LIRA STABILISATION, CONSTRUCTION BOOM AND THE LEVEL OF ECONOMIC ACTIVITY: THE SHIFT IN FAVOUR OF NON-TRADED GOODS PRICES AND URBAN RENTS

Giuseppe Tattara[1]

ABSTRACT. Lira convertibility in the 19th century was mainly advocated due to the need to attract foreign capital, to avoid the temptation of monetizing the huge state debt, to keep the state budget under control and to limit the uncertainties in trade settlements with Italy's main partners, which were gold-standard countries. However, going back to gold had various consequences. Urban rents and the sheltered sectors of the economy, as well as construction activity were favoured by a significant, relative price shift, while industrial and agricultural exporters were subject to additional stress. Two resumption episodes are studied and some conclusions for the present process of European monetary unification and enlargement are discussed

JEL Classification: N13; N23; N63; N73; E31.
Keywords: Stabilization; Construction; Traded Goods; Non Traded Goods; Rents

RÉSUMÉ. La convertibilité de la Lire au XIXe siècle était préconisée principalement dans le but d'attirer le capital étranger, de couper à la tentation d'une monétisation de l'endettement colossal de l'État, de garder le contrôle des finances publiques et de limiter le degré d'incertitude dans les transactions commerciales de l'Italie avec ses principaux partenaires qui étaient sous le régime de l'étalon-or. Cependant, ce retour à l'étalon-or n'est pas resté sans conséquence. Les rentes urbaines et les secteurs connexes de l'économie, ceux liés à la construction, ont bénéficié d'une variation significative dans les prix relatifs, alors que les industriels et les agriculteurs ont fait face à une situation plus tendue. Cet article étudie deux épisodes de reprise et tire certaines conclusions qui peuvent être valables pour le processus actuel d'unification et d'élargissement de l'Europe monétaire.

Classification *JEL* : N13 ; N23 ; N63 ; N73 ; E31.
Mots-clefs : Stabilisation ; secteur de la construction ; biens échangeables ; biens non échangeables ; rentes.

---

1. Giuseppe TATTARA, Professor of Economics, Department of Economics, Università degli studi di Venezia, (tattara@helios.unive.it).

The gold standard was definitively established in most of the industrialised world, Germany, the Netherlands and Scandinavia in the early 1870s and long before in France and the United Kingdom. Italy as well as other European countries like Spain, Austria-Hungary and Russia had a flexible exchange rate, and adhered to the gold standard only occasionally (Eichengreen and Flandreau, 1996). Italy was legally on gold for a limited number of years from 1861 to 1913 as convertibility was suspended twice and twice recovered. After suspension in 1865, convertibility was resumed in 1881, soon declined, to be attained again at the beginning of the new century. Thus, during the 52 years between Unification and World War I, Italy was legally on a bimetallic standard for 15 years, but the actual period of convertibility was limited to a decade.

This paper studies a source of difficulty experienced by Italy when the country went back to parity. If a country as Italy was so open to international trade and so small in world goods market that Purchasing Power Parity held, then, by definition, an exchange rate variation could not change domestic prices in relation to foreign prices for traded goods. With the nominal exchange rate brought back at par, the equilibrating variations in the real exchange rate occur through changes in the domestic price level in comparison with foreign competitors prices. Italy had a large internal market however and the existence of a considerably important sector producing goods that were not internationally traded[2] reveals that a country can experience significant relative price effects any time the rate of exchange varies. Any time the lira went back to parity (appreciation), the price of traded goods decreased and the relative price of the non-traded goods went up. Resources shifted out of the production of traded goods into production of non-traded goods, infrastructures and building (housing) investments, and income distribution shifted in favour of non-traded goods owners.

Various questions arise. Was the price shift between traded and non-traded goods that followed the two lira appreciation, in 1879-1881 and in 1895-1903, significant? Was it paralleled by a shift in the level of activity of non-traded goods? Did such a move divert resources from the other sectors of the economy? Is there evidence that income distribution moved in favour of rents and away from profits, both in manufacture and in agriculture?

The paper is structured as follows. First, the basic adjustment mechanism for a small country under the gold standard is summarised. Second, a short historical background of Italian history is provided. Third, the effect of adherence to a fixed exchange rate regime on prices of traded and non-traded goods, with reference to Italy, is discussed and the relationship between construction activity, capital imports, lira exchange rate and price of non-traded goods is subjected to test. Conclusions follow.

---

2. Non-traded goods are services and commodities whose transport cost is prohibitively high. Some sectors as housing, utilities and local transportat also fit in this category.
Italian economic development in the gold standard era was far from even, with manufacturing growing at 3% a year, agriculture stagnating at 1% and construction, housing and services at 2.5% (construction grew at 2.2%, transport at 4.8%, gas water electricity at 6.5% and financial services at 6.6%). Yearly compound rates computed from Maddison (1991, TABLE7, 236-237).

■ A SMALL OPEN ECONOMY WITH NON-TRADED GOODS

Assume a country sufficiently small and open so that prices of all traded goods as determined outside the country and fixed in terms of foreign currency. Goods produced are traded and non-traded.[3]

Currency appreciation worsens our country's balance of payments through two independent routes. First, a proportionate decrease in the price of traded goods, expressed in domestic currency, follows appreciation under the assumption that the country takes the world price of traded goods as given. Due to the domestic price reduction, *via* a real balance effect, an increase in spending takes place as an excess demand of traded and of non-traded goods. Traded goods prices are determined in the world market; the excess demand is faced *via* imports and generates a trade deficit. Non-traded goods production is not ready augmentable, so excess demand is matched through their price increase. The increase in the relative price of non-traded goods yields an additional unfavourable effect on the trade balance. For any given level of expenditure, a higher relative price for non-traded goods is paralleled by a shift in domestic resources from traded to non-traded goods. Few traded goods are produced and more are consumed: the excess demand for traded goods materialises in a bigger trade deficit.[4]

The distribution of income changes accordingly. Assume that costs are made of labour only; the labour market is unique so the same wage is paid in the two sectors. The shift in relative prices between traded and non-traded goods implies an immediate shift in income distribution in favour of people endowed with non-tradables. In the short run, final goods prices reflect in factors remuneration and not in raw material prices, and factors reward increases as prices of the final goods increase; factor prices have the meaning of quasi rents. Only gradually as long as the production of traded goods declines and the production of non-traded goods increases, profit rates are brought to equality in the two sectors. As the exchange rate appreciates, in the short run, the rate of profit in non-traded goods sector increases and the rate of profit in the traded sector relatively declines.[5]

Two important elements qualify the historical situation of Italy in the second part of the nineteenth century. First, capital flows. Lira appreciation was always accompanied, or preceded, by money inflows, either as foreign capital (the first lira's appreciation) or as emigrants' remittances (the second lira's appreciation). Capital inflow was followed by lower interest rates and this had an expansionary effect on expenditure both after the 1881 resumption and after

---

3. The country is so small that we have assumed both import and export prices as given or fixed in terms of foreign currency. It is then possible to aggregate the two kinds of goods together at their (given) relative price. The composite commodity thereby created is referred to as *traded good*.

4. Eventually the monetary approach to the balance of payments emphasises the role of reserve flows on resources allocation. When a country is running a balance of payment deficit, the level of reserves declines and translates into a reduction of money supply, with a contraction effect on expenditure. As expenditure declines, the price of non-traded goods must continuously decline to eliminate what would be an excess supply for non-traded goods. Money continues to flow out of the country and expenditure continues to decline, until in the long run the trade surplus has been eliminated.

5. The classical references to the non-traded goods model in a small oper economy are Salter (1959), Swan (1960) and Devaragan, Lewis and Robinson (1990).

the new attained parity, in the first years of the new century.[6] The offsetting effect of money flowing out of the country following appreciation – through a supposed balance of payments deficit – never materialised; at least it did not materialise in the short run. Second, there was no crowding out. Construction and traded goods increased and declined together, in a rather parallel move, stimulated by capital inflows and by low interest rates. The initial situation could be represented by a point inside the production possibility frontier, as output of both goods was less than it could be. In such a situation the excess demand that followed appreciation brought about a parallel swing in the real per capital stock of construction – the most important non-traded activity – that was only partially offset by the swing in prices of non-tradable goods and services. This was more evident in the second period when the reaction in terms of increase in quantities produced was more robust.

■ THE HISTORICAL SETTING

The Italian economy in the second half of the nineteenth century was open to international trade and had major dealings in the international capital market centred in Paris and London. Italy shared the long swings in the international resource flows (migrants and capital flows) that characterised the Atlantic economy during the late nineteenth century.

Construction growth in Italy was dependent more from capital inflows than from labour emigration; long swings in Italian construction were tied to changes in the supply of foreign capital, and thus to the cycle in British foreign investment and not to demographic changes (Fenoaltea, 1988, p. 605).[7]

Difference between domestic savings and domestic investments bore an inverse relationship to contemporaneous differences in Great Britain. Investments in Britain peaked in the mid 1870s, the late 1890s, and again on the eve of First World War, 1908-1913, with intervening troughs in the late 1870s and in the early 1880s. A surplus of British savings over domestic investments went into the international capital market and pushed the wave into Italy through the Paris capital market, in the 1860s and in the 1880s. Capital inflows from Berlin came into play afterwards.[8]

The changing balance between saving and investment opportunities at the centre and at the periphery of the system was also influenced by the nature of the developing capital market in the periphery. The international payment system under which Italy accomplished her

---

6. Demand composition was different. In the first episode consumption (private and public) stayed high and there was a limited surge in aggregate investment. In the second period a big surge in investment and exports compensated the decline in private and public consumption. Italian national account historical data are from Ercolani (1969, tab. XII.4.1.A, 422-423).

7. Emigration alters the growth rate of the population and the process of household formation and causes opposite variations in demand for construction, according to Brinley Thomas (1954,174-75) and to various other authors.

8. Britain's capital exports were of large importance to the Italian economy. "Foreign investment in Italy was primarily French, Belgian, and German rather than British: because continental capital competed with British capital at the local margins throughout the world, more foreign capital from all sources would flow into Italy when Britain pushed more capital into the world" (Fenoaltea, 1988, 629).

Unification process was gold convertibility: the lira was defined by its metallic content, equivalent to that of the French franc, but convertibility was suspended in 1866 facing a domestic banking crisis, a large increase in government expenditures because of the war with Austria-Hungary and the refusal of assistance to the Italian government with a new debt issue by the Rotschields, the traditional dealers in Italian public debt in the international capital market. Lira convertibility was formally resumed once the crisis was over in 1883, with the help of the proceeds of a large external loan, that was eventually placed in Paris (De Cecco, 1990, p. 36), but the new parity was short lived. Just few months after resumption, Italian banks of issue ceased to convert on demand (Di Nardi, 1953, p. 358)[9].

After the 1890's international crisis, foreign reserves increased their level before a substantial negative trade balance grace to emigrants' remittances, and the lira exchange rate came back to parity. Remittances were so huge to turn the highly negative Italian trade balance into a favourable current balance that would have forced the lira towards appreciation, except for the fact that Italian Rendita previously abroad was repatriated and monetary circulation was expanded to the necessary amount.[10]

Over the period at hand, the 52 years elapsing from 1861 to 1913, Italy found itself with a semi-pegged exchange rate, free to float below parity, when circumstances became binding, but with an upper limit at the "gold export point".

In Italy, the time path of national income, construction activity, industrial production followed a characteristic Kuznets cycle, with long swing peaks in the early 1870s, the late 1880s and in the first decade of the new century to the First World War, and intervening troughs in the late 1870s and in the late 1890s (Fenoaltea, 1988, p. 605). Italian swings were tied to the supply of foreign capital and to the domestic political cycle. In the 1880s, the political shift from the old right government, that was traditionally favourable to landowner's interests and adverse to manufacture, to the government of the Prime Minister Depretis with his new tariff policy, launched a period of political stability that restored the confidence of domestic investors and fostered industrial growth. Quite similarly, twenty years later, the abandonment of Crispi adventurous leadership found in Giolitti's government a period favourable to manufacturing.[11]

Within construction, investment in railways, other social overhead capital and private buildings all tended to move together.[12] The time path of the various components of construction, other capital formation, and public borrowing and spending were thus largely parallel

---

9. Credibility soon deteriorated. The state budged worsened in 1882-83 to reach a record negative value in 1889 (Ercolani, 1961, tab. XII.4.8, p. 432) and country risk, measured by the difference between interest rates on the Rendita Italiana and on the French Rente, both in Paris, increased since July 1882. The latter provides an evident sign of foreign investors lack of credibility on the lira resumption policy by the Italian government.
10. Through a large credit expansion. The monetary base did not grow directly, but M3 had a rapid upswing.
11. Fenoaltea (1969, p. 109-110). Fenoaltea points to the Italian cycle as to a cycle typical of durable goods, in a climate of political stability and buttressed by worldwide transport costs reductions (111-112). On the "trasformismo" as an element favourable to stability and entrepreneurs renewed confidence, see Carocci (1975, p. 46,70)
12. But for shipyards that presented a marked anticyclical pattern, scarcely relevant in the construction aggregate. See Fenoaltea (1969, p. 109).

(Fenoaltea 1988, fig.1, p. 610); they accompanied opposite movements in interest rates. There was no evidence of crowding out, and private construction added to public expenditures in a cumulative move that directly reflected in GDP positive variations.

During this period, capital inflows were positively correlated with lira appreciation, a stagnant or a low interest rate both at long and short term, a high domestic activity, a high level of public and private expenditure and a higher trade deficit. Declining construction and capital imports were instead associated with rising interest rates, low domestic activity and a lower trade deficit (FIGURE 1). Yields on Italian Consols (Rendita Italiana) provide a series for long-term interest rates. Interest rates were 7% in the early 1860s, with high construction and capital imports, and rose to 9.9% just after suspension, when construction and capital imports declined. From the late 1860s to the early 1870s, as construction and capital imports recovered, yields declined to about 6%. Then they fell again to 4.5%, as construction and capital imports surged in the 1880s, to stay near that level in the late nineties as construction and capital imports again declined, to decrease again and stabilise at 3.5-3.8% as construction and capital imports recovered in the new century (Fenoaltea, 1988, p. 626-627). Limited available data on short term interest rates are characterised by fluctuations of reduced amplitude, but they nonetheless parallel the cyclical movements of long run rates and of capital flows (Biscaini e Ciocca, 1979, Tab. 12).

Figure 1 –   Lira nominal effective exchange rate and construction activity in Italy
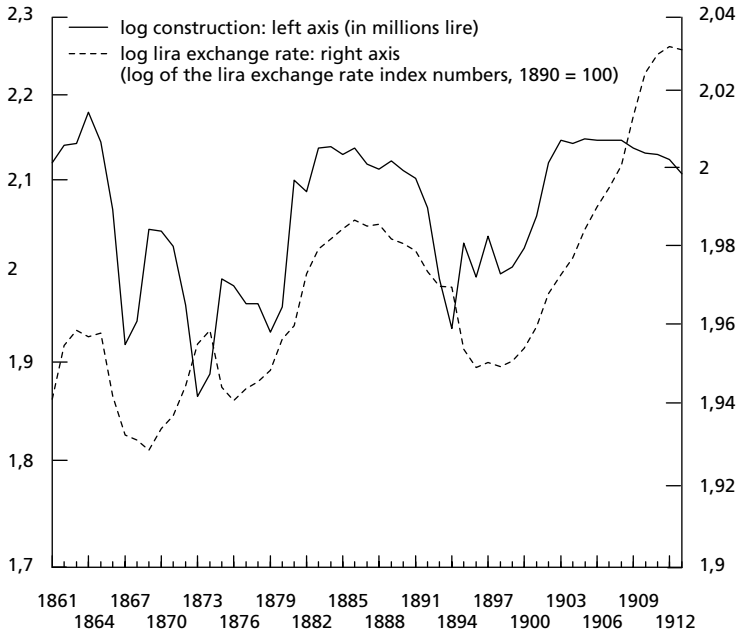
Sources: Ciocca, Ulizzi, 1990; Fenoaltea, 1987.

■ Traded versus non-traded commodity prices

Relative prices

Italian domestic relative prices during the time from the Unity of the Kingdom to World War I, had a general tendency to rise in comparison with other countries prices, following an almost linear trend continuing at least till the late 1880s – early 1890s, to stay stable afterwards. The differential growth in productivity possibly contributed to this long run tendency. There is evidence that cross-country productivity differentials from the second half of the eighteen-century to World War I were substantial; productivity in Italy was indeed stagnant during the first part of the period, to rise since the 1890s, when relative prices showed a decline. Probably both elements were important parts in the rising pattern of Italian relative prices and in the deterioration of the Italian real exchange rate from 1867 to the late 1880s. Since 1887, the lira real exchange rate was relatively stable and fluctuated around unity.

Overall, sundry elements played a prominent role in the real effective exchange rate determination, beyond the influence exercised by the nominal exchange rate and there is no wonder why a crude test of the Purchasing Power Parity theory does not apply[13].

To this long run upward trend in Italian relative prices, superimposed a wavelike movement resulting from the short time influence exercised by the nominal exchange rate on Italian domestic prices in relation to other countries prices deviations from parity. When the lira effective exchange rate depreciated in 1866-68, in 1872-74, in 1891-94 Italian relative prices increased quite soon, with a one-year lag, which is particularly evident in the first two occasions. When lira appreciated, in 1880-82 and in 1898-03, Italian relative prices declined.

The exchange rate at parity, or slightly appreciating, pegged domestic prices to the foreign prices as from the relative price series. Relative prices were stable in the period 1880-1885, when the lira resumed convertibility and again since 1897 when they actually declined, as the productivity effect added up to the stability effect arising from the exchange rate.

The effect of the lira exchange rate variations on prices can be meaningfully rephrased in terms of movement of prices of traded and non-traded goods. Since the seventies, capital flows, investments and aggregate domestic demand run closely parallel. Any time the lira appreciated, as it happened in 1879-1885 and again since 1897, foreign capital entered the country and while external competition kept the price of traded goods under control, the increase in domestic demand pushed up non-traded goods prices (at half 1870s, for all the 1880s and during the first decade of the new century). The reasons are many. First, traded goods prices are set in the world market and are not sensible to changes in domestic demand: entrepreneurs producing tradables face fixed prices determined in foreign currency and are allowed some flexibility in price determination only to the extent of the exchange rate down-

---

13. Fratianni and Spinelli speculate that PPP did not apply to the lira exchange rate over the period 1861-1913 (Fratianni and Spinelli, 1984). Indeed a more complex test, just taking a productivity measure into account, shows very clearly that lira exchange rate and relative prices, over the long run, have a common stochastic trend.

ward variation. A depreciating exchange rate decreases the relative price of non-traded goods, while appreciation is associated with the opposite movement. Second, Italian protective tariff policy in the late seventies turned relative prices in favour of tradables, making the shift following resumption (in 1881) still more pronounced. The rise in Italian duties, due to the Italian protective 1878 tariff act (Federico, 2001) and the lira nominal depreciation (duties were paid in gold)[14] may explain the increase in Italian relative prices for tradables over non-tradables of the late seventies. The average tariff level remained roughly the same to the end of the century, while subsequent tariff reductions in the new century account for relative price stability of tradables over non-tradables, adding again the effect of the tariff decline to the effect of the exchange rate recovered stability.[15] Third, capital inflows into Italy were so huge that their effect on relative prices of both traded and non-traded goods dominated completely any other element[16]. Four, the increase in investment, both public and private as their cycle went together, was mainly directed towards basic infrastructures that pushed up the demand for goods produced within the country and related only for a tiny amount to goods traded in world markets: bricks, plaster, wood etc. were locally produced. Therefore, the increase in demand that followed each main capital inflow originated a domestic price increase that was pushed up through the non-traded commodity price upsurge.

As capital inflows characterised periods of exchange rate stability there is an evident positive correlation between Italian non-traded goods prices and capital imports, where prices of non-traded measure the pressure of demand on the domestic market. Italian non-traded goods prices rose relatively to Italian wholesale prices and to the rest of the world traded goods prices (computed as UK and USA average traded goods prices by Dick and Floyd, 1992) any time foreign capital entered the country in a significant amount.

A look at the series of Italian non-traded goods prices in relation to traded goods prices (FIGURE 2) shows a rather stable path each time the lira depreciated in nominal terms and two

---

14. The protectionist side of the lira depreciation was clearly perceived by part of the industrialists that tried to delay resumption. The Milan Board of Trade president, Giulio Bellinzaghi, remembered emphatically that Britons had lived and progressed with a depreciated currency during two decades (Are, 1965, p. 172-74, p. 208).

15. The Italian protection was much strenghtened in 1887 but many duties were changed by specific laws as well as a consequence of two rounds of trade treaties, so that in the new century the average level of nominal protection was possibly much lower than in 1878 (Federico and Tena, 1998).

Federico, in his paper on Italian tariff policy (2001) speculates that Italian tariff policy was not inspired by any consistent, long-term strategy to change the allocation of resources. Effective protection of manufactures did not sistematically exceed that of primary products. Italy, on the whole, protected less the investment goods than the cosumer goods, as it would seem reasonable. But the substantial protection enjoied by the big steel-making firms was harmful to economic development, as it raised the prices of inputs in engineering.

16. Indeed a multitude of different factors affects prices other than shifts in capital flows. National income dynamic that stimulated domestic demand for traded goods allowed for large economies of scale and production of domestic goods at low cost. Changes in technology and in real income composition between traded and non-traded goods are some of the long list of various elements influencing relative prices.

Cost decrease due to technological progress, was certainly inferior for non-traded goods than for traded goods, both for the different nature of technical progress that was developed in this period of time and that concerned directly manufactured products and for the less competitive environment that surrounded the production of goods for the domestic market that tended to incorporate the effect of technical change in profits more than in sale prices. Italian and foreign time series have a different statistical structure: Italian wholesale prices and traded prices series show a clear upward trend during all the period. Foreign prices series, represented here by UK prices, are a stationary variable.

more rapid rise when the lira appreciated in nominal terms and remained stable (1877-1887 and, less abruptly, from 1897 to 1913). Price increased rapidly till the last decade of the century, with two peaks, in the early seventies and in the late eighties: a path that reflected, with a lag, that of construction, which peaked just after the country unification, in 1873, in 1889 and in the first decade of the new century, particularly after the 1907 crisis. During most part of this period, the lira had a stable exchange rate (1860-65, 1880-90 and 1901-1913). TABLE 1 reports the correlation coefficients among significant economic variables.

Figure 2 –   Lira exchange rate and prices of non-traded over traded goods in Italy
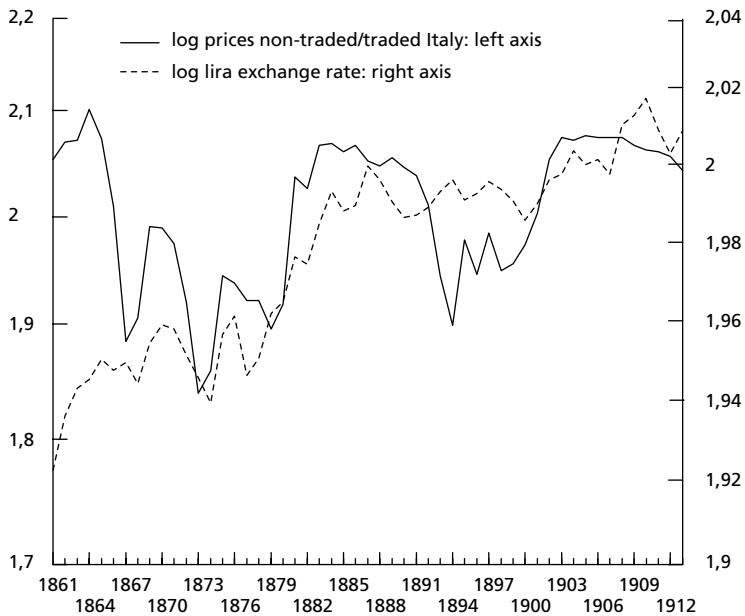
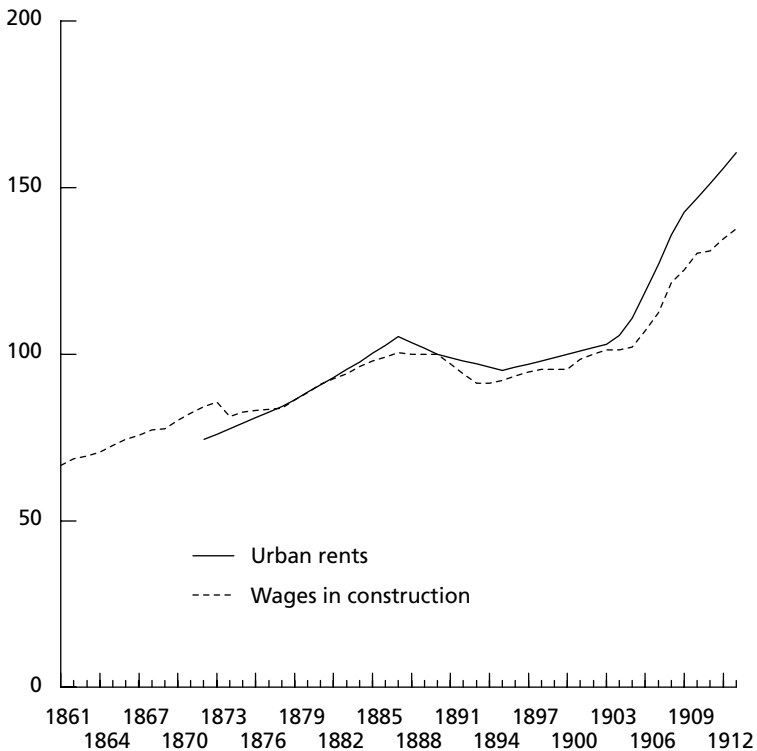Log of the lira exchange rate index numbers, 1890 = 100.
Sources: figure 1.

Table 1 -   Construction and other variables, correlation coefficients, 1861-1913

	Trade balance	Construction activity	Lira rate of exchange	Rendita italiana interest	Relative prices Italy: Non-Traded/Traded	Relative prices It/UK: Non-traded
Trade balance	1.000					
Construction activity	0.897	1.000				
Lira rate of exchange	0.523	0.524	1.000			
Rendita italiana interest	0.141	0.201	0.302	1.000		
Relative prices Italy: Non-Traded/Traded	0.661	0.563	0.450	0.027	1.000	
Relative prices It/UK: Non-Traded	0.775	0.576	0.435	–0.024	0.905	1.000

If capital imports pushed towards a rise in non-traded goods prices, and if at the same time, domestic prices for traded goods were kept under control through lira appreciation or a stable exchange rate, a very abrupt change in profitability ensues. Prices of Italian non-traded goods relative to traded goods increased by 33% from 1880 to 1887 and this element was one of the main factors behind the growth of rent values that resulted in the higher values of urban properties (with a peak in 1887) conducive to the 1890s crisis. The urban rent increase was due to several concomitant structural factors as the run to the capital town, the abandon of the countryside in favour of urban speculation, that was fuelled by banks' credit and lead to the banking crisis of the 90s (Carocci, 1975, 51; Caracciolo, 1956, ch.6). A similar rapid increase in relative non-traded goods prices materialised again from 1900 to 1910 (+30%).

FIGURE 3 charts the few available data on income distribution, i.e. rents and wages in construction. Urban rent index number exceed wages index, with two evident peaks, in 1887 and in the last part of the period.

Figure 3 –   Rents and wages in construction in Italy

Index numbers, 1890 = 100.
Source: Fenoaltea (1986: table 4, p. 18; 1987: table 2, p. 30).

Lira exchange rate resumption in 1881-83 played an obvious part in this process.[17] As lira appreciated and remained stable until the late 80s, non-traded goods prices increased relatively to traded goods prices, which had to bear the pressure of international competition, and rents increased. When the rate of exchange declined in 1889-94 relative prices stayed more stable as both, traded and non-traded goods prices increased with depreciation, and rents declined.[18]

It was a limited move. Since the first years of the new century the situation reverted: the rate of exchange was pegged upward and prices were constrained to follow the international pattern of the gold standard core countries, actually exceeding their downward movement. The lira prevented from appreciating turned the benefits balance in favour of the exporting industrial group – textiles – that, with landowners, constituted the most powerful lobby in parliament. The upper pegging did not benefit importers of investment goods, whose demand was booming because of the high rate of growth in manufacturing (Warglien, 1987) but whose political influence was negligible.[19]

The long run influence of relative prices (traded versus non-traded) in production and distribution becomes particularly clear when non-traded/traded Italian prices are compared with British non-traded/traded prices since in Britain, the main exporter of capital at the time, domestic investment displayed an opposite movement, in relation to investments in Italy, declining when capital was flowing out of Britain and into the recipient countries among which Italy. Domestic activity in Britain, with the associated parallel movement in non-traded goods prices moves roughly opposite to the movement of domestic activity and to the associated movement of non traded goods prices in Italy. Data on non-traded/traded prices make this process evident, with Italian non-traded/traded prices surging relative to British non-traded/traded prices in the two periods in which the lira had a stable rate of exchange and foreign capital entered Italy (FIGURE 4).

The empirical test

This complex set of propositions is subjected to empirical verification. To start with, price series need some discussion and explanation. Price indexes are not what one should hope for: Italian wholesale goods prices are computed from the Italian Central Statistical Office and look relatively reliable, behind the first years during which are more tentative (Sommario, 1958, TABLES p. 91-96). They include mainly traded products: the presence of non-traded components is so limited that they can be referred to as wholesale prices for traded goods. So, the Istat wholesale price series has been assumed, somewhat improperly, to represent the traded prices behaviour.

---

17. The change in profitability that ensued was clearly perceived by Italian industrialists (Are, 1965, 212).
18. Price shift was accompanied by a strong swing in construction activity; the rent swing would have possibly been stronger if the quantities did not grow as in fact did.
19. Similar arguments explain Italian tariff policy of the time (Federico, 2001).

Figure 4 –   Prices of non-traded over traded goods and relative prices of non-traded goods, Italy and UK
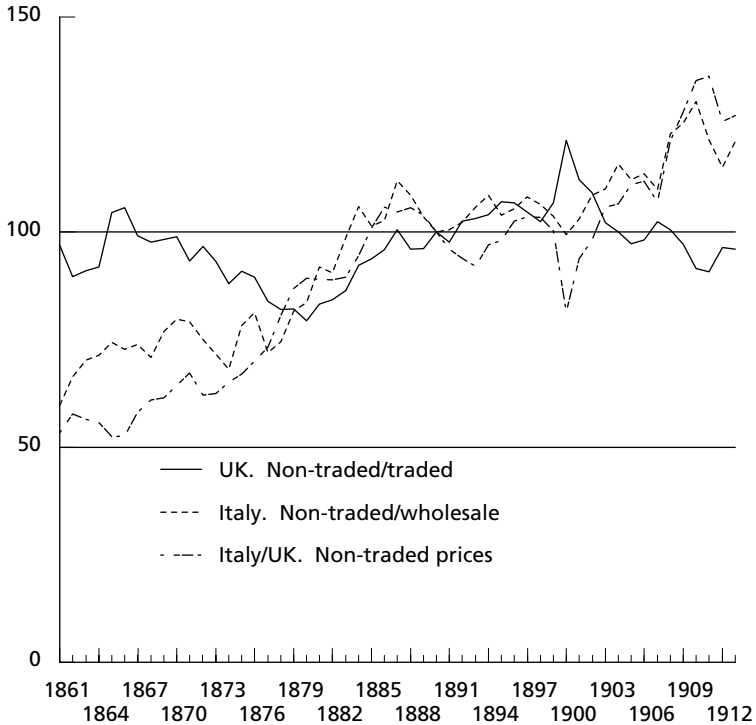
Index numbers, 1890 = 100.
Sources: figure 1; Wood, 1909; Brown et al., 1981; Dick and Floyd (1992) for UK prices.

Non-traded goods are discussed referring to the Italian construction sector (public work, railways and private construction), whose value-added amounts to almost half of the Italian manufacture value added (Maddison, 1991, TABLE 7, p. 236-37). The non-traded price index is made of labourer's wages, as a proxy for low value material prices – of domestic origin – employed in "construction activity" and is computed by Fenoaltea (1986, TABLE 4).

Foreign prices of non-traded goods – here non-traded goods prices in Britain – have been built combining the scarce available series. The non-traded goods prices are built on house rents computed by Wood[20] and on electricity and fuel prices constructed by Phelps-Brown and Hopkins[21]. Wholesale prices of traded goods were computed by the Board of Trade (Mitchell, 1962, TABLES 4 and 5). Italian non-traded relative price is the ratio between prices of non-traded poor materials used in construction and domestic wholesale prices ($P_{IT}^{NT/T}$).

---

20. Extrapolated for the last years of the period, see Wood (1909, p. 102-1103).
21. Brown and Hopkins (1981, chap. 2). Weights are taken from Dick and Floyd (1992, p. 186-187).

FIGURE 4 charts the ratio between non-traded commodity prices and traded commodity prices in Italy and in Britain.[22] Italian non-traded price relative to the UK non-traded price is the ratio between the two ($P_{IT/UK}^{NT}$).

Capital flows (*K*) have been approximated by the reverse trade balance on the ground that what makes the invisibles, essentially both labour income and unilateral transfers, i.e. emigrants remittances, which are by far the most important item, share their behaviour with capital movements, for the argument at hand.

Construction (*C*) data are from Fenoaltea (1988, TABLE 1). Construction is the sum of railways, public work construction and private buildings (Fenoaltea, 1984, 1986, 1987).

Wholesale prices, both domestic and foreign, the nominal effective (*E*) and the real effective rate of exchange of the lira are from Ciocca and Ulizzi (1960, TABLE 5).

Variations in domestic interest rate (Δi) are yearly variations in the Rendita domestic interest.

All variables, except for Δi and *K*, are in logarithms. They all appear to have a stochastic trend; the situation is less defined for the lira exchange rate whose series shows a stationary character (Tattara and Volpe, 1997, APPENDIX).

The underlying model is the following. Non-traded goods production depends on available resources. The binding resource is capital, that can be raised domestically or flow in from abroad. Capital from abroad is exogenous; its abundance is reflected in changes in the domestic long-term interest rate, more than in the interest level. The relative price of non-traded over traded goods determines the speed at which domestic resources are shifted from traded into non-traded production and is expected to play an important role as explanatory variable in the construction equation.

The domestic cycle in Italy appears to depend on a long swing in the supply of foreign capital, as already noticed. It is of interest to check if there is a common stochastic trend among construction, the rate of exchange, traded and non-traded goods prices, i.e. if the series are cointegrated. Cointegration analysis helps to discover a tendency for some linear relationship to hold between the above-mentioned series.

The long run relationship between these variables is estimated using the autoregressive distributed lag-modelling approach advocated by Pesaran and Shin (Pesaran and Shin, 1995) and developed in Pesaran and Pesaran (1997). This procedure is to be preferred, in small samples, to various other approaches, including the fully modified ordinary least square estimator of Phillips and Hansen (1990)[23].

---

22. A very similar result is obtained comparing the price of non-traded goods in Italy and in the United Kingdom with Italian prices computed in gold lire, as Italy has been for the largest part of the period out of gold standard. A similar procedure has been adopted by Dick and Floyd (1992, p. 48).
23. The FM-OLS estimates (VAR 2) provide nonetheless very similar results to the long run coefficients reported in table 2.

TABLE 2 transcribes the long run equation estimate, computed according to the ARDL method with a maximum of three lags, under various assumptions. TABLE 3 transcribes the Error Correction equation estimate (ECM) derived from the long run cointegrating variables in TABLE 2. Fitted values and residuals are charted in FIGURES 5 and 6.

Table 2 -   Estimated long run coefficients using the ARDL approach

| | INPT | K | Relative prices | | Δi | E | VAR order |
			$P_{IT/UK}^{NT}$	$P_{IT}^{NT}/^T$			
1	2.3116	0.00067		0.636			2, 0, 0
	(1.750)	(4.042)		(2.153)			
2	4.2316	0.00057	0.01005				2, 0, 0
	(18.979)	(4.883)	(4.165)				
3	1.3554	0.00049	0.00989		−0.00085	0.6287	2, 0, 0, 1, 0
	(0.368)	(4.572)	(4.600)		(−0.0123)	(0.776)	

Notes:
– ARDL (2,0,0,0,1) selected on Schwarz Bayesian Criterion.
– Dependent variable is Construction (C).
– Estimation from 1864 to 1913. Constant (INPT), no trend, t-ratios in parenthesis. 50 observations.

Table 3 -   Error correction representation for the selected ARDL model

| | INPT − INPT(−1) | $K - K(−1)$ | Relative prices | | $\Delta i - \Delta i\,(−1)$ | $E - E\,(−1)$ | ECM(−1) |
			$P_{IT/UK}^{NT} - P_{IT/UK}^{NT}(−1)$	$P_{IT}^{NT}/^T - P_{IT}^{NT}/^T(−1)$			
1	0.622	0.000156		0.147			−0.2313
	(5.252)	(2.542)		(2.029)			(−3.427)
2	0.549	0.00018	0.00311				−0.3101
	(4.979)	(3.155)	(3.697)				(−4.617)
3	0.647	0.00017	0.00347		−0.00030	−0.903	−0.3505
	(5.839)	(3.224)	(4.078)		(−0.122)	(−2.268)	(−5.180)

Notes:
  - Dependent variable is ΔC.
  - If the disturbances are uncorrelated, the OLS estimators of the short run parameters are T consistent and the ARDL-based estimators of the long run coefficients are super consistent, with the implication that standard asymptotic theory applies (Pesaran and Shin, 1995).

Equation 1 cointegrates construction in Italy, capital flows measured as previously explained and domestic non-traded/traded prices. Equation 2 replaces domestic prices with the UK/Italy non-traded prices. Equation 3 adds, among the explanatory variables, the domestic interest rate variation and the exchange rate. The coefficient signs are as expected.

Construction was sensitive to foreign capital, to a measure of its abundance, and to relative non-traded goods prices. Relative prices, measured both as Italian domestic relative prices and as UK prices relative to Italian prices, always prove an important explanatory variable. The lira effective rate of exchange might capture some influence on resources shifts that are only imperfectly captured by relative price shifts. The error correction coefficient, always superior to −0.35, is statistically highly significant in the three equations, has the correct sign,

and suggests a moderate speed of convergence to equilibrium, that is something we would have expected in dealing with construction activity.[24]

When the period reduces, skipping the early, more turbulent years, the significance of the independent variables and of the error correction coefficient always improves.

Cointegration points to the existence of a stable relationship among the significant variables. Lira appreciated when foreign capital flew into the country; excess supply of capital lowered the rate of interest, construction peaked and non-traded Italian prices were high in respect to British prices and in respect to Italian prices of traded goods because of additional pressure on demand of non-traded goods.

Figure 5 – Yearly variation in construction and fitted values
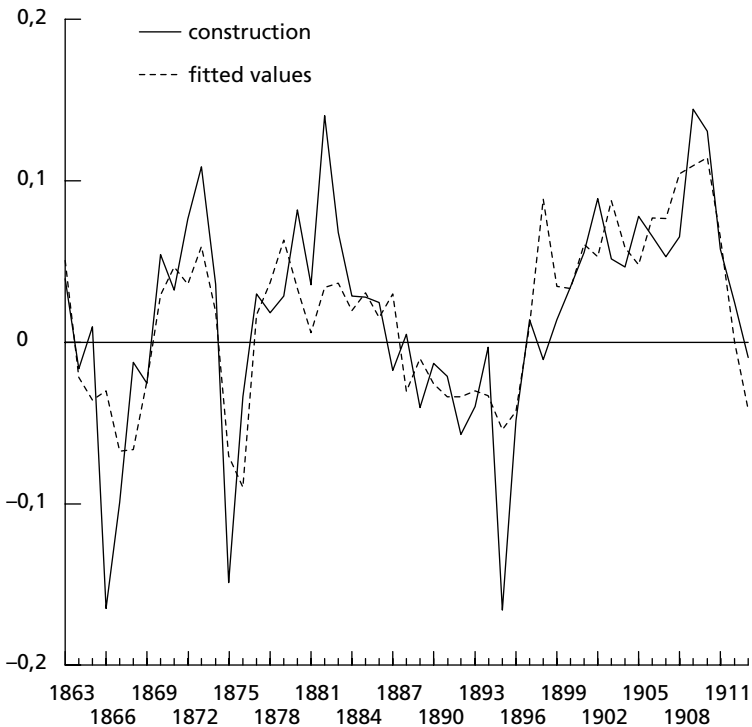
Figure 6 – Plot of residuals and two standard error bands
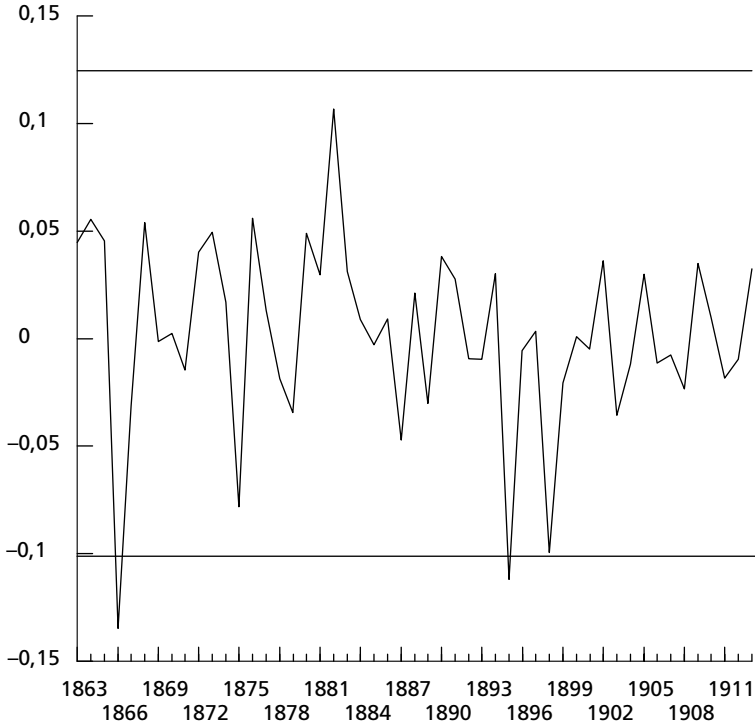
CONCLUSION

Lira semi-pegged exchange rate policy had important effects in production and in income distribution. Any time there was a regime shift and the lira recovered parity with the gold countries, a significant relative price movement in favour of non-tradables was put into force. This was one of the elements at the root of the run towards urban speculation, both in the early seventies and in the nineties and of the accompanying banking crisis.

Adhering to the gold standard, during the 19th century, required the abandonment of monetary sovereignty by the individual states, in a process that remembers the process of the European Monetary Unification (EMU). The study of past episodes of adherence to a single currency (the gold standard) sheds some light on the dangers of abandoning exchange rate flexibility in the earliest stages of development, with several banks of issue that were directly involved in commercial transactions and directly affected by the vagaries of the markets.

Lira resumption was mainly advocated by the need to attract foreign capital, to keep under control the state budget and to avoid the uncertainties in trade settlements with Italy's main partners that were gold standard countries. However, going back to gold had various, non-

explicit, consequences that came into force again when the lira was pegged upward, at the turn of the century. This policy eventually favoured urban rents and the sheltered sectors of the economy (construction activity) through a significant relative price shift, while industrial and agricultural exporters were subject to additional stress.

Adherence to the gold standard provides evidence that fixed exchange rate regime may endanger the competitiveness of the country and its export industry and act in favour of the sheltered sectors of the economy. Additionally the historical episode at hand shows that a unified money (the gold standard) was not accompanied by a unified commodity market, neither was followed by a significant reduction in tariff protection. The same reasons – vested interests – explain the slow emergence of a single market in Europe after the present adherence to a common standard, the ECU (Goldberg and Verboven, 2001) and explain why the process of enlargement of the monetary unification to the Eastern countries is planned, in the next years, as a very slow process. A process that will not lead, in the short run, to freedom of movement of labour and commodities, and is to be accompanied only gradually by an integration of the real side of the economies.[25]

G. T.

Giuseppe Tattara / Économie internationale 96 (2003), p. 23-42.

APPENDIX 1

Table A1.1 -   The Data Base

	Merchandise balance	Construction Maddison	Rendita Italiana interest rate	Lira effective exchange rate	Prices in Italy non-traded/ wholesale	Prices of non-traded goods. Italy/UK	Rents	Average wage in construction
	Million lire	Million lire, at 1870 prices		1890 = 100	1890 = 100	1890 = 100	1890 = 100	1890 = 100
1861	313	168	6.98	100.48	59.75	61.63		66.58
1862	223	205	7.26	101.53	66.38	74.04		68.68
1863	231	209	7.10	101.62	70.20	77.08		69.46
1864	367	208	7.56	103.53	71.40	77.68		70.64
1865	367	208	7.84	101.72	74.38	71.16		72.74
1866	219	165	9.24	97.71	72.77	68.89		74.44
1867	109	143	9.67	90.26	73.92	74.59		75.62
1868	71	139	9.32	91.50	70.86	72.57		77.33
1869	101	136	8.96	96.56	76.83	78.23		77.72
1870	101	145	9.00	96.47	79.75	80.67		80.21
1871	−152	155	7.21	95.61	79.11	84.80		82.31
1872	−35	171	5.98	92.36	74.97	77.61	74.43	84.40
1873	96	202	6.26	87.58	71.68	76.92	75.95	85.58
1874	264	213	6.25	88.73	68.16	77.47	77.61	81.39
1875	132	172	5.89	93.79	78.19	86.02	79.27	82.70
1876	62	160	5.85	93.41	81.22	90.77	80.94	83.09
1877	171	165	5.88	92.45	72.00	85.87	82.60	83.49
1878	−6	165	5.61	92.45	74.50	90.90	84.27	83.88
1879	121	170	5.16	90.93	81.66	99.38	86.38	86.37
1880	35	187	4.88	92.26	83.65	105.43	88.65	88.47
1881	27	199	4.88	99.43	91.93	110.35	90.77	90.96
1882	36	238	4.97	98.76	90.57	107.43	93.04	92.66
1883	51	258	4.98	101.34	98.69	114.22	95.46	94.23
1884	204	269	4.62	101.43	105.89	114.74	97.73	96.33
1885	452	280	4.57	100.96	101.44	108.17	100.30	98.03
1886	373	285	4.41	101.34	102.67	107.05	102.72	99.21
1887	524	270	4.47	100.38	111.92	111.40	105.30	100.52
1888	220	263	4.52	100.10	108.55	112.99	103.48	100.00
1889	363	249	4.59	100.57	103.48	107.59	101.82	100.00
1890	363	249	4.60	100.00	100.00	100.00	100.00	100.00
1891	194	243	4.71	99.52	100.50	102.88	99.09	97.12
1892	161	223	4.66	97.80	102.29	99.74	98.03	94.23
1893	172	214	4.64	93.79	105.78	102.49	97.13	91.35
1894	9	212	4.59	91.12	108.56	104.35	96.07	91.35
1895	84	167	4.38	95.80	103.92	97.06	95.16	92.14
1896	68	154	4.36	93.89	105.39	98.71	96.07	93.45
1897	18	154	4.18	96.18	108.13	103.25	96.97	94.63
1898	101	151	4.06	94.08	106.38	103.86	98.03	95.54
1899	−29	155	4.01	94.46	103.71	97.17	98.94	95.54
1900	244	166	4.03	95.51	99.46	81.98	100.00	95.54
1901	246	182	3.98	97.33	103.08	91.88	100.91	98.43
1902	166	208	3.91	100.48	108.55	99.48	101.97	100.00
1903	240	227	3.91	101.81	109.97	107.66	103.03	101.31
1904	214	244	3.90	101.62	115.77	115.72	105.60	101.31
1905	234	270	3.83	101.91	112.23	115.37	110.89	102.10
1906	494	293	3.87	101.81	113.51	115.60	118.61	107.08
1907	813	316	3.69	101.81	109.92	107.35	126.93	112.45
1908	1059	342	3.64	101.81	122.79	122.10	135.85	121.49
1909	1098	414	3.61	101.34	125.29	128.89	142.66	125.29
1910	1028	483	3.61	101.05	130.28	142.38	146.90	130.28
1911	1035	511	3.67	100.96	121.38	133.64	151.29	131.06
1912	1 155	521	3.6	100.67	115.06	119.39	155.82	134.73
1913	991	510	3.59	99.81	121.10	126.15	160.51	137.61

Source: References at pages 34-35 as specified.

References

Are, G., 1965. Il problema dello sviluppo industriale nell'eta' della destra, Pisa, Nistri-Lischi.

Biscaini Cotula, A.M., Ciocca, P., 1979. Le strutture finanziarie: aspetti quantitativi di lungo periodo (1870-1970), in: Vicarelli, F., (Ed) *Capitale industriale e capitale finanziario: il caso italiano*, Bologna, il Mulino, 61-138.

Brown, Phelps E.H., Hopkins, V.S., 1981. *A Retrospective of Wages and Prices*, London, Meuthen.

Caracciolo, A., 1956. *Roma capitale*, Roma, Edizioni di Rinascita.

Carocci, G., 1975. *Storia d'Italia dall'Unita' ad oggi*, Milano, Feltrinelli.

Ciocca, P., Ulizzi, A., 1990. I tassi di cambio nominali e "reali" dell'Italia dall'unità nazionale al sistema monetario europeo 1861-1979, in: Cotula, F., (Ed), *Ricerche per la storia della banca d'Italia*, v.1, Roma-Bari, Laterza, 340-368.

De Cecco, M., 1990. Introduzione, in: De Cecco, M., (Ed), *L'Italia e il sistema finanziario internazionale*, Roma-Bari, Laterza, 3-62.

Devaragan, S.J., Lewis, D., Robinson, S., 1990. Policy lessons from trade-focused two-sector models, *Journal of Policy Modelling* 12 (4), 625-657.

Di Nardi, G., 1953. *Le banche di emissione in italia nel secolo XIX*, Torino, Unione tipografico editrice torinese.

Dick, T.J.O., Floyd, J.E., 1992. *Canada and the Gold Standard, 1871-1913*, Cambridge, Cambridge University Press.

Eichengreen, B., Flandreau, M., 1996. The geography of the Gold Standard, in: Braga de Macedo, J., Eichengreen, B., Reis, J., (Eds), *Currency Convertibility. The Gold Standard and Beyond*, London and New York, Routledge, 113-143.

Ercolani, P., 1969. Documentazione statistica di base, in: Fua', G., (Ed), *Lo sviluppo economico in Italia*, Milano, Angeli, 380-460.

Federico, G., 2001. Protezione e sviluppo economico italiano: molto rumore per nulla?, in: Cafagna, L., (Ed), *Cattaneo e le forme dello sviluppo nell'Italia contemporanea*, Bologna, Il Mulino, 243-281.

Federico, G., Tena, A., 1998. Was Italy a protectionist country?, *European Review of Economic History* 2.1 (4), 73-97.

Fenoaltea, S., 1987. Construction in Italy, 1861-1913, *Rivista di storia economica*, second series, 4. International issue, 21-53.

Fenoaltea, S., 1969. Decollo, ciclo e intervento dello stato, in: Caracciolo, A., (Ed), *La formazione dell'Italia industriale*, Bari, Laterza, 95-113.

Fenoaltea, S., 1984. Railway construction in Italy, 1861-1913, *Rivista di storia economica*, second series, 1. International issue, 27-58.

Fenoaltea, S., 1987. Public works construction in Italy, 1861-1913, *Rivista di storia economica*, second series, 3. International issue, 1-33.

Fenoaltea, S., 1988. International resource flows and construction movements in the atlantic economy: the Kuznets cycle in Italy, 1861-1913, *The Journal of Economic History* XLVIII.3 (9), 605-636.

Fratianni, M., Spinelli, F., 1984. Italy in the Gold Standard period, 1861-1914, in: Bordo, M.D., Schwartz, A.J., (Eds), *A Retrospective on the Classical Gold Standard, 1821-1931*, Chicago and London, The University of Chicago Press.

Goldberg, P.K., Verboven, F., 2001. The evolution of price dispersion in the European car market, *Review of Economic Studies* 68 (237), 811-848.

Istituto Centrale di Statistica., 1958. *Sommario di statistiche storiche*, Roma.

Maddison, A., 1991. A revised estimate of Italian economic growth, 1861-1989*, Banca Nazionale del Lavoro Quarterly Review* 177, June, 225-241.

Mitchell, B.R., Deane, P., 1962. *Abstract of British Historical Statistics*, Cambridge, Cambridge University Press.

Pesaran, H.M., Pesaran, B., 1997. *Working with Microfit 4.0*, Oxford University Press, Oxford.

Pesaran, H. M., Shin Y., 1995. An Autoregressive Dstributed Lag Modelling Approach to Cointegration Analysis, University of Cambridge. Department of Applied Economics discussion paper 95-44.

Phillips, P.C.B, Hansen, B.E., 1990. Statistical inference in intrumental variables regression with I (1) processes, *Review of Economic Studies* 57, 99-125.

Salter, W., 1959. Internal and external balance: the rôle of prices and expenditure effects, *Economic Record* 35, 226-238.

Swan, T., 1960. Economic control in a dependent economy, *Economic Record* 36, 51-66.

Tattara, G., Volpe, M., 1997. Italy, the fiscal dominance model and the Gold Standard age, in: Officer, L., Marcuzzo, M., Rosselli, A., (Eds), *Monetary Standards and Exchange Rates*, Routledge, London, 229-263.

Thomas, B., 1954. *Migrationa nad Economic Growth: A Study of Great Britain and the Atlantic Economy*, Cambridge, Cambridge University Press.

Warglien, M., 1987. Investimento industriale e instabilita' finanziaria in Italia, 1878-1913, *Rivista di storia economica* 4 (3), 384-439.

Wood, G.H., 1909. Real wages and the standard of comfort since 1850, *Journal of the Royal Statistical Society* 72 (1), 91-103.