Pop competitiveness [*]

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Introduction

This paper deals with one of the most (ab)used words in current economics: competitiveness. The title explicitly alludes to Paul Krugman's famous book *Pop Internationalism*, the first essay of which, "Competitiveness: a dangerous obsession", argues that

> "concerns about competitiveness are, as an empirical matter, almost completely unfounded [...] the obsession with competitiveness is not only wrong but dangerous. [...] thinking in terms of competitiveness leads to bad economic policies on a wide range of issues".[1]

Krugman's thought is well known and can be summarised in two main points: *a*) the concept of national competitiveness is elusive because countries do not have any bottom line, and countries, unlike firms, do not go out of business irrespective of whether they are happy or unhappy with their economic performance; *b*) international trade is not a zero-sum game. We will not enter here into the debate

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[*] We thank three anonymous referees for helpful comments. We also benefited from comments by participants at EAEPE Conference in Lisbon, and by seminar participants at the Faculty of Economics, University of Calabria. The usual disclaimer applies. We thank CNR and the University of Bologna for financial support.

[1] Krugman (1997, pp. 2-3); the article was previously printed in Council of Foreign Relations (1994).

which arose around Krugman's challenge,[2] but we will implicitly share his view by showing that the concept of competitiveness is elusive[3] in so far as it neither has a well defined meaning nor is captured by unambiguous indicators.

There is a strong tendency amongst economists, politicians and journalists to use buzz-words without taking any trouble to define them. Hence we find scant precision in the use of these words, which thus end up meaning quite different things. In our opinion, competitiveness is one of these words.

Competitiveness is not a 'yes-or-no' concept but a fuzzy one, and we believe that, when it is used, a 'relative-to-what' argument should be always specified. Moreover, the missing univocal definition of competitiveness obviously translates into a missing univocal measurement, thus rendering highly questionable any clear quantitative evaluation it may bring to policy prescriptions.

Our aim here is not to survey the huge literature on this theme but, rather, to focus on a few streams, which should suffice to elucidate our point. We will discuss competitiveness at the various levels at which it is addressed in the literature: the competitiveness of a country (Section 1), the competitiveness of a 'local system' (Section 2) and the competitiveness of a firm (Section 3).

Since the interest here is mainly on firm competitiveness – at both micro and macro (international competitiveness) levels – we will deal neither with individuals nor with institutions; neither we will follow the debate along the lines developed by subjectivism or evolutionary economics, which deal mainly with competition rather than competitiveness.

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[2] For a collection of the most interesting articles on *Foreign Affairs* – where Krugman first published his contribution – see Council of Foreign Relations (1994).

[3] In this respect we basically disagree with Reinert (1995, p. 24), while sharing the tone of discussion on competitiveness, in so far as he affirms that "although often misused and mostly ill-defined, the term competitiveness properly used does describe an important feature in the world economy".

1. The macro-level: the competitiveness of a country

1.1. *The (non) definitions of competitiveness*

In the dictionary, competitiveness is defined as a derivative word, coming from 'to compete' or from 'competitive', calling for rivalry or striving. However, the etymological root – the Latin *cum petere* – possesses a prevalent co-operative message: *cum* means 'with' and it usually aggregates (things or persons; the opposite meaning does exist but it is less frequent); *petere* means 'to aim at' (besides 'to ask'). Over time the originally prevalent sense of co-operation has finally been replaced by the current connotation of opposition.

More importantly for our purposes, there is no common shared opinion among economists about what competitiveness means. Some, if questioned, give answers covering a wide field of issues: from behavioural aspects (competitiveness as a propensity to challenge), to specific microeconomic topics (usually concerning minimum production cost or maximum firm's profit, together with the innovation abilities of the entrepreneur), to macroeconomic arguments (mainly linked to the pattern of real exchange rates). Thus it is hardly surprising that the term competitiveness appears neither in economic dictionaries (of most common use) nor in any glossary in the most popular textbooks on micro and macroeconomics.[4] As a consequence, the range of definitions available in the literature is bewildering, and eloquent in itself, confirming that competitiveness is a concept that resists definition. To have some idea of this, let us take a look at some of the most recent and fashionable definitions, in chronological order.

> 1985: "Competitiveness cannot be defined as the ability of a nation to maintain a positive trade-balance [...] is also not assured or reflected by the ability to maintain and increase employment in the manufacturing sector [...] must similarly be tied to its ability to generate the resources required to meet its national needs" (US President Commission, quoted in Francis 1989, pp. 15-16).

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[4] See, e.g., Palgrave (1915), and the subsequent editions; Sills (1968); Greenwald (1982); Kuper and Kuper (1985); Pearce (1992). Among textbooks: Burda and Wyplosz (1993) for macroeconomics, and Pindyck and Rubinfeld (1995) for microeconomics.

1985: "National competitiveness refers to a Nation State's ability to produce, distribute and service goods in the international economy in competition with goods and services produced in other countries, and to do so in way that earns a rising standard of living" (B. Scott and G. Lodge eds, *US Competitiveness and the World Economy*, Harvard Business School Press, quoted in Reinert 1995).

1988: "[Competitiveness] refers to the ability of a country to realize central economic policy goals, especially growth in income and employment, without running into balance of payments difficulties" (Fagerberg 1988, p. 355).[5]

1990: "The only meaningful concept of competitiveness at the national level is national productivity" (J. Porter, *The Competitive Advantage of Nations*, Macmillan, quoted in Reinert 1995).

1990: "Competitiveness is a political concept [...it] relates to the observable" (Sharples 1990, p. 1279).

1992: "Our ability to produce goods and services that meet the test of international competition while our citizens enjoy a standard of living that is both rising and sustainable" (M. D'Andrea Tyson, *Who's Bashing Whom*?, Washington Institute for International Economics, quoted in Krugman 1997, p. 7).

1992: "Competitiveness may be defined as the degree to which, under open market condition, a country can produce goods and services that meet the test of foreign competition while simultaneously maintaining and expanding domestic real income" (OECD, *The Technology/Economy Program*, quoted in Reinert 1995).[6]

1994: "World competitiveness is the ability of a country or a company to, proportionally, generate more wealth than its competitors in the world markets" (Geneva World Economic Forum, in Aiginger 1996, p. 125).

1995: "Competitiveness is a powerful means to achieve rising living standards and increasing social welfare. Globally, by increasing productivity and efficiency in the context of international specialisation, competitiveness provides the basis for raising people's earn-

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[5] To be precise, Fagerberg (1988) hazards this definition after having stressed how rare it is to find clarification of the country-competitiveness concept even in contributions which aim at measuring it.

[6] Reinert (1995) accepts both this definition and the one by Scott and Lodge.

> ings in a non-inflationary way" (Competitiveness Advisory Group – Ciampi Group –, "Enhancing European Competitiveness", First Report to the President of the Commission, the Prime Ministers and the Heads of State, quoted in National Competitiveness Council of Ireland 1998).
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> 1995: "Competitiveness should be seen as a basic means to raise the standard of living, provide jobs to the unemployed and eradicate poverty" (Competitiveness Advisory Group, "Enhancing European Competitiveness", Second Report to the President of the Commission, the Prime Ministers and the Heads of State, quoted in National Competitiveness Council of Ireland 1998)
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> 1996: "A country is said to be competitive if it sells enough products and services, at factor incomes in line with countries' (current and constantly changing) aspiration level, at macro-conditions (of the economic and social system) seen as satisfactory by the people" (Aiginger 1996, p. 141).
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> 1996: "The ability of a country to create added-value and thus increase national wealth by managing assets and processes, attractiveness and aggressiveness, globality and proximity, and by integrating these relationships into an economic and social model" (International Institute for Management Development, in *The Economist*, 01/06/96, p. 94, quoted in National Competitiveness Council of Ireland 1998)

The list could go on, but the above seems to lend sufficient support to Krugman's view that macro-competitiveness proves approximately defined "as the combination of favourable trade performance and something else" (Krugman 1997, p. 7).

A different sensibility prevailed years ago, when very clear-cut definitions were usually provided. Balassa's definition furnishes a good example:

> 1964: "We can say that a country has become more or less competitive if, as a result of cost-and-price-developments of other factors, her ability to sell on foreign and domestic markets has improved or deteriorated" (B. Balassa, quoted in Frohlich 1989, p. 22).

Various factors concurred to change the way competitiveness was perceived. On the one hand, economic theory enjoyed an extension of scope thanks to the increasing importance of certain issues, in-

cluding that of sustainable development, and the need for a more interdisciplinary approach resulted in a certain contamination of concepts. On the other hand, increasingly vociferous mass-media brought about a more facile way of speaking about economic facts, no matter how imprecise and sloganeered.

Thus competitiveness has become a fuzzy concept, regarded with suspicion by all sorts of intellectuals. Competitiveness is not a concept that goes down well with left-wing thinkers, who tend to stress conflict and view things in terms of a zero-sum game. According to this line, competitiveness necessarily brings about a reduction in employment with spill-over effects on commercial partners: efforts for greater competitiveness tend to export unemployment. The more orthodox researchers are also sceptical about competitiveness, although for different reasons: Krugman literally makes fun of competitiveness, interpreting it as "a kind of ineffable essence that cannot be either defined or measured".[7]

1.2. *Ambiguities in the measurement of aggregate 'competitiveness'*

The missing fit between a unique clear concept of competitiveness and macro-performance could be a reason why there is blurring in measures of competitiveness. How can we measure something that has no clear-cut definition? In many different ways, depending on 'the' definition we apply. Thus there exists a huge empirical economic literature based upon likely or unlikely indicators of competitiveness, such as productivity, terms of trade, real income, relative unit labour costs, and so on and so forth. The variety of different results emerging after even a slight change in the most well grounded indicators can be quite intriguing.

In the following pages we will briefly outline the best known and most commonly used indicators, pointing out their conceptual inconveniences. We will consider price and profitability indicators together, and separately from those connected to trade performance,

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[7] Krugman (1997, p. 32).

rather than using the more common distinction between 'price' and 'non-price' indicators.[8]

1.2.1. Price and profitability indicators

Prices. Prices are unanimously considered as a (if not *the*) relevant variable. Consensus is not unanimous, however, when the question is what prices should be used in a relative form in order to disentangle the ingredients of competitiveness.

The most popular compound price-variable in the international context is the real exchange rate, whose increase is regarded as a signal of greater competitiveness**.** As is well known, nobody would be interested in aggregate price-competitiveness if purchasing power parity (PPP) held: every change in the price level would be offset by an equal change in the nominal rate. Unfortunately, it seems that 'absolute' PPP does not hold and that 'relative' PPP (i.e., changes in nominal exchange rates should be equal to the difference between the rate of growth in domestic and foreign prices) merits some reliance only as a very short-run indicator of market nominal rate deviation from the equilibrium value implied by the relation itself. The causes of this empirical failure have been traced to different factors: hysteresis due to costs of adjustment in international trade, uneven speed of adjustment of financial and good markets, less than perfect substitutability of traded goods, divergence in the relative growth of the traded-goods sector *vis-à-vis* the non traded one.[9] Thus, many indicators based on the PPP have been built with the aim of measuring the real exchange rate, that is to say the deviations from the PPP-implied equilibrium level of nominal exchange rate.[10]

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[8] The case of Germany in the mid '80s is a good example of the fact that price-competition is a partial approach: price-competitiveness got worse (both because of the DM strengthening and of the increase in labour costs without any balancing movement in productivity) but German trade performance could hardly be better. Pilat and van Ark (1994) explain this 'paradox' through the growing trade relations between Germany and Eastern Europe countries. By so doing they implicitly admit that different classes of indicators can well be incoherent.

[9] For a concise review, see Clark *et al.* (1994) and Bartolini (1995).

[10] For recent surveys on these indicators, see again Bartolini (1995), Clark *et al.* (1994) and Lipshitz and McDonald (1992).

The main difference among these indicators is the nature of the price indices used for deflating the nominal exchange rate. The variety of price indicators is large and depending on the chosen index; accordingly, the empirical scenario proves variable, as does interpretation of it. To take a straightforward example of the kind of problems we refer to, let us take the GNP deflator, which is based on the largest possible basket. It includes the price of both traded and non-traded goods, and it is quite common for the latter to vary through countries while the former tends to a substantial equalisation. Thus, if a given country faces a lower rate of increase in productivity in the sector of non-traded goods, it will experience a real appreciation, i.e., 'a loss in international competitiveness' even though this effect comes from price-dynamics in the non-traded sector which by definition does not have anything to do with international trade. Similarly, other price indices possess the same or different shortcomings. The relative price of manufactured goods, for instance, is possibly the most commonly used in order to assess competitiveness quantitatively. In fact, quantity and price evaluation is simpler for manufacturing than for the services, while manufacturing is also thought to be closer to the technological frontier than any other sector. Moreover, wage dynamics are more closely linked to productivity in this sector than elsewhere; manufactured goods are traded and hence more affected than others by foreign price dynamics. Too bad that almost everywhere manufacturing as a percentage of GDP is decreasing, thus losing relative importance as a measure of relevant prices; all recent records show that the contribution of the services to GDP growth is increasing and it is now more than two and a half times that of manufacturing on a EU average.[11] Another example is the consumer price index – a very common indicator[12] – which cannot be said to measure the market and production conditions faced by domestic producers (competitiveness?) properly in so far as it contains import prices,[13] not to speak of

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[11] Eurostat data; see also, e.g., Scarpetta *et al.* (2000) and Prometeia (2002).

[12] The measure of competitiveness currently used at the International Monetary Fund are a CPI-based real effective exchange rate (REER), and a unit labour costs based REER (see Bartolini 1995). We will argue on the latter later on. The OECD, too, uses unit labour costs in manufacturing, CP indices and export unit values of manufactures as a basis for indicator of relative competitiveness. The OECD then adds a sophisticated weighting pattern for the weighted average it uses (see Durand and Giorno 1987).

[13] See again Clark *et al.* (1994) and Bartolini (1995).

the export unit value indices that so many studies still rely on, despite unanimous recognition of their inaccuracy.[14] Thus, given that each price index – i.e., the relative export price, the relative price of traded-goods, the relative price of labour, etc., which are commonly used as well – is characterised by its own 'cons',[15] each measure of competitiveness is biased by definition. Prudence would then suggest at least computing several of the possible indicators and checking if they go the same way before asserting this or that conclusion on 'so called competitiveness'.[16]

The real exchange rate, which is based on some kind of price assessment, consequently proves to perform as a partial and controversial indicator, even in its 'effective' version, which should be a more accurate measure of exchange relations, but which obviously suffers from the same problems.[17] Not so very paradoxically, a situation of no-movement in the real exchange-rate can hide changes in the domestic or foreign production sphere, meaning that the real exchange rate might not even represent the profitability opportunities of the firms. In fact, suppose that firms do not alter their prices, no matter why, when production-costs change; in this case, the real effective exchange rate does not vary but micro-conditions (competitiveness?) do.

Profitability. Profitability indicators are strictly based upon labour-cost per unit of production. It is by no means clear why we should concentrate solely on this component of the total production cost, thereby neglecting intermediate inputs cost per unit of product or, even more importantly, the mark-up component or the entrepreneurial reward per unit of product. Explicit consideration of these elements could afford some important insights into the competitiveness of the entire production structure. We are not aware of works where intermediate goods are considered an element of, at least potential, competitiveness. On the other hand, in the rare works where mark-up is explicitly taken into consideration (for instance, Rowthorn and Ramaswamy 1997 and Lennan *et al*. 1986), evaluation of it goes in the opposite direction, i.e. as a straight indicator of competiti-

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[14] See, Kravis, Lipsey and Molinari (1990) and King (1993).

[15] The usual quotation is Kravis and Lipsey (1971). A very good discussion is provided by Durand and Giorno (1987 pp. 149-53).

[16] As Shone (1989, ch. 17), for instance, does relatively to the UK.

[17] For lively discussion on this topic, see Wright (1993) and Maciejewski (1983).

veness. Indeed, we might even go as far as asking why a greater return on capital (i.e., a greater burden on the production-cost side) should in itself be considered as a good proxy of product competitiveness in contrast to labour, which is a cost element as well. We will return to this variable in the next section, and we will see a possible reason, but the above consideration should not be always silenced, as it is.

Neglecting this question,[18] the mainstream literature considers competitiveness as synonymous with unit labour-cost, i.e. the ratio between nominal wage and average labour productivity. We should remember, however, that nominal wage dynamics are quite a different matter from those of average labour productivity,[19] and that – apart from the bias pertaining to the exchange rate used for the conversion into a common currency for comparison purposes – there are cyclical components which can be country-specific.[20] Therefore, from both the descriptive and normative point of view, changes in unit labour-cost which hide changes in one or the other component do not evoke equal scenarios or identical remedies. The labour-cost movements have different explanations in different theoretical paradigms. Let us suppose, for instance, we are facing an increase in real labour-cost. Had it been provoked by a rightward shift in the labour demand (owing to a positive technological shock) we should expect – in a neo-classical framework – favourable consequences on product competitiveness. Had it been provoked by institutional factors, like the political action of trade unions or the size of unemployment subsidies – in an insider-outsider theoretical environment – the result would be negative on the 'competitiveness' of the firms. Thus, evaluation of it crucially depends on a theoretical *a priori.*

As far as productivity is concerned, the overall scenario looks no better. In an important contribution evaluating the empirical literature on productivity and proposing an international agenda for research on this topic, Jorgenson (1992, p. 291) points out that "productivity measurement is not settled among economists [... and] the data are inappropriate for assessment of productivity".

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[18] Very brief reference to this aspect is exceptionally made in Wright (1993).
[19] See, *inter alia*, Fagerberg (1988) and Lipshitz and McDonald (1992).
[20] This element is discussed in Lennan *et al.* (1986).

Alternatively, in terms of labour productivity, the applied literature on competitiveness often uses total factor productivity, on the grounds that growth can also be obtained by a more intensive usage of factors themselves.[21] Is there any clear reason why a growing economy should be more competitive *by definition*?[22] In this respect, we cannot but again quoting Krugman's (1994), and Young's (1992) thesis concerning the absence of any "miracles" in the case of the amazing growth of the 'South-East Asia Tiger' economies. Again, both motivations and effects of an increase in factor intensity or, alternatively, in their 'pure' productivity, are quite different and, consequently, the social welfare implications as well as firms 'competitiveness' are also different. If total factor productivity increases, price-competitiveness might improve because of factors-saving, holding product constant; if, on the contrary, a greater amount of factors are employed, we would expect a likely decrease in competitiveness (at least beyond a given level of production). Moreover, the increase in total production brings forth more imports, thus implying a logical contradiction in that – as we will see later on – a growing amount of imports is usually presented as an inverse indicator of competitiveness.

1.2.2. Trade performance

There is a widespread belief that greater competitiveness means greater relative ability in selling domestic products on foreign markets. Thus, trade performances should prove the most appropriate indicators for evolution in competitiveness.

Export-shares are one of the leading concepts in the big family of trade-performance indicators and are very frequently used to assess competitiveness. In Leamer and Stern (1970) – one of the most famous contributions in the field of applied international economics – the

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[21] Leaving aside the decades long debate on the meaning of total-factor productivity derived from the aggregate neo-classical production function, it is to be noted that very recently (Reati 2001) there has been a new critique on TFP as an appropriate measure of technical change, in the face of the current technological revolution which presents embodied (in capital goods) technical change.

[22] The classical argument described as obvious (as in Boltho 1994) is: *above average* growth calls for more import penetration; *fixed exchange rates* require expansion in export or in import-substitute, or, to put it in other words, a *fast* growing economy must preserve its tradable-sector 'competitiveness'. The italics are intended to stress the minimal specific conditions necessary to affirm it.

measure of international competitiveness is exclusively addressed through constant market-share analysis. In addition, their approach illustrates very clearly the exclusiveness of this indicator in the literature of those times: the authors (Leamer and Stern 1970, p. xi) say that the aim of the book was

> "to write something general [...] that could serve as a guide and reference work for economic graduate students, academicians, and practising economists in private and government circles",

i.e. for everybody concerned with economics.

On a constant market-share analysis basis, each divergence between the export growth implied by this hypothesis and actual export growth is attributable to competitiveness. In other words, the idea is to give a name – competitiveness – to what is not explained: competitiveness as a residual just like another well known unexplained variable, namely technical progress in the Solow tradition. The main conceptual shortcoming of the export-share approach lies in its being exclusively supply-oriented. On the contrary, export-growth can equally well be demand-determined, as the authors themselves remind us. It can depend on

> "differential rates of monetary inflation, differential growth rates of available productive factors and the responsiveness of export supply to the domestic supply of these factors, differential rates of productivity increases, [and] the extent to which the country is concentrated in exports to very rapidly growing markets" (Leamer and Stern 1970, p. 176).

For instance, regarding the last point, think of a country whose importing partners are experiencing fast growing demand: it would probably end with a rise in its prices due to capacity constraints, thus losing market-shares and proving less competitive than another country whose export flows go towards partners with flat demand. In other words, countries can have a trade structure, mainly determined by their history and geography, which is binding them, at least in the short and medium run. Last but not least, even accepting the reductive feature of supply being the engine of export-growth, we cannot ignore the obvious fact that it will not apply to countries exporting mainly natural resources. However, export-share analysis has not been abandoned, as perhaps it should have been; on the contrary, it has been enhanced with important theoretical considerations such as the rele-

vance of the growth in knowledge as well as in the relative capability of acquiring technology.[23]

Evoking technology – in its multiple aspects related to the creation, diffusion and practical application of knowledge – leads beyond the Hecksher-Ohlin-Samuelson tradition, which lets competitiveness simply emerge in the matching between factor endowments and their relative intensity within the production process. This extensive new literature on technical progress, human capital formation, industrial organisation and learning processes[24] simply lets the very concept of factor endowments as the exclusive origin of trade disappear from the picture. However, this very important stream of economic theory seems to seek more to explain the differences among countries – the determinants of their export performances – than to explain the consequences of such differences, their relative 'competitiveness'. Nevertheless, adding new elements of reflection helps to widen the scope for measurement of the phenomena. Thus, some authors like Muellbauer (1991) and Aiginger (1996) worked to enlarge the spectrum of the variables to consider in order to be able to address competitiveness. Social development indicators such as life-expectation, status of health care system, crime-indices, system of education and so on should enter the picture in addition to the more traditional variables.

Closely related to this approach, in so far as the shared idea is that it is a basket of elements that constitutes competitiveness, is the concept of the 'attractiveness' of a country as a modern synonym of competitiveness: a composite picture of elements including fiscal treatment, labour relations, political stability and strategic geographical position, which brings a country to prevail over other not so dissimilar countries in international consideration and attention: Ireland is the obvious reference, the most recent and impressive case.[25] We will come back to this issue at the end of this section.

To take things in order, however, let us now go back to the specific point of the trade performance indicators that are largely used.

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[23] Two examples at a ten year distance: Fagerberg (1988) and Padoan (1996, especially chs 2 and 6).

[24] On the specific relation between these variables and competitiveness, see, for instance, Dosi and Soete (1983); Dosi (1992); Hughes (1992); Landau (1990 and 1992); Gustavsson, Hansson and Lundberg (1996).

[25] See, among many, Barry and Bradley (1997). For a description of the bulk of policies that the Irish government activated with the aim of acquiring 'attractiveness', see Barry and Bradley (1997) and Ruane and Gorg (1997).

Some measure of the balance of payments is by far the most common one, along with the above considered export-shares. Let us briefly recall the main ones, and simply point out their most evident inconvenience:

a) *The overall balance*. This is the official position of a country *vis-à-vis* the 'rest of the world'. While it seems a very useful concept, so impressively summing things up, it proves a misleading indicator because it is the result of very different patterns: the current-account is strictly related to the production sphere, which is the main topic here, while the capital-movements sector is completely unrelated to it. The Mexico-story, ironically recalled by Krugman,[26] should suffice to warn off this indicator for 'competitiveness'-uses.

b) *The current account balance*. This seems inappropriate for the same reason: it originates from the exchange of goods *and* services, 'products' that undoubtedly have quite a different nature. In a world where the exchange of services has grown very substantially both in weight and strategic relevance, the use of the current account balance as an indicator of (industrial) competitiveness proves misleading (as the relative price of manufactured goods only, recalled above). Moreover, it could also give the wrong signal: since the switch between services and industry implies an increase in industrial imports to meet demand, the current account balance may well happen to remain constant, thus giving no signal either of the evolution in services or of the change in the composition of trade.

c) *The trade balance*. This seems misleading as well, in so far as conventional wisdom attributes all the virtues to the surplus. It is well known how high the potentiality for growth is; this comes from the usefulness of imports in providing the economy with either cheaper, or more technology-intensive goods. Nor should it be forgotten that one man's imports are another man's exports, and when one man's income grows his demand increases as well, in the traditional foreign trade-multiplier story. On the other hand, a surplus can be ambiguous because it could, for instance, hide deep structural transformations within exports, with an increase in one sector's sales along with a decrease in another sector's 'competitiveness', as in phe-

[26] Krugman (1997, p. 4).

nomena of the Dutch-disease kind. The exploitation of new resources or an exogenous increase in the price of raw materials, owned by the country, creates a trade surplus at the expenses of the manufacturing sector. In other words, the indicator points to an unaltered or even greater degree of 'competitiveness' while a process of 'de-industrialisation' is running on, which is very often reputed an indicator of decreasing competitiveness. Still on the inadequacy of the trade balance as an indicator of competitiveness, let us remember the case of the UK during the '80s, when the British government promoted more imports (thus reducing the surplus) precisely with the aim to preserve the price-competitiveness of English products challenged by the surplus generated by the oil-price increase, which would have led to appreciation of the pound. Last but not least, it is worth recalling that international trade should no longer be identified with the exchange of goods and services, being more and more oriented to acquisition of firms and international merging, which can represent an alternative to trade itself. In fact, the activity of the multinationals has recently been turning towards the industrialised countries, with a growing trend in foreign direct investment among them. The literature on FDI used to attribute these capital movements to the existence of a higher return on capital in the host country, which is an indicator of unexploited profits, and potentiality for growth. In this respect, FDI can be rightly seen as an indicator of competitiveness, because new inbound capital is expected to act as an extra-engine for growth, thus accelerating the overall pace of expansion. However, when FDI-activity takes place among industrialised countries, which are home and host countries simultaneously, and where differences in factor-prices and relative returns are not so great, this means that other factors are at work. Specifically, the peculiarity of these more recent capital movements is seen as the outcome of internal industrial organisation strategies,[27] where the general conditions of a country do matter. Competitiveness should consist of this capacity to attract foreign capital, which could then lead to a further growth of the host countries. This view shows the multiplicity of aspects that the term competitiveness – still vague in its quantitative expression – should possess.

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[27] The literature on FDI is huge. For the points made in the text see, for instance, Graham and Krugman (1993). One of the most recent and at the same time consolidated contributions on FDI is Braunerhjielm and Ekholm (1998).

An additional, very common, indicator of competitiveness is the import to GDP ratio. The higher this ratio, also called import-penetration, the less competitive would be an economy. This point, however, does not seem to have sound economic bases: a growing GDP calls for a larger amount of imports, and there is no reason why a speedier growth in imports than in GDP should mean a loss of competitiveness rather than being considered, for instance, as a consequence of the need to enlarge production just because of a stronger 'competitiveness'. An increase in the import-GDP ratio could indicate the existence of structural changes in progress, like the growth in services at the expense of manufacturing recalled above. Thus, this indicator, more than 'competitiveness', simply reflects the different elasticity of demand components.

Once again it should be noted that competitiveness – even in the specific aspect of the open economy performance – is a compound concept, where elements coming from different streams of the economy cross together:

> "Changes in the overall competitiveness of a country [...] can be factored into several elements. One is the set of changes in competitiveness within industries. A second is their comparative advantage, which determines the extent to which they produce and export in each industry. And a third is the rate at which world trade grows in each industry. The last is partly a reflection of the rate of growth of demand and partly a result of shifts in the degree to which demand is met by each country's local output in each industry" (Lipsey and Kravis 1987, p. 160).

In other words:

> "[...] the measurement of competitiveness is – even within a well defined conceptual framework – very much a matter of compromises with available data, and entails a number of trade-offs among different criteria and objectives. In addition, a number of technical considerations arise in the construction of competitiveness indicators, not all of which have unambiguous solutions, even in theory" (Durand and Giorno 1987, p. 148).

2. The meso-level: the competitiveness of a local system

The label 'meso-level' is used to indicate an intermediate level between the individual and the aggregate macro-level. The industrial district and the local area (i.e. the region) are the cases of local system which we are interested in here.

The definition of 'system' would deserve a separate paper altogether. However, to simplify, let us assume a system to be a number of subjects sharing a body of rules and a minimum set of objectives; the system is generally the product of the evolutionary interdependence among subjects, in the presence of past and current historical facts. Our definition clearly requires some common objectives, even though different subjects may have (and generally do have) different individual goals. Furthermore, a body of (formal and especially informal) rules is a necessary condition for a system to exist. The set of common knowledge, common problems and common efforts represents the justification and the need for this level of analysis. Reference to history itself is not irrelevant: a large body of literature stresses the truly important consequences of chance events characterising economic and social history.[28]

2.1. *The competitiveness of an industrial district*

When the district comes into the question, the dynamic profile of competitiveness emerges clearly and the uselessness of the indicators based on production costs is even more evident since we now have to take into account several firms that are connected through a number of informal links together with the more traditional formal ones. Nevertheless, aggregate profits, value added, market share covered by the district, unemployment rate, labour productivity, or per capita income are frequently used to measure districts' (and regions') competitiveness.

Difficult as it is to gather all these elements in an indicator or in a set of indicators, some efforts have been made. Just to give an example, Steinle (1992) provides a measure of competitiveness involving

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[28] See Becattini (1989 and 1991) and Devine *et al.* (1996).

about thirty variables that cover several different 'abilities' of an area: full employment, product differentiation, growing income and value added, appropriate commercial networks, and so on. Clearly, it is hard to have pure economic connotations in such indicators. Needless to say, these indicators have more shortcomings at this level than they had at the country level, given the peculiar aspects of the district recalled above.

Our main critical observation on this kind of indices, however, rests on a different point: in our view, in order to deal with the issue of the performance (competitiveness?) of the industrial district, it is necessary to take into account how the district changes throughout its life, and how the importance of different elements evolves. With this purpose in mind, we follow the sociological analysis of Araujo *et al.* (1989), which is devoted mainly to competition within an industry but which can also be adapted to the case of the district. This analysis reveals a sort of 'life-cycle' of the system. During the different stages several aspects change: the awareness of individuals of their belonging to the district and their contribution to the general goal; the nature of competition; the extent to which it is important. According to these authors four basic steps may be identified during the life-cycle: *a*) the community stage, *b*) the informal network stage, *c*) the formal network stage, *d*) the club stage. In the first stage, there is little awareness by subjects of belonging to the system, and the existence of a common goal may be unclear; the main problems concern technological aspects of the production process. During the second stage (phase *b*) informal relationships emerge and reciprocal faith and loyalty govern personal behaviour. As the size of the district grows, room for opportunistic actions emerges and the consequent reaction is the constitution of formal contracts (phase *c*), aiming at limiting opportunism. During the last stage, the main worry is the exclusion of possible external subjects from the benefits accruing from the knowledge shared within the district. As a consequence, the district becomes similar to a club, generating spurious public goods. Over time, the source of success changes. In particular, the relative importance of professional roles changes: technicians are very important in the early stages, and become ever less important as the district evolves. The services sector gains relevance and the legal aspects become vitally important in the 'club' phase. The reduction of costs may be attributed to the ability of technicians in the district's (and the product's) early development, to

the widespread circulation of ideas and technical solutions in the middle stage, and to the sharing of services in the advanced one.

A further critical observation on the aggregate measures of district competitiveness is possible. Despite the high number of components, this kind of indexes never can capture all the potentially relevant determinants. Two examples are provided. First, efforts made in the direction of human capital accumulation rarely appear among the determinants of competitiveness measure, which is surprising, especially because the literature stresses the importance of human capital in each stage of the district's life.

Training of a 'learning by doing' type is provided, to some degree by the constituent elements of the district. Yet, specific as well as general education of people belonging to a district may be lacking: for instance, in several successful Italian districts formal educational levels are low and firms are generally of limited size, unable to afford the financial resources required to provide re-training for their employees. Thus, the adoption of technologies developed abroad is generally difficult.[29] These facts show the provision of basic education to be an important public good, whose cost should be computed and considered as a part of the overall production cost.

The second example concerns the measure of the degree of competition within the district: Becattini (1991), for instance, suggests that the ability to limit competition within the district gives rise to a stable patterns of prices, that in some stages of the district's life can benefit future developments of the district. To our knowledge, no empirical indexes are available, considering the measure of degree of competition as an ingredient in the district's competitiveness.

2.2. *The competitiveness of a region*

This is undoubtedly the level at which there exists a greater consciousness of the complexity involved in the concept of competitiveness. Available contributions of regional economics unanimously recognise that "regional competitiveness" is much more than the potential ability to export or the surplus in trade balance. The wide range of factors under consideration gives support to a con-

[29] On this aspect see Brusco (1991).

ception of the competitive process only partly based on the production of goods.

As a matter of fact, increasing attention is being devoted to social policies favouring access to (material and immaterial) inputs and their mobility. A clear example can be provided by the importance of an efficient market for housing, and transport and communications as well, which now appear to be major concerns for regional policies. Moreover, the importance of network is stressed by recent contributions, as well as the importance of the connections between different levels of networks – local, regional and inter-regional.[30]

Consequently, greater efforts are being made to compute complex indexes involving different economic elements, as well as demographic and social aspects. In this respect, a great deal of attention has been paid to the performance of employment or activity rates, the endowment of infrastructures and social services and production differentiation (deemed to be able to limit the effects of idiosyncratic shocks), besides the already mentioned records in value added or per capita production and income. The peculiar aspect of these contributions is the effort to compute an aggregate index for regional competitiveness by means of the principal-component (or similar) procedure.[31] Many variables that refer to infrastructure (e.g., transport and housing),[32] the job market, environmental conditions and demographic or social aspects may be considered. However, the most relevant variables for assessing the level of competitiveness still concern the employment rate and its evolution, the dynamics of per-capita income, the growth rate of export, efforts in R&D on the part of private and public subjects, and the size and average age of firms. Of course, the critical observations on aggregate indexes for the industrial district readily apply to the regional case as well.

The competitive position of regions is also a major concern for EU policy: since 1996, annual reports on the economic and social cohesion of the European Union have been provided by the European

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[30] See Storper (1995) and Vickerman (2000).

[31] See Steinle (1992).

[32] Traditional policy interprets infrastructure as a major tool in boosting production and employment at the regional level. Recent contributions cast some doubts on this view and stress not only the provision and quality of infrastructure, but also how effectively infrastructure works. See, e.g., Vickerman (2000) and Button and Pentecost (1999).

Commission. We would like to stress that social cohesion is interpreted as a fundamental ingredient in the competitive position of regions.

3. The micro-level: the competitiveness of a firm

The most basic idea about competitiveness of a firm can be summarised by a question: is a firm able to obtain positive profits by producing positive quantity of output? If so, the firm is said to be competitive. From this simple viewpoint the debate about competitiveness seems straightforward: a firm is competitive if it can serve a market. If it cannot, it goes out of business. Very rarely, however, are economists interested in 'yes-or-no' issues. The relevant questions in the firm context are the evaluation of the pattern of its competitiveness over time and/or the comparison of the different degree of competitiveness among firms. Thus, competitiveness is a relative, rather than an absolute, concept. We will take this precise course in the following paragraphs, and ask how the competitiveness of a firm can be evaluated in different market structures.

3.1. *The perfect competition case (where firms do not actually compete)*

Let us begin by considering the simplest possible case: perfect competition in the short run. In this framework (where, by the way, firms do not truly compete with each other) the concept of competitiveness makes little sense: the quantity is chosen by each firm so as to maximise its own profit according to the rule "price is equal to marginal cost" and the price is given. For each firm we can measure the level of average cost or the level of profit (or average profit) or the market share: these concepts are clearly defined and computable. However, three points are to be stressed. First, these indicators give a different ordering, even in this very simple case, when firms have different U-shaped average cost curves. Second, the market-share may not be synonymous with a higher profit when the average cost curve is U-shaped. Third, a firm may experience larger total profit, but a

smaller average profit.[33] In such a case, the question about which firm is the best (i.e., the most competitive) has no clear answer, and the verdict has to be subjected to further considerations.

In the long-run perfect-competition allocation, each firm works at the level of minimum average cost; there is no obvious correspondence between output of a single firm and its profit if cost curves differ across firms and infra-marginal firms are present.

The straightforward conclusion is that technology alone cannot adequately establish a definitive ranking of firms, and that the extension of the market is relevant to such a purpose even in the case of perfect-competition.

3.2. *The strategic competition case*

Under strategic interdependence, a more complex concept of what could be called 'competitiveness' comes to the surface.

a) Even in the simplest framework of no product differentiation (firms produce homogeneous goods), we have to distinguish different cases. 1) If firms compete in price, the Bertrand competition replicates the allocation of perfect-competition, which is at the root of all the problems discussed above. 2) In the case of simultaneous competition *à la* Cournot, different indicators (i.e., average cost, market share, profit, and so on) may produce different ordering of competitiveness. 3) The conclusions are not straightforward in the case of sequential games, either. It is well known that strictly selfish behaviours in competition *à la* Cournot produce inefficient outcomes for firms. This situation, like those replicating the prisoner's dilemma, suggests that selfish competition is not the way to obtain the best outcome. Accordingly, 'competitiveness' should be linked to the propensity to co-operate rather than to strive.

b) With product differentiation, an important aspect of competition in the real world, firms are allowed to modify their demand curve.[34] Since competition is typically non-price based in the presence of product differentiation, other elements must be looked for

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[33] Simple numerical examples are shown by Cellini and Soci (1998).

[34] Classical references to product differentiation are Porter (1985) and Spence (1976) among many others.

in order to evaluate the performance of the firms. First of all, not only the physical features of goods matter but also their related services, such as the after-sale or the financial ones for the benefit of buyers. Even though these elements could be measured in terms of price, their importance outweighs their market-price value. Buyers regard the scope of associated services as beneficial, and several services are a signal of reliability; the personal nature of the exchange is an important element in non-price-competition; the ability to establish personal relationships with customers is very important in the competitive process, since it leads to links based on trust (links which are equivalent to fixed investments for firms). In a word, reputation is well able to affect price and non-price competition.[35]

Is in this framework competitiveness simply the ability to innovate and to aim at creating and strengthening market niches? In situations like those outlined above (with in addition different consumers with different incomes and indivisible goods) even 'non-innovating' firms can survive thanks to their market-power in niches populated by consumers who cannot jump to higher quality ones.

3.3. *The innovator-entrepreneur*

We can better understand the dynamic essence of competition and competitiveness when considering that technology is no longer regarded as given within the process-innovation context. The ability of entrepreneurs to introduce novelty into the production process reduces the costs of production, and leads to new product characteristics in so far as process-innovation combines with product-innovation. The new situation affects the behaviour of all existing firms. Within this framework the core is no longer the equilibrium allocation; on the contrary, competitiveness must be judged on the basis of the ability to generate dis-equilibrium: i.e., to break a static situation or to react to it.

Since this literature focuses on the ability of the entrepreneur, non-economic elements are very important. Several contributions have analysed the issue from the sociological perspective and have

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[35] See Ansoff (1965) and Porter (1980) on the general topics of non price competition; Kreps (1990) on the importance of reputation and firm's culture.

emphasised the motivations for starting and practising the activity of the entrepreneur, willingness to demonstrate ability apparently being the prominent one. Success in competition is determined by the ability to establish a process leading from knowledge input to creative output.

The above considerations justify the indicators used in this approach. First of all, the intensity of labour input, which should point to a higher probability for introducing innovation.[36] Note that this point – supporting the superiority of labour as an innovation engine – is contrary to the commonly held view that substitution of capital for labour leads to greater competitiveness. In this case, small and medium firms should have an advantage, given their intensity of labour input. A second selected indicator is the numerousness of patents, which should capture the favourable environment for invention. This choice is, in our opinion, rather poor: it can tell us nothing about the economic relevance of inventions, or about the use of inventions to generate new technologies and new goods, i.e. to set the firm in a new position. A third widely used indicator is given by R&D effort, which aims at capturing the potential ability in generating new ideas, and which is usually measured by the share of profits (or revenues) devoted to it. However, it is well known that the 'formal activities' of research represent only a small fraction of the activities from which innovation can stem. The importance of learning by doing, learning by watching, learning by using (and so on) is rightly stressed in several strands of economic literature. From the standpoint of the competitiveness evaluation, the influence of these phenomena is not fully accounted for. Moreover, the efforts in formal R&D are hardly meaningful even for countries with similar structures, while in the case of economies with a different structure the effort captured by R&D expenses is a largely misleading indicator, since the importance of formal R&D activities differs across different sectors. However, what is more important for firms in order to develop innovations is the ability to transform ideas into concrete economic activity. In other words, important is not only that part of human capital able to generate a new idea, but also the part able to translate it into business.

Again following Karlsson (1989), it is worth recalling that the major difficulties faced by discoverers who wish to start a firm con-

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[36] See Karlsson (1989, p. 92).

cern the lack of knowledge about market conditions, the credit market and the future prospects for that specific economic activity. Thus, good policy cannot confine itself to the formation of human capital or organisation of the production processes: it must also pay attention to the social and institutional environment, in order to facilitate the assessment of economic activities originating from innovative ideas.

In the present dynamic framework competitiveness could be thought of as the ability of a firm to operate in a changing environment and, in our opinion, no suitable indicators are available to measure it.

3.4. *Firms with different goals and 'new' features*

In dealing with firms aiming at their own maximum profit, we have seen how difficult it is to define competitiveness clearly. There are cases, however, where competitiveness does not even make sense. Let us consider firms whose goals are different from profit maximisation for institutional reasons like workers' enterprises and labour-managed firms (which maximise the surplus per worker), government companies (which should maximise the market welfare) and non-profit firms. Let us think of firms like public companies, where there is separation between property and management: a large body of literature stresses that a satisfactory level of profit is a constraint under which managers aim at a different goal, be it the largest possible size of company, the quickest growth rate, the discretionary expenditures, and so on.[37] Then we have the 'behavioural theory of the firm', which asserts that individuals do not behave optimally, but simply aim at satisfactory results. In order to achieve satisfaction, it may be optimal to follow 'fixed rules' rather than maximising processes.[38] It is also worth referring to the theories which interpret the firm's behaviour as the result of conflicting interests among teams constituting the firm; in these theories it is logically impossible to identify even so much as the goal of the firm, since the different goals of different teams are relevant as well. Opportunistic behaviour in an

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[37] See Baumol (1959).

[38] See Simon (1979) and, in a slightly different perspective, Cross (1983) and Nelson and Winter (1982).

uncertain environment is the rule, and the performance of the firm depends on the design of incentives that can limit opportunistic actions.

Further considerations stem from the interpretation of the firm as motivated by the reduction of the cost of using the market: in this case, its competitiveness is tantamount to the lowest possible number of market transactions needed to be produced. Once again, organisation and its effects on cost function are the key elements in the evaluation of firms' performance, not to speak of the new organisation models of various firms such as groups, subsidiaries and so on, where room for satisfactory performance hinges on the relationships with parent, affiliates and partner-companies: here 'competitiveness' is to a large extent external to the firm.

When competitiveness is understood as a static, 'purely' economic concept closely linked to cost or price or profit, it is clearly far from being the main goal of all these firms; at the most, it is a constraint to be met.

4. Concluding remarks

From the semantic point of view (semantics always reveals something deeply rooted in culture) competitiveness has two distinct meanings embodied in its own etymology: struggle and antagonism, on the one hand, symbiosis and co-operation, on the other. The same twofold significance emerges in the dissimilar emphasis that competitiveness is given at the micro and macro level, respectively, in economics.

Within the former, the struggle prevails, with firms that seek their own safety and prevent others from expanding, even trying to squeeze them out of business. Unfortunately, no single indicator is suitable to capture the actual correspondence between the targets of a firm and its outcomes, the item 'firm' being complex and hardly definable, the category of firms a non-homogeneous set of very different entities.

At the level of districts or regions the problem of aggregation shows its relevance, and competitiveness emerges as a complex concept containing many aspects which go beyond economics. The litera-

ture on this intermediate stage of analysis has been even too indulgently inclined to sociological themes and, despite a wealth of insights, no competitiveness indicator able to receive unanimous consensus has been reached.

Within the macro level all the contradictions come to a head, both on the theoretical and the empirical profiles. This is hardly surprisingly: at the macro level of analysis reconciliation between the behaviour of firms and its outcome is even more challenging if we take into proper consideration the entire social and institutional context. Thus, the aggregate competitiveness concept happens to coincide with international competitiveness, and the ambiguity (or, worse, the vagueness) of the latter brings about the proliferation of indicators. While expected to give the full picture, they cannot but offer a partial view of specific aspects, that may clash with one another. In macro analysis the twofold sense of competitiveness is more alive than at the micro level, and is well evoked by the basic question whether some countries' growth can be achieved *at the expense of* or *together with* other countries' growth. This duplicity has some consequences for policy: suffice it to consider international trade, where the predominance of one or the other view may produce either protectionism or free trade-oriented policy actions.

Economists are required by politicians to envisage indicators as instruments for analysis and guidelines for intervention, and economics wreaks its revenge on politics, performing in such a complex way that it is hard to pin down. This is deeply true for the complex and elusive concept of competitiveness, and our firm conclusion is to abandon the idea of any generalised applicability of 'competitiveness' as simply meaningless.

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