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THE DEMAND SIDE VS. THE SUPPLY SIDE IN THE ANALYSIS OF EMPLOYMENT: THE POTENTIAL FOR THE USE OF 'EMPLOYMENT MULTIPLIERS'

by Paolo M. Piacentini

The reform of the labour law in France, which was passed despite tense opposition, and the 'Jobs Act' of 2014 in Italy appear to be late applications of 'supply-side'-oriented policies for employment activation, still taking inspiration from the 'Nairuvian' models once conceived in the atmosphere of Thatcherian Britain. However, the relevance of the 'Keynesian' multipliers to the consideration of the demand-side factors and the impact of fiscal policy is now also being admitted within non-radical opinion in the macro-economic 'think tanks'. In the elementary Keynesian framework, the labour requirements of an economy operating at less than full capacity is simply a 'derived' demand, given the aggregate 'final' demand. The apparently trivial consideration, that is, that 'short-run production functions' might also be read in the 'inverse' sense, particularly in the context of stagnation, has apparently not yet been incorporated into the current debate in the specialist research on labour. The 'employment multiplier', as originally conceived by Kahn, was the prior source of inspiration for the Keynesian 'income' multiplier, and it is indeed a simple task to derive expressions for the former given the latter. I will repropose and update an elaboration inspired by my earlier work on this occasion, believing that the concept and the methods carry renewed interest. A simple exercise for the differential performance of employment recovery in the USA and in the euro area in the aftermath of the 'Great Recession' is included as an exemplifying application.

La recente riforma del diritto del lavoro in Francia, approvata con forte opposizione, e il "Jobs Act" italiano del 2014 appaiono essere fattispecie tardive di applicazione delle politiche di attivazione orientate all'offerta, che traggono ispirazione dai modelli "nairuviani" concepiti nel contesto della Gran Bretagna di Margaret Thatcher. Questo, mentre la rilevanza dei moltiplicatori "keynesiani", nella considerazione degli andamenti della domanda finale e dell'impatto della politica fiscale, viene oggi ammessa anche da parte di posizioni non-radicali all'interno delle sedi internazionali di ricerca macroeconomica. Nell'impianto keynesiano, il fabbisogno di manodopera, in un'economia che opera al di sotto del pieno impiego delle risorse, si ricava semplicemente come una domanda "derivata" dal volume della domanda aggregata "finale". La considerazione, solo in apparenza banale, per cui "le funzioni di produzione di breve termine" dovrebbero essere lette in senso "inverso", in particolare nel contesto di economie in ristagno, non appare essere stata ancora sufficientemente incorporata nell'attuale dibattito di una ricerca specializzata sul lavoro. Il "moltiplicatore dell'occupazione", concepito da Kahn, ha rappresentato il contributo originale e la fonte di ispirazione per il più noto moltiplicatore keynesiano del "reddito"; i due moltiplicatori sono facilmente ricavabili uno dall'altro, date le ipotesi di proporzionalità, influenzate da produttività e orario di lavoro. In questa occasione riproporrò e aggiornerò elaborazioni in merito, ispirate a un mio precedente lavoro, nella convinzione che il concetto e i metodi possano suscitare oggi un rinnovato interesse. Il saggio include, come esempio di applicazione, un semplice esercizio relativo all'andamento differenziale della ripresa occupazionale negli USA e nella zona euro all'indomani della "Grande Recessione".

Paolo M. Piacentini, Department of Social Sciences and Economics, Sapienza University of Rome.

1. Introduction

The recent developments of the debate on macroeconomic and labour policies have encouraged me to reformulate and update my earlier elaborations on the 'employment multiplier', a simple tool for the comparative analysis of employment activation amongst countries or any other regional aggregation.

At the moment of the revision of this text, the new Presidency in France had enacted five legislative decrees aimed at the radical revision of contractual regulation[1]. An important reform of contractual regulation and employment protection (commonly referred to as the 'Jobs Act'), following a broadly similar orientation, has been operative in Italy since the end of 2014[2], and its claimed benefits are the object of controversy.

These policies appear in hindsight to be late examples of the enactment of 'supply-side'-oriented approaches to labour policy, for which the employment-friendly outcomes should come from a positive reaction by employers to legal and contractual innovation, relieving them of the costs of adjustment of labour. Broadly, these approaches still appear to derive their inspiration from the frames of what I call 'Nairuvian' models, as originally developed in the early 1980s, the policy application of which was influentially suggested by the Organisation for Economic Co-operation and Development (OECD) in 'The Jobs Study' (OECD, 1994).

Meanwhile, though, the Keynesian multiplier has returned to the centre of academic and political attention after years of arrogant neglect of the relevance of fiscal policy by the most dogmatic representatives of the 'neo-neoclassical' faith. The understatement and empirical underestimation of the effectiveness of fiscal multipliers, particularly in the context of a depressed macroeconomic environment, as in the aftermath of the Great Recession, were *in primis* admitted by the influential opinion of scholars embedded in institutional think tanks (Dell'Erba *et al.*, 2014). An empirical literature targeting the numerical estimation of fiscal multipliers followed. While welcoming the revival of Keynesian concepts, I refer to the specialised surveys that are now available for the accounting of methods and results[3].

Given these developments, a hiatus becomes apparent between the acknowledgement of the relevance of the demand-side activation of the macro-economy on one side, and the insistence on the other side, within the specialist approaches to labour economics, on self-referential models for labour market outcomes, based on a 'micro-founded, single market' approach. In these, notions of equilibrium results for diverse settings in the aggregate labour market, allowing for imperfect competition or information, frictions, and so on, are derived from a 'partial' analysis, and this result becomes the 'primer' in a supply-side vision of the determination of the potential output of the economy.

However, if we indeed live in a Keynesian 'demand-constrained' world where multipliers matter, the demand for labour should rather follow as a demand derived from capacity activation. This apparently naïve observation, according to which, in a context constrained by final demand, a 'short-run production function' should be read in the *inverse direction of causation*, apparently has not been incorporated into the toolboxes of policy application suggested by the labour market specialists.

[1] The 'ordonnances' were published in the "Journal Officiel" on 23 September 2017.

[2] Decree Law 20 March 2014, No. 34.

[3] See Qazizada and Stockhammer (2015) for the listing of the results by various authors; a coauthored work of mine, Piacentini, Prezioso and Testa (2016), with application to the Italian case, contains a paragraph for references.

The seminal contribution, in which the 'multiplier' effect was first described (Kahn, 1931), considered in effect an 'employment multiplier'. Keynes's own reflection, in the preliminary notes to the final draft of *The General Theory* (1936), implicitly alluded to employment variations as the final reference of his analysis: '[…] our object in this context is to discover what determines at any time the national income of a given economic system and (which is the same thing), its employment' (Keynes, 1973, p. 482). In Keynes's original intuition, income and employment multipliers are analytically (and statistically) equivalent. If fiscal multipliers are back on the macroeconomic agenda, the implications for 'employment accounting' should follow as the straightforward sequence of the analysis.

These considerations encouraged me to propose a re-elaboration of some earlier work of mine on this front, which passed almost unnoticed at the time, since it was delimited to an Italian context (Piacentini and Pini, 1998a, 1998b). About twenty years later, the effort on this occasion is put into extending and updating the applications to the actual developments of a global economy.

A brief section, with a critical assessment of the single-market modelling approach to mainstream labour economics, will precede the central section, in which the formula of the employment multiplier is derived and discussed. A detailed empirical application is deferred to a future occasion; nevertheless, illustrative calculations, applied to the comparison of employment performances in the USA and in the euro area in the years surrounding the Great Recession, are outlined in the final section. In the concluding notes, the limitation of this exercise is acknowledged: the supply-side factors – such as productivity norms, technological change, and so on – may matter, and these should be integrated within a more comprehensive approach for the retrospective or prospective analysis of employment outcomes.

2. Three decades of a 'Nairuvian' influence?

The theoretical basis of partial-equilibrium modelling for the outcomes of the aggregate labour market, when the ideal conditions of a perfect competition do not apply, were seminally set in Britain in the years at the onset of the 'Thatcherian (counter)revolution' and were strongly inspired by the specific context[4]. This original frame, however, was taken as a reference model for the wider application to the contexts of mature market economies. The development was highly encouraged by the divulgation and suggestions from scholars embedded in the think tanks of international organisations, with 'The Jobs Study' of the OECD (1994) as the most influential achievement. It is perhaps striking how long-lasting the influence of an analytical frame and policy indication has been, essentially inspired by the particular conditions of the British economy in the late 1970s, plagued by 'stagflation' and social unrest. 'Inflation' was identified as the signal of a 'loss of control' over the wage-bargaining mechanism and as the central object of the macroeconomic stabilisation agenda. By now, the problem appears to have been subdued well; the developments on this point are scantly presented in the table.

[4] The main reference text is by Layard *et al.* (1991); for a more concise version indicating the essential points, see Layard *et al.* (1994).

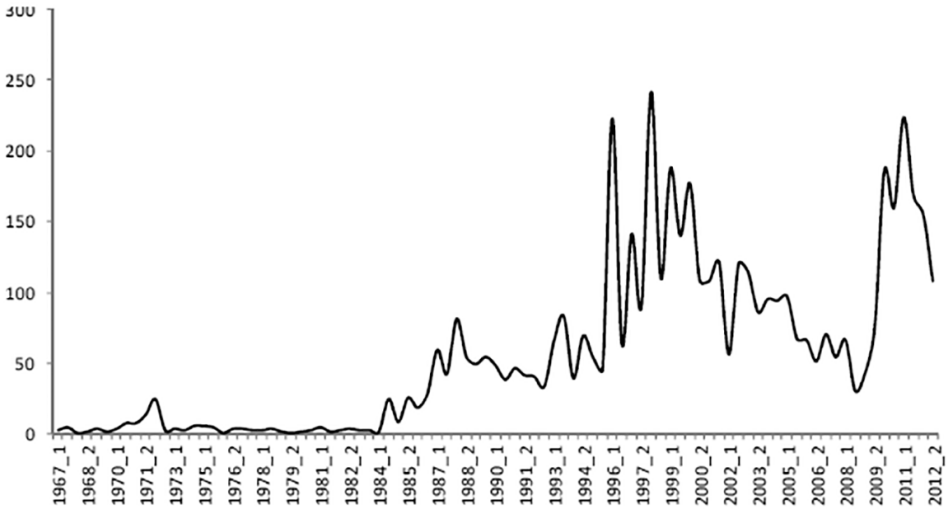
Table 1. Consumer price indexes: decadal averages of percentage annual increases

	1970s	1980s	1990s	2000s
USA	7.6	4.7	2.8	2.4
EU OECD	11.4	8.4	7.2	3.0

Source: OECD

However, even in current times, when deflation and 'secular stagnation' are rather worries of macroeconomic and monetary policy makers, the 'Nairu', albeit in its weaker version of a time-varying index, remains an operational concept, utilised in exercises aimed at deriving values for some capacity output from which highly sensible indicators for policy, such as the structural level of a public deficit and so on, are derived (IMF, Office in Europe, 1999; D'Auria *et al.*, 2010). We have not yet emerged from decades of obsessive insistence on the mantra for structural reforms, in which the central applications broadly appear to be targeting more flexible frames for the regulation of the national labour markets[5].

Figure 1. Recurrence of the word 'reform' in the OECD's 'Economic Outlook' 1967-2012[6]



[5] I quote as a reminder a selection from the original recommendations from the OECD (1994), as briefly summarised for policy suggestion by the OECD (1996). Out of the total of nine headings of the job strategy recommendations, I recall: '1) Set macroeconomic policy such as that it will encourage growth and, in conjunction with good structural policies, make it sustainable, i.e. non inflationary; […] 5) Make wage and labour costs more flexible by removing restrictions that prevent wages from reflecting local conditions and individual skill levels, in particular of younger workers; 6) Reform employment security provisions that inhibit the expansion of employment in the private sector; […] 9) Reform unemployment and related benefit systems, and their interaction with tax systems, such that societies' fundamental equity goals are achieved in ways that impinge far less on the efficient functioning of the labour markets' (OECD, 1996, p. 6).

[6] The figure is reproduced from Zenezini (2014). Italian readers are strongly recommended to consult this source for a more radically outspoken critical opinion.

What is reproduced below is only an elementary scheme, as used in teaching classes, as a reminder of the 'Nairuvian' parable and its policy message. The principal item in this frame is that of the 'wage-setting' norm, reflecting the behavioural and institutional settings of the reference labour market. With 'N' for employment, 'L' for the total labour force potential, 'Z' as a synthetic index summarising the 'institutional' conditions favouring the 'wage push' dynamics in this economy, and 'π' representing the index of labour productivity, I write:

$$W = Z + b\,(N / L) + \Delta P_{-1}$$

The use of italics for *W* and *P* should be understood as a reference to the rates of growth for nominal wages and prices. Wage bargaining is favoured by a higher employment rate 'N / L' and is partially or wholly ($\Delta \leq 1$) successful in the 'catching up' of the last-period inflation. Adding to this an extremely simplified rule for the 'price setting' by the (oligopolistic) firm,

$$P = W - \pi$$

that is, price inflation strictly following the rate of increase of the 'product wage', I derive:

$$P = Z + b\,(N / L) + \Delta P_{-1} - \pi$$

The 'non-acceleration' norm will set, for an equilibrium $P = P_{-1}$ with fully adjusted expectations, $\Delta = 1$; at this point, the equilibrium rate of employment in this economy is easily derived as:

$$N / L = (-Z + \pi) / b$$[7]

The 'warranted' rate of employment for the economy, compatible with macroeconomic stability, will then be lower:
a) the higher the role of institutional 'wage push' factors, 'Z';
b) the higher 'b', expressing the strengthening of wage bargaining when approaching full employment;
c) the lower, *ceteris paribus*, the increase in the labour productivity, contributing to moderate the price of an aggregate supply. If productivity clauses were inserted into contracts, or the strong bargaining power of monopolistic unions were capable of including the productivity gain within the wage norm, the expression above would be reduced to:

$$N / L = -Z / b$$

This might be read as the extreme version of Nairuvianism, in which the (un)employment rate of the economy, compatible with stability, depends only on the *institutional/regulatory/bargaining frame* of the reference labour market, as synthetised by the parameters 'Z' and 'b'.

[7] I derive equilibria for 'employment rates' as the key reference, as in the original formulation by Layard *et al.* the 'Nairu', conventionally expressed as an unemployment rate, would thus be: $1 - (-Z + \pi) / b$.

If this is the essential part of this analytical frame, the policy recommendations follow quite obviously. Sustainable improvements for employment outcomes will only emerge from actions capable of checking an excessive 'wage push' (e.g. too generous regimes for unemployment benefits) or encouraging wage flexibility or moderation in cyclical events (e.g. checking 'insider power' or 'EPL' to favour the moderation of wage claims in the face of the rise in general unemployment). This inspiration has been pursued in successive years and still appears to be influential in the inspiration of the recent examples of 'structural reforms' in the European context.

It would indeed be unfair and incorrect to reduce the whole corpus of the policy-oriented research agenda pursued over these two or three decades to this 'Nairuvian essential'. Models framed within partial analyses for the aggregate labour market and developing aspects such as 'search and matching', 'insider-outsider', 'efficiency wages', and so on, have in fact contributed to the formal framing of the influences on the labour exchange of factors such as friction, dualism, moral hazard, asymmetric information, and suchlike. Despite their sophistication, however, most of this modelling appears to describe the forms of sub-optimal equilibria, explicating their 'pseudo-demand' and 'pseudo-supply' schedules for labour, falling short with respect to the ideal competitive norm, and thus checking the realisation of full equilibrium without involuntary unemployment. If some weak or second-best notion of labour market equilibrium is the common output of the models, this result becomes *per se* a founding 'prior' within supply-sided visions for the determination of overall economic activity. Although not irrelevant, it appears in my opinion to be excessive to assume that regulations and contractual practices in the labour exchange are the prime or principal determinants of the differences in the levels and growth of the 'wealth of nations'.

In the following, I argue otherwise for a Keynesian circuit, in which the short-run aggregate production function is read in an inverse sense, with the levels/rates of growth of employment seen as results derived from the final demand activation. The formulas for 'employment multipliers' essentially describe this reverse circuit. However, I do not wish to insist too much on the 'opposition to mainstream' in this derivation of the demand-side view: the applications that follow are in fact derived from the identities of national income accounting and do not claim any alternative 'micro-foundation'. Excluding all '*a prioris*' or value judgements, the outcomes for employment are described as being fundamentally constrained by the identities easily derived from the national accounts. What is considered here alludes rather to a macro-foundation binding, *ex post,* the outcomes of employment activation[8].

3. Why not use employment, as the dependent variable, in the multiplier?

'Fiscal' multipliers were rediscovered as relevant in the aftermath of the global crisis following the financial crack of 2007/2008 and became the object of empirical research for their estimations through diverse econometric methodologies. Recent applications are mostly in agreement in finding high values for fiscal multipliers in the contexts of

[8] Although we broadly agree with the quotation in King (2015, p. 45), for which: 'As Kalecki maintained, macroeconomics and microeconomics should be thought of as existing side by side and influencing each other but also relatively autonomous and neither constituting the foundations of the other'.

stagnation/depression for the economy, which is, by the way, precisely the state in which the original concepts by Kahn and Keynes were developed[9]. While I will not survey here the econometrics of the pursuit of fiscal multipliers, I feel encouraged by this debate to repropose some elaborations already outlined in my earlier works, with the estimation of a multiplier applied directly to the analysis of employment activation and its variations.

In the main, the passage from 'income' or expenditure multipliers to 'employment' multipliers requires simply the explicit introduction of the variations of product per worker; through this passage, I may see, like Keynes, how the determination of national income and employment are almost 'the same thing'.

Without imposing any prior hypothesis on the rules of price determination (flex-price, mark-up, etc.) or the productivity regimes, and so on, I wish to stress the inferences that may be directly drawn from accounting identities through appropriate manipulation.

At the beginning, all the variables are defined in their current, nominal values:

$$Y^S = P\,\pi\,N$$

$$Y^D = C + I + G + (X - M)$$

The value of the aggregate supply is simply defined with the price level, 'P', and the product per worker, 'π', taken as parametric over the reference period. The symbols used in the sum of the components of the aggregate final demand should be familiar.

Now I consider incomes for the role of changes in the functional distribution of income, between wages 'W', and non-wages, 'Π' (= $Y - W$), to which I attribute differential propensities to consume 'à la Kaldor'. The demand side becomes:

$$Y^D = [c_W\,W + c_\Pi\,(Y - W)]\,(1 - \tau) + I + G + X - m\,Y^D$$

with 'τ' and 'm' denoting the proportional rates of taxation and import propensity; the 'demand multiplier' is at this point conventionally derived as:

$$Y^D = \frac{1}{1 - [c_\Pi + (c_W - c_\Pi)\,\lambda]\,(1 - \tau) + m}\,(I + G + X)$$

where $\lambda = W / Y$ is the labour share of incomes.

Following the original intuitions by Keynes (in chapter 3 of *The General Theory*), I now equalise the price of the aggregate supply with the value of the aggregate demand. In the following expression, I sum in 'A' (= $I + G + X$) the total value of an 'autonomous' demand (as the 'multiplicand'):

$$P\,\pi\,N = \frac{1}{1 - [c_\Pi + (c_W - c_\Pi)\,\lambda]\,(1 - \tau) + m}\,A$$

[9] Qazizada and Stockhammer (2015); see Auerbach and Gorodnichenko (2012) for a different methodology.

Through simple manipulation, I obtain the employment multiplier, expressed as:

$$N = (1 / \pi) \times \left(\frac{1}{1 - [c_{\Pi} + (c_{W} - c_{\Pi})\,\lambda]\,(1 - \tau) + m}\right) \times (A / P) \quad (1)$$

The warranted employment of the economy in the reference period is thus expressed as above depending on the composition of three fundamental factors explicated on the right-hand side: *a*) the reciprocal of the average product of labour (or 'labour coefficient'); *b*) the 'income multiplier', relevant to the size of secondary employment activated by induced consumption expenditures[10]; and *c*) the value of the autonomous demand, now deflated by 'P' as the 'multiplicand', which appears to act as the prime mover of the employment activation process.

There is indeed little analytics involved in explicating the employment multiplier; however, its heuristic potential should not be understated. The multiplicative expression for the levels of 'N' may, through logarithmic transformation and differentiation, become the tool of a 'growth accounting' exercise applied to the rates of variation of employment over any time interval (t-1, t).

$$\Delta (\lg N) \approx \Delta (\lg (1 / \pi)) + \Delta (\lg (\text{'M'})) + \Delta (\lg (A / P)) \quad (2)$$

'M' synthetically stands for the income multiplier.

Although with approximation, given the second-order effects, or because of the imprecisions in aggregation and deflation from the original data from national accounting, the use of this simple expression allows for accounts that are directly founded on real data and free from any *ad hoc* or *a priori* restriction, typical of much mainstream econometrics (vector autoregressions – VARs, simulation in a dynamic stochastic general equilibrium – DSGE – setting, etc.). Expression (1), as the result of manipulations that maintain the original identity properties of the national accounts, is always defined as such and allows for further specifications that may eventually be introduced into the frame, for example for price formation and adjustment ('mark-ups', supply price functions with constant or variable returns, etc.)[11]. The formula may be elaborated further for the multiplier of consumption (e.g. including 'wealth' effects in autonomous consumption) or for more detail in the disaggregation of the components of the 'multiplicand' (e.g. explicating housing investment as a specific item). Many applications are often checked by data availability.

Employment multipliers may also be used as a complementary empirical reference within key topics in the actual macroeconomic debate, such as the 'employment content' of growth or the effect of redistribution, as it may derive from a 'Kaldorian' negative impact on consumption of redistribution against labour. This effect is accounted for, in the multiplier expression, through the inclusion of 'λ', the parameter of the labour share. Another path of analysis may entail more in-depth considerations for the differential paths of technical progress in comparative contexts over time or amongst the economies. The 'π' is only the aggregative result for the 'GDP per worker', which depends on the

[10] From Kahn's (1931) original terminology.

[11] An earlier publication in Italian and working papers, in which further elaborations of the multiplier for pricing hypotheses and so on are developed, are available on request from the author.

sectoral productivities and the structural composition of employment: follow-up and renewed attention to disaggregation to allow for the analyses of the structural dynamics of employment activation should be welcomed[12]. Still, we might make inferences from the evidence on how much of a 'digital revolution' is appearing at the overall level of the economy. It might emerge that the famous assertion by R. Solow that 'you can see the computer age everywhere but in the productivity statistics' (Solow, 1987) still applies to the more recent experience. Another decomposition, product per worker, being in effect the multiplication of the product per hour worked and of the hours worked per worker, may account for the effects of changes in the average working time, the extension of part-time work, and so on[13].

A 'steady-state' norm for employment may be written as in the following proposition: 'If propensity and distribution parameters remain constant within the reference period, a constant level of employment will be maintained, *if and only if the rate of growth of autonomous demand in real terms precisely matches that of the product per worker*'.

This apparently simple affirmation may sound trivial, but its implications for the present-day state of most mature economies may be somewhat worrying. The decrease in the investment-to-GDP ratio (or the investment/gross profit ratio) is a stylised fact, much commented on in the recent literature, particularly within the debate on the prospects of the European economy[14]. As for the trends in productivity, there is a growing literature with projections for job substitution potentials linked to the advances in digital control and application; these might eventually show up at the level of aggregate results. Putting things together, one might foresee the future growth of 'A' increasingly falling short of that of 'π'. Eventually, situations of excess savings, with profits exceeding real investment, would imply lower values for the multiplicand as well as the multiplier. Eventually, austerity orientations in policy, checking the public components of demand (or raising taxation), will not help. Globally open markets will imply a greater contribution of exports to the multiplicand but with a lower multiplier because of rising import propensities.

These sundry considerations are evocative of a scenario of 'secular stagnation' with increasing job shortages[15]. Corrections in policy appear to be needed to overcome this pessimistic outlook; income inequalities should not increase further, excess savings should be better intermediated to 'real' employment creating enterprise rather than sunk in the meadows of financial speculation, and so on.

In conclusion, the explication of employment outcomes from the basic macroeconomic identities appears to be a useful empirical tool, complementing the debate on the medium-term prospects of mature capitalistic economies. In this frame, 'micro-inspired' policies for labour market regulation may marginally affect the cost/benefit calculations for the

[12] L. Pasinetti's original frame for structural employment dynamics, in which both the evolution of sectoral productivities per worker and that of the employment content activated by the sectoral composition of the consumption of the worker matter (and in which, in the limiting vision of a vertically integrated economy, 'capital' goods are reconducted to past labour contributions), remains in my opinion the key point of departure for a revival of these approaches. See Pasinetti (1981).

[13] Last but not least, I recall here in a note the actual debate on 'what' should be considered as autonomous within the demand components, given that investments themselves include 'induced' components; in the more extreme versions of a 'supermultiplier' theory, only government expenditure and exports would be left as truly 'exogenous'. See for example Cesaratto (2015).

[14] The 'profit without accumulation' regime as a currently prevalent state of most European economies is a central topic in a 'post-Kaleckian' school for the analysis of growth and distribution regimes in modern capitalism; see for example Organhazi (2008), Stockhammer (2011), and Hein (2012).

[15] As a key reference for the origination of the debate on secular stagnation, see Summers (2015).

employment decision of firms; however, the overall scene appears to be set by the macro-fundamentals: technology, distribution, and (real) investment.

4. Sketching for application: the differential employment performance in the USA and in the euro area before and after the Great Recession

As an example of the application of employment multipliers to analyses aimed at answering the question of why employment growth rates differ, I outline here a comparative analysis of the trends in aggregate employment in the USA and the euro area as a whole[16] in the years after the turn of the century and surrounding the crisis of 2007-2008. Without using econometrics, and through simple calculations from a spreadsheet, I may hint at the rationale behind the diverse employment outcomes.

The table below is a reminder of the total numbers in employment in the USA and the euro area during the cycle considered.

Table 2. Total employment (thousands)

	USA	Euro area
Peak before the crisis	138,612 (6/2008)	143,208 (third quarter/2008)
Minimum at trough	128,692 (12/2011)	136,145 (first quarter/2012)
2015	143,762 (10/2015)	140,543 (third quarter/2015)

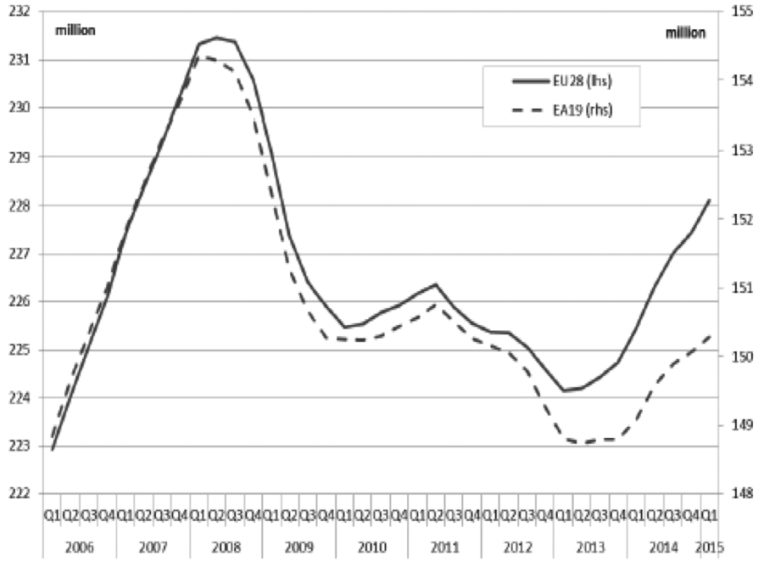
Source: all numbers and elaborations here and in the following table are derived from the AMECO database of the EU.

The US economy was capable of recovering its previous employment activation level within about three years from the cyclical trough; the countries within the euro area, while evidencing the role of 'protection nets' cushioning the fall in the slump, have since then shown a much slower rate of recovery. The graph below presents complementary evidence on the poor performance of the euro area: the countries within the EU that had opted out of the currency union performed better in terms of employment recovery[17].

I briefly discuss the values of the parameters relevant to the derivation of the employment multiplier and their differential impact between the two aggregate economies considered. When aggregating within 'A' the total of an autonomous demand, it is necessary to be aware that 'A' may differ widely in its composition, particularly within the context of a 'US vs. EA' comparison.

[16] For temporal coherence, I always refer to the data for what is defined as 'EA17' in the AMECO database.
[17] The chart is reproduced from European Commission (2014), p. 10.

Figure 2. Employment level – EU and euro area



Key: EU: European Union; lhs: left-hand scale; EA: euro area; rhs: right-hand scale.
Source: Eurostat, National Accounts, data seasonally adjusted [namq_10_pe].

Table 3. Percentage composition of autonomous expenditure

	'I'	'G'	'X'
2000			
USA	36.9	46.0	17.0
Euro area	22.7	42.3	35.0
2007			
USA	34.1	48.2	17.7
Euro area	22.4	39.5	38.1
2015			
USA	30.2	50.5	19.3
Euro area	18.0	40.6	41.5

One major point of difference emerges: the greater export dependence of the euro area, where the share of exports in the total exogenous expenditure is almost double that in the USA and increases significantly throughout the period. Further, the share of the public component appears to be higher in the USA than in the euro area, with increases and decreases here and there in 2015 with respect to 2000. The fiscal policies thus appear

to have higher multiplicative potential in the USA, while the 'austerity' orientation and the targeting of balanced budgets appear to have checked the compensative role of the public sector in the face of significant falls in the contribution of investments.

The table below presents the values for the rates of variations calculated as logarithmic differences, for the employment level and for the items within the employment multiplier expression. The calculations are reported for variations over the whole interval 2000-2015 and the sub-intervals 2000-2007 and 2007-2015, that is, broadly before and after the turn of the crisis.

Table 4. Rates of variation of employment and components of the multiplier

	N	π	*A*	*M*	*(RES)*
USA					
2015/2000	8.9	18.9	35.4	–9.6	1.0
2007/2000	5.9	7.4	23.0	–9.2	–0.5
2015/2007	2.3	11.0	10.1	1.3	1.9
Euro area					
2015/2000	6.7	9.6	28.0	–10.0	–1.7
2007/2000	11.9	6.2	19.1	1.3	2.3
2015/2007	–1.9	2.8	7.4	–8.7	1.4

Employment variations were defined in 2) as being approximately given by the sum of the effects of the three components (π, A, and M), part residual effects[18]. The numbers for 'RES', the residual variations of employment left unexplained by the components, showing relatively low values, confirm the validity of my exercise of decomposition for the dynamics of employment depending on the three fundamentals: autonomous expenditure, productivity, and the income multiplier[19].

In the table that follows, I reproduce, as a final item from the exercise, the values of the 'demand multipliers' estimated for reference years: 2000, 2007, and 2015. I do not mean to propose my 'spreadsheet' calculation as an alternative to the estimates of fiscal multipliers derived through sophisticated econometrics, although the values appear to be in a reasonable range and conform to the expected differentials between the two areas and over the periods.

To make a synthetic comment, the multipliers are higher in the USA because of the lower import propensity there; in a relatively more 'closed' economy, any fiscal stimulus will have a relatively higher impact on final activation. This may explain in part the faster and better rebound for employment in the USA in the aftermath of the crisis. However,

[18] One approximation derives from the fact that all the aggregates in nominal values were deflated by a common GDP deflator. For further precision, deflation through component-specific deflators should be considered.

[19] In the calculations of the multipliers, I parametrised the propensity to consume out of wage incomes at the value of 0.8, and for non-wage incomes at 0.4; these values are broadly in line with those considered in literature, e.g. Stockhammer and Ederer (2008), p. 489.

the influence of the diverse orientation of fiscal policies in the USA and the euro area is also clearly evidenced by the exercise. This is shown in the differentials for the variations of the multiplier and the multiplicand, particularly during the interval 2007-2015. While facing a recession, 'A' increased by 10.1% in the USA against 7.4% in the euro area; in the USA, the contribution of the multiplier change was small but with a positive sign, while in the euro area there was a significant, negative change for 'M' (-8.7%), mainly as an effect of a tax incidence to GNI rising by 1.6 points together with an import propensity to increase steadily. Moreover, the different values and incidences of the multiplier are seen as eventually being dependent on the diverse composition of the autonomous expenditure given the export-dependent growth of the euro area as a whole. In the case of the USA, notwithstanding the official statement of conservative opinion in political and academic circles, calling for restriction of the federal budget, 'Big Government' still appears to have played an active role in cushioning the recession and providing impulses for recovery, as underlined by H. Minsky for earlier episodes[20]. Would a more convinced drive towards structural reforms possibly have helped to achieve a better outcome? I stop here to avoid placing excessive emphasis on evidence drawn from 'naïve' exercises. Summing up is left to the conclusions.

Table 5. Estimation of the value of the income multiplier

	2000	2007	2015
USA	1.78	1.58	1.61
Euro area	1.11	1.09	1.00

5. Concluding notes

This brief draft was encouraged by the recent renewed awareness of the relevance of the multiplier effects from demand-side impulses to the macroeconomic outcome of economies struck by recessionary events. However, with fiscal multipliers back in fashion, why not also elaborate employment multipliers? These can in fact be derived, through a few additional passages, from the former. The exercise of decomposition and rearrangement starting from the basic national accounting identities allows for the factor decomposition (functional distribution, export drive/import dependence, etc.) of the differential employment performance of the countries. In the meantime, specialist labour economics often appears to be stuck within the self-referential frames of partial analyses of labour exchange, from which the supply-side causality for the temporary equilibria in economic activation implicitly follow. The counter-position to this 'Nairuvianism', which has influenced policy orientation in Europe for three decades or more, of my employment multiplier might appear, to the sophisticated theorist, to be a naïve exercise of inverted reading for the circuit of causation within the short-run production function.

[20] E.g. Minsky (1986), part II.

This is not, however, the ambition of this draft. Being in fact an algebraic manipulation of identities, multiplier models cannot pretend to have much theoretical sophistication and cannot, in this respect, be placed in opposition to micro-founded modelling. However, the working out from identities and the avoidance of the imposition of any prior behavioural hypothesis offer, in my opinion, a sort of macro-foundation, which is the constraining frame for any micro-founded effort of the agents and for policy makers when they engage in designing incentive schemes or regulatory reforms. This does not mean to say that prescriptions within these frames are irrelevant: training, better institutions and instruments for favouring the matching of demand and supply in the labour exchange, for example, may matter. Moreover, the improvement in the productivity performance, when matched with qualitative improvements in the labour demand and when contributing to reductions in the aggregate supply price for output, may avoid acting only through its direct, mechanical effect of reducing the labour coefficients. This scanty view from the aggregate statistics might seem to confirm that the potential of a 'digital revolution' has not yet been reflected strongly in the aggregate productivity trends. Endogenous interaction between output and output per worker, as once formulated within Okun's or Verdoorn's law or similar frames, still appears to hold its relevance.

To conclude, the derivations and the implications drawn from macro-identities, as outlined on this occasion, may constitute one useful approach for circumscribing 'excessive' pretentions by micro-modellers in providing unilateral causation or policy recipes for the result of employment activation, which should rather be derived within the interactions of the economy as a whole.

References

AUERBACH A. J., GORODNICHENKO Y. (2012), *Fiscal multipliers in recession and expansion*, in F. Giavazzi, A. Alesina (eds.), *Fiscal Policies after the Financial Crisis*, University of Chicago Press, Chicago, pp. 63-102.

CESARATTO S. (2015), *Neo-Kaleckian and Sraffian controversies on the theory of accumulation*, "Review of Political Economy", pp. 154-82.

D'AURIA F., DENIS C., HAVIK K., MCMORROW K., PLANAS C., RACVIBORSKI R., ROEGER W., ROSSI A. (2010), *The production function methodology for calculating potential growth rates and output gaps*, in "European Economy", Economic Papers, No. 420, Directorate for Economic and Financial Affairs, European Commission, Brussels.

DELL'ERBA S., LOLOSKOVA K., POPLAWSKI-RIBEIRO M. (2014), *Medium-term fiscal multipliers during protracted recessions*, IMF Working Paper, WP/14/213.

EUROPEAN COMMISSION (2014), *EU Employment and Social Situation. Quarterly Review*, March, Brussels.

HEIN E. (2012), *Financialization, distribution, capital accumulation, and productivity growth in a post-Kaleckian model*, "Journal of Post Keynesian Economics", 34 (3), pp. 475-96.

INTERNATIONAL MONETARY FUND, OFFICE IN EUROPE (1999), *The structural budget balance. The IMF's methodology*, prepared by R. Hagemann, IMF Working Paper, WP/99/95, July.

KAHN R. F. (1931), *The relation of home investment to unemployment*, "The Economic Journal", pp. 173-98.

KEYNES J. M. (1936), *The General Theory of Employment, Interest and Money*, Macmillan, London.

KEYNES J. M. (1973), *The functions relating employment to the independent variables of the system*, in Towards the General Theory. Collected Writings, vol. XIII, pp. 480-4, MacMillan, London.

KING J. E. (2015), *Advanced Introduction to Post Keynesian Economics*, E. Elgar, Cheltenham.

LAYARD R., NICKELL S., JACKMAN R. (1991), *Unemployment. Macroeconomic Performance and the Labour Market*, Oxford University Press.

LAYARD R., NICKELL S., JACKMAN R. (1994) *The Unemployment Crisis*, Oxford University Press, Oxford.

MINSKY H. (1986), *Stabilizing an Unstable Economy*, Yale University Press, New Haven.

OECD (1994), *The Jobs Study*, Paris.
OECD (1996), *The OECD Jobs Strategy. Pushing Ahead with Strategy*, Paris.
ORHANGAZI O. (2008), *Financialization and capital accumulation in the non-financial corporate sector: a theoretical and empirical observation*, "Cambridge Journal of Economics", 32, pp. 863-86.
PASINETTI L. L. (1981), *Structural Change and Economic Growth: A Theoretical Essay on the Dynamics of the Wealth of Nations*, Cambridge University Press, Cambridge (Italian version, *Dinamica strutturale e sviluppo economico – Un'indagine teorica sui mutamenti nella ricchezza delle nazioni*, Utet, Torino 1984).
PIACENTINI P., PINI P. (1998a), *Domanda interna e redditi da lavoro: una nota sul ruolo del 'moltiplicatore dell'occupazione'*, "Economia Politica", 1, pp. 97-117.
PIACENTINI P., PINI P. (1998b), *Domanda, produttività e dinamica occupazionale: un'analisi per 'moltiplicatori' applicata a sette paesi OECD 1960-1995*, "Economia e politica industriale", 99, pp. 37-66.
PIACENTINI P., PREZIOSO S., TESTA G. (2016), *Effects of fiscal policy in the northern and southern regions of Italy*, "International Review of Applied Economics", 6, pp. 747-70.
QAZIZADA W. STOCKHAMMER E. (2015), *Government spending multipliers in contraction and expansion*, "International Review of Applied Economics", n. 2, pp. 238-58.
SOLOW R. (1987), *We'd better watch out*, "The New York Times", Book Review, 12 July, p. 36.
STOCKHAMMER E. (2011), *Wage norms, capital accumulation, and unemployment: a post-Keynesian view*, "Oxford Review of Economic Policy", pp. 295-311.
STOCKHAMMER E., EDERER S. (2008), *Demand effects of the falling wage share in Austria*, "Empirica", vol. 35, pp. 481-502.
SUMMERS L. H. (2015), *Demand side secular stagnation*, "American Economic Review Papers and Proceedings", pp. 60-5.
ZENEZINI M. (2014), *Riforme economiche e crescita: una nota critica*, "Economia & Lavoro", 3, pp. 99-128.