

NEW INDICATORS FOR POLICY IMPACT ANALYSIS IN THE KNOWLEDGE ECONOMY

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The “New economy”, whatever this term might be taken to mean, has apparently changed the “rules of the game”, nationwide and globally. Increasingly, economic dynamism and strength have been associated to ICT investment and use and, more generally, pro-IT change and adaptation. It is a fact that new technologies are spreading and increasingly influencing human activities. But how, exactly, IT related investment and change affect economic performance and impact on individuals living styles and standards? And, as yet, can we foresee with confidence that this influence will span over a relative long period and mark an epoch in economic history?

Total factor productivity (TFP) estimates and a host of other e-indicators have been developed and used to map and monitor the spread of the New economy. So far, however, they have failed to provide us with convincing snapshots. We appear to have many pieces, most likely too many, of what hitherto comes across as a blurred and unfinished jigsaw. Furthermore, vital information is missing and reliable statistics and micro data are not there. Causes and, *a fortiori*, relationships and patterns of change are inadequately understood. Hence, the whole picture remains elusive and the very existence of a “New economy” continues to be challenged. In the circumstances, it is difficult to appraise not only the “rules of the game” which the new economy is said to be reshaping but, and even more importantly, to play a part in molding them.

From the policy standpoint, a major hindrance to good policy making is represented by the growing gap in policy related knowledge, with regards to the evidence policy makers needs to take advantage of the opportunities provided by the new economy, that is to assess both aggregative, structural and systemic developments; and the relative merits of alternative policy courses. Because of this, several important policy issues are currently surrounded by a great deal of uncertainty. Among the questions which are difficult to apprehend some concern the very nature and dynamics of the process of socio-economic change (e.g., which factors are at the root of the process of systemic change which is unfolding ahead of and around us? And which of them can be assumed to imply strength or weakness? Which changes are brought about by new technologies?) and its costs and benefits (e.g., how does the latter impact on performance and living standards? How are its costs and benefits distributed?), while others relate to policy and span over a wide range of issues including policy options (which policies can be implemented to foster socio-economic change, maximise benefits and minimise transition costs) and, more specifically, objectives, ways, means, cost-effectiveness and so on.

So far, old policy paradigms and indicators have continued to be applied to the “New economy”. Their macro focus, however, has increasingly been challenged since the “New economy” is very much about ICT and ICT-induced *systemic change* that (i) occurs and is discernible only at the micro level; (ii) affects the ways in which micro systems work and function; and (iii) is associated with pervasive “structural breaks” which open up unprecedented opportunities.

At the macro level, the influence of ICT can but be gauged by looking inside the macro “black box”, as illustrated by the concept and measurement of TFP. Yet, this concept, while useful for the analysis of differentials in economic performance and time paths, fails to shed light on critical systemic transformations or hindrances of various types that structural policies need to target to secure economic systems on “golden courses” or to minimize transition costs that may otherwise show up only when opportunities are forgone.

To map these transformations, a change in focus is evidently needed if light has to be shed inside the macro “black box”. The turbulent burgeoning in the number of e- and non e-indicators witnesses this necessity. These have mushroomed without, however, foundations and rigorous analytical frameworks. Unsurprisingly, it has become increasingly difficult to add them up and lay them in the jigsaw of the New economy, so that each can tell its part of the story. Evidently, there is a clear need to micro found indicators, ensure that they have clear properties and that they can add up along the micro-meso-macro spectrum of change.

New economy breakthroughs and the associated, as yet alleged long stretching “epochal” change are attested by a growing evidence on a variety of systemic innovations - that is impulses in views, behaviours, institutional devices and technological developments - which are reshaping the socio-economic landscape and are increasingly visible at the micro and meso level. The measurement and description of this process is, by its very nature, “data thirsty” and to require e-knowledge that can effectively support policy-making. They also require a whole host of reliable and timely figures and indicators, that have clear properties and are scope fulfilling; and a framework that can serve to link different dimensions (such as, from micro to macro, from local to regional and global), benchmark outcomes, map performance, measure impact, monitor effects and chart progress at the macro and micro level. To achieve this, much more value added needs to be extracted from existing statistics, availing from the opportunities offered by new technologies, and much greater consideration should be given to users’ demands and requirements.

Eventually, what is at stake is the “rate of return” we get from our current investments in new knowledge for research and policy purposes. The New economy has put systemic features and change in the limelight. As yet, this has not been matched by a similar change on, say, ways and types of statistics that are collected and on economic indicators. The focus of the former continues to be the macro national accounts notions and figures that have become customary since the 1960s. Similarly, the overwhelming majority of the latter aims at compressing into summary measures whole distributions. By thus doing, most often hides the very changes indicators are supposed to portray and measure. Multiplying the number of indicators, as it has happened, is unlikely to be the answer. Decomposable and well-behaved indicators, that permit to “make enlargements” and “catch” changes in shapes by choosing different focuses, is the investment that needs to be developed.

In a nutshell, whether we want to measure systemic change or provide information that can effectively be used to support policies we appear to fail. At best we seem ready to accept sub-optimal results. This is not inevitable. There is much more new knowledge that can be extracted from existing statistics than we do at present. With reference to the current state of the art and requirements in the EU, four aspects appear to be central in the development of new measures and indicators for policy impact analysis in the knowledge economy:

1. Public policies for the new economy require a vision and a strategy.
2. The policy environment is complex and multifaceted;
3. Good governance and policy making can but be evidence based;
4. Adequate support to policies is not possible unless supported by an integrated Eu-wide effort aimed at developing accessible statistical information infrastructures.

These four points are addressed below.

1. “GOOD” PUBLIC POLICIES FOR THE NEW ECONOMY REQUIRE A “VISION” AND A STRATEGY

General principles, objectives and commitments, unclear means and ambiguity on essential policy traits (such as who gets what, when and for how long) do not constitute a good basis to judge on policy quality. An essential component of good policy making is that policies are judged on their achievements, expected or actual. Reflecting this conviction, tools and methods for “evidence based policy making” have been deployed and spread significantly since World War II. Presently, they are seen as a necessary constituent of good governance in a growing number of countries, especially in North America and in Anglo-Saxon and Nordic European countries.

In the European Union as a whole and in the Commission this **vision** is not there yet. Indeed, most EU governments and the Commission appear to suffer of what has been regarded as the “*Master Artificer*” or “*Absolute Wisdom*” syndrome, which implies a top down, allegedly “scientific” or “technocratic” approach to policy making reflecting the conjecture that policy makers always know best. Four illustrations can be referred to support this statement.

The first two come from two EU published documents. The message they carry is that symptoms’ research and indicators are sufficient to draw policy recommendations and roadmaps, and to identify mechanisms for overcoming problems.

- Case 1: “*..the researchers have identified various new working methods and...**produced a number of detailed policy recommendations** addressed to EU and national policy makers, employers, trade unions, and civil society organizations. These **recommendations identify mechanisms for promoting** higher participation and employment rates through IST, as well as for promoting an improved quality of work and family life..”.*
- Case 2 “*..a simple example of the impact in policy decision making of complex network studies is provided by **the insight obtained fromanalysis ..yielding an assessment of the efficiency of different scenarios, providing objective results...on infrastructure networks...protection...which should be provided to largely connected providers that already are the ones holding the majority of the available resources...** The **policy choice thus remains a complex trade-off process in which the role of the scientific approach is to provide probabilistic analysis for the different possible scenarios**”.*
- Case 3: is from an evaluation report of a proposal on Policy Impact Analysis, which was judged to be outside the scope of the call because its subject was deemed to (i) be “**monodisciplinary**”; (ii) imply “**political analysis**”; and (iii) be about “**producing numbers**”.
Of course, none of these remarks applies to Policy Impact Analysis. This third reference witnesses very vividly the lag that the EU suffers in the field of policy impact analysis, since it reflects the judgement of five evaluators who, allegedly, should have been quite knowledgeable in the research area they had been asked to evaluate. I.e. “Multilevel governance and development of New Policy Tools”.
- Case 4: A host of indicators has mushroomed lately, as indeed happened in the 1960s and 1970s with social indicators. Two fundamental, a priori and as yet unanswered question concerns whether the indicators that have been deployed (i) can be used to shape “policy visions”; and (ii) mean what they are assumed to mean and we know their properties. and Eu countries seem to believe that indicators is what they need.
On the face of it, it would appears that broad agreement has already been reached on using indicators for policy purposes, since the Commission has already envisaged ¹:

¹ See *e-Europe 2005. An Information Society for All*, Brussels

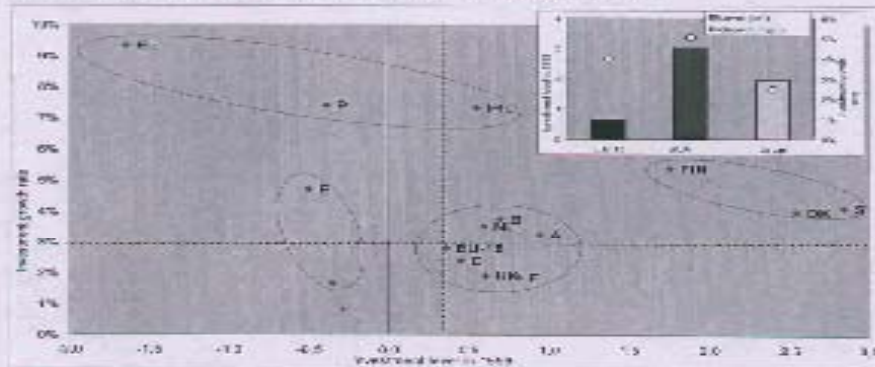
- Policy reviews, exchange of good practices, demonstration projects, sharing lessons, benchmarking and overall co-ordination of existing policies;
- Appointing a Steering group with the remit to provide an overview of policy developments and an exchange of good information.

Strikingly, though, little or no lesson seems to have been learned from the earlier experience on social indicators. The proposition that “the more economic indicators are available, the better” appears quite strong, now as then. And, if one looks back over the past decade, how sure are we that the mistakes made with social indicators are not being repeated? Mushrooming growth in economic indicators is also a sign that the time to pause and rethink may already be or very soon become ripe. Once again have moved in the forefront issues such as:

- What kind of indicators and how many of them do we need?
- How many indicators are micro-founded, have clear properties, are consistent, well-behaved, purpose oriented and scope fulfilling?
- Is it time to step back and change course?

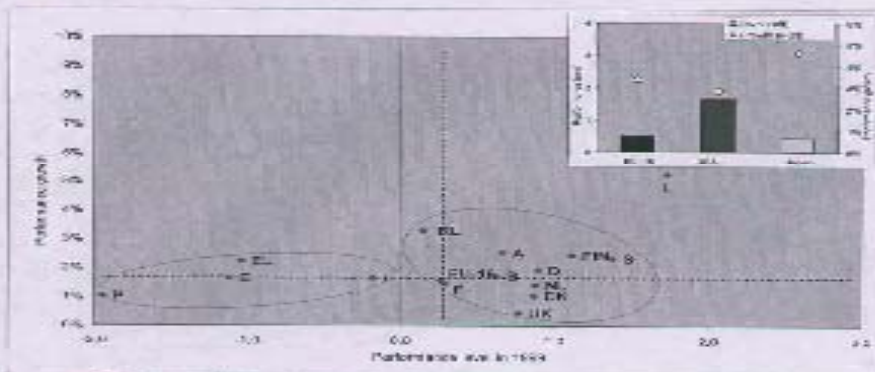
A look at Figure 1 below, suggests scepticism as to whether enough homework has actually been done before it can be claimed that existing indicators are ready to be used for policy purposes. Surprisingly, while alleging that the figure portrays a “composite indicator”, what is graphed is only the level (on the horizontal axis) and the rate of change (on the vertical axis) of just one variable.

Figure 1: Composite indicator of investment in the knowledge-based economy. Investment level in 1999 and investment growth rate 1995-1999.



Source: DG Research, Key figures 2002 (Figure A)

Figure 2: Composite indicator of performance as regards the transition to a knowledge-based economy. Performance level in 1998 and performance growth 1995-1999.



Source: DG Research, Key figures 2002 (Figure B)

2. THE POLICY ENVIRONMENT IS COMPLEX AND MULTIFACETED

Over half a century of developments in Policy Impact Analysis (in, mostly, the USA, Canada and Northern Europe) has unveiled a complex picture in which what we see or experience (outcomes and symptoms) may have many causes and hide quite different dynamics, depending on drivers, incentives and behaviours. Similar complexities are admitted on the impact of public policy. This cannot be taken for granted. It hinges on number of factors ranging from the very nature of the problems they are assumed to tackle to a host of aspects including program design, ways and means, program administration and, substantially, aspects underlying different socio-economic environments. Invariably, different policy courses or mix can be advocated and supported.

The menu of possible policies is not only always rich, but no policy is “an island”. Different policies can interact, complementing or competing among each other. Also, “one size/typology fits all” policies do not exist, nor it can be expected that benefits will always be evenly distributed. As it

is well known, EU regions do not constitute a one large optimal area for all policy purposes. Even for monetary policy, debates are still open as to whether the EU is or is not an OCA.

These and other circumstances imply that decision-making in modern democracies has many sides. It hardly ever crops up as a sheer budgetary issue. It is always convoluted and thorny. Notably, it involves evaluating alternative means of achieving objectives under many different angles, to eventually answer questions such as: are policies well adapted to circumstances? are they sufficient to put “things” back clearly on course and to a sustainable path? Are there factors that may jeopardize success and how large is this risk? And so on.

If choosing among different policies were to entail a resolve on the basis of cost-effectiveness in meeting ends, choosing between different options would amount to a trivial technical exercise. In the circumstances, computers could supplant politicians. However, decision making never comes down to a sheer technical problem. It is not and it cannot be a substitute for good judgement, political wisdom and choice. Practising political decision makers know too well that

- The process by which decisions are reached is amazingly sophisticated;
- The essence of political decision making is to reach agreement among individuals and groups whose values and objectives may differ substantially;
- There is no simple division of labour in which the “politicians” achieve consensus on an agreed-on-set of objectives while the “analysts” design and evaluate;
- Decision making is not only about “ends”, but also about “means”, program design, “implementation” (even good policies may fail, if implementation plans are poor) and administration;
- Decision about “means” are often no less political than those about “ends”;
- Trade-offs cannot be avoided. Policy making is choosing among alternative courses;

As it was put by C.L. Schultze,” the question at issue is not how Policy Impact Analysis can supplant the political process but whether and how it can fit into that process and permit evidence base debates and decisions.... Policy Impact Analysis is not a substitute for good judgement, political wisdom and choice”.

3 GOOD GOVERNANCE AND POLICY MAKING CAN BUT BE EVIDENCE BASED

Since the Lisbon commitment, it has become standard practice to support and claim for policies with indicators of one type or another. Even assuming that indicators might serve for benchmarking purposes, two problems arise when they are used to support policies. First, they can hardly serve to provide a “Vision”. They can support a “Vision”., but cannot be a substitute for it. Second, indicators generally condense all information into one figure, with little, if no concern for distributive aspects. Very often, however, the latter are what policies are about. If, for instance, one takes income distribution, hardly anywhere social programs are based on Gini coefficient or annual personal income growth rates. The use of micro founded indicators and, more generally distributive analysis has become standard in policy analysis. No similar development has occurred yet in the field of economic policy. In this field, policy impact analysis has lagged behind. Unsurprisingly, however, in those countries where it has advanced first, economic performance has been better.

A quote can serve to illustrate the challenge faced in the EU, where “the playing field” needs to be levelled. As it is, in the early 1990s the harmonization path pursued by the Commission envisaged setting minimum rates, in order to reduce the cost of distortion. In commenting this decision, the remark was made that “in view of our current ignorance, this seems an eminently sensible

approach” (CEEPR, 1992). At first reading, this conclusion may appear quite convincing. With hindsight, it is much less since it virtually implies that the EU can do a better job than national governments even when it lacks information. As it was subsequently noted, claims such as the above are “...as sound as a slipshod apprentice sailor’s belief who, merely by virtue of having a boat, thinks he can safely sail with neither compass nor maps nor other knowledge...Of course, that would be reasonable only if one cared nothing about either his safety or his ultimate destination”.

As it is, good policy making at the national and supranational level can hardly spring from ignorance or any policy course, even unsound, would be “eminently sensible”. Basing policy on evidence implies a two-pronged approach aimed at building up knowledge that, on one hand, would allow to better understand the strengths and weaknesses of e- (and non-e)EUROPE, at the regional and local level; and, on the other hand, to support policies to achieve the Lisbon objectives.

In a nutshell, the European Commission and Member States can no longer postpone asking questions such as

- How high up is “evidence based policy” on the agenda?
- Is it possible to de-link “evidence based policy” from “Good Governance”?
- Are “one-size/typology fits all” policy good for all member countries, i.e. have they a uniform impact across the EU, irrespective of underlying socio-economic structures?
- Do policy-maker have the “compass” and the “maps” and, more generally, the knowledge and information which they need?

4. ADEQUATE SUPPORT TO POLICIES IS NOT POSSIBLE UNLESS SUPPORTED BY AN INTEGRATED EU-WIDE EFFORT AIMED AT DEVELOPING ACCESSIBLE STATISTICAL INFORMATION INFRASTRUCTURES.

The opportunities and potential for policy impact analysis (PIA) and policy orientated research offered by integrated and systematize information systems is, regrettably, an under-researched area. Two IST FP5 projects, DIECOFIS (*Development of a System of Indicators of Competitiveness and Fiscal Impact on Enterprises Performance*) and EUROKY-PIA (*Developing European Knowledge for Policy Impact Analysis*) have permitted to have a “taste” of these opportunities and lead to advance on the definition of :

- *PIA inputs*, prominently including:
 - An integrated “Vision” for statistics envisaging a “systemic, global IT supported approach to microdata storage and use;
 - The development of “Statistical Information Infrastructures” (SII) that can be “navigated” in all direction to “blow up” large scale maps and to “fine tune” indicators; which can be accessed in safe environments, for research and policy analysis purposes.
- *PIA tools*, prominently including:
 - Tools to access SII for research purposes, availing from the potential and opportunities offered by new technologies;
 - Microsimulation Models
- *PIA-outputs*, prominently including
 - Policy evidence (factuals and counterfactuals)
 - Well-behaved Indicators (One-, n -dimensional, composite and decomposable)

Behind this effort is a PIA “Vision” made up of three inter-linked and complementary components

