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All Because of Euro? On Some Structural Changes in the Italian Foreign Trade, 1960-2000

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Abstract

Using a long-run series of I-O tables, some simple facts are explored with respect to the Italian trade balance in the period 1960-2000. The analysis confirms that the Italian economy underwent a de-specialisation process *before* the Euro era. This phenomenon weakened our export capacity, and in addition worsened significantly our dependence on non-oil imports.

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1. INTRODUCTION

In a nice technical paper published in 1969[1] professor Vittorio Sirotti investigated the stability conditions of the general equilibrium of a two-country, two-good model. Having assumed homogeneity of the goods across countries and the use of a single currency, equilibrium requires, among other things, a relative price such that the quantity of each good exported (imported) by one country equals the quantity imported (exported) by the other country. Stability -i.e. the ability of price adjustments to bring about this equilibrium- is lucidly proved to hold always, as it happens in two-good economies[2]. Interestingly enough, in this setting each country's trade balance is in equilibrium by definition: indeed, for each country the value of excess demand (supply) of one good coincides with its imports (exports), and by Walras Law the total value of excess demand must be identically zero.

Now, it is clear that relaxing some of the hypotheses carefully stated by professor Sirotti things might go differently. Here I mention only some points, driven by casual curiosity related to the Italian case. First, assuming inter-temporal consumption choice, it can happen that single-year

[1] Sirotti (1969).

[2] Arrow & Hurwicz (1958), in particular Theorem 6.

national saving (hence the trade balance) is different from zero. Second, given that different countries adopt different currencies, a new price -the exchange rate- enters the determination of equilibrium. Third, if a country suffers from international liquidity constraints, it might be the case that the exchange rate is tuned to attain year-by-year equilibrium of the trade balance, provided that the Marshall-Lerner condition is satisfied. Coupling the first and the third of the above conditions, together with a persistent time-preference for current consumption, might provide a first approximation for interpreting the Italian case during the last decades of the 20th century.

In this note an unsophisticated route will be taken, quite differently from professor Sirotti's theoretical style of 1969. We will enquire into some empirical features related to the long-period performance of the Italian trade balance, starting from the so called 'boom' and ending with the dawn of the Euro era. The "structural" aspect of the story lies in using a long-run dataset of input-output tables for the Italian economy[3], with data expressed at constant 1978 prices[4]. This simple analysis will confirm a well-known fact, namely that the Italian economy underwent a de-specialisation process *before* the Euro era. This phenomenon weakened our export capacity, and in addition worsened significantly our dependence on non-oil imports.

2. SIMPLE FACTS

When evaluated at *constant* 1978 prices, the Italian trade balance[5] shows a persistent deficit during the whole period 1960-2000: on average, the annual volume of exports is 85% of the volume of imports. It is often said that this depends on Italy being scarcely endowed with energy resources: indeed, when evaluated net of oil imports, the trade balance is overall slightly in surplus, export being on average 102% of imports. If one considers, instead, the overall trade balance evaluated at *current* prices, one finds surpluses, or at least balances, in the Sixties and early Seventies, and again in the end-Eighties and Nineties: on average exports were 99% of imports. Figure 1 shows these facts.

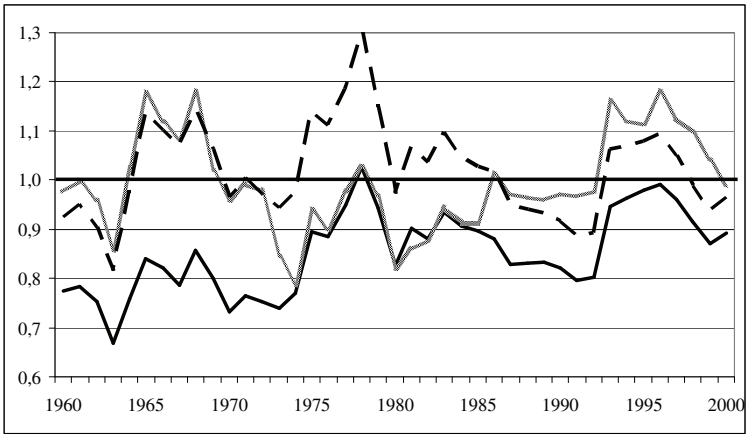
[3] See G. Rampa (2007), containing a 1959-2000 series of input-output tables for the Italian economy, at both current and constant prices. For the deflation methodology, see G. Rampa (2008).

[4] This base-year was chosen because it lies in between the two major oil crises, so that backward and forward price indexes do not display excessive fluctuations.

[5] A caveat: differently from the ESA95 methodology, here imports (resp. exports) do *not* include consumption of resident (resp. foreign) persons while they are abroad (resp. in the economic territory). This, together with some revaluation of National Accounts operated after 2000, explains the differences between our figures and those than can be derived from more recent datasets.

Figure 1 – *Export/import ratio*

Black lines = constant prices (solid =overall; dashed = imports net of oil and gas). Grey line = current prices (overall)



Considering the overall balance evaluated at current and at constant prices (solid lines, resp. grey and black) one sees that during the oil shocks, i.e. the period around our base-year, the two series are fairly similar to each other, while they differ significantly in the queues. In other terms: had the oil relative price stood the same in the base-year *and* in the Sixties and Nineties, the Italian trade balance would have been much worse than it actually was in the latter periods. Hence, one popular view maintains that oil price is a major source of the troubles of our external balance.

Another well-known feature of the Italian economy, holding until the mid-Nineties, is its inclination to domestic currency devaluation. Indeed, the main recovery phases appearing in Figure 1 (apart from the 1964-65 one[6]) are connected with three major devaluation processes (1975-77, 1981-82 and 1993-94)[7]. Thus, a second popular view is that the entry in the EMS, and a fortiori in the EMU, preventing further devaluations, is another major source of our troubles, especially those to be observed after 2000.

Although the two popular views above contain some truth, there is more to be said besides energy price fluctuations and exchange rates. Observe that the distance between the two black (solid and

[6] Notice that the deep fall shown by Figure 1 in the years 1961-63 must *not* be attributed to any external price shock: it depended instead on the very high domestic growth rates (7-8%) compared with world ones, inducing a large decrease in net exports. Indeed, while exports grew by 35% between 1960 and 1963, imports grew by 60% in the same years. The sharp increase of the export/import ratio following 1963 was due to the strong deflationary policy implemented by the Central Bank.

[7] A very simplistic OLS regression of the export/import ratio against the lagged relative export/import price index (with constant term) over the period 1960-2000 returns a parameter estimate of −0.42 (p-value = 0.001). This gives support to the idea that some form of Marshall-Lerner condition was holding for the Italian trade balance during that period.

dashed) lines of Figure 1, i.e. the contribution of oil and gas imports, is greater during the Sixties than during the Nineties, and it tends to decrease steadily. This phenomenon takes place, obviously, starting from the oil shocks; however it continues also after the counter-shock (1985-86), and during the Nineties, when the relative oil price was fairly stable[8]. As a consequence, the role of energy imports becomes less and less important. On the other hand, relative import/output and import/export price indexes (not reported for brevity) would appear favourable to a good performance of the overall Italian trade balance during the second half of the Nineties. Figure 1 shows, on the contrary, that things tend to worsen during this period: thus, there must exist some other source of this poor performance besides the exchange rate[9].

3. SOME STRUCTURAL CHANGES

The sharp internationalization process of the Italian economy between 1960 and 2000 almost tripled the import-to-output ratio, and more than tripled the export-to-output one (gross output, and data at constant prices, are considered): see Table 1. The process underwent a slowdown in the Seventies, but accelerated again after the oil shocks.

Table 1 – *Imports and exports relative to domestic output*

Year	Import-to-output ratio	Export-to-output ratio
1960	0.067	0.052
1965	0.083	0.070
1970	0.112	0.082
1975	0.107	0.096
1980	0.120	0.099
1985	0.122	0.109
1990	0.146	0.120
1995	0.165	0.162
2000	0.195	0.173

It seemed that the last major devaluation of 1992-3 could turn things right, almost equating exports to imports; but this was only a temporary phenomenon: indeed during the last five years imports grew more than imports.

[8] Curiously enough, in 1999 and 2000, when the oil price went significantly up, the volume of oil imports increased relatively to total imports.

[9] It is true that the Italian Lira was revaluated by about 12% after 1995; however, entering the EMU, it remained devaluated by about 30% with respect to the early Nineties.

As recognised by some short after 1980[10], the oil shocks caused a significant change in the Italian productive system: the production of some intermediate inputs, involving energy-intensive processes, were decentralised abroad, so that the Italian economy started to loose specialisation in sophisticated productions. This is shown by Table 2.

Table 2 – *Share of two kinds of products in total imports*

Year	Energy products	Metal and mechanical products
1960	0.202	0.227
1965	0.303	0.191
1970	0.265	0.255
1975	0.234	0.276
1980	0.172	0.345
1985	0.148	0.345
1990	0.119	0.397
1995	0.105	0.407
2000	0.084	0.455

Hence, combining the information of Tables 1 and 2, it turns out that the volume of energy imports per unit of domestic output of the whole economy, after doubling between 1960 and 1970, fell back in 2000 to its 1960 value (1.5%)[11]. On the contrary, the volume of metal and mechanical imports per unit of overall domestic output rose from 1.5% in 1960 to almost 9% in 2000. This should be considered carefully by those thinking that oil is the main concern as regards the Italian trade balance.

That these changes are due to a de-specialisation trend is confirmed by the following facts. First, the role of fixed investment diminished gradually during the whole period: its share in total resources declined from 15% in 1960 to 8.5% in 2000, and while it was on average 13.3% before the oil shocks, it became on average 9.4% after 1975. Second, although total investment became less and less important in the economy, the share of imported investment goods in total investment grew dramatically from less than 5% in 1960 to 17.5% in 2000 (on average, it was 6.2% before, and 12.7% after, 1975). As a result, the share of imported investment goods in total resources more that doubled, from 0.7% in 1960 to 1.5% in 2000.

Third, and more importantly, one must consider the role of *intermediate* goods in the Italian economy. The so-called "roundaboutness" of the economy, i.e. its propensity to use intermediate goods, is measured by input-output coefficients. Table 3 contains the aggregate I-O coefficients of the Italian economy.

[10] Heimler-Milana (1984).
[11] Recall that we are considering data at 1978 constant prices.

Table 3 – *Aggregate I-O coefficients*

Year	Total inputs	Domestic inputs	Imported inputs
1960	0.41	0.36	0.05
1965	0.45	0.38	0.07
1970	0.46	0.37	0.09
1975	0.47	0.38	0.09
1980	0.48	0.39	0.09
1985	0.49	0.40	0.09
1990	0.51	0.41	0.10
1995	0.51	0.38	0.13
2000	0.53	0.38	0.15

The first column shows that, indeed, the economy became more and more "roundabout": the use of intermediate inputs per unit of gross domestic output increased steadily from 0.41 in 1960 to 0.53 in 2000. There is, however, a great difference between the coefficient of domestic and that of imported intermediate inputs: while the former rose only until the second half of the Eighties, and then decreased in the Nineties, the latter went up constantly and tripled passing from 0.05 to 0.15. Notice that this growth accelerated in the Nineties, precisely when the coefficient of domestic intermediate inputs went down. Hence, imported inputs passed from 11.2% of total intermediate inputs in 1960 to 27.3% in 2000. As a further consequence, the actual aggregate I-O *multiplier*[12] diverged increasingly form the "potential" one: the latter is the multiplier that would prevail hypothetically, if all intermediate inputs were bought from domestic producers. This is show in Table 4.

Table 4 – *The I-O multiplier*

Year	Potential	Actual
1960	1.69	1.57
1965	1.80	1.61
1970	1.86	1.60
1975	1.87	1.62
1980	1.92	1.64
1985	1.97	1.67
1990	2.05	1.69
1995	2.04	1.62
2000	2.11	1.62

The increased roundaboutness of the economy would have implied a rise in the potential multiplier by 25% (from 1.69 in 1960 to 2.11 in 2000); however, the strong substitution of imported

[12] The aggregate I-O, or Leontief, multiplier measures the amount of domestic total output that is induced by a unit of final demand; it is increasing in the aggregate I-O coefficient. Here, multipliers are computed in a rough way: calling a the aggregate I-O coefficient, a quick and approximate estimate of the aggregate I-O multiplier is $1/(1-a)$. A more sophisticated computation would be the following: calling **A** the matrix of I-O coefficients, the aggregate multiplier is $\mathbf{u}'[\mathbf{I}-\mathbf{A}]^{-1}\mathbf{d}$, where **u'** is the row sum vector whose elements are all equal to one, and **d** is the column vector of the composition of final demand (that is, $\mathbf{u}'\mathbf{d} = 1$).

intermediate inputs for domestic ones interrupted this process after the Eighties, and the actual multiplier fell back to the value it had in the Sixties and Seventies, short greater than 1.6.

All this means that not only the Italian economy became more and more dependent on imported inputs, a fact that is obviously common to many economies in the globalisation era: it also became less and less capable of translating any push coming from final demand into a substantial domestic activity. It should be noticed that this took place in a period when the exchange rate was floating: it may thus be expected that the repeated devaluations rendered imports more expensive; but imports never ceased to go up[13].

One might contend that the rapid growth of exports (see Table 1) can counterbalance the increase of imports, thus preserving the long-run equilibrium of the trade balance. There are, however, two aspects to be noticed. First, it is well known that the specialisation of Italian imports lies in traditional products (food, textiles, leather, shoes, etc.), whose elasticity to world demand is not very high. To be sure, there was a period in which more sophisticated mechanical products seemed to gain importance in our exports: indeed, between 1960 and 1975 their share grew by about 45%, while the share of traditional products grew only by 2%. But after 1975 these trend were reversed: the share of mechanical products rose by only 14% until 2000, while the share of traditional products rose by 23%.

Secondly, one cannot overlook that exports themselves, being a part of final demand, induce a certain amount of intermediate imports. Indeed, the intermediate imports induced by exports were 14.9% of total intermediate imports in 1960: this percentage passed to 26% in 1980, and became even 41.3% in 2000. At the same time, as we said above, the ability of final demand, including exports, to induce domestic activity went down.

Table 5 – *The output and import multiplier of exports*

Year	A. Output	B. Import	A/B
1960	1.67	0.14	11.9
1965	1.72	0.20	8.5
1970	1.70	0.24	7.2
1975	1.75	0.22	7.8
1980	1.74	0.23	7.5
1985	1.75	0.24	7.3
1990	1.76	0.27	6.6
1995	1.65	0.31	5.3
2000	1,62	0.34	4.7

[13] What happened actually is that, apart from 1973-4, domestic prices were growing on average *more* than import prices, thus giving the impression that imports were cheaper.

Table 5 shows the output and the import multipliers[14] of exports from 1960 to 2000. The output multiplier of exports (column A) increases until 1990 and decreases afterwards, following the same trend as the output multiplier of general final demand (Table 4, "actual" multiplier): however, while the former is higher than the latter until 1995, the two become equal in 2000. This means that at the end of the period exports loose their superior ability to pull domestic activity.

The import multiplier of exports (column B of Table 5), on the other hand, keeps increasing for the whole period, with a neat acceleration in the Nineties: in 2000 one unit of exports brings about 0.34 units of imports. The amount of domestic output induced by exports was almost twelve times that of imports induced by exports in 1960; this ratio becomes less than five in 2000 (last column of Table 5). These huge structural changes imply that the traditional "export-led-economy" model, besides being less effective than in the past, might conflict permanently with the objective of a balanced international trade.

4. CONCLUSION

It is sometimes maintained, mainly by casual observers, that the main source of the poor performance of the Italian trade balance in the new millennium is the Euro. The scanty analysis put forward in this note suggests, on the contrary, that the answer to the question appearing in the title is "No". The seeds of our problems appear to have been planted well before the Euro era, in the period when cheap devaluations induced a progressive de-specialisation of our economy. If innovation and productivity growth do not come back to the foreground, it seems difficult that the Italian economy can avoid a permanent decline.

[14] Call $\mathbf{A_D}$ and $\mathbf{A_M}$ the domestic and the imported input coefficient matrices, respectively; let $\mathbf{e}$ be the column vector of composition of exports (that is, $\mathbf{u'e} = 1$). The output multiplier of exports is computed as $\mathbf{u'}[\mathbf{I}-\mathbf{A_D}]^{-1}\mathbf{e}$, while the import multiplier of exports is computed as $\mathbf{u'A_M}[\mathbf{I}-\mathbf{A_D}]^{-1}\mathbf{e}$. Their meanings are the usual ones: the former measures the amount of domestic output induced, directly and indirectly, by one unit of exports; the latter measures the amount of imports induced by one unit of exports.

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