

THE NEW ECONOMY, PREMISE OF SUSTAINABLE DEVELOPMENT

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ABSTRACT

The crisis has highlighted the fragility and cyclic unpredictability of the economies or how vulnerable world's nations and their social systems can be when the markets that finance them collapse, but other crises of high amplitude and duration, although not as stormy, describe the people- natural environment ratio (what Lipietz calls crisis of abundance or new scarcity of natural resources, that threat the industrial pattern) and the severe wide disparities between North & South, which seem to be positioned exactly in the heart of the current model of growth and development located in economic crisis.

Key words: new economy, sustainable development, human development, crisis

JEL classification: O31, O44

Starting from defining the sustainable development concept by the Report "Our common future"⁴ according to which "Sustainable development is the development that pursues satisfaction of current needs, without compromising future generations' possibilities to satisfy their own needs" we develop the idea that the sustainable development concept values human-nature relationship from the point of realizing the danger of minimizing resources, both for current generations and for future ones.

Sustainable development is the process through which a generation preserves its resources potential, in the future giving equal development opportunities to future generations, at the same time ensuring the premises of a an increase in welfare for the present generations, by establishing/ fixing a political economic strategy that aims rational use of resources.

Thus, the definition of sustainability resides in identifying capital classes that gives the individual utility by satisfying current and future needs, in the sense that future generations benefit at least as much as the present generations of a certain level of utility of capital. Thus, capital classes are: natural capital, manufacture capital (equipment, technology, infrastructure of production), human capital (knowledge, skills and aptitudes of the individual) and social capital (government system, institutions). Preservation of capital as a whole requires *a set of values and tools* through which the natural capital can give future generations economic goods that provide at least the same level of utility as present generations. This fact can be realizable by developing human capital as a base for increasing manufacture capital stock, by protecting and preserving the natural capital and by increasing efficiency of the social capital.

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⁴ Brundtland Commission Report, 1987, World Commission on Environment and Development (WCEF)

In the light of this classification of capital, Eric Neumayer⁵ suggested the creation of two sustainability classes:

- Weak sustainability (WS)- capital classes are interchangeable for maintaining or raising the whole stock of capital available to future generations, generally by the saving (investment);
- Strong sustainability (SS)- rejects the idea of interchanging capital forms, of investment role in preserving the whole stock of capital, especially of the natural one, available for future generations, at least in terms of maintaining a constant utility level;

The development concept symbolizes a basic characteristic of life: living beings develop lifelong, so they evolve. Development is a sub-system of life system (Capra, 2005); developments in this system relates to new forms of spontaneous order, which gives dynamism, evolution, creativity to the system. At the same time, development is an alive system, with an own internal structure which always is evolving. For this reasons, there can be identified a series of manifestations with local specifics, with different intensities, of development concept.

The “Sustainability” Concept especially refers, in our opinion, to preservation and efficient utilization of economic resources in order to facilitate and to guarantee to future generations the access to a natural and economic environment that can be exploited. More specifically, far as it provides satisfying present needs without compromising the ability of future generations to meet their own needs⁶ which relies on two aspects of equity: equity within generations (within a generation) and inter-generation equity (between generations).

Economy, through the perception of the contemporary world, where premises of eco-efficient and sustainable approach are the base of identifying some precepts of current and perspective realities, advertise new forms of conceptual approach to support the new economy. Thus, the new economy sustains and interferes in its principles of sustainable development, addressing natural resource and environmental issues in the context of scarcity and eco-efficiency of natural resources, dematerialisation of economies, complementary of informational society.

Dematerializing of economies probably is the main characteristic of IST (*Information Society Technology*). Below, we explore literature and dis/ advantages of *dematerializing* in terms of eco-efficiency and sustainable development. If IST/ICT (*Information and Communication Technology*) main contribution is proved by the efforts of economies to increase the stock of intangible capital and to restructure, im/ materialization inherently isn't eco-efficient and / or sustainable, but tends to cause unintended effects as the rebound effects. In relation to dematerialization of production, we favor dematerialization paradigm "as a switch in consumption behavior from more material to less material."

Dematerialization probably is the main economic path of XXI century. The trend seems oriented on increasing intangible capital stocks (van Ark and Hulten 2007), however investment in ICT (Information and Communication Technology) know a real boom in the

⁵ Eric Neumayer, Human Development and Sustainability, Human Development Research Paper, 2012/05, http://hdr.undp.org/en/reports/global/hdr2010/papers/HDRP_2010_05.pdf (acesat 21.08.2012)

⁶ Brundtland Report, WCED, 1987

90s -2000. Nowadays, we know for example that catching-up type of CEE ⁷ economies increase in '90/2000 is linked to restructuring resulting from investment in information technology (van Ark and Piatkowski 2004 Apostol, Balaceanu, and Padurean 2011) and that intensive users of ICT sectors are behind divergent growth of USA to Europe (O'Mahony and van Ark 2003). Globally, the sharp decline in prices and advances of globalization have facilitated technology transfer to emerging economies and ICT contribution nearly doubled from a quarter to a third of the total capital contribution between 1995-2000 (Jorgenson and Vu 2009). Thus, economists saw knowledge and new technologies as the main response to development and sustainability issues (Chichilnisky 1997, 1998; Yamamichi 2011; Qiang et al 2012; Pascu, Nedea, and Milea 2012). For them, economies based on rising informational and/ or intangible capital stocks tend to be less dissipative. Probably main reasons of economists are related to the capacity of immaterial economies to provide increasing returns; by comparison, conventional economies are more material-based on accumulating factors (technology being built), and obviously dissipative. The theory of increasing returns, probably for the first time, has provided the possibility that economies can continue to grow without the need to expand the stock of physical capital and / or energy / resources consume. The appearance and expansion of information and communications technology (ICT) between the 90 -2000 has only revived interest in higher-generation and use of knowledge and / or massive accumulation of intangible capital. For economists, the great hope was to encounter problems in sustainable and eco-efficient (eco-efficiency) development, meaning "by the delivery of competitively priced goods and services That Satisfy Human Needs and bring quality of life, while progressively reducing ecological Impacts and resource intensity ITS Throughout the life cycle, to a level at Least in line with the Earth's estimated carrying capacity "(Willard and Halder, 2003, p.9).

The thing that remains is linked to economies' capacity that dematerializes (by enlarging the stock of knowledge and / or intangible capital) to encounter sustainable development issues. In other words, is information society technology an environmental-friendly technology? Do ICT and Internet face development issues in terms of eco-efficiency? Discussions in the last ten years show that the substitution of informational products and services for products and services containing material and decline of prices are not without problems, generating the so-called rebound effects. The main significance of rebound effects is that information products tend to generate, through the positive feedback mechanisms, loss of eco-efficient gains from reduced material consumption and / or costs. In other words, if ICT and generally dematerialization, reduce the material consumption in producing goods and services, contrary trend of economy is to become an unsustainable economy by reducing costs and / or inherent increase of consumption (Tulbure 2002 Schauer, 2002, 2010). The main problem of the IST (Information Society Technology) is to overcome the so-called rebound effects in a way that will boost gains in eco-efficiency, not reduce them. We explore an alternative within the sustainable development starting from the benefits of IST and / or im/ dematerialization. Thus, we distinguish between dematerialization and immaterialisation on the line of Simmons (2002) and Juric and Voegel (2005) to indicate that virtualizing savings should be correlated with the values or with the lifestyle of the consumer (a switch in consumption behavior from more material to

⁷ Central and Eastern Europe

less material) so that the company can benefit from eco-efficient gains of information society and / or become sustainable.

IST/ICT generally is associated with the production boom, especially in services sector, with development in infrastructure and labor / quality of work, the catching-up type of jumps in emerging economies between 90-2000 (van Ark and Piatkowski 2004 Apostol, Balaceanu, and Padurean 2011; Apostol 2011). A quasi-common description is that: "Revolutionary potential of new ICT resides in their ability to instantly connect to vast networks of individuals and organizations across great geographical distances, at very low cost. As such, ICT were key catalysts of the process of globalization, globally facilitating flows of information, capital, ideas, people and products. They transformed businesses, markets and organizations, they have revolutionized learning and knowledge sharing, they have empowered citizens and communities, and they created significant economic growth in many countries. ICT has boosted brain power in much the same way that nineteenth-century industrial revolution amplified muscle power " (Essentials, 2001, p.2).

Im/ Dematerialization of economies is wanted to be a new way of approaching organic or synergistic economy, the one in which the individual has to choose between a polluting consume and a sustainable one. Thus, we consider that we need to project the pattern of a modern man to be fully informed and reasoned when it comes to the act of consumer's choice. Im/ Dematerialization of economies probably is the main characteristic of IST (Information Society Technology). In this text we explore advantages of im/ dematerialization in terms of eco-efficiency and/ or of sustainable development. If the main contribution of IST/ICT (Information and Communication Technology) is proved by economic efforts to increase their intangible capital stocks and to restructure themselves, im/ dematerialization of economies is not inherently eco-efficient and/ or sustainable, but has the tendency to generate unintended effects as rebound-effects. In relation to dematerialization of the new production we favor the immaterialization paradigm: "as a switch in consumption behavior from more material to less material." Juric and Voegel (2005) express this behavior as "One integral element of the debate is to shift consumers' demands from material-based to resource-saving patterns of consumption. The road map of dematerialization implies the substitution of material products by adequate non-material services and promotes immaterial needs instead of material wants, thus advancing social change to achieve sustainability" (p.267). IST promises in terms of eco-efficiency and sustainable development are directly dependent on extending the benefits of IST / ICT while changing consumption patterns on the Immaterialization.

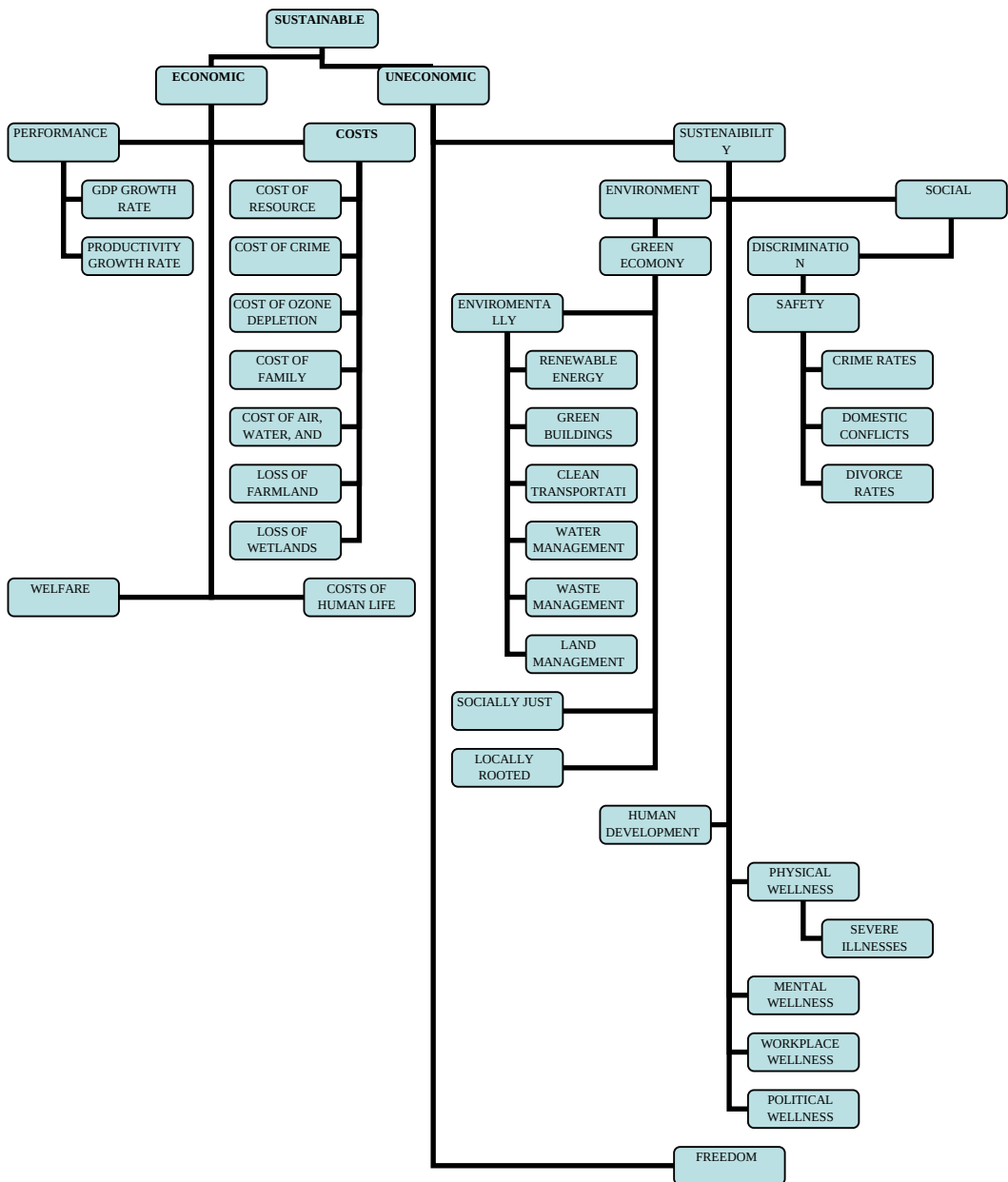


Fig.1 Synoptic scheme of binomial human development-sustainable development

Source: Authors' own data

By analyzing links between human development- sustainable development concepts we identify the main advantages of introducing, developing and implementing on a large scale of the new economy, as a premise of ensuring long term well-being of population, of reducing environmental side effects generated by the lack of resources, by their exploitation, by irrationally using economic resources.

Weillard and Halder (2003) point for the approach of informational society's and sustainable development's insights and find out that there can be identified six scenarios with different approaches on the issue. Some highlight development, others im/dematerialization, some the advantages of applying IST, others rather the disadvantages of them. Isolation and/or uncorrelated evolution of development, of ecologic sustainability, of IST, etc at objectives', policies' and/ or vocabulary's (and methodologies') level probably is the main source of issues and disadvantages.

We focus on the main dis/ advantages of im/ demateriazation of IST (*Information Society Technology*) and of consumer's lifestyle. Among the advantages of economy dematerialization we identify, in terms of eco-efficiency, reducing paper consumption (massive CO2 cuts), savings in the service, as is the introduction of the online banking, substitution and increased transport efficiency, for example by introducing so-called teleworking or Internet delivery of media products, high efficiency in industry and construction, which can mean savings just by what means e-commerce and business to business transactions, 4-5 billion and, finally, the efficiency of production planning, for example by taking the supply chain of the Internet, reducing inventories; decrease overproduction, unnecessary capital expenditures, paper-based transactions and errors in implementing orders, finally IST achieves a higher output with less energy consumption (Willard and Halder 2003 p.11-12). On the contrary, the disadvantages are directly related to the impact of rebound effects and lifestyle or social-cultural values. Schauer (2002, 2010) and Willard and Halder (2003) mention two types of effects directly relevant to unintended effects of IST: primary and secondary rebound effects. Both describe the failure of the economy to decouple GDP growth from unsustainable consumption and production processes. If rebound effects generally mean unsustainable growth derived from reducing costs, primary rebound effects indicate the negative impact of IST/ ICT both on precious metal deposits (component side) and on the ecosystem resulting from their disposal (e-waste). And so, fast global expansion, of consumption and of using ICT, becomes unsustainable, for example if meeting consumption growth has the effect of reducing the ecological footprint of 2.3 hectares per capita at 1.9, instead it requires an increase in the use of ICT which goes beyond eco-efficient realization (Willard and Halder 2003). Secondary rebound effects mean that the cost savings and eco-efficiency gains derived from extending IST have unintended consequences: cost reduction through dematerialization of economy results in savings being available in the economy translated into increased consumption of goods, services and / or energy / resource, obviously with loss in eco-efficiency (Simmons 2002; Willard and Halder, 2003, p.15; Tulbure 2002 Hoorens et al 2004, p.37, 61).

1. CONCLUSIONS

Dematerialization includes immaterialization of production or production going online, while Immaterialisation involves immaterialisation consumption and / or consumption behavior. Dematerialization makes gains in eco-efficiency and rebound effects (Rebound Effects D) a substitution effect (price substitution effect), i.e. the quantity of products and services with intangible content increases in the economy highlighting increase consumption of energy and raw materials involved in the production of IST specific products and services, while Immaterialisation emphasizes rather on consumption or lifestyle decisions and there's a "switch in consumption behavior from more material to less material"; Rebound Effects I are in this case an effect of income (Income effect), not one

of substitution: Immaterialisation indicates that overlapping dematerialisation of economies with a too little immaterial lifestyle reduce eco-efficiency gains through increased consumption of goods and services with high material content. Thus, the lifestyle and consumption patterns are in the heart of Imaterialisation understood as "switch in consumption behavior from more material to less material".

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