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**THE DEMAND-SIDE VS. THE SUPPLY –SIDE IN THE ANALYSIS OF EMPLOYMENT: THE
POTENTIALS FOR THE USE OF “EMPLOYMENT MULTIPLIERS”**

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The demand-side vs. the supply-side in the analysis of employment: the potentials for the use of “Employment multipliers”

Paolo M. Piacentini*

Abstract

The reform of Labour law, passed through tense opposition in France, and the “Jobs Act” in Italy of 2014, appear as a late, if not senescent, applications of “supply-side” oriented policies for employment activation, still taking inspiration from the “Nairuvian” models once conceived in the atmosphere of Thatcherian Britain. Yet, the relevance of the “Keynesian” multipliers, for the impacts of the demand-side factors and of fiscal policy, is now being admitted also within non-radical opinion within macro-economic “think-tanks”. In the elementary Keynesian framework, labour requirements, in an economy operating at less than full capacity, are simply a “derived” demand, given the aggregate “final” demand. This apparently trivial consideration, i.e. that “short-run production functions”, ought to be read in an “inverse” sense, in particular in stagnation contexts, has not yet apparently been introjected within the current developments of the specialist research on labour. The “Employment multiplier”, as originally conceived by Kahn, was the 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 re-propose and update elaborations inspired from my previous works in earlier years for this occasion, in the belief that concept and methods carry on a renewed interest. A simple exercise, for the differential employment performance of the United States and of the “Euro-area” in the aftermath of the “Great Recession”, is sketched as example for application.

Introduction

The recent developments of debates on macroeconomic and labour policies encourage me to update for this occasion my earlier elaboration of “Employment “ multipliers, as a simple tool for the comparative analyses of employment activation amongst countries, or for any broader or narrower regional aggregation.

At the moment of the drafting of this text, the s.c. “*Loi Travail*” has just been enacted in France¹, with Government resorting to a French constitutional clause allowing a “by-pass” of vote by the Parliament. 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 2014², and its claimed benefits are the object of controversial opinion.

These policies appear, to my hindsight, as late examples of enactment of a “supply-side” oriented approach to labour policies, in which the “employment friendly” outcome should, in principle, come out of a positive reaction by employers to the legal and contractual innovations, relieving to them the cost of adjustments of labour. Broadly, these approaches still appear to derive their inspiration from the frames of what we call the “Nairuvian” models, as originally developed in the early 1980’s, and whose policy applications were influentially suggested by the OECD in its “Jobs Study”.³

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¹ As published in the Journal Officiel, 9/8/2016.

² Decreto Legge 20/3/2014, n. 34.

³ OECD (1994).

In the meanwhile, though, the “Keynesian” multiplier is well back at the centre of academic and political attention, after the years of arrogant neglect for the relevance of fiscal policies from the part of the most dogmatic representatives of a “neo-neoclassical” faith. Former understatement and empirical under-estimation for fiscal multipliers, particularly in the context of depressed macroeconomic environments in the aftermaths of the “Great Recession”, were, *in primis*, admitted by the influential opinion of scholars embedded in the institutional “think-tanks”.⁴ An extensive literature targeting to the numerical estimation of fiscal multipliers has followed. While welcoming this revival of “Keynesian” concepts, I must refer here to specialized surveys available for the account of methodology and results.⁵

Given these developments, a “hiatus” becomes apparent, between the acknowledgement of the relevance of the “demand-side” activation for the general macro-economic assessments, on the one side, and the insistence, on the other, within the “specialist” approaches of “Labour Economics” on self-referential modelling based upon “micro-founded, single market” approaches for the labour market outcome. Notions for “equilibrium” results, for diverse settings of an aggregate labour market allowing for imperfect competition or information, frictions, etc., are in fact derived on the basis of a “partial” analysis, and these results appear as a “primer” factor, in “supply-side” determinations for the potential output of economy.

But if we are indeed in a Keynesian, “demand-constrained” world, where multipliers matter, the demand for labour rather follows, as a derived demand, given a capacity activation constrained by “effective demand”. This apparently naïve” observation, for which in a demand constrained context the “short-run production function” ought to be read in inverse direction of causation, apparently has not been yet introjected within the toolboxes for policy application of the labour market specialists.

The seminal contribution, in which the “multiplier” effect was first described (Kahn, 1931), was framed, in effect, in terms of an “employment multiplier”. Keynes’ own reflections, in notes preliminary to the final draft the “*General theory*”, implicitly allude to employment variation as the final interest of the analysis, as we may read: “...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”.⁶ In the original Keynes’ intuition, income and employment multipliers are analytically (and statistically) equivalent. If fiscal multipliers are back in the macroeconomic agenda, drawing their implication for employment accounts should be a straightforward sequence of the analysis.

These considerations encourage me to reconsider some earlier work of mine following this line, which went at the time almost unnoticed, since diffused only in Italian publications.⁷ Twenty years since, an attempt is here made to update reflections and applications for the context of the actual development of global economy, unforeseen at that time.

A brief section, with a critical assessment for the “single-market” modelling approach by “mainstream” labour economics, will proceed the central section, in which formulations for the “Employment multiplier” are described. Empirical applications in detail are referred to further occasions, but an example for application, centered to the analysis of the differential employment performances in the United States and in the “Euro-area” in the years “around” the “Great Recession”, is outlined in the

⁴ Dell’Erba et al. (2014).

⁵ See Qazizada & Stockhammer (2015) for the listing of the results by various authors ; a coauthored work of mine, Piacentini, Prezioso & Testa (2016), with application to the Italian case, contains a paragraph for references.

⁶ Keynes (1973), p.482.

⁷ Piacentini & Pini (1998a), (1998b).

following section. I will however affirm my awareness upon the limit of this exercise in the conclusions: “supply-side” factors---such as productivity norms, technological changes, etc.---- may matter, and they should be integrated within more comprehensive approaches, for the retrospective or prospective analyses of the employment outcomes.

Three decades of a “Nairuvian” influence ?

The theoretical settings of a “partial-equilibrium” modelling for outcomes of the aggregate labour market, when the ideal conditions of perfect competition do not apply, were seminally set in Britain, in the years at the onset of the “Thatcherian (counter)revolution”, and strongly inspired by the specific context.⁸ This original frame was, however, soon taken as reference model for wider applications, in the contexts of mature market economies. This development was highly influenced by divulgation and suggestion by scholars embedded within “think-tanks” of international organizations, with OECD’s 1994 “Jobs Study” as the most influential achievement. It is striking, how widespread and long-lasting has been the influence of an analytical frame, and policy implication, essentially inspired by the particular conditions of a British economy in the late 1970’s, plagued by “stagflation” and social unrest. “Inflation” was then identified as the signal of “loss of control”, over the mechanisms of a wage bargaining, and assumed as the central target of the macroeconomic stabilization agenda. By now, this problem appears subdued; stylized development on this point are scantily presented in the table.

TABLE 1. Consumer Price Indexes: decadal averages of percentage annual increases. Source: Oecd.

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

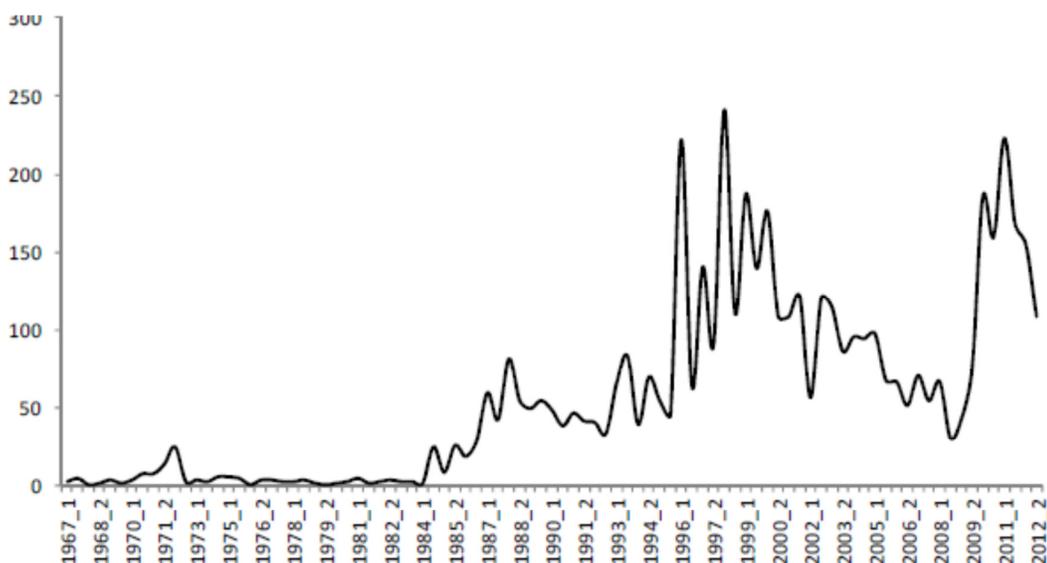
However, even in more recent times, when rather deflation or “secular stagnation” are in the worry of macroeconomic and monetary policy makers, the “Nairu”, albeit in its “weaker” versions of a “time-varying” indicator, remains an operational concept, in the exercises aimed at deriving some value for a “capacity” output, from which highly sensible policy indicators, such as the level of a “structural” public deficit, etc., are derived.⁹ We have not yet come out, of decades of an obsessive “mantra” pleading for “Structural Reforms”, in which the main field for applications appears broadly targeting more “flexible” frames, for the regulation of national labour markets.¹⁰

⁸ The main reference text is Layard, Nickell and Jackman (1991); for a more concise version for the essential points, Layard, Nickell and Jackman (1994).

⁹ IMF, Office in Europe (1999); D’Auria et al. (2010).

¹⁰ We quote as reminder, a selection from the original recommendations from OECD(1994), as briefly summarized for policy suggestion in OECD (1996)0. Out of the total of nine headings of Jobs Strategy recommendations, we recall : n. 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; n. 5) “make wage and labour costs more flexible by removing restrictions that prevent wages from reflecting local conditions and individual skill levels...; n.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.

FIG: 1 Recurrence of the word “Reform” in OECD’s “Economic Outlook” 1967-2012¹¹



What is reproduced here below is only an elementary scheme, usable in teaching class, for the reminder of a “Nairuvian” parable and its policy message. The principal item in this frame is that of a “Wage-setting” norm, influenced by the behavioural and institutional settings of the reference labour market. With “N” for employment, “L” for the total labour force potential, and “Z” as a synthetic indicator variable, summarizing for the “institutional” conditions favouring a “Wage-push” dynamic in that economy, and eventually “ π ” for the index of labour productivity, we may write:

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

Italics *W* and *P* should be understood as actual rates of growth for nominal wages and prices. Wage bargaining is favoured by the higher employment rate “N/L”, and is partially or wholly ($\delta \leq 1$) successful, in the catching-up of last-period inflation. Adding an extremely simplified rule for the “price-setting” of the (oligopolistic) firm,

$$P = W - \pi$$

i.e. price inflation strictly following rates of increase of “product-wage”, we may derive:

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

The “non-acceleration” norm sets, for the equilibrium, $P = P_{-1}$, and expectations fully adjusted : $\delta = 1$; out of which the equilibrium rate of employment of economy is easily derived as:

$$N/L = (-Z + \pi) / b^{12}$$

¹¹ The figure is reproduced from Zenezini(2014). Italian readers are strongly recommended to go through this source for a more radically spoken-out, critical opinion.

¹² We derive equilibria for “employment rates” as the key reference, as in the original formulation by Layard, Nickell and Jackman, op.cit. The “Nairu” conventionally expressed as an unemployment rate would thus be: $1 - (-Z + \pi) / b$

The “warranted” rate of employment of the economy , compatible with macroeconomic stability, will be then lower:

a) the higher the role of institutional “wage-push” factors, “Z”;

b) the higher “b” , expressing the strengthening of the wage-bargaining when approaching “full-employment”;

c) the lower the contribution , *ceteris paribus*, of increases of labour productivity, contributing to the moderation of the price of aggregate supply. If “productivity clauses” were inserted in contracts, or the strong bargaining power of “monopolistic unions” is capable to include productivity gains within wage norms, the expression as above will reduce to:

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

This might be read as the “extreme” version of “Nairuvianism”, where the (un)employment rate of the economy compatible with stability depends only on the institutional/regulatory/bargaining frames of the reference labour market, as synthetized by the parameters “Z” and b”.

If this is the essential of the analytical frame, policy recommendations follow quite obviously. Sustainable improvements for employment outcomes will only come out from actions capable at checking excessive “wage-push” (e.g. excessively generous regimes for the unemployment benefit) , or encouraging wage flexibility and moderation over cyclical events (e.g. checking “Insider power” or EPL to favour wage moderation with rising general unemployment). This track appears to have been thoroughly pursued in the successive years, and still influential in the inspiration of recent cases of structural reforms for labour regulation in European contexts.

It would be , indeed, unfair and incorrect to reduce the whole corpus of a research agenda pursued in these two-three decades, to this “Nairuvian essential”. Models framed within a “partial” analysis for the aggregate labour market, developing aspects such as “search and matching”, “Insider-outsider”, “efficiency-wages”, etc., have in fact contributed to the formal setting of the influences upon the labour exchange, of factors such as frictions, dualism, moral hazard, asymmetric information, etc. Despite their sophistication, however, most of this modelling appears as describing for formulations of “sub-optimal” equilibria and expressing “pseudo-demand” and “pseudo-supply” schedules for labour ,when reality falls short of the ideal competitive norm, checking thus the realization of a “full” equilibrium with no involuntary unemployment. These “weak” or “second-best” notions for labour market equilibria become, *per se*, a founding prior for a supply-sided vision in the determination of economic activity overall. Although not irrelevant, it appears to me excessive to assume, that regulations and contractual practices in the labour exchange are the prime, or principal, determinants, for the differential growths of employment and “Wealth of Nations”.

In what follows, we argument for a “Keynesian” circuit, where the “short-run aggregate production function” is read in an inverse sense, therefore with levels/rates of growth of employment essentially seen as “derived” result given final demand activation. The formula for “employment multipliers” essentially, describes this reverse circuit. However, we do not wish to imply much theory in opposition to “mainstream” in our view: the applications which follow, in fact, are derived from the fundamental identities of a National Income Accounting, and do not claim any alternative “micro-foundation”. Excluding all “*a-priori*”s and value-judgements, the outcomes for employment are described as

fundamentally constrained from identities as derivable from National Accounts. What is being recalled here is, then, rather a “Macro-foundation” for the constraints binding the *ex-post* outcomes, for the employment activation.

Why not Employment, as the dependent variable in the multiplier?

“Fiscal” multipliers were rediscovered in the aftermath of the global crisis following the financial crack of 2007/8 , and became soon the object of wider empirical research pursuing estimation through diverse methodologies. Recent applications agree however in finding “high” values of fiscal multipliers in the context of economies in stagnation/depression, which is, by the way, precisely the state in which the original concepts by Kahn and Keynes were worked out.¹³ While I will not survey here the econometrics of the pursuit for fiscal multiplier, I feel encouraged by this debate, in reproducing some application from my earlier works , in which the “multiplier” was directly applied to the analysis of employment activation and variations.

In its main, the passage from “income” or expenditure multipliers to “employment” multiplier requires simply the explicit consideration of variations for the product per worker ; through this passage we will see how, as for Keynes, the determination of national income and employment become “*the same thing*”.

Without imposing any prior hypothesis upon price determination, productivity regimes, etc., we wish to give stress to the inferences which may be directly drawn out from the identities, through their appropriate manipulation.

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

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

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

The value of aggregate supply is simply defined with price level, “P”, and product per worker, “π” parametric over the reference period. The symbols then used, in the summing of the components of aggregate demand, should be familiar.

Now we take into consideration the functional distribution of income, between wage “W”, and non-wage , “Π” (= Y - W), incomes, having differential propensities to consume “à la Kaldor” . The demand-side becomes:

$$Y^D = [c_w W + c_n (Y - W)] (1 - \tau) + I + G + X - m Y^D$$

Where “τ” and “m” are proportional rates for taxation and import propensity; the “demand multiplier” is then conventionally derived as :

¹³ Qazizada & Stockhammer (2015) cit.; Auerbach and Grodnichenko (2012) for a different methodology.

$$Y^D = \frac{1}{1 - [c_n + (c_w - c_n)\lambda](1 - \tau) + m} (I + G + X)$$

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

If we equalize now, following original conceptions from Keynes, "Price of Aggregate Supply" with the Value of Aggregate Demand, and summarizing with "A" ($= I + G + X$) for the total of the "Autonomous" components of demand (the "multiplicand"):

$$P \pi N = \frac{1}{1 - [c_n + (c_w - c_n)\lambda](1 - \tau) + m} A$$

Through simple manipulation we get an "Employment Multiplier" expressed as:

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

The "warranted" employment of the economy in the reference period is thus, as from above, expressed as the composition of three "fundamental" factors on the right-hand side: a) the reciprocal of the average product of labour (or "labour coefficient"); b) the "income multiplier", relevant for the size of activation of a "secondary employment" activated by induced expenditures;¹⁴ c) the value of autonomous demand, now deflated by "P", as the "multiplicand", which acts as the prime-mover of the whole activation process.

There is not, indeed, much analytics in explicating for the employment multiplier; however, its heuristic potential ought not to be understated. The multiplicative expression for the levels of "N" may, through logarithmic transformation and differentiation, become a tool for a "Growth Accounting" exercise applied to the rates of variation of employment over time-intervals ($t-1, t$).

$$\Delta(\lg N) \approx \Delta(\lg(1/\pi)) + \Delta(\lg("M")) + \Delta(\lg(A/P)) \quad (2)$$

¹⁴ As from Kahn(1931)'s original terminology.

Where “M” means synthetically the income multiplier. Although with approximations, given second order effects, or coming out from aggregation and deflation criteria in National accountings, this simple expression appears directly founded on real data, and free from “*ad hoc*” restriction, with respect to much “mainstream” econometrics (VAR, simulation from DSGE settings, etc.) for the analyses of employment change.. The expression 1), as the result of manipulations maintaining the original identity from National Accounts, is always valid as such, and before any further hypotheses, which may be introduced in the frame, e.g., for price formation and adjustment (“mark-up”s, supply price functions with constant or variable returns, etc.).¹⁵ The formula may be further elaborated, for the multiplier of consumption (e.g. including “wealth” effects in autonomous consumption), or for further disaggregation of the “multiplicand” (e.g. explicating housing investment as specific component, etc.). Data availabilities often limit more sophisticated application.

The analysis of the employment multipliers may be also useful, as a side empirical reference, for topics actually central in the macroeconomic debate, such as the employment content of growth, the distributive effects as these may derive from a “Kaldorian”, negative impact on consumption of redistribution against labour. These effects are accounted for, in our expression, through the inclusion of “ λ ”, the parameter for the labour share. One further path is the more in-depth analysis of the differential path of technical progress, for spatial or temporal comparative contexts. Finally, our “ π ” is only the aggregative result for “GDP per worker”, depending on sectoral productivities and compositions of employment: a follow-up and a renewed attention towards “structural dynamics” approaches, applied to the employment activation, should be welcomed.¹⁶ Moreover, we produce evidences on how much of a “digital revolution” is being shown-up at an “overall” level. It might come out that the famous assertion by R. Solow for which “ *you can see Computer-age everywhere but in the productivity statistics*”¹⁷ still applies a to more recent experiences. A further possible decomposition, with product per worker as the composition of product per hour worked and of the hours worked per worker, may be estimated for the effects over time of changes in average working time, the extension of part-time work, etc..¹⁸

A weak notion for a “steady-state” norm for employment may be stated out from the above expression:

If the propensity and distribution parameters remain constant within the reference period, a constant level of employment will be maintained, if and only if the growth of the real autonomous demand precisely matches that of the product per worker.

This affirmation may sound trivial, but when we think at its implications, in the present-day state of most mature economies, we should feel some worry. The decrease of the investment to GDP ratio (or the investment/gross profit ratio) is a “stylized fact” much focused in the recent literature and debate for the prospects of the European economy.¹⁹ As for productivity, there is much literature for the projections of

¹⁵ Earlier publication in Italian and WPs, where further elaborations from of the multiplier for pricing hypotheses etc, are developed, are available upon request from the author.

¹⁶ L. Pasinetti’s original frame for structural employment dynamics, where matter both the evolution of sectoral productivities per worker and of the employment content activated from sectoral composition of the consumption of the worker (and where, in the limiting vision of a vertically integrated economy “capital” goods are re-conducted to past labour contributions) remain, in my opinion, the key point of departure for a revival of these approaches. See Pasinetti (1981).

¹⁷ R. Solow, New York Times Book Review, July 12, 1987; p.36.

¹⁸ Last but not least, we recall here in a note the actual debate upon “ 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 e.g. Cesaratto (2015),

¹⁹ The “profit without accumulation” regime as a currently prevalent state of most European economies is a central topic in a “Post-Kaleckian” school for analysis of growth and and distribution regimes in modern capitalism; see e.g. Hein(2012) , Organhazi (2008) , Stockhammer(2011).

job substitution potential of the advance in digital control and application; these might, eventually, show their effect at the level of aggregate result. The two things together might foresee future growth rates for “A”, falling more and more short of that of “ π ”. An “excess savings” situation, where profits exceed real investment, might imply lower values for the “multiplicand” as well as the “multiplier”. The “austerity” orientations in policies, checking the public components of demand, will not help. Eventually, globally “open” markets will imply higher contribution of exports in the multiplicand, but lower multipliers because of rising import propensities.

These sundry considerations perhaps are evocative of the scenery of a “secular stagnation” with increasing job shortage.²⁰ Corrections in policy are needed for overcoming this pessimistic outlook; income inequalities should not further increase, “excess savings” should be better intermediated to the real, employment creating enterprise, rather than sunk in the meadows of purely financial speculation, etc.

In conclusion, the explication for employment outcomes from the basic macroeconomic identities appear to be an useful empirical complement in the actual debate upon the key-issues of the medium-term prospect of mature capitalistic economies. In this frame, “micro inspired” policies for the the labour market may have marginal effects, in the cost/benefit calculations for the employment decision of firms; however, the overall scene appears ruled by the “macro-fundamentals”: technology, distribution, (real) investment.

Sketching for application: the differential employment performance in the United States and in the “Euroarea” before and after the “Great Recession”

As an example for the application of the “employment multiplier”, within a tentative approach to answering the question on “Why employment growth rates differ”, I outline here a comparative analysis for trends in aggregate employment in the USA and the “Euro” area as a whole²¹, in the years after the turn of the century and around the crisis of 2007-8. Without the use of any econometrics, and through simple calculations from a spreadsheet, we may hint at the rationale behind the diverse employment outcomes of the two areas.

The table below is a reminder for total numbers in employment in the US and EA across the cycle.

Table 2. Total Employment (‘000s)

	USA	Euroarea
Peak before crisis	138,612 (6/2008)	143,208 (III q./2008)
Minimum at through	128,692 (12/2011)	136,145 (I q./2012)
2015	143,762 (10/2015)	140,543 (III q./ 2015)

Source: all numbers and elaborations here and in the following table are derived by AMECO database of the European Union.

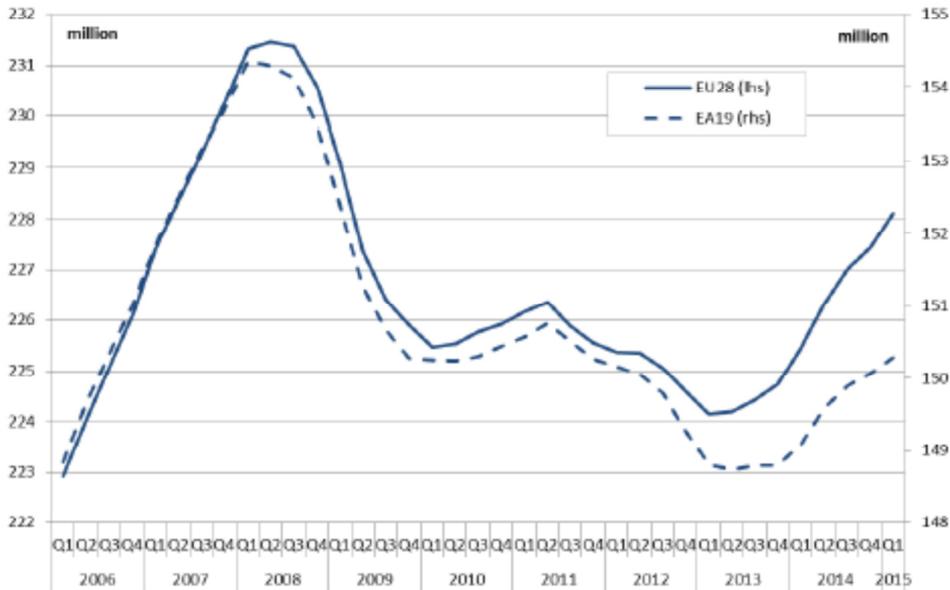
²⁰ As key reference for the origination of the debate on “secular stagnation”, see Summers (2015).

²¹ For temporal coherence, we always refer to data for what is defined as “EA17” in the AMECO database.

The US economy was capable to recover its former employment activation levels, within about three years from the cyclical trough; the countries within the “Euroarea”, although evidencing the role of “protection nets” cushioning fall in slump, have, since, shown much slower rates for recovery. The graph below presents a complementary evidence for the bad performance of the “Euroarea”: the countries within the European Union, which had opted out of the currency union, have performed better in employment recovery.²²

FIG. 2

Chart 7: Employment level - EU and EA



Source: Eurostat, National Accounts, data seasonally-adjusted [namq_10_pe]
[Click here to download chart.](#)

We summarize for the values for some parameters relevant in the derivation of the employment multiplier, and their differential pattern between the two big aggregate economies being considered. When tying together, within “A”, total autonomous demand, we must be aware that the composition of “A” may widely differ, in particular within the context of an “US. vs. EA.” comparison.

²² The chart is reproduced from European Commission (2014), p.10.

Table 3. PERCENTAGE COMPOSITION OF AUTONOMOUS EXPENDITURE

	"I"	"G"	"X"
<u>2000</u>			
USA	36.9	46.0	17.0
EA	22.7	42.3	35.0
<u>2007</u>			
USA	34.1	48.2	17.7
EA	22.4	39.5	38.1
<u>2015</u>			
USA	30.2	50.5	19.3
EA	18.0	40.6	41.5

One major difference emerges: the “export dependence” of the Euro-area, where the share of exports on total exogenous expenditure is almost double to that in the USA, and increases significantly, throughout the period. Further, the share of the public component appears higher in the US than in the EA, with increases there and decreases here in 2015 with respect to 2000. Fiscal policies, thus, appear to have a higher multiplicative potential in America, while the “austerity” orientation and the targeting at balanced budgets appear to have checked in the Euro-area compensative roles of the public sector, in a situation marked by a significant fall in the investment to output ratio.

The table below, presents the results for the rates of variations, calculated from logarithmic differences, for employment levels, and for the items of the employment multiplier expression. The calculations are reported over the whole interval 2015/2000, and for sub-intervals, 2007/2000 and 2015/2007, i.e., broadly, before and after the event of the crisis.

Employment variations were defined, in (2), as approximately determined by the sum of the effects of the variations of the three component factors (π , A, M), a part from a residual due to composition effects and data imprecision.²³ The numbers for (*RES*), the residual variation of employment unexplained by the components, reported to show relatively low values, comfort us for the overall validity of our exercise of decomposition for the employment variation as dependent from the fundamentals: autonomous expenditure, productivity, income multiplier.²⁴

²³ One approximation derives from the fact that all aggregates in nominal values were deflated by a common GDP deflator. For further precision, deflation through component specific deflators should be considered.

²⁴ In the calculations for multipliers, we parametrized the propensity to consume out of wage incomes at the value of 0.9, and for non-wage incomes at 0.4; the differential is broadly in line with those considered in literature, e.g. Stockhammer (2008).

TABLE 4 RATES OF VARIATION OF EMPLOYMENT AND COMPONENTS OF THE MULTIPLIER

	<i>N</i>	π	<i>A</i>	<i>M</i>	(RES)
<u>USA</u>					
<u>2015/2000</u>	8.9	18.9	35.4	-9.6	1.0
<u>2007/2000</u>	5.9	7.4	23.0	-9.2	-0.5
<u>2015/2007</u>	2.3	11.0	10.1	1.3	1.9
<u>Euroarea</u>					
<u>2015/2000</u>	6.7	9.6	28.0	-10.0	-1.7
<u>2007/2000</u>	11.9	6.2	19.1	1.3	2.3
<u>2015/2007</u>	-1.9	2.8	7.4	-8.7	1.4

In the table which follows, we present, as final output from the exercise, the values of the “demand multipliers”, estimated for the reference years 2000, 2007, 2015. We do not wish to propose our “spreadsheet” calculation, as an alternative to the estimates of fiscal multipliers derived through some more sophisticated econometrics. Though, the values appear within reasonable ranges and confirming expected differences between the two area and over time.

Table 5: ESTIMATION FOR THE VALUE OF THE INCOME MULTIPLIER

	2000	2007	2015
USA	1.78	1.58	1.61
EUROAREA	1.11	1.09	1.00

For a synthetic comment: multipliers are higher in the US, 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 better rebound for employment in the US in the aftermaths of the crisis. However, the effect of the differences in the orientation of fiscal policies in the US and the EA are clearly evidenced from the exercise. This appears in the differentials in the variations of the “multiplier” and the “multiplicand”, in particular over the interval 2007-2015. While facing recession, “A” increased by 10.1 % in the US as against 7.4% in the Euro-area; in the US, 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 the effect of a tax incidence to GNI rising by 1.6 points, together with import propensity in steady increase. Moreover, the values and incidences of the multiplier are eventually dependent on the diverse composition of the autonomous expenditure, in particular the “export-dependent” growth for the EA as a whole. In the case of the US, notwithstanding the official

statement of conservative opinions in the political and academic circles, pressing for the adjustment of the federal budget, “Big Government” still appears to have had an active role in cushioning recession and providing impulses for recovery, as underlined by H. Minsky in earlier recessive episodes.²⁵ Would possibly a more convinced drive towards “structural reforms” have helped for a better outcome for Euroarea? We stop here, since we do not wish to put excessive emphasis to evidences drawn from a “naïve” exercise. A summing-up is left for the conclusion.

Conclusions

This draft was encouraged by the recent, renewed awareness upon the relevance of “multiplier” effects of demand-side impulses for the macroeconomic outcome of economies struck by recessionary events. But with “fiscal multipliers” back in fashion, why not also elaborate for “employment multipliers”? These can be in fact derived, through simple additional passages, from the former. The exercise of composition and arrangement, starting from the basic National Accounting identities allow for an analysis for the contributions of factors (functional distribution, export drive/import dependence, etc.) which may matter in the differential employment performance of countries.

In the meanwhile, “specialized” models in labour economics have insisted, rather, in their frames of a “partial” analyses for the outcomes of a labour exchange, implicitly suggesting a “supply-side” causality for notions of “temporary equilibrium” in economic activation. The counter-position to “Nairuvianism”, which has much influenced policy orientations in Europe for two decades or more, of a “demand-side” employment-multiplier approach might appear, to the sophisticated theorist, as a naïve exercise, with an inverted reading, for the circuit of causation of some “short-run production function”.

This is not however in the ambitions of this draft. Being, in fact, simply algebraic manipulations out of identities, “multiplier” models cannot pretend much “theoretical” sophistication and cannot, in this aspect, be proposed in opposition to “micro-founded” modelling. However through the working out from identities, and the avoiding of the imposition of any “prior” behavioral hypothesis, we describe a sort of a “Macro-foundation” constraint, which should be kept in mind, in any micro-founded modelling for the behavior of the agents, and by the policy makers, when they engage in designing incentive schemes, or regulatory reforms. This is not meant to say that prescriptions coming out of the frames recently considered within labour policies are irrelevant: e.g. training, better institutions and instruments for favouring the matching of demand and supply in the labour exchange, etc. may matter. Moreover, improvements of the productivity performance, when well matched with qualitative improvements of the labour demand and contributing to the reduction of an “Aggregate supply price” for output, may avoid to act only negatively on employment, through its direct “mechanical” effect of the reduction of the labour coefficient. Our scanty view from aggregate statistics seem to confirm that the full potential of a “Digital revolution” have not yet been reflected in the aggregate productivity trends. “Endogenous” interaction between output and output per worker, as sometimes formulated within “Okun’s” or “Verdoorn” ‘s Laws, and similar frames, appear still to hold its relevance.

Concluding, the derivations and the implications drawn from macro-identities, as outlined in this occasion, may be one complementary approach for the circumscribing “excessive” pretensions, by the micro-modelers, when proposing unilateral causation or policy recipes for the results of the employment activation, which should be, rather, considered through interactions within the “Economy as a Whole”.

²⁵ E.g. Minsky (1986), part II.

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