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# EQUITY CRITERIA AS INSTRUMENT TO ENSURE SUSTAINABILITY OF PARETO OR KALDOR-HICKS EFFICIENCY: A CORRELATION HIDDEN BY SOURCES OF CONFOUNDING AS KEY FOR SORTING OUT THE GLOBAL ECONOMIC CRISIS

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## Abstract

The hypothesis is that Pareto and Kaldor-Hicks Efficiency have an aspect of sustainability in relation to inequality. Such efficient situations reached increasing inequality are argued to bring in the long term decreases of effective demand larger than counterbalances by total factor productivity growth. Equity and efficiency in welfare economics, rather than being quite contrasting objectives, are as such related and mutually necessary. Countries implementing redistributive policies could implement Kaldor-Hicks movements which make some parts of the economic agents less well off. Such movements with redistribution would though reinstate effective demand on the demand side and make in general all economic agents better off, increasing output and wealth throughout the economy. Redistributive policies increase also imports, benefiting other countries and remunerating therefore their potential free-rider behaviour. The concerned demand side policies, requiring cooperation and redistribution, call the international institutions to coordinate their action for harmonizing such policies and restrain free-rider behaviour.

*Keywords:* paradigm, inequality, total factor productivity growth, confounding, pareto efficiency, kaldor-hicks efficiency, cost-benefit analysis, effective demand, sustainability, sustainable development, global economy.

## Introduction

In Benazzo (2009), a paradigm is presented in which competition for meritocracy is good for TFP growth and cooperation for keeping inequality as low as possible is good for the outlet markets. In this paper the implication of that paradigm are drawn on the domain of Pareto Efficiency and Kaldor-Hicks efficiency. In order to proceed it is therefore necessary to recall the main aspects of the paradigm. This is done in Benazzo (2010) and a shorter version is here performed. The wealth maximisation condition of this paradigm is that, given a situation in which the economy is at full potential output, TFP growth is maximised while its benefices are equally shared by both capital and labour, and throughout all occupational groups, in order to avoid excessive inequality. Considering the analysis of Paolo Sylos Labini (1981), capital remuneration and labour remuneration should keep growing at the same yearly percentage as that of TFP growth. It is underlined that this condition should apply also throughout wages of all occupational groups, in order to have an impact on inequality aspects. This condition has been unattended in the last decades, such that capital remuneration and top executives remuneration have grown more than TFP growth, while other occupational groups remuneration have grown less than TFP growth or have ended even more behind (Krugman, 2007). Different empirical analysis brings to different and contrasting results on a correlation of inequality with effective demand and with growth (Galbraith, 2008; Barro, 2008). This is argued to be due to three main sources of confounding. Altogether these sources of confounding require to be controlled in order to avoid that a variable, i.e. called inequality, hiddenly includes other dynamics becoming as such a composed confounding variable with a spurious name. The three sources of confounding are considered to hide a negative correlation between inequality and effective demand.

## Inequality and Effective Demand

Concerning the first, inequality has a different effect on the subsistence sector that concerns subsistence necessities and on the modern industrial sector that concerns goods and services that can eventually be foregone. This latter sector includes all the rest, such as leisure food, leisure clothes, additional housing, appliances, holidays, recreation, etc. "Industrial" in the sense that was absent in traditional subsistence economies, "modern" as industrialization touches also the traditional subsistence sector production, which remains "traditional". This is a dual sectors economy based on the research by Arthur W. Lewis, which was on the supply side, and it is transformed in two sectors that can be considered from the demand side also. The dual economy of Bhaduri (2006) includes also the analysis of the demand side, using a classification of the two sectors more in line with that of Lewis. Amartya Sen's (1981) analysis of famines,

those due to increase in inequality, is applied to the two sectors economy. This brings to the implication that a rise in inequality creates a dynamic of inflation of the subsistence sector in relation to the modern industrial sector, within the economy. Subsistence is assumed to be the same in general for all, and to vary for factors which are quite independent from a person's efforts or skills, such as the climate of the area (mountain, desert, ...), the metabolism of the person concerning food and reaction to cold or hot temperature. Inequality should therefore be measured on the modern industrial sector only because inequality has anyway to be ensured, and because subsistence can be assumed an equality consumption in itself. A second source of confounding concerns the presence of action on effective demand both from the part of TFP growth and from the part of an increase in inequality in opposite directions. This requires the control of one of the two while analysing the effect of the other on effective demand. As TFP growth increases effective demand counterbalancing decrease in effective demand related to increase in inequalities, when the two are considered together without distinguishing them, a moderate progression of effective demand may be attributed all to moderate TFP growth rather than to a high TFP growth counterbalanced by a negative effect of increased inequality. A stability of effective demand may be attributed to a moderate progression of TFP growth counterbalanced by a small effect of increase in inequality or by other factors, while it could instead be due to a high TFP growth with a corresponding counterbalance due to inequality increase. The two components would need to be considered explicitly, either together, or one only while controlling for the other. A third source of confounding dramatizes this dynamic through delocalization that creates a decoupling with the demand side that remains locally in the headquarters country, while big part of the supply side is delocalised. The TFP growth that operate in the delocalised factories is then embedded in the low prices of the delocalised products that are imported in the headquarters country. The TFP growth gets therefore delocalised while the inequality increase remains local. Current GDP and GNP measures are unsuitable to account specifically for this dynamic. The dynamic tends therefore to remain hidden behind data. This should be taken into account, as well as the fact that delocalization tend to give the fruits of TFP growth to the parent headquarters in the developed country, leaving the developing country as if TFP growth remained as before. Developed as well as developing countries can both have the closed economy inequality increase and the delocalization dynamics, even if the second is usually in a larger amount for developed economies towards developing ones.

When the dynamic of increasing inequalities continues, the modern industrial sector would continue to shrink in the economy and the TFP growth should then reinstate effective demand on a progressively shrinking set of entitlements available in the modern industrial sector. This requires a sustained acceleration of the TFP growth which is impossible in the long term.

The economy would initially appear to remain at a rather constant output or to increase it, while the industrial sector would actually be shrinking. When the counterbalancing requires an unfeasible TFP growth, the economy would go in recession.

This paradigm has interesting properties that provide its credibility. There are two main ones: On one side it proposes a solution to a controversy over the Keynesian multiplier. Economists' debates have quite an agreement that it works in cases of big recessions or great depressions, in agreement with quite consistent empirical findings. The reason why it would work in these occasions is less agreed. Critics tend to consider that in such cases it is good to start with Keynesian expenditure and then implement other policies that take over when the Keynesian expenditure starts losing effect due to inflationary dynamics. Advocates tend to consider that effective demand and the demand side is important and this is where Keynesian expenditures acts. The disagreement rests more on its working during normal fluctuating cycle where findings are quite contradictory and leave the debate more open. Critics sustain that it works only in the short term and then that it loses thrusts as it drained by inflationary pressures. Advocates consider that it works on effective demand and that it makes these measures work. The paradigm of inequality decrease multiplier provides a reconciling reason for this. It indicates that in big recessions or great depressions the economic situation is so compromised that Keynesian expenditure in any case would decrease inequalities. In case instead of mild negative economic cycle, Keynesian expenditure can be carried out in two ways, either by increasing public sector expenditure in a bigger amount than the increase in taxes, or by decreasing the public sector in a smaller amount than the decrease in taxes. The first way therefore decreases inequalities, the second one increases them. Keynesian economics fosters considering them as equivalent. The inequality decrease multiplier entails rather that the Keynesian expenditure performed decreasing inequality is the one that works. The inequality decrease multiplier entails that the Keynesian multiplier works when it decreases inequalities, and that as such is a special case of the inequality decrease multiplier. It allows agreeing with both critics and advocates of Keynesian expenditure on the condition of specifying the type of Keynesian

expenditure.

The other interesting property of the inequality decrease multiplier is that it provides a solution to the paradox of thrift. The decrease in the aggregate value of savings due to an increase in savings, is a normal case when inequality increases, as it increases the propensity to save while it decreases effective demand on the demand side, in the long run at a faster pace that what TFP growth can counterbalance. This creates financial market bubbles that burst and eventually pass to other sectors of the economy ending up in subsistence sectors of the economy, like housing. From there the only way out left is through recession, which decreases the value of savings. This dynamic, rather than a paradox, is a normal case dynamic.

### **Social sustainability and Pareto and Kaldor-Hicks Efficiency**

Upon this base, the relation of inequality with efficiency is examined.

These are considered as separated in conventional economics. Economics equity is one issue and efficiency another. The maximisation of output is disconnected from equity. The analysis performed here above brings to the implication that, inequality affects output maximisation. Inequality decreases effective demand on the demand side and as such has a contrasting effect on TFP growth. Inequality may affect also TFP growth from the supply side if it is excessive or too low (Caselli, Francesco & Nicola Gennaioli, 2005). If it is too low it may tamper incentives to perform and therefore to find ways to decrease costs by increasing TFP growth. If it is too high, it may foster dynastic management that rewards ties and relations rather than efficiency.

Pareto Efficiency is disconnected from equity issues (Zerbe Jr. and Bellas, 2006). As Pareto Efficiency allows that efficiency gains from TFP growth are distributed in a way that inequality increases substantially, then it may allow TFP growth in the short term, however, through the demand side, it allows inequality effects to decrease effective demand and to bring about 'paradox' of thrift dynamics, which decrease output and the value of the increased savings. This decreases wealth of many, both those that saw their wealth increase in the beginning and others that had already remained behind before. The Pareto Efficiency criterion, when put in a paradigm with the inequality decrease multiplier, contradicts itself. It states that it should avoid decreasing the wealth of others, however in the long run it allows decreasing the wealth of many. The Pareto Efficiency criterion is as such unsustainable. It could certainly be compatible with situations in which Pareto improvements are carried out with cases in which inequality stays constant or decreases. In such cases its sustainability would remain. The Pareto Efficiency criterion though is detached from distribution issues. The Pareto Efficiency criterion is meant to define different states which are all considered efficient in the same way, when the wealth of some is increased without decreasing that of others. The Pareto Efficiency criterion is usually considered as to be supplemented by political decisions. These could judge about equity issues. In the inequality decrease multiplier paradigm though, the Pareto Efficiency would define as equal Pareto improvements those that have different effects on inequality. This, having different effects of the sustainability of the Pareto Optimality, contradicts the impartiality of the Pareto Efficiency criterion. There are therefore different states of Pareto Optimality in the long run that give it sustainability or unsustainability and in various degrees. The criterion is as such of little added value in policy options analysis, and in political choices, and it may lead to consider as equivalent options which have very different sustainability conditions.

Pareto Efficiency is anyhow a principle that is almost impossible to have in actual practical economic dynamics. As Zerbe Jr. points (2006), also a transaction which is Pareto Efficient for those that are directly involved in the transaction may decrease the wealth of the consumers that would have paid less the purchase, as this increases at least slightly the price of the purchase in the market, and the decreases the wealth of the suppliers that think the purchase should have been at higher prices, as it decreases the price in the market.

The alternative Kaldor-Hicks Efficiency criterion, allowing for decreasing the wealth of others as long as the wealth in the economy increases, can also be analysed in light of the inequality decrease multiplier paradigm. The action or project considered is desirable when the money value of benefits is higher than that of the costs. This again is disconnected from issues of distribution. Kaldor-Hicks Efficiency is the standard criterion (KH) used in Benefit-Cost Analysis (BCA). Principal aims of BCA are to save money, maximise wealth and increase aggregate real income. In the inequality decrease multiplier these aims require tackling inequality; therefore the KH criterion would be insufficient. More in specific, as indicated for the Pareto Efficiency, the Kaldor-Hicks criterion is also indicating a set of valid options that have an equivalent value of improving efficiency. As long as in indicating these sets of options the inequality is left out of the picture, as in the Pareto Efficiency, the issue of sustainability of the Kaldor-Hicks Efficiency improvements is left

out. A state A is considered, from which there are two possible improvements, both having benefits higher than costs after the losers are potentially compensated for any loss incurred. These two states are state B and C, and in relation to each other they run into the Scitovsky paradox as they can be reversed one back to the other indefinitely and still respect the Kaldor-Hicks Efficiency. States B and C, which are then equivalent in such a frame, are most likely having different effects on inequality. This leaves thus disregarded the issue of their sustainability in an inequality decrease multiplier paradigm. The value of equivalence of the two states B and C is in such a paradigm lost and the two policy options on one side cannot be considered equivalent, on the other side there is no information that indicates what distributional effects each of the two carry out. The Kaldor-Hicks criterion lacks therefore added value for setting priorities and policy options comparisons in an inequality decrease multiplier paradigm.

Zerbe Jr. (2006) indicates a different view which has been called Kaldor-Hicks-Moral (KHM), which addresses the problem of moral sentiments in the Benefit-Cost Analysis. In the moral sentiments, the sentiments about equity are included. Equity issues are therefore included, and as such this criterion addresses the issue of inequalities. The willingness to pay (WTP) are measured also for outcomes of projects and policy options that touch moral sentiments. These measurements are quite more difficult. Moral values in Benefit-Cost Analysis have often been integrated by KH as an adjustment of the discount rate, which usually is decreased with respect to the current one in the markets, in order to account more for long term effects. This addresses somehow the issue of sustainability. Specific information about directions in inequality remains though hidden in such information and therefore the sustainability in relation to increases in inequality remain out of the picture. The KHM, including the WTP for the moral sentiments towards equity, addresses this issue (Zerbe Jr., 2004).

The KHM characteristics, in comparison to the Kaldor-Hicks criterion are (Zerbe Jr., 2006): 1) both use willingness to pay for gains and willingness to accept costs of losses; 2) both acknowledge the existing property rights as a status quo; 3) KH considers equally all gains or losses, while KHM excludes those that are legally illegitimate or that violate well-accepted moral principles; 4) both recognize and include also non-pecuniary effects; 5) KH uses the Potential Compensation Test for identifying the efficient options, while KHM uses the comparison of aggregate benefits with aggregate losses; 6) KM, even if there are willingness to pay for options components related to moral sentiments, it excludes them, while KHM includes all those for which there are WTP; 7) both assume equal marginal utility of income, treating each person the same; 8) KM justifies its use on the presence of market failures and externalities, while KHM works without this condition; 9) KH excluded transaction costs, while KHM includes them; 10) KM tends to be considered as the answer, rather than information on options within a wider decision making process, while KHM uses this second approach.

A relevant characteristic in the sustainability issue in relation to equity analysed here, both for KH and for KHM is the number (5). It has been analysed already for KH above. Concerning KHM, the comparison of aggregate benefits with aggregate losses overlooks the effects on distribution. Effects on distribution are included in the costs and benefits as moral sentiments, such as those against generating income losses for the poor (Zerbe Jr. 2006). This is positive and towards considering more inequality. This approach leaves though efficiency and equity as two separate issues which lack any feedback with each other. Welfare increase is the result of benefits net of losses to be still positive, including also equity in the counting. The inequality decrease multiplier implicates a trade-off between TFP growth for competition and inequality decrease for cooperation. Being equity one of the components of the Benefit-Costs, in terms of WTP for satisfying moral sentiments, there is the issue of putting a weight to the equity issues. Should it weight as any other component, other moral sentiments, and other increases in personal wealth? The inequality decrease multiplier gives a special importance to inequality which can be detached from moral sentiments. Inequality is in fact in such a paradigm a self interest, as it ensures sustainability of a wealth situation reached. With inequality increase, the 'paradox' of thrift dynamic in the long term counteracts the wealth situation reached and brings to a lower welfare situation. A selfish person is therefore interested in a decrease in inequality sufficient to maintain the welfare situation. The problem is then how can that person obtain such a result. The 'free-rider' dynamic is in place here, for which a selfish would want that everybody else pays for decreasing inequality but him/herself. The choice of social sustainability by decreasing inequality confirms to be in the sphere of cooperation. There is the need of a social contract for this; laws that indicate how certain labour market dynamics before taxes should function or how taxes should be in order to decrease excessive inequality.

Another issue raised by the inequality decrease multiplier paradigm is the characteristic number (7). Both KH and KHM assume equal marginal utility of income, treating each person the same.

In the inequality decrease multiplier, the marginal utility of consumption is different for different levels of wealth. Marginal utility of consumption is equivalent to marginal utility of wealth. An affluent person has a lower marginal utility of wealth than a limitedly wealthy person. Wealth is related to income. Condition (7) is therefore incompatible with the inequality decrease multiplier as it impedes to consider distribution issues. Again, KHM addresses partially this by including equity in the moral sentiments for which there is willingness to pay.

The implications in an inequality decrease multiplier are that Benefit-Cost analysis misses its central aims. It is required to provide a clear criterion for deciding between two options which one is better for saving money, maximise wealth and increase the aggregate real income. Without including inequality in the picture, these two options may be equal for the Kaldor-Hicks criterion, while having different inequality implications. They would in the long run bring to very different states of those aims. An option superior in Benefit-Cost Analysis based on KH could be inferior when considering for the inequality implications. The challenge for Benefit-Cost Analysis is therefore to see if there are ways to develop even further the inequality issue, from the work done for the KHM criterion, and to see if it is possible to pass it from the moral sentiments spheres to a sphere which touches long term self interest about the sustainability of the Efficiency inherent in the Optimality reached. This sustainability remains currently an issue which requires deep implication of social choices, as it entails a free-rider incentive that has to be regulated by political decisions. The KH criterion could still be used currently in a way as to consider two equal options in terms of KH and add to them separately the consideration of the implications on inequality of the two options.

The implication of the differentiation between short term efficiency, on one side, and long term sustainable efficiency, on the other, leads to the necessity of a change in the economic policies on the global arena. As the global economic crisis affects all countries, global competitive export-led policies are deemed to disappoint as they need to have at least a corresponding quantity of import demand from import-led countries. The solution is rather on redistribution that would reinstate and enhance internal demand. Countries implementing such redistributive policies could implement Kaldor-Hicks movements which make some parts of the economic agents less well off. Such movements with redistribution would though reinstate effective demand on the demand side and make in general all economic agents better off, increasing output and wealth throughout the economy. Such redistributive policies increase also imports, benefiting other countries and remunerating therefore their potential free-rider behaviour. The concerned demand side policies, requiring cooperation and redistribution, call the international institutions to coordinate their action with a new "Bretton Woods" to harmonize such policies that would otherwise be contrasted by the free-rider behaviour.

### **Concluding Remarks**

The hypothesis presented was that Pareto and Kaldor-Hicks Efficiency have an aspect of social sustainability in relation to inequality, so that only Efficiency equilibria that comply with certain equity criteria are sustainable in the long term.

This analysis has been based on a previous one on different levels of sources of confounding in the sense of aggregations that keep together aspects of the same variables that economically generate with contrasting dynamics. Their analysis exposes a correlation of inequality with effective demand and with growth. As inequality increases, effective demand decreases on the demand side, while total factor productivity growth decreases prices reinstating that effective demand. On the long run though this requires an unachievable acceleration of total factor productivity growth eventually bringing the economy to a recession, or great recession as currently experienced in the world economy, and eventually a great depression. This process decreases the welfare of many people contradicting previously reached Pareto or Kaldor-Hicks Optimality. The last decades of deregulated free-market policies have coincided with the increasing concentration of wealth, increasing inequality. This stem as having brought decreases of effective demand larger than counterbalances obtained thanks to total factor productivity growth, majour factor of Kaldor-Hicks increases in efficiency. Companies profits, employees' wages, stock market valuations, have therefore come to a plunge in a vicious cycle. The Kaldor-Hicks efficiency unequally allocated yield in the long term to aggregate self dismantling. There are sustainable and unsustainable Pareto optimalities, sustainable and unsustainable Kaldor-Hicks efficiencies, depending on how each of them affects distribution. The challenge is to see how the Kaldor-Hicks, and its development in Kaldor-Hicks-Moral criterion can further be developed in order to include inequality issues, in a way as to be counted as self interest factors for long term sustainability of wealth in welfare economics. The inclusion of inequality and the need to decrease

its excessive levels reached call for a coordination of international organizations on the global arena for a new “Bretton Woods” centred though on decreasing inequalities.

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