

CENTRO DI RICERCHE E DOCUMENTAZIONE
"PIERO SRAFFA"

UNIVERSITÀ DEGLI STUDI ROMA TRE

DISINFLATION IN
INDUSTRIALIZED COUNTRIES,
FOREIGN DEBT CYCLES
AND THE COSTS OF STABILITY

Andrea Ginzburg and Annamaria Simonazzi

Quaderno di Ricerca n. 4
2004



Quaderni di ricerca della Fondazione "Centro di Ricerche e Documentazione Piero Sraffa"

Dipartimento di Economia
Via Ostiense 139 – 00154 Roma
Telefono 06/57374037
e-mail: sraffa@uniroma3.it

Comitato Scientifico

Roberto Ciccone
Pierangelo Garegnani
Paolo Leon
Enrico Sergio Levrero (*curatore*)
Fabio Petri
Fernando Vianello

— I *Quaderni di Ricerca* della Fondazione "Centro di Ricerche e Documentazione Piero Sraffa" si propongono di promuovere ricerche indirizzate verso la ricostruzione dell'economia politica lungo le linee dell'impostazione degli economisti classici riportata alla luce e sviluppata da Sraffa; di offrire una sede di discussione nella quale i risultati raggiunti dalle diverse correnti critiche possano essere confrontati fra loro e con quelli della teoria economica ortodossa; di stimolare lo studio di concrete realtà economiche, e di restituire alla spregiudicata osservazione dei fatti quel ruolo centrale che essa è necessariamente chiamata a svolgere in ogni costruzione scientifica.

— Il Comitato Scientifico decide circa la pubblicazione di lavori nella collana dei *Quaderni di Ricerca* della Fondazione Sraffa sulla base del parere di referees. Il Comitato Scientifico dei *Quaderni* può anche decidere la ristampa di materiali già pubblicati.

— Il Comitato Scientifico dei *Quaderni di Ricerca* è costituito da due membri del Consiglio della Fondazione "Centro di Ricerche e Documentazione Piero Sraffa", nonché da studiosi esterni nominati dal Consiglio.

— I *Quaderni di Ricerca* sono depositati come opere a stampa secondo gli obblighi previsti dall'Art. 1 del D.L.L. 31.8.45 n. 660. I *Quaderni* vengono inviati a studiosi, a istituzioni universitarie e a centri di ricerca interessati.

Copyright © MMIV
Aracne editrice S.r.l.

Customer care
06 93781065
info@aracne-editrice.it
www.aracne-editrice.it
redazione via R. Garofalo, 133 a-b
00173 Roma
amministrazione via Gramsci, 264, pal. 6
00040 Lanuvio (RM)

ISSN 1722-5604
ISBN 88-7999-741-6

I edizione: settembre 2004

Finito di stampare nel mese di settembre del 2004
dalla tipografia « Grafica Editrice Romana S.r.l. » di Roma
per conto della « Aracne editrice S.r.l. » di Roma

CENTRO DI RICERCHE E DOCUMENTAZIONE
"PIERO SRAFFA"

UNIVERSITÀ DEGLI STUDI ROMA TRE

DISINFLATION IN
INDUSTRIALIZED COUNTRIES,
FOREIGN DEBT CYCLES
AND THE COSTS OF STABILITY

Andrea Ginzburg and Annamaria Simonazzi

Quaderno di Ricerca n. 4
2004



Abstract of the paper

The paper starts out from an empirical observation: in two “central” countries — respectively the UK in the 19th century and the U.S.A. in the 20th century — long phases of disinflation — prompted by a tightening in their monetary policy in a context far from full employment — were accompanied by a relative overall stability in the output of the “core” and by an increasing frequency and intensity of financial crises in the “periphery”. The aim of the paper is twofold: to offer a framework for the analysis of disinflation in the industrialised countries during the two disinflation phases mentioned above, and to draw attention to important redistributive effects of disinflation. We argue in fact that the observed relative output stability of “central” countries is but the other side of the increased instability of “peripheral” countries. We suggest that Sraffa’s framework — extended to take into account relationships that stay outside the “core” of the theory — can provide the basis for an analysis of a relationship between rate of interest and prices which is based not on Wicksellian lines but on the influences of the interest rate on production costs in an open economy. Changes in the rate of interest in the “central” countries affect their normal costs of production in a variety of ways, but in particular through their effects on the prices of imported raw materials and industrial inputs. The terms of trade improvement in the “core” in turn opens the way to a series of debt deflation-induced real and financial crisis in the “periphery”. By underlining the link between macroeconomic policies in “central” countries, falling commodity prices and debt cycles, our analysis emphasises the serious drawbacks which may derive in the long-run even to central countries from apparently successful anti-inflationary policies.

DISINFLATION IN INDUSTRIALIZED COUNTRIES, FOREIGN DEBT CYCLES AND THE COSTS OF STABILITY

Andrea Ginzburg
Annamaria Simonazzi*

1. Introduction

The economic crisis of the 1930s, featuring a parallel fall in prices and output, prompted the search for a theoretical framework capable of addressing such phenomena as “deflation induced by lack of effective demand” and “debt deflation” (cf. the interpretations of authors as diverse as Keynes, Kalecki, Fisher). Since then, the evolution of events and, above all, of the interpretations elaborated upon them, convinced many authors that such concepts could be disregarded as referring solely to a special case. If we confine our attention to the industrialised countries we do in fact find long periods of disinflation accompanied by stagnation or slowdown in production, and fall in employment where growth in production fell behind productivity. However, since stagnation did not in general affect all sectors and countries, it has often been held inappropriate¹ to apply such blanket terms (“stagnation”, “slowdown”, “depression”) to trends in output differing and even diverging across sectors and countries. One may speak on the contrary of a relative overall stability in output. This applies equally to the phase of the so-called “Great Depression” of 1873–1896 and the “Great Disinflation” of the 1980–2000. However, taking a different space — as well as time — scale this “overall stability” may prove far less evident. Particularly, we may wonder whether this relative stability of quantities in the presence of disinflation is sufficient reason not only to make the ‘debt deflation’ category obsolete but also to rely on the self-regulating capacity of the economic system.

Two lines of research have studied the relationship between price flexibility² and output. The first research tradition includes Wicksell, Pigou and Modigliani, who, in order, argue that price flexibility is a stabilising element insofar as: a) exerting pressure to reduce the monetary interest rate to the level of the diminished natural rate, it restores the balance between savings and

* University of Modena e Reggio Emilia and University of Roma “La Sapienza”. We thank Antonella Palumbo for helpful comments. Financial support by MURST is gratefully acknowledged.

¹ Cf. for instance, for the 1873–96 phase, S.B. Saul (1969).

² We use the expression “price flexibility” and reduction in the rate of inflation as being synonymous: with some degree of rigidity in distribution, variations in price levels translate into variations in their rates of inflation.

investments (Wicksell 1965 [1898a]); b) by raising the real value of wealth it increases the demand for consumption (real balance effect, Pigou 1943); c) by leading to a decline in the demand for money, it brings about a fall in the interest rate and a rise in investment (Modigliani, 1951 [1944]).³ The second research tradition came to far more problematic conclusions. It began with Keynes (1936), in chapter XIX of the *General Theory*, and was taken up by many authors⁴ who revived Keynes' thesis that no general, monotonically negative relationship can be determined over the short period between prices (and wages) and output, because of contrasting effects on aggregate demand: falling prices can lead, through the channels of debt deflation and of expectations, to negative effects on production. Price flexibility drives up the effective real interest rate paid by the debtor who has stipulated a contract in nominal terms (Minsky, 1975; Caskey and Fazzari, 1987 and 1992). If the debtor's propensity to spend is greater than the creditor's, the redistribution of income between debtors and creditors brought about by price flexibility leads to a drop in aggregate demand and income. Moreover, falling prices lead to a rise in the expected real interest rate, which in turn has a negative influence on investment (De Long and Summers, 1986; Caskey and Fazzari, 1992).

Both lines of research have shortcomings. The first assumes a full employment, long-run interest rate deriving from the intersection of monotonic investment and saving functions. Monetary policy is compelled to follow over the short period a course set by the movements of the underlying (and unobservable) natural rate. Disinflation is assumed to have no effect on the distribution of income, nor therefore on the spending decisions that depend upon it. The second research tradition has the merit of stressing the redistributive effects of disinflation and pointing up how, even with a parallel decline in interest rates and prices, the fall of the latter may exceed that of the former — thus triggering off the cumulative, destabilising mechanisms of debt deflation.⁵ It has, however, the drawback of concentrating on the short period. Since these authors

³ In the case of flexible wages, a fall in prices will lead to reductions in the nominal income, in the demand for money and in the nominal interest rate, which will eventually bring the system back into equilibrium. In the case of rigid wages there will be "a basic maladjustment between the quantity of money and the wage rate. It is the fact that money wages are too high relative to the quantity of money that explains why it is unprofitable to expand employment to the 'full employment' level" (Modigliani, 1951 [1944]: 224–225). Thus there is room for an expansionary monetary policy restoring the money/wage ratio compatible with equilibrium. Departing from Keynes (1973 [1936], chapter 19), Modigliani not only saw price flexibility as stabilising, but took as much the same thing a reduction in the interest rate obtained through the reduction of prices, given the quantity of money, or through the increase in the quantity of money, given the level of prices (and money wages).

⁴ Among these, Tobin (1975) developed Fisher's analysis of the debt deflation (Fisher 1933) within the neo-classical synthesis framework.

⁵ Cf. on this also Keynes (1972 [1931]).

accept the idea of an investment function elastic to the rate of interest, the notion of a full employment interest rate entirely regains validity over the long run, and with it the neutrality of money is definitely restored. Thus the remarks previously made on the passive role attributed to the Central Bank (and in particular to the Central Bank of the country “conducting the orchestra”) in the determination of interest rates also apply here.

In both cases, scant room is given to analysis of the influence exerted by the internationalisation of economic systems on the relationships studied.⁶ This is all the more curious if we consider that it was precisely upon reflection on the “Great Depression” of the last two decades of the 19th century (a period that saw vigorous expansion in international exchanges) that Wicksell set out to advance his own original interpretation of the relation between prices and interest rate. Anyone seeking to explain the positive correlation found between these two variables on the basis of the theory then accredited — namely the Quantitative Theory of money — would, as Wicksell⁷ pointed out, find himself up against “contradictions”. In fact, the expectations of the theory “that rising prices are due to an excess of money, falling prices to a scarcity” did not accord with observed movements: “when prices are falling there is a continual *fall* in rates of interest” (p. 167, italics in the original text). It was precisely to settle these “contradictions”, and at the same time to reject the interpretation previously proposed by Tooke founded on the determination of prices on the basis of production cost, that Wicksell had come up with the ingenious idea of the short-run divergence between the money rate of interest and a non-observable magnitude (of which “nothing is really known at all”,⁸ or “practically an unknown”),⁹ namely the natural rate of interest. Wicksell’s theory is essentially based on the hypothesis of a closed economy. The only commodities traded at the international level are finished goods, so that any transmission through trade from costs to prices is ruled out *a priori*. In chapters 10 and 11 (entitled respectively “International Price Relationships” and “Actual Price Movements in the Light of the Preceding Theory”) the import of goods favoured by the relative inflation resulting from divergence between natural and monetary interest rates serves solely to increase the supply of capital and thus make it possible (this time through reduction of the natural rate) to achieve both at home and at the international level that equality between natural and monetary interest rates that would come about in the case of the “closed economy” (1965 [1898]: 163).

⁶ Although the “closed economy” hypothesis prevails in the *General Theory*, chapter XIX contains a brief reference to two effects of reduction in money wages, considered respectively favourable (competitiveness effect) and unfavourable (terms of trade effect on the propensity to consume) to an increase in aggregate demand. Cf. Keynes (1973 [1936]: 262–263).

⁷ Cf. Wicksell, (1965 [1898a]: 166–168).

⁸ Wicksell (1965 [1898a]: 168).

⁹ Wicksell (1958 [1898b]: 85).

The need to get rid of the notion of a “full employment interest rate” as we find in Sraffa’s framework, where the interest rate is determined outside “the system of production”,¹⁰ seems to us to be particularly relevant to the two aims we set ourselves with this paper. The first is an attempt to offer a framework for the analysis of disinflation in the industrialised countries during the two phases defined above. The second is to assess who actually ‘pays’ for these countries’ relative stability.

We started with an empirical observation: long phases of disinflation in the “central” countries (respectively the UK in the 1873–1896 period and the USA in 1980–2000), prompted by a tightening in their monetary policy in a context far from full employment, were in both cases accompanied by an increasing frequency and intensity of financial crises in the ‘peripheral’ countries. Since these crises took on the characteristics of ‘debt deflation’, we investigate what circumstances lay behind the emergence in those countries of *real* interest rates (deflated by their export prices) so severe as to set in motion vicious circles bound, sooner or later, to find issue in financial crisis. Different as the historical conditions were in the two phases, certain analogies¹¹ must be pointed out: 1) a marked swing in the monetary policy of the central countries, expansive at first, then sharply restrictive; 2) marked fluctuations in the prices of raw materials, strictly correlated with the trend in developed countries’ production; 3) a context of rapid technological progress, encompassing transport and communications, that, by widening the world market, enhanced the competitiveness of the developing countries’ products on the markets of the industrialised countries. As we shall see, these circumstances fostered the onset of debt deflations in the “periphery”, by virtue of a flexibility of their export prices (mainly raw materials), which is *endogenous* to the monetary policy of the ‘central countries’. In both phases we observe the combination of high interest rates and low prices of raw materials. However, while the first phase saw interaction between technological progress and socio-economic policies marking transition — at various rates and with varying characteristics — of the European countries from agri-

¹⁰ The idea that “the rate of profits ... is susceptible of being determined from outside the system of production, in particular by the level of the money rates of interest” (cf. Sraffa, 1960: 33) is from the point of view of long-period analysis in general incompatible with the existence of a definite relation between interest rate and demand, and demand for investment in particular. It is, therefore, also incompatible with the concept of a «full employment interest rate». In the neoclassical theory with flexible wages and prices, the hypothesis of an investment function leads to the conclusion that, in the long-run, the rate of interest is influenced by real factors alone. In fact, «admitting an elastic investment demand schedule leads to maintaining, on the one hand, the existence of a full-employment level of the rate of interest and, on the other, the presence of inflation, or deflation and unemployment, when the actual rate of interest rate is not the full employment one; the idea that the market rate of interest tends to gravitate towards its full employment level then acquires plausibility» (cf. Garegnani, 1979: 79).

¹¹ Here for the sake of simplicity we disregard the differences in exchange rate regimes, mainly fixed exchange rates in the central countries at the time of the Great Depression, flexible, albeit through manipulation, in the last two decades of the 20th century.

culture to industry, the second phase witnessed transition from industry to the services. We find in the latter phase a different type of price flexibility, associated with a new internationalisation of productive processes. It now concerns manufactured goods, and not only raw materials and, secondly, it is *exogenous* to monetary policy (or, rather, only indirectly related to it). It is associated with the attribution to intermediate goods produced in the 'periphery' of those characteristics of marked price flexibility previously associated solely with commodities. Thus we may speak of forms of *commoditization* of intermediate industrial goods. For a given nominal interest rate, in certain conditions this flexibility can also generate financial crises.

In both phases debt deflations in the periphery influence via the prices of imported goods the normal cost of production and thus, for a given interest rate and money wage, the price level in the 'central' countries. In order to analyse these effects we must return to the theory of prices based on production cost advanced by Tooke (in its modern reformulation), and which Wicksell sought to confute. In particular, analysis of what we term 'endogenous flexibility' calls for the study of a relationship between rate of interest and prices based not on Wicksellian lines, but on the influences of the rate of interest on production costs. To this end, too, Sraffa's framework — extended to take account of the open economy hypothesis — can provide the basis for analysis of the redistributive effects of disinflation.

2. The Interest Rate as a Determinant of the Costs of Production

As we have seen, one aspect of the 1873–96 disinflation that attracted the attention of Wicksell and a number of other scholars — given also that it clashed with the expectations of the most widely accredited theory — was the positive correlation found between the long-run interest rate and the level of prices, a correlation noted by Thomas Tooke as early as 1844.¹² Denying the validity of the inverse relation between interest rate and demand for commodities upon which the prevalent opinion was founded, Tooke states that a sufficiently persistent reduction in the rate of interest will, on the contrary, lead to a reduction in production costs which, by virtue of the competition between producers, will in turn emerge as a reduction in the prices of commodities. In short, Tooke argues that if we are to understand the evolution of the level of prices we must look to the circumstances affecting the cost of production, *among which*¹³ feature the level of interest rates, the conditions governing the supply of commodities and the degree of competition between firms.

¹² Cf. Tooke (1959[1844]: 79). Cf. on this also Pivetti (1991: 77 *et seq.*). See also Pivetti (1987).

¹³ In his writings of the 1823–1838 period Tooke gathers considerable evidence in support of the thesis that the fall in prices in the years following on 1819 did not derive from variations in

Subsequent to Wicksell's, Tooke's interpretation of the relationship between interest rates and prices was forgotten. Rehabilitating Tooke's position, Pivetti (1991: 47) advances an explanation of this relationship (dubbed, after Keynes,¹⁴ the "Gibson Paradox") within the framework of the theory of distribution formulated by Sraffa along the lines of the classical political economy. Having determined production prices and the uniform rate of profit given the methods of production and the real wage, Sraffa suggests reversing the wage–rate of profit relation, taking the latter as «given». The rate of profit «as a ratio, has a significance which is independent of any prices, and can well be 'given' before the prices are fixed. It is accordingly susceptible of being determined from outside the system of production, in particular by the level of the money rates of interest» (Sraffa, 1960: 33). Taking up this suggestion, Pivetti argued that in this theoretical framework «there is nothing 'paradoxical' in a positive correlation between interest rates and prices... given money wages and production techniques, a rising (lowering) of prices as a result of a lasting rising (lowering) of interest rates would merely reflect the adaptation of prices to normal costs, caused by competition» (op. cit., p. 47). To Sraffa's scheme Pivetti adds the hypothesis that the money wages are given. When the rate of interest rises, the effect of the inverse relationship between the rate of profit and real wages (which Sraffa shows to be valid when wages are measured in terms of any commodity) means that the price of each commodity, and thus the *level* of prices, will increase for each given level of money wages. Price variations moving in the same direction as the money rate of interest are the tool by means of which the rate of profit will, in the long–run, adjust to the money interest rate and not vice–versa, as Wicksell has it.

Following the cost of production theory of prices, we may write the following price equation:

$$p = (1 + r)Ap + (1 + r)A_m e p^* + w l$$

where p , p^* and l are, respectively, vectors of domestic and foreign prices and labour coefficients; e is the diagonal matrix of effective exchange rates (weighted by the geographical origin of imported commodities); A is the matrix of technical coefficients of domestic inputs (here we disregard the use of fixed capital goods), A_m is the matrix of technical coefficients of imports and w the money wage; $(1 + r)$ is the diagonal matrix of the rates of profit. According to Pivetti (1991: p. 71), they can differ across industries since they derive from the sum of two parameters, the rate of interest i and n_k , which represents the firm's reward

the quantity of money or alterations in the system of the currency, but from variations in the costs of production or the circumstances affecting supply (seasonal factors, the presence or absence of barriers to foreign sourcing, significant improvements in production processes or in production of cheaper substitutes, and, last but not least, significant changes in the cost of imported commodities). Cf. Pivetti (1991: 76).

¹⁴ Keynes (1971 [1930]: 177–178).

for the «risk and trouble» in industry k , expressed as a percentage of the capital invested, hence the generic $r_k = i + n_k^{15}$.

The above formulation implies that the price level depends *directly* on the elements of cost, among which the interest rate. Nevertheless, we should not rule out the possibility that individual cost components may not be independent, thereby also opening the way to less general and automatic influences of the interest rate on production costs, and so on prices. This lack of regularity prompts placing these relationships outside what has been defined the 'core'¹⁶ of the theory. We suggest that there might, *for the industrialised countries*, be an *indirect* way running from the rate of interest to production costs through the relationship between interest rate and the prices of raw materials. The model is based on the following assumptions: 1) the trend in imported raw materials is not an exogenous element for the industrialised countries as a whole, but is influenced by the relative growth of the «central» industrialised countries; 2) the monetary authorities of the «central» country use as a tool for direct intervention the short-term interest rate,¹⁷ orienting prevalent opinions on the market in such a way as to influence the long run behaviour of long-term money interest; 3) substantial variations in the core country's interest rate lead to an inversion in the trends of terms of trade (due to the higher flexibility of import prices with respect to export prices); 4) reduced import prices feed back into domestic prices; 5) now, with falling prices, it will be the interest rate to follow prices. As monetary policy becomes more buoyant, short and long run interest rates will fall with prices, though possibly not in the same proportion,¹⁸ so that we can expect a rise in the real interest rates.

We can distinguish three phases, each including a number of economic cycles.

1. In the upward phase, faced with a gradual rise in the level of prices driven up from the costs side, the monetary authorities do not put economic growth in jeopardy: the nominal interest rates gradually mount, but not to the extent of having truly restrictive effects. It is only when imported inflation, possibly on

¹⁵ For the economy as a whole, the domestic inputs disappear from the price equation, which can then be set out according to the customary mark up or full cost formula. In this case:

$$P = \mu_1 \frac{w}{\pi} + \mu_2 \frac{i \cdot P_K \cdot K}{Q} + \mu_3 \frac{e \cdot P^* \cdot M}{Q}$$

where P , P_K and P^* are, respectively, the prices of the product (Q), the capital goods (K) and imported goods (M), e is the effective exchange rate, w and p are the money wages and labour productivity. The μ_i are the mark ups over each component of cost.

¹⁶ Cf. Garegnani (1987).

¹⁷ Cf. Kaldor (1958: 17–32). See also Pivetti (1991: 47–48) who refers to Sayers (1964: 201 *et seq.*) for the relation between short and long-term interest rates.

¹⁸ The extent of the short term interest rate fall will depend on the specific reaction function of the Central Bank.

top of internal pressures, reaches such heights as to bring about a worsening of the terms of trade and/or balance of payments of the «central» country that the Central Bank will intervene *drastically* (at the peak of the ascending phase) by raising rates.¹⁹ The inversion in monetary policy will, sooner or later, be followed by all the other industrial countries, to avoid capital flights or exchange rate instability.

2. Through demand, cost and exchange rates effects this will lead to an equally drastic drop in the prices of imported raw materials, thus exerting downward pressure on the level of prices. The descending phase then sets in: with (more) stable internal prices and flexible prices for imported raw materials, the terms of trade begin to improve.²⁰ With inflation curbed and the main reasons for the «squeeze» thus allayed, the interest rate can be *partially* left to fall. As Keynes pointed out in the *Treatise*, reduction is gradual and limited in the descending phase since monetary policy proves to be guided more by financial reasons (control of reserves, stability for the financial system, etc.) than by commitment to checking inflation. Authors limiting the focus of their attention to the co-movement of interest rates and prices have neglected the fact that nominal rates do not fall as much as prices, thus disregarding the associated effects on income distribution.

3. The fall in the price of raw materials forces down the prices of the «central» countries' commodities as, in the periphery, a crisis of insolvency (and refinancing) sets in.

With regard to the relations between what we term the «direct» and «indirect way», we can say that the latter tends to reinforce the positive correlation

¹⁹ One might question whether the drastic increase would not also mean mounting costs, and hence prices, thus barring the way to the following phase. Tooke himself had already offered an answer to this objection. He argued that to be transferred to prices there would only be changes «of such duration and permanence as to enter into the cost of production» — characteristics that cannot be attributed to hikes in rates introduced to stem a drain in reserves. Actually, «the greater the rise in the rate of interest from a forcible operation of the Bank on its securities, the less must be the probability of its duration.» (cf. Tooke, 1959 [1844]: 123–24 and, for discussion, Pivetti, 1991: 81). In transition from one phase to the next a temporary increase in short-term rates is followed by a *reduction* in short and eventually in long-term rates. To quote Hicks: «Only if there were a *temporary* shift to a policy of drastic restriction, which stopped the inflation in its tracks, would it be possible for money to become really cheap later on. If such a dénouement were really to be expected, it would be rational for the long-term rate to come down.» (Cf. Hicks, 1967 [1958]: 99, italics added).

²⁰ In the mid-1950s the relation between recession in the «core» country, falling prices of raw materials and improving terms of trade in the industrialised countries was considered so evident that Beckerman wrote an article to explain the «apparent paradox» of the prices of raw materials holding in the face of an American recession. Among the circumstances responsible for this course of affairs he mentioned «the revival in European activity partly due to the post Korean fall in primary product prices.» Cf. Beckerman (1954: 262). For an early formulation of the thesis that growth in commodity prices followed economic growth in industrialised countries, see Phelps Brown and Ozga (1955).

between interest rate and level of prices. In the ascending phase two sources of cost increases — interest rates and commodity prices — tend to cumulate. As this phase reaches its peak, drastic intervention by the monetary authorities tends to check inflation and restore firms' profitability. In the subsequent disinflationary phase a lower real interest rate (augmented by the firms' risk premium) sets the limit below which the rate of profit cannot fall. Under competitive conditions the falling prices of raw materials would increase the reduction in prices (relative to wages) necessary to align the "pure" rate of profit with a reduced interest rate. Under different market conditions (or when firms try to restore the rate of profit previously obtained), falling commodity prices with fixed or rising final prices are accompanied by increases in the mark-up (higher price-wage ratios) and/or by redistribution of the surplus to privileged categories, with an increase in wage differentials and income inequality.

3. The Great Depression and the 1873–1896 Foreign Debt Cycle

Monetary and real factors have been advanced to explain the decline in prices which occurred between 1873 and 1896, the period that came to be known as the «Great Depression» (cf. Saul, 1969). Notable among the former factors was transition to the gold standard in many countries after 1871, leading to frenzied accumulation of reserves in order to maintain fixed exchange rates and allow for international flows of gold. Attempts to seek a purely monetary interpretation will, of course, find the 'Gibson Paradox' in their way.²¹ Explanations based on 'real' factors generally refer to reductions in costs brought about by a continuous flow of important technological innovations,²² including the revolution of transport on rails and by sea, which had its major influence on costs of long distance transport for low-value-added goods.²³ The effects of transatlantic competition were added to those of overproduction of agricultural produce and intensified exploitation of mining in the 'New World', which were associated with the 'second industrial revolution'. This, too, is an explanation that leaves many questions open.²⁴

Keynes' and Triffin's analyses on the functioning of the gold standard suggest a different explanation that links the core country's interest rate policy and

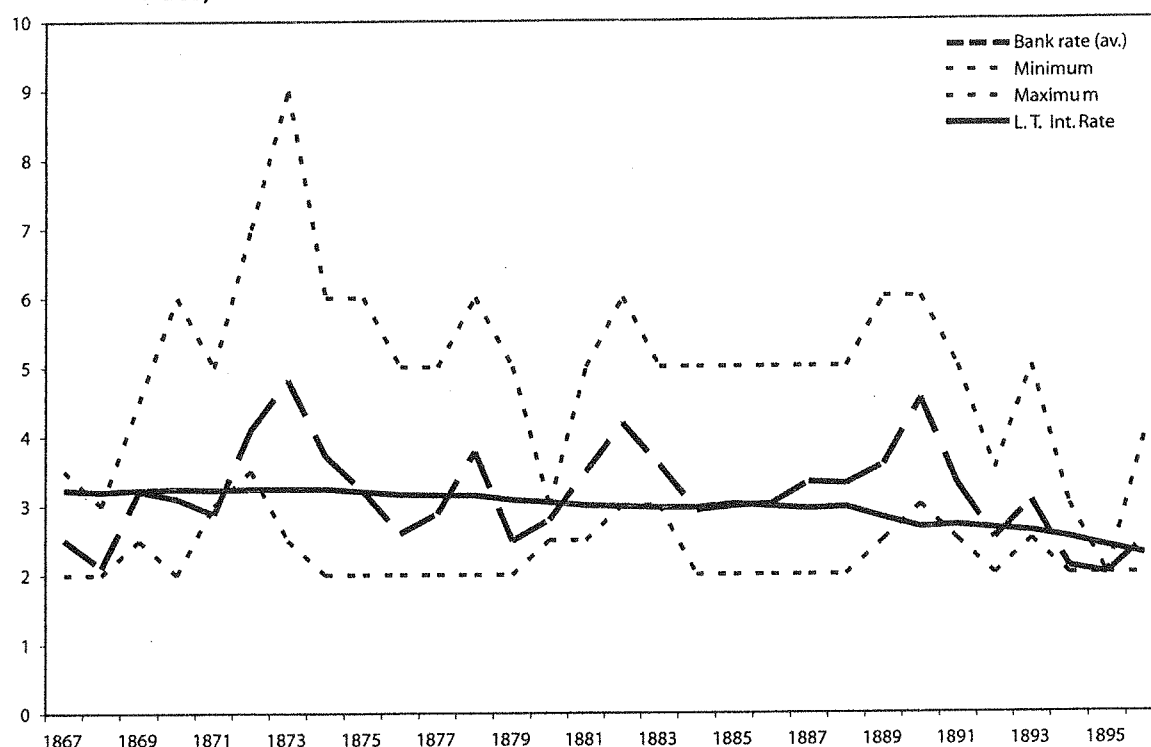
²¹ Referring to the positive correlation between prices and interest rates, Coppock (1961: 209) wrote: «the behaviour of interest rates is the crucial argument against the monetary theory of the price decline.» Keynes himself asserted in the *Treatise* (1971 [1930], vol. VI: 146–152) that monetary factors offer an explanation of price movements up to the late 1880s, although he added that the discovery of gold in Australia and South Africa suggested seeking an explanation elsewhere, at least after 1890.

²² As well as Schumpeter (1939), D.S. Landes (1966) also insisted on this point.

²³ According to Coppock (1961: 211), however, the fall in transport costs would at the most account for a sixth of the overall reduction of import prices in the period.

²⁴ Cf. Saul (1969: 13–14 and 21).

Figure 1. UK Bank Rate (average, minimum and maximum) and Long Term Interest Rate, 1867–1897



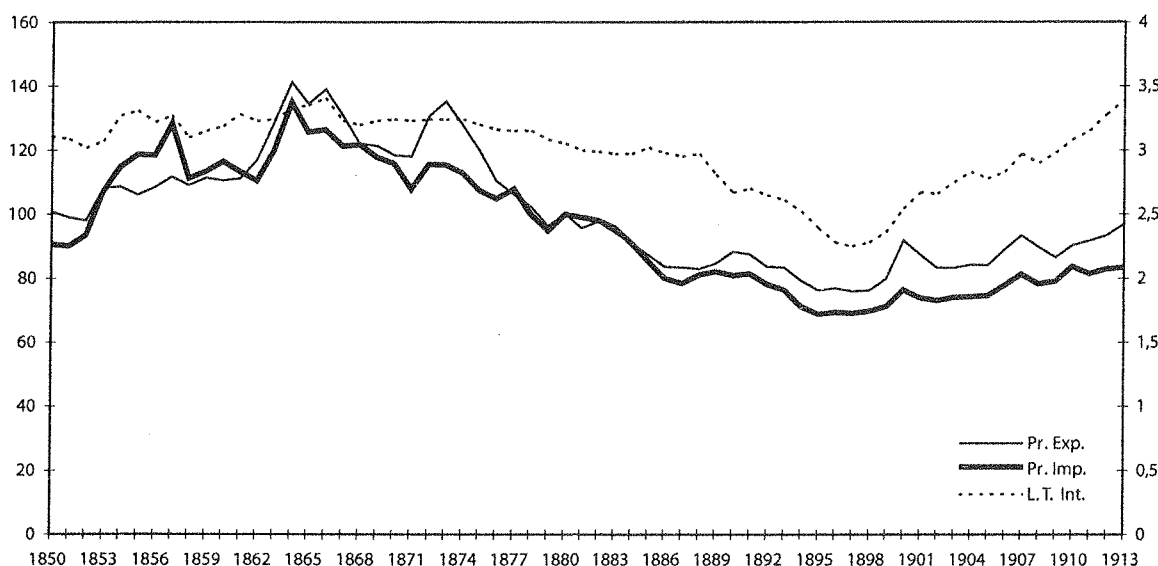
Source: Homer S. and Sylla R. (1992)

the change in the terms of trade with the cumulative process leading to the debt crisis in the periphery.²⁵ Triffin stresses that «to a very large extent, increases in the London discount rate brought about a readjustment in the British balances of payments, not through their effects on the British economy, but through their effects on the outside world, and especially on the agricultural and raw material countries.» Triffin saw the discount rate manoeuvre as acting along a dual channel (see figure 1, which can also be read as an illustration of the data upon which Wickseil built his own interpretation). Along with (figure 1) the fall in commodity import prices deriving from the direct and indirect effects of a decline in British demand, Triffin points out that thanks to the role played by London in financing the commodity trade an increase in the discount rate influenced financing conditions for stocks, encouraging dealers to sell them off. The demand effect is reinforced by the action of the “Triffin effect” as the increase in interest rates leads to liquidation of stock, thus increasing supply in the face of declining demand.²⁶ As export proceeds decline (due to the simulta-

²⁵ As already argued by Keynes in the *Treatise* (1971 [1930], vol. VI: 151), the fall in prices can only be accounted for with the cumulative effects caused by the international scale of the crisis, with a consequent depression in international wholesale prices. Furthermore, he adds, «in the later stages the drain of gold to London caused by the cessation of foreign investment probably induced an income deflation abroad, as well as a profit deflation, which operated as a further depressing influence on international prices.»

²⁶ Cf. Triffin (1947: 62–63); and Kenen (1960: 59–62). Kenen points out that Triffin first

Figure. 2. UK. Long term interest rate, export and import prices



Source: Homer S. and Sylla R. (1992). Prices: B.R. Mitchell, P. Deane (1992)

neous fall in volume and prices), payments for the service of the debt increase as a consequence of the rise in interest rates and (in the case of depreciation) of the real value of the foreign debt. Increases in domestic interest rates (and contractionary fiscal policies) required to adjust the rapidly deteriorating external accounts feed back into a swelling (domestic and foreign) debt.

The fall in the prices of commodities was accentuated by a 'defensive' spread of interest rates increases, and by the asymmetric positions of capital exporting and importing countries. By curbing the outflow of investments abroad, the increase in the discount rate was particularly effective in evening up the balance of payments for the former. However, the consequences were disastrous for the latter countries, the rise in the «central» countries' discount rate drying up the flow of capital towards the periphery at the very time when a slump in the commodity market made it indispensable to sustain demand. In conclusion, the alleged stability of prices and exchange rates²⁷ in the gold standard was limit-

analyses the effect of a rise in British interest rates on the economic activity of other countries: the result is a reduction not only in import prices but also in demand for British exports. It is only subsequently that he brings up what was to be called the «Triffin effect», i.e. the influence of financing cost on inventories, and thus on the prices of primary commodities. «The decline of these inventories,» Kenen remarked, «need not have depressed production abroad and the demand for Britain's exports. It would have its sole sure impact on commodity prices.» It is hardly surprising that this anti-Keynesian reading of the «Triffin effect» (prices effect, demand and income being equal) gained among the orthodox economists «much popularity since the 1951 rehabilitation of British monetary policy» as a way to balance of payments adjustment (cf. Kenen, op. cit.: note 72 and p. 61).

²⁷ According to De Cecco (1979: 24–25), by contrasting the *stability* of the centre with the instability of the periphery Triffin ultimately reasserted — in an indirect, problematic way — the mythical image of a harmoniously functioning mechanism since his analysis fails to give due weight to the dark clouds of crisis that were gathering before the final debacle of 1914.

ed to the countries constituting the core of the system, and was in part obtained at the cost of sharp, simultaneous fluctuations in the periphery's exports, terms of trade and capital flows (figure 2).

What has been defined as the «Triffin effect», is however just one kind of a more general species. Analysing the disinflation of the '30s Keynes (1972 [1931]: 156) had argued that «a decline of money values so severe as that we are now experiencing threatens the solidity of the whole financial structure». In fact (ibidem: 151), «a multitude of real assets in the world which constitute our capital wealth — buildings, stocks of commodities, goods in course of manufacture and of transport, and so forth» are supplied to the banking system as guarantees in exchange for the financing to purchase them. The fall in prices concerns, to varying degrees, the «prices of various type of property» (ibidem: 154–55): in the first place, the prices of raw materials, «very largely financed through the banks», then shares, securities and, finally, «real estate» (whose prices show rather less uniform trends in the different countries) and «loans and advances» based on business profits. The fall in prices of the «real assets» undermines the value of the collateral, driving the banks to bring in further restrictions on loans, which in turn contribute to feeding deflation. «If today a really conservative valuation were made of all doubtful assets, quite a significant proportion of the banks of the world²⁸ would be found to be insolvent». For a given rise in interest rates, the greater the fall in prices and the size of indebtedness, the greater the threat to financial stability. Hence during phases of what we might term «macro-deflation» — that is, a long phase of disinflation following upon a monetary policy that is sufficiently restrictive to have systemic effects — debt crises pile up, particularly in those countries where conditions favouring crisis tend to abound, i.e. the countries of the periphery specialised in primary commodities, with possible indirect repercussions on the central countries.²⁹

With respect to the three phases mentioned in the previous section, the first covers the years from 1850 to 1873. Several factors contributed to the surge of

²⁸ Keynes (1972 [1931]: 157) adds «fortunately our own domestic British banks are probably at present — for various reasons — among the strongest. But there is a degree of deflation which no bank can stand».

²⁹ For analysis of the cumulative interactions of real and financial components that set in during crises see also the interpretation Kalecki offered of the financial crisis which initially, in 1930, hit only the raw material producer countries of South America and Australia, beginning with a fall in export prices, a fall in the value of inventories, a rise in the degree of debt, difficulties in repaying or renewing loans, etc. He writes: «These storms on the fringes of the capitalist world met with relatively weak response from the centre: the losses borne by primary commodity producer countries were offset by the advantages accruing from the low prices of their products in comparison with the still only slightly lowered prices of manufactured products. It was only later, in the wake of the fall in prices of raw materials, that a fall in the prices of finished goods came about and the financial crisis involved Europe and the United States.» Cf. H. Braun [M. Kalecki] (1993 [1931]: 76).

foreign loans experienced in this period. Among these, the formation of export economies (Latin America) that boosted income and imports and, by offering a sort of collateral and prospects of substantial gains, stimulated the supply of loans. The drive for financial penetration and political factors³⁰ were also important. The American Civil War also brought about deep-reaching and to some extent irreversible changes in international specialisation and the flows of international loans. The blockade of cotton exports from the United States (which had satisfied five sixths of Europe's needs in 1860, and 80% of the UK's)³¹ forced the British textile industry to seek emergency supplies in India and Egypt. With speculation also driving it up, the price of cotton quadrupled from 1861 to 1862. There was a proliferation of investments financed by British loans which were later — many years after the 'cotton famine' — to prove over-investments, wreaking havoc on the financing banks.³² Between 1854 and 1865 Egypt shot up from fifteenth to third place among exporters to the United Kingdom (after France and India), thanks also to the quality of its fibre, which was finer and longer than the Indian product.

The 1873 international crisis put an end to what had been defined as the «Victorian boom» — a boom powered by railways, wars, raw materials and speculation. While the end of the boom and the fall in prices struck contemporaries as «inevitable and was anticipated»,³³ a fall in prices lasting twenty years had no precedent for the generation that found itself going through the experience.³⁴ An important role in triggering off the sequence of events that gave rise to the long-lived crisis was played by the payment of the equivalent of about two hundred million pounds by France to Germany as war indemnity.³⁵ Since the transfer of funds was conducted through the London money market, where a large proportion of the funds had been raised, every outflow of gold connected with the payment of indemnities drove the Bank of England to raise the bank rate yet higher. In 1873, due in part to the financial crisis that hit, first, Austria (with Turkish, Egyptian and Russian securities plummeting) and then the United States, pushing foreign interest rates up, the bank rate was raised no fewer than twenty-four times, to reach 9% by December. «At this moment,» wrote Morgan (1965: 185), «the German government, whether from charity or desire for profit, suspended its gold withdrawals, and gold came in from abroad.»

³⁰ The Ottoman Empire, considered «as a sort of outpost of Europe» in the face of Russia is the most obvious example. Cf. Blaisdell (1929: 40–41).

³¹ Cf. Landes (1990 [1969]: 74 and note).

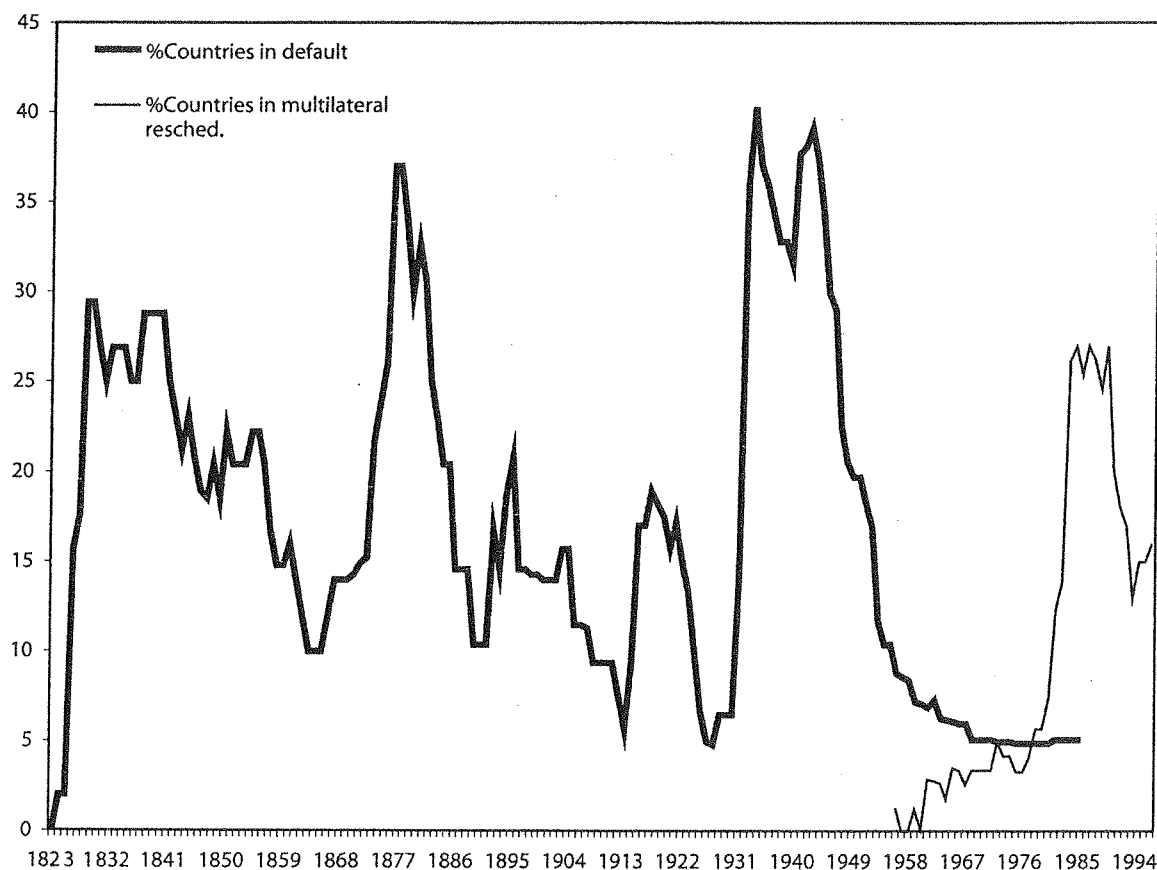
³² Giffen accounts thus for the bankruptcy of the City of Glasgow Bank in October 1878. Cf. Clapham (1967 [1927]: vol. 2, p. 383).

³³ Clapham (1967 [1927]: vol. 2, p. 383).

³⁴ For an account of the French economists' perception of the «Great Depression», see Breton (1993).

³⁵ The analogy with the results of the Treaty of Versailles was pointed out by Newbold (1932: 427) in a periodical edited by Keynes.

Figure 3. Countries in default and involved in multilateral reschedulings (% on total reporting countries)



Source: Suter (1992) for 1823-1989; World Bank (1996) for 1990-1996. The data refer only to official loans

The debt crises gathered in two waves (see figure 3 for an overview of the share of countries in default on official loans). The first, and more serious, had effect in the years from 1873 to 1882 and involved the Ottoman Empire, Egypt, Spain and, to a lesser extent, the ten cotton states in the south of the United States, Peru and Colombia. The second, coming after the Baring crisis (1890), affected Argentina, Portugal, Greece and Uruguay. In the countries of Latin America and the Near East, the Great Depression emerged with all the features of the «debt crisis, because the overriding cause of the economic turmoil there stemmed from an excessive accumulation of foreign debts by governments».³⁶ All three aspects normally characterising debt crises were there, although combining in different ways in the different countries: diminishing export receipts due to falling demand and prices, with consequent limitations to import capacity (also due to the stability or increase in import prices); inefficient, unproductive use of the loans obtained; tougher conditions and/or a halt in financial inflows. While most commentators tend to point at the second aspect alone as the culprit when financial crises have broken out, we shall here stress the point

³⁶ Cf. Marichal (1989: 102).

that — without disregarding the others — it is above all the first that accounts for both financial insolvency and the downward trend in the central countries' prices. Exports from Latin America to the UK dropped by 37% from 1872 to 1878, while prices plummeted.³⁷ With the prices of commodities (sugar, coffee, wool, copper, steel) plummeting, bankruptcy hit firms and banks while public revenues ebbed drastically. Despite the gravity of the crisis, Argentina, Chile and Brazil escaped insolvency «because of a relatively high level of exports earnings» (Marichal, 1989: 105), but neither the Ottoman Empire nor Egypt (where the UK acted as a sort of financial controller, in the former case officially through the Ottoman Public Debt Administration) nor Peru (whose declaration of insolvency came with a slump in commodity prices — guano in the first place, but also sugar and nitrates)³⁸ was spared.

On top of the falling prices of primary products came the effects of devaluation in countries on the silver standard.³⁹ During the long period of deflation, improved terms of trade together with the inflow of net earnings from abroad thus sustained the 'central' countries' income and consumption during a phase marked by a slackening in the growth rate of industrial production, increasing unemployment⁴⁰ and rising real wages, as money wages held in the face of falling prices.⁴¹

³⁷ Cf. Marichal (1989: 105). In the case of the Ottoman Empire, the prices of exports to the industrialised countries fell by 41% from 1873 to 1896 while the debt/exports ratio rose from the 10% of the early 1860s to 50% by the mid-1870s. Cf. Pamuk (1987: 62 and 59).

³⁸ Cf. Marichal (1989: 108) and Suter (1990: 127).

³⁹ Among these countries we find, in Europe, after 1880, Russia (until 1896) and Austria-Hungary (until 1892) and, in Asia, China, India (until 1893) and Japan (until 1897). In fact, as from 1872 the price of silver against gold began a descent that was to last two decades, and the countries on the silver standard tended to keep pace by devaluing their currencies. The fall in silver price was in part due to increased production, but above all to a trend towards silver demonetisation: in 1871 Germany opted for the gold standard, to be followed one after another by the major western countries. As de Cecco (1979: 72, 87) pointed out, these countries were exporters of agricultural produce or, in general, primary products: «only with progressive devaluation... could the competition be tackled... that came from the United States' highly productive areas of cultivation» or in general from falling prices.

⁴⁰ Between 1873 and 1896 agricultural (and financial) crises were frequent and severe in Europe; in the more industrialised European countries average rates of growth in industrial output, although positive over the period as a whole, saw periods of decline in production levels. In the UK the average rate was 2% (but output dropped in 1877–79, 1884–86 and 1892–93), in France 1.7% (drops in 1877, 1879, 1883–85, 1890 and 1895) and 2.9% in Germany (just one fall in 1880). Data cited by Toniolo (1988: 135), drawn from Mitchell (1975: 179).

⁴¹ Blake (1992) shows that in the UK, in the period of the Great Depression fluctuations in the implicit UK GDP deflator were entirely accounted for by movements in import prices, particularly raw materials. According to Coppock (1961), who cites an article by Phelps Brown and Hart (1951), "The behaviour of money wage rates in the Great Depression presumably reflects the growth of Trade Union strength in the period, in conjunction with a weak 'market environment'."

4. The Great Disinflation of the 1980s and 1990s

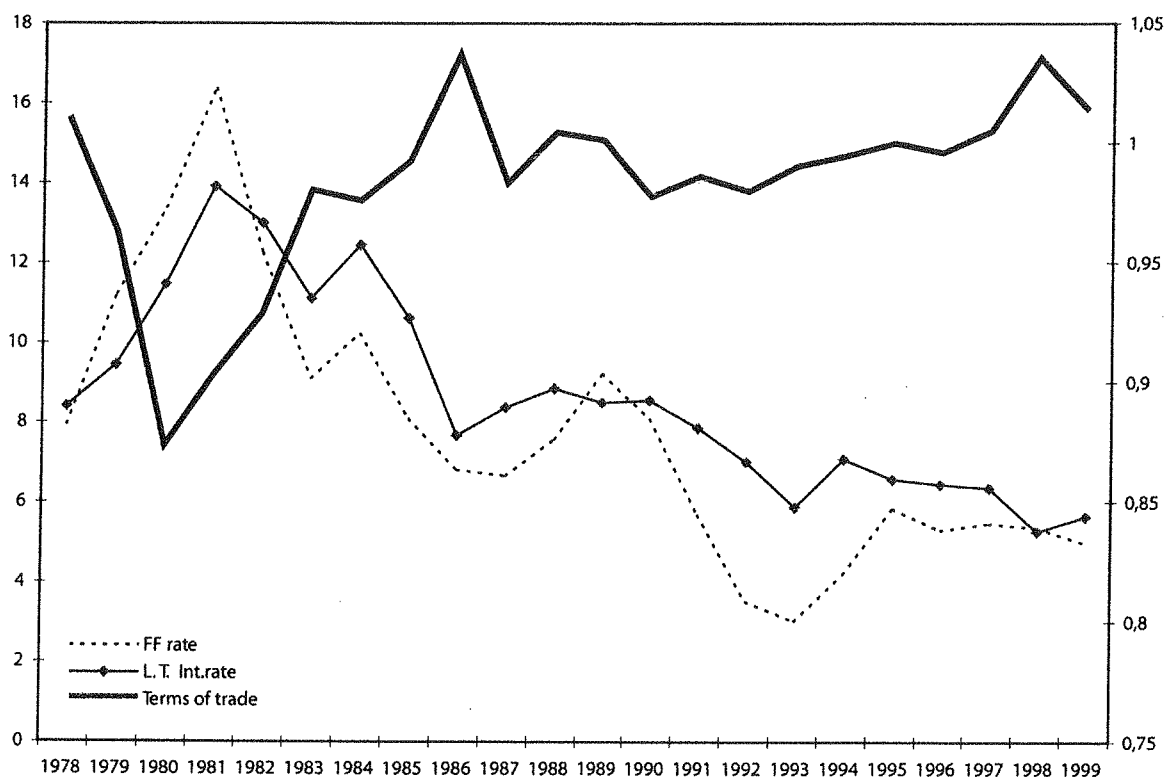
In the 'Great Disinflation' of the 1980s and 1990s we find, albeit in decidedly different historical circumstances, mechanisms similar to those we saw at work in the last quarter of the 19th century. Here, too, we find the three phases in the build-up and outbreak of the crisis as outlined above. In the early stage, during the '70s, the recycling of petrodollars guaranteed sizeable flows of investments at low interest rates for the peripheral countries, thus allowing them to pursue growth policies that proved highly differentiated from the qualitative point of view. In fact, the rising prices of raw materials had triggered an inflationary process in the industrial countries, but improved terms of trade in the periphery had provided the countries producing primary goods with the basis (the collateral) for heavy borrowing. The turning point came in 1979 with the Federal Reserve's credit squeeze, which set US interest rates soaring (figure 4). In this case too, the reason for this drastic upturn in monetary policy had to do with defence of hegemony by the leading country. Subsequently, all the effects Triffin had illustrated for the gold standard period came into force: «defensive» rises in the interest rates on the part of the other industrial countries brought recession to the entire OECD area; rising interest rates in the "central" countries meant decline in the prices of raw materials, in part also through the pressure to liquidate stocks;⁴² and finally, a reversal in capital flows from the periphery to the centre. (Figure 4, 5)

Coming on top of the direct effects the recession had on receipts from the developing countries' exports, this reversal set growth rates diverging within the periphery. In fact, while the countries producing raw materials, with scant diversification in their production structures, found their growth thwarted, the peripheral countries utilising primary products (in particular the newly industrialising countries of eastern Asia) initially found in the falling prices further stimulus for their own growth (figure 5).⁴³ While the debt crisis sweeping through the countries of Latin America and Africa led to their (temporary, in the case of certain Latin American countries) exclusion from the international capital circuit, dollar appreciation and proliferating bids to replicate the Japanese industrial development model led to an initial wave of foreign investments in the NIEs (Korea, Singapore, Taiwan) in the early '80s. Lower costs of labour and the continuous appreciation of the Yen against the dollar in the 1985–1995 period originated a second wave of financial flows in the ASEAN countries (Malaysia, Thailand and Indonesia), where they contributed both to

⁴² Cf. Humphreys (1988) for evidence on the working of the so called "Triffin effect" in the 1980s.

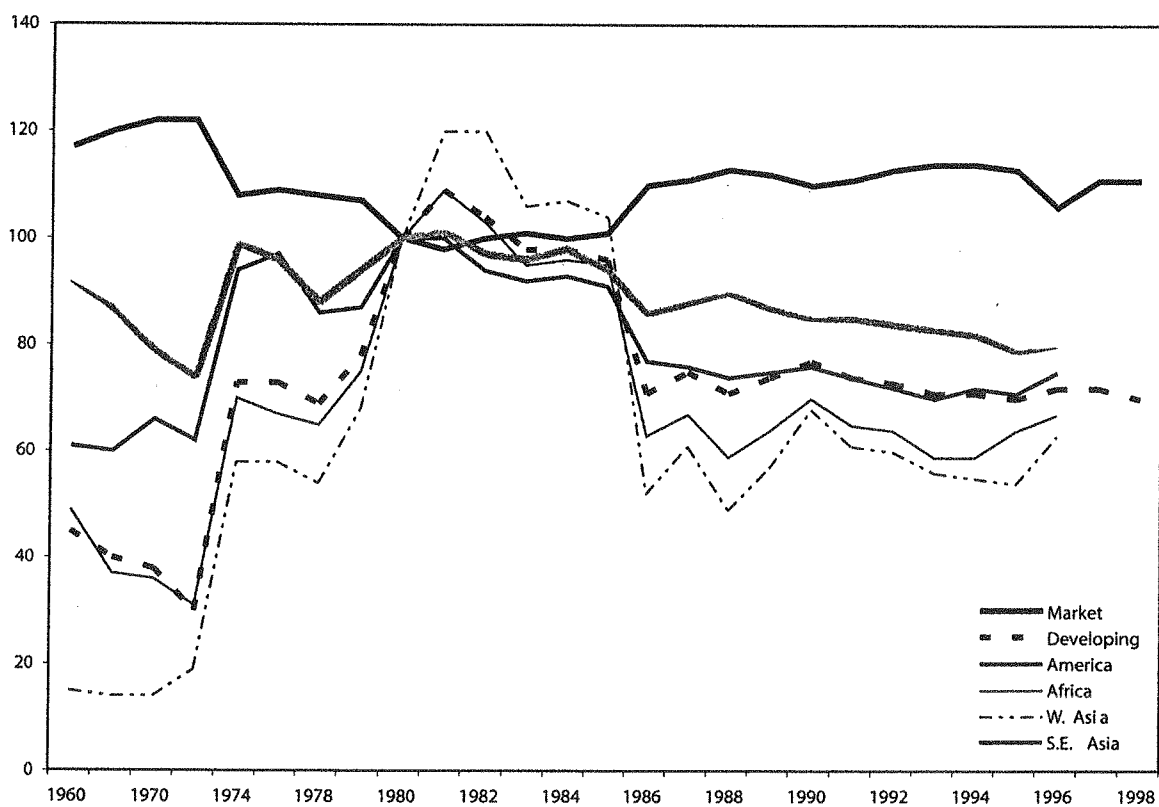
⁴³ For data on the «diverging performance of the developing countries in the 1980s» cf. World Bank (1991). In the 1980–1989 period per capita GDP fell by 2.2% and 6% a year respectively in the Sub-Saharan countries of Africa and Latin America.

Figure 4. USA: Federal Funds Rate, Long Term Interest Rate (left scale) and Terms of Trade, 1878–1999



Source: IMF Financial Statistics

Figure 5. Terms of trade by area, 1980 = 100



Source: UNCTAD, Handbook of International Trade and World Bank, Economic Outlook

financing new productive capacity in the electronics sector (which was to prove excessive in the subsequent crisis), and to property–market speculation, driving up the prices of financial and real estate operations. On both accounts, unregulated flows contributed to build economies weaker⁴⁴ than others (e.g. Taiwan and Singapore) which continued to have effective “developmental states”. Given the high price flexibility of the commodities and assets involved, the stage was set for the second wave of the crisis.

With most Asian currencies tied to the US dollar, China’s devaluation (1994) and the weakness of the Japanese yen (since 1995) set off a sequence of events that as from 1997 was to mean for southern Asia a new cycle of deterioration in terms of trade, with debt deflation and financial crises. According to Schulmeister (2000), the rise in US interest rates, starting from 1994, and above all the ensuing dollar appreciation of 1995–1996⁴⁵ had qualitatively similar effects as in the early 1980s:⁴⁶ decline in the East Asian countries’ terms of trade (cf. IMF, 1998: 176),⁴⁷ current accounts deficits, currency depreciation, rises in the dollar value of debts, and successive waves of declines in Stock Exchange values and capital flights (and all this, be it noted, when measures had just been agreed upon for the liberalisation of capital flows).

The numerous explanations of the recent East Asian crises generally focus on excessive accumulation of (mainly short term) private debt and mismanagement (bad loans marring banks’ solvency).⁴⁸ Accumulation of debt surely represents a factor of vulnerability, yet, as acknowledged by Dornbusch (2001), “the proposi-

⁴⁴ Cf. Henderson (1999: 362. See also p. 330 and 347). Henderson observes (p. 342) that in Thailand and Indonesia “no effective state capacity was developed that was capable of leveraging business in the interest of industrial deepening, technological upgrading, or indeed of guiding investment into productive activities and away from the easy (and lucrative) business of speculation”. On the weaknesses of the Malaysian policy, cf. *ibid.*, p. 343.

⁴⁵ The yen depreciation against the dollar amounted to 53% in the April 1995–February 1997 period.

⁴⁶ “Dollar prices in world trade declined significantly and the real interest on international debts soared. This development hit the dynamic economies in East Asia most since their external dollar debt had grown particularly strong over the 1990s. As in the 1980s, the dollar prices of commodities declined more strongly than those of manufactures, which contributed to the spillover of the financial crisis to Russia and Latin America” (Schulmeister, 2000: 391).

⁴⁷ The strength of the yen had been among the premises of successful deployment of the «flying geese model». In fact, as far as it contributed to keeping terms of trade high even in the NIEs producing industrial goods in competition with Japan and low in the ASEAN countries supplying raw materials, the upward trend of the yen favoured orderly, hierarchical deployment of the «flying geese model» (cf. Kwan, 1992). However, on the gap between the ideal “flying geese” scheme and the effective — far more fragile — reality of the development model in the countries of South Asia, in particular after the Plaza agreement sanctioning devaluation of the dollar, see Bernard and Ravenhill (1995).

⁴⁸ Henderson (2001: 338) points out the necessity to distinguish between “political economic corruption with the characteristic of the ‘developmental’ form” in Korea, Taiwan, Japan and “acquisitive corruption” present, in varying degrees, in Southeast Asian economies.

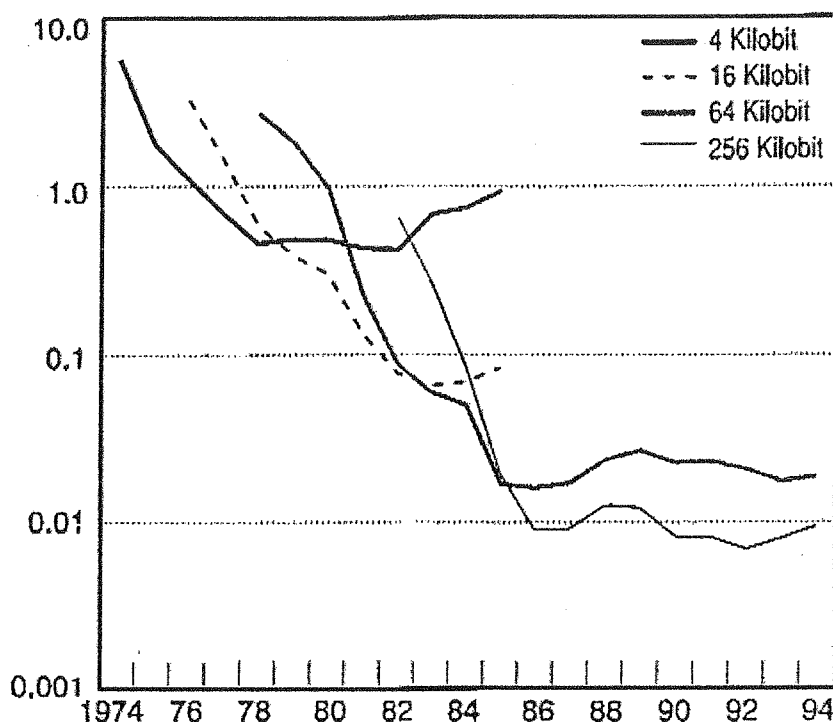
tion 'good balance sheets, no crisis' risks being circular". First of all, what makes "a bad balance sheet" is also affected by the institutional environment: the "huge" debt/equity ratios of some East-Asian countries might have been sustainable in a regulated financial setting, but became explosive in a hastily de-regulated one. In addition, reliance on commodities that are subject to large fluctuations in prices makes even a financially sound balance sheet unsustainable. The capital flows to the ASEAN countries led to a sharp increase in these countries' export dependence on few industrial products. As the Asian countries stepped up competition on the same markets and with the same products, overcapacity in certain industries became evident.⁴⁹ This stemmed mainly from two circumstances: China's entry into the world market as a competitor in the more standardised segments of industrial production, and Asian countries' inability to challenge the US leadership in the upper end of the technological scale. In the semiconductor industry, for instance, after the 1984-85 recession in which Japanese firms were charged with dumping in the US, American companies tended to exit from "commodity chips", a market segment dominated by Japanese firms, shifting on to microprocessors and "differentiated and specialized computer chips instead". Microprocessors can collapse "entire electronic systems onto a few chips" (Baily and Solow, 2001: 168). Lacking "the first mover advantages and technology lead of the US industry, Japan's and Korea's (and their ASEAN followers)" "product mix was skewed toward 'commodity chips' production". As observed by Baily and Solow, in this segment⁵⁰ "the output of one firm ... [is] ... a very close substitute for the output of other firms (such as DRAMs, standard MOS logic chips, digital bipolar chips and analogue devices) and so tough price competition... [slashes] profit margins". Production over-capacity and fall in demand from user industries result in spectacular plunges in prices.⁵¹ As a result of increas-

⁴⁹ The possibility of a «fallacy of composition» was pointed out in UNCTAD (1997: 149). Having pointed out the presence in the developing countries of a long-run trend towards declining terms of trade for manufactured products (intra-area differentiation appearing due more to differences in the unit values of exports than in those of imports), the report states: «The above findings suggest that either income and price elasticities ... are low or that demand for these exports is constrained by protection in the advanced economies. They also raise the possibility that the prices of labour intensive manufactured exports could come under significant pressure if supply increases much faster as a result of a widespread attempt to replicate the successful experience of first-tier NIEs» (p. 149).

⁵⁰ Cf. Baily and Solow (2001: 168). Cf. also Flamm (1996: 426) and, for an account of US resurgence in the higher end of the semiconductor industry, cf. Langlois and Steinmuller (1999: 52-6).

⁵¹ Between late 1995 and late 1996, the price of lower quality (16 megabit) memory chips plunged from 50 to 10 dollars. «Production overcapacity that reflected rapid expansion by Korean chipmakers contributed to the price drop, along with slowdown in demand among computers companies that are the chips' main consumers.» (Burton, 1997: 1). We must also take into account the interdependence between technological progress in the microprocessor sector and obsolescence in the lower segment of the "memory chips" sector. In fact, as increasingly powerful micro-

Figure 6. DRAM Prices Per Bit of Memory (Dollars per Kilobit)



Source: U.S. Department of Commerce; Bureau of Economic Analysis

ing competition in the area of hardware devices and commodity chips, “already steep annual declines in computer prices from 1987 to 1994 accelerated sharply beginning in 1995”.⁵²

The fact that the trend in the prices of memory chips exported from the countries of the periphery can be accounted for with mechanisms not unlike those we saw at work in the latter half of the 19th century (excess supply for a one-buyer market, debt deflation and devaluation) demonstrates that the similarities between the mechanisms is not so much a matter of the type of goods exported (raw materials versus industrial products) as of the conditions in which it appears difficult to restrain output in the face of a slump in demand. These conditions define, in each historical period, “what is a commodity” and the distinctive features of the “commoditization” process (cf. Kaplinsky 1993). They include undifferentiated products, low barrier to entry, and pressures for forced selling induced either by the interest rates (Triffin effect and/or debt deflation cumulative processes) or by monopsonist market power and planned obsolescence (figure 6).

Given the weight of lower quality semiconductors in total exports of

processors are introduced, as pointed out by Grimm (1998, footnote 20), we also see increase in “the speed with which they can get data to and from memory and the total amount of memory that can be addressed”. Thus while the introduction of Pentium III or IV microprocessors leads to greater demand for larger DRAM memories (albeit at low profit margins), it also leads to the obsolescence of the lower performance memory chips.

⁵² Cf. Digital Economy 2000 (2000: 9).

Eastern Asia,⁵³ the slump in prices resulted in an unprecedented fall in these countries' current accounts. The East-Asian countries simply substituted one vicious commodity cycle (for instance palm oil or timber) with another (semiconductors). The lasting tendency of export prices to fall did not reflect interplay of supply and demand but, in a context of a plurality of asymmetric influences, political and social margins for downward cost (wage) flexibility. As we read in UNCTAD⁵⁴ (1996, p. 149): «Sharp drops in real wages in manufacturing that were associated with rising exports most probably contributed to declines in the terms of trade by allowing export prices of these products to be reduced without affecting profitability».

5. Conclusions

In the last few years a number of partial analyses and empirical evidence may be cited in support of each single step of the interpretative scheme proposed above, although an organic long-run interpretation of the phenomena under examination seems still to be lacking.

The positive impact of industrial countries' activity on commodity prices (in particular, oil), its feedback effect on the industrial countries' inflation, and the ensuing contractionary monetary policies are by now fairly well established.⁵⁵ Moreover, starting from the pronounced "responsiveness of primary commodity prices to interest rate changes"⁵⁶ attention turned to the specific risk that a rise in interest rates brings to bear on the external balance of countries producing raw materials (Hua, 1996; Petersen and Srinivasan, 1990) and on the role played by dollar appreciation in forcing down the prices of these very commodities. Since primary producers' access to loans (in the ascending phase) was based on the increase in value of collateral associated with the rising price of raw materials, by reducing the collateral, the subsequent fall in prices aggravated the crisis further (Manzano and Rigobon, 2001).

⁵³ For nearly 50% of Singapore's exports, 25% of Malaysia's, and 10–15% of the exports of Taiwan, Thailand and the Philippines (cf. UNCTAD 1998: 15).

⁵⁴ For an example of the increasing gap in real wages between United States and low income suppliers countries, see Kaplinsky (1993).

⁵⁵ Cf. Hua (1996). Bernanke et al (1997) found that "between 2/3 and 3/4 of the reduction in US output following an oil price shock is accounted for by the monetary policy tightening in response to adverse oil price shocks" (quoted in Lee et al. 2001). It should be noted, however, that asymmetric effects of oil price shocks have been reported in most countries (Mork et al. 1994); that is, no statistically significant effect of oil price decreases on GDP growth could be found.

⁵⁶ According to Petersen and Srinivasan, (1995: 314) "the empirical magnitude of ..[the].. negative effect of real interest rates on real commodity prices is not a settled issue". For the purpose of their simulation exercise, "drawing on research work done at the World Bank" these authors assume an interest rate semi-elasticity of 2 for non-oil commodity real prices.

As for the relationship between import prices and disinflation in industrialised countries, Beckerman and Jenkinson (1986) account for the “Great Disinflation” of the ‘80s (and, we may add, the ‘90s as well) as the result of a reversal in the trend of commodity prices. The results of their analysis bear out the existence of a close correlation between wages and domestic prices and thus, given the mark up formation of prices, between wages and import prices. On the contrary, the unemployment coefficient does not appear to play a significant part in the wage equation. The authors conclude that «The results thus provide no support for the belief that inflation has been reduced through any direct impact on the labour market of the rise in unemployment» (p. 49): hence there is no individual Phillips curve — no consistent relationship between unemployment and wage inflation *at the single country level*. The fact remains, however, that the «Great Disinflation» of the ‘80s can be ascribed to the world recession, but along paths that involve not the labour market, through reduction in nominal wages, but rather the product market, through variations in the relative prices between commodities and manufactured goods. For the industrialised countries, therefore, adjustment is systemic, and not individual. This systemic perspective also helps account for the so-called “inflation puzzle”⁵⁷ of the ‘90s, i.e. the extremely subdued inflation associated with the rapid expansion of the US economy. This “puzzle” has rekindled attention on the role of import prices on domestic prices, either directly, through the lower prices of inputs, or indirectly, through the competing-goods effect (see Gamber and Hung, 2001). It should be noted, however, that while these studies explain the fall in import prices with the slump in demand, with high foreign excess capacity accounting for much of the recent decline in the US inflation⁵⁸ in a globalised production network, they fail to address the problem of the link between macroeconomic policies in the central countries, falling commodity prices and debt cycles.

The Prebisch–Singer hypothesis of a long-run downward trend in real commodity prices (relative to manufactures) has given rise to prolonged and indeed heated debate based on conflicting empirical evidence.⁵⁹ Such inconclusive results are not surprising, given the above-mentioned existence of long-run upward and downward phases in the developed countries’ industrial production and the associated behaviour of commodity prices. Further, since commodity price variability is largely trend-related — real prices can change by as much as 40% or even more in a single year — the results very much depend on the period chosen.⁶⁰ However, given the particular characteristics of the economic

⁵⁷ Cf. Chan–Lau and Tovarick (1999).

⁵⁸ In Gamber and Hung’s study (2001: 70) the measure of capacity utilisation is a trade-weighted average capacity utilisation for the 35 major US trading partners, which “includes many of the Asian countries involved in the recent financial crisis, including Thailand, the Philippines and Indonesia”.

⁵⁹ Cf. Cashin and Mc Dermott (2001) for references.

⁶⁰ Cashin, Mc Dermott and Scott (1999) find that for the majority of world commodity prices,

systems of many of the developing countries, this variability can bring in its wake disastrous long-run effects. In fact, shifting attention from real commodity prices to the terms of trade of individual developing countries, it has been shown for a group of Sub Saharan African countries that the persistence of terms of trade shocks is positively correlated with the concentration of exports (mainly primary commodities) and the share of petroleum imports, and negatively correlated with the share of “non fuel-and-minerals” exports (Cashin and Pattillo, 2000: 30–33). Since these same variables also indicate the vulnerability of economic systems to the cumulative sequences of debt deflation, we must look to the circumstances determining debt deflation in order to account for the persistence of crisis situations in the countries of the ‘periphery’. Among these, together with the restrictive monetary policy of the central countries and the domestic policies of the countries more dependent on foreign debt, we also have to reckon with the degree of “resilience” shown by economic systems. According to Holling,⁶¹ this term is not to be taken in the traditional sense of homeostatic systems, or in other words of the return to equilibrium after perturbation (since this would presuppose the existence of a single, fixed equilibrium). Resilience, Holling writes, “is the capacity of a system to absorb and utilise or even benefit from perturbations and changes that attain it, and so to persist without a qualitative change in the system’s structure”. The extent to which the productive structure concentrates on products characterised by pronounced price flexibility, be it endogenous or exogenous to monetary policy, is one of the aspects behind the lesser resilience of the economic systems of the developing countries while at the same time accounting for the greater capacity enjoyed by the industrialised countries in absorbing crisis and actually benefiting from it.

the duration of price slumps typically exceeds the duration of booms, while the amplitude of price movements during booms and slumps are quite similar.

⁶¹ Cf. Holling (1973), quoted in van der Leuw and Aschan (2001: 9).

REFERENCES

- BAILY M. N. and SOLOW R.M. (2001), International Productivity Comparisons Built from the Firm Level, *Journal of Economic Perspectives*, Summer, 3.
- BECKERMAN W. (1954), The Recent United States Recession and the Strength of Primary Product Prices, *Oxford Bulletin of Economics and Statistics*, n. 7–8.
- BECKERMAN W. and JENKINSON T. (1986), What Stopped the Inflation? Unemployment or Commodity Prices ?, *The Economic Journal*, 96, March.
- BERNANKE B.S., GERTLER M. and WATSON M. (1997), Systematic monetary policy and the effects of oil price shocks, *Brookings Papers on Economic Activity*.
- BERNARD M. and RAVENHILL J. (1995), Beyond Product Cycles and Flying Geese. Regionalization, Hierarchy and the Industrialization of East Asia, *World Politics*, January.
- BLAISDELL D.C. (1966 [1929]), *European Financial Control in the Ottoman Empire*, New York, AMS Press.
- BLAKE N. (1992), Import Prices, Economic Activity and the General Price Level in the UK, 1870–1913, in S.N. Broadberry and N.F.R. Crafts, (eds.) *Britain in the International Economy 1870–1990*, Cambridge, Cambridge University Press.
- BRAUN H. [M. KALECKI] (1983 [1931]), The World Financial Crisis, (in Polish), *Przegląd Socjalistyczny*, Warsaw, 20 dicembre 1931, n. 1. (It. tr. in *La crisi del '29*, edited by M. Storaci, Bologna, Zanichelli).
- BRETON Y. (1993), La perception de la 'grande dépression' de la fin du XIX siècle (1873–1890) par les économistes français, *Economie et Sociétés*, 7–8.
- BURTON J. (1997), South Korean chipmakers suffer sharp profit falls, *The Financial Times*, February 27.
- CASHIN P. and MC DERMOTT C.J., (2001), The Long–Run Behavior of Commodity Prices: Small Trends and Big Variability, *IMF Working Paper*, WP/01/68.
- CASHIN P., MC DERMOTT C.J. and SCOTT A., (1999), Booms and Slumps in World Commodity Prices, *IMF Working Paper*, WP/99/155.
- CASHIN P. and PATTILLO C., (2000), Terms of Trade Shocks in Africa: Are They Short–Lived or Long–Lived, *IMF Working Paper*, WP/00/72.
- CASKEY J. and FAZZARI S. (1987), Aggregate Demand Contractions with Nominal Debt Commitments: Is Wage Flexibility Stabilizing ?, *Economic Inquiry*, October.
- CASKEY J. and FAZZARI S. (1992), Debt, Price Flexibility and Aggregate Stability, *Revue d'économie politique*, juillet–août.
- CHAN–LAU J. and TOVARICK S. (1999), Why has inflation in the U.S. remained so low? Reassessing the importance of labor costs and the price of imports, *IMF Working Paper*, WP 99.
- CLAPHAM J.H. (1967[1927]), *An Economic History of Modern Britain*, vol. 2, Cambridge, Cambridge U.P.

- COPPOCK D.J. (1961), *The Causes of the Great Depression, 1873–1896*, Manchester School.
- DE CECCO M. (1979), *Moneta e Impero*, Torino, Einaudi.
- DE LONG J. B. and SUMMERS L. (1986), Is Increasing Price Flexibility Stabilizing?, *American Economic Review*, December.
- DIGITAL ECONOMY 2000 (2000), Third Annual Report of the US Department of Commerce, <http://www.esa.doc.gov/de2k.htm>
- FISHER I. (1933), The Debt–Deflation Theory of Great Depression, *Econometrica*, October.
- FLAMM K. (1996), *Mismanaged Trade? Strategic Policy and the Semiconductor Industry*, Brookings Institution Press, Washington D.C..
- GAMBER E.N. and HUNG J.H. (2001), Has the Rise in Globalization Reduced U.S. Inflation in the 1990s?, *Economic Enquiry*, vol. 39, January.
- GAREGNANI P. (1979), Notes on Consumption, Investment and Effective Demand: II, *Cambridge Journal of Economics*, January.
- (1987), Surplus approach to value and distribution, in *The New Palgrave. A Dictionary of Economics*, London, Macmillan.
- GRIMM B.T. (1998), Price Indexes for Selected Semiconductors, 1974–96, in *Survey of Current Business*, February.
- HENDERSON J, Uneven Crises: Institutional Foundations of East Asian Economic Turmoil, *Economy and Society*, August.
- HOMER S. and SYLLA R. (1992), *A History of Interest Rates*, Rutgers U.P., New Brunswick.
- HUA P. (1998), On Primary Commodity Prices: The Impact of Macroeconomic/Monetary Shocks, *Journal of Policy Modeling*, 20, 6.
- HICKS J. (1967[1958]), The Yield on Consols, in *Critical Essays in Monetary Theory*, Oxford, Clarendon Press.
- HOLLING C.S. (1973), Resilience and Stability of Ecological Systems, *Annual Review of Ecology and Systematics*, 4.
- HUMPHREYS D. (1988), Metal Prices in the 1980s. A view from the supply side, *Resources Policy*, December.
- INTERNATIONAL MONETARY FUND (1998), *World Economic Outlook*, May.
- KALDOR N. (1985), *The Scourge of Monetarism*, Oxford U. P., Oxford.
- KAPLINSKY R. (1993), Export Processing Zones in the Dominican Republic: Transforming Manufactures into Commodities, *World Development*, 21.
- KENEN P.B. (1960), *British Monetary Policy and the Balance of Payments*, Cambridge, Mass., Harvard U. P.
- KEYNES J.M. (1972 [1931]), The Consequences to the Banks of the Collapse of Money Values, in *Essays in Persuasion*, The Collected Writings of J.M. Keynes, vol. IX, London, Macmillan.
- (1973 [1936]), *The General Theory of Employment, Interest and Money*, in The Collected Writings of J.M. Keynes, vol. VII, London, Macmillan.

- (1971 [1930]) *A Treatise on Money*, The Collected Writings of J.M.Keynes, vol. V e VI, London, Macmillan.
- KWAN C.H. (1992), *Economic Interdependence in the Asia-Pacific Region*, London, Routledge.
- LANDES D. S. (1966), Technological Change and Development in Western Europe 1750–1914, in *Cambridge Economic History of Europe*, vol. VI, part I, Cambridge, Cambridge U. P.
- (1990[1969]), *Bankers and Pashas*, New York, Harper.
- LANGLOIS R.N. and Steinmueller W.E. (1999), The Evolution of Comparative Advantage in the Worldwide Semiconductor Industry, 1947–1996, in D.C. Mowery and R.R. Nelson (eds.), *Sources of Industrial Leadership: Studies of Seven Industries*, Cambridge U.P., Cambridge.
- LEE B.R., LEE K. and RATTI R.A. (2001), Monetary policy, oil price shocks, and the Japanese economy, *Japan and the World Economy*, 13.
- MARICHAL C. (1989), *A Century of Debt Crises in Latin America: from Independence to the Great Depression, 1820–1930*, Princeton U. P., Princeton.
- MANZANO O. and RIGOBON R., (2001), Resource Curse or Debt Overhang?, *Working Paper 8390*, NBER, Cambridge, Mass.
- MINSKY H. (1975), *John Maynard Keynes*, Columbia U.P., New York.
- MITCHELL B.R. (1975), *European Historical Statistics: 1750–1970*, Macmillan, London.
- MITCHELL B.R. and DEANE P. (1962), *Abstract of British Historical Statistics*, Cambridge U.P., Cambridge.
- MODIGLIANI F. (1951[1944]), Liquidity Preference and the Theory of Interest and Money, reprinted in *Readings in Monetary Theory*, Irwin, Homewood.
- MORGAN V.E. (1965 [1943]), *The Theory and Practice of Central Banking 1797–1913*, London, Cass.
- MORK K.A., Olsen O. and Mysen H.T. (1994), Macroeconomic responses to oil price increases and decreases in seven OECD countries, *Energy Journal*, 15.
- NEWBOLD J.T.W. (1932), The Beginnings of the World Crisis, 1873–1896, *Economic History*, suppl. to *Economic Journal*, January.
- PAMUK S. (1987), *The Ottoman Empire and European Capitalism 1820–1913: Trade, Investment and Production*, Cambridge, Cambridge U. P.
- PETERSEN C.E. and SRINIVASAN T.G. (1995), Effects of a Rise in G–7 Real Interest Rates on Developing Countries, in Vines D., Currie D., eds., *North–South Linkages and International Macroeconomic Policy*, Cambridge U.P., Cambridge.
- PHELPS BROWN E.H. and HART P.E. (1952), The Share of Wages in National Income, *Economic Journal*.
- PHELPS BROWN E.H. and OZGA S.A. (1955), Economic Growth and the Price Level, *Economic Journal*, 65, March.
- PIGOU A.C. (1943), The Classical Stationary State, *Economic Journal*, December.

- PIVETTI M. (1987), Thomas Tooke, an entry of *The New Palgrave. A Dictionary of Economics*, ed. by J. Eatwell, M. Milgate, P. Newman, London.
- (1991), *An Essay on Money and Distribution*, London, Macmillan.
- RADELET S. and SACHS J. (1997), *Asia's Reemergence*, Foreign Affairs, November–December.
- SAUL S.B. (1969), *The Myth of the Great Depression, 1873–96*, London, Macmillan.
- SAYERS R.S. (1964), *Modern Banking*, Oxford, Clarendon.
- SCHULMEISTER S. (2000), Globalization without Global Money: the double role of the dollar as national currency and world currency, *Journal of Post-Keynesian Economics*, Spring.
- (1939), *Business Cycles*, New York, Mc Graw Hill.
- SRAFFA P. (1960), *Production of Commodities by Means of Commodities*, Cambridge, C. U. P.
- SUTER C. (1992), *Debt Cycles in the World Economy*, Westview Press, Boulder.
- TOBIN J. (1975), Keynesian Models of Recession and Depression, *American Economic Review Proceedings*, May.
- TONIOLO G. (1988), *Storia economica dell'Italia liberale 1850–1918*, Bologna, Il Mulino.
- TOOKE T. (1959 [1844]), *An Inquiry into the Currency Principle; the connection of the currency with prices and the expediency of a separation of issue from banking*, London, University of London.
- TRIFFIN R. (1946–7), National Central Banking and the International Economy, *The Review of Economic Studies*, vol. 14.
- VAN DER LEUW S.E. and ASCHAN LYGONIE C., A Long–Term Perspective on Resilience in Socio–Natural Systems, Paper presented at the workshop on “System Shock–System Resilience”, Abisko, Sweden, May 2000.
- UNCTAD (1997), *Trade and Development Report 1996*, New York.
- UNCTAD (1998), *Trade and Development Report 1997*, New York.
- WICKSELL K. (1965 [1898a]), *Interest and Prices*, Engl. tr. of *Geldzins und Güterpreise*, New York, Kelley.
- (1958 [1898b]), The Influence of the Rate of Interest on Commodity Prices, in *Selected Papers on Economic Theory*, London.
- WORLD BANK (1991), *World Development Report*, Washington D.C.
- (1996), *World Debt Tables*, vol. 1, Washington D.C.
- (2000), *World Development Report*, Washington D.C.

ISSN 1722-5604



9 771722 560004

40004