Università degli Studi di Ferrara

DIPARTIMENTO DI ECONOMIA, ISTITUZIONI, TERRITORIO

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Quaderni del Dipartimento

n.9/1998

June 1998

Internal Demand and Labour Income: A Note on the Role of "Employment Multiplier"

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Thematic Network: Full Employment for Europe

Internal Demand and Labour Income:

A Note on the Role of "Employment Multiplier" [♠]

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June 1998

JEL Classification J23, E12, E24, O33

Summary

The paper suggests an accounting scheme of the impact of demand side factors, i.e. growth, composition and distribution of income, on the determination of changes in the aggregate balance of employment. The level of employment warranted in a system is here derived from the application of a simple scheme which we have called, following the contributions of Richard Kahn and John Maynard Keynes in the '30s, the "employment multiplier". Starting from an accounting identity between the values of aggregate supply and demand, a level of "warranted" employment is derived, given the labour coefficient and the deflated values of final demand, in which autonomous components are distinguished from an induced component, this latter depending on total labour income. Thus, the variations of aggregate employment for a country can be decomposed into the effects of the contributions of three components: growth of average productivity of labour, growth of "autonomous" demand components, and variations of the "multiplier", a term which summarises the impact of wage share and consumption propensity on induced demand and again on the level of overall employment. On the basis of this framework, we have worked out a quantitative assessment with temporal comparison within a national context. The aim has been to rebuild the employment pattern for seven European countries "warranted" on the factors indicated above, with specific timing in the period 1960-1995 required in identifying differential behaviours of the relation between employment growth and production growth.

[♠] *This note presents a thesis which can be found in a more extended version in (Piacentini – Pini, 1997). This version has been presented at the TSER meeting in Bremen, 14-16 May 1998, Thematic Network on Full Employment for Europe.* *The authors would like to thank Gilberto Antonelli, Annaflavia Bianchi, Sergio Destefanis, Mauro Gallegati, Peter Kalmbach, Jan Kregel, Giorgio Lunghini, Pascal Petit, Marina Schenkel, Anna Stagni and the member of the TSER working group for their critical comments and suggestions.*

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1. Introduction

In the more recent years, changes in the sphere of income distribution adverse to workers seem to be intensified in several industrial countries (ILO, 1995, 1996; EC, 1996). These changes, together with very favourable dynamics in labour productivity not associated with similar adjustments in real wages, appear to have brought about important effects on the composition of aggregate demand, penalising its domestic components, in particular consumption, and thus the employment performance. The persistence of high unemployment levels in the major European countries, and the evidence of a small employment elasticity reflecting in an inadequate reabsorption capacity of the labour supply excess, even in the most favourable phase of the cycle, suggest a reconsideration of the schemes aimed at modelling the determination of aggregate employment balances. In this paper we propose, for the period 1991-1995, a quantitative assessment of the impact of demand side factors, i.e. growth, composition and distribution of income, on the determination of changes in the aggregate balance of employment.

In the eighties, a line of research broadly defined as the one of partial equilibrium analysis in the aggregate labour market has been quite pervasive. Unlike the conventional approach of labour demand and supply function in perfect competitive markets, this line has been able to explicate in the formalised models and empirical analyses relevant institutions and behaviours: bargaining and contract settlements, trade unions actions, job search strategies, workers selection in context of imperfect competition, etc. At the aggregate level of analysis, however, the variety of these schemes find a synthesis in an analytical representation which identifies an equilibrium rate of (un)employment as the solution of wages and prices push factors on the workers and firms side. We refer, in particular, to schemes which define an equilibrium rate for (un)employment (NAIRU, etc.) through the interactions of "wage equation" and "price equation" emerging on an idealised "real wage-employment" plane, i.e., in a context of partial equilibrium analysis for labour market.

Thus, these schemes tend to provide a "classical" sequence where, starting with the concept of partial equilibrium in the labour market, the level of activity of the system and the level of employment are derived in a way that they are compatible with a unique labour market not-inflationary equilibrium. The factors affecting the "final demand" are eventually taken into account as possible causes of a short-run disequilibrium, and assuming however that an attracting process toward a stable long-run equilibrium prevails[1].

In a text in which an interest for empirical results prevails, we do not intend to arise critical comments on these schemes so briefly summarised. However, we are not denying in the occasion an intention of encouraging a critical consideration of the relevance, for the medium-term performance of

[1] In the long-run, there is a natural level of employment determined in the labour market: in a context of imperfectly competitive firms, real wages and employment are jointly determined by the price-setting policy of firms and by the bargaining policy of workers. A unique natural level of aggregate demand compatible with no inflationary pressure is associated to this natural level of employment. In the short-run, a level of aggregate demand different from the natural one determines an upward or downward pressure on the level of equilibrium employment. If the employment level differs (e.g. higher) from the equilibrium, pressures on wages and prices emerge, leading to a wage-price spiral. In the short-run, therefore, the unemployment rate may differ from the natural one, giving rise to costs in terms of growing or decreasing inflation rate, for example as a consequence of an aggregate demand level inconsistent with the equilibrium level. This framework determines both the long-run NAIRU based on structural variables in the labour market, and the gap between unemployment rate and the NAIRU and its adjustments toward the NAIRU. See Layard – Nickell – Jackman (1991).

employment, of factors on the "demand side". Thus, the approaches which follow are directly inspired by a different sequence where the employment outcomes derive from the dynamic of final demand, its components, productivity growth and income distribution. Indeed, beyond specific hypothesis regarding the microeconomic foundations of labour demand, we believe that these will prove to be of heuristic interest in the rationalisation of the different performances of employment growth in industrialised countries during the recent years.

Specifically, we believe that it is worth resuming and verifying two aspects which should help interpreting the poor employment performance of the European countries in a way which differs from a conceptualisation rooted in wage and price push factors:

a) the explicit consideration of the dynamic of demand components, assumed in a Keynesian fashion as the primary source of the determination of employment;
b) the twofold role of wage dynamics, as structural element of the supply costs, on the one hand, and as main factors determining an induced demand component for consumption goods, on the other.

Thus, we will resume the view according to which the employment is essentially an *outcome derived from the final demand and its composition, from the state of technology and from how its changes affect distributive variables through the transfers of productivity gains on labour real income*.

2. Autonomous demand and induced demand in the contributions of J.M. Keynes and R. Kahn

The level of employment warranted in a system is derived from the application of a simple scheme which we have called, following the contributions of Richard Kahn and John Maynard Keynes, the "employment multiplier". Starting from an accounting identity between the values of aggregate supply and demand, a level of warranted employment is derived, given the labour coefficient and the deflated values of final demand. In final demand, autonomous components are distinguished from an induced component, which depends on total labour income (Piacentini, 1995, 1997). Thus, the variations of aggregate employment for a country can be decomposed into the effects of the contributions of three components:

a) the technological progress as witnessed by the reduction over time of a labour coefficient of output (the inverse of average productivity of labour);
b) growth and composition of autonomous demand;
c) variations of the "multiplier", which summarises the impact of wage share and consumption propensity on induced demand and thus on the level of overall employment,

The approach followed also falls apart, therefore, from a trend in a "New Keynesian Macroeconomics", which is mainly interested in finding rational microfoundations for "Keynesian" outcomes in the Macroeconomy, through the identification of behaviours which may explain nominal and real rigidities in the labour, goods or credit markets (Mankiw – Romer, eds., 1991). The approach we follow intends to resume the original version in accordance to which *employment essentially derives from final demand*[2], given the state of technology. At the same time final demand itself, through the capability to generate an induced demand out of labour income (given the transferring mechanisms of productivity gains on real wages), interacts with the dynamic of employment level. As in the simple income-expenditure model, in which the exogenous components of demand determine the equilibrium level of income given the multiplier parameters for the induced demand, similarly, it is possible to obtain the employment level "warranted" on the basis of the level and composition of autonomous demand -

[2] See Keynes in *The General Theory* (Keynes, 1936, edition 1974, p.24): "[…] in a given situation or technique, resources and factor cost per unit of employment, the amount of employment […] depends on the amount of the proceeds which the entrepreneurs expect to receive from the corresponding output" (Keynes, 1936, edition 1974, p.24).

domestic and external - , and of the technical coefficient of production (summarised by the aggregate product per worker ratio), given real wages and the propensities to consume out of labour income as parameters of the induced component of demand for labour.

In other words, we intend to suggest again that Keynesian view which was emphasised in the preparation of the Keynes' *General Theory*:

> "Our object in this context is to discover what determines at any time the national income or dividend of a given economic system and (which is the same thing) its employment; which means in a study so complex as economics, in which we cannot hope to make completely accurate generalisations, the factors in which the changes *mainly* determine our *quaesitum*. Thus we begin our theoretical study with the conclusion derived from the experience that changes in effective demand are what matters and we then proceed to analyse, again interspersing our logic with practical judgements based on experience, what can best be regarded as the variables chiefly significant in changing effective demand" (Keynes, 1973a, p.482-483).

This was, we believe, the vision of Keynes behind his notion of the aggregate employment function, determining the volume of employment required for production activity, given any (expected) level of effective demand. Following Keynes, we can distinguish two demand components which generate employment: the first is linked to the demand for consumption goods which is connected to the employment level itself; the second is an autonomous component affected by interest rate and marginal efficiency of capital, which are considered initially as independent variables (Keynes, 1973a, pp.481-483). Thus we have an employment function depending on an induced component and on an autonomous component of final demand.

This Keynesian view is also found in the seminal article by Richard Kahn (1931) in which employment is distinguished in two components: a "primary" component activated by the exogenous components of demand, and a "secondary" component induced by the consumption out of wage bill in the income-expenditure circuit (Kahn, 1931, p.173). The "secondary" component emphasis also, in Richard Kahn argument, the role of real wage dynamics as multiplicative element of a induced demand for consumption goods, then not only as cost element of the supply price borne by firms. In the specific case of "public works", or more generally of "home investment", discussed by Kahn in the 1931:

> "The increased employment that is required in connection actually with the increased investment will be described as 'primary' employment. […] To meet the increased expenditure of wages and profits that is associated with the primary employment, the production of consumption-goods is increased. Here again wages and profits are increased and the effect will be passed on, though with the diminished intensity. And so on *ad infinitum*. The total employment that is set up in this way in the production of consumption-good will be termed the 'secondary' employment" (Kahn, 1931, p.173).

This passage clearly stresses the role of wage increments, as a multiplying component of an induced demand for consumption goods, and therefore, not to be considered exclusively as a cost component on the supply side. Keynes and Kahn were, though, conservative in maintaining a "classical", inverse relationship between real wages and employment, which is so often been called for when recommending wage moderation in front of high unemployment. It is affirmed in fact that "In a given state of organisation, equipment and technique, the real wage earned by a unit o labour has a unique (inverse) correlation with the volume of employment" (Keynes, 1936, ed. 1974, p.17), or where Keynes says "[…] the volume of employment engaged in producing consumption-goods and the price-level of home-produced consumption-goods are uniquely correlated. […] If the supply curve rises

steeply, there is a large rise in prices" (Kahn, 1931, p.178). However, this correlation cannot be thought as a deterministic one. Keynes wrote**:**

> "Real wages seems to me to come in as a by-product of the remedies which we adopt to restore equilibrium. They come in at the end of the argument rather than at the beginning. […] Employment is not a function of real wages in the sense that a given degree of employment requires a determinate level of real wages, irrespective of how the employment is brought about" (Keynes, 1930a, ed. 1973, p. 180)[3].

Then, the wage bill and labour compensations have a twofold role, as to determine the supply price for goods, on the one hand, and to multiply an autonomous demand, on the other. A partial view of wages as purely cost element to be reduced in order to gain competitive advantages could jeopardise the capability of the multiplier to induce an internal demand out of labour income and thus to sustain employment level. Keynes emphasised this crucial element in Ch. XIX of *The General Theory* in which, debating the induced effects of a decline in wage rate, he noticed that a consequent income distribution adverse to workers (and favourable to *rentiers*) could imply negative effects on employment, rather than positive ones, for the decline in consumption for workers and the increase in saving for *rentiers* (Keynes, 1936, ed. 1974, p.262)[4].

An approach which considers employment activation as an outcome "a posteriori" with respect to volumes and composition of a final demand might appear, at first, heterodox within the orientations of

[3] In an article published in *The Economic Journal* of 1936 (*Relative Movements of Real Wages and Output*), Keynes will reconsider the correlation between variations of real wages and output, affirming that the causal link going from production (increasing) to real wages (decreasing), does not appear to be as robust as assumed by classical theory, so that a greater caution should be appropriate when accepting the classical "first postulate". In the meanwhile Keynes underlines how variations of wages, which arise autonomously with respect to a change in production, may later have complex influences on output itself, going possibly in any direction; these effects should be kept separated, for Keynes, from those which may be extrapolated from a "classical" causality (Keynes, 1939, edition 1974).

[4] See also Keynes (1930a; 1932, in 1973b, vol. XIII, pp.343-373; 1939) and the essay *The Question of High Wages* (Keynes, 1930b). In the essay *The Question of High Wages*, Keynes wrote: "So far as the exiting disequilibrium is concerned [the higher wages in England relatively to those prevailing in other countries], I believe that it is impracticable and undesirable to seek the remedy of reducing wages. We must contrive somehow or other, first to mitigate the tendency to excessive foreign lending by finding new openings at home at attractive rates; and for the rest we must, as opportunity offers, try to solve what is still left of our problem by squeezing the higher wages out of increased efficiency. It may not be easy. But I believe it to be easier than the alternative" (Keynes, 1930b; 1981, p.11). In a Round Table at the University of Chicago in June 1931, devoted to "Are Wage Cuts a Remedy for Unemployment ?", Keynes was even more explicit, and his thought is, we believe, much pertinent with respect to a present-day situation**:** "From a practical point of view, I think one is justified in holding on to as high a level of wages as one can. For any individual country to hang behind others is difficult, therefore it is particularly objectionable to start competitive wage cutting between countries. If we would have a period in which there was a project [prospect?] of an excessive saving for a long time to come, the reduction of wages might very well fail to bring us to equilibrium, and then you have to have further, further, and further cuts in wages. Thus there might be no equilibrium point until the burden was so intolerable that there would be a social cataclysm (Keynes, 1932, edition 1973, p.371). See also Keynes (1973b, vol. XIII, pp.343-373), for a full report of the Round Table and of the Chicago lectures given by Keynes in the 1931.

macroeconomic analysis prevailing at the present time[5]. We are not denying, in the occasion, an intention of encouraging a critical consideration of the relevance, for the medium-term performance of employment, of factors on the "demand side". We believe, however, that an empirical re-examination of the relationship between the dynamic of components of final demand and employment should not, in principle, constrain to a particular viewpoint upon the direction of causation of demand for labour, or of "regimes" of wage or price determination.

The approach which follows is, thus, directly inspired from the sequence outlined by Keynes in Ch.3 of *The General Theory* and by Kahn in 1931. We assume indeed as our point of departure the aggregate identity between value-flows of aggregate supply and demand. The derivation of a solution for a "warranted" volume of employment follows then from simple algebraical manipulation respecting the basic identity. We arrive thus to an expression which will be used as a basic ingredient of an "employment accounting" exercise, rather than to be interpreted as a reduced form of a model, casually or sequentially explicated. Within these analytical boundaries, we believe however that the approach will prove to be of heuristic interest in the rationalisation of different performance of employment growth among countries, or among different periods and cyclical episodes within each country.

3. The "employment multiplier" approach

The point of departure of our exercise is the "Keynesian" expression equalising values of aggregate demand and supply, which should be read as an accounting identity among flows[6]:

(1) $p \pi N = c_w w N + c_{NL} Y_{NL} + A.$

On the l.h.s. of (1) there is the value of aggregate supply, with π for the average product of labour, N the volume of employment and p the price level of output. On the r.h.s., three components are distinguished out of an aggregate demand in nominal terms: a) a consumption demand "induced" out of labour income - with w the nominal wage per worker and c_w the propensity to consume of workers -; b) consumption out of non-labour income Y_{NL} with propensity c_{NL}; c) an "autonomous" component of demand A aggregating here investment, government consumption and net exports[7].

[5] The latter would rather derive "a-priori" (or equilibrium) levels of employment, or unemployment, from models of behaviour of agents on an aggregated labour demand, described in situations, broadly defined, of imperfect competition. We refer, in particular, to a scheme which defines an equilibrium rate for (un)employment (NAIRU, etc.) through interactions of "wage equations" and "price equation" emerging on an idealised "real wage-employment" plane, i.e., in a context of partial equilibrium analysis for labour market.

[6] We are not claiming originality in the working out of the aggregate relations implicit from the *General Theory*: it is right to recall, at this point, the lively line of research in this direction, within a "Post-Keynesian" environment of the 1970's, which was margined in a more recent literature, under the "obsession" of the search for microfoundations. We would like to remember here Sidney Weintraub as, perhaps, the more coherent promoter of this approach. See Weintraub (1972, 1980), and Wells in Weintraub (ed.) (1977).

[7] Labour income includes a component attributed to self-employed, assuming the same average compensation w of the employees' one. Adopting an extreme hypothesis, "à la Kalecki", consumption would derive only from workers, with $c_w = 1$ and e $c_{NL} = 0$, so that the previous relation would reduce to the identity between the value of production and the sum of "wages" and "profits" which will coincide correspondingly with consumption and other components of demand.

The key step, within an "employment multiplier approach", is the explication of the employment N from the accounting demand-supply identity (1):

$$(2) \qquad N = 1/\pi \left(\frac{1}{1-c_w(w/p)/\pi}\right)\left(\frac{c_{NL}\, Y_{NL}}{p} + A/p\right).$$

The "warranted" level of employment, within the reference period, thus comes out to be the product of three factors: a) the reciprocal of the average productivity, $1/\pi$, i.e. the labour coefficient of the national product, reflecting labour saving technological change; b) the expression of an induced demand from income out of employment (the "multiplier"), determined, for a given propensity c_w , by the parameters of a primary distribution of the output (the share of labour $(w/p)/\pi$ on total income); c) the volume, in real terms, of exogenous demand, including here the "autonomous component" A and consumption out of a non-labour income with propensity c_{NL}. Exogenous demand appears on the right, as the prime factor of propulsion of economic activity and employment, in Keynesian fashion.

The former expression may be, through logarithmic differences or calculation of rates of variations over intervals of time, the point of departure for exercises of decomposition for the variations of employment, among the contribution of these three factors. Our empirical exercise will therefore derive variations of N as additive result of three component dynamics: a) labour coefficient (i.e. inverse productivity); b) the "multiplier"; c) the autonomous demand in real terms, augmented by the volume of consumption out of non-labour income, indicated here as AAC/p.

$$(3) \qquad N_t = (1/p)_t + \left(\frac{1}{1-c_w(w/p)/p}\right)_t + (AAC/p)_t ,$$

where with the italics we refer to rates of variations over the time interval *t*.

In a practical application of (3), the only additional difficulty arises from the unavailability of separate figures for the two consumption propensities c_w and c_{NL}, while all the other variables are easily available in the current National Accounts statistics. In our application, therefore, we were obliged to substitute the specific propensities with a single common value: an aggregate consumption/income ratio c_y. When c_w and c_{NL} values differ, such an approximation implies the introduction of a distortion in the accounting identity between l.h.s and r.h.s of the expressions (1) to (3). Employment variations calculated as the sum of the components, on the one hand, and the effective variation rate of N, on the other, may now differ because of this procedure, and residual differences may emerge.

In the empirical exercise, in fact, (3) was substituted by:

$$(3 \text{ bis}) \qquad N_t \approx (1/p)_t + \left(\frac{1}{1-c_y(w/p)/p}\right)_t + (AAC'/p)_t ,$$

where $AAC' = c_y Y_{NL} + A$.

Growth of demand, income distribution and labour saving technical progress (technological deepening) appear, thus, to be the background factors in employment variations. The scheme is capable of explicating two effects of trends in functional distribution on demand, and consequently, on employment variations: a) at the level of a "primary" distribution of the value added, "real wages" increasing in excess (or in default) of labour productivity will increase (decrease) the multiplier, for a given value of c_y; b) effects of redistribution adverse to labour income may, in principle, be

counterbalanced, on the demand side, by increases of consumption out of non-labour income, entering the value of AAC'.

3.1 Conditions for maintaining a full employment path

Growth and distribution of income, together with technological progress, appear to be, as from our introductory remarks, the basic factors behind employment variations. The approach clearly stresses two effects of the functional distribution of income on demand, and consequently, on employment: (a) at the level of "primary" distribution, an increase in the real earnings greater (smaller) than that of productivity brings to increasing (decreasing) values of the multiplier, for given values of propensity to consume c_y; (b) a redistribution at a primary level unfavourable to labour may, in principle, be counterbalanced by increasing consumption deriving out of other incomes, entering the value of AAC'.

Looking at the above expressions, it is evident that the multiplier will remain constant, with no autonomous contribution to employment dynamics, in the case in which:

(4) $c_y + w/p - p = 0$

If (4) holds (i.e. real wages increase in line with productivity, and distribution - and redistribution - does not alter the aggregate propensity to consume), variations of employment in an interval of time will exclusively depend upon the differential between the dynamics of autonomous components of demand, augmented by the consumption out of non-labour income, on the one hand, and the dynamics of output per-capita, on the other:

(5) $N_t \lesseqgtr 0$, se $(AAC'/p)_t \lesseqgtr p_t$, con $c_y = 0$, e $w/p_t = p_t$.

In the case of an increase of real wages lower than the productivity one ($p>w/p$), a compensating increase of exogenous demand (including consumption out of non-labour income) higher than the productivity one ($AAC'/p>p$) is required to keep a constant level of employment; while in the opposite case ($p<w/p$), a necessary but not sufficient condition for $N = 0$ will be $AAC'/p<p$.

These simple derivations of the occupational impact of distributional changes lead us, a part from the attempt at an empirical investigation of their incidence, towards a more general consideration on the implications of "income policies" and "wage guidelines". These have been proposed and implemented mainly in the context of strategies having disinflation as target. Their "real" implications on growth and employment have seldom been considered. Specifically, policies aiming at a mere preservation of a constant purchasing power of labour, when associated with steady increases of labour productivity, will imply a fall in the multiplicative component from an induced demand in employment activation ("secondary employment" in Kahn). This is likely to lower the elasticity of employment with respect to any exogeneous increase in autonomous demand. In the meanwhile, the acceleration of a labour saving impact of the technological progress itself will worsen the risk of a technological unemployment, unless a robust compensation on the side of the autonomous components of demand (with an increase in "primary employment") is allowed for.

3.2 Autonomous components of demand and wage dynamics compatible with a steady employment level

The dynamics of AAC required to maintain a given volume of employment, for different hypotheses on rates of growth of real wages, can more precisely be seen through a simple scheme which

reconsiders the Kahn's and Keynes' distinction between "primary" and "secondary" components of total employment, with the latter activated by consumption out of labour income.

We describe with:

(6) $N = N_p + N_s$,

(7) $S_p = N_p/N$,

(8) $S_s = N_s/N$,

the partition of total employment between a primary component *p* and secondary *s*.

Taking real values of induced, C_R, and autonomous, AAC/p, demand:

(9) $C_R = c_w\, w/p\ N$,

(10) $AAC/p = A'$,

we solve for the variations of the components of employment as:

(11) $N_s = (c_w + w/p + N) - p$,

(12) $N_p = A' - p$,

and approximate total variation of N as their weighted average.

(13) $N \cong S_s (c_w + w/p + N - p) + S_p (A' - p)$,

We write now:

(14) $w/p = p \pm \delta$,

where δ will indicate positive or negative deviations of the dynamics of real wages with respect to productivity growth.

We simplify here assuming the constancy of the consumption propensity out of a wage income (c_w=0):

(15) $N \cong S_s (\pm \delta + N) + S_p (A' - p)$,

from which we derive the condition for a null variation of employment (N=0):

(16) $A' = p\ (S_s/S_p)\ \delta$.

A positive differential between wages and productivity growth (δ<0) given steady employment (which might be referred to some "equilibrium" notion for the labour market) would necessarily require the growth of the autonomous components of demand to be kept below that of total output, implying a progressive "crowding out". On the other hand, a negative δ, with real wages increases falling short of productivity growth, will give rise, *ceteris paribus*, to a potential "gap" between aggregate supply and demand, which ought to be compensated through a surplus growth of autonomous demand, worth

$(S_s/S_p)\delta$ in order to maintain constant employment. Graph 1 describes, on the bold line, the trade-off for the $N = 0$ condition, for fixed S_s/S_p ratio.

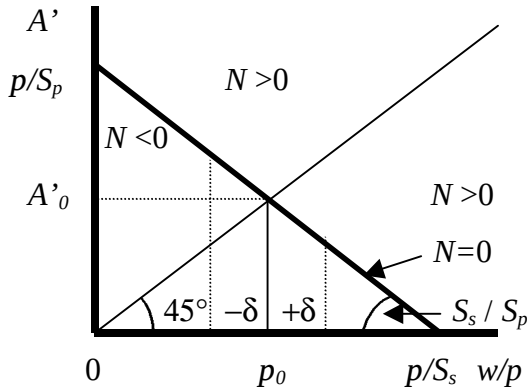

Figure 1

We wish only to give a brief hint to one implication of the scheme for the short-run dynamics of employment. A policy pursuing "competitive deflation" and allowing at the most a constancy of the purchasing power of labour incomes, in order to fully translate into competitive gains the cost reductions allowed by growth of *p*, will require, in order to avoid a fall in employment, the real growth of autonomous demand to be kept steadily higher than that of productivity. These implications appear to us as particularly relevant, with reference to the European experience of the recent years.

We would also like to remark that this exercise in employment accounting may be applied to any context of territorial aggregation, from the regional to the continental level. When we consider further levels of aggregation, components of net exports within the area will cancel out. The importance of the "multiplier" of the induced components of demand will be the higher, the greater the extension of the geographic area being considered. With the words of Kahn:

> "The more a country approximates to a closed system, [...], the greater is the ratio of secondary to primary employment. [...]. A perfectly closed system, to go one step further, is the world as a whole" (Kahn, 1931, p.185).

This passage underlines one crucial aspect of the multiplier approach to employment analysis, which appear to be particularly relevant in the context of a "global market". Economic policies at a national level aiming at a "competitive disinflation", as an alternative to a "competitive devaluation" which may no longer be a feasible option, would press for a wage moderation on one hand and incentivate innovation aimed to increase productivity on the other. Monetary and financial stability will require restrictions of fiscal deficits: the whole compensation on demand side is thus sought in the growth of net exports. But the external component for a country becomes then mainly an internal component for an integrated economic area. And the greater the aggregation, the more an area will approximate a closed economy. In this context, the role of the induced component of demand in the maintenance of positive employment balances, as well as of other genuinely internal components of the

exogeneous demand - government expenditure, "autonomous" investment and "autonomous" consumption - will emerge, more relevant than ever[8].

4. An empirical application to seven OECD Countries

On the basis of this framework, we have worked out a quantitative assessment with temporal comparison within a national and international context. The aim has been to rebuild the employment pattern for a group of OECD countries "warranted" on the factors indicated above, with specific timing (cycles and decades) in the period 1960-1995 required in identifying differential behaviours of the relation between employment growth and production growth (Piacentini - Pini, 1997).

Our quantitative approach provides some interesting and original evidence about the effects of the "multiplier" of induced demand on employment dynamics. In fact, the following main factors contribute to changes in the employment multiplier and then to the employment elasticity of growth: a) changes in labour market regimes and labour market regulations, affecting the pattern of real compensations with respect to productivity gains, b) constraints on macroeconomic policies and income policies which shape the timing between nominal wages, productivity and prices.

In our exercise, logarithmic differences over intervals of time have been calculated decomposing the variations of employment as contribution of three factors: a) changes in labour productivity (or its inverse, labour coefficient PRINV); b) changes in the autonomous demand in real terms, augmented by the volume of consumption out of non-labour income (AAC'); c) changes in the "multiplier" (MPL). For the last term, we have calculated its dynamic through the pattern of real compensations (RW), labour productivity (PR) and the aggregate consumption/income ratio (c_y). Given the use of c_y, the differences between the calculated employment dynamic and the effective one represents the residuals (RES)[9].

We present here some of the results obtained for seven OECD countries[10], commenting upon the decomposition of employment pattern for the first part of the nineties, and comparing it with the pattern of the previous decade (Graph. 1 -2)[11].

4.1 Decomposition of employment dynamics: an overview

In the first five years of the nineties among the countries we have considered there is evidence of a pronounced difference in the employment performance of the two non-European countries with respect to the European ones. In fact, the United States and Japan show positive employment dynamics, confirming the pattern of the previous decade. On the contrary, European countries are characterised by a fairly negative employment dynamic, or at the best, no change in the employment level in the period 1991-1995.

The positive employment dynamics for the United States can be explained by two factors. The first, in order of importance, is represented by the steady excess of the growth of autonomous demand

[8] As Kahn emphasised: "It follows, as is indeed quite obvious, that an international policy of 'public works' would be far more efficacious from the point of view of each separate country than a purely local policy" (Kahn, 1931, p.185).

[9] The statistical source is OECD (1996): for details see Piacentini - Pini (1997).

[10] The countries considered are: the United State and Japan, as industrialised non-European countries, and the United Kingdom, West Germany, France, Italy and Sweden for Europe. For a more accurate presentation of the results for the whole period 1960-1995, see Piacentini - Pini (1997).

[11] The comparison between the eighties and the nineties is not presented in the graphics, but only in the text. See Piacentini - Pini (1997) for more details.

components[12] over the dynamic of product per worker, which has been relatively low with respect to international standards. The second factor is the contribution of the multiplier that, although quite small, has been always positive. Among the autonomous components of demand, the dynamic of private investment has played a major role in the period 1991-1995, compensating for the negative influence provided by public and foreign components. At the same time, there is evidence of a positive influence provided by consumption out of non-labour income. In addition, the multiplier dynamic appears more favourable in the nineties than in the previous decade, as a consequence of a growth rate in both real compensations and the aggregate consumption/income ratio higher than the one in labour productivity[13].

The employment performance for Japan seems instead to be explained by factors different from those affecting the USA performance. In the nineties, the economic stagnation in Japan, with the "Heisei slump", has been characterised by a zero growth rate for autonomous demand and by very low productivity gains according to Japanese standard. The gap between autonomous demand growth and productivity growth has been negative, about 2 percentage points. Nevertheless, the employment dynamic remains slightly positive (+0,67% per annum), as a result of the contribution of the multiplier (+1.42% per annum): the rise in the aggregate consumption/income ratio is the main factor explaining the increase in the multiplier, while the compensation dynamic appears to be only slightly higher than productivity gains. This result probably reflects the impact of economic policy aimed at realising a recovery in domestic private consumption out of labour income, both as a short-term policy and correction of a too high foreign trade balance surplus. There is evidence, in fact, of a positive contribution from public components of demand, while private investments and domestic consumption out of non-labour income show a significant stagnation.

Among the European countries considered, Sweden, the United Kingdom and Italy are those that show the poorest employment performance over the period 1991-1995, while France and West Germany present nearly steady employment patterns.

In the first three countries the contribution of the multiplier appears significantly negative: -2.3% for Sweden, -1.38% for the United Kingdom and -2.17% for Italy. The real compensation dynamic has been much lower than the productivity dynamic, negatively affecting the multiplier: the gap between π and w/p has been -2.2 in Sweden, 1.5 in the United Kingdom and 1.9 in Italy. In these countries, most of the employment losses can be explained by changes in the multiplier. In Sweden, a relatively weak growth in the autonomous components of demand has been added to the changes in primary distribution favourable to non-labour income, together with a strong recovery in productivity growth. The weakness in autonomous demand has been induced mainly by three factors: a) the slump of private investments: b) zero growth in government expenditures; c) a pronounced rise of net-export demand which does not appear adequate to induce the necessary compensations. In the United Kingdom and in Italy, the autonomous components of demand play at least a partial compensation role with respect to the primary distribution changes. In both countries, the net-exports show the major positive contribution to aggregate demand growth, together with the growth of private consumption out of non-labour income, while private investment and government expenditures present worse dynamics with respect the previous decade.

[12] The decomposition analysis for the autonomous components of demand show: (a) a minor role played by foreigner component; (b) a strong impulse of private investment in the seventies and eighties; (c) a pronounced recovery of the private investment in the nineties; (d) a significant role played by consumption out of non-labour income in particular in the eighties; (e) positive effects of government expenditures in the sixties and eighties, but non remarkable in the seventies and nineties.

[13] However, it is worth to notice that also in the nineties the change in income distribution has been adverse to labour, at least on the basis of the gap between productivity growth and real compensations growth.

Vice versa, in West Germany and France, the employment stability in the years 1991-1995 seems to be associated with very small changes in the multiplier, together with a dynamic for the autonomous components of demand very similar to productivity gains. The lower income growth in these countries does not seem to produce large negative effects in the labour market, as it does in the previous three countries. In West Germany, the gap between productivity growth and real compensation growth is within 1 percentage point, while in France it is even less (0.5%), with distributional effects not very favourable to non-labour income. In the German case there is also evidence of a rise in the aggregate consumption/income ratio, with a relevant compensation effect on employment, while within the autonomous components of demand no significant change emerges with respect to the previous decade, except for a fairly lower contribution of private investment and private consumption out of non-labour income. In France, on the contrary, the composition of autonomous final demand shows greater changes: the contribution of private consumption is quite small and the one of private investment is even negative, while net-exports show a much better dynamic with respect to the previous decade. Thus, in these two countries the dynamic of foreign demand does not seem capable of strongly supporting the growth of induced demand, even though this is still favourable as the multiplier remains stable as a consequence of almost steady distributional dynamics., i.e. not very favourable to non-labour income.

4.2 Decomposition of employment dynamics in Europe

The employment decline in the years 1991-1995 in Sweden seems the largest of all the countries considered. Three phenomena appear at the basis of this deep downturn with respect to the positive experience of the previous three decades: a) a pronounced decline in the autonomous components of demand (with a growth rate of +0.96% against +2.64% for the eighties); b) a recovery for productivity dynamics (+2.3% in the early nineties, +1.37% in the eighties); c) a low dynamic for induced demand, given the further decrease in the labour share on national income (the distributional gap[14] has been -2.26 percentage points in the early nineties, against -1.11% for the eighties, per annum). These figures show the impact of radical changes in the mechanisms of income and fiscal policies as consolidated in the previous decades.

In the United Kingdom, the macroeconomic scenario changes in a significant way in the early nineties with respect to the previous decade, and the employment dynamic becomes negative in the period 1991-1995 (-0.93% per annum), because of the economic downturn of the early nineties. This dynamic can be mainly attributed to two factors: a) a slight rise in the growth rate of productivity (from +1.95% in the eighties to 2.28% in the early nineties): b) the negative contribution of the multiplier which decreases by -1.38% per annum, while in the previous decade it positively affects employment dynamics. The change in the value of the multiplier is due to a distributional gap strongly adverse to labour: real compensations rise at the of rate of +0.79% determining a gap with respect to productivity growth of 1.49 percentage points per annum. At the same time, the aggregate consumption/income ratio was almost constant. The autonomous components of demand tend to compensate for the previous two factors, growing at the rate of +2.48% (against 1.55% in the previous decade, per annum). In decomposing this dynamic, a strong positive impact of the consumption out of non-labour income emerges (+1,7%). This result confirms the role played by distributional changes, with a compensation of private consumption out of non-labour income for the decline in induced demand derived from labour income: nevertheless this compensation appears insufficient to determine employment gains, given the negative role played by the variation of the multiplier.

In Italy, for the nineties there is evidence of a serious worsening for employment performance (-1.01% per annum). This decline seems associated with two factors: a) a recovery in the labour productivity dynamic (+2.17% in the period 1991-1995, against 1.7% in the eighties, per annum); and

[14] I.e., the difference between real compensation growth and labour productivity growth.

b) a downturn in the contribution of the multiplier which becomes negative (-1.46%). This last factor is explained by an almost stationary dynamic for real compensations (-0.27%), which brings about a pronounced decline of the labour share in national income. In the Italian case, this distributional change - which determines a weak dynamic for private consumption out of labour income -, might have contributed to the poor employment performance in the years 1991-1995. In fact, there has been in this period a recovery of the autonomous components of demand (+2.86% against +2.08% in the previous decade, per annum), triggered by the contribution of net exports (+1.76%). But, notwithstanding the exogenous components push, the stagnation of labour income might have affected the induced demand so strongly as to determine a growth rate of aggregate demand insufficient to compensate for the labour saving effects of productivity growth[15].

With reference to France, it should be noticed that - in a broader temporal perspective (1960-1995) - while in the first two decades the employment performance appears favourable as a result of the positive gap between the dynamic of autonomous components of demand and the one of productivity (in the sixties) or as a result of the role played by the multiplier (in the seventies), in the subsequent fifteen years the multiplier always provides a negative contribution to employment dynamics. In the eighties, in fact, the positive gap (+0.8 percentage points per annum) between autonomous demand growth and productivity growth (given the considerable influence of private consumption out of non-labour income) has been entirely compensated by the change in the multiplier (-1% per annum). Also in the more recent period (1991-1995), although the gap between autonomous demand growth and productivity remains positive (+0.3%), there is evidence of slight employment losses, as a result of the negative contribution of the multiplier (-0.11%) and given the "residual" (-0.30%). The pattern of labour share in national income confirms the negative trend started in the previous decade, with a -0.49 percentage points gap between real compensations and productivity growth.

Finally, in West Germany in the early nineties, a near constancy of the employment dynamic is associated with both an identical trend for autonomous components of demand productivity, and a steady level of the multiplier. In this period, although there is evidence of a distributional change towards non-labour income (the distributional gap is -1 percentage point per annum), the rise in the aggregate consumption/income ratio compensates this variation. If we consider the whole cycle starting in 1990 up to 1995[16], the employment dynamic is slightly positive, given a growth rate of autonomous demand higher than productivity gains. For this period, there is evidence of an important role played by the net-exports dynamic, which contributes to autonomous demand growth (+0,94%), but a relevant role is also played by consumption out of non-labour income, while government exports and private investment show a decreasing positive influence. In particular, private investment, after the great push in the sixties and a good performance in the subsequent two decades, presents a severe stagnation in the early nineties, with a negative contribution to autonomous demand growth. The decade 1981-1990 is, instead, the period with the best employment performance for West Germany (+0.54% per annum). This pattern seems entirely determined by the gap of the autonomous component over productivity growth, while the contribution of the multiplier appears negative, given both the distributional changes adverse to labour income (the distributional gap is about -0.6 percentage points) and the small decline in the aggregate consumption/income ratio.

5. Some final comments

A more adequate comment on these results would require more detailed evaluations on the pattern

[15] On the recent distributive dynamics in Italy, see Banca d'Italia (1995, 1996) and Istat (1996) for details.

[16] 1990 is, in fact, the initial peak for last cycle for West Germany.

of primary and secondary distribution of real income for each country. However, it is worth making clear a background consideration on the basis of the analytical scheme we wanted to keep as elementary as possible[17]. In the interpretation and forecasting of employment patterns, the incidence of the "induced" component of demand, to which the dynamic of real disposable income contributes critically - specifically labour income -, cannot be neglected. Macroeconomic policies and income policies, which, given the necessity to control inflation and to pursue monetary stability and international competitiveness, "freeze" the transfer of productivity gains into disposable income for a major part of the population for a prolonged period, would run the risk of lowering the potential for the demand multiplier, thus dampening the possibility of exploiting the employment elasticity of growth during the recovery. A positive dynamic of autonomous components of demand, in particular of the external demand, does non appear to be capable in itself of supporting the employment level, at least recently, obviously taking into account the labour saving effects provided by productivity increases.

We think that this message should apply, beyond the specific evidence for the countries examined, to the diagnosis of "employment sclerosis" in the European context and even in a broader scale[18].

The United States and Japan have actually been able to maintain positive employment performance also in period of relative low growth in income in the eighties and nineties. There is evidence, for these countries, of some capacity to compensate the slowing phase of the cycle with the rising of induced components of demand, traceable to behavioural and distributional factors, but also with fiscal incentives which could have positively affected the propensity to consume in the "multiplier".

Vice versa, on the basis of the negative evidence for a specific area of the European Union, the following idea is strongly reinforced: there has been an underestimation of the negative impact of prolonged stagnation in the capability to consume out of labour income for preserving the employment level gained in the past, and in addition an overestimation of the compensation capacity provided by exogenous component of demand, specifically net-exports.

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[17] Taking as our departure point the Keynes' methodology, as remarked by Kaldor: "[…] a way of approaching the economic problem, focusing attention on the relationships between a limited number of strategic aggregates" (Kaldor, 1960, p.1).

[18] See the results presented in (Piacentini – Pini, 1997).

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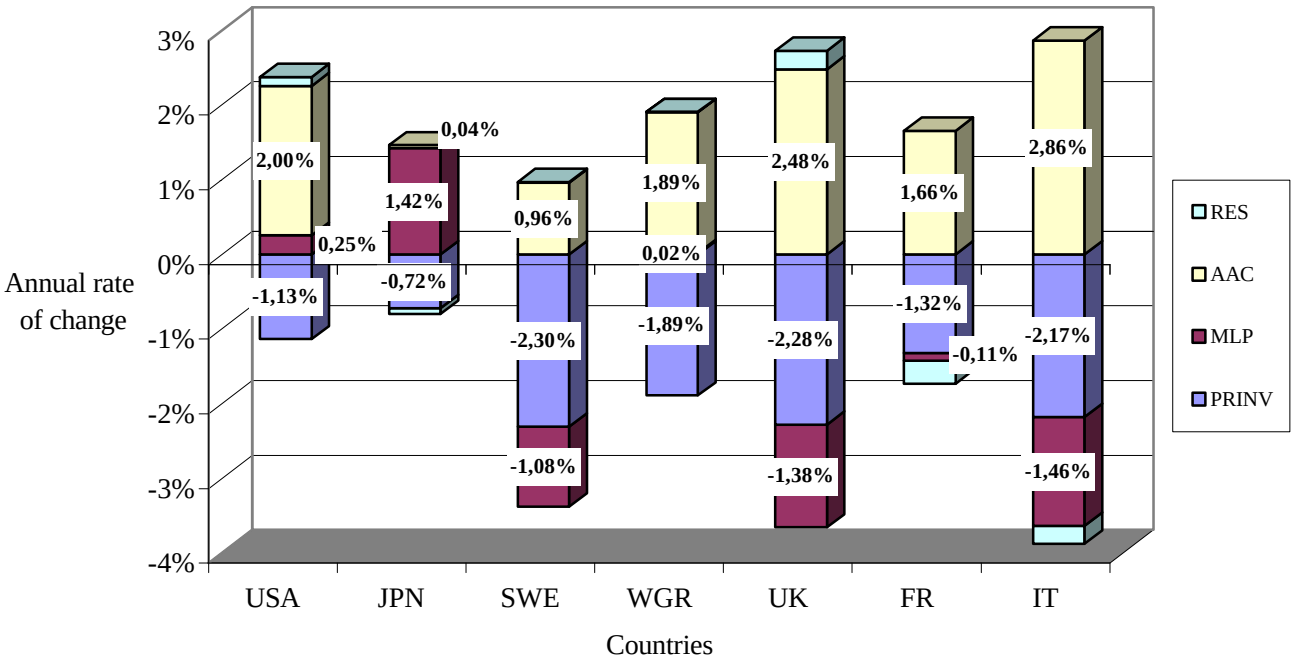
Graph.1: Decomposition of employment dynamics, 1991-1995



Graph.2: Decomposition of AAC' dynamics, 1991-1995