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**The Linkage between Tertiary and Industrial
Sector in the Italian Economy: 1951-1988**

by

Gian Paolo Caselli and Gabriele Pastrello

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Dipartimento di Economia Politica
Via Giardini 454
41100 Modena (Italy)

The linkage between tertiary and industrial sector in the Italian economy: 1951-88. From external dependence to internal one.

The aim of this paper is to study the evolution of the tertiary sector from the point of view of employment value added, aggregate investment and distribution of income, in the more general framework of the development of the Italian economy in the period 1951-1988.

It's our opinion that only an analysis of such a long period may give a satisfactory and comprehensive reading of the process of tertiarization of the Italian economic system. Long run examination does not mean from our point of view a search for a trend. On the contrary it may allow a differentiation of periods in which the dynamics of the tertiary sector depends mainly on the different kind of linkages between the service and the industrial sector. If we go through the economic literature on Italian economic growth we find only two moments of intense debate on the process of tertiarization; the first is at the beginning of the seventies (L. Frey 1975, L. Spaventa 1973, M. D'Antonio 1972, M. Salvati 1976) and concerns mainly the " nature" of the tertiary sector. The questions were whether it could be considered only a "rent" sector and its employment only a residual one, and whether its employment was therefore determined by other factors, mainly social ones. The debate

suddenly ended when the Italian economy had to face the first oil shock. There was a second debate at the beginning of the eighties (F. Momigliano and D. Siniscalco 1982, G.P. Caselli and G. Pastrello 1984, L. Rampa 1986, M. Eller Veinicher 1977) that was mainly a late reply to the first debate, focusing on the period 1965-75. The answer was: the terzianization of the Italian economy in this period was not a widening of a "rent" sector, but was part of a process of modernization. The analysis based on input/output methods concluded that the increasing needs in service inputs of the industrial sector could explain the rise of the employment in services. In this way the process of terzianization was for the first time observed in Italy from the point of view of the producer service approach (1).

This debate was however looking at current processes, and the answer was mixing the features of the period 65/75, with the features of the period when the authors were writing; the relevance of the producer services was then exaggerated, and the modernization intensity backdated (2), the true take-off of the terzianization having to be postponed to the end of the seventies. Also the answer to the first debate is unconvincing: the tertiary sector was viewed in this approach like a residual sector, with no linkages or very weak ones with the fast growing industrial sector and then untouched by the process of modernization.

In this way the backward features of the tertiary sector,

undoubtedly prevailing in the fifties, were postdated to the seventies, acknowledging to it only the role of a social buffer. The relative underestimate of the modernization in the first debate, and the relative overestimate in the second have the same origin, namely that of focusing on "trends" and therefore overlooking the fact that structural changes occur during the cycles.

The tertiarization in the long-run: italian economic sectors
1951-1987.

-The great employment transformation.

Following C.Clark (3), the current view on the process of tertiarization is similar to a theory of stages: first the agricultural employment is shrinking then the share of industrial employment on total non agricultural employment is diminishing compared to the share of tertiary sector. This picture may seem appropriate to describe the process of employment share transformation of the U.K in the nineteenth century (although some historians have a different view on this point-see D.J. Gould 1972 (4)).

In fact the share of agricultural employment was , according to J.A.Hobson (5), already at the low level of 22% in 1861 and was still diminishing at 8% in 1901; during the same period the share of industrial employment on total non agricultural employment was oscillating around 65%.

The growth of the United States shows however a quite different picture. The two processes, the shrinking of agricultural employment and the shifting of the industrial relative share seem to occur at the same time. According to D.Weintraub and H.Magdoff (6), the share of agricultural employment on the total was about 50% in 1870 and 20% in

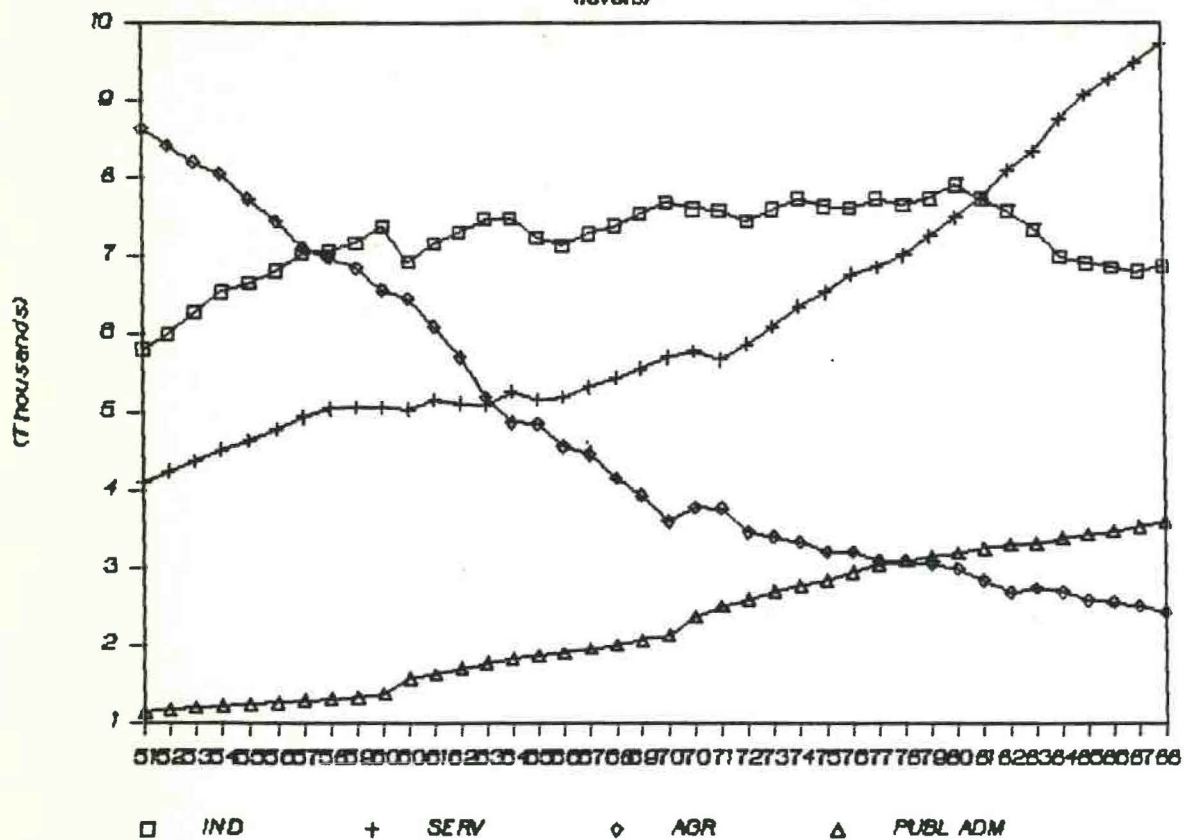
1930, while during the same period the share of industrial employment on the non agricultural one was falling from 77% to 57%.

It's worthwhile to stress that in the U.S.A the pace of employment shifting is slowing down at the beginning of the sixties: the relative share of industrial employment is not much less than in 1930 and begins to fall again at the end of the seventies (G.P. Caselli e G. Pastrello 1987 (7)).

The italian process of employment shifting is striking in comparison to the british and american ones. What these two economies have accomplished in a century, the italian economy has performed in forty years: from the beginning of the fifties to the end of the eighties the agricultural share fell from something more than 40% to something less than 10%. While in the first half of the period the process is more similar to the british one - with constant share of industrial employment: 58,5% in 1951, and 57,5% in 1970 (on total employment, net of agriculture and public sector (8)) - in the second period it is more similar to the american pattern: agriculture is still about 18% in 1970 and halves in 1987, while the share of industrial employment in relation to the sum of industrial and market services (9) employment is falling to 42% in 1987.

GRAPH 1. TOTAL EMPLOYMENT

(levels)



Sources: Authors' computation on data from
 - ISTAT Annuario di Contabilita' Nazionale, 1986, vol.14/1.
 - Relazione Generale sulla Situazione Economica del Paese (1988) - Roma 1989.

What we have sketched above may be observed in the graph number 1, where we have plotted the levels of the employment of different sectors: we can observe that although public employment shows a rising path, the sum of agricultural and public employment has halved during the period, so that the contribution to the growth of global employment is due only to industrial and market services sectors. Of course the fall of agricultural employment is mainly due to the exit of autonomous agricultural workers (small proprietors and peasant families), but the same conclusion holds even if we take into account only dependent workers as before (see graph 1 bis).

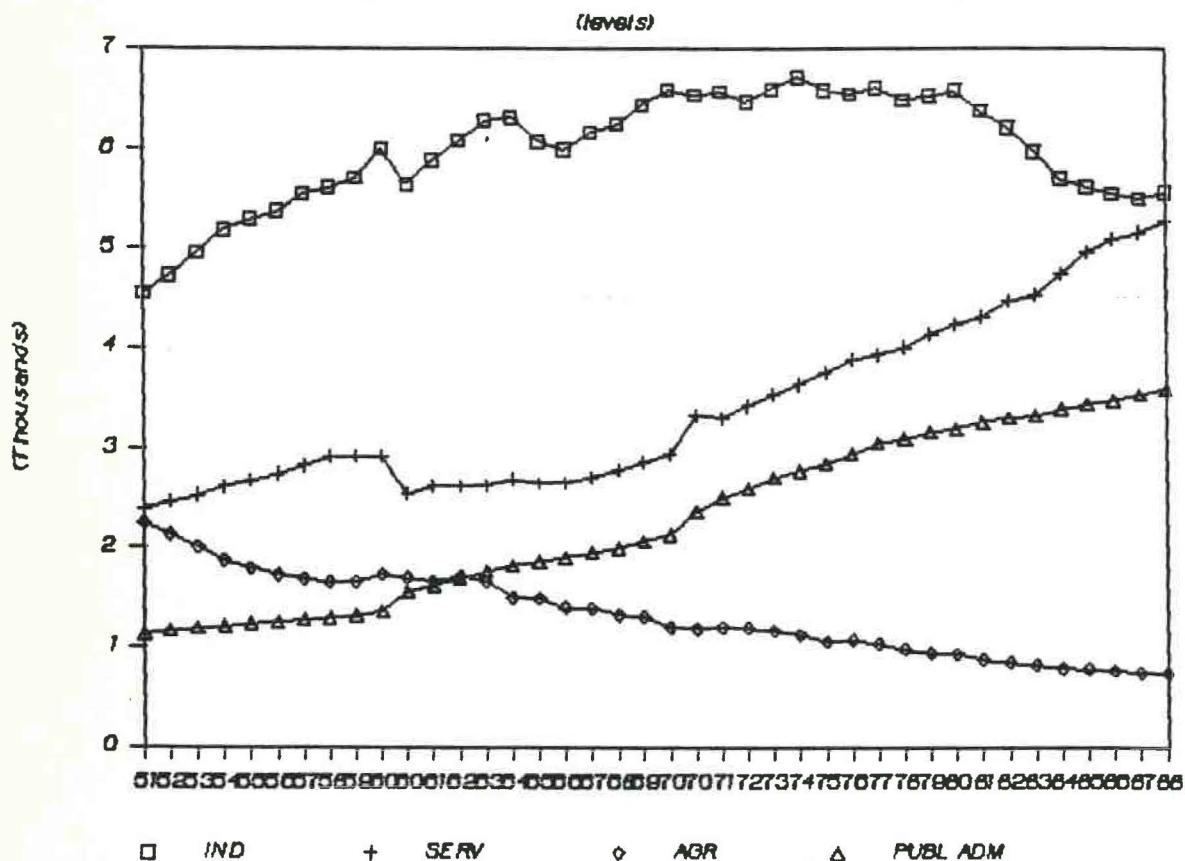
Indeed the increase of the of agricultural and public dependent employment as a whole is only about 10% of the increase in overall employment. Moreover, the share of the employment of these two sectors, taken together, has fallen from about 50% on the total in 1951 to 30% in 1970 and to 26% in 1987. Owing to the slowing down of the rate of growth of the public sector employment, it is foreseeable that this share will still diminish, even if at a lesser pace.

One can conclude that the rise and fall of the overall employment is mainly due to the dynamics of the industrial and the market service sector; for these reasons from now on we shall concentrate our analysis on these two sectors.

The more important evidence that emerges from graph 1, as far as the process of terzianization is concerned, is that the

levels and consequently the share of service employment overtakes the level of industrial employment at the beginning of the eighties. The service dependent employment, on the contrary, does not yet match the industrial one even at the the end of the eighties. It is also true that during this period the difference between the two sectors almost disappears, due to an acceleration in the rise of services and a fall in industry. Nevertheless it would be misleading to read the dynamics of tertiary employment as a process evolving along a rising trend even during the american-like period of growth. On the contrary, as we shall see later, in the second half of the eighties the rise of service employment sharply decelerates. .pa

GRAPH 1bis. DEPENDENT EMPLOYMENT



Sources: Authors' computation on data from

- ISTAT Annuario di Contabilita' Nazionale, 1986, vol.14/1.

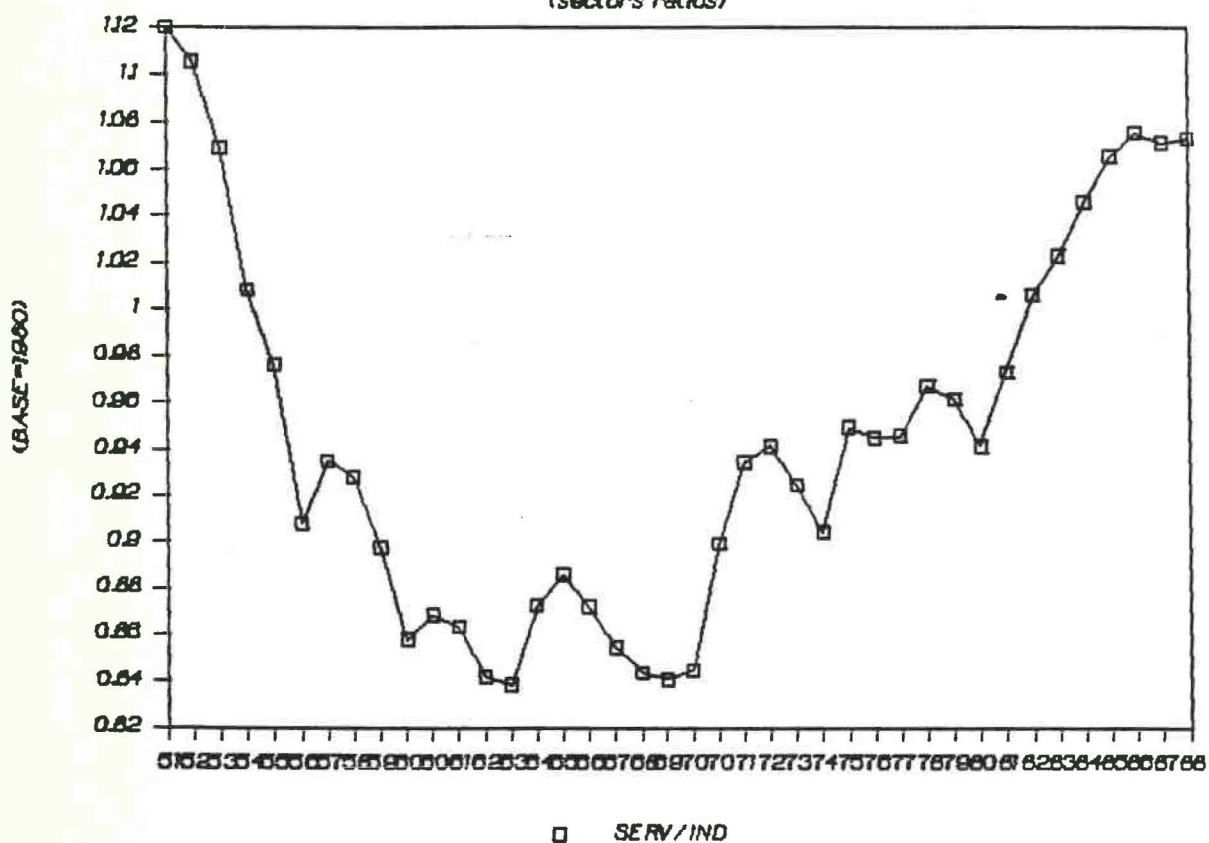
- Relazione Generale sulla Situazione Economica del Paese (1988) - Roma 1989. .pa

-Restoring the value added shares.

The beginning of the eighties is relevant also for comparing the value added levels of the two sectors. In fact market services value added (measured in 1980 lire; see graph n. 2)

GRAPH 2. VALUE ADDED

(sectors ratios)



Sources: Authors' computation on data from

- ISTAT Annuario di Contabilita' Nazionale, 1986, vol.14/1.

- Relazione Generale sulla Situazione Economica del Paese (1988) - Roma 1989.

overtakes the industrial one in 1982. This finding is at odds with a measure in current values which on the contrary shows a major weight of the industrial sector at the beginning of the period, and a rising trend of the service sector up to the mid seventies, and a striking acceleration from 1976 to 1986. We use the constant measure in order to get rid of the rising price differentials either due to productivity effects or to market structure.

The overtaking of the service sector is of course favoured by the diminution of industrial value added in absolute term associated to the second oil crisis but nonetheless the differential is widening even during the subsequent industrial recovery.

What we want to stress is that in terms of constant value added the italian economy was as much tertiarized in 1982 as it was in 1951. From 1951 the differential is increasing in favour of industry reaching the maximum in 1974. Notwithstanding the 1975, a year when the italian economy resents of the world wide recession due the first oil shock, we can see that the positive differentials between industry and services is falling from the second half of the seventies, while during the growth period 78-80 industrial share was more and more stabilizing, after the overtaking, when the industrial recovery reaches the maximum in the last three years. Obviously the same level of value added in services and industry in 1951 and 1982 has a quite different

meaning. As we shall see later the equal level in value added in industry and services is due in 1951 to the backwardness of the Italian economy, while in 1982 is due to a forthcoming jump in modernization.

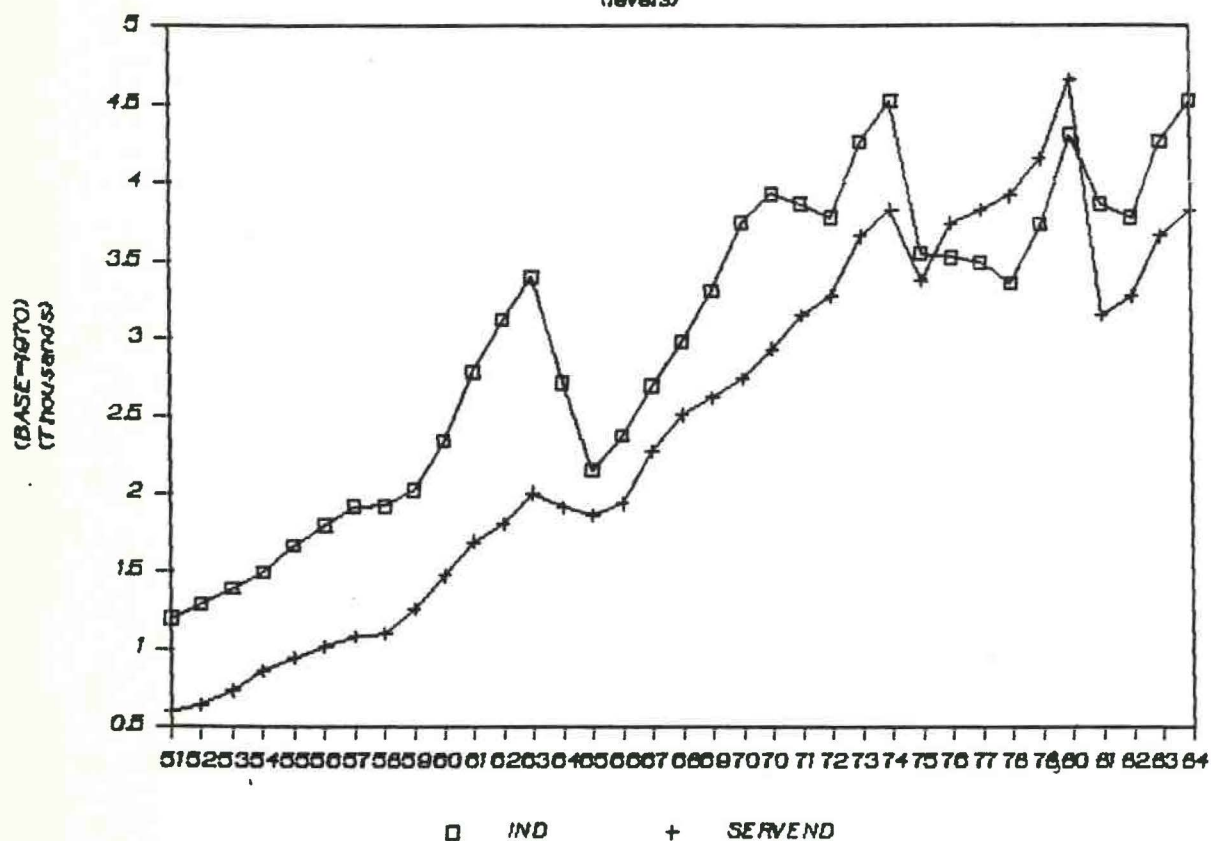
We have discussed only the relative importance of industry and market services sectors not taking into account the public and the agricultural sectors because the weight of these two sectors has sharply declined during the period. In fact the share of these two sectors, taken together, on total value added in constant terms, fell steadily from 36% in 1951 to 16% in 1987.

-The overtaking of service investments.

The profile of the investment series (see graph. 3) is broken, broadly speaking, in three periods. The first up to 1965 (the year of the first severe recession induced by internal economic policy) shows the highest differential of the whole period between the investments of the two sectors in favour of industry.

GRAPH 3. INVESTMENTS

(levels)



Sources: Authors' computation on data from

- ISTAT Annuario di Contabilita' Nazionale, 1986, vol.14/1.

- Relazione Generale sulla Situazione Economica del Paese (1988) - Roma 1989.

The second, up to 1975, shows a decrease in the differential; the third, from 1975 on, shows the overtaking of service investments over the industrial ones up to 1979, and the restoration of the previous differential from 1980 to 1984. This last finding is however somewhat unconvincing.

In fact the statistical series of employment and value added available up to 1987 have been recently revised, and the figures relating to service sector have been increased - in particular from the beginning of the eighties. On the contrary, investment series - available only up to 1984 - have not yet been revised, so we may guess that the new revised series will show a profile of service investment higher than the industrial one. This suggestion is supported by the Bank of Italy statistics on credit allocation among sectors which show an enormous increase of bank finance directed towards the services sectors. Even taking into account some speculative movements - especially in the midst of the eighties - this credit reallocation is likely to be associated with a higher level of investment than the one recorded in the old series.

In our opinion all the economic indicators suggest that the period 75-80 is crucial for the takeoff of what we may call a process of modernizing terzianization of the Italian economy, whose relatively high degree of tertiarization at the beginning of the fifties was due on the contrary to a lack of

modernization.

Splitting the tertiarization process in subperiods.

In order to make evident the cyclical aspects of the growth of employment we shall use the first differences of indexed time series. We can distinguish in this process four different subperiods, in some way connected with the phases of the cyclical fluctuations (see graph 4) of the Italian economy (10). Our criterion to define these subperiods is the relative dynamics between industrial and service employment together with the dynamics of two service subsectors. The subperiods are: the beginning of modernization 1951-58, the Italian miracle 59-65, the aftermath of the miracle 1966-75 and eventually the take off of tertiarization.

-The beginning of modernization: 1951-58

The first relevant period embraces the so called 'korean cycle' and a second minor cycle up to 1958, year in which the Italian economy was under the influence of a world recession. This period was marked by relatively strong cycles of employment creation in the industrial sector (without meaningful differences between total and dependent workers (see graphs 5 and 6)); by medium strength creation in the service sector which presents a weak cyclical connection with the industrial sector; in the service sector however

autonomous employment creation heightens the level of time series all along the period, without modifying the time series profile in a sensible way. During the same subperiod agricultural employment is shrinking at a relevant pace of 238000 lost jobs (yearly average); the employment destruction in agriculture is inversely correlated to the process of employment creation in the industrial sector. The relevant difference in the behaviour of industry and that of market services is that, in the year of the trough, industry diminishes the employment creation while the service sector is still creating dependent and autonomous jobs at the same rate (see graphs 5 and 6). During this period italian economy grows at a sustained pace, whose consequences will become visible in the coming miracle. The growth in industry of dependent and autonomous employment almost at the same rate stresses the remaining backwardness in this sector (M. Salvati 1976); the service sector is weakly linked to industry dynamics, and the growth of employment in this sector appears to be mainly connected to the expulsion of agricultural workers, not absorbed by industry. The fall of agricultural employment is the principal modernizing effect, while the service sector grows on a traditional organizational basis and is acting as a sponge (G. Lanciotti 1971). This conclusion is in agreement with the findings of other economists who state that the process of modernization of the italian economy was only at the

beginning and was severely limited sectorially and geographically.

-The economic "miracle": 1959-65.

The second period under examination coincides with the so called Italian economic miracle, whose cycle goes from 1959 to 1965 (defined by the two lower turning points (see graph 4)).

In this period the picture undergoes a radical transformation not only in terms of the changing structure of the employment, but also of the social meaning of that change. The industrial sector is creating employment at a sustained pace as in the previous period, the service sector is creating a negligible number of jobs, while agriculture is destroying them at a more intensive pace than before (see graphs 5 and 6). But this time the dynamics of total employment is the result of different paths of dependent and autonomous employment; in fact almost in every sector dependent employment is created at a higher rate than previously, while autonomous employment is collapsing in agriculture, and declining in the other sectors. A meaningful exception is exhibited by one service subsector (whose employment was mainly of backward kind) in which both dependent and autonomous employment is consistently shrinking (see graphs 7 and 8). What in our opinion happened in this second subperiod was a violent process of modernization: not

only the labour force coming from agriculture flew into the industry, bypassing on the whole the service sector, but the lack of global job creation in this sector was the result of the depletion of the more traditional part of it and of a limited creation in the remaining part.

In this period the strong industrial growth not only destroys traditional services jobs but also begins to change the traditional forms of service organization. While in the previous subperiod the tertiary sector was mainly isolated from the impulses coming from industrial growth, in this period it begins to reveal a strong linkage with industry. This new feature was completely dismissed by the traditional view of Italian economists on the role of the service sector in Italian economic growth.

-The aftermath of the miracle: 1966-75.

This subperiod encompasses two industrial value added cycles. The first is a cycle of recovery after the the strong credit squeeze in 1964 (which caused the 1965 and 1966 employment fall) and was ended by another credit and budget restraints in 1970, decided by internal (the wage explosion in 1969-70) and external reasons (the dollar crisis in 71). The second from 1972 to 1974 sustained by strong investments and exports (following the 1973 devaluation of the Italian lira) cycles in 1973-74, and was ended by the first oil crisis (see graph 4). The main characteristic of the relative dynamics of

industrial and service employment is that the two cycle become more synchronized than in the previous subperiod (see graphs 5 and 6). This is a typical path of other more industrialized countries, like for instance United States and Great Britain. This synchronization is the symptom of a increasing interconnection between the two sectors, interconnection wich may only happen on the basis of an organizational transformation of the service sector. This transformation may be correlated to the progressive degree of openness of the italian economy. In the years from 1972 to 1975, the employment creation cycle of the service sector is higher than the industrial one. This is likely to be the basis of the overestimate of the weight of producer services, whose growth is extended to the whole subperiod by Momigliano and Siniscalco.

-The take-off of tertiarization : 1976-88.

In this subperiod we find two value added cycles, the first from the recession following the first oil shock to the second one , and the second cycle from the recession of the first eighties to the recovery of the years 1984-88. The main feature of the industrial sector is the divorce between the dynamics of value added cycles and the one of employment cycles due to the deep reshaping of the italian industry (F. Barca and M. Magnani 1989)(see graphs 4, 5 and 6). This divorce is the reason for our splitting of the tertiarization

subperiods in 1975.

In fact during the 1972-75 cycle dependent employment creation has still occurred in industry while from 1976 on industry destroys it. It's worthwhile to recall a sentence of the Governor of the Bank of Italy who in his 1981 Report - referring to 1979 - wrote : "For nine months since the beginning of the expansionary phase gross domestic product grew at an annual rate of ten per cent". During the same period dependent employment in industry grew negligibly bearing the brunt of industrial reshaping.

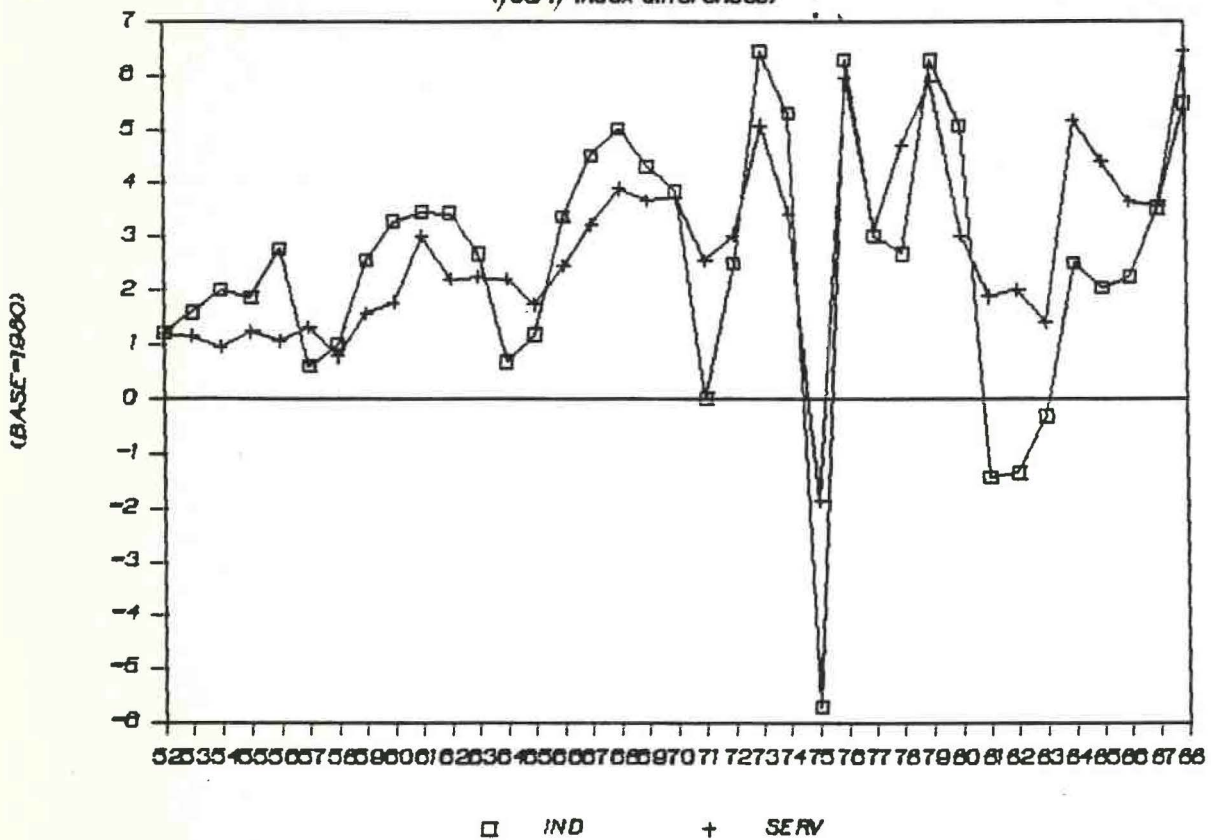
In spite of the long period of recovery 1984-88, industrial employment begun growing again only in 1988. On the contrary, during the same subperiod, the service sector employment first increases at a high rate, explodes after 1982, and finally slows down again at a high rate after 1984. Here we observe a breakdown in the synchronization which existed in the previous period. This does not imply the breakdown of any linkage between the two sectors. What is happening is a new division of labour between them. This new division of labour is created by the new demands of industry upon the service sector. This new demands depends on two factors, internal and external to the firms.

The former is the reshaping of the firms, the latter is the need of more information in order to master a much more uncertain environment. The confirmation of this conclusion is based on the exceptionally quick and impressive growth of the

employment of the service subsector which supplies these new function (see graphs 7 and 8).

GRAPH 4. VALUE ADDED

(yearly index differences)



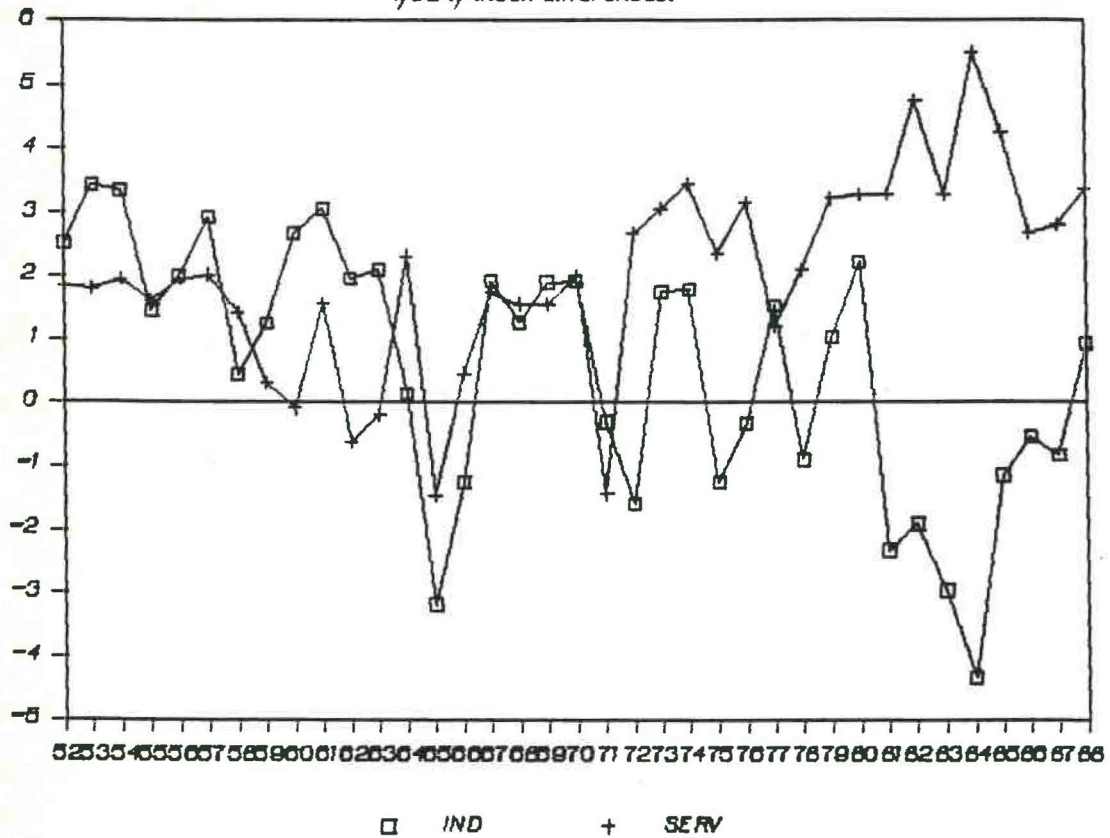
Sources: Authors' computation on data from

- ISTAT Annuario di Contabilita' Nazionale, 1986, vol.14/1.

- Relazione Generale sulla Situazione Economica del Paese (1988) - Roma 1989.

GRAPH 5. TOTAL EMPLOYMENT

(yearly index differences)



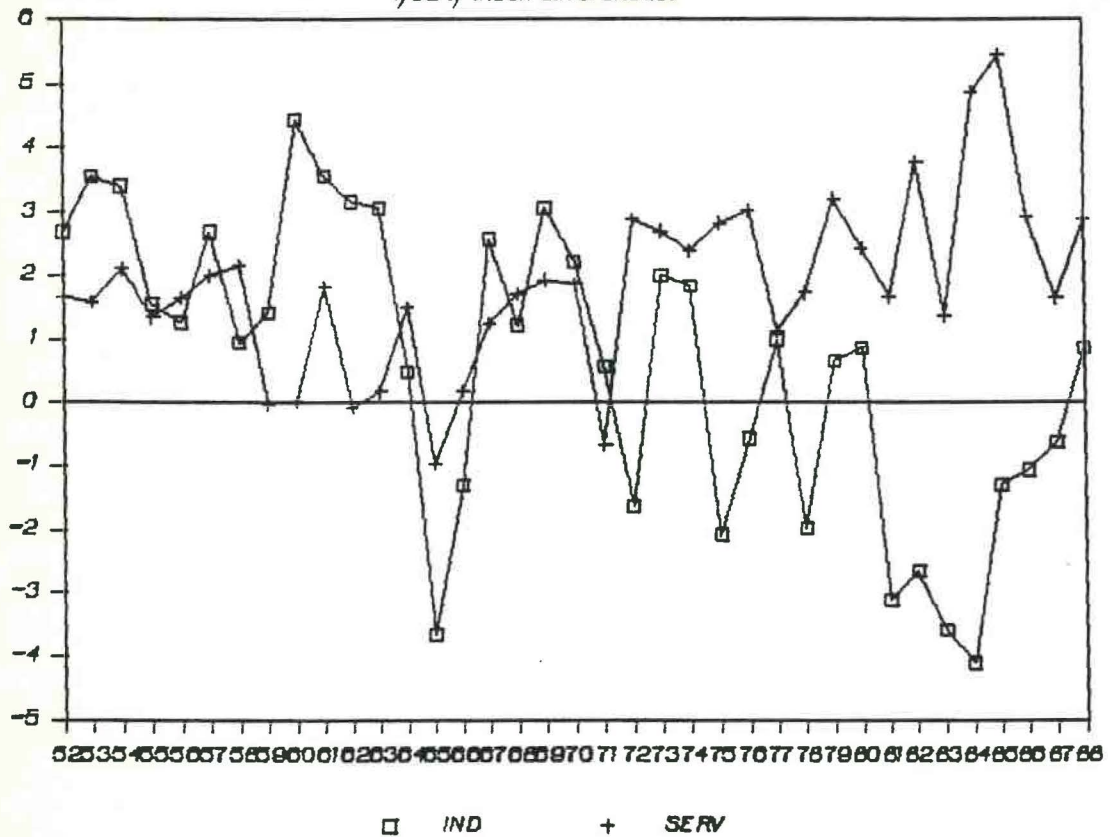
Sources: Authors' computation on data from

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- Relazione Generale sulla Situazione Economica del Paese (1988) - Roma 1989.

GRAPH 6. DEPENDENT EMPLOYMENT

(yearly index differences)



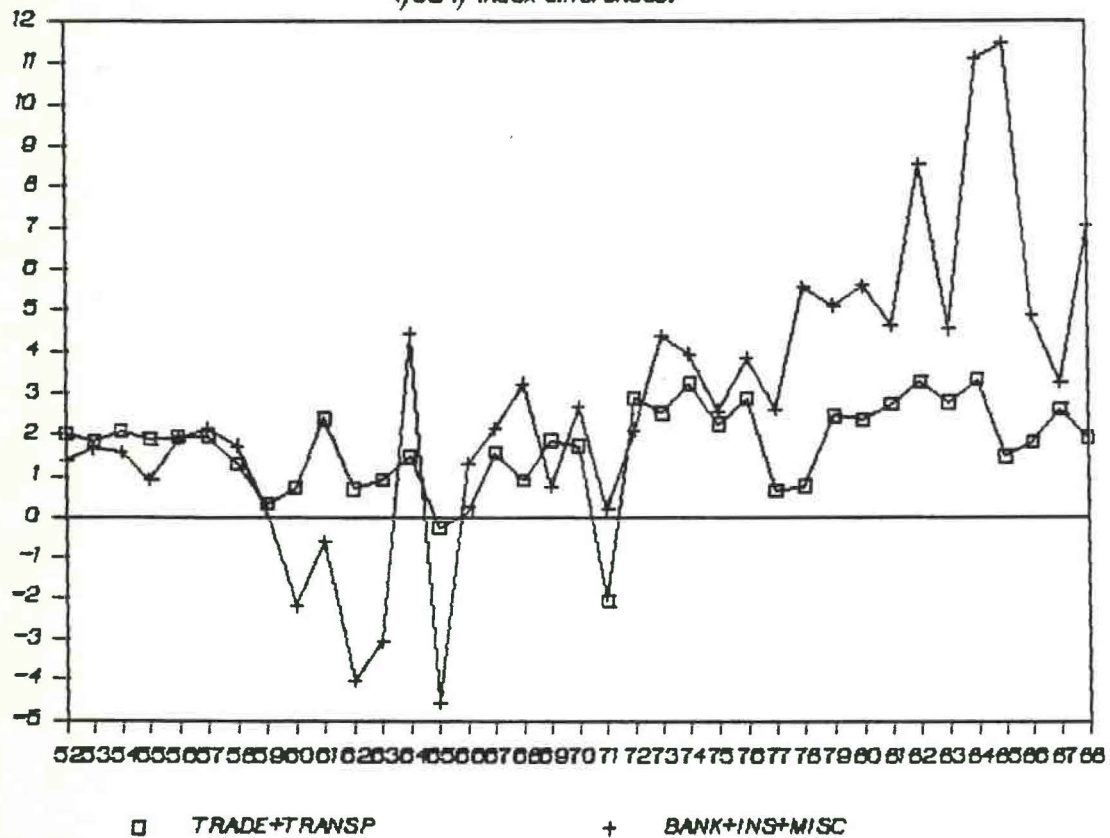
Sources: Authors' computation on data from

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- Relazione Generale sulla Situazione Economica del Paese (1988) - Roma 1989.

GRAPH 7. TOTAL EMPLOYMENT

(yearly index differences)



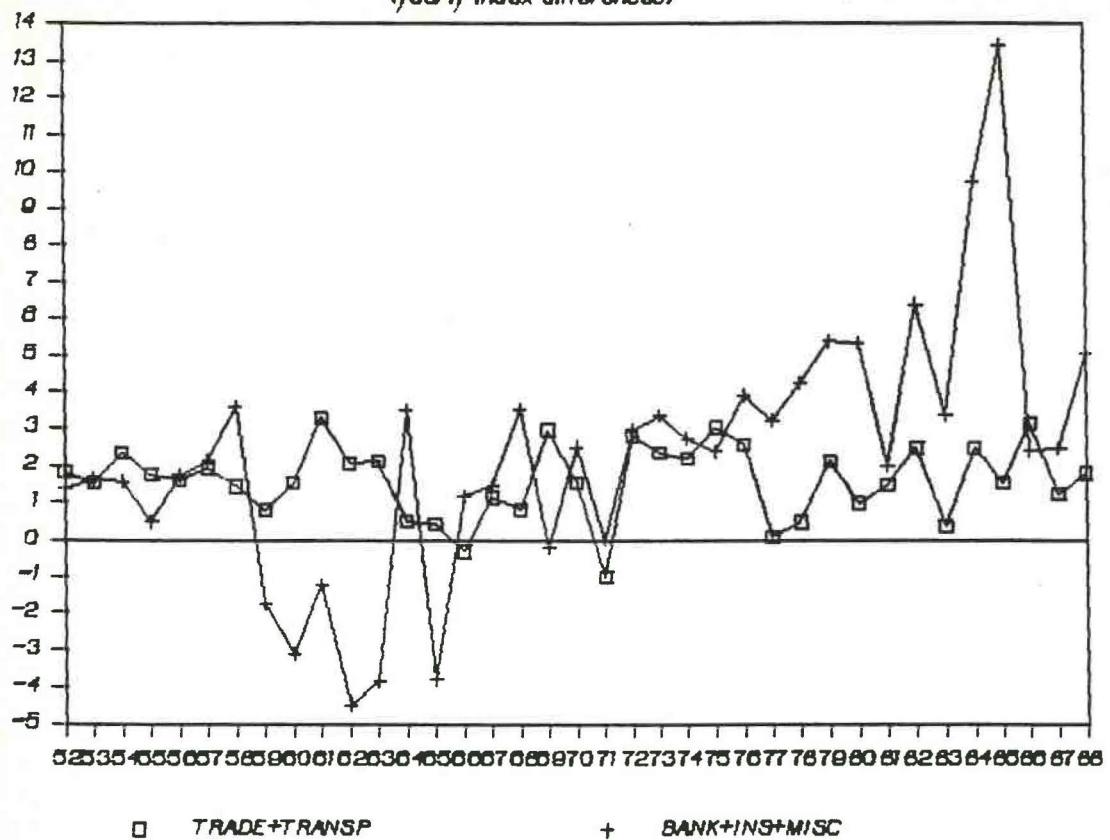
Sources: Authors' computation on data from

- ISTAT Annuario di Contabilita' Nazionale, 1986, vol.14/1.

- Relazione Generale sulla Situazione Economica del Paese (1988) - Roma 1989.

GRAPH 8. DEPENDENT EMPLOYMENT

(yearly index differences)



Sources: Authors' computation on data from

- ISTAT Annuario di Contabilita' Nazionale, 1986, vol.14/1.

- Relazione Generale sulla Situazione Economica del Paese (1988) - Roma 1989.

- Some considerations on income distribution.

The greatest difference between the dynamics of labour cost in industrial and service sectors emerges in the last subperiod, from 1975 to 1988 (see graph 9). The peculiar feature of the previous period was that industrial labour costs grew either at the same pace or faster than the service ones. The dynamics of the service labour costs reached the peak, like the industrial one, in the years of strongest wage push (M. Salvati 1973). This was the signal of the existence of a certain degree of coordination between the two labour markets. In the last years industrial labour costs are still growing , even at a slower pace than before. On the contrary the index of service labour costs decreases up to 1980, and thereafter falls to negative values, recovering only in the last two years of the period.

This phenomenon has never occurred before for both sectors, apart for the year of greatest fall in the level of economic activity. The halt of employment absorption in the industrial sector is likely to have created a condition of excess supply in a consistent part of the service labour market. The existence of a buyer labour market is not equivalent to a sponge effect; during the years - the fifties - when the service sector was behaving this way wages were slowly increasing.

If we consider the margin value added ratio of the two

sectors (see graph 10), we may distinguish three different patterns; at the beginning both ratios are decreasing and the difference between the two margins is in favour of industry, in spite of the tightening of its labour market. In the second period up to 75 the difference between the two sector ratios begins to diminish in favour of services. The last period is a period of increasing ratios for both sectors, and in the same period the gap is closing up (in particular on the industrial sector (Barca and Magnani 1989)). The main difference in the margins rising process lies in the adjustment variable. In the industrial sector demand and wages are correlated and the adjustment variable is the dynamics of employment; in the tertiary sector on the contrary the correlated variables are demand and employment, wages are being the adjustment variable.

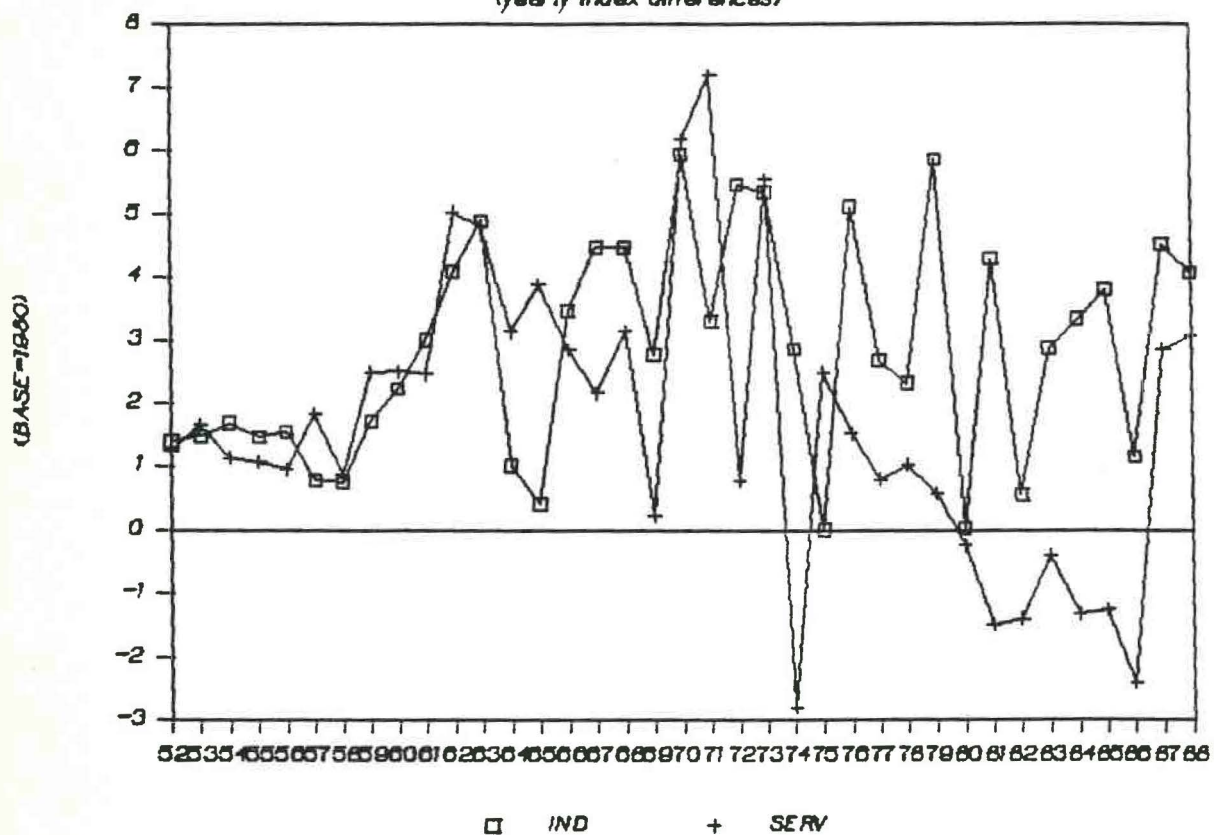
The margins are calculated, as usually, adding to effective wage incomes the imputed wages to autonomous workers in order to estimate the profitability conditions. In this way we reasoning from a production point of view. From the demand point of view, on the contrary, we must take into account the whole income which accrues to non wage earners.

We then consider the non wage incomes value added ratios of the two sectors (see graph 11). The differences between the two shares is widening in favour of the tertiary sector up to 1975, and then stabilizing up to the end of the period. Both shares are decreasing from the beginning of the period up to

1975 and than increasing at almost the same pace. The increase of the shares from 1975 to 1988 restores the 1951 level for the tertiary sector and the 1961 level for industry. From this shift we may measure the striking change in income distribution which occurred in the last subperiod.

GRAPH 9. UNIT LABOUR COSTS

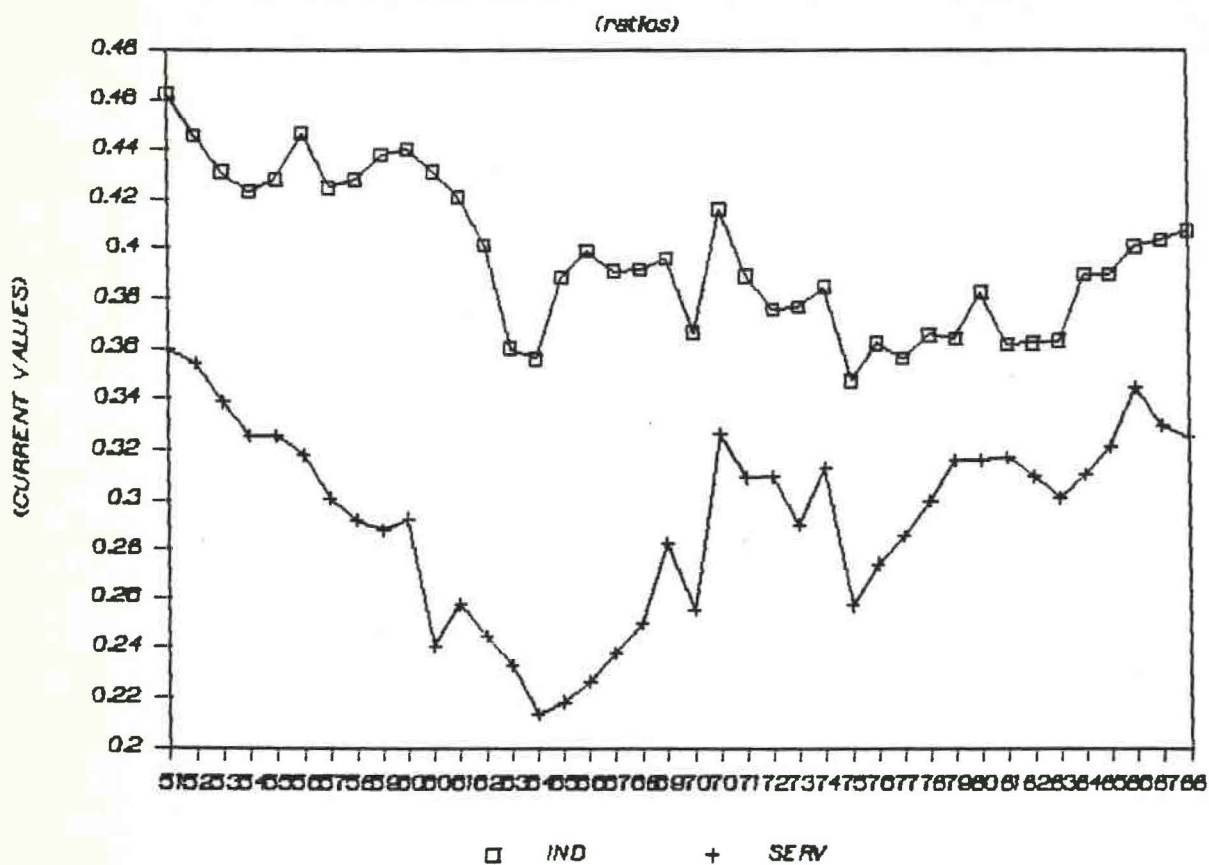
(yearly index differences)



Sources: Authors' computation on data from

- ISTAT Annuario di Contabilita' Nazionale, 1986, vol.14/1.
- Relazione Generale sulla Situazione Economica del Paese (1988) - Roma 1989.

GRAPH 10. MARGINS/VALUE ADDED

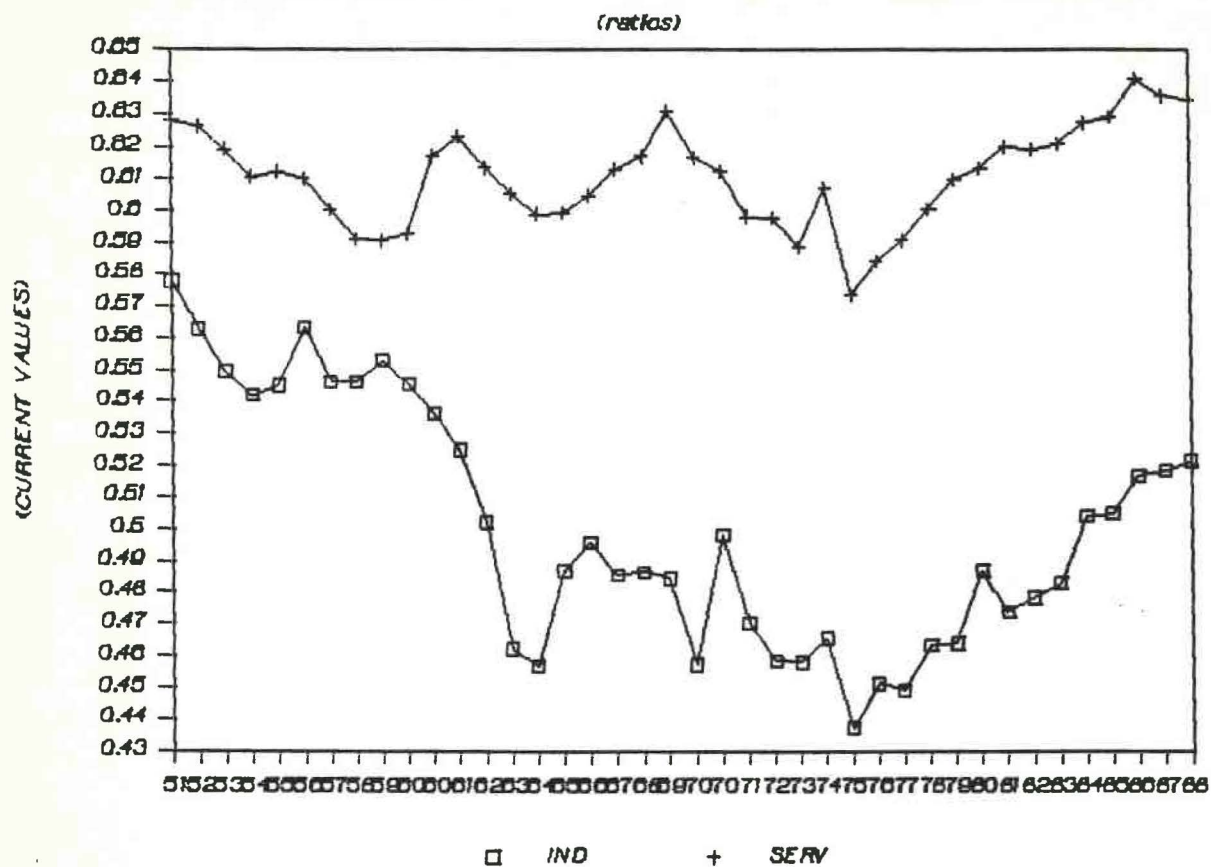


Sources: Authors' computation on data from

- ISTAT Annuario di Contabilita' Nazionale, 1986, vol.14/1.

- Relazione Generale sulla Situazione Economica del Paese (1988) - Roma 1989.

GRAPH 11. NON WAGE INCOMES/VALUE ADDED



Sources: Authors' computation on data from

- ISTAT Annuario di Contabilita' Nazionale, 1986, vol.14/1.

- Relazione Generale sulla Situazione Economica del Paese (1989) - Roma 1989.

- Some provisional conclusions.

During the period 1951-88 the market service sector of Italian economy underwent a great transformation from backwardness to modernization, passing through different phases of linkages (11) with the industrial sector. The more relevant periods of this transformation were the years 1959 -65 - the so called "economic miracle" - and the take off period 1982-1987. In the years of miracle the features prevailing in the sector, traditional organizational structure and underemployment, were put under pressure by the acceleration of industrial development. The years of take off are the ones in which industry and services are getting more and more interconnected. From the point of view of employment, value added and investment the period of truly deep tertiarization of the Italian economy begins in 1976. In fact in those years we observe a general overtaking of the aggregates of the service sector compared to those of industry: investments in 1976, total employment in 1981 and value added - both level and dynamics - in 1982.

The origin of the great transformation, which takes place in the period 1976-88, lies in the deep industrial reshaping which follows the first oil shock and accelerates after the second one. The rationalization generates a new division of labour between industrial and tertiary sector. A new strong demand arises for a whole range of new service functions;

some functions previously performed within the industrial firms are transferred to the service sector. Nevertheless in order to be efficiently performed these functions must be deeply reorganized. This increased interconnection between industry and services is not limited geographically or dimensionally but spreads all over the whole economy: the process of spreading explains the intensity of service growth. The reorganization of the two sectors develops together with a deep change in income distribution from wage earners to non wage earners. This induces a great change in the pattern of demand with a substantial upgrading of it. The upgraded demand - from non wage earners of both sectors - generates a new demand of reorganized services which induces a new demand for industrial goods. In this way the growth of the service sector induced by the transformation of industry gives rise to a subsidiary self sustained mechanism of growth.

G. P. Caselli G. Pastrello

ipartimento di Economia Politica

Università di Modena

Maggio 1989

NOTES

- (1) - For an analysis of the importance of producer services, see Shalla, A.S. (1971)
- (2) - Momigliano and Siniscalco (1982) and (1985) used in their works the increase of some specific coefficients of the Leontiev inverse matrix as a criterion to measure the increase in integration between the service sectors and industry. They found that the integration consistently grew in the period 65-75; Caselli and Pastrello (1984) opposed that the increasing coefficients were due to internal activation of industry, and not to integration.
- (3) - see Colin Clark famous book, The conditions of economic progress. (1940)
- (4) - Gould stresses the importance of the service sector in the industrial revolution, criticizing the usual stages approach.
- (5) - J.A. Hobson was the first economist who studied the process of tertiarization in Great Britain and in the United States, at the end of the nineteenth century, giving useful insights to the modern scholar; of great interest are the categories of "make" and "deal", he uses instead of service sector and material one. See his book, The industrial system (1906).
- (6) - D. Weintraub and H. Magdoff stressed the relationship

between employment creation in industry and the service sector, emphasizing the importance of the producer services in the service employment structure of U.S.A in the first decades of this century.

(7) - On the process of tertiarization of the U.S.A see the useful study of A.Brender, A.Chevalier, Etats Unis: croissance, crise et changement technique dans une économie tertiaire.

(8) - We didn't take into account the public sector, because its value added and employment are not sensitive to demand impulses.

(9) - We could not use the kind of classification we used in our article on service sector in U.S.A, because our statistical material is incomplete. Another reason is that agricultural employment was shrinking at such a pace to make meaningless the yearly variations of the employment of that sector defined in a hobsonian way.

(10) - For the first study on italian cycles, see Fua' (1973).

(11) - For a useful discussion of the linkages between industry and the service sector see S. Cohen and J. Zysman, Why manufacturing matters: the myth of post-industrial society.

BIBLIOGRAPHY

- Barca, F., Magnani, M. (1989), L'industria fra capitale e lavoro. Piccole e grandi imprese dall'autunno caldo alla ristrutturazione, Bologna, Il Mulino.
- Barras, R. (1987), Innovation in services, Applied economics, n.3
- Bhalla, A.S. (1971), Le role du secteur des services dans l'expansion de l'emploi, in essai sur l'emploi, Bureau international du travail, Geneve.
- Brender, A., Chevallier, A., Pisany-Ferry, (1980), Etas-unis: croissance, crise et changement technique dans une economie tertiare, in Economie prospective internationale n.2
- Caselli, G.P., Pastrello, G. (1984), L'integrazione industria e terziario in Italia tra il 1945 ed il 1975. Un'analisi input/output mediante scomposizione dei coefficienti di attivazione, in L, Industria, n.3.
- Caselli, G.P., Pastrello, G. (1985), Crescita dei servizi e crescita dei servizi alla produzione. Problemi generali e analisi comparata regionale e provinciale. In "Problemi dello sviluppo industriale e dell'occupazione a Bologna. Franco Angeli 1985

- Caselli, G.P., Pastrello, G. (1987), Un suggerimento hobsoniano su terziario e occupazione. USA 1940-1983. La specificita' americana e la debolezza europea. "Politica economica" n. 1.
- Clark, C. (1940), The conditions of economic progress, London, Mac Millan
- D'Antonio M. (1973) Sviluppo diseguale e inflazione nell'economia italiana, 1959-1969, in Moneta e credito, terzo trimestre.
- Cossutta, D., Conti, V. (1986) Il problema dell' occupazione: disequilibrio strutturale o transitorio?, in " Oltre la crisi ", edited by Ente Luigi Einaudi. Il mulino, Bologna.
- De Bandt, J. (1985) a cura di, Les services dans les societes industrielles, Economica, Paris.
- De Cecco M. (1972) Una interpretazione ricardiana della forza lavoro, Note economiche, gen.
- Cohen, S., Zyman, J. (1987) Why manufacturing matters: the myth of post-industrial society, Basic Books, New York.
- Eller Veinicher M. (1977), Conseguenze della crescita e dei mutamenti del settore terziario per il sistema delle imprese italiane, in G.Carli (a cura di), Sviluppo economico e strutture finanziarie in Italia, Bologna, Il Mulino.
- Fua' G. (1973), Cicli e tendenze di fondo dell'economia

italiana nell'ultimo ventennio, in Rassegna economica n.5

Frey L. (1975), L'occupazione terziaria, Franco Angeli, Milano.

Giarini, O. (1984), Cycles, value and employment. Responses to economic crisis. Pergamon press.

Giavazzi, F., Spaventa, L. (1989), Italy: the real effects of inflation and disinflation, working paper n.71, dipartimento di scienze economiche, Bologna.

Graziani A. (1972), Introduzione a "L'economia italiana: 45-70" Bologna, Il Mulino.

Gould, D. J. (1972), Economic growth in history, Methuen, London.

Hobson, J. A. (1909), The industrial system, (second edition), Longmans Green, London.

Lanciotti, G. (1971), Occupazione e produttività nel settore dei servizi, in Contributi alla ricerca economica, Banca d'Italia.

Martinelli, F., (1984), Servizi alla produzione e sviluppo economico regionale: il caso del mezzogiorno d'Italia, in Rassegna economica, n.2.

Memigliano, F., Siniscalco, D. (1982), Note in tema di terziarizzazione e deindustrializzazione, in Moneta e Credito, secondo trimestre.

Monigliano, F., Siniscalco, D. (1985), Mutamenti della struttura del sistema produttivo e integrazione fra industria e terziario, relazione presentata alla XXV riunione della società italiana degli economisti.

Pavitt, K. (1984), Sectorais patterns of technical change: towards a taxonomy and a theory. In research policy n.13.

Rampa, G. (1986), Ancora sul terziario: produzione di beni e settori dell'intermediazione nell'economia italiana, 1965-83. L'industria n.2

Salvati, M. (1973), Il sistema economico italiano: analisi di una crisi, Bologna, Il Mulino:

Salvati, M. (1976), Sviluppo economico, domanda di lavoro e struttura della occupazione, Bologna, Il Mulino.

Spaventa L. (1973), Note su rendite e profitti, in Moneta e Credito, quarto trimestre.

Weintraub, D., Magdoff, H. (1940) The service industries in relation to employment trends, in Econometrica n.4

Statistical sources.

Annuario di contabilita' nazionale 1986, volume 1-2. Istat, Roma.

Relazione della Banca D'Italia: various issues.

Relazione generale sullo stato economico del paese 1988,
Ministero del Tesoro.

Materiali di discussione

1. Maria Cristina Marcuzzo [1985] "Joan Violet Robinson (1903-1983)", pp.134.
2. Sergio Lugaresi [1986] "Le imposte nelle teorie del sovrappiù", pp.26.
3. Massimo D'Angelillo e Leonardo Paggi [1986] "PCI e socialdemocrazie europee. Quale riformismo?", pp.158.
4. Gian Paolo Caselli e Gabriele Pastrello [1986] "Un suggerimento hobsoniano su terziario e occupazione: il caso degli Stati Uniti 1960/1983", pp.52.
5. Paolo Bosi e Paolo Silvestri [1986] "La distribuzione per aree disciplinari dei fondi destinati ai Dipartimenti, Istituti e Centri dell'Università di Modena: una proposta di riforma", pp.25.
6. Marco Lippi [1986] "Aggregation and Dynamics in One-Equation Econometric Models", pp.64.
7. Paolo Silvestri [1986] "Le tasse scolastiche e universitarie nella Legge Finanziaria 1986", pp.41.
8. Mario Forni [1986] "Storie familiari e storie di proprietà. Itinerari sociali nell'agricoltura italiana del dopoguerra", pp.165.
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11. Fernando Vianello [1986] "Labour Theory of Value", pp.31.
12. Piero Ganugi [1986] "Risparmio forzato e politica monetaria negli economisti italiani tra le due guerre", pp.40.
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15. Giovanni Bonifati [1986] "Saggio dell'interesse e domanda effettiva. Osservazioni sul capitolo 17 della General Theory", pp.42.
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17. Sebastiano Brusco e Giovanni Solinas [1986] "Mobilità occupazionale e disoccupazione in Emilia Romagna", pp.48.
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19. Sergio Lugaresi [1987] "Redistribuzione del reddito, consumi e occupazione", pp. 17.
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24. Fernando Vianello [1987] "Effective Demand and the Rate of Profits: Some Thoughts on Marx, Kalecki and Sraffa", pp. 41.
25. Anna Maria Sala [1987] "Banche e territorio. Approccio ad un tema geografico-economico", pp. 40.
26. Enzo Mingione e Giovanni Mottura [1987] "Fattori di trasformazione e nuovi profili sociali nell'agricoltura italiana: qualche elemento di discussione", pp. 36.
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28. Massimo Matteuzzi e Annamaria Simonazzi [1988] "Il debito pubblico", pp. 62.
29. Maria Cristina Marcuzzo (a cura di) [1988] "Richard F. Kahn. A disciple of Keynes", pp. 118.
30. Paolo Bosi [1988] "MICROMOD. Un modello dell'economia italiana per la didattica della politica fiscale", pp. 34.
31. Paolo Bosi [1988] "Indicatori della politica fiscale. Una rassegna e un confronto con l'aiuto di MICROMOD", pp. 25.
32. Giovanna Procacci [1988] "Protesta popolare e agitazioni operaie in Italia 1915-1918", pp. 45.
33. Margherita Russo [1988] "Distretto industriale e servizi. Uno studio dei trasporti nella produzione e nella vendita delle piastrelle", pp. 157.
34. Margherita Russo [1988] "The effects of technical change on skill requirements: an empirical analysis", pp. 28.
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38. Giovanni Mottura [1988] "La 'persistenza' secolare. Appunti su agricoltura contadina ed agricoltura familiare nelle società industriali" pp. 40.
39. Giovanni Mottura [1988] "L'anticamera dell'esodo. I contadini italiani dalla 'restaurazione contrattuale' fascista alla riforma fondiaria" pp. 40.
40. Leonardo Paggi [1988] "Americanismo e riformismo. La socialdemocrazia europea nell'economia mondiale aperta" pp. 120.
41. Annamaria Simonazzi [1988] "Fenomeni di isteresi nella spiegazione degli alti tassi di interesse reale" pp. 44.
42. Antonietta Bassetti [1989] "Analisi dell'andamento e della casualità della borsa valori" pp. 12.
43. Giovanna Procacci [1989] "State coercion and worker solidarity in Italy (1915-1818): the moral and political content of social unrest" pp. 41.
44. Carlo Alberto Magni [1989] "Reputazione e credibilità di una minaccia in un gioco bargaining"

pp. 56.

45. Giovanni Mottura [1989] "Agricoltura familiare e sistema agroalimentare in Italia" pp. 84.
46. Mario Forni [1989] "Trend, Cycle and 'Fortuitous Cancellations': a Note on a Paper by Nelson and Plosser" pp. 4.
47. Paolo Bosi, Roberto Golinelli, Anna Stagni [1989] "Le origini del debito pubblico e il costo della stabilizzazione" pp. 26.
48. Roberto Golinelli [1989] "Note sulla struttura e sull'impiego dei modelli macroeconomici" pp. 21.
49. Marco Lippi [1989] "A Short Note on Cointegration and Aggregation" pp. 11.