

# **Consumption composition: implications for growth and distribution**

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## **1. Introduction**

Though a prominent issue in the macro literature, consumption spending is often treated, in a typically Keynesian fashion, in aggregate terms. This reflects Keynes main purpose, that of analyzing income and employment levels in the short-run. The exception is the model of growth and structural change of Pasinetti (1981, 1993), which establishes a bridge between the effects of technological change and demand and, because of that, it must consider its structure as an essential aspect of the growth process. Indeed, a dynamic theory of consumption.

The question raised by Pasinetti comprehensive study of structural dynamics contains several possible directions of investigation. New products play an important role in it, but it is mostly hinted at, rather than developed, since the model has rather more general purposes. (Gualerzi, 1996) The focus on new products is however the key to address the question of the effects of consumption composition on growth and

distribution. The question then crosses with the revamping interest in new commodities and variety in consumption one can find in the literature.

New products have been approached in rather different theoretical perspectives. They are an important theme of the literature on industrial organization (E. Mansfield, F. Scherer) One can read the attention to the question as originating in the work of Chamberlain and J. Robinson on monopolistic and imperfect competition and in the theory of the firm of E. Penrose. Especially the famous expression of E. Mansfield, the frost on the cake suggests a rather narrow focus on differentiation as a key element of marketing strategies with minimal technological innovation.

At the opposite end of the spectrum we can put the fundamental role that new products have, when treated as a basic innovation, in the analysis of the Neo-Schumpeterian literature (A. Freeman, G. Dosi).<sup>1</sup> The notion of “technological systems” (Clark, Freeman, Soete, 1982) is specifically designed to explain the macroeconomic, long-term effects of basic innovations. Here the relationship to growth is straightforward: new products are part of the technology-push driving autonomous investment and the long wave of development. New products are therefore a central issue because of the association with technology development and investment.<sup>2</sup> Still, the approach remains largely supply determined. Nota

This might largely depend on the fact that the elaboration of the issue of new products from the demand side has been mostly within consumer theory. While opening up the consumer problem to product innovation (Lancaster, 1966, 1971) and indicating ways in which new commodities can shape consumption patterns (Ironmonger 1972), the refinements of consumer theory could not overcome the limit posed by a theory of taste based on exogenous preferences and even less develop a relationship between change in consumption and growth.<sup>3</sup>

To move in that direction is first necessary to overcome the contrast between exogenous preferences and product innovation. A possible solution is to partially internalize the process of innovation in consumption into the consumer choice problem. This requires an active participation of consumers in defining viable new alternatives of consumption. This makes possible to consider the role of product innovation in determining

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<sup>1</sup> For a recent review of the Neo-Schumpeterian theory see Verspagen, B. Structural Change and Technology. A long view, 2002.

<sup>2</sup> Product innovation plays a fundamental role also in some of the New Growth Theory models , in particular the Schumpeterian models a la Aghion-Howitt. This reference to the same roots, however, only emphasizes two fundamentally different theoretical perspectives.

<sup>3</sup> Lancaster’s main motivation was indeed to enable traditional consumer theory to cope with product innovation and differentiation.

consumption composition and develop, in a second step, the analysis of consumption patterns as part of the growth process.

The analysis of this “composition effect” develops out of the foundation laid by the Harrod-Domar and Pasinetti model. Indeed, it is precisely the attempt to extend to the long run Keynes principle of effective demand of the Harrod-Domar model that poses the problem of composition in the process of growth. The lack of an elaboration of the theory of effective demand in the long run then explains why the issue has become so elusive to theoretical analysis and even to the recent literature on variety in consumption.

The last sections of the paper consider the two expansive cycles of the 1980s and 1990s in the US economy. They illustrate the role played by product innovation and consumption composition in determining a particular pattern of growth and its effects on distribution.

## **2. Product innovation: quality and variety**

It was pointed above that, though addressing the problem of new items of choice, the refinements of consumer theory left largely untouched the relationship of a larger and more diversified basket of consumption with aggregate spending and growth. Interestingly the question of product innovation and consumption composition has resurfaced in the literature under the heading of quality improvement and variety growth.

In the last years there appears to be a new interest for the issue of new goods. (Bresnahan and Gordon, 1997; Boskin et al., 1996) This interest, however, stems mainly from a specific problem, i.e. whether quality improvements are correctly taken into account by prices. Particularly the issue at stake is to measure quality improvement so to have better measure of inflation (hedonic pricing), and therefore of growth. Typically the expectation is that some of the price increases should be netted off to take quality into account therefore decreasing the rate of price inflation so that “real growth” appears underestimated.

Bils and Klenow (2001b) observe that “the hedonic techniques...have been applied to only a limited number of goods.” The problem is that the measurement of quality requires very detailed knowledge obtainable only for specific goods. In fact, even the estimates of the Boskin Commission are based on limited number of good-by-good studies.<sup>4</sup> The main purpose of their work is then devising a methodology that can overcome this limitation, which they use to estimate “the rate of unmeasured quality

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<sup>4</sup> “The Boskin Commission Report (Michael J. Boskin et al., 1996) cites only an handful of studies in arriving at its estimate that unmeasured quality change biases U.S. Consumer Price Index (CPI) inflation upward by 0.6 percent per year.” (p.1006)

growth for 66 durable consumer goods that constitute over 80 percent of U.S. spending on consumer durables.” (p.1006)<sup>5</sup> They observe that “quality growth can take several forms”, determining either “a rising market share of existing, above-average-quality goods”, or “the replacement of existing goods in the market with higher quality versions.” Their methodology can in principle account for both types of quality upgrading.<sup>6</sup>

Thus, the issue of quality improvement partially overlaps with a second theme, that of variety, which is of more direct concern here.

In a previous article Bils and Klenow (2001a) had developed a model to estimate the effects of variety, and in particular the acceleration in variety growth, on consumption spending. The starting point is that, as opposed to the central role played by the growth of variety in theoretical growth models, there is not empirical evidence on this point. Here the difficulty consists in estimating consumer surplus “from the myriad of new models and features that are continually introduced.” Their “indirect approach” consists of inferring the importance of variety from the relative growth rates of consumption expenditure in dynamic goods, those for which variety is growing, with respect to static goods.

In a few case of “dramatic product innovations” (cable television, VCR and movie rentals, personal computers, cell phones), there is a clear positive effect on the spending in the categories they belong to.<sup>7</sup> In order to conduct a more exhaustive test they define a set of dynamic goods, and study the pattern of expenditure in the 1959-1999 period, considering sub-periods 1959-1979 and 1979-1999.

To isolate the effects of variety growth, i.e. product innovation, they estimate Engel curves for 106 categories of spending in order to net off income and price effects on spending. This confirms a shift of expenditure away from static goods and a sizable residual growth rate. They then relate “changes in the spending shares for 1980-1996 to the rate of item substitution within each category, as recorded by the BLS for 1997.” (p.277)<sup>8</sup> to find out that item substitution rates predict shifts of spending even after controlling for income, price and demographic effects. Thus, a

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<sup>5</sup> “The approach provides an overall diagnostic on the extent of quality bias in official inflation rates for a set of goods. Yet a strength of our approach relative to using hedonics is that our approach does not require detailed information on the attributes of goods.” (p. 1029)

<sup>6</sup> Similarly the Boskin Commission considers studies on both new goods and higher quality goods.

<sup>7</sup> For example cable television has increased spending for television as a share of the expenditure in recreation.

<sup>8</sup> “Item-substitution rates measure how often the BLS replaces an item in the pricing basket with another model because the former has disappeared from the sample outlet.” (p. 274)

further confirmation that product innovation is an important determinant of spending.

It must be observed that item substitutions rates are indicator of rapid innovation, but also of new products replacing old ones. This is why Bils and Klenow focus “on those item substitutions that the BLS judges to be noncomparable, meaning no closely similar model exists or appears on the outlet.” This better represent their interest in “important new varieties”. However, the problem remain somewhat unresolved, as they themselves point out. This is confirmed by the persistent difficult to distinguish between quality improvement and novelty.<sup>9</sup>

This does not disturb much their main conclusion: variety sustains spending and this is confirmed by the shifts of expenditure shares as variety growth accelerated very considerably in the second sub-period 1979-1999. In fact, it parallels their suggestion that there is “an important role for quality growth in consumption growth.”(2001b, p.1007)

Admittedly their purpose is to provide evidence on variety as a determinant of consumption composition via product innovation, and of its acceleration in the last twenty years, which they suggest to see in parallel with the growth of patents since the mid 1980s. It remains unclear, however, how spending driven by variety and/or quality affects income growth. Indeed, in their conclusions Bils and Klenow simply argue that: “We find that spending shares have shifted dramatically, with these shifts poorly anticipated by relative Engel-curve or price effects...new products have played an important role in the substantial shifts in spending.” (p.279)

There is no clear way in which this links up to issues of aggregate spending and growth. Unless we fold back on the issue of unmeasured growth, which pops up again in some of the literature they discuss in connection with the measurement of variety.

### **3. Growth and consumption composition**

#### **3.1 Effective demand in the long run**

The study of variety and quality growth, while indicating the importance of the relationship between consumption spending and product innovation, and the difficulties involved, leaves open the question of whether and how consumption composition and its change can drive growth. A drastically

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<sup>9</sup> “Improvement in existing models are often referred to as ‘quality growth’ rather than ‘variety growth’. If the new model is imperfectly substitutable for the previous model, however, then a more accurate description may be ‘variety growth.’ Thus, what e refer to as ‘variety growth’ can take the form of added features to existing products as well as entirely new products.” (p. 274, footnote 1)

different perspective can be developed starting from what is lost in most of the recent analyses of growth, the Keynesian principle of effective demand. This appears at first rather peculiar, given that Keynes develops its analysis in aggregate terms and pays no attention to consumption composition. In fact, we have first to undo this drastic separation between Keynes analysis of income determination and the question of consumption composition to uncover its relationship to growth and distribution.

The Harrod-Domar model represents the extension to the long run of Keynes principle of effective demand. If we add to the short-run condition  $I = S$  the long-run condition  $Y_c = Y_d$ , where  $Y_c$  is output, i.e. productive capacity, and  $Y_d$  is aggregate demand, then the warranted path of growth requires that  $Y_c = K/v = I/s = Y_d$ , where  $s$  is the marginal propensity to save and  $v$  is the capital output ratio. In other words, moving to the long run requires the full appreciation of the capacity creating effect of investment, previously considered only for its capacity to determine income.

Still, early Keynesian growth theory focuses on aggregate growth in its long-run analysis. This is very “Keynesian” in spirit, given the stress laid by Keynes on the aggregate level of economic activity and income determination. It appears indeed reasonable in the short-run to take the level of productive capacity, and its composition, as given. Similarly, the role of consumption as a purely income determined variable of expenditure appears justified by the fact that autonomous investment is considered only in its capacity to determine income and employment. However, in the long run these explanations no longer apply.

Maintaining the attention on the aggregates permits to focus sharply on the inherent instability of the growth path and the relationship between growth and employment, but overshadows the question of demand composition, though the latter becomes, quite obviously, a proper topic of investigation in a long-run perspective. While it was of little damage to the short-run perspective of Keynes, it obscures the many implications of the principle of effective demand for the theory of growth. In particular, the fact that the growth rate of aggregate demand must be such to absorb the output of the new installed capacity suggests that the proportions between industries and expenditure components may remain constant and the structure of demand adjusts to that of supply. Thus, a theory of output concerned only with its level.<sup>10</sup>

These remarks do not call into question the central role of investment and of the multiplier in determining output and employment. Simply they call

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<sup>10</sup> Hidden in Keynesian growth theory is then, as pointed out by Joan Robinson, a steady state path of growth, with constant proportions within sectors.

attention to the structural aspect of the growth process, and especially changes in the volume of spending in new areas of consumption. If we follow the lead of Keynes' principle of effective demand and search in the demand side the key to the pace and direction of accumulation, the question of demand composition immediately arise and poses the problem of a theory of the level and composition of output.

### 3.2 A dynamic theory of consumption

A growing economic system in which the proportions between industries and the demand structure are unchanged is typical of most growth theory. This is precisely what Pasinetti calls "pseudo-dynamics". The main novelty of his model (1981, 1993) is to consider together changes in the structure of production *and* in the structure of final demand.

The starting point is the recognition that technical progress proceeds at different pace in different sectors and productivity growth is uneven between sectors. Precisely uneven productivity growth makes difficult to accept the notion of an unchanging structure of consumption. That would require demand to grow proportionally to absorb any increase of sectoral outputs resulting from technical progress. Alternatively, it requires a theory of its evolution, i.e. a dynamic theory of consumption.

One thing we know about demand, argues Pasinetti: "it does not expand proportionally". A path of different growth rates of sectoral demands can be anchored to the Engel law. Pasinetti theory of consumption is therefore based on an endogenously generated and income-driven rule of non-proportional expansion. Limits to the expansion of expenditure on certain products are set by saturation levels, at which the rate of growth of demand decelerates and then flattens out.

There is an obvious overlapping between the (changing) composition of consumption expenditure and new products and/or product variety. The non proportional rule of expansion of expenditure, however, cannot say much about the specific, commodity-based forms of satisfaction of such broad categories of needs as those considered in the structure of consumption expenditure. These are specific to a social and production structure in a certain stage of development of the economy. Especially, they reflect firms' investment and marketing strategies.

Pasinetti makes reference to new products several times in the analysis. He acknowledges that they are an essential aspect of technical progress and in the few passages he speaks of product innovation as a way to promote demand. He also seems to attribute to them some autonomous role in the determination of the patterns of consumption. "The variation in the composition of consumption may well occur independently of the increase

in income and of the changes in prices, as a consequence of the appearance on the market of newly invented goods and services."(p.40) This line of reasoning implies that a lot of attention should be given to product innovation.

More so because the fundamental force underlying Pasinetti structural dynamics is the learning principle, which operates both on the production side, i.e. technical change, and the demand side, through consumers learning. According to Pasinetti the limits set by saturation (of certain needs) imposes a periodical speeding up of consumers' learning. Learning their new preferences would allow consumers to redirect spending to new areas of consumption. Learning of these new preferences appears however by the logic of the argument inextricably linked to product innovation.

Indeed, the notion of learning is better suited to an approach to consumer choice in which, rather than discovered, new preference are developed within an adaptive, socially conditioned process, where the contact with products, and especially new products, as well as the social rules of consumption, are essential aspects. Furthermore, this appears to be particularly true when what is involved is the development of needs that may cause a deep repositioning of consumption spending. Thus, learning of new preferences at least implicitly suggests an analysis of consumption focusing on the relationship between innovation, endogenous taste formation and the development of the structure of need.<sup>11</sup>

#### **4. Innovation in consumption**

Quite clearly this approach re-proposes the issue of a dynamic theory of consumption beyond the regularities of the Engel curve. The issue eluded the traditional theory of consumer choice inherently static, but also the effort to introduce technological change and new commodities in that framework.

The problem is that when we consider new commodities shaping the ways of satisfying needs there seems to be no more room for consumer choice. If indeed, as Schumpeter suggests, consumers are "educated" by producers, then the issue seems to disappear and the entire question of composition seems to be entrusted to the product innovation strategies of firms. An alternative approach should, first of all, overcome the contrast between exogenous preferences and product innovation. In this respect, precisely novelty and change in consumption, which are the roots of the problem, also indicate the way out. On the one hand it makes difficult to define the optimizing problem of the consumer, on the other it opens the way to an active role of consumers beyond the notion of consumer choice

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<sup>11</sup> Some of these elements are also in the approach suggested by Caminati (in this volume).



When the problem is closely examined, it can be concluded that what matters is the contribution of consumers at establishing a way of satisfying need as the norm of consumption, i.e. a socially acceptable and desirable alternative. Consumer then have a role precisely in the process of change. The subjective element is better captured by some notion of personal development than by exogenous preferences. Thus, there is no contrast between endogenous preferences and subjectivity to the extent that locating taste formation within the economic process does not exclude and actually finally gives to a full recognition to the agency of individuals as consumers. The third element of this approach to consumer choice is then to partially internalize individuals drive to self realization, based on the development of personal identity, into an interactive process of innovation in consumption.<sup>12</sup>

The interactive process of consumption innovation is based on the fact that individuals pursue the realization of personal identity facing a constantly changing world of commodities and the evolution of consumption alternatives which that entails. Individuals strive to be persons within the economic process and social structure, bending towards their private aims the system of commodities that grows larger and more sophisticated because of product innovation. They behave as interactive social agents responding to this process of change and “inventing” the consumption practices and use systems that validate the final specification of commodities and the selection of technologies of production and distribution.

A socially molded individuality then contributes to determine consumption innovation and that it does so by interacting with the major source of innovation, i.e. the dynamism of the production system. Innovation in consumption need not to be identified purely with the supply side and the development of technology. It is a process broader than the introduction of new products, in which consumption practices and the definition of use systems determine the success of new items of consumption and their diffusion paths. This, as much as technical change, can explain the concrete forms taken by the efforts of consumers to satisfy their needs.

### **5. The composition effect: New products and expansion**

The interactive process of consumption innovation fully redefines the consumer choice problem. It does so focusing on the active participation of consumers in defining viable new alternatives of consumption. In this perspective taste formation is the self-realization of individuals, which may well be articulated according to social rules and values, as much as it is the

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<sup>12</sup> The full specification of the approach based on the notion of the active, although not sovereign, consumer is in Gualerzi, 1998.

development of the need structure realized in a specific pattern of consumption.<sup>13</sup>

This is a crucial element, since it follows from the establishment of a new product within the previous structure of consumption. In this way consumption innovation validates the investment in this product. This in turn allows for an analysis of technical change and new products that departs from the narrow jacket in which consumption composition has been approached, for instance in the literature on variety, and makes explicit its relationship to growth.

Indeed new products, and innovation in general, do not fall from the sky, they are the outcome of firms strategies of development. More specifically, they represent the effort of firms to enlarge and structure the market for purposes of their expansion. Consumers validating new products as a viable innovation in consumption contribute to the success of a particular strategy of development of the firm. Therefore new products matter for growth in the aggregate to the extent they are the result of investment. The latter, in turn, must be validated by their insertion in the current pattern of consumption, which they contribute to transform.

Thus, within a changing structure of consumption as in the Pasinetti model, product innovation acquires its full relevance for the study of growth. Consumption composition affects growth realizing in a specific pattern of consumption, i.e. a structure of expenditure *and* commodity-based forms of need satisfaction, the stimulus of new commodities and validating net investment in these commodities.

The focus on investment clarifies that changes in consumption output composition, i.e. the transformation of consumption patterns is expansionary. New ways will of course displace old ways of satisfying needs. However, an increase in the level of effective demand, due to what we can call *innovative investment*, will first fuel expansion, which will be then sustained by the validation of the investment strategies.

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<sup>13</sup> There is an element of subjectivity in the interactive process consumption innovation. It concerns the self realization of individuals through consumption. The fundamental difference with the traditional approach to consumer choice, and also other approaches sensitive to social determinations of taste, is that the individual we are referring to is a social construct, not in any general sense of being social, but in so far as need development reflects the development of individuality as a social phenomenon. We therefore do not have any abstract individual making choices, nor the issue is recognizing that they are influenced socially. The point is that individuals do not exist except in relationship to other individuals and within society. Consequently the development of need is a social phenomenon in which subjectivity and social determination are not counter-posed or added one to another, they are the same thing. Individuals become what they are in connection with their consumption practices and new products.

This can clarify a number of issues that eluded other treatments of consumption composition. The reference to the new preferences and the promotion of demand suggests that product innovation may work to sustain spending in products that are in the maturity phase of the product cycle and/or approach the saturation levels set up by the non-proportional growth of demand in specific markets. From the point of view of firms such a strategy of investment in product innovation aims at maintaining market share. This is where the traditional notion of differentiation, or minimal innovation of the literature on industrial organization more clearly applies. It can be associated also with the search for novelty, assimilated into the marketing strategies of new models and new design typical of large scale consumers markets. In this case the expansionary effect of new products may still be small and consumption composition changes might be not very significant. However, the diffusion process is also the typical milieu in which incremental innovation, quality improvement and variety may uncover new potential for consumption innovation, therefore establishing the condition for additional investment.

The fundamental point is that the structure of need realized in a specific pattern of consumption has an implicit potential for development, which is uncovered precisely by innovation. New products may substitute for old products in the consumption basket, because they are variations or improvements in the old ones, or because they satisfy in a different form the same need. We need not conclude that it is zero sum game. Additional investment must in any case take place to develop and establish the new product. The successful introduction of a new product sets up the conditions for a diffusion process that drives additional investment. Finally, consumption innovation and diffusion uncover new complementarities and interdependencies. Ultimately, it is the structure of need that is affected and therefore the possibility to face further development of that structure.<sup>14</sup>

These effects grow much larger when considering new products that more fundamentally affect the forms of satisfaction of need and therefore the pattern of consumption. Not only innovative investment might be much larger but its induced effects much stronger. Innovation in this case would affect more fundamentally the development of need and channeling spending into new areas of consumption. Changes in consumption

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<sup>14</sup> “What is really new about an innovation can only be known when experience of the social practice associated with its use uncovers its real potential. The starting point must be the unity of old and new; the movement into the unknown world of a new structure of needs starts out by masquerading as a part of the prevailing structure.” (Levine, 1981, vol. 2, pp.141-2)

composition would then be associated with stronger expansionary effects of a changing pattern of growth.<sup>15</sup>

In sum: The notion of new products can then be clarified rigorously in relation to the role they play in accumulation, that is, for the amount of (autonomous) investment they set in motion. The validation of innovative investment through innovation in consumption determines a flows of revenues to the firm that recreated the conditions for another round of investment. The intensity of the investment drive will depend on the extent in which the pattern of consumption is transformed, recreating the conditions for innovative investment.

Therefore, we can outline three expansive effects of the changing composition. The first is innovative investment, in the phase of product introduction. We assume that most radical innovation, i.e. new products that determine a significant process of consumption innovation, will require larger investment spending. A differentiated product, although it may be non a perfect substitute, or have additional attributes, will mobilize less resources than a new product, which we assume to be a non perfect substitute. The second expansive effect concerns the establishment of the new product as a viable way of satisfying a certain need. The diffusion process will have a significant impact on product development and induced investment. A third expansive effect concerns complementarities and interdependencies that may open up prospects for more innovation in consumption and therefore reinforce investment spending. Thus, a simple model based on an articulation of the principle of effective demand in the long run to take into account of the composition effect may well capture the inherent dynamism of changes in consumption composition.

The generality of the theoretical analysis and the complexity of the relationship involved does not lend itself to the effort of constructing a model of the process of determination between the composition effect and growth. Nevertheless the main relationships can be given a formal definition (functional) for purposes of more clearly indicating the underlying structure of determination of the conceptual model. Appropriately specified it may permit at a later stage some form of empirical testing and/or simulation.

Four fundamental relationships determine the model of income growth via consumption composition.

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<sup>15</sup> To this extent there is an analogy with the role of basic innovation in Neo-Schumpeterian theory. Incidentally, one may note that this approach would provide the latter with a demand side tempering its inherent technological determinism.

$$1) g = f(I)$$

$$2) I = f(\text{Sales trend}, Z, I_i)$$

$$3) I_i = f(T, d\text{Sales}, dC_c)$$

$$4) dC_c = f(I_i, NP)$$

$g$  = aggregate growth rate

$I$  = aggregate investment

$Z$  = degree of capacity utilization

$I_i$  = Innovative investment

$T$  = index of technology development

$D\text{Sales}$  = rate of growth of sales

$dC_c$  = change of consumption composition

$NP$  = new products

These relationships spell out the mechanism by which the composition effect rooted the structure of consumption, affects the pattern of growth and contributes to determine it.

In the two following sections we will see how this set of ideas and relationships can help to analyze and interpret the stylized facts of the two cycle of expansion the 1980s and 1990s in the US economy.

The reference to specific cycles of expansion has two purposes: it contributes a factual knowledge on the relationship between product innovation, consumption composition and aggregate growth, laying the ground for an interpretation of the period. On the other hand, it gives some more detailed description of the processes presented in abstract terms in the theoretical framework. To this extent it can therefore be seen as its complement.

## **6. The recovering 1980s**

### **6.1 Peculiarities of the 1980s cycle**

Hailed as a strong recovery after the years of stagflation the 1980s cycle begins with the most severe recession since 1950, followed by a dramatic rebound and a steady and progressively lower growth rate from 1983 to 1989.<sup>16</sup> Despite seven years of positive growth rates the average growth

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<sup>16</sup> I make reference here to the cyclical pattern of the economy of the in the post-war period. The entire analysis is based on four "peak to peak" cycles: 1958-66, 1966-73, 1973-79, 1979-8Cfr. Gualerzi, 2001, chapter 7). This choice stresses the relevance attributed to the 1960's cycle, the last cycle of strong expansion in comparison with the sluggish growth of the 1970's.

rate over the cycle 1979-1989 is modest for post-war standards, 2.6 percent, in fact in line with that of the 1970s.<sup>17</sup>

The second peculiarity for a strong upturn is a relatively weak investment spending.<sup>18</sup> At the same time there is evidence of a consumption-fuelled recovery, combined with deep changes in the consumption structure and in the income distribution.

Divergences from the pattern of expenditure forecast by an income led model (Cfr. Gualerzi, 2001, chapter 8) indicate that at least three categories of the twelve National Income and Product Accounts consumption expenditure categories have an unequivocal pattern of expansion above the predicted values: personal business, which includes financial services, medical and recreation.<sup>19</sup>

This is an indication of the areas of need most affected by innovation in consumption, in fact modifying quite significantly consumption composition. This is mirrored by the rapid growth and transformation of the industries serving these markets. The 1980s are indeed the decade of the rise of finance and the spread of financial services into the consumption basket of households. It implied a rapid industrialization of the delivery of these services, an issue of a more general process of industrialization of consumer services. This applies to a large extent also to the other two industries, that of medical and entertainment services, but also to tourism and travel.

We can conclude that in the 1980s one of the most significant processes of structural transformation of consumption is the rise of the new service industries where expansion of spending goes hand in hand with changes in the characteristics and delivery of its products.

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<sup>17</sup> The severe depression at the beginning of the cycle lowers the average growth rate of GNP over the cycle, contributing to give a growth scenario worse than it may otherwise be. However, the point of taking peak to peak intervals is precisely that of making possible comparisons between different cycle.

<sup>18</sup> Domestic Investment grows rapidly after a dramatic collapse in 1982, but by 1985 has already stabilized, with no indication of further growth. We may conclude that investment grows after 1982 and hardly at all after 1985. Other disturbing peculiarities of the “strong recovery” are the growth of debt, accumulated by both households and firms, slow productivity growth, even slow growth of output, relatively high unemployment and low level of utilization of productive capacity.

<sup>19</sup> The NIPA consumption expenditure categories are very large aggregates of consumption spending. We are here considering shifts that have complex explanations due to the specifics of the industries involved. Some of the divergence is accounted for by steep price rise, as it seems the case for instance for medical services, as well as number of other socio economic phenomena. To take one, which again applies to medical services, the aging of the population.

This, however, contrasts with the relatively modest part played by investment in the recovery. *Innovative investment* certainly had a role in the establishment of these industries, but, possibly because of its concentration in a handful of industries, did not drive the expansion. This would be consistent with a relatively weak process of consumption innovation *outside* the new consumer services industries. In other words, *innovation in consumption* did not affect in any fundamental way the forms of satisfaction of needs, at least not in a way consistent with a stronger expansion, as witnessed by relative weak aggregate investment and modest growth rates.

The point is precisely the form taken by consumption innovation and its relationship with technology development.

The benchmarks of a new epoch, located in information technologies, telecommunications, biotechnology and another few areas of scientific and technological research, represent indeed new long-term trends of technological development. During the 1980s they reach a new level of maturity. And yet, looking in retrospect, they appear at an early stage of development. Though important for process innovation and industrial restructuring, they were not able to sustain a generalized new investment wave, nor the creation of radically, or at least significantly, new consumer durables.

Since there are no major technological developments, acting as instruments of *long-term investment*, nor new consumer durables, the process of product innovation is led on the one hand by the introduction a new generation of improved consumer durables, on the other by the restructuring of consumers markets around a two distinct patterns of innovation, on the one hand, the definition of high standards of quality; on the other the diffusion of cheaper, imitation products.

## **6.2 Glamorous Consumption**

The list of what we can call “a second generation” of consumer durables, is rather long. However, the VCR, the microwave oven, the new TV sets, to mention the most important, are hardly new products in the way electric appliances were in the 1960s. rather a further step in an evolving path. They introduce new dynamism into consumption patterns, but do not sustain a comparable process of transformation of consumption patterns.

To contrast the effects of saturation, lacking real alternatives in terms of new products, what emerges is indeed a *divergent pattern of product innovation*. On the one hand, we have novelty and high quality standards, associated with the consumption and the life styles of the wealthy and emerging social strata; on the other, a process of imitation, based on the

industrialization of the same novelty at the lower end of the market, exploiting scale economies, cheap inputs and standardized design.

For consumer durables, such as automobiles, appliances and consumer electronics, but also for non-durables, like apparel and food, this translates into a strategy of introduction of new lines of products with higher standards of performance, which define the up-to date level of quality for specific areas of consumption spending. A good example may be the fashion industry. New lines of products embody most recent technologies. Typically this takes the form of substitution of mechanical and electrical devices with electronics components in durables, the increasing sophistication the technology of materials, components and ingredients mix for non durables, and the diffusion of computer based design and manufacturing for both. As a result of the new technology desirable characteristics of the product are more fully realized and new ones are made possible. Thus, in a competitive environment dominated by saturation and low growth rates in the markets that represents the bulk of consumption expenditure, the effort to gain a competitive edge depends on "technological obsolescence", i.e. updating the performance and perception of consumers' goods by means of technological improvement.

In the case of durables and non durables *product innovation on the one hand propels newness and hi quality novelty; on the other it sustains imitation.*

In particular, novelty does not generalize to the rest of the market in the way predicted by the traditional pattern of diffusion, with new products spreading throughout the basket of consumption of all consumers. Imitation of course implies that cheaper counterparts of the hi-quality durables and non durables as well as the items previously restricted to relatively small elites find their way into the basket of consumption and life styles of the less affluent consumers. But they are not the same commodities, and do not contribute to the same life style, to the extent that they have lost the hi quality attribute and the glamour of status and distinctive prestige consumption that sustains spending by the affluent consumers. Thus, we can identify a tenuous but clear line separating the imitation effect from the diffusion pattern of consumer durables in the 1960s and 1970s.

Rather than simply diffusing product innovation aims at different market. Products are designed, produced and marketed for two distinct consumers market. Thus, though sustained by industrialization, imitation is qualitatively different from the diffusion and generalization of novelty. We observe instead a transformation leading to a *macro segmentation of*



*consumption markets* (Gualerzi, 2001, chapter 11), which determines the specifics of product and consumption innovation.

Product innovation not only establishes distinctive characteristics of the same kind of products. It leads to a fundamental rupture, rather than continuity, in the patterns of diffusion. Especially it sustains a *polarized pattern of consumption*, distinguishing between high-quality, luxurious, status-creating goods and “standardized”, cheaper counterparts. This segmentation corresponds to distinct pricing policies. Product innovation aimed at high quality and elevated standards of performance is combined with a distinction between highly priced, high quality, “new” (up-to date) products and low priced, standardized, “old” products. The marketing effort is directed to present new, high-quality products, the standards of cutting edge consumption, as distinct from their old counterparts and from products, directed to less affluent consumers.

This restructuring of consumers markets can keep running the transformation of consumption along a complex pattern, organized around a polarization of consumption patterns. It can sustain consumption spending and indeed increase products variety and consumption alternatives. However, the burden of leading the transformation is restricted to the high quality standards and status enhancing characteristics of the new items and life styles of the wealthy, the social strata which see income and opportunities rising. They have both the capacity and the means to invent new consumption practices sustaining consumption innovation.

The hypothesis above suggests that in the 1980s recovery, *innovative investment* and *innovation in consumption* are mainly directed to industrial restructuring on the one hand and the reshaping of consumption patterns, more than to expansion in the traditional sense of capacity building and the diffusion of new commodities in fairly homogeneous consumption markets. Indeed in the 1980s technology and product innovation operated mainly through the reshaping of the life styles with respect to those prevailing in mass consumption, within an increasing complexity of consumers markets.

In the case of consumer services (entertainment, travel, tourism) we can speak of a transformation led by the industrialization of elite consumption, stressing standardization of products and routinization of consumption practices.

Thus, as opposed to the claim that technology and new products were the foundation of a grand expansion, the transformation rests on a subtle and pervasive mechanism stressing consumption spending as identification with the new standards of quality of the “glamorous” consumption of the new wealthy classes. Indeed this pattern of consumption innovation, while

unable to reverse the tendency to modest growth rates, was consistent with and supported by income dynamics and a new hierarchy of wealth.

### **6.3 Income distribution and social polarization**

The macro-segmentation of the market corresponds to distinct pricing policies, as outlined above. Firms market development strategies typically determine high prices for new, cutting edge products and low prices for old, standardized products. Indeed, the pattern of consumption innovation outlined above was consistent with and sustained by a quite clear distribution dynamics, dominated by a substantial stagnation of wages and a growth, though less than exceptional, of profits.<sup>20</sup>

The deterioration of the relative position of lower income earners is confirmed by the percentage of aggregate income going to the top fifth of the population (Consumer Income Series, p-60, Bureau of Census) which increases almost two points from 1981 to 1987, and by the median annual family income, which grows noticeably only for the two top fifths and especially for the highest fifth of the population (Bureau of Census).

The distribution dynamics can be explained largely by the labour markets dynamics. In fact, polarization in consumption is reinforced by a differentiation developing within the social structure, between the losers and the winners in the changing competitive environment. This is reflected in a growing segmentation of the labour market, between well paid and low paid jobs. The reference here is to the tri-partition of the labour market indicated by R. Reich (1992), which defines a compensation structure centered on a large minority of well paid jobs and a majority of low wage workers. The profile of the “symbolic analyst” is typical of that part of the labour force whose opportunities, and thus neediness, grow and therefore is the backbone of glamorous consumption.

## **7. The booming 1990s**

### **7.1 The ICT sector and the expansion**

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<sup>20</sup> A first indicator, Gross Hourly Earnings of Non-Agricultural Production Workers in 1982 constant dollars, shows that the decline of workers' compensation occurred at the end of the 1970's was not reversed during the recovery and that it remains through the 1980s at the level it was at the end of the 1958-66 cycle. Another indicator, Average Hourly Earning Index in constant 1977 dollars confirms that there is been only a modest improvement and that earnings remained well below the level reached in the 1970s. Data on profits do not give a clear cut picture. Corporate Profits after Taxes peak in 1979, come down sharply and recover after 1983. The Composite Index of Profitability, a more complex business indicator, grows instead rapidly from 1982 reaching a peak which is well above that of the 1960s and 1970s.

It is interesting to observe that the glamorous consumption of 1980s and the associated emerging macro-segmentation of the market seems have turned in the 1990s into a permanent change in the structuring of consumers markets. The main trend of transformation seems to be precisely the redefinition of the market in two layers, characterized by distinct strategies of market development. A provisional evidence of such a process is in the cover story of Business Week (March 17, 1997).

The story focuses on “two-tier marketing” as the fundamental market strategy of companies now “tailoring their products and pitches to two different Americas.” The distinction between “upscale” and “downscale” products runs through most items of consumption and includes the distinction between used and new cars and used and new clothing. More in general it suggests a now stabilized split between the pattern of consumption of the wealthy and that of the less affluent consumers. Within each of them new phenomena emerge, fueled by products variety, technological change and restructuring of distribution and communication channels.

The main difference in the 1990s is, however, the rise of innovation in consumption and a development of the need structure. Superimposed on the “two tier market” is the spreading of new products such as the cell phones, and in general advanced ICT telecommunication products, and especially the rise of services and products available on the Internet.

The expansion cycle of the 1990s sets in after a brief downturn in 1990 and 1991, less severe with respect to that of the early 1980s.<sup>21</sup>

Table 1

Average Annual rate %	60-70	70-80	80-90	90-00	96-00
Δ GNP	4.4	3.3	3.1	3.1	4.3
Δ Labour Productivity	2.9	1.0	1.4	1.9	2.6
Δ Employment	1.9	2.4	1.7	1.3	1.8
Unemployment	4.8	6.2	7.3	5.8	4.5
Inflation	2.3	7.1	5.6	3.0	2.0
Δ Real return S&P 500	6.6	-0.5	12.9	15.9	26.4

(Lossani, 2001. Sources: Bank of St.Louis, 2000; IMF 2000; BLS, 2000)

<sup>21</sup> The last two quarters of 1990 and the first one of 1991 show negative growth rates, but only 1991 has a negative annual rate. This compares with the negative growth rates in 1980 and 1982.

It is often described as one of the longest and strongest expansion of the post-war period. In fact, annual growth rates remained substantially in line with the average of the 1980s until 1995, except for a peak in 1994, to accelerate considerably from 1996.<sup>22</sup> Even so they were never close to those of the 1960s. (See Table 1) Nevertheless this provide some solid ground to argue for an expansion stronger than in the previous cycle.

There is also evidence that investment played a much bigger role and was at the basis of the acceleration of growth in the second part of the 1990s. A pivotal role was played by investment in the ICT (Information and Communication Technologies) sector, which experienced what can be called a real boom.<sup>23</sup>

This confirms that ICT sector had a fundamental role in the rapid growth of output and productivity in the second part of the 1990s.

The studies on productivity, despite differences of estimates and interpretations, all agree on three main phenomena: the growing importance of ICT products as investment goods in the productive process; the improvement of productivity *within* the ICT sector leading overall productivity growth; the role played by the very rapid efficiency gains and productivity growth in the semiconductors industry to determine these results. The link between productivity growth and ICT sector would then be explained on the one hand, by the spread of computers and communication equipment as part of the productive equipment, favored by falling prices and improvement of their capabilities; on the other, by the efficiency gains in the production of ICT products and, at least to some extent, in the manufacturing of durables.

The other side of this investment drive in the ICT sector is of course the impact on consumption composition.

From this point of view the development new ICT products and of Internet, is prepared by a first wave of innovative investment. The rapid diffusion of these products validated the investment strategy and sustained an investment boom, with innovation in consumption reinforcing product innovation and technological development. So, while there is evidence that investment played more of a role than in the 1980s, it appears that

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<sup>22</sup> Bureau of Economic Analysis, GDP per cent change based on chained 1996 dollars.

<sup>23</sup>“The growth rate of gross private fixed investment remained high in the following years, registering an annual average of 9% for the period 1993-2000. The increase was particularly high for machinery, equipment and software...which registered average yearly growth of 13.5 %...” (Maffeo, 2001, p. 8) It can be noticed that the proportion of investment in this sector accounted for by data processing equipment and programs rose from 45.5 % in 1991 to 72.5 % in 2000.

*innovative investment* in the ICT sector not only sustained the acceleration of growth in the second part of the decade, but also had strong spill over effects and a significant impact on the structural dynamics of growth.

## 7.2 Innovation in consumption: access and communication

As much as computerization was a phenomenon changing the organization of production, the rapid diffusion of ICT products have affected consumers markets and determined a major process of *innovation in consumption*.

The most clearly identifiable items of innovation in consumption are the new home electronics goods, the cell phones and computers as the hardware support for network access. They distinct impacts, larger and most complex as we go from home electronics to the Internet. They however share a common characteristic, that is, a rapid diffusion, combined with constant technical improvements and the addition of new features. Innovation in consumption has transformed these new products from status symbols and/or attributes of technology freaks into generalized items of consumption following a diffusion path similar to that of mass consumption.

Penetration rates provide a first evidence of the pace of diffusion these new products. Factory sales of cellular phones, including analog, dual band and PCS types, went from 1,830,000 units in 1990, with an household penetration rate of 5 %, to 57,000,000 units in 2000, with a penetration rate of 60 %. Factory sales of computers, including monitor, keyboard, mouse and other peripherals, went from 4,000,000 units in 1990 to 16,400,000 in 2000, with a penetration rate up from 22 % to 58%.<sup>24</sup>

As for the for innovation in consumption and the associated process of need development are cell phones and the Internet, it can be argued that consumer electronics have determined a new standard of consumption in certain areas of needs, that of home entertainment, for example, with the increasing use of digital signal for video and music and the spread of video games.

Cell phones and Network access are more important because they more fully realize an aspect of need development crucial to an understanding of the ICT boom, that of communication and access.<sup>25</sup>

Cell phones appear at first as an addition and an improvement of the telephone, not a new product in itself. However, cell phone amplify substantially the possibility of being in contact and make communication

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<sup>24</sup> EBrain Market Research, 2003.

<sup>25</sup> Jeremy Rifkin has captured this aspect (*The Age of Access*, 2000), though referring to a more general trend in which, in the net economy, access substitutes for property .

virtually available at any time and in any place. As such they build on a need of being in touch of parents with their sons and daughters, when traveling and sailing, as much as they make simple to take decisions and set up appointments, a part of the mobile office, which is indeed another new product made possible by the combination of processing capabilities with advanced telecommunication. Cell phones not only have more fully realized the need for communication, but have also generated additional need for communication and the transfer to more and more sophisticated information such as that contained in images. An important aspect of life style have been accordingly modified, together with the consumption practices associated with telecommunication.

The point, as it was stressed earlier, is how a new product becomes part of the consumption structure. Its position within the system of needs, realized in a specific composition of consumption, and the characteristics of consumption innovation determine the size of the induced effects, both in terms of further development of needs and stimuli to more investment.

Similarly, the Internet made possible a substantially different use of the computing capacity installed in computers. Here again is the issue of access and communication that is at the core of the new development. However, it had an even larger impact and created larger prospects of further development.

Information processing capabilities are now interconnected in a network. Indeed, the pivotal role played by ICT in structural dynamics cannot be appreciated without giving full relevance to the possibilities created by advanced telecommunications. The development of hardware and software have been increasingly oriented to networks, with two main results. On the one hand the development of networks externalities, on the other, the possibility of reorganizing productive processes, the transactions of goods and services, and in the end the supply of new products and services. Internet has created the condition for an unprecedented development of what was the much more narrow notion of distributed data processing and information services, adding a number of new services. Through the development of the network the effects of the rapidly growing computing capabilities actually determines the rise of new products and services and thus of consumption innovation.

This is the basis for a *composition effect* rooted in the increased sophistication of the ICT sector. It has two dimensions, one concerning the market for productive inputs, the other affecting consumers markets. This clarifies the complex and far reaching relationship of “ICT-driven development” not only to aggregate productivity growth, but also to structural transformation.

It appears however that during the 1990s the transformation was not enough of a validation for the amount of investment that created the boom. The growth prospects of a larger and deeper process of innovation in consumption created by ICT development failed to materialize. We could say that consumption innovation was not capable of filling the enormous expectations created by the development of ICT markets. Instead we witness a market failure, in the sense that these prospects fold back in a more conservative outlook. An example was the somewhat disappointing development of E- markets and the of many of the services on line, determining the collapse of many of the dot.com companies.

In fact, the acceleration of growth in the second part of the decade based on the relationship between innovative investment and consumption composition, lasted only a few years. It collapsed because induced investment driven by consumption innovation and further innovative investment, based on prospects of a even deeper transformation of consumption patterns, turn out to be a massive over-investment, especially in telecommunications and dot.com companies, given the actual pace of the transformation.

### 7.3 Distribution dynamics

From the perspective illustrated above the composition effect and the transformation centered on ICT products and Internet explain the phenomenal boom of the stock market. In turn this is in the literature the key to the effects of income distribution.

The latter is summarized by two clear trends. Several data confirm that the profits are at a post war peak, while real wages have grown at a rate lower than that of productivity in the entire period 1990-2000. It can be concluded that most of the productivity gains have been passed on to capital owners. On the other hand, returning to the table 1 which outlines the growth performance of the US economy in the post war period, it can be noted that the single indicator pointing at an indeed exceptional performance are the real returns in financial markets, as measured by the S&P 500 index.

One may ask why in a boom with a fairly low unemployment there has been little pressure to increase wages. There are in fact a number of reasons that might explain the lack of an explicit distributive conflict. The literature has focused on a new argument, maintaining that there was no distributive conflict over the level of wages because wages are only one part of workers income. This might be so considering the large number of workers that have their savings invested in the stock market, directly or through some mutual funds, or receive compensations based on their

company performance, and/or own shares of the company where they are employed.

Assuming that most of the US families have invested their saving in the stock market, the performance of the stock market becomes one of the main determinant of their incomes. The spread of the *worker-capitalist* combined with the exceptional performance of the financial markets in the 1990s then explains why a distribution of income increasingly skewed towards profits has not fuelled a strong distributive conflict. Indeed, *shared capitalism*, seems capable of reconciling the stylized facts of income distribution with the centrality of financial markets performance and the lack of wage, and therefore inflation, pressures arising from a distributive conflict.

One should, however, take this interpretation with a certain caution. While the existence of workers revenues originating in invested savings and a changing structure of workers income during the 1990s appear reasonable assumptions, the importance of workers capital income might be badly overstated.<sup>26</sup>

The weaknesses of the argument suggest to consider other, in fact complementary, explanations.<sup>27</sup> In particular, one may ask the question of whether the labour demand generated by the ICT industries has followed the same lines that which have determined in the 1980s an increased labour market segmentation, associated with different level and dynamics of wages. If indeed the ICT industries reflect and reinforce a demand for labour split between highly paid jobs for a minority and low paid jobs for the majority, we would then have a depressive effect of the level of wages.

## 8. Conclusive remarks

It is quite clear that in the perspective of an extension to the long run of the principle of effective demand the question of consumption composition becomes an issue. The dynamics of consumption investigated by Pasinetti quite clearly suggests the importance of new commodities and taste formation, directing the attention to the fundamental questions of the relationship between composition and growth.

Bils and Klenow ask the question of whether variety can account for shifts of consumption spending shares, beyond income and price effects. Their

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<sup>26</sup> Just to give a hint of the problem involved, Lester Thurow has argued that 90% of the gains in the stock market was pocketed by the 10% of the wealthiest families, while 60% of the families had no stock shares. (The Boom That Wasn't, *The New York Times*, p. A19, January, 18, 1999)

<sup>27</sup> It must be noticed that the stock market explanation of income distribution emphasizes also spending, sustained by the wealth effect generated a booming stock market, as a main reason for the expansion, downplaying the role of fixed investment.



empirical analysis shows that variety is important to determine the growth of spending. But says little about the relationship between variety and income creation. Indeed the relationship to growth remains unexplored except when variety includes quality improvement, since the latter does influence the level of real output, via a decline of the price level.

In the approach presented here consumption composition affects growth through investment in new products that act as fundamental stimulus for consumption innovation. The latter builds on the possibility of developing needs that is inherent to a system of market relations.

A simple model based on effective demand can therefore explain what remains otherwise quite hidden also in growth models of the new generation. In this framework the reference to product innovation reaches out where the analysis of consumption spending is insufficient and makes explicit the mechanics of growth implicit in the process of change of consumption composition. Focusing on innovative and induced investment in turn is the key to the demand of factors which affects income distribution.

In the 1980s we witness a composition effect determined by the rise of the new service industries, while consumers goods market are increasingly structured around a new pattern. Product innovation for high quality and the high segment of the market, the consumption of the affluent consumers, led innovation in consumption. The transformation can be distinguished from the diffusion process that the spread of automobiles and electric appliances in the 1960s led us to believe to be general.

It also affected the structure of need less than the new products such as the cell phones and the Internet. Indeed in the 1990s a significant and steady investment flows in the ICT sector, created the conditions for consumption innovation through the new technical possibilities embodied in new products. In particular, computers networks and cellular phones enlarged the access of firms and the general public to communication and information, a new area of need development. The income distribution associated with the composition effects of the 1990s indicate that the great majority of the benefits of growing productivity went to capital owners, confirming a long term trend of stagnation of real wage and pointing at the stock market as one of the determinants of income distribution dynamics.

## **References**

Bils, Mark and Klenow, Peter J. 2001a. "The Acceleration of Variety Growth", *AER*, May.

- \_\_\_\_\_ 2001b. "Quantifying Quality Growth", *AER*, September.
- Bresnahan, T.F. and Gordon, R.J.(eds.) *The Economics of New Goods*. 1997 *Business Week*, March 17, 1997.
- Caminati, M. 2004.
- Clark J., Freeman, C., and Soete L. 1982. *Unemployment and Technical Innovation*. Greenwood Press.
- Gualerzi, D. 1996. "Natural Dynamics, Endogenous Structural Change and the Theory of Demand: A Comment on Pasinetti", *Structural Change and Economic Dynamics*, Vol. 7, No. 2, June.
- \_\_\_\_\_ 1998 "Economic Change, Choice and Innovation in Consumption", in Bianchi M. (ed.) *The Active Consumer: Novelty and Surprise in Consumer Choice*. Routledge, London.
- \_\_\_\_\_ 2001. *Consumption and Growth: Recovery and Structural Change in the U.S. Economy*. Edward Elgar, Cheltenham, U.K.– Northampton, MA, USA.
- Ironmonger, D.S. 1972. *New Commodities and Consumer Behaviour*. Cambridge, Cambridge University Press.
- Lancaster, K.J. 1971. *Consumer Demand: A New Approach*, New York, Columbia University Press.
- \_\_\_\_\_ 1966. "A new Approach to Consumer Theory", *JPE*.
- Levine, David P. 1981. *Economic Theory*, Vol. I and II, London, Routledge & Kegan Paul.
- Lossani, M. 2001. Old Wine in the New Economy Bottle, ITEMQ, Università Cattolica, Milano, published in G. Nardozzi (ed.) *I rapporti tra finanza e distribuzione del reddito*, LUISS edizioni, Roma, 2002.
- Maffeo, V. 2001. "Effective Demand Versus Wage Flexibility: Some Notes on the Causes of the Growth of Employment in the USA in the Nineties", *Contributions to Political Economy*, Vol. 20.
- Pasinetti, L.L. 1981. *Structural Change and Economic Growth*. Cambridge, Cambridge University Press.
- \_\_\_\_\_ 1993. *Structural Economic Dynamics*. Cambridge, Cambridge University Press.
- Reich, R. 1992. *The work of Nations*, Vintage Book, New York
- Verspagen, B. 2002. Structural Change and Technology. A long view. Working paper 02.13.