

## IF “WELL-BEING” IS TO BE THE KEY-CONCEPT IN POLITICAL ECONOMY...

*ABSTRACT: If “well-being” is to be the key concept in political economy, then economists are placed, from a methodological viewpoint, in an uncomfortable position. A well-being approach requires consideration of several non-economic dimensions strongly interrelated with the economic process, and failure to consider them means that the subsequent economic analysis cannot be based on steadily defined categories and, therefore, economists cannot value the full implications of their policy prescriptions. In this note, I show how an interrelated economic-social scheme able to analyse (sustainable) well-being calls for a broadening of the range of social factors interacting (in short and long term) with the market equilibria, and that this entails both new analytical categories and a new socio-economic relations model; in the absence of this apparatus, the effects of economic policies on society are not reliable and, therefore, ought to be systematically subject to a “precaution principle”.*

### 1. *Why the consideration of “well-being” produces a problem.*

For a long time interpretations of the economic situation and economic policy prescriptions have referred to an aggregate – the Gross Domestic Product – as an appropriate picture of the community’s welfare and gauge of society’s civil progress. In recent times the belief has increased – even outside the world of scholars – that such an aggregate, as a valuation of market production, cannot also be a measure of how well-off people are.<sup>2</sup> If the economists’ reference should indeed be welfare – however defined – rather than product (in the broad sense of GDP), then a radical change of viewpoint is called for, almost a new paradigm, raising a key analytical question.

With reference to the long debate on the need to shift attention from a production-oriented view to a broader view of social progress, the SSF Report<sup>3</sup> has identified well-being in a context of sustainability as the most appropriate indicator for a non-misleading evaluation of economic processes and related policies. This proposal aims to redefine the structure of economic categories, at present centered on the “product”, to a structure centered on “sustainable well-being”. But this means changing the present view of the economic process since it changes the object of what constitutes the “value” resulting from the social process. Innovation with regard to the central category of political economy transforms the contents of the aggregates actually used and so also the economists’ agenda at both the analytical level and that of economic policy interventions.

With this paper I intend to submit for discussion my conviction that the issue entails, not only the need to re-define and re-build a more meaningful economic indicator, but also to question the entire economic conceptual apparatus. From this point of view it is worth recalling that the economy became an object of scientific investigation when scholars established as the (remarkable) object of their research the aggregate outcomes of the interrelated individual behaviors in an exchange market system.

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<sup>2</sup> The critique of GDP as an indicator of well-being is borne out by the institutional commitment to build new welfare indicators, for example with the EU Beyond GDP initiative and its Italian BES Report (ISTAT 2013). For a more general examination of alternatives to GDP able to provide a measure of individual and collective well-being, see FLEURBAEY 2009.

<sup>3</sup> STIGLITZ, SEN, FITOUSSI 2009. I refer to this report (hereafter SSF) because the authors’ proposal to adopt the concept of “sustainable well-being” poses the question in all its complexity. In fact, their search for a better economic indicator concerns the macroeconomic dimension and involves not only the flow of well-being but also the stock of well-being productive resources associated with long-term sustainability.

It is also worth remembering that the production of well-being can be interpreted by (market and non-market) exchanges, and that this means shifting the focus onto the aggregate outcomes of interrelated behaviors in a social space not restricted to the market.

But refocusing research in this macroeconomic direction means – and this is my conclusion – that economists place themselves in an uncomfortable position in which they cannot count on clearly defined categories; therefore, they are forced to work with an inevitably inadequate and partial macroeconomic framework without any guarantee that their economic policy prescriptions are well-founded, reference being made only to a concept of economic efficiency more narrow than a concept of social well-being.<sup>4</sup>

To support my thesis, I refer, for the sake of convenience, to the SSF Commission's proposal, which recognizes "sustainable well-being" as the crucial category required for an adequate view of the economic process.<sup>5</sup> In sections 2 and 3, I present, in general terms, the contents of "well-being" and of "productive resources of well-being", both critical SSF-concepts<sup>6</sup>, and compare them with the respective content of "product" and "capital" categories at the core of current economic analysis. By replacing product with well-being I am able (in section 4) to provide, using a social accounting scheme, a representation of the economic process through which, reinterpreting the different meanings of the resulting network of aggregates, I show (section 5) that a representation of the macroeconomic system centered on quality of life drives economic analysis to new ground, to a different view of the process of production of "value" – and towards an analytical view of society – that should stimulate, in accordance with the hope of the Report, economists' interest in "a discussion of societal values, for what we, as a society, care about, and whether we are really striving for what is important".<sup>7</sup>

## **2. The new "production boundaries": from "product" to "well-being" ...**

The value production concept is central for economic analysis. As we know, the current concept of "product" (in terms of GDP and related aggregates) is basically an expression of market production, and a legacy of understanding needs related, in the forties and fifties, to anti-cyclical analysis and policies. On the other hand, and as is equally well-known, market production is not the only component of the current product aggregate; given the importance assumed by the public sector, it also includes the provision of non-market public services.

The well-being concept refers instead to "a rich array of attributes – such as belonging, fulfilment, self-image, autonomy, feelings, and the attitudes of others – that are associated with Quality of Life. (...) Human well-being depends on what resources enable people to do and to be, and the ability to convert

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<sup>4</sup> In another article on the SSF, I concluded that the researchers' proposal provides a dramatic challenge for economic analysis and policy; in fact, in the present situation, "(t)he economist (and the economic policy authorities) are (...) in a dilemma between working with a *restricted* (to economic values) representation inevitably *partial*, or working on the basis of an *extended* representation empirically *undefined*". (GNESUTTA 2013).

<sup>5</sup> "The report distinguishes between an assessment of current well-being and an assessment of sustainability, whether this can last over time. Current well-being has to do with both economic resources, such as income, and with non-economic aspects of peoples' life (what they do and what they can do, how they feel, and the natural environment they live in). Whether these levels of well-being can be sustained over time depends on whether stocks of capital that matter for our lives (natural, physical, human, social) are passed on to future generations" (STIGLITZ, SEN, FITOUSSI 2009, 11). Although complementary, the two analytical categories of well-being and its sustainability are "*examined separately*" (STIGLITZ, SEN, FITOUSSI 2009, 17, 61, 77).

<sup>6</sup> The exclusive reference to SSF concepts is not intended to sideline all other contributors to the debate on well-being, fairness and happiness. In this note the question at issue does not concern the content of the categories, but the methodological aspect of their consideration in the (socio-)economic process.

<sup>7</sup> STIGLITZ, SEN, FITOUSSI 2009, 18.

resources into a good life”.<sup>8</sup> This concept of well-being comprises not only the “economic” dimension, but also includes features normally attributed, widely if not universally, to other “social” dimensions. Whatever the definition may be, the concept of well-being is inevitably multidimensional; in fact, the Commission’s interpretation of well-being is characterized by eight simultaneous dimensions: in addition to (i) material living standards, closely related to the current economic concept of the product, it proposes consideration of the conditions of (ii) health; (iii) education; (iv) personal activities; including work; (v) political voice and governance; (vi) social connections and relationships; (vii) environment (present and future); (viii) insecurity, of an economic as well as a physical nature.<sup>9</sup>

**TABLE 1: THE PRODUCTION BOUNDARIES OF WELL-BEING FLOW**

<b>WELL-BEING</b>	<i>Market productive activities</i>	<i>Market goods and services</i>	<b>PRODUCT</b>
	<i>Public services production</i>	<i>Non-market goods and services</i>	
	<i>“Other” productive activities of well-being</i>		

All these activities concern the quality of life and contribute to people’s well-being.<sup>10</sup> As can be seen in Table 1, the indications relating to some of them are also part of the concept of product currently in use: not only most of the production of goods<sup>11</sup> supplied in the market, but also, as pointed out above, most of the public services. However, this extension of the product concept notwithstanding, the proposed well-being concept includes a number of important activities for personal and collective life that makes these two concepts incommensurable.<sup>12</sup> So, the value of the current product is only a part of the flow of well-being in a given period; and whether it is a great or a small part is a secondary issue in the present case. The relevant aspect is that it comes up in a sector of “other” productive activities of well-being and that it defines the structure of the economic process of well-being production and use.

### **3. ... and from “capital” stock to “well-being productive resources” stock.**

The other innovative aspect of the SSF’s proposal is the reference to a concept of “sustainability” of

<sup>8</sup> STIGLITZ, SEN, FITOUSSI 2009, 144.

<sup>9</sup> See STIGLITZ, SEN, FITOUSSI 2009, 14-16.

<sup>10</sup> As the product is a macroeconomic concept, well-being is here dealt with also as a macroeconomic aggregate. That is to say, here I am not interested in the (important) question of how to represent the individual (subjective) feeling of well-being, but in considering a framework from an objective point of view since how society is organized makes a difference for people’s lives.

<sup>11</sup> As has been well-known since publication of the classic and seminal NORDHAUS-TOBIN 1973 paper, there are goods and services that – as we shall see later – are traded in the market, and included in the GDP, that do not offer any contribution to well-being.

<sup>12</sup> It suffices to point out that the difference between product and well-being derives from important aspects of economic and social life: household self-consumption, leisure, use of common goods, collective services (security, medical, educational, housing facilities, sport facilities and so on).

well-being over time. Well-being measured at a point in time makes little sense since it is a moment in a continuous process the current effects of which influence, progressively or regressively, the future. In fact, also in the measurement of standard of living it is not only the current income flows that are important, but in addition the consumption opportunities over time.<sup>13</sup> Granted that well-being is to be seen in a context of sustainability, we must take the future into account. But the production of future well-being is based upon the future resources the availability of which depends on present behaviors. So, if the current process of consumption affects the conditions for future (well-being) production, then it is necessary that in the present production and consumption processes the stocks of available productive resources are not depleted. The only way to guarantee the sustainability process is to leave “to future generations (...) enough resources of all kinds to provide them with opportunity sets at least as large as the ones we have had for ourselves.”<sup>14</sup>

It is therefore essential to state precisely the form of (well-being) productive resources. In current national accounting the production of resources to be used for future production is essentially a matter of man-made capital goods embedded in firm activity, or in civil construction and public infrastructures. In the SSF’s proposal, by contrast, the “resources” taken into account are manifold: “fossil resources, renewables other environmental resources, but also physical, human and social capital, or general knowledge.”<sup>15</sup>

**TABLE 2: STOCK OF WELL-BEING PRODUCTIVE RESOURCES**

<b>WELL-BEING PRODUCTIVE RESOURCES</b>	<i>Man-made capital</i>	<b>CAPITAL</b>
	<i>Human resources</i>	
	<i>Social resources</i>	
	<i>Natural resources</i>	

As can be seen in Table 2, the range of factors governing economic and social progress is greatly extended when it includes, within the boundaries delimiting the stock of well-being productive resources, not only (man-made) capital goods privately owned or subject to market forces, but also the collective assets managed outside the market and embedded in personal ability, social relations and natural conditions. The preservation, or better the further accumulation, of these resources ensures opportunities for future well-being.

#### **4. The sustainable well-being production process: the structure of relations ...**

Taking into consideration an economic process centered on well-being, and especially on sustainable well-being, means interpreting society’s reproduction from a different viewpoint. In this context, the production process does not refer solely to goods and services to be exchanged on the market (“market-goods”), but also to the other goods and services that generate well-being without passing through the market (here defined as “value-goods”); moreover, resources productive of well-being are also the result of a production process. Therefore, there are three interdependent production lines

<sup>13</sup> On the limits of SSF proposals see the ample survey of VANOLI 2010.

<sup>14</sup> STIGLITZ, SEN, FITOUSSI 2009, 250.

<sup>15</sup> See STIGLITZ, SEN, FITOUSSI 2009, 250, 265-66.

since value-goods are produced with the use of market-goods, too, and the production of these requires the use of value-goods; the reproduction of resources necessary to the overall production entails the use of both market-goods and value-goods. In essence, the process of production of well-being is a process of production of market-goods, value-goods and resources by means of market-goods, value-goods and resources.

Description of the (sustainable) well-being production process amounts to constructing an appropriate list of inputs – market and non-market, including the consumption of (different) resources – necessary to obtain the several outputs. In order to produce, for example, the value-goods – care and assistance, educational, political and social security and so on – procedures and institutions are necessary that employ resources and (market and non-market) goods and services. Even the reproduction of productive resources – liable to depreciation and depletion through the production process itself or other events – derives from institutionally organized activities with the task of restoring or extending human capabilities, social relationships and the natural environment.

**MATRIX 1: THE (SOCIO-)ECONOMIC SYSTEM:  
MARKET AND VALUE GOODS; CAPITAL AND HES RESOURCES.**

<b>MATRIX 1</b>	RESOURCES		PRODUCTION		CONSUMPTION	RESOURCES FORMATION			RESOURCES		TOTAL
	INITIAL STOCKS	MARKET GOODS	VALUE GOODS	WEALTH		FIRM'S CAPITAL	HES RESOURC	REVALUATION	FINAL STOCKS		
	(A)	(B)	(C)	(D)		(E)	(F)	(G)	(H)	(I)	
(1) WEALTH-RESOURCES: INITIAL STOCKS						$K_{H^i}$	$Z_{H^i}$				$K_{H^i}+Z_{H^i}$
(2) PRODUCTION: MARKET GOODS			$B_{VM}$	$C_M$		$GF^K_M$	$GF^Z_M$				$T_M$
(3) PRODUCTION: VALUE GOODS		$B_{MV}$		$C_V$		$GF^K_V$	$GF^Z_V$				$T_V$
(4) CONSUMPTION		$Y_M$	$Y_V$								$Y_H$
(5) WEALTH ACCUMULATION	$R_{H^i}$			$S_H$				$RV(R_H)$			$R_{H^f}$
(6) FIRM'S CAPITAL FORMATION		$D^K_M$								$K_{H^f}$	$K_{H^f}+D^K$
(7) HES RESOURCES FORMATION		$D^Z_M$	$D^Z_V$							$Z_{H^f}$	$Z_{H^f}+D^Z$
(8) WEALTH-RESOURCES: REVALUATION						$RV(K_H)$	$RV(Z_H)$				$RV(K_H)+RV(Z_H)$
(9) WEALTH-RESOURCES: FINAL STOCKS						$R_{H^f}$					$R_{H^f}$
TOTAL	$R_{H^i}$	$T_M$	$T_V$	$Y_H$		$R_{H^f}$	$K_{H^f}+D^K$	$Z_{H^f}+D^Z$	$RV(R_H)$	$K_{H^f}+Z_{H^f}$	

To attribute to the production concept a different content from the usual involves redefining the content of the entire system of income, consumption and capital formation aggregates, in other words of the entire network of macroeconomic relationships. Matrix 1, applying the usual tools of social accounting<sup>16</sup>, reconstructs the structure of this network, albeit in very simplified form; it takes into account two sectors of productive activity, respectively market-goods and value-goods; one sector of consumption; two areas for the accumulation of productive resources, respectively “capital” (firm capital goods) and “HES resources” (other resources productive of well-being, such as human, social

<sup>16</sup> Reference is to social accounting of the SNA tradition along the Stone, Stuvell, Ruggles and Ruggles research lines (EISNER 1988) and popularized in GNESUTTA 1983.

and natural capital).<sup>17</sup>

In comparison with the usual accounting schemes, analysis of Matrix 1<sup>18</sup> highlights the more interesting issues.

As regards the production of market-goods (row 2 - column B of the Matrix)<sup>19</sup> we may note that:

- the costs of market-good production include, as intermediate goods, the part of value-goods ( $\mathbf{B}_{MV}$ ) including all those services currently produced by the social system (directly or by the public administration) that, not exchanged in monetary terms, determine the productive environment in which businesses operate; in particular, the social relations and collective action (justice, crime fighting and prevention, educational programmes and so on) that influence the climate of cooperation and mutual trust and favor firm activity;
- the costs of market-good production include depreciation of the human, social and environmental resources due to the production process ( $\mathbf{D}_{M}^Z$ ), such as environmental pollution, deterioration of working conditions, the social insecurity of the productive organization;
- part of the market-good output is used to rebuild both the firm's productive capital ( $\mathbf{GI}_{M}^K$ ) and the HES resources ( $\mathbf{GI}_{M}^Z$ ). This is a gross expenditure that offsets, completely or partially, the depreciation of both stock due to market-good production; the expenditure includes “defensive expenditures”, as in the case in which health and education expenses are considered as investments in human capital or remediation of pollution as investment to improve or maintain environmental quality;
- the consumption of market-goods regards only their direct consumption by the population ( $\mathbf{C}_M$ ), while if the market-goods are purchased to be transformed, for example in domestic production, they appear as intermediate goods ( $\mathbf{B}_{MV}$ ) for the production of value-goods.<sup>20</sup>

Similar considerations can be formulated for value-good production (row 3 - column C of the Matrix).<sup>21</sup> In addition to the two items (the intermediate goods  $\mathbf{B}_{VM}$  and  $\mathbf{B}_{MV}$ ) examined above, we may note that:

- human, social and environmental resources also deteriorate in the production of value-goods ( $\mathbf{D}_{ZV}$ );
- part of value-good output is allocated for the reconstruction of both the firm's productive capital ( $\mathbf{GI}_{V}^K$ ) and the HES resources ( $\mathbf{GI}_{V}^Z$ ); non-market activities also contribute to defensive consumptions<sup>22</sup>;

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<sup>17</sup> In this simplified representation the institutions are basically two, one for production and one for consumption. The productive institutions are distinguished between those producing market-goods (firms, subscript  $M$ ) and those producing value-goods (households, hospitals, schools, universities etc., subscript  $V$ ); both produce for the consumption and formation of the two types of productive resources (capital  $K$  and HES resources  $Z$ ). For the sake of further simplicity, the production of public services is not distinguished from the production of other value-goods. The activity of consumption is attributed to a single institution, the overall population (subscript  $H$ ) which also owns the entire final stock of productive resources (wealth  $R$ ). However, the decision to aggregate the entire population in a single sector entails the impossibility of considering significant aspects such as the interdependence of the various lines of production of value-goods and inequality in distribution in income and resources.

<sup>18</sup> In the APPENDIX are listed the accounting identities and all the symbols.

<sup>19</sup> APPENDIX, Identity 2B.

<sup>20</sup>  $\mathbf{B}_{MV}$  also includes all those expenses incurred in order to participate in the production process (such as the cost of commute to work), but which do not enhance the well-being of people.

<sup>21</sup> APPENDIX, Identity 3C.

<sup>22</sup> In fact, many expenses are not considered consumption since they are costs to remediate undesirable conditions due to the deterioration of resources (e.g. the effects of pollution, urban traffic, insecurity etc.).

- the consumption of value-goods ( $\mathbf{C}_V$ ) also comprises, as noted above, the market-goods purchased and transformed by non-firm institutions (for example, meals at home, commuting to work, family care in domestic production, as well as the soup kitchens and assistance services of voluntary work);
- the added value of value-good production indicates the social value produced by non-firm institutions and so the (non-market, non-monetary) income due to those operating in this activity (in the above examples, the home and voluntary workers).

With regard to these considerations, it should be noted that the consumption account (row 4 - column D of the Matrix) sets out in the row the added values of the two sectors ( $\mathbf{Y}_M$  and  $\mathbf{Y}_V$ ) and in the column the consumption of the population in the two types of goods ( $\mathbf{C}_M$  and  $\mathbf{C}_V$ ), where both  $\mathbf{Y}_V$  and  $\mathbf{C}_V$ , non-market aggregates, refer to social value produced and used that does not take monetary form. This does not mean these aggregates are not “true” values; it simply means that in the market economy social organization must find the social forms to redistribute the monetary income to ensure the existence and efficiency of these essential value-good productive activities. Concrete examples of these redistribution procedures, in addition to public administration, are the redistributive forms within families, voluntary contributions to associations and so on. It is also evident that some types of social organization increase the non-market value-added, while others can depress it: society’s organizational form is part of its social capital.

The remaining relations of the Matrix 1 are easily understood. Only the resources revaluation/devaluation items ( $\mathbf{RV}(\mathbf{K}_H)$  and  $\mathbf{RV}(\mathbf{Z}_H)$  and therefore  $\mathbf{RV}(\mathbf{R}_H)$ , row 8 - column H) merits brief consideration. These two items record the changes that affected the various resource stocks for events other than the production process. Unforeseen obsolescence of a firm’s productive instruments or an organizational innovation in the productive process that affects their future productivity, but also the effects of earthquakes, floods and nuclear disasters are all events that increase/reduce the quantity and quality of the stock of resources for the production of future well-being independent of the present production process.<sup>23</sup>

Therefore, an understanding of the relationship between growth (of productive capital goods) and development (of the well-being productive resources) cannot leave out the productive structure of the value-goods sector and its interrelationship with the market-goods sector. In case of changes in the resources devoted to this sector, or in their productive structure, or in complementarity or substitutability between the market and the value-goods sector it seems plausible to argue that the society’s development path can be significantly altered. The representation of the economic process that results from accepting sustainable well-being as a key-concept of economic analysis highlights the causal, circular and cumulative relationship between the social sphere and the market sphere. Even though the possibility of applying a quantitative measure to the aggregates that arise from this analytical choice is fairly remote, it is nevertheless not conceptually possible for the economist to exclude from his considerations the structural interdependence that exists between economy and society and to rely on an *a priori* unidirectional (synthetic) effect from one to another that ignores the cumulative effects of their interdependence.

Neglecting this analytical dimension precludes possession of the requisite tools for understanding the non-uniqueness between the level of product and the level of well-being. In particular, if we take into

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<sup>23</sup> It is to be noted that, unlike the current national accounts, net investment expenditure does not generally correspond to an increase in the resources of the country; in fact (identities 6F and 7G), gross investments offset the loss of production efficiency of capital ( $\mathbf{GI}^K_M$  and  $\mathbf{GI}^K_V$ ) and of the resources ( $\mathbf{GI}^Z_M$  and  $\mathbf{GI}^Z_V$ ) due both to the production process (e.g. due to pollution, the costs of which are respectively included in  $\mathbf{D}^K_M$  and in  $\mathbf{D}^Z_M$  and  $\mathbf{D}^Z_V$ ) but also to other external events (e.g. due to disasters, whose costs are respectively included in  $\mathbf{RV}(\mathbf{K}_H)$  and in  $\mathbf{RV}(\mathbf{Z}_H)$ ).

account the point that, with reference to the scheme used, the current GDP aggregate is given by the sum  $Y_M + B_{MV} + D_M^Z$ , then, in present accounting data, since the last two terms are not recorded, the contribution of the market-goods sector to net creation of social value  $Y_M$  (by approximation, the GDP current estimate) is systematically overestimated. It is on the strength of this consideration that I can assert the existence of an impasse in (present) economic research since, on the one hand, its concept of “product” (and the corresponding conceptual scheme) is an inadequate tool for analyzing the reality to be studied, while on the other hand, its concept of “well-being” (and its conceptual scheme) is not a well-developed tool for the persuasive analysis of many major issues. However, if taken seriously, this cognitive tension may be an incentive to organize (and revise) an economic approach able to interpret the economic (and social) process in a more convincing manner.

### ***5. ... and the implications for economic policy.***

Possessing a more extensive and comprehensive analytical framework for the many qualitative factors in the interaction between economy and society is not only crucial for economic analysis; it is an even more relevant and urgent issue for assessment of the effects of economic policy. In fact, policy prescriptions can be formulated with reference to a conceptual framework based on the “product” only if we hold the unlikely belief that the structure of relations linking the product to well-being and the composition of productive resources remains stable over time. Once we recognize that the social, political and cultural process serving the material and moral reproduction of society evolve over time, changing the structure of economic and social development, we are compelled to suggest that, in the absence of adequate availability of the necessary information, economic policy should be formulated under an explicit *precaution principle*.<sup>24</sup>

We cannot assess the effectiveness of economic policy choices if, centered only on results in terms of product, they do not take into account the effects on the production of value-goods (and their retroactive effects). It is not difficult to understand, for instance, that the “austerity policies” adopted for a growing market product may produce a negative social effect; again, and as present events are showing, the (expected) increase in a country’s GDP can be accompanied by an increase in degradation of resources, by deterioration of working conditions in terms of rights and dignity, by increased collective insecurity due to deterioration of social relations and so on. And, in such cases, we are in very big trouble, since we have no tools to analyze and compare what we gain with the product increase against what we lose with the decrease of well-being.

This necessary caution does not apply only to our insufficient knowledge of how the factors that affect the social and civil progress of a country operate, but indeed also to the very identification of this term. We must not overlook the fact that “well-being” is a multidimensional concept that rests on value judgments, not only on which elements of well-being should be considered but also on which of them loom larger at a given moment in any one particular historical society. There may be several aggregate definitions of quality of life that reflect different political perspectives and the questions they address; in fact, as sustainability involves the future, these varying definitions relate not only to what the future may hold, but even more to what society we want to build. Choosing between different interpretations of sustainable well-being deriving from value judgments is ultimately a normative decision.<sup>25</sup>

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<sup>24</sup> There is an extensive and growing economic and social literature regarding the determinants and the effects of the production of what I name value-goods. A (partial) survey of these studies demonstrating the attention from leading scholars this research field already enjoys is set out in GNESUTTA 2010.

<sup>25</sup> “However, as what we measure shapes what we collectively strive to pursue – and what we pursue determines what we measure – the report and its implementation may have a significant impact on the way in which our societies look at themselves and, therefore, on the way in which policies are designed, implemented and assessed.” (STIGLITZ, SEN, FITOUSSI 2009, 9).



The value judgments are not the only normative factor. The need to relate the actions of current economic (and social) policy to the results of a future economic (and social) structure inevitably means that decisions based on such projections are made in a context of fundamental uncertainty. Different possible paths for future conditions of well-being stem from the model applied to describe future interactions, the assumptions as to individual behaviors, including those of the policy makers, the weight given to various factors and the magnitude of future external shocks. Economic policy is then forced to operate with alternative scenarios to assess future states of the economy and society, to be evaluated on the basis of assessment of the risk that such scenarios may prove mistaken. Essentially, also from the theoretical point of view, assuming the sustainability condition means proceeding with explicit predictions of future economic trajectories and with (explicit or implicit) normative choices on values attached to what is to be sustained, and for whom. The fact is that there are very different views on all of these points, not only ideological but also due to different beliefs about probability distributions of future scenarios. Hence it is advisable that, in evaluating the alternatives, the economic policies take into account the worst cases scenarios, in accordance with the “precaution principle”.

### 6. To widen our research space.

The difficulty of obtaining a complete picture of economy-society interactions calls into question the coordinates within which economic analysis is currently constrained, not to mention economic policy itself. Taking as significant the interactions between the moral and material reproduction of society without being able to give them a quantitative dimension, albeit approximate and conventional, is a factor that weakens economic analysis and implies the necessity of subjecting economic policy choices to deliberative processes, whereby people can, in severely problematic situations, democratically identify the perspectives that most directly bear on their present and future living conditions. This is the fundamental knot that economists must either cut or untangle – it does not matter how approximate their initial solutions may be – in order to arrive at a more comprehensive evaluation of the progress of society and to achieve a more profound verification of the effects of economic policies.

## APPENDIX: THE (SOCIO-)ECONOMIC RELATIONS NETWORK

### The accounting identities

1A	<i>Wealth-Resources: Initial stocks</i>	:	$K_H^i + Z_H^i$		=	$R_H^i$
2B	<i>Production: market goods</i>	:	$B_{VM} + C_M + GI^K_M + GI^Z_M$		=	$B_{MV} + Y_M + D^K_M + D^Z_M$
3C	<i>Production: value goods</i>	:	$B_{MV} + C_V + GI^K_V + GI^Z_V$		=	$B_{VM} + Y_V + D^Z_V$
4D	<i>Consumption</i>	:	$Y_M + Y_V$		=	$C_M + C_V + S_H$
5E	<i>Wealth accumulation</i>	:	$R_H^i + S_H + RV(R_H)$		=	$R_H^f$
6F	<i>Firm's capital formation</i>	:	$D^K_M + K_H^f$		=	$K_H^i + GI^K_M + GI^K_V + RV(K_H)$
7G	<i>HES resources formation</i>	:	$D^Z_M + D^Z_V + Z_H^f$		=	$Z_H^i + GI^Z_M + GI^Z_V + RV(Z_H)$
8H	<i>Wealth-resources: revaluation</i>	:	$RV(K_H) + RV(Z_H)$		=	$RV(R_H)$
9I	<i>Wealth-Resources: Final stocks</i>	:	$R_H^f$		=	$K_H^f + Z_H^f$

### The content of symbols

$B_{MV}$	intermediate value goods in market goods production
$B_{VM}$	intermediate market goods in value goods production

$C_M$	consumption of market goods
$C_V$	consumption of value goods
$D^{K_M}$	depreciation of firm's capital in market goods production
$D^{Z_M}$	depreciation of HES resources in market goods production
$D^{Z_V}$	depreciation of HES resources in value goods production
$GI^{K_M}$	firm's capital formation in market goods production
$GI^{K_V}$	firm's capital formation in value goods production
$GI^{Z_M}$	HES resources formation in market goods production
$GI^{Z_V}$	HES resources formation in value goods production
$K_H^f$	stock of final firm's capital
$K_H^i$	stock of initial firm's capital
$R_H^f$	stock of final wealth
$R_H^i$	stock of initial wealth
$RV(K_H)$	reevaluation of initial stock of firm's capital
$RV(R_H)$	reevaluation of initial stock of wealth
$RV(Z_H)$	reevaluation of initial stock of HES resources
$S_H$	savings
$Y_M$	added value in market goods production
$Y_V$	added value in value goods production
$Z_H^f$	stock of final HES resources
$Z_H^i$	stock of initial HES resources

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