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Abstract

The revaluation of the Lira against the Pound, the so-called ‘quota 90’, was a major economic policy decision taken by the Fascist government in 1926. The economic history literature has seen this policy as the domestic implementation of the return to the Gold Exchange Standard characterizing the interwar period, with relatively limited economic consequences. We interpret the effects of this decision through an Error Correction Model and find that the economic cost in terms of output was limited. We claim that the main reason for this muted effect lied in a labor market that Fascist reforms tilted in favor of the firms.

Keywords: Quota 90, Fascism, fascist economic policy, fixed exchange regime, Italy.

JEL codes: N14, E52, C32.

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1. Introduction

In their classic analysis, Ciocca and Toniolo (1976) identify five sub-periods in the economic policy of Fascism: fiscal consolidation (1922-1925), ‘quota novanta’ (1926-1929), international crisis (1930-1932), autarchy (1933-1935), empire and preparation for war (1936-1939).

During the first period, excess demand due to investments took inflation to 19% in 1925 and 5% in 1926. The Italian lira depreciated against sterling from 89.48 in June 1922 to 145 in July 1925 and 154 in July 1926. This contrasted with the appreciation to 90 (the so-called ‘quota 90’), set out by Mussolini in 1926, obtained through capital controls, the increase in interest rates and the compulsory exchange of short-term with long-term bonds. Looking at the raw data, the re-evaluation of the lira seems to have caused a slowdown in real GDP in 1926 (+0.8%) and a recession in 1927 (-3% in real terms, -13% in nominal terms), but growth was soon back to 6.3% (1928) and 5% (1929) (Gabbuti, 2020). Then, the Great Depression struck.

‘Quota 90’ has been analyzed by several authors. However, as de Cecco (1993) noted, on the one hand, it is difficult to assess Mussolini’s reasons for implementing ‘Quota 90’, and on the other hand, it cannot be dismissed simply as a foolish policy choice. Moreover, the literature lacks a quantitative approach, not unlike other economic issues relating to fascism.¹ As noted by Gabbuti (2020), after intense research in the 1970s, economic historians turned to liberal Italy. The interpretations given by Toniolo (1980) still hold, and the new wave of data released in 2011 has not addressed the interwar period. This paper attempts to fill this gap in the literature by providing an econometric analysis of the effects of changes in the terms of trade on GDP. In doing so, we first analyze the time-series properties of the variables involved in the study and then check for a long-run relationship between them. Finally, through an Error Correction Model, we investigate the short-term adjustment. We find that the adjustment to a terms of trade shock is relatively fast. We do not examine the specific revaluation of the Lira in 1927 but study the relationship between terms-of-trade and output over a longer period to draw insights into this particular policy. In economic terms, the cost of the revaluation of the Lira seems to have been small, with the benefits mostly lying in following other major countries in the re-establishment of the Gold Exchange Standard.

The paper is organized as follows. Section 2 reviews the implementation of ‘quota 90’ and the literature investigating this policy. Section 3 provides an account of stabilization efforts in other European countries through the return to the Gold Exchange Standard, providing a broader scenario for the understanding of revaluation policy. In section 4 the methodology and data are introduced, whereas section 5 illustrates the results. Section 6 concludes.

2. “Quota 90” and the economic policy of Fascism

“I want to tell you that we are fully determined to carry out our economic fight in defense of the lira, and from this square, I confirm to the whole civilized world that I shall defend the lira to the end.”²

¹ See Ricciuti (2014) for a short review of the cliometrics of fascism and for the effects of the economic policies of fascism on capital accumulation.

² Translation by Fratianni and Spinelli (1997).

These few words, pronounced by Benito Mussolini in Pesaro on 18 August 1926, summarize the so-called Battle for the Lira, which is known as ‘Quota 90’,³ undertaken by the fascist regime between 1925 and 1927. The Pesaro Speech is less important for its financial results as its political significance.

After the March on Rome, the fascist regime, which included some elements of the old liberal State, concentrated its efforts on improving state finances by stabilizing and then reducing the public debt. The foreign trade balance, in deficit after WWI, slowly improved, thanks to international circumstances but also to the devaluation of the Lira, which favored exports. Moreover, after two troubled years in 1919-20 with a class struggle both in the industrial and agricultural sectors, wage increases were absorbed, and the economic situation became settled. The wholesale price index was stable until the beginning of 1925, and a slight devaluation of the Lira hardly affected the cost of living of the middle class and *rentiers*, while entrepreneurial groups benefitted significantly from the situation (Toniolo, 1980). After good harvests, the agrarian sector prospered between 1923 and 1925, although the conditions of agricultural workers hardly improved (Toniolo, 1980).

This situation changed dramatically between the end of 1924 and the beginning of 1925 when the Lira started to devalue, imports began to outweigh exports and the wholesale price index rose. This new pressure on the balance of payments was caused by external circumstances and the strength of internal demand (Toniolo, 1980). Moreover, intense national and foreign speculation (including against the French and Belgian Francs) hit the Lira hard, contributing to its depreciation (Falco and Storaci, 1977).

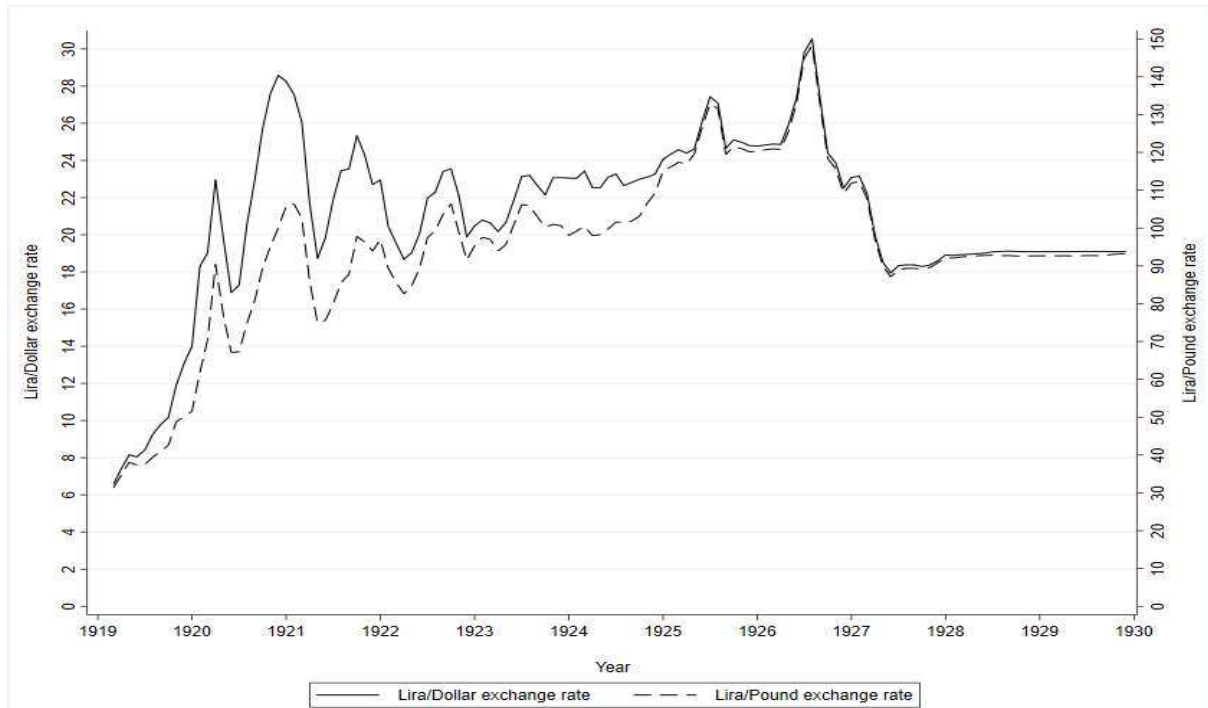
The exchange rate of the Lira against the Dollar and the Pound, fairly stable between 1922 and the beginning of 1925, started to falter, reaching over 27 for the Dollar, and over 132 for the Pound in July 1925 (Figure 1).

Inflation, muted until 1925, shot up, impacting the cost of living, with dire consequences for the middle class, whose support was crucial for the regime. The price of imports, especially food and other raw materials, started to increase fast (Staraci and Tattara, 2001). Consequently, the industrial sectors (such as iron and steel) which depended on imports, were harmed. Vice versa, agriculture and textiles, leading exports, benefited from the shock. Faced with the crisis, the Minister of Finance, Alberto de’ Stefani, seemed utterly helpless and lost the support both of the Fascist Party and the financial world (de’ Stefani, 1988). Mussolini replaced him with Giuseppe Volpi in July 1925. The choice of Volpi (who was, first of all, an entrepreneur and financier) could also be read as a strong message to manufacturers (Salsano and Toniolo, 2011).⁴

³ As noted by Sarti (1970), the term ‘Quota 90’ was used for the first time by Mussolini on 26 May 1927 in the famous ‘Ascension Speech’. See De Felice (1966) for a political analysis of ‘Quota 90’ in the documents of Mussolini and Volpi.

⁴ For recent accounts on de’ Stefani and Volpi see Bini (2017) and Segreto (2019), respectively.

Figure 1: *The exchange rate between the Lira and the Dollar and Pound Sterling (1919-1929)*



Source: Cotula and Spaventa (1993). Data in Lire.

With the support of Mussolini, the new Minister acted differently. The State started to buy Lira in the market to reduce liquidity but not much could be achieved without favorable circumstances internationally.

In the aftermath of the Washington agreement on war debt between the US and France, on 18 November 1925, Volpi negotiated a loan with the Morgan Bank, which was essential to increase the reserves of strong currency in order to return to the gold exchange standard (Migone, 1973). Until April 1926, the Lira remained stable. Afterwards, a meltdown occurred. Toniolo (1980) cites some of the possible causes: the international situation, increasing inflation, the balance of payments deficit and the growth of currency supply from big investment banks towards companies. Moreover, the American *Quota Act* limited immigration in the US after 1921 and began to bite, including the drastically decreasing value of remittances. During the summer, Volpi initiated some structural interventions to stabilize the value of the currency. The first step was in August 1926, when the Bank of Italy became the only institution with the right to print money, revoking the rights of the Bank of Sicily and the Bank of Naples. This measure was a message to international institutions like the Federal Reserve of New York and the Morgan Bank. The American financial world wanted central banks to be independent from politics (Migone, 1973). Volpi also introduced capital controls in the exchange market to limit speculation. In the London Accords in 1926, Italy had an 84% ‘haircut’ of its debt with the US and the UK (Astore and Fratianni, 2019), mostly related to WWI.⁵

⁵ After the Lausanne Conference of 1932 which failed to forgive war debt, in 1934 Italy defaulted on its debt (Astore and Fratianni, 2019).

During the summer of 1926, with inflation severely reducing the value of the French and Belgian currencies (Falco and Storaci, 1977), Mussolini pronounced the previously mentioned Pesaro Speech. It was barely considered by international markets but acted as the prelude to Volpi's action. He renewed the deflation policy, buying Lira in foreign markets and transferring the proceeds of the loan from the Morgan Bank to the Bank of Italy, which started to tighten credit. This increased deflation and the next step was to further reduce the currency in circulation. To do this, Mussolini and Volpi launched the so-called *Prestito del Littorio* in November 1926: all public debt securities with a maturity of less than seven years were forcibly converted into long-term securities.

In May 1927, a pound was worth 90 Lira and the exchange rate had stabilized. The Battle was over, although it was only in August 1927 that the government formally ceased the revaluation process (Fратиanni and Spinelli, 1997).⁶ With Royal Decree 2325 dated 21 December 1927, the legal tender was shifted over to the gold standard. The Pound exchange rate was fixed at 92,46 Lira, and the Bank of Italy was obliged to keep a gold reserve or convertible currency equal to 40% of all notes in circulation (Fратиanni and Spinelli, 1997). Despite Keynes's pessimistic and rather sarcastic remarks (Toniolo, 1980), currency reform was completed.⁷

The causes and results of 'Quota 90' have long been discussed by historians and economists. The devaluation of the Lira in the previous period was non viewed as a problem by the government, especially by de' Stefani, an economic non-interventionist. This attitude could be called *benign neglect* (Salsano and Toniolo, 2011). However, the government probably had few tools to fight against devaluation and its international causes (Cotula and Spaventa, 1993; Cavalcanti, 2011). Moreover, until the end of 1924, a large portion of the industrial sector supported devaluation, i.e. until it became costly, particularly for the heavy industry, an importer. A weak currency suited the textile and agricultural sectors, large exporters, but negatively impacted on the middle class, the backbone of the fascist Regime (Toniolo, 1980).

However, 'Quota 90' was essentially a political decision (Sarti, 1970). Mussolini sought international prestige for himself and the regime. In 1926, the *Duce* feared that France would stabilize its currency before Italy. The international credibility of the regime was instrumental for obtaining loans from foreign investors (Asso and De Cecco, 1993). 90 Lira per Pound was the exchange rate in December 1922, just two months after the March on Rome (De Felice, 1968). So, in Mussolini's opinion, 'Quota 90' was a symbol of success, infinitely preferable to "Quota 120", the exchange rate requested by the industrial world via Confindustria and Assonime (Salsano and Toniolo, 2011).

Another possible cause of revaluation was Mussolini's view of foreign exchange policy as laying the foundations for the Corporative State (Toniolo, 1980). It would be a mistake to neglect the origins and ideology of fascism when analyzing the causes of 'Quota 90'. The toots of the Fascist Party included some elements of anticapitalism. The government intended to

⁶ According to Di Nino et al. (2013), the Lira real exchange rate corrected for productivity differentials appreciated from 1921 to the mid-1930s, leading to overvaluation. Much of the appreciation was due to 'Quota 90'.

⁷ Keynes (1978) wrote: "Fortunately for the Italian taxpayer and Italian business, the lira does not listen even to a dictator and cannot be given castor oil." Those who opposed the fascist government were given castor oil (*olio di ricino* in Italian) to swallow as a punishment.

transform Italy from a *laissez-faire* (in the Liberal Age) to a state-run economy. According to La Francesca (1972), 'Quota 90' was an instrument that brought together Italian economic forces and public opinion in a battle for national pride. Finally, in 1925/1926, although the regime was stable, Mussolini feared that a failure on monetary policy would strengthen his opponents, both inside and outside the country and be used as a weapon to undermine the Fascist regime (Cohen, 1972).

Assessing the results of 'Quota 90' is more complicated. The currency reform was completed just two years before the onset of the Great Depression, so it is difficult to disentangle the impact of the policy from the crisis. The most evident consequence was the increase, after 1928, in the balance of payments deficit, as acknowledged by scholars at the time (Borgatta, 1937). Cohen (1972) maintains that if the revaluation of the Lira had been 10% instead of the 19% sought by 'quota 90', the balance of trade in 1928 would have been negative for 188 million Lira, instead of the 2,513 million it actually stood at. Had Mussolini listened to Volpi and industrialists, and limited the exchange rate to 120 Lira to the Pound, Cohen (1988) believes unemployment would also have been lower. A lower exchange rate meant less deflation and fewer trade restrictions. Meanwhile, at least in the short run, the price of non-tradable goods being rigid downward would not have changed much. After the currency reform, unemployment indeed grew, returning to the 1923 level. Deflation and revaluation favored the larger industrial companies over the small and heavy industry over the light, negatively impacting particularly on the textile and agricultural sectors (Cohen, 1988). However, Mussolini was willing to pay these costs to win the "Battle for the Lira". Almost certainly, the *Duce* knew the effects deflation would have. And, according to Cohen (1972), the Pesaro Speech is proof of this.

3. The international environment

'Quota 90' can be understood within a trend characterizing the major economies after World War I: a tendency to return to the old monetary system. Indeed, Bonelli et al. (1976) strongly maintain that many of the policies implemented by Mussolini were indistinguishable from those of neighboring, democratic countries. In the aftermath of World War I, most European countries faced a severe economic, financial and monetary crisis. The belligerents faced huge debts with limited fiscal capacity. One of the economic consequences of the conflict, derived from the need to fund the war effort, was that countries were forced to abandon the gold exchange standard, in effect since the 1870s. Consequently, money was more abundant in every country than before the war, causing high levels of inflation.

The US was a rare exception. Indeed, during US neutrality, European governments had sought short-term loans from American banks, transforming the US from a pre-war debtor to the main international creditor after the conflict. Additionally, one of the main problems for post-war Europe was the question of war reparations. The most severely war-ravaged countries, like France and Belgium, relied too heavily on reparations to fix their internal fiscal and economic situation, while for the defeated countries (mainly Germany), war reparations dragged them down, preventing a meaningful recovery and much-needed stability.

Regarding the monetary system, the prevailing consensus was for a rapid return to the pre-war gold standard. In two international conferences (Brussels 1920 and Genova 1922) European countries sought to give some order to their monetary systems and to re-establish gold as the monetary anchor (Bordo and MacDonald, 2003). The resulting monetary framework was called the gold exchange standard. According to the rules, each central bank limited fluctuations in the purchasing power of gold while ensuring continuous cooperation with one another. Central banks fell into two different categories: one comprised of key currencies whose reserves consisted in gold only (the US Dollar, the British Pound and the French Franc), and the second group comprising central banks whose international reserves consisted of both gold and foreign exchange (highly liquid short term credits) in the above key currencies. This gold exchange standard system reached its maximum expansion in 1929 with 46 countries involved.

There were several benefits of returning to the gold standard: minimal exchange rate fluctuations, balanced public budget, no inflation to fund the public sector. The financial markets rewarded the countries that returned to gold, especially when they did so at the pre-war parity, with the ability to borrow at substantially lower interest rates (Bordo et al., 1999). The main push toward international gold exchange standard restoration came from Britain in 1925, when it felt the need to quickly return to pre-war parity to stop outflows of gold reserves as other countries were adjusting to the new gold exchange standard. Moreover, London wanted to re-establish itself as the center of global finance, a role which little by little was shifting from the British capital to New York (Wandschneider, 2008).⁸ In 1926, France returned to the Gold exchange standard, the French government having relied too much on war reparation funds to solve its financial problems, taking the country to the brink of hyperinflation as in Germany. Inflation had put the old parity out of reach, making the Franc an overvalued currency, so France sterilized gold inflows to prevent a rise in prices. After the invasion of the Ruhr Valley by France and disastrous hyperinflation until 1923, Germany was able to achieve credible financial and monetary stability by pegging the Mark to the US Dollar, enabling the German economy to experience a brief period of prosperity and growth, often referred to as “the Golden era”, until the Great Depression of 1929.

As explained above, the interwar exchange standard worked as a system centered around a few key currencies with reserves in gold, and peripheral currencies with reserves in gold and a mix of key foreign currencies. The system brought internal and external monetary stability to member countries. Nevertheless, the new system was unable to repeat the success of the pre-war gold standard. One of the main reasons for the failure of this system was the lack of coordination among central banks; another failure was the asymmetry between surplus and deficit countries in the way they reacted to gold inflows and outflows. In fact:

“Under the “rules of the game,” central banks of countries experiencing gold inflows were supposed to assist the price-specie flow mechanism by expanding domestic money supplies and inflating, while deficit countries were supposed to reduce money supplies and deflate. In practice, the need to avoid a complete loss

⁸ Keynes openly criticized British revaluation, believing that the return to gold would lead to an overvalued Pound and deflation, with high levels of unemployment (Wolcott, 1993).

of reserves and an end to convertibility forced deficit countries to comply with this rule; but, in contrast, no sanction prevented surplus countries from sterilizing gold inflows and accumulating reserves indefinitely, if domestic objectives made that desirable. Thus there was a potential deflationary bias in the gold standard's operation.” (Bernanke and James, 1991, p. 36-37).

Two main gold surplus countries, the US and France, rarely followed the “rules of the game” allowing their respective central banks to sterilize gold inflows in order to accumulate large amounts of gold, without properly inflating their money supply. But this also meant that deficit countries did not lose much of their gold reserves before they were forced to deflate. Meanwhile, Britain carried a constant deficit in the balance of payments and shortages in gold, and the weakness of the Pound increased the overall instability of the system.

In this system, the main tool of central banks to protect their currencies was the bank rate, which they increased to attract gold inflows and prevent outflows. On the other hand, when there was no longer a need to attract gold or the bank rate was not in line with the internal economy, the central bank could lower its rate (Eichengreen et al., 1985; Dutton, 1984). The instability of the system came into full view after the financial crisis in the American market in 1929. The ensuing depression meant that many countries were unable to remain anchored to gold, since central banks could not efficiently fight recession and unemployment while their currencies were pegged to gold. The interwar gold exchange standard system started to break down in 1931, and by 1936 had completely disappeared (Wandschneider, 2008).

4. Methodology and data

This section addresses the empirical relationship between the lira exchange rate and GDP at market prices, in order to gain an understanding of the effects of Lira revaluation in 1926 on the Italian economy. Terms of trade (ToT) are used to measure the exchange rate. They are the relative price of exports in terms of imports and are defined as the ratio of export prices to import prices. An improvement in terms of trade benefits a country because it can buy more imports for any given level of exports. The terms of trade are influenced by the exchange rate because – the key policy variable here - a rise in the value of a country's currency lowers the domestic prices of its imports but may not directly affect the prices of the commodities it exports.

The first step in this time series analysis involves checking for the stationarity or non-stationarity of the variables; a stationary process is referred to as being integrated of order 0 or I(0), meanwhile a nonstationary stochastic process that can be made stationary is said to be integrated of order I(1).

To test for the presence of unit root, we apply the Augmented Dickey-Fuller test (1979), which tests for the null hypothesis that a series does contain a unit root against the stationarity of the process and the KPPS test (Kwiatkowski et al., 1992), where stationarity is the null hypothesis and the unit root is the alternative.

Afterwards, a cointegration test is carried out to investigate the long-run relationship between the exchange rate and the economic variables (Johansen, 1988). According to Engle and Granger (1987), even where some economic series are not stationary, some linear

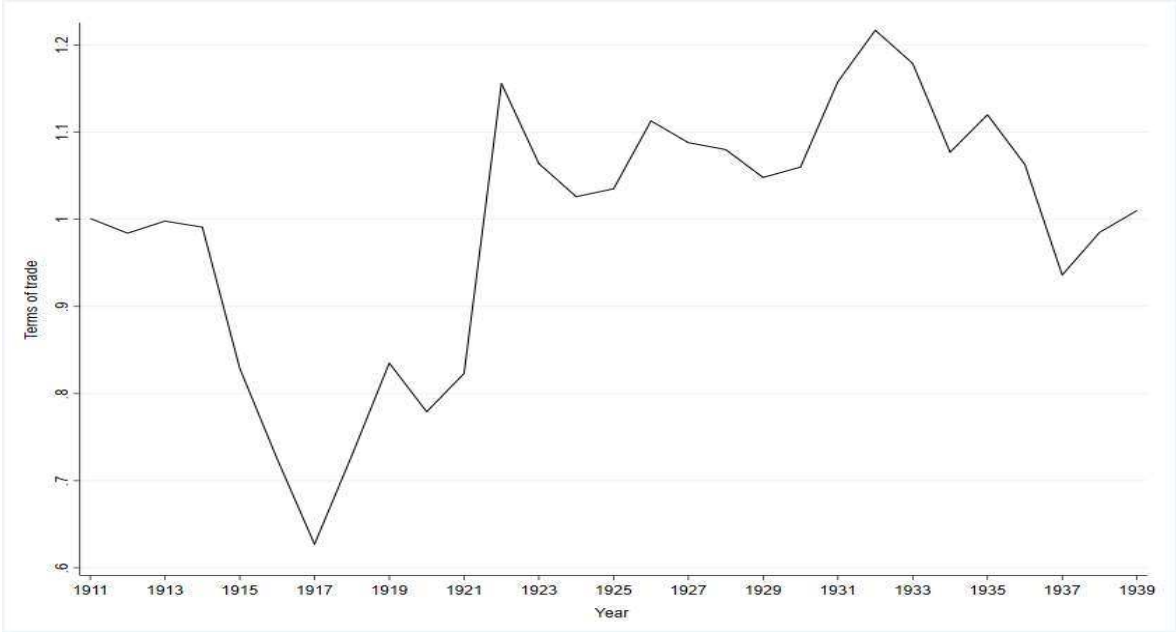
combinations of the variables may be stationary. When variables have a common stochastic trend and possess a linear combination which is $I(0)$, they are cointegrated.

Where the variables prove to be cointegrated, the best candidate for modelling the DGP is the vector error correction model (VECM) that corrects for short-run disequilibrium. The VECM has the form (Lütkepohl and Kratzig, 2004):

$$\Delta y_t = \Pi y_{t-1} + \Gamma_1 \Delta y_{t-1} + \dots + \Gamma_{p-1} \Delta y_{t-p+1} + u_t \tag{1}$$

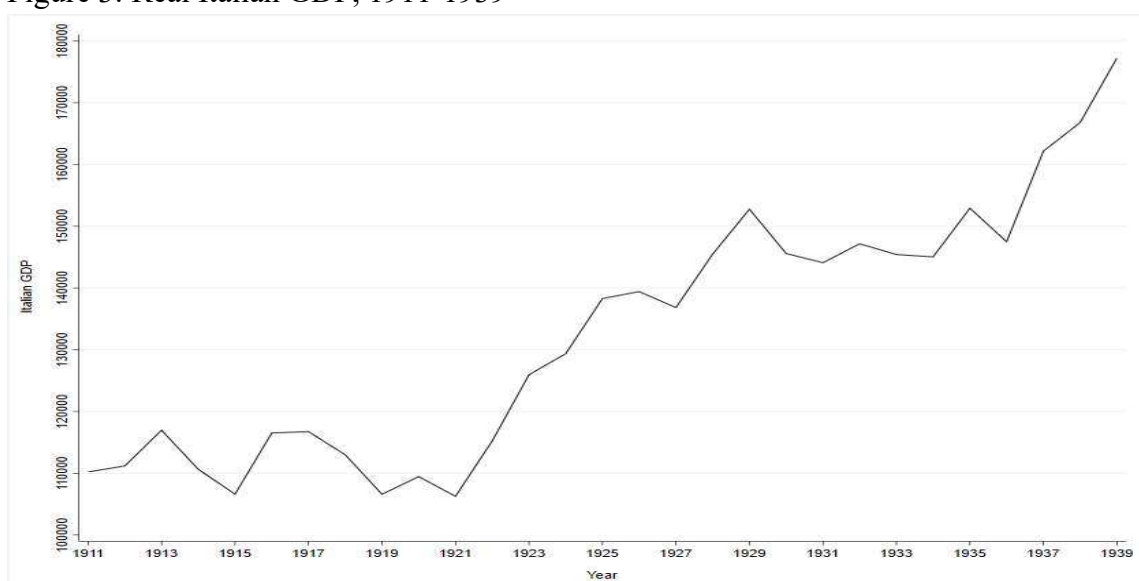
The data for GDP at market prices for the period between 1911 and 1939 were taken from Baffigi (2013) and are expressed in real terms with base 1911. The data for the terms of trade (ToT) are taken from Federico et al. (2011, tab. 8, p. 230). Both variables are in logs. Figures 2 and 3 plot the two variables of interest. Given the small size of the sample, we estimated the most parsimonious model, and acknowledge that it would have been interesting to include other variables that could act as channels in the relationship between terms of trade and GDP. Given the sample size, some caution should be taken in interpreting the results.

Figure 2: Terms of trade, 1911-1939



Source: Federico et al. (2011)

Figure 3: Real Italian GDP, 1911-1939



Source: Baffigi (2013).

5. Results

We start by analyzing the stochastic properties of the series.⁹ Table 1 sets out the results of the unit root tests. For the terms of trade, the ADF cannot reject the null of a unit root in levels, but in first-differences at the 5% significance level, therefore the variable is I(1). This result is confirmed by the KPSS test, where stationarity is rejected in level at the 10% significance level. The same occurs for GDP, however, the case for unit roots is stronger, since it is obtained at the highest significance level.

Table 1 – Unit root tests

	ADF		KPSS	
	Level	First-differences	Level	First-differences
ln ToT	-1.3919	-3.0095	0.3649	0.3133
ln GDP	-0.1274	-5.0581	1.3973	0.1999

Critical values for the ADF test: -3.43 (1%), -2.86 (5%) and -2.57 (10%). Critical values for the KPSS test: 0.347 (10%), 0.463 (5%) and 0.739 (1%). For ToT the number of lags in level and first-differences in the ADF test is 4 and 2, respectively. For the KPSS the number of lags is 2 in both cases. For GDP, the number of lags in the ADF test is 8 and 3, respectively, and in the KPSS is 4 and 3. The number of lags was selected through the Akaike Information Criterion.

Having established the nature of the DGP of these variables, we look for the existence of a long-run relationship between them, i.e., cointegration. The trace test by Johansen (1988) was applied. We strongly reject the null hypothesis that $r = 0$, whereas we cannot reject the null

⁹ The econometric analysis was carried out with JMulti and Gretl software.

of one cointegrating vector (Table 2). Therefore, terms of trade and GDP have common long-run behaviour.

Table 2 – Cointegration test

r	Test statistics	90%	95%	99%
0	144.63	23.32	25.73	30.67
1	8.34	10.68	12.45	16.22

To analyze short-run behaviour, we estimate a VECM. The number of lags is determined by the Akaike Information Criterion. A dummy variable that takes the values 1 from 1929 to 1932 and 0 otherwise, is included to take into account the effects of the Great Depression, which could be a serious confounder, since it negatively affected GDP.

Interpreting these results for the problem at hand, we can maintain that the revaluation of the Lira had relatively mild consequences on output. The decision amounted mostly to an important political gesture by Mussolini, with low economic costs. A possible reason may be the moderate weight of industrial activities on GDP at that time (about 20%), which could gain from devaluation, and the limited role for exports (12% of GDP), which are severely hit by a revaluation.¹⁰

Another possible source of this dumped effect may be the labour policy of the fascist government. The literature is unanimous in characterizing this policy as “wage compression” (e.g., Sabbatucci Severini and Trento, 1975).¹¹ Figure 3 shows the daily real wage for industrial workers (Zamagni, 1975). After two years of sizable increases following WWI, since 1922 real wages had been going down. After the decision to revalue the lira, the first 10%-cut in nominal wages was proposed by fascist unions in May 1927. It was not enough to offset the revaluation and in October 1927 the Council of the Fascist Party chose an overall decrease of 20%. The effect was felt in 1928, with a drop in real wages of about 7%. In 1930, there was a further 8% cut in nominal wages, but the effect on real wages did not materialize.¹² The foundations for these choices were based on the Palazzo Vidoni Agreement of October 1925, making non-fascist trade unions illegal.¹³

¹⁰ A notable victim of ‘Quota 90’ was SNIA, which exported 80% of its production and imported only a few raw materials, amounting to about 7-11% of its production costs. The company recovered only during autarchy, when the domestic demand for its products increased and it obtained subsidies for exports (Onida et al., 2013). In a letter addressed to Mussolini on 27 June 1927, the owner, Riccardo Gualino, expressed his concerns about the prospect of excessive revaluation (Bermond, 2005).

¹¹ Giordano and Giugliano (2015) argue that the switch to a more interventionist industrial policy by the Fascist regime in 1926–27 caused a marked slowdown in productivity growth. In turn, *ceteris paribus*, this caused stronger wage cuts to keep international competitiveness unchanged.

¹² Salvemini (1936) states that foreign observers were surprised by the willingness of Italian workers to accept wage cuts. Indeed, Zamagni (1975) shows that Italy was an outlier in real wages compared with Germany, the US, the UK, France and Japan.

¹³ Sylos Labini (1965) describes the biased wage bargaining process under corporatism. See Romagnoli (2003) for a general overview of labour laws during fascism.

The policy amounted to internal devaluation aimed at reducing domestic costs, diminishing the burden on industry which could accommodate for the higher costs due to ‘quota 90’.

Table 3 – Industrial wages in Italy, 1920-1932

Year	Daily real wage (in 1938 lira)	Yearly change (%)
1920	16.69	+10.23
1921	17.34	+ 3.89
1922	16.45	- 5.14
1923	17.12	+ 4.07
1924	17.02	- 0.59
1925	16.25	- 4.53
1926	15.84	- 2.53
1927	16.08	+1.51
1928	14.93	-7.16
1929	14.72	-1.41
1930	14.62	- 0.68
1931	14.74	+0.82
1932	14.80	+ 0.40

Source: Zamagni (1975)

6. Conclusions

This paper provides a time series characterisation of the relationship between the terms of trade and GDP for the Italian economy from 1911 to 1939. It identifies the average effect, which is used to interpret the economic consequences of the revaluation of the Lira announced in 1926 and implemented in 1927. We find that the two variables have a common long-run relationship and that short-term adjustment was relatively fast. Recalling that in the terms of trade, the export prices depend both on the nominal exchange rate (the variable shocked by government policy) and domestic prices (also affected by government policy but in the opposite direction by reducing workers’ rights and wages), we conclude that the effect on the output of “quota 90” was small. The surrogate role of the fascist labour policy to reduce the negative effects of revaluation should not be overlooked. It was, indeed, a central tenet of policy – and more generally of political philosophy - under Mussolini’s governments.

Political considerations outweighed economic concerns. ‘Quota 90’ was the way that the fascist government sought to gain some international standing in the wake of the return to the Gold Standard system, which took place at that time.

Further work, along the lines of counterfactual history, may assess whether a smaller revaluation – as discussed in the existing literature - would have been more beneficial for the Italian economy.

References

- Asso, P.F. and De Cecco, M. (1993). *L'Italia e il sistema finanziario internazionale, 1919-1936*, Laterza, Roma.
- Astore, M., and Fratianni, M. (2019). 'We can't pay': How Italy dealt with war debts after World War I. *Financial History Review*, Vol. 26, 197-222.
- Bachi, R. (1937). Il mercato finanziario italiano 1919-1936, *Annali di Economia*, EGEA, Vol. 12, pp. 203–229.
- Baffigi, A. (2013). National Accounts, 1861-2011. In: Toniolo, G. (Ed.) *The Oxford Handbook of the Italian Economy Since Unification* (pp. 157-186). New York: Oxford University Press.
- Bermond, C. (2005). *Riccardo Gualino finanziere e imprenditore. Un protagonista dell'economia italiana del Novecento*, Centro Studi Piemontesi, Torino.
- Bernanke, B. and James, H. (1991). The Gold Standard, Deflation, and Financial Crisis in the Great Depression: An International Comparison. In: R. G. Hubbard (ed.) *Financial Markets and Financial Crises*, University of Chicago Press, pp. 33-68.
- Bini, P. (2017). Austerità e crescita negli anni 1922-1925 del fascismo. Alberto De' Stefani e l'ultima controffensiva del liberismo prima della resa all'economia corporativa. In: Barucci, P., Bini, P. and Conigliello, L. (eds.), *Economia e diritto in Italia durante il fascismo*. Firenze: Firenze University Press.
- Bonelli, F., Cafagna, L. and Galli della Loggia, E. (1976). L'economia italiana nel periodo fascista: alcune osservazioni, *Quaderni Storici*, Vol. 31, 359-373.
- Bordo, M., Edelstein, M. and Rockoff, H. (1999). Was Adherence To The Gold Standard A "Good Housekeeping Seal of Approval" During the Interwar Period? NBER Working Papers 7186, National Bureau of Economic Research.
- Bordo, M. D. and MacDonald, R. (2003). The Inter-War Gold Exchange Standard: Credibility and Monetary Independence. *Journal of International Money and Finance*, Vol. 22, pp. 1-32.
- Borgatta, G. (1937). La politica monetaria nel sistema corporativo, *Annali di Economia*, EGEA, Vol. 12, pp. 231–311.
- Cardarelli, S., Cotula, F. and Spaventa, L. (1993). *La politica monetaria tra le due guerre, 1919-1935*, Laterza, Roma.
- Cavalcanti, M.L. (2011). *La politica monetaria italiana fra le due guerre (1918-1943)*, FrancoAngeli, Milano.
- Ciocca, P.L. and Toniolo, G. (1976). *L'economia italiana nel periodo fascista*, Il Mulino, Bologna.
- Cohen, J. (1972). The 1927 Revaluation of the Lira: a Study in Political Economy, *The Economic History Review*, Vol. 25, pp. 642–654.
- Cohen, J. (1988). Was Fascism a Developmental Dictatorship? Some Evidence to the Contrary, *Economic History Review*, Vol. 41, pp. 95-113.
- De Cecco, M. (1993). *L'Italia e il sistema finanziario internazionale, 1919-1936*, Laterza, Bari.
- De Cecco, M., Roccas, M. and Sannucci, V. (1990). *L'Italia e il sistema finanziario internazionale: 1861-1914*, Laterza, Roma-Bari.

- De Felice, R. (1966). I lineamenti politici della 'quota 90' attraverso i documenti di Mussolini e di Volpi, *Il Nuovo Osservatore*, Vol. 7, pp. 370-95
- De Felice, R. (1968). *L'organizzazione dello stato fascista: 1925-1929*, Einaudi, Torino.
- De' Stefani, A. (1998). *Quota 90: la rivalutazione della lira 1926-1928*, UTET Libreria Bancaria, Torino-Roma.
- Di Nino, V., Eichengreen, B. and Sbracia, M. (2013). In: G. Toniolo (Ed.) *The Oxford Handbook of the Italian Economy Since Unification*, Oxford: Oxford University Press.
- Dickey, D. A. and Fuller, W. A. (1979). Distribution of the Estimators for Autoregressive Time Series with a Unit Root, *Journal of the American Statistical Association*. Vol. 74, pp. 427-431.
- Dutton, J. (1984). The Bank of England and the Rules of the Game under the International Gold Standard: New Evidence. In: M.D. Bordo and A.J. Schwartz (Eds.) *A Retrospective on the Classical Gold Standard, 1821-1931*. Chicago: University of Chicago Press, pp. 173-202.
- Eichengreen, B., Watson, M. W. and Grossman, R. S. (1985). Bank Rate Policy Under The Interwar Gold Standard: A Dynamic Probit Model. *The Economic Journal*, Vol. 95, pp. 725-745.
- Engle, R.F., and C.W.J. Granger (1987). Cointegration and Error Correction: Representations, Estimation and Testing. *Econometrica*, Vol. 55, pp. 251-276.
- Falco, G. C. and Storaci, M. (1977). Il ritorno all'oro in Belgio, Francia e Italia: stabilizzazione sociale e politiche monetarie (1926-1928), *Italia Contemporanea*, Vol. 29, pp. 3-44.
- Federico, G., Natoli, S., Tattara, G., and Vasta, M. (2011). *Il Commercio Estero Italiano 1882-1950*, Bari-Roma, Laterza.
- Fratianni, M. and Spinelli, F. (1997). *A Monetary History of Italy*, Cambridge University Press, Cambridge.
- Gabbuti, G. (2020). When We Were Worse off. The Economy, Living Standards and Inequality in Fascist Italy, mimeo.
- Giordano, C. and Giugliano, F. (2015). A Tale of Two Fascisms: Labour Productivity Growth and Competition Policy in Italy, 1911-1951, *Explorations in Economic History*, Vol. 55, pp. 25-38.
- Gregor, J. (1979). *Italian Fascism and Developmental Dictatorship*, Princeton University Press.
- Grifone, P. (1971). *Il capitale finanziario in Italia*, Torino: Einaudi.
- Johansen, S. (1988). Statistical Analysis of Cointegration Vectors. *Journal of Economic Dynamics and Control*, Vol. 12, pp. 231-254.
- Keynes, J.M. (1978). *The Collected Writings of John Maynard Keynes: Volume 4: A Tract on Monetary Reform*, edited by Johnson, E. and Moggridge, D., Vol. 4, Royal Economic Society.
- Kwiatkowski, D., Phillips, P. C. B., Schmidt, P. and Shin, Y. (1992). Testing the Null Hypothesis of Stationarity against the Alternative of a Unit Root, *Journal of Econometrics*, Vol. 54, pp. 159-178
- La Francesca, S. (1972). *La politica economica del fascismo*, Bari: Laterza.
- Lütkepohl, H., and Krätzig, M. (2004). *Applied Time Series Econometrics*, Cambridge: Cambridge University Press.

- Marconi, M. (1982). *La politica monetaria del fascismo*, Bologna: Il Mulino.
- Migone, G.G. (1973). La stabilizzazione della lira: la finanza americana e Mussolini, *Rivista di Storia Contemporanea*, Vol. 2, pp. 145-148.
- Onida, F., Berta, G., Perugini, M. (2013). Old and New Italian Manufacturing Multinational Firms. In: G. Toniolo (Ed.) *The Oxford Handbook of the Italian Economy Since Unification*, Oxford: Oxford University Press.
- Ricciuti, R. (2014). Fascism Was Not a Developmental Dictatorship. Evidence from Simple Tests. *Historical Social Research*, Vol. 39, 337-346.
- Romagnoli, U. (2003). Il diritto del lavoro durante il fascismo. Uno sguardo d'insieme, *Lavoro e diritto*, Vol. 77, pp. 77-100.
- Sabbatucci Severini, P. and Trento, A. (1975). Alcuni cenni sul mercato del lavoro durante il fascismo, *Quaderni Storici*, Vol. 29-30, pp. 550-578.
- Salsano, F., and Toniolo, G. (2010). Da Quota 90 allo Sme, Assonime and Laterza Editori.
- Salvemini, G. (1936). *Under the Axe of Fascism*. New York: The Viking Press.
- Sarti, R. (1970). Mussolini and the Italian Industrial Leadership in the Battle of the Lira 1925-1927, *Past & Present*, No. 47, pp. 97-112.
- Segreto, L. (2019). Giuseppe Volpi di Misurata al Ministero delle finanze: tecnocrate o politico? In: Barucci, P., Bini, P. and Conigliello, L. (eds.) *Intellettuali e uomini di regime nell'Italia fascista*, Firenze: Firenze University Press.
- Storaci, M. and Tattara, G. (2001). Kingdom of Italy's external borrowing and domestic monetary policy between the two world wars, *Financial History Review*, Vol. 8, pp. 49-72.
- Sylos Labini, P. (1965). La politica economica del fascismo. La crisi del '29, *l'Astrolabio*, Vol. 3, pp. 32-34.
- Tattara, G. and Toniolo, G. (1975). Lo sviluppo industriale italiano tra le due guerre, *Quaderni Storici*, Vol. 10, pp. 377-437.
- Tattara, G. and Toniolo, G. (1976). L'industria manifatturiera: cicli, politiche e mutamenti di struttura, in Ciocca, P.L. and Toniolo, G. (eds.) *L'economia italiana nel periodo fascista*, Il Mulino, Bologna.
- Toniolo, G. (1980). *L'economia dell'Italia fascista*, Laterza, Bari.
- Zamagni, V. (1976). La dinamica dei salari nel settore industriale, 1921-1939, *Studi storici*, Vol. 10, pp. 530-549.
- Wandschneider, K. (2008). The Stability of the Interwar Gold Exchange Standard: Did Politics Matter? *Journal of Economic History*, Vol. 68, pp. 151-181.
- Wolcott, S. (1993). Keynes Versus Churchill: Revaluation and British Unemployment in the 1920s. *Journal of Economic History*, Vol. 53, pp. 601-628.