the cause of unemployment is not specified. If the unemployment is of a Keynesian type, and nominal wages are fixed, the policy recommendation could expand output. However, if the unemployment is "classical" or "neo-classical" (the term I prefer) that is, a result of real-

^{1/} It is arguable that the output effects are still positive because the trade balance measured in volume terms will improve, even if the balance worsens in value terms. However, Salant points out that a worsening of the trade balance in value terms by affecting domestic income and demand, will have output effects in the second round. Thus, the net output effects, resulting from volume and value changes, is not clear.

wage rigidity, then expanding aggregate demand via fiscal policy, with a pegged exchange rate, will expand output only at the expense of external disequilibrium. As Modigliani-Padoa-Schioppa show, full employment, price stability and external balance are not simultaneously attainable. Indeed, as has been shown by Sachs and Argy-Salop (among others) fiscal expansion with a flexible rate is the way to escape from the real-wage constraint.^{1/} Since Dornbusch (1978) and Dornbusch-Krugman do emphasize the importance of real-wage resistance their recommendation of fiscal expansion and a pegged rate seems of limited relevance.

Dornbusch-Krugman explicitly associate themselves with the VCH. They say that the causal process from exchange rates to inflation "aggravates the problems of soft-money countries and lightens the burden of hard-money countries. This 'vicious and virtuous circle' has been recognized by the Organization for Economic Cooperation and Development and the Bank of International Settlements." The logic of this argument is not clear since, as they point out later, in connection with the link between monetary expansion and inflation, they are not describing a sustained inflationary process but rather a once-and-for-all increase in the level of prices.

Moreover, the reference to hard-money and soft-money countries begs the important question, since it is not explained what determines whether a country falls into one or another category. If a country is a soft-money country, the Dornbusch-Krugman policy recommendation, that it peg its exchange rate, and expand by the use of fiscal policy while it finances its external deficit, is probably not feasible. The fiscal expansion and external deficit may, in itself, prompt speculative outflows, so that private financing of the deficit is not forthcoming. On the other hand, official financing for a soft-money country,

^{1/} I have argued elsewhere (in an unpublished note) that this is a limited escape-hatch, but the more important point remains: fiscal expansion with a fixed rate is not a viable route to reduce unemployment caused by fixed real wages.

which has been perceived to have mis-managed its economic policy, (why is it a soft-money country?) may not be forthcoming. If official financing is available, the conditions attached to it would probably require policies contrary to those Dornbusch-Krugman suggest. Dornbusch-Krugman might contend that official lending institutions should be willing to lend to soft-money countries that follow their policy advice. But, it is difficult to envisage (or justify?) official lending to soft-money countries, which may be in that position because of the failure of domestic policy.

In concluding this part, a very general comment can be made about all the VC arguments loosely grouped in my second category. If, in specific circumstances, the proper policy is to peg the exchange rate, a country with a flexible rate can always choose to do so, since it is not bound to flexibility. It might be argued that the authorities in some countries have, in part, made the incorrect policy choice, i.e., they have allowed the exchange-rate to float when alternative superior policies were available, and suffered a vicious circle as a consequence. I do not know which, if any, countries fall into this category. Moreover, the Dornbusch-Krugman version of the VCH would require the authorities to persist in monetary expansion with a floating rate, despite the repeated failure of such a policy to expand employment. It is unlikely that any country has followed such a course of action. In any case, arguments of the second category imply that the vicious circle is a consequence of policy failure and **not** of the exchange-rate regime.

However, it might also be argued that the incorrect policy choices could be forced upon the authorities in a flexible-rate system, because external financing is needed to allow a stabilization policy with a pegged rate to work.

That is, private and official financing might be unavailable on "reasonable" terms. In my view, it is hard to believe as a general proposition about the period of wide-spread floating that the existing international financial arrangements have imposed unwarranted exchange-rate flexibility. I shall examine this question in more detail with reference to Italy later.

II

The Italian Experience and the Vicious Circle Hypothesis

Introduction

Developments in the Italian economy in the 1970's provide a fertile field for theories of flexible exchange rates. The most dramatic episode occurred in the first part of 1976 when the lira, on a weighted-average basis, declined about 22 percent between December 1975 and April 1976, while import and domestic prices accelerated sharply. The pattern of depreciation and inflation has been seized upon by some economists to demonstrate the validity of the VCH for Italy.

This position has also been strongly contested (see Lubitz, Laney, among others); the difficulty in analyzing this period in a convincing way arises precisely because an embarrassment of riches are available to explain the lira depreciation.

The aim of this part of the paper is far less ambitious than that of a recent paper by Tullio which explores the effects of demand management policy and exchange rate regime in Italy by means of simulations with an econometric model. Although his results are of relevance to the questions discussed here -- and some will be referred to in the course of my discussion -- the nature of the issues we discuss differ, since I am less concerned with policy choices given the macro-economic structure of the Italian economy, than with the vicious circle hypothesis itself.

The 1975-1976 Experience

I shall not review the 1975-76 period in detail, but will sketch the main economic developments in order to discuss the relevance of several versions of the VCH to Italy. Tables 1 and 2 present selected economic indicators for the period 1971-78; Table 1 presents general indicators and Table 2 labor cost variables.^{1/} Chart 1 shows the nominal weighted average exchange rate for 1973 to 1978.

As a prelude to a discussion of the 1975-76 experience, it is important to stress that Italy had not enjoyed a reasonable degree of internal and external balance since the "hot autumn" of 1969, which led to substantial wage increases. The relative price stability and current-account surplus of the early 1970's was bought at the expense of weak activity, and the return to faster growth in 1973 led to a worsening of inflation and the current account; this occurred prior to the oil shock. As I argued in Lubitz (1978), the economy's underlying equilibrium position had probably altered after 1969 because of the increase in real wages that occurred at that time. After the wage explosion, the high output/employment objectives held in Italy were not compatible, in my view, with the prevailing real wage (made

^{1/} Different labor cost variables are used in this paper. In Table 1 wages refer to the hourly contractual wage rate for industrial workers. In Table 2 a labor cost variable (for industrial workers) is used, which is derived from the National Accounts. It is the sum of earnings (rather than wage rates) and employer social insurance contributions. The labor cost variables in Chart 2 and Table 3 are based on series constructed by the IMF; they refer to the manufacturing sector and include earnings as well as employers' social contributions and taxes.

Table 1

Selected Economic Indicators, 1971-78
(Percent change from previous year, unless otherwise indicated)

	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
GDP	1.6	3.1	6.9	4.2	-3.5	5.5	2.0	2.8
CPI	4.8	5.7	10.8	19.1	17.0	16.8	17.0	12.1
Contractual Hourly Wage	11.9	9.2	23.0	20.1	28.0	20.8	27.4	16.4
Real Wage: ^{1/}	6.8	3.3	11.0	0.8	9.4	3.4	8.9	3.8
Unemployment (percent)	5.3	6.3	6.5	5.3	5.7	6.6	7.1	7.2
M ₂ (percentage change, December/December)	17.1	18.2	23.0	15.4	23.5	20.8	21.8	22.9
Trade Balance ^{2/} (\$ Billion)	0.1	0.1	-4.0	-8.5	-1.2	-4.2	-0.1	2.9
Current Account ^{2/} (\$ Billion)	1.6	2.0	-2.5	-8.0	-0.6	-2.8	2.5	6.2

^{1/} Contractual wage rate deflated by CPI.

^{2/} Economic basis; imports, exports f.o.b. for trade balance.

Source: ISTAT, Bollettino Mensile di Statistica; Banca d'Italia, Relazione Annuale, Bollettino, various issues.

Table 2
Productivity and Labor Costs in Italian Industry, 1971-78
(percent change)

	(1) <u>Labor Cost Per Worker</u>	(2) <u>Output Per Worker</u>	(3)=(1)/(2) <u>Unit Labor Cost</u>
1971	10.9	0.9	10.0
1972	11.3	5.6	5.4
1973	21.8	8.6	12.1
1974	22.6	2.8	19.2
1975	22.3	-9.2	34.7
1976	23.5	11.9	10.5
1977	19.8	1.5	18.0
1978	14.4	3.1	11.0

Source: Banca d'Italia, Relazione Annuale, 1979.

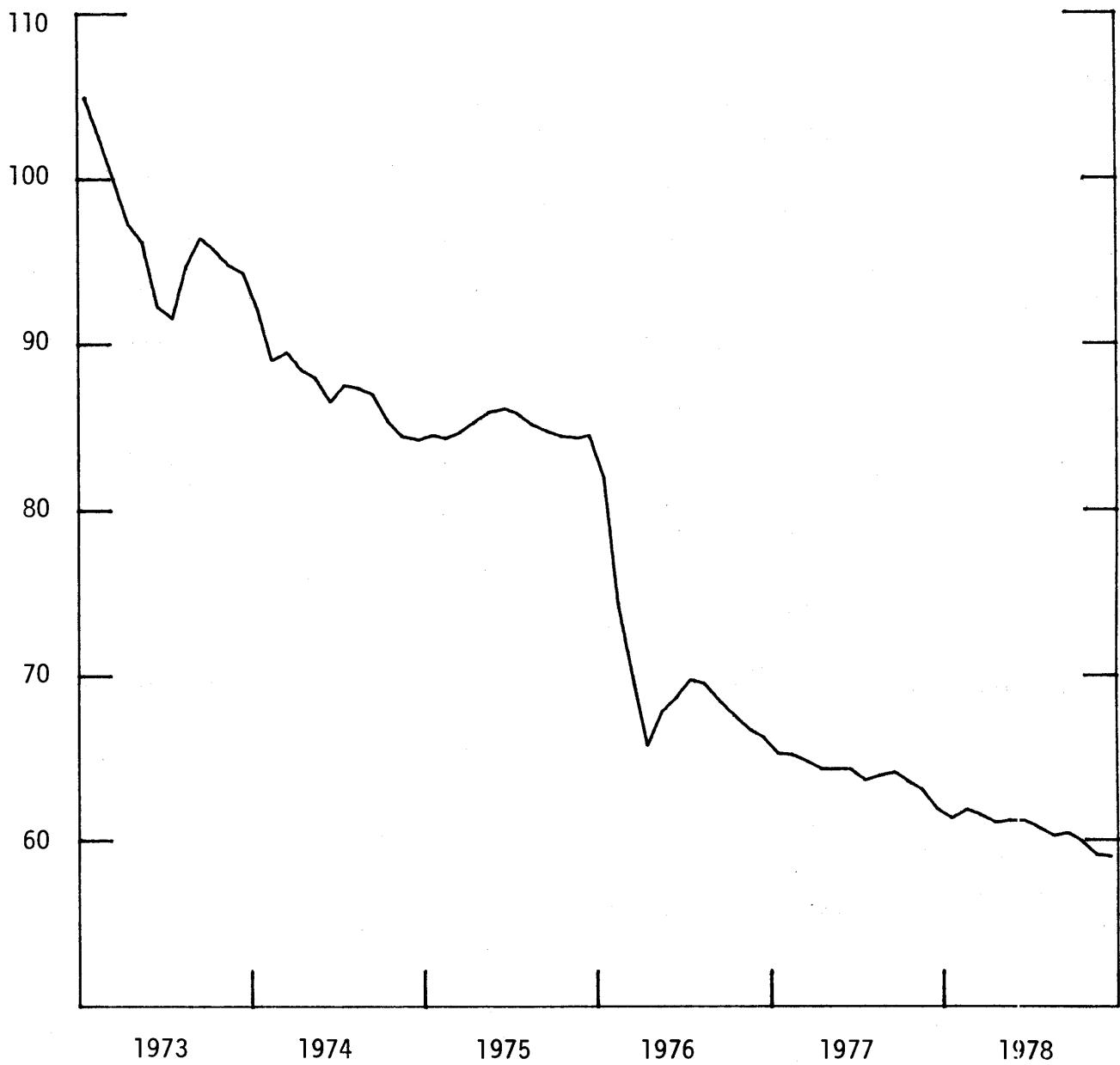
almost completely rigid after 1975 by changes in the scala mobile). I also argued that by attempting to achieve those objectives, inflationary and external pressures were created. Consequently, it cannot be assumed -- and it is probably not the case -- that Italy entered the post-1973 period in, or roughly near, equilibrium.

The 1973-74 oil shock lowered, (for given productivity levels) the real wage compatible with given high output/employment objectives, intensifying further the real-sector disequilibrium generated by the earlier real wage increases. The most dramatic effects of the oil-shock were an exchange crisis and high inflation rates. In response to this crisis, and in accord with conditions attached by the IMF and EC to credits extended to Italy, tight monetary and fiscal policies were adopted.

For most of 1975 Italy was in a recession resulting in large part from the oil-shock and the stabilization measures. Policy was loosened during 1975; and a large fiscal stimulus package was adopted in August; the Treasury cash deficit for 1975 rose to 12.3 percent of GDP, from its level of 8.7 percent in 1974. At the same time, the monetary aggregates expanded rapidly, primarily to finance the growing public sector deficit. Thus, the monetary base grew 18.6 percent between December 1974 and December 1975, while M_2 expanded 23.5 percent. Unit labor costs in industry skyrocketed, rising 19 percent from 1974IV to 1975IV, after having risen 27 percent

CHART 1

WEIGHTED AVERAGE EXCHANGE RATE INDEX -- LIRA
(MARCH 1973=100)



over 1973IV-1974IV (Table 3.) The increase in 1975 was a result of wage increases stemming from three factors: contractual wage increases, a change in the scala mobile, and increases directly linked to the cost-of-living index. At the same time, productivity declined over 1975. (Table 2 shows, on a year-over-year basis, the productivity and labor cost contributions to the unit labor cost increase.) By the end of 1975, economic activity was reviving, and the lira was coming under downward pressure. However, contrary to what one might expect from the popular version of the vicious circle theory, the exchange rate was not allowed to float downward, but was maintained at an unchanged weighted-average level by central bank intervention.

In order to round out the catalogue of plausible explanations for the lira's decline, it should be added that the political situation contributed to the economic crisis. Early parliamentary elections were thought to be likely (and were, in fact, held in June 1976, a year before they were required), and it was feared that the Italian Communist Party (PCI) might emerge as the leading party, or, at any rate, might enter the government. Fear of the PCI may have stimulated capital flight, as well as discouraged foreign lending.

Italian reserves had been drained in 1974, and the government had incurred a large external debt, so that the resources available to defend the lira were not large. The troubled political and economic situation made borrowing on the Eurocurrency market very difficult. Thus, in January 1976 the lira was unpegged and allowed to float downward. The lira then dropped precipitously, declining from January to May, on a weighted-average basis, by a maximum of about 25-1/2 percent, before recovering. (Chart 1 shows the monthly averages for the lira.)

Table 3

Italy: Weighted-Average Real Exchange Rate --
Unit Labor Cost Estimate
March 1973=100

	(1)	(2)	(3)	(4)	(5)
	Italy ULC	Wtd. Average ULC	(2)/(1)	Wtd. Average Exchange Rate	Real Exchange Rate (4)/(3)
1973 QI	96.8	98.4	101.7	107.7	105.9
QII	100	100	100	100	100
QIII	103.4	102.1	98.8	99.0	100.2
QIV	106.9	105.5	98.7	99.7	101.0
1974 QI	109.7	108.5	99.0	94.8	95.8
QII	115.7	114.3	98.8	92.0	93.2
QIII	119.5	119.5	99.8	91.6	91.8
QIV	135.2	126.4	93.5	88.9	95.1
1975 QI	154.2	132.3	85.8	88.8	103.5
QII	158.7	133.4	84.1	90.1	107.3
QIII	164.2	134.5	81.9	89.5	109.2
QIV	168.1	134.7	80.2	88.7	110.6
1976 QI	166.9	137.0	82.1	79.2	96.5
QII	171.8	137.5	80.1	70.8	88.5
QIII	185.7	139.6	75.2	72.7	96.6
QIV	188.1	142.5	75.8	70.2	92.6
1977 QI	195.8	143.9	73.5	68.3	92.9
QII	205.7	146.3	71.1	67.6	95.0
QIII	210.5	148.8	70.7	67.1	95.0
QIV	225.5	150.8	66.9	66.0	98.6
1978 QI	229.5	153.0	66.7	64.7	97.0
QII	229.2	153.6	67.0	64.3	95.9
QIII	232.3	155.1	66.8	66.6	95.3
QIV	235.0	155.8	66.3	62.4	94.1

Source: FRB staff calculations based on IMF labor cost estimates.

Views of the 1976 Crisis

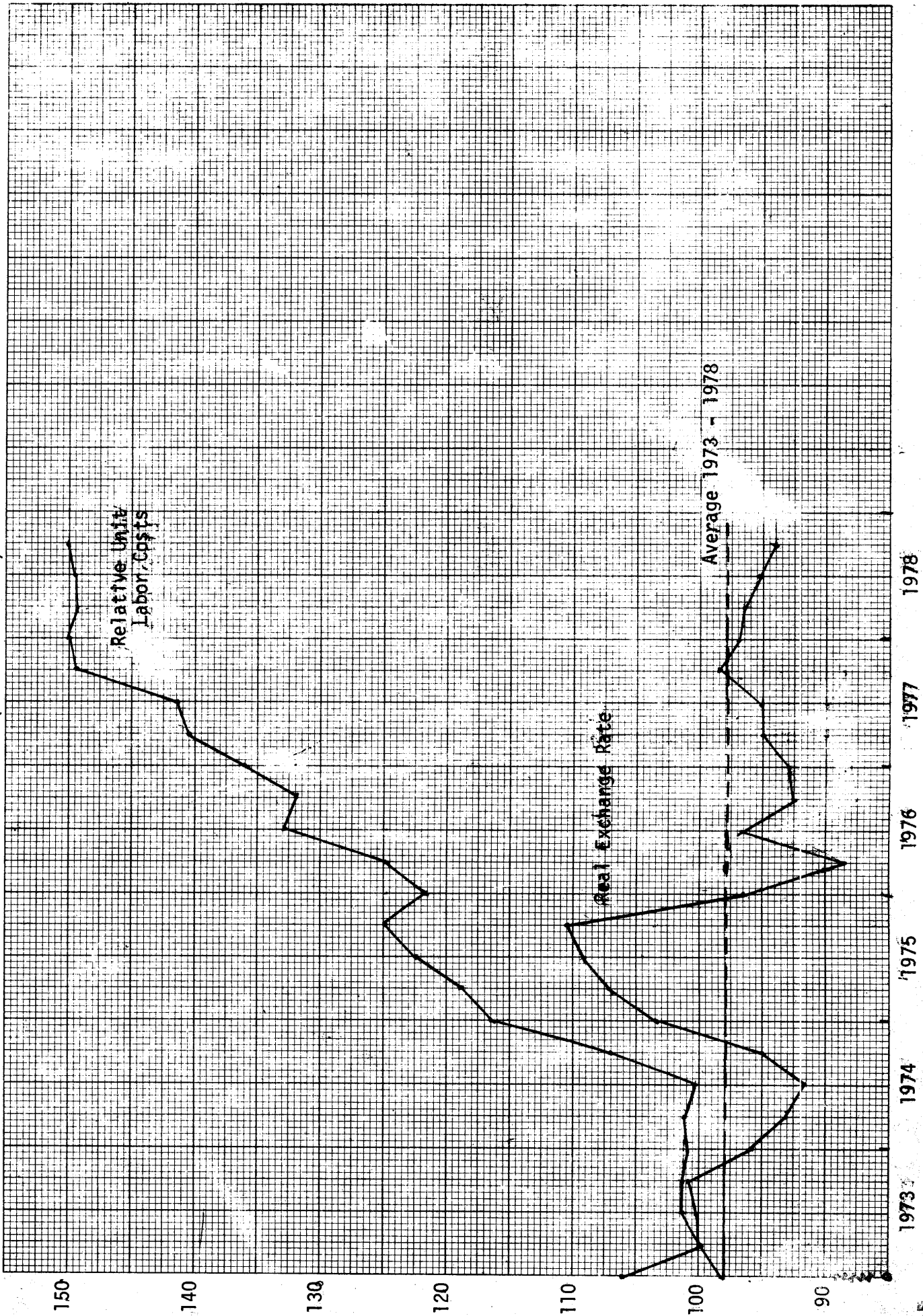
This bare outline of 1975-76 suggests that the major contending theories of the crisis -- monetarist, labor costs, or speculative -- can derive some vindication, since we seem to have "overdetermination" with a vengeance: the rapid expansion of the money supply and the rise in unit labor costs both suggest that the equilibrium rate had altered, while the political situation and volatile behavior of the exchange-rate point in the direction of speculative disturbances.

Although the differences between the monetarist and labor cost views are obviously of great importance, from the point of view of the VCH and the Italian 1975-76 episode, the more relevant distinction is between those views that argue that the exchange-rate depreciation reflected fundamental factors determining the exchange rate and those that argue that speculative disturbances either caused the depreciation or, at least, caused a depreciation, that may have been justified on the basis of fundamentals, to be excessive. A proper test of the speculative hypothesis requires a widely-accepted theory of exchange-rate determination, capable of giving quantitative results. In the absence of this, I shall review some evidence relevant to two popular views -- already referred to -- of the underlying determinants of equilibrium exchange rates: labor costs and monetary growth. This will provide some indication as to whether the 1976 lira depreciation was either not justified by fundamental factors or was excessive by those criteria. This evidence is, at best, suggestive since equilibrium levels are not known, and we can only observe changes from an arbitrary base period.

Some data relevant to the labor cost view are presented in Tables 2 and 3 and Chart 2. The rise in real wages in 1975 caused an increase in the real exchange rate (based on unit labor costs) of nearly 16 percent between 1974 IV and 1975 IV; after this sharp rise, the real exchange rate plunged in 1976. This fall in the real exchange rate more than offset the previous increase,

CHART 2

REAL EXCHANGE RATE - UNIT LABOR COST ADJUSTED
(MARCH 1973=100)



reaching a trough in 1976 QII, before recovering as the nominal exchange rate appreciated after May.

The question might be raised to what extent the lira crisis of 1976 could have been precipitated by a divergence in labor costs, since these costs do not, in the first instance, appear as price differences. Moreover, the real exchange rate based on consumer price and wholesale price indexes did not appreciate in 1975. However, a rise in unit labor costs will alter equilibrium prices and nominal exchange rates. If the labor cost increases are not matched by equivalent price increases, profits will be squeezed and inflationary pressures created. A variety of reasonable models would predict that with given employment levels, higher labor costs will generate external imbalance and inflation so that further adjustment is necessary. Thus, in the Modigliani-Padoa-Schioppa model, in the equilibrium associated with a higher real wage, output is lower, prices higher and the exchange rate depreciated. This seems like a reasonably good fit of the stylized facts for 1975-76.

Some economists (including the present author) have also indentified the rapid growth of the monetary aggregates as an explanation for the lira crisis. This position is most forcefully argued by Laney based on a monetary model of exchange rate determination to explain the lira's movements in 1975-76.

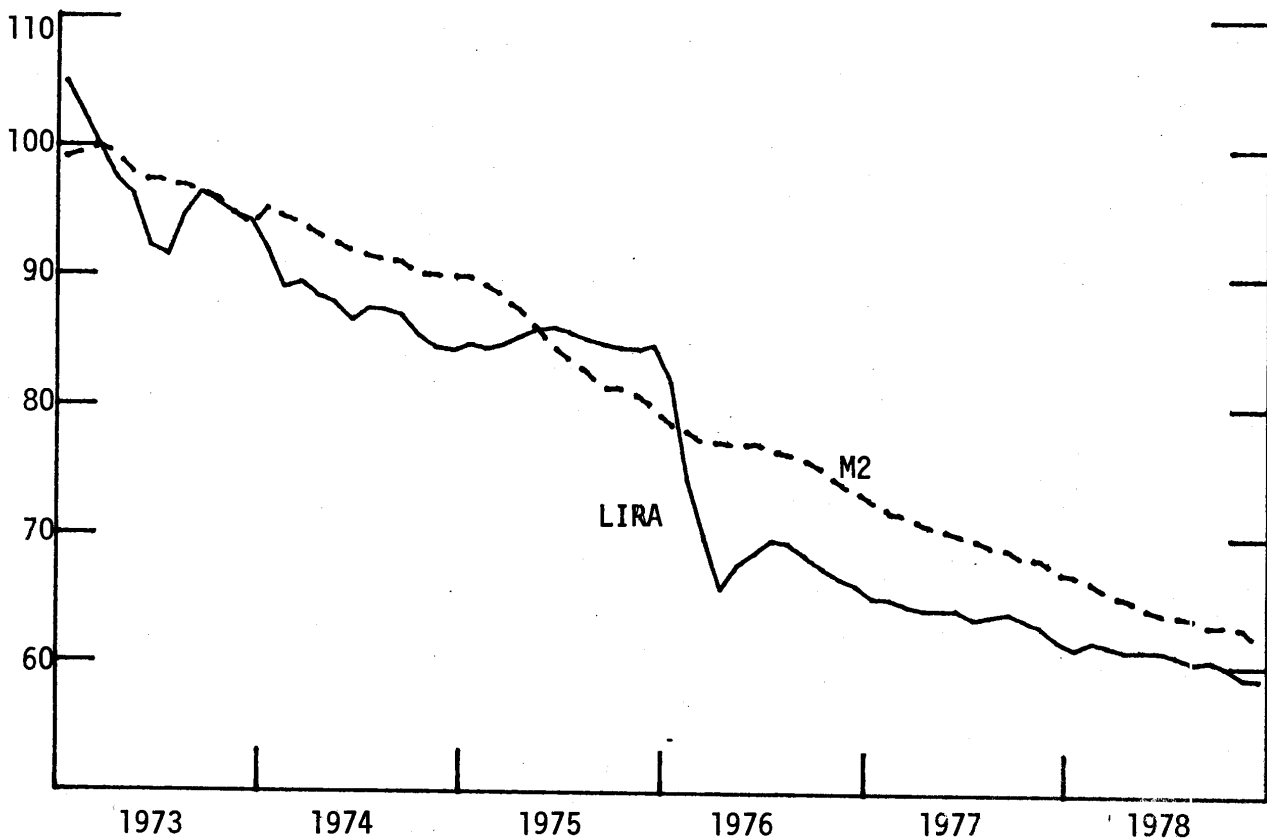
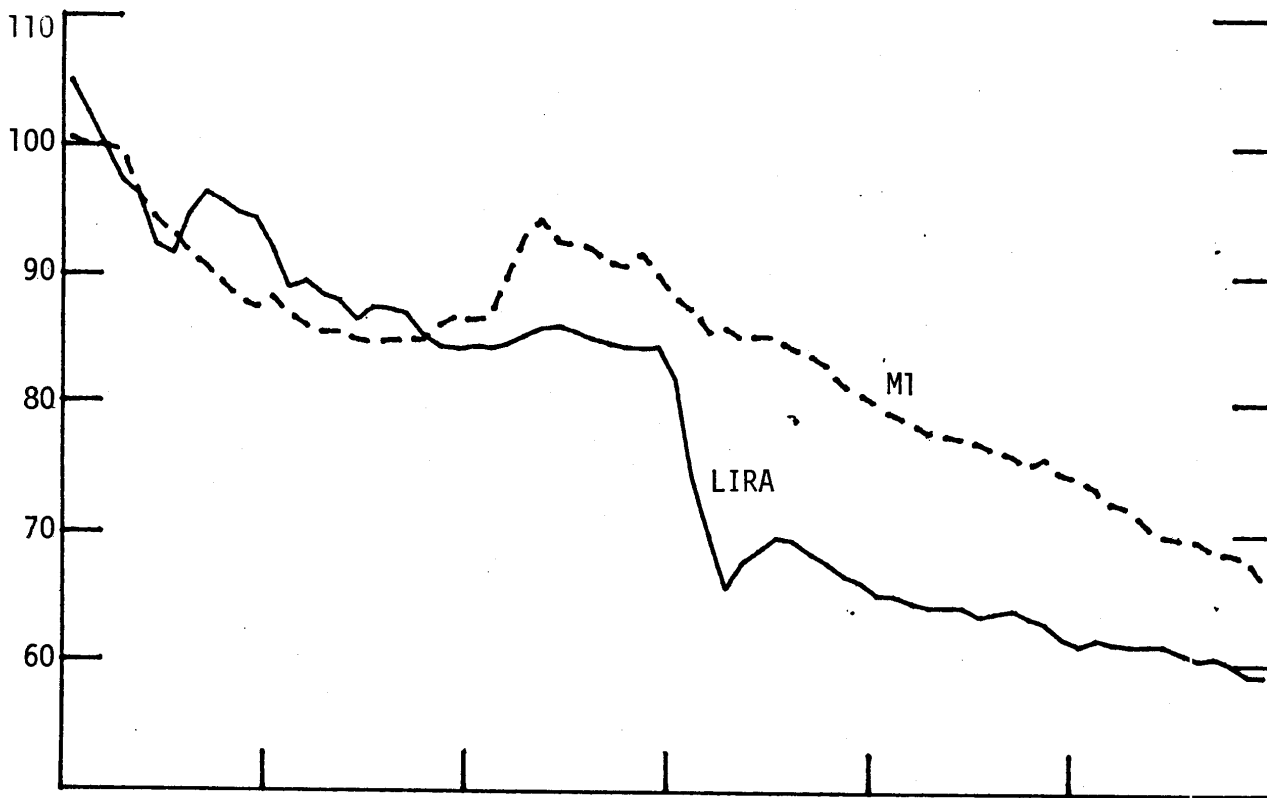
Laney's argument is based on a comparison of the movements of two series: the ratio of foreign M1 (a weighted-average of 5 countries) to Italian M1 and the nominal weighted-average lira. He argues, on the basis of the charts and tables he presents, that the series move in parallel in 1975-76 and that the lira reversal in May 1976 was matched by a reversal in the M1 series.

Although the data do provide some evidence for a monetary explanation of the 1976 crisis, it is weaker than Laney suggests.^{1/} In Chart 3

1/ And to be candid, than I had thought in my 1978 paper.

CHART 3

WEIGHTED-AVERAGE LIRA AND RATIOS OF FOREIGN WEIGHTED AVERAGE
MONETARY AGGREGATES TO ITALIAN, M1 AND M2
(MARCH 1973=100)



the nominal exchange rate is plotted against M1 and M2 series, constructed as the ratio of the weighted-average of foreign monetary aggregates to the Italian.^{2/} For both comparisons it is clear that over a sufficiently long-period the series move together. However, while it is true that the Italian aggregates rose faster than than foreign in late 75 - early 1976, the exchange-rate movement was much sharper. The exchange rate fell by over 22 percent (monthly averages), while the maximum fall in my M1 money-ratio was about 7 percent, for November 1975-May 1976.^{3/}

Laney was in part misled by his data. He looked at mid-1975 to end-1976, for M1 only, and observed that both series moved in the same direction, but ignored the differences in the magnitude of the movements. Also, his M1 ratio series does show a stronger drop than mine -- although still less than the exchange rate fall. As the charts indicate, the Italian money supply has usually grown faster than foreign, while the exchange-rate has not always been depreciating. Thus, the money growth differential cannot be used uncritically to explain any given period of exchange-rate weakness. A casual inspection of the charts -- or of the data -- shows how tenuous the short-period exchange rate-money growth correlation is over the 1970's. This point can be highlighted by a simple comparison between changes in the M1 ratio and the exchange-rate for 12 month periods:

12 months ending:	Weighted-Average Lira (percent change)	Ratio of Foreign M1 to Italian M1
December 1973	-9.0	-14.2
" 1974	-10.6	0.8
" 1975	0.3	2.8
" 1976	-21.7	-9.9
" 1977	-6.6	-7.4
" 1978	-4.7	-10.7
" 1979	2.0	-14.8

^{2/} The M1 ratio is based on 5 foreign countries and the M2 on 7 . For both series the Italian data were seasonally adjusted by the FRB staff. The series thus differ from Laney's.

^{3/} The data should be used with caution. The Bank of Italy does not publish seasonally adjusted money supply series. Laney uses the data published by the IMF while, as noted above, the series in this paper were seasonally adjusted by the FRB -- using the unadjusted Bank of Italy data.

Most tests of the monetary approach to exchange rate determination take account of the variables in the demand for money equation -- interest rates and nominal incomes. Laney does report an attempt to incorporate some part of the demand for money, but he indicates his results were weaker than his simple money supply comparison. However, it is possible that a full test of the monetary approach for this period would be more successful.

To sum up this part of the discussion, it is true that a temporal simultaneity held between differential money growth and the lira's depreciation. However, this pattern cannot demonstrate the validity of the monetary explanation. The high growth rate of the Italian aggregates may help explain the lira's weakness, but the evidence is not persuasive that it explains most of it.

Relevance of the Vicious Circle Hypothesis

The discussion of the labor cost and monetary approaches to exchange-rate determination establishes a presumption, in my view, that fundamental factors justified some lira depreciation in 1976. If this view is granted, we can readily deal with the relevance of that version of the VCH which asserts that a speculative disturbance can permanently force a flexible exchange-rate away from its "correct" level. Such a version could be supported by reference to the capital outflows from Italy in 1975-76, which were motivated by political as well as economic considerations. However, the "speculative" theory in its pure form is not persuasive. First, the Bank of Italy pegged the exchange-rate for as long as feasible in 1975 and January 1976. Second, as has been just discussed, the lira's depreciation was justified by more permanent considerations of a real and monetary nature.^{1/}

Although the "pure" speculative hypothesis is not persuasive, a more plausible argument can be made that while some exchange-rate adjustment was needed because of the fundamentals, the 1976 depreciation was excessive. This can be taken in two senses: (1) the reversal of the lira in May 1976 indicates overshooting or, (2) the "final" net depreciation (after the recovery from overshooting) was greater than required.

I shall discuss the second sense first. As was pointed out above, the relative monetary growth rates do not seem to justify the size of the depreciation that actually took place in 1976 -- assuming that the "initial" exchange rate was at or near its equilibrium. On the other hand, the labor-cost-adjusted real exchange rate by the end of 1976, was at the level that prevailed prior to the huge 1975 labor cost increases and close to its average for 1973-78. Although we cannot

^{1/} The necessity for a nominal depreciation of the lira might be contested, if it were thought that the increase in the real exchange rate prior to January 1976 was justified by the real lira having been undervalued. However, it is hard to believe, given the external crisis in 1974, that the real lira was undervalued. The current account balance of 1975 was associated with a steep recession so that the "underlying" current account was probably in significant deficit.

determine the equilibrium real exchange rate, there is not much evidence on the labor cost view that the depreciation was excessive in the second sense.

However, both the monetary and labor cost indicators do seem to point to "overshooting" and a reversal in 1976 QII. Some VCH proponents might argue that this overshooting would then get built into import and domestic prices, and generate further depreciation. Before turning to this latter point, it should be noted, as Laney suggests, that the actual extent of the lira's reversal was relatively small. He also points out that the overshooting is understandable as a temporarily erratic and overreactive response at a time when rapid monetary expansion and heavy (in his view) official support preceded the sharp decline in the lira. He points out that the lira rebound can represent a rational response to a change in economic policy -- the fiscal and monetary tightening (particularly the monetary base drain involved in the import deposit scheme adopted in May) and various exchange control measures instituted during the year.

If the lira's rebound was a response to the stabilization measures, i.e. a response to a set of altered economic conditions, then its movements cannot be described as a speculative overshooting of its "correct" level, since that level changed with the new measures. On the other hand, if the lira overshot because of erratic behavior and overreaction, then the speculative view is more plausible; however, one could still maintain that the lira's overshooting was not caused by a pure exogenous disturbance (say, because of political factors) but by the de-stabilizing quality of economic policy.

If some overshooting of the exchange rate did occur, and it is estimated by the recovery in the real exchange rate (labor-cost adjusted) between the second and third quarters of 1976, the overshooting was about 9 percent. However, this is very likely an overestimate, since the lira soon dropped back; its net recovery from 1976 QII to QIV was about 4-1/2 percent and this may be a more reasonable estimate of the overshooting. The duration of the overshooting was quite short (about 2-3 months); it is certainly questionable that this is sufficient time to alter permanently the price level.

Also, as Laney notes, when the exchange-rate did recover, lira import prices did decline somewhat (although a partial reatchet effect can be observed) limiting even further any net long-term effect of the overshooting on the domestic price level.

Finally, suppose that the extent of overshooting was 5 percent, and that this had a permanent price level effect. We can use the Bank of Italy econometric model to estimate the price level effect of a devaluation, taking account of second round wage and price reactions. The maximum estimate of the effect on the CPI after 10 quarters, of a 5 percent permanent depreciation, assuming endogenous domestic demand, is 4 percent relative to the control solution. With controlled domestic demand, the effect is 3.3 percent. This is a small part of the total 32 percent CPI increase that took place between mid-1976 and end-1978. Also, the 3-4 percent is probably an overestimate of the exchange-rate effects, given the short duration of the overshooting.^{1/}

The Dornbusch model provides another explanation of overshooting; its relevance to Italy in 1976 can be briefly discussed. In that model, when overshooting occurs, the increase in prices subsequent to the depreciation increases the demand for money balances so that the interest rate and exchange rate rise. In Italy in 1976, the exchange rate reversal occurred quite rapidly and before most of the domestic-price effect of the depreciation was felt.^{2/} It is far more plausible to attribute the rise in interest rates and the exchange rate reversal to the strong policy measures that were adopted.

^{1/} Tullio's simulation exercise indicates a slower response to a devaluation: for a permanent 10 percent devaluation, consumer prices will be 3 percent higher after one year than in the control solution (no devaluation), and remain at that relative level for about 5 years, before reaching a new equilibrium level 10 percent above the control level in 15 years. Monetary policy is endogenous and partially accomodating in this exercise.

^{2/} This statement is based on movements in the CPI; wholesale prices did rise more rapidly. The CPI is probably a better measure to deflate nominal balances.

Finally, as noted in Part I, the J-curve is another mechanism which might cause a flexible rate to depreciate past its "proper" level. The rapidity with which the Italian trade account in the 1970's improved after lira depreciations (see Table 1, for 1975, 1977-78 trade balance swings) makes one doubt whether Italy has faced a J-curve; however, this inference is at best tentative since lira depreciations were accompanied by deflationary measures which also have had powerful effects on the external balance. A more rigorous test for the J-curve by Tullio did not find evidence for its existence in Italy; his result follows from the high trade elasticities he estimated, and also from the fact that the Italian trade balance was not in large deficit at the start of his simulation period.

Inflationary Pressures from Depreciation

Up to this point the discussion of excessive depreciation has dealt with a flexible rate depreciating by more than justified by the fundamentals. Some economists seem to hold to a VCH based on a different pattern, in which the exchange rate at first may move to its correct level, but inflationary pressures created by the depreciation further lowers the equilibrium rate.

Italian experience is sometimes cited as evidence for this view. Thus, after mid-1976 wages and prices rose in response to the earlier exchange-rate change, and the nominal exchange-rate depreciated steadily until 1978. However, the same inflationary pressures would have arisen from a devaluation under an adjustable-peg system, always given the assumption of monetary accomodation. External imbalance implies that absorption is greater than output, with the unrequited imports financed by drawing down reserves or foreign inflows. To eliminate the imbalance, by depreciation, or any other method, absorption must be reduced for a given output; lower absorption implies fewer goods available domestically and, with given nominal demand, a higher price level. A depreciation, therefore, can only be successful if a real adjustment is made, and the higher prices are allowed to cut absorption. The refusal by labor to accept a cut in

real wages will reproduce the disequilibrium at the new exchange rate.^{1/}

But, the problem lies in the system of indexation of exchange rates -- no method of restoring balance will work if absorption is not cut.

I think that this argument is consistent with Tullio's conclusion that monetary policy is more effective in raising GNP, with a smaller inflationary impact under fixed rates compared to flexible rates. His result requires, as he notes, a reduction in official reserves under fixed rates. Although the link between the reserve loss and the "superior", less-inflationary, performance of fixed rates is more complex, and different from the one discussed here, the underlying rationale for the result is, in my view (although perhaps not Tullio's) similar -- the decumulation of reserves permits the acquisition of goods (or assets) greater than would otherwise be the case.

If we recognize the need for real adjustment, and the price effects that will probably follow from it, to correct an external imbalance, then those Italian economists who appear to accept the VCH (in the sense that the VC is a systemic property of flexible rates) in reality are also objecting to discrete devaluations, and not simply to flexible rates, because of these price effects. Thus, before the March 1981 devaluation of the lira within the EMS, it was generally agreed that the Italian lira had become overvalued as a result of the inflation differential between Italy and its trading partners, but many economists resisted the idea of devaluation because it was "inflationary." The view that both discrete devaluations under an adjustable peg, as well as depreciation under a flexible rate, should be ruled out, even in the face of manifest disequilibrium, because of a fear of its "inflationary" consequences, implies a return to a fixed rate system. It is not clear what types of adjustment and financing are advocated by those economists who adhere

^{1/} This states the issue in schematic terms -- given our inability to know the equilibrium real wage. Also, real profits can absorb some of the income loss consequent upon a depreciation, but not to the extent necessary to make it stick.

to this view.^{1/}

The Problem of Financing

An important element in some vicious-circle theorizing is the availability (or lack thereof) of financing to support a currency which is under downward pressure. Those versions of the VCH which emphasize the importance of speculative disturbances forcing a currency away from its equilibrium level implicitly assume -- given the desire of the authorities to maintain the "proper" rate -- a lack of financing.

This issue has some relevance of Italy in 1976. Although the Bank of Italy did intervene to support the lira, some observers pointed out that the extent of intervention, about \$1-1/2 billion from September 1975 to January 1976, was small compared with intervention other central banks have carried out when their currencies were under downward pressure. In this view, in its simplest form, if Italy had had sufficient reserves, or had access to adequate external financing, it could have weathered the speculative storm without the steep fall in the lira that took place.

Few economists promote this version, i.e. it was simply a lack of financing that provoked an unwarranted lira depreciation, since it is generally agreed that the lira crisis had deeper roots than a bout of speculation. However, since there is a more widespread view that lack of financing can force unwarranted or excessive depreciation, and thus create inflationary pressures, it is worth exploring the role of financing in Italy in 1976. In this view, a country is envisaged as a repentant sinner that has undertaken the necessary stabilization policies to correct its disequilibrium, but requires financing to tide it over the period needed for the stabilization policies to take hold and the financial markets to be convinced of its rectitude, thereby, avoiding unnecessary depreciation.

^{1/} Some economists might reply that the correct policy is to reduce the degree of indexation; granted that this is true, but if real wage rigidity is loosened, the case against using exchange rates for adjustment, and, for the VCH, is correspondingly weakened.

Italy in early 1976 hardly fits the repentant sinner mold. The 1976 crisis arose because the structural problems leading to the 1974 crisis -- public sector deficit, monetary expansion, labor costs -- had not only not been corrected but had intensified. Italy's meagre reserves and large official indebtedness were the result of the 1974 crisis. And, the reluctance of private lenders to provide finance to Italy reflected an (accurate) perception of the political and economic situation in early 1976, and the country's failure to use the post-1974 interlude to undertake reforms. When credible stabilization measures were enacted, and the political climate improved, the lira did level out, and did so without intervention. In fact, Italy was a net purchaser of dollars in the second half of 1976. (It is true that exchange controls played a major role in the lira's strength.) On the basis of the 1976 events, I think that it is hard to believe that the lira's problems stemmed from failures in the international monetary system which denied Italy the financing which would have been available in a more efficiently functioning system.

Conclusion

I shall not try to summarize this section of the paper, except to state that the Italian experience in 1976 does not lend much support to the versions of the VCH considered here. The evidence seems to be fairly persuasive that a major depreciation of the lira in 1976 was justified by fundamental factors and was not simply the result of speculative disturbance. It is true that the monetary and labor cost calculations produce different conclusions as to the size of the required depreciation. In my view, the labor cost calculations, which suggest that most of the 1976 depreciation was justified, are more acceptable. In addition to the possibility that the net lira depreciation in 1976 was somewhat excessive, it can also be agreed that there may have been some overshooting in

May 1976; but, the case has not been made that this caused significant domestic price increases that would not have occurred in response to the depreciation that was necessary.

Before concluding the paper I would like to examine briefly the relevance of the views of Dornbusch-Krugman and Wallich-Gray. The Dornbusch-Krugman view might appear to have some applicability because the monetary aggregates did rise sharply in 1975. However, the authorities were not trying to expand output via an exchange rate depreciation brought about by deliberate monetary expansion. On the contrary, it might be more accurate to say that they followed the Dornbusch-Krugman prescription of fiscal expansion with monetary accomodation and a pegged exchange rate.^{1/} Also, as I suggested in Section I, a fiscal expansion with fixed rates, will not remove unemployment due to rigid wages.

In Wallich-Gray a vicious circle will arise in a fully-indexed economy with a flexible rate that tries to stabilize output in the face of an aggregate demand shock. Although it is difficult to describe the Italian case in 1976 in terms of shocks, and therefore to fit it exactly into the Wallich-Gray scenario, there are some similar features. More importantly, the lesson is the same -- that price increases and exchange-rate depreciation follow from attempting to pursue an employment target that is inconsistent with real wage rigidity. This result can also be found in other models of real wage rigidity and flexible exchange rates, such as that of Modigliani-Padoa-Schioppa.

The VCH amounts to a type of misspecification. It falsely attributes to the exchange-rate system the cause of difficulties that lie elsewhere -- in the economic structure (real wage resistance) and policy objectives inconsistent with that structure. The changes in nominal magnitudes -- wages, prices, and

^{1/} I am not asserting that the Italian government actually formulated and successfully pursued a coherent policy-mix program. The steps taken in Italy were broadly consistent with, not a conscious application of, this policy.

exchange rates -- have the appearance of a vicious circle, but reflect the dis-equilibrium movements induced by attempts to achieve real objectives incompatible with the real economic structure.

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