MAKE ECONOMICS GREAT AGAIN

Review of Economics and Economic Methodology

Volume II, Issue 1

October 2017

Review of Economics and Economic Methodology, ISSN number: 2536-1953

Publisher: Movement for Economic pluralism, Kardeljeva ploščad 17, 1000 Ljubljana

Volume II, Issue 1, Autumn 2017

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Make economics relevant again

Managing editors

Review of Economics and Economic Methodology (REEM) tries to promote the eclectic way of doing economics. To do so, we turn to the economists who best understood the subject of their inquiry. What can we learn from the great minds of Adam Smith, David Ricardo, John Stuart Mill, Karl Marx, Thorstein Veblen, John Maynard Keynes, Joseph Schumpeter, Frank Knight, Hyman Minsky, Friedrich Hayek, Kenneth Arrow, Amartya Sen and many others? While they do not necessarily share their political convictions or theoretical conclusions, they all understood the importance of deep and broad understanding of economic issues and their unquestionable social nature.

Since its first publication last year REEM has undergone an interesting transformation into a widely supported student journal. It happened when we have, out of mere curiosity, invited different notable economists to join our advisory board. To our great surprise and even larger appreciation, most of them accepted the invitation, while many have even praised our attempt to set up a serious journal, where both serious scholars and students can biannually publish their research, essays or book reviews. The reason behind setting up REEM is a straightforward, perhaps a naive dissatisfaction with the state of economic science today. We see economics isolated in the high ivory towers of mathematized models, and even after many recent economic-crises checks not much was done to counter such a seclusion of the economic mainstream. Economics is losing its old repute and merit, so we set to address the core of the problem – its canonical body of knowledge. While our initiative might be motivated by a youthful naivete, the support by so many grand names gave us a validation that we are stumbling in the right direction.

The second edition of REEM mirrors the general direction of the journal. We tried to make it eclectic in content and pluralistic in method. We have received many interesting contributions, and selected five that we think had the most significant contribution to the relevant topics in economics today. We invite the reader to approach these papers with scholarly tolerance and critical eye demanded by any intellectual discipline, and urgently needed to expand the horizon of economics yet again. This edition is strongly international; three out of five papers published were written by non-Slovenian scholars or students. In this editorial introduction, we want to summarize all the published papers and add a personal note to each one.

The first paper comes from a respectable scholar, Dr. David Ellerman, who long time ago waged a war against the institution of wage labor. In most of his past work – and the present one is no exception – he employs the labor theory of property (LTP) and natural rights theory to argue that the employment contract is an institutionalized fraud. While the employment contract pretends to do so, no contract *de facto* can - and for that matter, should -, alienate the right to self-determination and the personal responsibility of the product of one's labor. In the paper *Reframing the Labor Question: On Marginal Productivity Theory and Labor Theory of Property* (p. 9-44, this publication) Ellerman follows his neo-abolitionist approach to argue that economics should re-examine the property-related questions that arise when studying production. The question of who is to appropriate the property over the product of a firm has been neglected in both the marginal productivity theory (MPT) and in most of the heterodox theories of distribution. MPT holds that under competitive conditions each factor is paid according to what it produces - and so markets, if intact, distribute meritocratically among the factors of production. Heterodox economists usually take on the assumptions underpinning MPT. Uncompetitive markets, imperfections and asymmetries in information, immeasurability of marginal productivity, irrationality of economic agents and the like lead to power relations that favor capital owners to the detriment of laborers. On the left side of the heterodox-spectrum are Marxist economists, who criticize capitalism because it does not guarantee to the workers the value they create. All the above-mentioned theories and approaches to production deal with the distribution of the product and not the ownership of it. The distributive shares are not a factual description of how property is ascribed over the assets and liabilities created but rather a metaphor. There are no distributive shares, capital owners are, conventionally, owners of the whole product, while laborers usually do not own a share in it. Ellerman argues that all these metaphorically-driven theories are problematic – instead of distributive theory a pre-distributive theory is needed. Who should be the owner of the whole product (assets minus liabilities)? Either the capital owners should be able to appropriate the product and hire wage labor, or laborers should be the owners of the product, hiring capital for interest and land for rent. The ownership of the whole product does not follow capital ownership but the contract of hiring. When A hires B, A is the owner of 100% of the total revenues, and the liabilities to pay B wage, interest or rent (depending if B is labor, capital or land, respectively). In this paper, Ellerman shows that employment contract in which capital hires labor is invalid and should be replaced for a different type of hiring relation. To understand his argument, we should first understand that in the light of inalienability theory, there are certain personal liberties that are factually inalienable from one's personhood. For example, a liberty to self-determination cannot, by its nature, be taken away from a person. There is no switch in (wo)man's mind (not yet for that matter) that would take away her/his freedom of making her/his own conscious decision; raising a hand, believing in a god, thinking about certain things etc. While this means that no contract can alienate a person's liberty of choice and action, the employment contract pretends to do exactly so, as its essence is in "the right to control the servant's work, either personally or by another servant or agent. It is this right of control or interference, of being entitled to tell the servant when to work (within the hours of service) and when not to work, and what work to do and how to do it (within the terms of such service) which is the dominant characteristic in this relation."[1] We can now return to the question of who should be the owner of the whole product? According to juridical principle of imputation, legal responsibility is assigned in accordance with factual responsibility. If worker's responsibility for her/his own actions cannot be transferred to an employee, not even with a contract that pretends to do so, we should find a relationship that transfers the transferable, alienates the alienable. A contract where labor hires capital (and land) is such a contract, and the only valid contract of hiring. Thus, Ellerman concludes, workers should be the only owners of the whole product of the firm. The solution lies in economic democracy.

The paper by Andrej Srakar, research associate at the Institute for Economic Research (IER) in Ljubljana and Assistant Professor on the Faculty of Economics, University of Ljubljana, comes from a field which is still rather unfamiliar to most economic readers, especially among Slovenian economists - cultural economics. The paper *In need for a drastic change: On the "evidence-based" debates in cultural economics and cultural policy research* (p.45-62, this publication) addresses the relationship of cultural economics and research in cultural policy and provides a bold claim to the field that most of the research in cultural policy, indeed most of the field itself, is an example of "bullshit" (following the renowned definition of Harry Frankfurt). Srakar firstly provides a concise definition of bullshit and links it to a similar article on bullshit in cultural policy by the renowned University of Warwick professor, Eleonora Belfiore. Yet, if the article of Belfiore was mainly a critique of "statisticulation" of cultural policy, Srakar's article provides an opposite claim: there is far too little "serious" statistics in the research on cultural policy which severely hinders the development of the field. Srakar provides justification of his claim via two case studies (but there could, surely, be more, which he explains in conclusion and provides a detailed list of open questions in the research on cultural policy and cultural economics, almost completely unaddressed, at least as far as empirical and econometric evidence is concerned). His first case study is a classical one: studies on the economic impact of culture. This already

[1] Ronald Coase *The Nature of the Firm* (1937): This is a seminal paper in the new institutional theory that sets theoretical foundations for the study of a firm and employment relation.

formed the basis for the Belfiore's article, but here, not only there is a different focus, but a solution is provided to decades of futile discussions and research in this area: a new and promising method, ex-post econometric verification, which received acclaim in recent two years in cultural economic circles, culminating in the recent special issue of Journal of Cultural Economics, where the editors, Ilde Rizzo and Douglas Noonan, state: "The economic impact study included in this special issue, for instance, stands out for its application of a (much-maligned) methodology in a particularly novel way that clearly articulates a contribution to the economic literature. Clearly, it is possible to advance the field and state of knowledge substantially even in controversial areas. The prevalence of studies using a particular methodology (e.g. CVM, economic impact analysis, DEA) merely raises the bar in terms of rigour and novelty that is needed to stand out from the crowd." (Rizzo and Noonan, 2017). Srakar also elaborates on the condition on this topic and provides some answers to the problems noted but not solved by Belfiore. In the second case study, another problematic issue in the research on cultural policy has been addressed: usages of official cultural statistics to address measurement issues in the research on cultural policy, in particular, the construction on composite indicators. Srakar clearly elaborates in the open issues and problems here, and, again, provides several pathways for more consistent and much needed research in the area in future. In the concluding section, Srakar, on the one hand, provides a detailed listing of vast and open issues, possible methods, datasets and approaches for future research in cultural policy (and its relationship to cultural economics), and concludes by nicely and directly repeating his main claim: "Until something changes, evidence-based cultural policy research is an example of bullshit. It is the task of future work in cultural policy research (and cultural economics) to change this in a significant and drastic manner." The article is, therefore, a rather bold and innovative theoretical contribution to the fields of both research in cultural policy and cultural economics and is likely to be referred to and addressed in future work in this area.

In the paper *Why established macroeconomics is problematic and how this situation can be overcome* (p. 63-83, this publication) David Chester argues that the current status of established macroeconomics is problematic and proposes a different take on the subject. The author finds that the field suffers from logical fallacies, poor definitions and ill-defined ideas. Additionally, scientific endeavour is hampered by the inevitable presence of politics and bias. Finally, according to the author, macroeconomic theory lacks scientific formality and finds that the language of economics has been a serious obstacle towards the subject coming closer to proper scientific inquiry. The author then proposes a model based on six types of economic units: landlords, householders, capitalists, producers, the government and finance institutions. In some respects, this sort of a division is already present in existing modes of thought rooted in the classical and Cantabrigian traditions and upheld by post-Keynesian authors today. The final version of the model is made up of stocks and flows and access rights to natural resources between these different groups.

The authors background in engineering gives an interesting, outsiders view on economics and how it is currently being tackled. A large part of his critique has to do with the language of economics, where different authors use different terminology describing the same phenomena. While this is obviously problematic in light of the subjects' aspiration towards becoming a proper scientific discipline, it is also quite telling that despite how mathematicized mainstream economic theory has become, the author, coming from a natural science background, still fails to identify it as scientific. And rightfully so. Because the formal elegance is a facade for ideology, an elaborate series of thought experiments with very clear conclusions to which the empirics have to adapt (and not the other way around!). Therefore, the critique of economics not being scientific is spot on, but the question then becomes whether it ever can be to the same degree that, for example, physics is? The answer to that question depends very much on one's Weltanschauung. Because lest we forget, it is far from certain that what we perceive as the scientific method should be applied in all walks in life because it has proven so successful in some of them. In others, it has failed miserably and continues to do so.

In the article *Socialism and Marxian economics: An overview* (p. 84-101, this publication) Ema Talam provides a short and accessible introduction to the basics of Marxian economics whose analysis is, especially in the midst of the current social and economic crisis, relevant yet often put aside. Ema first reviews major milestones in the life of Karl Marx and succinctly comments on some of his most famous aphorisms. Next, she presents Marx's idea of socialism and contrasts it with other, competing versions that were in circulation at the time. She also notes the two-other main intellectual influences on Marx's thinking – Hegelian philosophy and Ricardian political economy – and sets forth a rough sketch of Marx's theory of history. In the next two subsections, she describes what are probably the most known concepts which are associated with Marx, especially with his critique of political economy, i.e. the commodity, value and surplus value. The three subsections that follow are concerned with Marx's theorization of capitalism's inherent tendency towards crisis. Talam reviews Marx's law of the tendency of the rate of profit to fall and points out that this idea has been one of the most criticized aspects of his intellectual enterprise. She concludes the article by observing that many of Marx's theoretical pronouncements and especially his predictions have been shown to be only partly true, insufficient or outright mistaken. However, she notes, there is much to be appreciated both in what Marx says and the types of analyses he has bequeathed to us.

In the last contribution of the second REEM edition, Maruša Conič, a MSc student of Faculty of Economics, University of Ljubljana, has written a review of Choreography of Resolution: Conflict, Movement, and Neuroscience, a book publication, edited by Michelle LeBaron, Carrie MacLeod and Andrew Floyer Acland (p.102-108, this publication). This book provides a theoretical overview on the issues related to contemporary dance practices, related to economics and other social sciences. Most topics relate to conflict and its relationship to contemporary dance practices. First chapters of this book relate to cognitive science, in particular neuro-scientific and neuro-economic developments (highly addressed in economic literature in recent years in general, see e.g. authors like Kahneman, Motterlini, Shull, Vernon L. Smith, Zak, Tversky, De Martino and Camerer). They also address an issue, quite familiar for Slovenian theoretical debates, one could say: relationship of dance and ideology. Following chapters also address the relationship of dance and intelligence (kinesthetic and emotional), analogies in the negotiation processes and conflict resolution to dance practice; mediation; and, finally, several case studies (Ireland, Cambodia, Liberia). Most of all, it will be interesting in the future to develop such research endeavours in more detail and deepness: as many artistic sectors and areas, dance is exteremely interesting and its connections to social sciences theories and methos would need more effort. As Conič writes at the end of her review. "Economists and empiricists of the social sciences could design and apply a myriad of observational techniques and of approaches for determining the important variables, descriptions of the patterns, measuring scales, etc., … There is immense potential for the fields of behavioural and experimental economics to discover new factors that drive behaviour, or get closer to observing how the known factors behave under different tasks. Once researchers start developing methods of observation and analysis that combine empirics, comparative approaches in institutional systems and organizational studies, semiotic approaches, heuristics, cognitive science and other approaches, the field can open a pool of options for new knowledge about decision making and social interaction." This reminds me of a fascinating endeavor done in recent years at the Institute Jožef Stefan, a contribution of the work of Prof. Nada Lavrač and her colleagues: the modelling of creativity following bisociation theories of Koestler and using data mining approaches. Indeed, the developments in contemporary statistics and mathematical modelling would allow many approaches to stud the issues presented in the book and noted in Conič's review – it is a hopeful wish they will be followed in future and many new, fascinating and much needed knowledge on those topics finally provided.

It should now be clear that the second edition of REEM covers a decent variety of economic topics with an obvious interdisciplinary and pluralist approach. A critical reader might question such an array of topics published in so-proclaimed economic journal. In this case, we ask the reader; what should economics be the science of? Most economists would reply that economics is the study of individual choice within given constraints, using the optimization method. It is not up to us, and most certainly not up to this editorial introduction to provide a different (and better) definition of economics, but we could not call ourselves a critical academic institution if we were to pass over such conversation in silence.

Any science is a systematic study of its own particular subject, therefore to define a science, one needs to define its field of interest. What often happens, especially in the social sciences, is that a certain method of a study determines the subject of a study and not *vice* versa. Physics is the study of matter and its motion and behavior through space and time, while Newtonian method is only necessary but not sufficient to understand related questions. Biology is the study of life and living organisms, but the evolutionary biology is only a subset of its methodology. Similarly, to define economics, we should ask what are its fields of interest and should never allow a method (optimization) to determine its subject (individual choice within given constraints). As told above, we think that one of the reasons that economics lost its relevance is the reduction of its theoretical scope and reduction of the method.

We think that the question of property acquisition of the firm's product is a subject of economics; we think that Marxian analysis of capitalism bears often forgotten importance for economic analysis; we think that culture has a clear economic impact and should be encouraged for the economic reasons in addition to the aesthetic ones; we think that macroeconomics suffers under the prevalent methodological individualism, and its critique ought to be read in economic journals; and finally, it was argued that economics can learn even from seemingly completely unrelated subject of dance – we included a review of a book that tells a story about how contemporary dance practices can help us understand different economic issues. It is impossible, of course, to address such a variety of subjects with bare economic tools. For a sufficient analysis of such interdisciplinary subjects, an interdisciplinary approach is necessary, and for this reason, we allow the tools of philosophy, sociology, psychology and law to enter our journal.

But we have already taken this discussion a step too far. To clear any possible misunderstanding, we are not in any way apologizing for this publication and the broad aim of the journal, - our motives are honest and scholarly - but sometimes one has to defend such projects against the well-worn paths of intellectual laziness that proliferates too many scientific institutions. The second edition of REEM tries to rejuvenate the initial colorfulness of economic inquiry. To make economics relevant again.

Reframing the Labor Question: On Marginal Productivity Theory and the Labor Theory of Property

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Abstract

Neoclassical economics uses the perfectly competitive market paradigm to frame and limit questions. Concerning labor, the key aspect of the competitive paradigm is marginal productivity theory which shows that, under competitive conditions, workers are paid "according to what they produce." It takes a theory to kill a theory. This paper reframes the labor question according to the normal juridical principle of imputation whose application to property appropriation is the modern treatment of the old natural rights or labor theory of property—the theory that people have a natural right to the fruits of their labor. The same critique also reframes the labor question about the employment contract, a reframing that has nothing to do with the pay, benefits, or working conditions. The point is that the whole idea of hiring or renting human beings, i.e., selling responsible human actions, is invalid due to the factual inalienability of responsible human agency—as is recognized in juridical imputations to hired criminals.

Keywords: marginal productivity theory, labor theory of property, natural rights theory, redistributive theory, predistributive theory

JEL classifications: B41, B51, B59, D02, D24, D33, J31, J41, J54, K11, K31

Introduction: The Importance of Framing

All discussion takes place within the limits of some framework. Conventional, i.e., neoclassical, economics has the long-established framing of the "competitive model" as an ideal. The focus in this paper is on the keystone of that neoclassical competitive paradigm, the marginal productivity (MP) theory of distribution. The key importance of MP theory lies in the understanding that the competitive private property market system would allocate to "each according to what he and the instruments he owns produces" [Friedman 1962, pp. 161-162]. Hence the labor question is usually framed in the competitive model: is a worker being paid "according to what he… produces"—or is labor being 'robbed' in some basic sense?

Most of the liberal or progressive heterodox criticism of neoclassical economics takes place well within the framing of the problem of distribution [Piketty 2014; Stiglitz 2012; Galbraith 2012; Keen 2011; Rawls 1999; Thurow 1975 etc.]. The critique outlined in this paper reframes the labor question as being about property instead of pay. It attacks even the competitive ideal of distribution to labor according to marginal productivity—as opposed to most criticism about how the actual economy falls short of the competitive paradigm.

It takes a theory to kill a theory. The theory used to critique MP theory (as applied to labor) is the usual juridical principle of imputation (impute legal responsibility according to de facto responsibility) applied to questions of property appropriation. This is the modern treatment of what historically was called the *labor* or *natural rights theory of property*—the basic idea that people have a natural right to own the positive fruits of their labor (and a natural obligation to bear the negative fruits of their labor) [Hodgskin 1973 (1832); Menger 1899; Schlatter 1951; Ellerman 1993].

The same critique also reframes the labor question about the employment contract. The point has nothing to do with the size of wages, benefits, or working conditions. The point is that the whole idea of renting human beings, i.e., selling responsible human actions, is invalid due to the factual inalienability of responsible human agency. This treatment of the "core of the whole modern labor question" is an updating of the argument made long ago by Ernst Wigforss, one of the founders of Swedish social democracy, that the legal contract for the selling of human labor was essentially an invalid contract.

"But, above all, from a labor perspective the invalidity of the particular contract structure lies in its blindness to the fact that the labor power that the worker sells cannot like other commodities be separated from the living worker. This means that control over labor power must include control over the worker himself or herself. Here perhaps we meet the core of the whole modern labor question, and the way the problem is treated, and the perspectives from which it is judged, are what decide the character of the solutions." [Wigforss 1923, p. 28 (translated by Patrik Witkowsky)]

Comparison to heterodox or radical criticism

What is surprising is how much of heterodox 'criticism' of MP theory stays within the framing of the competitive paradigm by pointing out all the ways in which the actual economy falls short of the competitive model:

- markets in general and labor markets in particular are far from competitive;
- information imperfections abound which undercut the informational assumptions behind the competitive model;
- there are great difficulties in actually measuring "marginal productivity" at the firm level;
- most economic decision-making is not governed by the rational maximization of the neoclassical theory; and
- all of this adds up to an economy suffused with non-competitive rents and rent-seeking behavior.

And even the competitive market paradigm does not address all the prior non-market violence, theft, and conquest behind the historical initial distribution of property.

But, it will be asked, "What about Marx's labor theory of value and exploitation?" It didn't just attack the competitive shortcomings of the actual economy. Firstly, it should be noted that MP theory provides a neoclassical theory of exploitation which also purports to show, under certain non-competitive conditions, that workers would be underpaid according to their marginal product. Marx's theory was developed well before MP theory but it also purported to show, under certain conditions, that labor would be "paid below its value."

"It will be seen later that the labour expended during the so-called normal day is paid below its value, so that the overtime is simply a capitalist trick to extort more surplus labour. In any case, this would remain true of overtime even if the labour-power expended during the normal working day were paid for at its full value." [Marx 1977, fn. p. 357]

But, outside the dwindling band of the faithful, Marx's labor theory of value and exploitation has long been discredited (and rightly so)—in addition to being *superficial* since it was not even a critique of the institution of wage labor *per se* (e.g., if labor was “paid for at its full value"), but only a critique of labor being “paid below its value".[2] There is no need to further beat the dead horse of Marx's labor theory of value and exploitation [see Ellerman 1983, 1993].[3] As Albert Hirschman wisely observed, Marx's “works exhibit a simple juxtaposition of scientific apparatus and moralistic invective, wholly un*versöhnt* [i.e., unresolved]” [Quoted in: Adelman 2013, p. 570]. In fact, it has gotten so bad that Marxism has become a “capitalist tool” [Ellerman 2010] in the sense that the main 'supporters' these days (in the sense of keeping the theory 'in play') of Marx's labor theory are the orthodox theorists who want to pretend that Marxist economics is the only real alternative to neoclassical theory—in the same sense that “Soviet Communism” was long promoted as the only real alternative to the present system. Then they can knock down the Marxist strawman and declare “There Is No Alternative” to orthodox economics.

The Debate about the Distribution of Wealth and Income

Today much of the discussion in progressive circles [e.g., Stiglitz 2012; Galbraith 2012; Piketty 2014] has been framed in terms of the obscene mal-distribution of wealth and income as if that were “the” problem. And the proposed redistributive reforms (e.g., changes in income, wealth, and estate taxes, increased minimum wages, income caps, and universal basic incomes) have all stuck to that framing of the question.

Let's apply that framing to the previous system. There was a similar, if not more extreme, mal-distribution of wealth, income, and political power in the institution of slavery wherein some people owned other people. Yet, it should be obvious to modern eyes that redistributions in favor of the slaves (surely a good thing), while leaving the institution of owning workers intact, would not address the root of the problem.

The system of slavery was eventually abolished in favor of the system we have today which differs in two important respects: (1) the workers are only rented,[4] hired, or employed (i.e., the

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[2] The point is about Marx's *theory* that wages are too damn low, not his personal views. Of course, he was personally against the institution of wage labor, at least in its private form. The point is that he only brought a value theory to a property-theoretic fight, so it would have still been ineffectual even if it was a good value theory.

[3] It seems that many on the Left only support the Marxist analysis of exploitation for reasons of identity and posture; it serves as their “badge of Red courage” to establish their credibility as being against “the system.”

[4] The word “rented” is used deliberately even though American English prefers to say that cars are rented but people are hired. In the UK, rental cars are called “hire cars.” Indeed, the system of borrowing money or renting *things* is called the “loan and hire” system in English law [Baty 1918] as in the phrase “hire-purchase” applied to things. In any case, the underlying economic relationship (buying the services of a productive factor instead of the ownership of the factor) is the same no matter what it is called. Moreover, this is not a matter of controversy; as the late dean of neoclassical economics, Paul Samuelson, put it: “Since slavery was abolished, human earning power is forbidden by law to be capitalized. A man is not even free to sell himself: he must *rent* himself at a wage.”

employer/master only buys some, but not all, of employee's labor); and (2) the rental relationship between employer and employee is voluntary.

Today, the root of the problem is the whole institution for the voluntary renting of human beings, the employment system itself, not the terms or completeness of the contract or the accumulated consequences in the form of the mal-distribution of income and wealth.

What is the orthodox defense of the institution of voluntarily renting human beings? It has several layers. The first layer of defense is that the employment contract is voluntary, and, indeed, it *is* voluntary by any normal juridical standards.[5] That defense is supposed to remove the employment relation out of the category of possibly being *per se* invalid—so any remaining questions can only be about the terms and conditions of the contract.

Here again, it may be helpful to repose the question about the prior system of *owning all* of a worker's labor. What if that system was based on a voluntary contract? Conventional intellectual history has long displayed a studied ignorance of the fact that the sophisticated arguments for that peculiar institution were indeed based on seeing the incidence of contract from Roman Law down to Antebellum America [Ellerman 1993].[6]

[Samuelson 1976, p. 52 (his italics)] Or as other neoclassicals put it: "The commodity that is traded in the labor market is labor services, or hours of labor. The corresponding price is the wage per hour. We can think of the wage per hour as the price at which the firm rents the services of a worker, or the rental rate for labor. We do not have asset prices in the labor market because workers cannot be bought or sold in modern societies; they can only be rented. (In a society with slavery, the asset price would be the price of a slave.)" [Fischer et al. 1988, p. 323; or nearly identical passage in: Begg et al. 1997, p. 201].

[5] At a more fundamental level than the neoclassical framing of the competitive paradigm is the older classical liberal framing in terms of consent-versus-coercion. There has long been a fashionable posture on the Left to simply escalate one's conception of involuntariness so that the labor contract, if not most contracts, would be 'involuntary' and 'coercive.' But by any real-world standards (leaving aside cultural posturing), a collectively-bargained employment contract is "more" voluntary than the usual contract of adhesion between an individual consumer and a supermarket. Moreover, that involuntariness-critique of the wage-labor contract shows the superficiality of much of the Left that is unable to get beyond the classical liberal "consent-versus-coercion" framing to figure out what could be inherently wrong with a voluntary contract—or, at least, to learn about the inalienable rights theory hammered out in the abolitionist and democratic movements which answers that question.

[6] For instance, Rev. Samuel Seabury [1969 (1861)] gave a classical implicit-contract defense of slavery in 1861. Another standard defense was that slaves were prisoners of war who had the tough choice between death or being sold into slavery, and voluntarily chose the latter. For instance, John Locke seems to have justified slavery in the American colonies by interpreting the status of slaves as "captives" in wars inside Africa who took that plea bargain and who were then sold into the Atlantic slave trade (viz. Laslett notes on §24, 325-326 in: Locke 1960). But modern liberal scholars of pro-slavery thought can't seem to find any of the contractarian defenses. Eric McKitrick [1963] collects essays of *fifteen* pro-slavery writers; Harvard University's current President, Drew Gilpin Faust [1981], collects essays from *seven* pro-slavery writers; and Paul Finkelman [2003] collects *seventeen* excerpts from pro-slavery writings. But *none* of them include a single writer who argued to allow slavery on a contractual basis such as Seabury—not to mention Grotius, Pufendorf, Locke, Blackstone, Montesquieu, and a host of Scholastics such as Jean Gerson, Luis de Molina, and Francisco Suarez (on the Scholastics, see [Tuck 1979]). If a contractual relationship to buy *all* of a person's labor was morally wrong in spite of being voluntary, then the current economic system based on the voluntary contract for the short-term renting of other people might be put in moral jeopardy. Hence 'responsible' intellectual historians of pro-slavery thought just cannot go there.

The real argument for the abolition of the *voluntary* purchase of all a worker's labor was the theory of inalienable rights that descends from the Reformation (i.e., inalienability of conscience) and Enlightenment (principally, Baruch Spinoza and Francis Hutcheson) down to the present in the abolitionist and democratic movements [Ellerman 1993, 2015]. The "problem" in the historical remembrance of that inalienable rights critique of the voluntary contract to sell all of one's labor at once (the factual inalienability of human agency) is that it clearly also applies to the current system of piecemeal selling of labor—so that critique must go down the memory hole of liberal intellectual history.

But from the viewpoint of the Economics profession, the intellectual history of inalienable rights in the abolitionist and democratic movements is all outside their bailiwick. They have developed a tight mathematically formulated theoretical structure, the competitive paradigm. They take their stand within that framing. In spite of all the heterodox critique of the empirical applicability of the competitive model, orthodox economists are clear that it was never intended as an empirical model. Perhaps the most philosophically sophisticated of the orthodox defenders is Frank Knight who was quite clear on the point.

"Economic theory is not a descriptive, or an explanatory, science of reality. Within wide limits, it can be said that historical changes do not affect economic theory at all. It deals with ideal concepts which are probably as universal for rational thought as those of ordinary geometry." [Knight 1969. p. 277]

The competitive model is not intended to be descriptive; it is postulated as the ideal or paradigm around which to *frame and limit* the normative discussion, e.g., are workers paid the value of their marginal product as in the competitive model or not? Even the most slavish neoclassical (or Austrian) defender of the faith is well aware that human rental markets are not perfectly competitive. Yet most progressive or heterodox critics of marginal productivity theory, e.g., Lester Thurow [1975], John Rawls [1999], and Steve Keen [Chapter 6, 2011] in addition to Stiglitz and Piketty, do not mount any criticism of the distributive *ideal* of marginal productivity but only focus on applicability issues such as the non-competitiveness and informational "imperfections" of labor markets, measurement difficulties, rents based on market power, and the background mal-distribution of wealth—all of which were long ago acknowledged by sophisticated defenders of the system of human rentals such as Knight.

John Rawls may be a good example to illustrate the point. He spent his whole adult life philosophizing about justice while living in a society based on the renting of human beings. Yet he never considered that the human rental contract might be inherently problematic. Far from criticizing marginal productivity theory from the view point of "people getting the fruits of their labor," Rawls identified the two theories!

"Accepting the marginal productivity theory of distribution, each factor of production receives an income according to how much it adds to output (assuming private property in the means of production). In this sense, a worker is paid the full value of the results of his labor, no more and no less. Offhand this strikes us as fair. It appeals to a traditional idea of the natural right of property in the fruits of our labor. Therefore to some writers the precept of contribution has seemed satisfactory as a principle of justice." [Rawls 1999, p. 271]

Then he went on to only quibble about the background conditions.

"The marginal product of labor depends upon supply and demand. What an individual contributes by his work varies with the demand of firms for his skills, and this in turn varies with the demand for the products of firms. An individual's contribution is also affected by how many offer similar talents. There is no presumption, then, that following the precept of contribution leads to a just outcome unless the underlying market forces, and the availability of opportunities which they reflect, are appropriately regulated." [Rawls 1999, p. 271]

Indeed, how *can* one criticize the ideal of paying rented human beings the value of their marginal product—of course, with "underlying market forces [being] appropriately regulated"? Isn't that, as Rawls suggests, the very idea of a "natural right of property in the fruits of our labor" or reaping what you sow? As Knight argued, the competitive system satisfies:

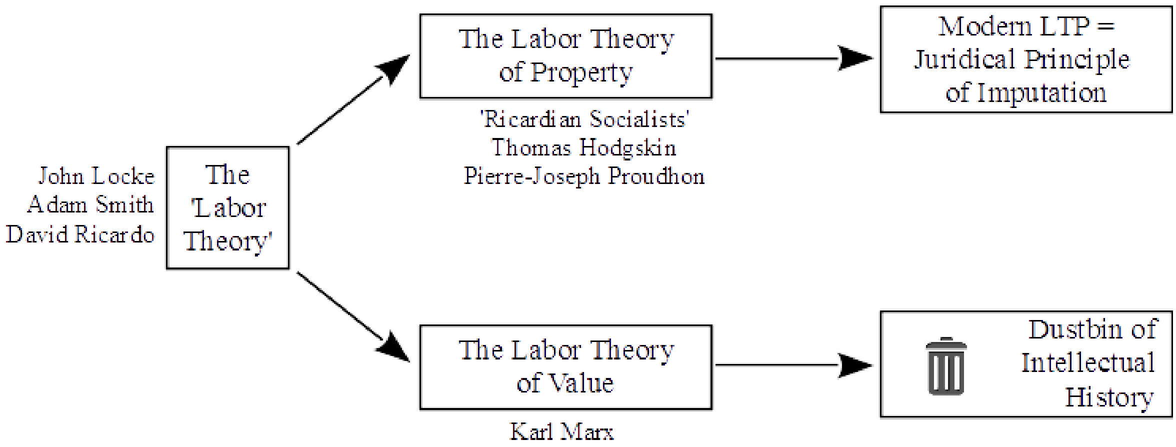
"justice by the principle of equality in relations of reciprocity, giving each the product contributed to the total by its own performance ("what a man soweth that shall he also reap")." [Knight 1956, p. 292]

Otherwise, as John Bates Clark pointed out:

"A plan of living that should force men to leave in their employer's hands anything that by right of creation is theirs, would be an institutional robbery—a legally established violation of the principle on which property is supposed to rest." [Clark 1899, pp. 8-9]

The fork in the road for heterodox economics

It takes a theory to kill a theory, so to criticize the MP theory as an ideal applied to labor, it takes an alternative theory about labor. One must go outside the usual orbit of concepts covered in neoclassical, Austrian, or even most heterodox economics, and, indeed, one has to go back to the first half of the 19th century, and take the other fork in the road.



The Fork in the Road: How to Develop the "Labor Theory

The upper fork in Figure 1 represents: "that small band of economic radicals who between 1820 and 1840 put forth the claim of labor to the whole product of industry" [Blaug 1958, p. 140]

including Thomas Hodgskin in 1832 [1973], Pierre-Joseph Proudhon in 1840 [1970], and the other so-called "Ricardian socialists" (although they were neither). They tried to develop the inchoate in-the-air "labor theory" into a labor theory of *property* [Menger 1899] rather than a labor theory of *value*. In the history of economic ideas, these early attempts to develop a labor theory of property were largely overshadowed by Karl Marx's monumental attempt to develop a labor theory of value—whose eventual failure has made it the favorite foil of orthodox economics.

It might be noted that the critique of the labor theory of value has become such a part of the DNA of orthodox economics that economists cannot even "hear" about the labor theory of *property* without automatically assuming one is talking about some labor theory of *value*.

What you are probably trying to say is that "Only labor produces value, and thus all value should go to labor." Yes, we have heard all that before, so let me tell you why that value theory is completely discredited.

Hence no orthodox text, to the author's knowledge, even discusses the modern treatment of the labor theory of property—which has *nothing* to do with value or price theory. Instead, the labor theory of value is the designated foil for orthodox theory.

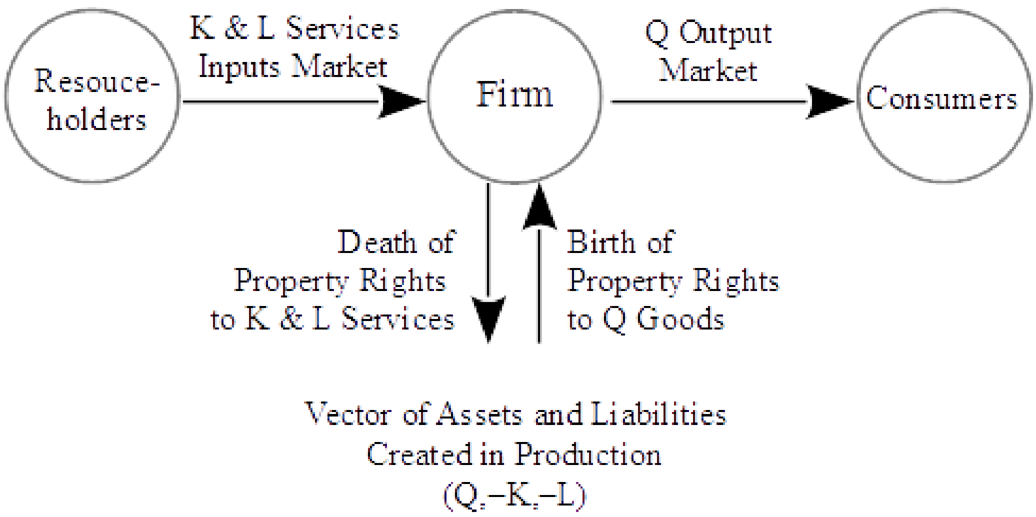
The Neglected Question of Appropriation

To understand the modern labor theory of property, there is many 'misunderstandings'—"ideological dreck" may be a better phrase—that needs to be first cleared away. Firstly, the theory of property applies to the initiation and termination of property rights, not the exchange of property rights. One cannot see the answer to the question if one has not even formulated the question. The labor theory of property is also normative theory that applies to the creation and termination of property rights (i.e., appropriation) in normal production (and consumption) activities.[7] There is also a descriptive theory of property as to how property rights are created and terminated in a private property market economy.

The flows of property rights should always be described in an algebraically symmetric manner reflecting both assets and liabilities. In a common stylized picture of production, the input services, say K and L, are used up and the outputs Q are produced. The assets Q are created so one property-theoretic question is: "Who is to own those assets?" The services K and L (including intermediate goods) are used up so another property-theoretic question is: "Who is to owe those liabilities?"[8] The two questions together are: "Who is to legally appropriate the assets and liabilities (Q,−K, −L) created in a productive opportunity?"

[7] Our focus is on commodities, rivalrous and excludable private goods that are produced and consumed as a part of deliberate human activity.

[8] The termination of rights was an original meaning of "expropriation." "This word [expropriation] primarily denotes a voluntary surrender of rights or claims; the act of divesting oneself of that which was previously claimed as one's own, or renouncing it. In this sense, it is the opposite of 'appropriation.' A meaning has been attached to the term, imported from foreign jurisprudence, which makes it synonymous with the exercise of the power of eminent domain, ..." [Black 1968, p. 692, entry under Expropriation]. Since "expropriation" now has this acquired meaning, I will treat the "expropriation (termination) of rights to the assets +X" as the "appropriation of the liabilities –X."



Assets and liabilities created in production

It is a remarkable fact—which itself calls for explanation—that economic theory *does not even formulate the question* about the initiation and termination of property rights in these normal activities of production. For example, the question is ignored in the "economics of property rights" [e.g., Furubotn and Pejovich 1974], in the "property rights approach" to the firm [e.g., Hart and Moore 1990], in the Putterman and Kroszner anthology [1996] of papers on the "economic" nature of the firm, in the "property rights" literature of the new institutional economics [e.g., Furubotn and Richter 1998], or in the law and economics literature [e.g., Cooter and Ulen 2004; Miceli 1999].

One reason for the neglect is that discussions of property tend to be restricted to a mythical state of nature [e.g., Locke 1960 (1690)] or to the appropriation of unclaimed or commonly owned natural goods [e.g., Umbeck 1981; Barzel 1989] rather than the everyday matters of production where property rights are constantly created and terminated. On the liability side, the law and economics literature looks extensively at the assignment of liabilities in the legal trials that may follow the *accidental* destruction of property [e.g., Calabresi 1970]. But what is the mechanism for assigning the liabilities for the normal deliberate using-up of inputs in production (or consumption)?

The Fundamental Myth: The *pons asinorum* of property theory

The most basic reason why the question of appropriation in production apparently cannot be raised is the "Fundamental Myth" that is largely swallowed whole by both the Left and Right. The Fundamental Myth is the idea that the rights to the product (and, incidentally, the discretionary management rights over production) are part and parcel of "the ownership of the means of production" (to use the Marxian phrase). There is no need to raise the question of appropriation, i.e., who should own the assets and owe the liabilities created in production, since it is all supposedly part of the already-existing ownership of "capital" or "ownership of the firm."

The idea goes back to the medieval notion of "dominion" or ownership of land as including the governance rights over the people living on and working the land as well as to the fruits of their labor. In feudal times, the governance of people living on land was taken as an attribute of the ownership of that land: "ownership blends with lordship, rulership, sovereignty in the vague medieval *dominium*,...." [Maitland 1960, p. 174] The landlord was Lord of the land. As Otto von Gierke put it, "Rulership and Ownership were blent" [1958, p. 88]. One of Marx's most basic blunders was to carry over this idea by substituting capital for land.

"It is not because he is a leader of industry that a man is a capitalist; on the contrary, he is a leader of industry because he is a capitalist. The leadership of industry is an attribute of capital, just as in feudal times the functions of general and judge were attributes of landed property." [Marx 1977, pp. 450-451]

Marx's blunder has been a staple of socialist thought ever since.

"It is astonishing that a hundred years of socialist thought have not confronted the basic capitalist idea—that owners of capital have the right of command in the relations of production. The idea behind nationalization, wage earner funds, and the like is in fact fundamentally the same idea as that on which capitalism is based, namely, that ownership of capital should give owners the right to command in the production process (be they democratically elected politicians, state bureaucrats/ planners, workers' representatives, or union officials). Indeed, this is a nice example of what Antonio Gramsci called bourgeois ideological hegemony." [Rothstein 1992, p. 118]

This view is also standard today in neoclassical economics, e.g., the

"rights of authority at the firm level are defined by the ownership of assets, tangible (machines or money) or intangible (goodwill or reputation)." [Holmstrom and Tirole 1989, p. 123]

In addition to swallowing the Fundamental Myth whole (and ignoring the role of the employer-employee contract in determining the "rights of authority at the firm level," the cavalier inclusion of "goodwill" in "the ownership of assets" by two winners of the 'Nobel Prize in Economics' is all too typical of the superficial treatment of property rights in the standard economic literature.[9]

It is conceptually *trivial* to see that in the current market system, the product and governance rights are not part and parcel of the ownership of capital. Human beings are not the only rentable inputs in the current system; capital may also be rented. The party who *hired in* the capital and paid for all the other used-up inputs would have the legally defensible first claim on the produced output, not the owner of the capital asset.

The Fundamental Myth often hides behind misconceptions about corporations: "Are you saying a corporation's ownership of its product is a myth?" Of course, a corporation owns "its product" (by definition of "its") but what determines whether or not the product produced using, say, a corporation's factory building is "its product"? For instance, must the Studebaker Corporation own the cars that rolled off the assembly line in the factory owned by Studebaker? If Studebaker at one point leased one of its plants to another automobile company, it is easy to see that the answer is actually "No." Those cars would be owned by the other company who was making the lease payments and paying for all the other inputs in car production and who thus would have the defensible claim on the produced cars.

In general, consider the common notion of "owning a factory" or "owning a corporation." There is the ownership of factory buildings and the ownership of corporations with such assets, but there is no "ownership" of the going-concern aspect of *operating* a factory since that is a contractual role in a market economy. By using the same phrase "owning a factory" or "owning a corporation" to straddle both meanings, one could seem to have an argument that the contractual role of operating a factory was "owned."

For instance, when it is pointed out that operating an owned factory or an owned corporation as a productive going-concern is a contractual role, not an extra owned property right, a typical response is: "Yes, but it is that role which we call the 'ownership' role." After thus redefining factory 'ownership' to include the going-concern contractual role, the semantics shifts back to conclude that "the product rights are part of the 'ownership' of the factory" or "the 'ownership' of the corporation." Such loose patterns of thought allow the Fundamental Myth to persist.

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[9] Even accountants [Catlett and Olson 1968] understand that it is problematic to treat goodwill under "the ownership of assets."

The legal party who ends up appropriating (i.e., having the defensible claim on) the produced assets is the party, sometimes called the "residual claimant," who was the contractual nexus of hiring (or already owning) all the inputs used up in production (and thus who "swallowed" those liabilities). There is no 'ownership' of the contractual role of residual claimancy in a private property market economy. Since the residual claimant is determined by who hires what or whom (and power relations in the market and ideological hegemony certainly affects that outcome), the property rights to the product are not part of some prior bundle of rights to a capital asset or to a corporation. If competition arises so that the suppliers or customers of a going-concern business go elsewhere, then the so-called "owner of the firm" cannot claim that any actual (as opposed to mythical) property rights have been violated. Orthodox economists, Nobel laureates or not, should at least be able to cross the *pons asinorum* by understanding those conceptual implications of capital goods also being rentable like persons.

The grip of the Fundamental Myth in one form or another seems to account for the failure *to even formulate the question* of the appropriation of the assets and liabilities that are created in normal production activities. The professional defenders of the human rental system are only too happy to accept *Marx's Gift*, the fundamental-myth characterization of the system as being based on the "private ownership of capital" and thus also the misnomer of calling the human rental system "capitalism."

"The common understanding in Marxist and well as non-Marxist theories of the relation between power in the production process and market economy has no logical underpinning. ... Contrary to Marxian thoughts, it is the nature of the hiring contract, not the market economy as such, that entails power in a market-based production process." [Rothstein 2011, 208 fn. 3]

Frank Knight, a deeper thinker on these matters than most apologists, was quite clear on "capitalism" being a misnomer and that the employer may not be the owner of the capital.

"Karl Marx, who in so many respects is more classical than the classicals themselves, had abundant historical justification for calling, i.e., miscalling—the modern economic order "capitalism." Ricardo and his followers certainly thought of the system as centering around the employment and control of labor by the capitalist. In theory, this is of course diametrically wrong. The entrepreneur employs and directs both labor and capital (the latter including land), and laborer and capitalist play the same passive role, over against the active one of the entrepreneur. It is true that entrepreneurship is not completely separable from the function of the capitalist, but neither is it completely separable from that of labor. The superficial observer is typically confused by the ambiguity of the concept of ownership." [Knight 1956, p. 68, fn. 40]

The "confused" myth about the "ownership" of the means of production is not part of the actual legal system where capital goods are just as rentable as people. But it *is* part of neoclassical capital *theory* and corporate finance *theory* [Ellerman 1993] and is apparently accepted or perhaps not even noticed by the heterodox Cambridge 'critics' of capital theory [Harcourt 1972] who only criticize orthodox capital theory because of aggregate notions of capital, reswitching, and all that.

So far our task has just been to clear away the ideological dreck (symbiotically shared by the Right and Left) so that the descriptive and normative question of appropriation in production can be clearly formulated.

If we use the highly stylized description of a productive opportunity given by a production function $Q = f(K,L)$, then the list or "vector" of assets and liabilities created in productive opportunity is $(Q, -K, -L)$.

- The *descriptive* question of appropriation is: "How is it that one legal party rather than another ends up legally appropriating $(Q, -K, -L)$?"
- The *normative* question of appropriation is: "What legal party ought to legally appropriate $(Q, -K, -L)$?"

The descriptive question of appropriation

The descriptive question is easily answered from our previous discussion. There is a *laissez-faire* or *market mechanism* for the assignment of the liabilities and assets created in production in a private property market economy. One legal party purchases (or already owns) all the inputs necessary for a productive opportunity and instead of reselling those inputs or expecting to be reimbursed for those used-up inputs, that party shoulders, swallows, or absorbs those liabilities when the inputs are consumed in production. Then having borne all the costs involved in the productive opportunity, that same legal party has the legally defensible claim on the produced outputs which are typically sold. Thus in terms of property rights and liabilities, one legal party appropriates 100% of the input-liabilities $(0, -K, -L)$ as well as 100% of the output-assets

(Q, 0, 0). In property terms, there are no "distributive shares"; that is only a value-theoretic metaphor.

The 100% appropriation of the input-liabilities and output-assets by one legal party is a simple legal fact. Since the distributive shares picture has conquered the Economics profession "like the Inquisition conquered Spain" (Keynes' phrase in another context), one will search in vain through the modern economics texts to find that simple legal fact mentioned. One has to go back to economics texts prior to the marginalist revolution to find such a simple statement about the actual property rights.

"Being equally, however, the owner of the labour, so purchased, as the owner of the slave is of that of the slave, the produce, which is the result of this labour, combined with his capital, is all equally his own. In the state of society, in which we at present exist, it is in these circumstances that almost all production is effected: the capitalist is the owner of both instruments of production: and the whole of the produce is his." [Mill, James 1826, Chapter I, section II]

Outside of the 'science of economics' one can find a few souls who are willing and able to describe the actual, as opposed to the metaphorical, property rights involved in production in the human rental system. Here, for example, is a statement by a sociologist a century ago.

"Under the factory system, the factory, raw materials, and finished product belong to the capitalist. The laborer at no time owns any part of what is passing through his hands or under his eye. Never can he say, "This product, when finished, will be mine, and my rewards will depend on how successfully I can dispose of it." There is much theoretic discussion to the "right of labor to the whole product" and much querying as to how much of the product belongs to the laborer. These questions never bother the manufacturer or his employee. They both know that, in actual fact, all of the product belongs to the capitalist, and none to the laborer. The latter has sold his labor, and has a right to the stipulated payment therefor. His claims stop there. He has no more ground for assuming a part ownership in the product than has the man who sold the raw materials, or the land on which the factory stands." [Fairchild 1919, pp. 65-66].

Setting aside the normative questions for a moment, one may search in vain through the entire corpus of modern economics to find such a plain statement of the "actual fact" that the employer bears 100% of the liabilities for the used up inputs and owns 100% of the produced outputs—with the employees having 0% of both.

The normative question of appropriation

Now we turn to the normative theory. First a matter of terminology. The list of input-liabilities and output-assets (Q, −K, −L), that is called the "production plan" [Varian 1992, p. 2] or "input-output vector" [Quirk and Saposnik 1968, p. 27] in modern neoclassical texts, can be identified with the notion of the *whole product* [which is composed of the *negative product* (0, −K, −L) plus the *positive product* (Q, 0, 0)] that was used in the old slogan of "Labour's claim to the whole product" highlighted by Carl Menger's jurisprudentially-trained brother, Anton Menger [1899]. It is true that this labor's-right-to-the-whole-product tradition put the emphasis on the positive product. But since they could hardly expect some other party to pay their production costs, we will interpret their notion of "whole product" in modern terms as the usual production vector that includes the negative product, the input-liabilities as the negative entries.

Thus the normative question of appropriation is: "Who ought to appropriate the whole product in any given productive opportunity?" That party, the whole product appropriator, is rightly labeled the "firm" (in the going-concern sense of *being* the firm instead of "owning" the firm). Hence we have the prior:

- *Question of Predistribution*:[10] "Who ought to be the firm—in the first place?" as opposed to the usual;
- *Question of Distribution*: "What should be the firm's distributive shares?"

The traditional answers to the Question of Predistribution are: Capital (the owners of the "means of production"), Labor (the legal party consisting of all who work in the enterprise), the State (as in present or past Marxian socialism), or perhaps just any entrepreneurial party who employs all the necessary inputs, bears those costs, and then claims and sells the outputs.

[10] The phrase "predistribution" is due to Jacob Hacker but it was Branko Milanovic who suggested the application to worker ownership. For instance, legislation to increase worker ownership through Employee Stock Ownership Plan (ESOPs) or worker cooperatives is predistributive while raising taxes on the 1% is redistributive.

The juridical principle of imputation

The other fork in the "labor-theory" road is the largely untraveled labor theory of property that answered the normative Question of Predistribution with "Labor's right to the whole product." The key insight that distinguishes the *modern* treatment of that old theory is that it is simply the property-theoretic application of the usual:

Juridical Principle of Imputation: assign legal responsibility in accordance with factual responsibility.

The principle is so basic and obvious that it is usually not even stated explicitly.[11] For instance, in a jury trial, the jury is charged with making the official decision about whether or not the defendant is factually responsible as charged—and then the legal system, without further question, assigns or imputes the legal responsibility accordingly. The imputation principle applies in the first instance to *deliberate* human actions (not the accidents focused on in the law and economics literature), and the most deliberate of all human activities is production where the deliberate human actions are called "labor" (in the broad sense of all who work in an enterprise).[12] That is why the old labor theory of property is, in modern terms, just the property-theoretic application of the juridical imputation principle.

In factual terms, all who work in a productive opportunity (regardless of their legal role of employer or employee) are jointly de facto responsible for using-up the inputs and thus, by the imputation principle, they constitute the legal party who should owe those legal liabilities. And by those same deliberate human actions, they produce the outputs and thus, by the same imputation principle, they should legally own those assets. Thus the application of the conventional (i.e., 'bourgeois' in the Marxist sense) principle of imputation to production

[11] Apparently independent of Ellerman [1980a, 1980b, 1985, 1993], this connection between property and imputation has been noted by a legal scholar: "[T]he libertarian entitlement thesis, to the effect that persons are entitled to retain the fruits of their labor, and the libertarian thesis about outcome-responsibility, to the effect that persons are responsible for the harms that they cause, are two sides of the same coin. ... The basis of this unity is the idea that people "own" the effects, both good and bad, that causally flow from their actions." [Perry 1997, p. 352] Ironically, the first insight into the property and imputation connection can be traced back to the two ways to paraphrase the *metaphorical* interpretation of MP theory. John Bates Clark [1899] developed that interpretation using Lockean "fruits of one's labor" language while Friedrich von Wieser [1889] used the language of imputation [*Zurechnung* in German], so together they foresaw the connection between property appropriation and the imputation of responsibility.

[12] Note that the juridical imputation principle is about the past-oriented assignment of legal responsibility (positive and negative) for the results of people's deliberate de facto responsible actions, and has nothing to do with future-oriented "assignment of responsibilities" in organizational roles. See Hart [1968, p. 211] or Ellerman [1993, pp. 86-7] for the many ways the R-word "responsibility" is used and abused.

provides the juridical basis for the old claim of "Labor's right to the whole product"—to the positive and negative fruits of their joint labor.

But what about the employment contract? The employees voluntarily sold their labor services to the employer. Here the analysis makes contact with the aforementioned theory of inalienable rights that provided the basis for the abolition of a voluntary contract for selling labor by the lifetime. In a contract to sell or rent out a material instrument such as a wrench or a truck, the owner of the instrument can factually fulfill the contract by turning over the use of the instrument to the buyer or renter so that party can be factually responsible for using it and for whatever is thereby produced. The services of a thing are factually alienable.

But the same transfer to fulfill the contract is not *factually* possible when a person voluntarily sells or rents out *themselves*. Responsible human agency is factually inalienable. Hence the contract to rent persons, like the contract to buy persons, is inherently invalid. To pretend that responsible human agency can be transferred from one person to another is a legalized fraud carried out on an institutional scale in our current economic system.

One of the founders of Swedish social democracy, Ernst Wigforss, made the point long ago that the labor contract is invalid because it bogusly pretends that labor can be factually transferred like a commodity—and that this is the core of whole labor question. The remarkable passage is in the 1923 report of the *Wigforss Commission on Industrial Democracy*.

"There has not been any dearth of attempts to squeeze the labor contract entirely into the shape of an ordinary purchase-and-sale agreement. The worker sells his or her labor power and the employer pays an agreed price. What more could the worker demand, and how could he or she claim a part in the governance of the company? It has already been pointed out that the determination of the price can necessitate a consensual agreement on how the firm is managed. But, above all, from a labor perspective the invalidity of the particular contract structure lies in its blindness to the fact that the labor power that the worker sells cannot like other commodities be separated from the living worker. This means that control over labor power must include control over the worker himself or herself. Here perhaps we meet the core of the whole modern labor question, and the way the problem is treated, and the perspectives from which it is judged, are what decide the character of the solutions." [Wigforss 1923, p. 28 (translated by Patrik Witkowsky)]

A similar argument has been made independently by the contemporary political theorist, Carole Pateman.

"The contractarian argument is unassailable all the time it is accepted that abilities can "acquire" an external relation to an individual, and can be treated as if they were property. To treat abilities in this manner is also implicitly to accept that the "exchange" between employer and worker is like any other exchange of material property. … The answer to the question of how property in the person can be contracted out is that no such procedure is possible. Labour power, capacities or services, cannot be separated from the person of the worker like pieces of property." [Pateman 1988, pp. 147-50]

At most, a person can and typically does voluntarily agree to follow the instructions of the employer, but then, in factual terms, they each share some of the de facto responsibility for the results of their joint actions. But if no crime has been committed, then the legal authorities do not intervene to hold a trial and apply the juridical imputation principle by assigning legal responsibility in accordance with that joint de facto responsibility. Instead the legal system just counts obeying the employer as "fulfilling" the labor contract—even though there has been no factual transfer of responsible human actions ("labor services") unlike the case of the factual transfer of the services of *things* like a wrench or truck. And then, as we saw in the description of the market mechanism of appropriation, one legal party (the employer) paid for all the input services (e.g., the services of the rented wrenches, trucks, and persons) so that party absorbs those liabilities and thus has the defensible legal claim on the produced outputs. Thus the employment system inherently violates the juridical principle of imputation since one party is factually responsible for the whole product (the party consisting of all who work in the enterprise) while another party legally appropriates the whole product (the legal party playing the role of the employer).

The employees in an employment firm have *zero* legal claims against them (qua employees) for the input-liabilities (they are only one of the parties to whom the wage-liability is owed) and they have *zero* legal claims (qua employees) on the output-assets—which is exactly *the legal role of a rented thing*. As usual, Frank Knight expresses it best:

"It is characteristic of the enterprise organization that labor is directed by its employer, not its owner, in a way analogous to material equipment. Certainly there is in this respect no sharp difference between a free laborer and a horse, not to mention a slave, who would, of course, be property." [Knight 1965, p. 126]

This can be illustrated using our "priceless" example. All who work in a production opportunity ("Labor" including managers) are de facto responsible for using up the inputs K to produce the outputs Q, which is summarized as *Labor's product* (Q, –K, 0). But Labor (qua Labor) only legally appropriates and sells (0, 0, L) in the employment system. Labor is de facto responsible for but does not appropriate the difference which is the "institutional robbery" of the whole product: (Q, –K, 0) – (0, 0, L) = (Q, –K, –L).

Labor de facto responsible for	(Q, –K, 0)	= Labor's product
Labor legally appropriates	(0, 0, L)	= labor commodity
Labor de facto responsible for but does not appropriate	(Q, –K, 0) – (0, 0, L) = (Q, –K, –L)	= whole product.

Imputation principle: Violation under the employment siystem

Since no prices or values were mentioned in Table 1 (or in the underlying analysis), even the most casual reader should be able to understand that the labor theory of value is not involved. It is also easy to see why neoclassical economists are so addicted to the picture of the employees as metaphorical "partners" getting their distributive share of the product! They in effect say:

As scientific economists, we don't look at the superficial legalistic assignation or imputation of property rights and liabilities in an employment firm; instead we focus our attention on the deeper question of labor's share of the product—which is justified in the ideal competitive case by the theory of marginal productivity.[13]

[13] At least, when the actual facts are considered as superficial, while metaphorical shares in the product are considered as deep, then one doesn't have to ask if science or ideology is riding in the saddle.

Before turning to marginal productivity theory, we might consider the legal system's acceptance of the employee's inextricably co-responsible performance as "fulfilling" the contract for the transfer of labor—when a crime is committed at the behest of the employer. Then the market or laissez-faire mechanism of appropriation is set aside, and the legal system intervenes in a trial to apply the juridical principle of imputation. And then the servants in work suddenly become the partners in crime.

"All who participate in a crime with a guilty intent are liable to punishment. A master and servant who so participate in a crime are liable criminally, not because they are master and servant, but because they jointly carried out a criminal venture and are both criminous." [Batt 1967, p. 612]

When the venture being "jointly carried out" is non-criminous, the workers do not suddenly become non-persons or instruments being "employed" by the "employer." The facts about de facto responsible co-operation remain the same.[14] It is the reaction of the legal system that changes when no legal wrong is recognized. Then legal authorities accept the employees' same de facto co-responsible cooperation as "fulfilling" the human rental contract so there is no need for a legal intervention to make the imputation in accordance with the actual de facto responsibility. The input-suppliers have supplied their inputs fulfilling their side of the input contracts and employer has paid all the costs (and thus appropriates the input-liabilities) fulfilling his side of the input contracts, and thus the employer also has the defensible legal claim on the produced output.

That is the 'secret' or 'trick' involved in the employer's legal appropriation of the whole product produced by rented people. It has *nothing* whatever to do with prices, values, wages, exploitation (e.g., being under-paid or over-worked), bad working conditions, dominating [Roberts 2017] or oppressive [Anderson 2017] employers, bathroom breaks [Linder and Nygaard 1998], or the like.

In this manner, the employer legally appropriates the whole product—which is the negative and positive fruits of the de facto responsible human actions of all who work in the enterprise. That is the "institutional robbery—a legally established violation of the principle on which property is supposed to rest" [Clark 1899, p. 9] at the core of our private property market economy.

[14] Of course, a contract involving a crime is legally null and void. But the worker is not de facto responsible for the crime because they made an illegal contract. The employee is de facto responsible because the employee, together with the employer, committed the crime (not because of the legal status of the contract).

Perhaps the biggest moral idiocy of Marxism is its attack on the idea of private property. Far from implying the abolition of private property, the labor theory of property might paraphrase Gandhi[15] to say:

It *would* be a good idea to have a *real* private property market economy based on the principle of people legally appropriating the positive and negative fruits of their labor—instead of the property-as-theft system we have now based on the fraudulent and inherently invalid contract for the renting of human beings.

That would imply the abolition of the contract to rent, hire, or employ human beings in favor of companies being reconstituted as democratic organizations whose members are the people working in the enterprise [Ellerman 1990a]. But orthodox economists will respond:

Please, we're economists; we can't talk about property rights and contracts or some so-called "juridical principle of imputation." That's not even part of Economics! So let's talk about economics. What you probably mean to say is that workers produce more value than they are paid—and we largely agree with you since markets are far short of the competitive ideal as is correctly pointed out by progressive economists such as Stiglitz, Piketty, Thurow, and Keen as well as by leading progressive philosophers such as Rawls. But in the ideal competitive case, workers are paid the value of their marginal product so workers then "reap what they sow." Hence let's talk about making markets more competitive so workers will really be paid the full value of their marginal product, and then your concerns about justice—which we, of course, share—will be satisfied.[16] Hence we turn to marginal productivity theory.

[15] The perhaps apocryphal quote attributed to Gandhi is that when asked "What do you think of Western civilization?", he replied "I think it *would* be a good idea."

[16] The point is that neoclassical economists face a genuine quandary at this point. Should they argue that rented workers are actually non-responsible instruments 'employed' by the employer—unless they commit crimes? Should they argue that people should not appropriate the fruits of their labor? The solution taken is the obvious one; just ignore all those 'non-economic' questions about property and contract. Work within the framing of the "problem of distribution" shared by the 'serious' progressive economists. And when it comes to 'taking on the real opposition', find the nearest Marxist to play the "useful fool" and give them a lecture on the problems in the labor theory of value and exploitation. Robert Solow's review [Solow 2006] of Duncan Foley's book, *Adam's Fallacy* [Foley 2006] is an excellent example of this genre.

On the Theory of Marginal Productivity

Although economists may feign ignorance of the juridical principle of imputation, they have used, explicitly or implicitly, a metaphorical version of the principle in marginal productivity theory ever since the marginalist revolution at the beginning of the 20th century. As Milton Friedman put it, "To each according to what he and the instruments he owns produces." [1962, pp. 161-2], or as Frank Knight put it, "what a man soweth that shall he also reap" [1956, p. 292]. However, this attempted application of the imputation principle is based on:

- a metaphor,
- a mistake, and
- a miracle.

The Metaphor: Treating Productive Services of Things like the Responsible Actions of Persons

The first and foremost problem is the neglect of the difference between responsible human actions and the non-responsible but causally efficacious (i.e., productive) services of things like a wrench, machine, or truck. This blind-spot does not differentiate orthodox from heterodox economics; heterodox economists have just as much trouble finding the R-word. This fundamental distinction between persons and things in terms of responsibility and imputation has long been part of standard jurisprudence—but is virtually unheard of in orthodox or heterodox economics.

"A *person* is the subject whose actions are susceptible to imputation. … A *thing* is something that is not susceptible to imputation." [Kant 1965 (1797), pp. 24-25]

Marx could not find the R-word from bourgeois jurisprudence, and economists cannot find the R-word on their own or in pathetic attempts to find some reasonable interpretation of Marx.

"Marx emphasized that labor is not the only useful factor of production. However, he did argue that it is the only useful factor of production contributed by *human society*. In this sense he considered it necessary to define all value and, therefore, all surplus value (profit, interest, and rent) as something that is produced by labor. [Baumol and Blinder 1982, p. 775]

The point of the value theory may than be summed up as follows: goods are indeed produced by labor and natural resources together. But the relevant *social* source of production is labor, not an inanimate "land." [Baumol 1974, p. 59]

One form of the failure to differentiate is that human actions and the services of things are both treated simply as causally effective productive services. As usual, Knight expresses it best.

"We have insisted that the word "produce" in the sense of the specific [i.e., marginal] productivity theory of distribution, is used in precisely the same way as the word "cause" in scientific discourse in general." [Knight 1965, p. 178]

"For "labor" we should now say "productive resources"." [Knight 1956, p. 8]

Knight goes on to describe the distribution problem in those terms.

"Goods are typically produced by the co-operation of various kinds of productive services, and the special problem of distribution, in modern terms, is that of the division of this joint product among the different kinds of co-operating productive services and agents." [Knight 1956, p. 21]

There is an old literary metaphor (a version of the pathetic fallacy) where natural forces are pictured in an animistic way as being "responsible" for certain consequences. Instead of Knight's down-grading responsible human actions to being just like the causally efficacious "productive services" of things, some economists use the opposite tactic as when an asset's services, natural forces, and human actions are all coupled together as if all were de facto responsible agents.[17]

"Together, the man and shovel can dig my cellar… . [L]and and labor together produce the corn harvest… ." [Samuelson 1976, pp. 536-537].

[17] It is interesting that orthodox economics always treat human actions and the services of things both as being only "productive services" or both as being "responsible agents." Economists seem to instinctively know that recognizing any fundamental difference between responsible human actions and the productive services of things in production can only lead to 'trouble' individually in the profession and collectively in fulfilling the social role of the profession.

However, since the demise of primitive animism, the law has only recognized persons as being responsible agents. If orthodox economists, such as Knight or Samuelson, were on jury duty for a murder trial, they would probably drop their learned ignorance of difference between the responsible actions of persons and the causally efficacious services of things. They would probably not wonder—or, at least, not out loud—how to effect the “division” of the joint responsibility “among the different kinds of co-operating productive services and agents.” They might even understand that the responsibility for the murder is imputed back through any gun or other weapon to the person using those instruments.

The legally-trained Austrian economist, Friedrich von Wieser, could find the R-word.

“The judge ... who, in his narrowly-defined task, is only concerned with the *legal imputation*, confines himself to the discovery of the legally responsible factor, –that person, in fact, who is threatened with the legal punishment. On him will rightly be laid the whole burden of the consequences, although he could never by himself alone–without instruments and all the other conditions–have committed the crime. The imputation takes for granted physical causality. ...
If it is the moral imputation that is in question, then certainly no one but the labourer could be named. Land and capital have no merit that they bring forth fruit; they are dead tools in the hand of man; and the man is responsible for the use he makes of them.” [Wieser 1889, pp. 76-79]

For instance, a non-animistic version of Samuelson's statements would be that a man is responsible both for using up the services of a shovel and for thereby digging a cellar, or that labor uses up the services of land in the production of the corn harvest.

In spite of the relative commonplace of the legal assignment of liabilities in a damage suit, economists (orthodox or heterodox) seem to be particularly baffled by the negative components in the whole product vector and the corresponding assignment of the input-liabilities as the bearing of costs. They seem to find it particularly difficult to understand the negative side of responsibility, e.g., the man is responsible for using the services of the shovel or the land, or, as Wieser put it, land and capital are but “dead tools in the hand of man; and the man is responsible for the use he makes of them.”

There is a common pose that orthodox economists are scientifically judging the existing human rental system according to some normative principles such as Pareto optimality. But the social role of “economics” suggests the opposite direction of causality. Normative principles are judged according to whether or not they align with the social role of orthodox economics in giving a “scientific account” of the existing or perhaps an idealized human rental system.

For instance, Wieser summarizes the essentials of the labor theory of property (juridical imputation principle) critique of the employment system–"Land and capital have no merit that they bring forth fruit; they are dead tools in the hand of man; and the man is responsible for the use he makes of them." But that gives Wieser no second thoughts about the system of renting human beings; it only shows that the usual moral or legal notions of imputation *obviously* do not apply! It would be a *reductio ad absurdum* to apply the usual moral/legal notion of imputation to production since it conflicts with the institution of renting human beings in the free market free enterprise system! The social role of economics in the human rental system demands a new notion of "economic imputation" in accordance with another new notion of "economic responsibility".

"In the division of the return from production, we have to deal similarly ... with an imputation, – save that it is from the economic, not the judicial point of view". [Wieser 1889, p. 76]

By defining "economic responsibility" in terms of the animistic version of marginal productivity, Wieser and later orthodox economists can finally draw the conclusion demanded by their professional vocation: to show that the competitive human rental system "economically" imputes the product in accordance with "economic" responsibility. But one should not think that orthodox economists are intellectual hirelings just because they ignore the usual legal or moral principle of imputation; they can be quite critical of the non-competitive aspects of the actual economy when workers are not paid rentals according to their "economic responsibility."

Thus we arrive at one of the highpoints of neoclassical microeconomics: trying to justify a metaphorical imputation of the product with a metaphorical notion of "responsibility."

In contrast, the modern treatment of the labor theory of property (i.e., based on the juridical imputation principle) deals with the imputation of the "return from production" precisely from the moral, legal, or "juridical point of view."

The Mistake: No Division of Actual Property Rights to the Product

"Now the riddle of the Sphinx—how to allocate among two (or more) cooperating factors the total product they *jointly* produce—can be solved by use of the marginal-product concept." [Samuelson 1976, p. 541]

But it's the wrong riddle of the Sphinx. The simple mistake involved in this interpretation of MP theory is that it does not deal with the actual appropriations addressed in the Question of Predistribution: "Who is to be the whole product appropriator—in the first place?"[18] There is no property-theoretic riddle since in an enterprise, one legal party, typically the employer, legally appropriates the:

(Q, −K, −L) = (Q, 0, 0) + (0, −K, −L) or
Whole product = Positive product + Negative product.

There is no actual division of the property rights to the product. In order to address that question about the actual appropriation of the assets and liabilities created in production, one needs a theory of property, whereas marginal productivity theory is actually only a theory of the derived demand for inputs.[19]

It might be also noted that there is a dual metaphor that can be used to provide an ideological interpretation of marginal cost theory. Instead of metaphorically picturing all the inputs as responsible agents producing the positive product, one could picture the outputs as responsible agents using up the inputs (i.e., producing the negative product). Instead of imputing to each input "what it produces," impute or charge to each output "what it uses up." That is, in addition to saying that "an individual deserves what is produced by the resources he owns" [Friedman 1976, p. 199], one might say "an individual deserves the liabilities produced by the outputs he owns." In value terms, each buyer of a unit of the output would be charged the marginal cost and, indeed in competitive equilibrium, the price of the output is equal to marginal cost (P = MC).

This dual metaphor is faulty for the same reasons as the original metaphor. Outputs are not responsible for using up the inputs; the people who work in the firm are the ones who perform the responsible human actions that use up the inputs in the course of producing the outputs. And the legal liabilities for the used up inputs are not assigned to the purchasers of the outputs. By the market mechanism of appropriation, those liabilities are laissez-faire appropriated by the last owner of the used up inputs–all of which is a technical way of saying the costs lay where

[18] Much ink has been spilt by Knight [1965] and others on the near-tautology that the party who "bears the risks" (i.e., appropriates the negative product) should also appropriate the positive product. Of course, *one* party appropriates the *whole* product (i.e., both the positive and negative products). The real question is: who is to be that one party?

[19] The juridical principle of imputation provides no normative critique of treating genuine commodities (i.e., things) as things. Maximizing an objective function requires valuing things at their marginal contribution to the objective as indicated by the Lagrange multipliers in the mathematics of constrained optimization [Ellerman 1984, 1990b].

they fall unless a court reassigns them. The last-owner of the inputs thereby gets the legally defensible claim on the appropriable outputs which, in turn, are sold to the output buyers. Thus the actual non-metaphorical legal facts are that there is one legal party who stands between the input suppliers and the output buyers, and that one party legally appropriates the whole product, i.e., both the input-liabilities and the output-assets.

The Miracle: Each Factor's Immaculate Production of its Marginal Product

The whole picture of each unit of a factor producing its marginal product is not even remotely plausible in the first place since production requires other inputs! Each (marginal) unit of the labor L cannot "immaculately" produce *ex nihilo* its marginal product $MP_L = \Delta Q/\Delta L$ of so-many widgets without using up some other services of capital and other intermediate goods summarized in K.

What technically counts as the marginal product of labor? Given an increase in labor of ΔL, the usual computation of the marginal product of labor $\Delta Q/\Delta L$ involves a shift to a slightly more labor-intensive production process so that ΔQ extra product is produced with no change in the other factors, i.e., $\Delta K = 0$. But that nominal shift in general would violate the cost-minimization assumption that requires expansion along the least-cost expansion path. Thus the ΔL would typically require an increase in the other inputs K in order to produce some extra output ΔQ at minimum costs. Hence in place of the usual scalar notion of MP_L, the neoclassical assumptions themselves require a vector notion of marginal product to account for those changes in the other inputs necessary to stay on the least-cost expansion path. Hence the *vector marginal product* of the extra labor ΔL would be a vector $\mathbf{MP_L} = (\Delta Q, -\Delta K, 0)$. And since labor is the only de facto responsible factor, the *total* labor L would be de facto responsible for the sum (or integral in technical terms) of the vectorial marginal products of labor from 0 to L which is exactly what we previous termed:[20]Labor's product = (Q, −K, 0).

Of course, the same mathematical calculations can be made for the causally efficacious but non-responsible inputs K (e.g., capital), but since non-responsible things do not qualify for imputation, that calculation has no normative significance.

Thus redoing the MP theory taking account of the non-metaphorical fact that in terms of legal or moral imputation "no one but the labourer could be named," we are taken right back to the

[20] The mathematics of vectorial marginal productivity theory was worked out a couple of decades ago in Chapter 5 entitled "Are Marginal Products Created *Ex Nihilo*?" of Ellerman [1995].

property-theoretic application of the juridical principle of imputation, historically known as the "labor theory of property."

This raises the question of why doesn't neoclassical economics follow out its own assumptions by using the vector marginal products taken along the least-cost expansion path instead of the notional (immaculate) marginal products off that path? On this matter, is it science or ideology that is 'in the saddle'? The answer seems to be that only the immaculate marginal products gives the "distribution of the product" or "distributive shares" picture (with the "exhaustion of the product" under constant returns to scale)—which can then be combined with the pseudo-application of the imputation principle to show that the competitive employment system satisfies "the ethical proposition that an individual deserves what is produced by the resources he owns." [Friedman 1976, p. 199]

Conclusion

If the modest neo-abolitionist proposal [Ellerman 2015] were accepted that the contract for the renting of human beings be recognized as invalid and abolished, then production could only be organized on the basis of the people working in a firm (jointly) hiring or already owning the capital and other inputs they use in production. Then the laissez-faire market mechanism of appropriation would correctly impute the legal responsibility to the de facto responsible party.[21] The legal members of the firm as a legal party would be the people working in the firm. As the Conservative thinker, Lord Eustace Percy (1887-1958), put it:

"Here is the most urgent challenge to political invention ever offered to the jurist and the statesman. The human association which in fact produces and distributes wealth, the association of workmen, managers, technicians and directors, is not an association recognised by the law. The association which the law does recognise—the association of shareholders, creditors and directors—is incapable of production and is not expected by the law to perform these functions. We have to give law to the real association, and to withdraw meaningless privilege from the imaginary one." [Percy 1944, p. 38; quoted in: Goyder 1961, p. 57]

[21] See the fundamental theorem of property theory in Ellerman [2014].

Such a firm is a *democratic firm* and the private property market economy of such firms is an *economic democracy*.[22] The interesting implication is that, notwithstanding over two centuries of economic theorizing, the current system is not the "natural system of private property and contract" any more than would be a private property system where longer-term voluntary contracts in human capital (e.g., self-sale or voluntary slavery contracts) were legally valid.[23] The natural system of private property and (non-fraudulent) contracts is one where the owner-operated proprietorship and the family farm generalize to democratic firms of any size where people are jointly working for themselves.[24]

Moreover, the system of economic democracy finally resolves the long-standing conflict between being a citizen whose inalienable rights are recognized in the political sphere and being a rented "employee" in the workplace. As the visionary corporate leader (founder of RCA, President and Chairman of General Electric, and Time magazine Man of the Year for 1929), Owen D. Young (1874-1962), put it:

"Perhaps someday we may be able to organize the human beings engaged in a particular undertaking so that they truly will be the employer buying capital as a commodity in the market at the lowest price.… If that is realized, the human beings will then be entitled to all the profits over the cost of capital. I hope the day may come when these great business organizations will truly belong to the men who are giving their lives and their efforts to them, I care not in what capacity. Then they will use capital truly as a tool and they will be all interested in working it to the highest economic advantage. … Then we shall dispose, once and for all, of the charge that in industry organizations are autocratic and not democratic. Then we shall have all the opportunities for a cultural wage which the business can provide. Then, in a word, men will be

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22 See, for example, Robert Dahl [1985] and particularly the "Sketch of an Alternative" [p. 91]. The best examples today are probably the Mondragon industrial cooperatives in the Basque region of Spain [see Oakeshott 1978, 2000; Whyte and Whyte 1991]. Employee stock ownership plans (ESOPs) and codetermination arrangements are steps in the same direction.

23 Actually, the orthodox "fundamental theorem" that a competitive equilibrium is Pareto optimal must assume full futures markets in all commodities including labor so that theorem actually assumes long-term contracts in human capital. This is, of course, not stated in any elementary or advanced economics text but in an apparent outburst of clarity and honesty, an orthodox economist did state this in no less a forum than Congressional testimony. "Now it is time to state the conditions under which private property and free contract will lead to an optimal allocation of resources.... The institution of private property and free contract as we know it is modified to permit individuals to sell or mortgage their persons in return for present and/or future benefits." [Christ 1975, p. 334]

24 The legal appropriation of the output-assets and input-liabilities is, of course, not done individually but jointly in the democratic company as the "human association which in fact produces and distributes wealth." How the net value-added is allocated between the members is part of what has to be democratically decided by the members of the company [Ellerman 1990a]—not unlike the way a democratic polity has to decide how the joint net liabilities of the government are allocated between the citizens as taxes.

as free in cooperative undertakings and subject only to the same limitations and chances as men in individual businesses. Then we shall have no hired men." [Young 1927, p. 392]

Yes, then we shall have no rented people.

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In need for a drastic change: on the "evidence-based" debates in cultural economics and cultural policy research

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Abstract

Cultural policy research is overloaded with speaking about »evidence-based cultural policy«. But, has cultural policy research gone far enough in the production of policy-relevant knowledge? Indeed, is it asking the appropriate research questions at all? Is evidence-based cultural policy research not merely an example of bullshit, i.e. currently prevailing rhetoric with no meaning at all, »a signifier without the signified«? Our study surveys the examples of evidence-based cultural policy research, following two streams: economic impact of culture, and composite indicators. We show that in both streams, cultural policy research satisfies itself with rhetorical figures and descriptive analysis, unable to answer the most basic research questions. At this point, therefore, evidence-based cultural policy is only a rhetoric concept, by policymakers and researchers. We provide a broad set of research questions to be addressed in future, examples of methods and datasets, and good practices from other sectors of public policy.

Keywords: cultural economics, cultural policy, bullshit, evidence-based, economic effects, statistical methodology

JEL classifications: Z11, Z18, H41, R11, C43

Introduction: on the concept of evidence-based policy research

In her often-quoted article, Belfiore (2009) introduced the concept of bullshit in evidence-based cultural policy by referring to (mis)using statistical calculations with the aim of cultural policy persuasion and demagogy. She pointed to this problem as »statisticulation« (referring to the usage by Darrell Huff, see Huff, 1954), presenting several misusages of statistics, related to cultural policy practice in United Kingdom. Although her article received good response in cultural policy research, we claim that it might have caused misusage for presenting statistical research as »the root of evil« in cultural policy research. Furthermore, we briefly demonstrate that the debates in cultural policy research, particularly emphasizing the concept of evidence-based cultural policy, are misplaced. Most of these debates rely on the contrast between, on the one hand, strongly theoretically based arguments and, on the other, very basic and "rudimentary" methods to solve the highly complex problems of cultural statistics and, consequently, try to avoid the issues it should be preoccupied with: improvements of statistical methodology and a consequent more proper, concise and content-rich answer to the problems under consideration.

We use the concept of bullshit as a grounding point. Most of the discussion on this concept started with the work of American philosopher Harry G. Frankfurt, namely the essay »On bullshit« in 1986 (later reprinted in a book form by Princeton University Press, see Frankfurt, 2005) where Frankfurt presents a theory of bullshit that defines the concept and analyzes its applications in the context of communication. As such, bullshit "can be neither true nor false; hence, the bullshitter is someone whose principal aim is to impress the listener and the reader with words that communicate an impression that something is being or has been done, words that are neither true nor false, and so obscure the facts of the matter being discussed" (Frankfurt, 2005: 30-34).

In our article, we demonstrate that the present discourse on evidence-based cultural policy research is a clear example of bullshit: it aims to impress the reader / listener that something is being done / researched (or even better to say: thought / reflected / critiqued) with a large disparity over what was promised / supposed to be done and what was actually done. We demonstrate this by using two topics which we consider as excellent examples of bullshitting related to evidence-based cultural policy research: economic impact studies and the construction of composite indicators in culture. While previous studies (Belfiore and Bennett, 2007; Belfiore, 2009; 2010) already identified the first (economic impact) as an example for bullshit in cultural policy practice, we provide a step ahead from their elaboration: we see a potential of the debate on economic impact of culture which has been misused, but not (or not only) by the practitioners and policymakers but rather by the researchers themselves.

It is necessary to firstly concisely define the term "evidence-based policymaking". As stated by Sutcliffe and Court (2005: 1), "The idea of using evidence to inform policy is not new. As far back as ancient Greece, Aristotle put forward the notion that different kinds of knowledge should inform rulemaking. This would ideally involve a combination of scientific knowledge, pragmatic knowledge and value-led knowledge". As stated by Davies, evidence-based policymaking is an approach that "helps people make well informed decisions about policies, programmes and projects by putting the best available evidence from research at the heart of policy development and implementation" (Davies, 2004: 3). Such discourse has become popular among a range of policy communities, those within government departments, research organizations and think-tanks (Sutcliffe and Court, 2005).

Shaxson (2005) argues that we need evidence in policymaking, in terms of policy, to understand the policy environment and how it's changing; and appraise the likely effects of policy changes so we can choose between different policy options and subsequently assess their impacts. In terms of strategy, we need it in order to demonstrate the links between strategic direction, intended outcomes and policy objectives; and determine what we need to do to meet our strategic goals or intermediate objectives. In terms of outreach, we need it to influence others so that they help us achieve our policy goals and take them through to delivery; and to communicate the quality (breadth and depth) of our evidence base to meet the open government agenda (Shaxson, 2005: 106-107).

When speaking about the research foundations for evidence-based policymaking, Sutcliffe and Court state that "evidence-based policy should be based on research-based evidence" (Sutcliffe and Court, 2005: 3). On the other hand, they adopt a very general and widely accepted definition of research as any systematic effort to increase the stock of knowledge (see also OECD, 1981). Thus, to their opinion, such research can include "all kinds of evidence as long as they have been collected through a systematic process" (Sutcliffe and Court, 2005: 3). Simply said, almost anything that could count as research could be the foundation of evidence-based policymaking.

Our methodological approach will be descriptive and based on the presentation of two case studies to support our main claim. Firstly, we will present the extant evidence in the literature on the economic impact of culture, the critiques of the existing methods, some of the related discussions in the field of cultural policy and solutions in cultural economics that are emerging in recent years. Secondly, we will present also the emerging field of composite indicators in culture (related to the field of cultural statistics in more general terms) and similar problems (with a similar structure of the presentation of our arguments) emerging there.

The remainder of the article is organised as follows. Section 2 presents the debate on economic impact of culture (related also to the work of John Myerscough, the main topic of the special issue), its problems, the proposed solution and plethora of possibilities of future work. Section 3 develops similarly the debate on cultural indicators, very lively presently in both cultural policy and cultural economic research. Finally, section 4 concludes by pointing to the other fields of cultural policy research which also succumb to the problem of bullshitting and a reflection on the future usage of statistical methods in the research of cultural policy phenomena and practice.

Evidence-based research on the economic impact of culture

The debate on the economic impact of culture, at least in cultural economics, started in the 1970's, with the American »monetary experiment« (Barsky and Kilian, 2000) when the US started to use extremely restrictive monetary policy to solve the problems of stagflation. To this reason, many areas of public economy have come under closer public scrutiny and were faced with a significantly changed financial environment. To adjust, they started using economic arguments to justify their support (in culture, this debate is nicely summarized in the work of Radich, 1993). The debate spurned so-called economic impact studies, starting with two influential studies: the 1977 report, Economic Impacts of Arts and Cultural Institutions: A Model for Assessment and a Case Study in Baltimore (Cwi and Lyall, 1977); and the 1983 study, The Arts as an Industry: Their Economic Importance to the New York-New Jersey Metropolitan Region (Port Authority of New York and New Jersey – Cultural Assistance Center, 1983). Such kind of studies pretended to calculate the "net economic impact" of a certain cultural event, mainly to show its large benefit for the economy and community in general. In an influential essay, Frey labelled the proponents of such studies as "arts people" which "focus more on the economic effects of the arts than economists do. Or conversely: arts economists concentrate more on the artistic aspects than arts people do" (Frey, 2005: 2).
In Europe, such "economic" arguments have been glorified and used in favour of public support of the arts in the study published in 1988 by John Myerscough and entitled The Economic Importance of the Arts in Britain (1988). As stated by Belfiore (2003: 1), it "was a highly controversial publication, strongly criticized particularly by cultural economists, yet, it opened the way to an increasing number of similar studies claiming to be able to prove and measure the importance of the arts sector to the local and national economy". Myerscough demonstrated, through the use of a multiplier-based analysis, that direct spending on the arts led to spending in other sectors which in turn enhanced wealth and job creation on the city and

country level. This study had a far-reaching impact on the cultural sector and strengthened its argument for the economic impact of the arts as a powerful justification for continued public funding.

Studies on economic impact are of course clear examples of research based evidence, as defined by Sutcliffe and Court. But it is also necessary to claim that such kind of evidence is misplaced. Although it uses some rudimental statistical methods, it clearly uses them a) wrongly – the numbers, calculated by such methodology are clearly overblown and not supported by the ex-post evidence (Seaman, 1987; Seaman, 2006); b) purposefully – the numbers are clearly calculated with the purpose of showing large impacts to justify the economic value of the event and convince the funders that it is economically profitable to invest in (Frey, 2005). This has commonly led researchers to conclude on the inappropriateness of such approach and even proposing different types of agendas, focused on defying instrumental rationality and pronouncing critical approach (see e.g. Belfiore, 2010).

In cultural economics, such critical approach is probably best described by the research agenda on the usage of contingent valuation method to study the individual preferences and "total economic value" (see Peterson and Sorg, 1987) of the event, encompassing both use and non-use values and including sometimes also cultural values, being broadly defined as values of culture outside of the economic / monetary valuation (the debate on cultural values is today very widespread, see e.g. Klamer, 1996; Hutter and Throsby, 2008; Oakley et al., 2006; Hesmondhalgh et al. 2014; Oakley and O'Brien, 2015). Such debate and usage of methodology originates from environmental economics and was transferred to cultural economics in the 1980's by the study of Throsby and Withers (1986). Today, the debate on the economic impact and value of cultural events in academic circles has been predominated by the usage of contingent valuation methodology. Some researchers also use other methods, like life satisfaction approach (Steiner, Frey and Hotz, 2015), new internet possibilities, such as Google Trends and Google News (Plaza et al., 2015) or even referenda (Frey, 2000). As a consequence, many researchers in academic cultural economic and cultural policy research believe that we should completely forget the economic impact studies due to their numerous flaws and problems. Although this speaks in favour of using statistical methods (which are significantly more complex in contingent valuation studies than in "classical" economic impact studies), we should ask ourselves: is this the appropriate path of research and does it answer to the research questions under hand?

If the purpose of the analysis is to measure economic impact of the arts, the contingent valuation method and other above mentioned methods clearly do not answer the main questions: a) do the art events have significant economic effects, as measured by e.g. new income, employment spaces, additional tourism and taxes raised; b) how large precisely are such effects; c) on what characteristics do they depend upon. We can certainly agree that "value" of the arts is multidimensional and cannot be completely encapsulated in either use or monetary amount. Nevertheless, the responses currently provided do not answer the original questions, pretending they are impossible or largely unimportant.

At present, there is a new way that appears promising to solve the present conundrums of economic impact research which, as a paraphrase of Frey, is stuck in the futile dichotomy between the "arts people", using economic impact studies (providing wrong numbers), and the "arts economists", using contingent valuation and similar approaches (answering the wrong questions – and being prone to numerous own methodological problems, exemplified and warned against by e.g. Diamond and Hausman, 1994). This methodological path is called ex-post econometric verification, and has been used in culture very seldom (Skinner, 2006; Srakar and Vecco, 2016; Srakar, Slabe-Erker and Vecco, 2016). It originates in sport economics, starting with work of Baade and Dye (1988). The method uses existing statistical data after the event takes place (ex-post) and econometrical methodology to discern a "blip" (Gergaud and Ginsburgh, 2013), caused by the event, in the data. There are many advantages of the method which clearly answer all of the above challenges (and in an easy manner): a) it is done after the event; b) it uses a methodology, which suffers from no additional problems, characterising both economic impact studies and contingent valuation (overblown results, hypothetical bias, micro vs. macro focus); c) it employs statistical data, measured under commonly accepted methodology; d) its results can be compared across events, regions, countries; e) it is not expensive or methodologically over-complex.

Although there exist several issues also with this methodology, such as whether it is possible to really discern the "blip" from the data and in which cases is this even impossible due to e.g. small event in a large city, inadequacy of data, many other competing events and happenings at the same time, etc., it is justified to say that if any method is able to answer to the above pointed research questions in best manner, it is probably this method. The possibilities provided are extensive: the method can be used to study almost any cultural event under question and even to relatively easily compare them (a problem of "benefit transfer" that contingent valuation is hardly able to answer, see Whitehead, Morgan and Huth, 2015). At present, the methodologies for studying the ex-post economic impact of a cultural (or sport) event can be broadly classified into two types: time series methodology, which can be applied to small events and very few variables with adequate data, as demonstrated by Skinner (2006); and panel data methods, which can be applied when the data allow richer possibilities and comparison among different individual units. Therefore, the method allows to be used in numerous different settings and it remains to be developed and explored in its possibilities in future research.

It also demonstrates a key finding for our article. The impotence and flaws of previously used economic impact studies do not mean that the question of economic impact cannot be studied methodologically and even using traditional statistical and econometrical framework. In cultural economics, the debate has so far been caught between two contested and futile options, both having significant methodological and ideological problems of their own. In cultural policy research, the prevailing misplaced economic impact studies of the "arts people" have led the researchers to conclude on the inappropriateness and bullshit character of such studies and to the need of the program of research on arts impacts that would "not be confined to the demands of an instrumental rationality". In both research fields, the main research questions to our opinion remain largely unanswered despite the amount of articles and studies done in past decades.

To our opinion, the focus of research should be significantly changed in future and drawn back to the original economic questions as stated above. Yet, it should use a different methodological approach and agenda, and, furthermore, should not be "purposefully" oriented. Interestingly, as demonstrated by the evidence in existing sport economic ex-post econometric studies, almost never they find an economic impact as predicted by the ex-ante studies, even more, such effect can be significantly smaller and sometimes even negative (Seaman and Price Elton, 2016; Srakar and Vecco, 2016). The findings which are, therefore, more realistic, appear to distract the usages by the "arts people" in future and promise an interesting and fertile research agenda for the future.

Evidence-based research on composite indicators in culture

Another contested topic of evidence-based research in cultural policy is the construction and usage of composite indicators in culture. According to the OECD glossary, "a composite indicator is formed when individual indicators are compiled into a single index on the basis of an underlying model of the multi-dimensional concept that is being measured" (OECD, 2007). In the presence of an ever wider need for measurement of composite and multi-dimensional concepts, the need for a developed methodology for constructing composite indicators has come to the forefront of attention in many fields of research. This has been summarized in influential studies of OECD (Nardo et al., 2008), which provides a detailed description and elaboration on the main required steps in building any composite indicator, and Bandura (2008) who provides an inventory of over 400 country-level indices, with topics spanning from economic progress to educational quality.

In culture and the arts, the haze of making cultural indices is also in a significant rise. Endeavours such as the US National Arts Index, Arts Index Netherlands, recently published Indicator Framework on Culture and Democracy, several efforts to construct a European Cultural Index (see e.g. Inkei, 2013), British NCA Arts Index, ARC Creative City Index, Creative Community Index, Florida's Creative Cities Index, Euro-Creativity Index, Cultural Life Index, Creative Vitality Index, Intercultural Cities Index, and research and overview articles such as Srakar, Verbič and Čopič (2015), Kregzdaite et al. (2016) and Rodríguez Ramos et al. (2016) show the intense efforts into construction of an appropriate composite indicator to measure the condition of culture.

Yet, as pointed out by Srakar, Verbič and Čopič (2015), even the most basic methodological principles for constructing composite indicators, such as appropriate considerations of weighting, multivariate analysis and sensitivity analysis, are for the most part absent from all of the above mentioned indices. The need for improved cultural statistics has been exemplified in studies and reports such as Bína et al. (2012) and there are many problems of cultural statistics, not least being the comparability of data across countries due to different definitions of culture. Furthermore, Eurostat as the main European statistical institution does not provide any regular / yearly data on cultural indicators, so most of the studies have to rely on sporadic Cultural Statistics Pocketbooks, provided by the same institution (at present there have been three editions, published in 2007, 2011 and 2016). This justifies special consideration provided to statistical indicators in culture.

Yet, this provides also reasons for wonder why so far no institutional effort on developing a comparative composite indicator of condition of culture (i.e. cultural index) that would follow more closely the statistical guidelines of OECD (Nardo et al., 2008) has been provided. Is this merely the lack of statistical knowledge among researchers in cultural policy – but, if this is so, this surely provides reasons for serious concern. As we note in conclusion to this article, at present almost no topic in cultural policy research has been provided a solid and complex statistical framework of research, not least to mention that it would be adequately researched in statistical and/or econometric terms.

One short example we will use is National Arts Index as developed by the organization Americans for the Arts. The index, composed of 83 indicators, comprises all sectors: non-profit organisations, for-profit businesses, individual artists, as well as amateur levels of activity. On a broad level, the indicators are grouped into four dimensions: (1) financing, (2) capacities, (3) participation, and (4) competitiveness. Each dimension adds up to a respective index.

Interestingly, the selection of dimensions does not follow any previous statistically developed analysis and is merely guided by intuition (as is characteristic of almost any existing institutionally provided index in culture). Also, no particular consideration is provided to weighting methods, such as factor analysis, principal components, structural equation modelling, etc. which is clearly contrary to suggestions of Nardo et al. (2008).

Despite its problematic statistical structure, National Arts Index is used in numerous policy publications and is even used as a reference by e.g. the Arts Index Netherlands (see Boelhouwer et al., 2013), which is another example of weak statistical structure – composed by mere basic summation over intuitively composed set of dimensions without any used weighting scheme. Not much difference could be found for e.g. NCA Arts Index as the main cultural index for United Kingdom.

The most recent composite indicator attempt is the Indicator Framework of Culture and Democracy, described in research reports of e.g. Council of Europe (2016) and published in beta version in October 2016. The indicator framework was intended "to launch a medium-term working process that should include work on indicators of the impact of cultural activities on democracy as well as the economic efficiency of financing culture in order to improve the effectiveness of cultural policies" (Council of Europe Conference of Ministers of Culture, 2013). It consists of 8 dimensions – 4 for respectively each culture and democracy; in total it includes 177 variables, transformed using basic z-score normalization, for 37 Council of Europe member states. The data are compiled for one cross-sectional period, although gathered many time for different years, due to inaccessibility of data.

This indicator framework is very ambitious in its attempt to provide a tool to "be used by governments to adjust cultural policy in order to spend money where it is most needed, make access to culture easier where required, assist marginal and excluded groups where necessary and let the private sector and civil society take responsibility where needed and possible" (Council of Europe, 2016). Furthermore, it claims to be able to analyse the causal relationships between culture and democracy. Causal inference is an important part of contemporary statistical and econometric analysis, receiving an extensive coverage with some of the best known works by Angrist and Pischke (2009) and Morgan and Winship (2014). It shows that when data are considered in an inconsistent statistical manner, it can soon lead to problematic and wrong conclusions about causality. Recently, problems of overly simplified statistical evidence when analysing the effects of institutional (e.g. political, such as democracy) characteristics of a country on e.g. economic growth have been exemplified by Pozuelo, Slipowitz and Vuletin (2016). It is, therefore, reasonable to question whether the attempts such as this indicator framework do not succumb to the problem that Diamond and Hausman nicely labelled as "is some number better than no number" (1994). Definitely, it should be taken with careful consideration and could easily lead to rush and oversimplified / wrong "statistical" conclusions.

Again, the shortly presented debate has pointed to our main claim: the problem of using statistical indicators and / or methods to study culture does not lie in the usage of statistical methodology per se, but rather in its inadequate usage in present day research in cultural policy. It is not accidental that despite numerous existing attempts to construct cultural indexes by cultural organizations and institutions, there are to date to our knowledge no published scientific articles with statistical methodology on this topic.

On the other hand, the possibilities for (statistical) research on this topic are rich. A clear one is better exploration of the characteristics of cultural statistics, specific for this domain. How to take into account the problems of different definitions of culture – would any particular statistical methodology be able to provide a more appropriate and timely answer to this question. Furthermore, what means could be used to take into account the missing data problems in existing cultural statistics? What is the relation between cultural indicators and indicators of sustainable development – economic, social, environmental – and could those relationships be used to better take into account problems with existing cultural indicators? Could perhaps the methods of multivariate analysis (e.g. structural equation models, correspondence analysis, tree modelling, modern methods in clustering, etc.), taking into account the latent / unobserved nature of many cultural phenomena be used to study cultural statistics in a more appropriate manner? Those are just some of the many research questions and possibilities that would not only enrich the research agenda in cultural policy but also improve the knowledge in statistical methods and econometrics in general.

Discussion and conclusion

In conclusion, let's firstly resume the debate and our arguments. In the introductory section we defined the concept of evidence-based policy research and pointed to some of the problems when applied to the existing research practice in the field of cultural policy. We presented the existing evidence in two large areas of cultural policy research: economic impact of culture and composite indicators in culture. We pointed to large problems of existing studies which cannot be attributed simply to misuse in practice or problems of statistical methods, but mainly to inadequate research work and lack of usage of appropriate statistical methodology. To our opinion, we could attribute this in large part also to professional affiliation of the researchers themselves: in particular in the field of cultural policy research, more sophisticated statistical analyses are extremely hard to find and even to convince they are needed. To our opinion, this is contributing to both a) over-pronouncement of theory over statistical work; and/or b) misuse and false arguments, using poorly done and "purposefully" oriented statistical work, as demonstrated on the cases of two chosen fields. This does not mean the theory should be abandoned for the purpose of empirical and statistical work, quite the contrary: the more solid and profound evidence that is missing at present would, on the one hand, need to be supported by even stronger theory, interpreting it and putting it to the (changed) context, while, on the other, surely leading to significant theoretical developments in future, which are at present, paradoxically as this may sound, almost impossible – with missing evidence and missing answers (mentioned previously and in below paragraphs), leaving the field with mainly theoretical speculations of "what should be there".

A related question is, surely, the implications: for both cultural policy research and cultural economics. Related to the first topic, economic impact of culture, the over-exaggeration of this debate and its consequences for the field of culture in general (presented in Section 2) has definitely contributed to the severe and strange situation, faced at present – a strange mix of "bullshitting" on the side of practitioners and avoidance of answering more serious questions on the side of the researchers (both of cultural policy and cultural economic provenience). If such situation will persist, it will surely have an additional and strong adverse effect on the perception of both fields in scientific, policy and more general and wide public circles. The problematic situations, when the proclaimed economic effects are simply "not there" (as described shortly in Section 2), cannot but contribute to marginalization of both cultural policy research as well as cultural economics. The main intention and novelty of the article, indeed, is to point to this: although there is a plethora of already existing critiques, they seem to be misfounded and simply leading nowhere. Misplaced economic impact studies are still done, even quite frequently, and it is just to say that until the methodological development will not be able to catch up with the real problems, laying unanswered in the field, such studies might even prosper, develop and overthrow all the efforts and critiques by the researchers – because simply there is demand for such research. And if such demand is left unmet and taken unseriously (as, unfortunately, is the situation at present), this will surely and gradually lead to even more bitter consequences as were in the past decades since the first such studies have been done.

Not much different is the situation with composite indicators in culture (and, indeed, many or even most of the fields of empirical cultural policy research – as described in more detail below). Here, the field is much "younger", still only emerging, but, indeed, already with full of "bullshitting", as defined in our article: with a lot of poor statistics, with a potential of leading also to a lot of problematic and wrong conclusions. The only solution that this article is able to provide is clear, but demands dire changes in the present situation, in particular for cultural policy research: significantly more effort into more demanding and sophisticated (but focused on problems, not methods *per se*) statistical and econometric work. Only with this will the field be able to catch up with the development of other scientific fields at present, and, indeed, be able to provide more concrete and developed answers to many research questions, left open.

In the article, we did not satisfy ourselves with the description of present condition and presented possibilities of corrections and pathways for future research, which seem many. As noted, on our opinion, however controversial this may sound, to date almost *no* topic in the empirical and statistical research on cultural policy has been adequately covered. Even more, to date we could hardly find any existing study providing any more solid and complex / sophisticated statistical evidence on those topics. Numerous topics, beside economic impact and composite indicators, come to mind: public financing of culture – to date there exist almost no econometric cross-country analyses on the determinants, dynamics and characteristics of public budgets in culture and its relationship to other macroeconomic and policy variables. Some studies (e.g. Čopič et al., 2013) point to lack of knowledge of the relationship between central and local public budgets for culture, yet the data on both are clearly available in relatively long time series, provided by Eurostat's COFOG database. Furthermore, the relationship between public financing and employment in culture has remained un-modeled and under-researched – one would clearly expect a causal relationship, with public financing positively affecting the employment, but no evidence has been provided so far to our best knowledge. Extremely large and unstudied topic is the effects of the implementation of different policy measures on the outcomes of cultural policy. Many other fields of policy analysis use counterfactual methods (e.g. Angrist and Pischke, 2009; Morgan and Winship, 2014) deriving from a large econometric field, called program evaluation methods. Yet, to our knowledge, usages of this methodology to provide "evidence" on the effects of cultural policy measures can hardly, if at all, be found in the literature. The decisions of expert commissions have also remained a largely unexplored topic, although receiving some literature in past years (e.g. Meskell et al., 2015). Large macro-models, like microsimulation models and different types of general or partial equilibrium modelling have also remained largely a void in the field, although used in many other policy areas (e.g. education, social policy, health care, labor market). Studying efficiency of public institutions has gained momentum in past decade, following works like Cuccia, Guccio and Rizzo (2013) and Zieba (2011). Still, several methodological issues remain open here as well, like comparison of different estimators, studying both technical and allocative efficiency, and, furthermore, finding a method which would be able to capture not just basic quantitative aspects of the efficiency of organizations, but also some of the more qualitative aspects and, indeed, the complexity of the problem of efficiency. Also, international trade with cultural goods is still very much under-reseached with only handful of existing studies (e.g. Marvasti and Canterbery, 1992; Disdier et al., 2009; Qu and Han, 2011). The list is not conclusive – one could list many more topics in the "evidence-based" research on cultural policy which are at present *completely blank*.

The final point of the article, therefore, seems clear, but brutal: research that could be the foundation of evidence-based policymaking, as defined in the start of this article following Sutcliffe and Court (2005), is extremely undeveloped. Most of the existing debates are theoretical and critical with insufficient focus on the development of appropriate statistical methodology to study the phenomena and practice of cultural policy in an adequate manner. Until something changes, evidence-based cultural policy research is an example of bullshit. It is the task of future work in cultural policy research (and cultural economics) to change this in a significant and drastic manner.

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Why established macroeconomics is problematic and how this situation can be overcome

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Abstract

Past writings about theoretical macroeconomics are criticized as being illogical, incomprehensible and incoherent. This difficulty is solved by structural-modeling. A general model of the national macro-economy is derived from first principles, using analytic logic for obtaining the minimum size. Two vital features for portraying our society are: its representation as a system and its modeling by using a diagram. This structural presentation enables us to properly understand how macroeconomics works seamlessly—both for explanation and analysis. Two basic assumptions reduce the complexity to a manageable model size. The system connects particular traded exchanges of goods, services, access-rights, legal documents, etc., and they pass between discrete pairs of unique role-playing agents (entities). These diverse but similar exchange activities are idealized as aggregates, within the system's paths. Only a limited number of paths are needed, and an even smaller number of entities suffice to cover the whole system. Derived from the general nature of society, there are 10 necessarily kinds of trading exchanges. These are sub-divided in a table of 19 flows of money, being mutually exchanged for different kinds of goods, services, etc. These flows pass between only 6 entities. From the resulting tabulated list, a block-and-flow diagram or model is drawn. Since the minimum number of activities is logically determined using the least number of individual necessary entities, it is concluded that this model of our social system, is the simplest and best possible--yet still being sufficiently complete, in the most ideal, scientific, and logical manner for further practical use.

Keywords: macroeconomic theory, methodology of macroeconomics, methodological individualism, alternative macroeconomic modelling

JEL classification: E00, E40, E60

PART ONE — THE PROBLEM

Introduction

This writer, having been an engineering student, was concurrently interested in economics (which logically follows, since engineering usually comprises the solving of problems in the most efficient way). Having qualified with a master's degree and during his long carrier, he separately chose to make an intensive study of our social system. During this investigation of various texts and papers and as a result of his training, he was surprised to discover that today's macroeconomics theories are very poorly explained. He was more than disappointed to find in this 250-year-old subject that the logical format as first described by Adam Smith (1776) [1], later became badly expressed and confused.

After the limited work by David Ricardo (1817) [2], a well-reasoned theory could then have been developed and for it to have led to some sensible and properly-derived scientific analytic results. After the partially reasoned but long-winded writings of Karl Marx [3], a summary of the significant findings would have been useful--instead the subject became politically motivated due to challenges against the exploitation by landlords and monopolists (which actually went back to the Land Enclosure Acts in England, dating from the 16th century but continuing well into the 19th century [4]). The subsequent developments in explanations, by John B, Clark (1899) [5] and his followers, was deliberately introduced as a confusing trend away from what Henry George (1879) [6] had clearly shown. In his seminal book George explained the cause of poverty and the means for its eradication. In particular and even today, the influence of land monopolists as speculators and their support through the banks is why our economic progress continues to be so slow.

However, the present writer finds in recent text books and research papers that the confusion introduced between the theoretical activities of landlords and capitalists, by John Bates Clark [5], caused a cessation in the logical progress of the development of satisfactory macroeconomics theories. The "Big Picture" was set aside and more detailed subjects, particularly relating to production, Leon Walrus (1874) [7]; trade, W.W. Leontief (1916) [8]; and money J.M. Keynes (1936) [9]; all received greater attention. Instead, there are many varied and differently expressed ideas, some of which contradict and contain much disagreement. These works contain limited logical development of a formal nature. It is as if each formulated independent opinion claims to be correct and that the many others do not deserve serious recognition. In some cases, where the development of a previous theory was supported and provided, it was consigned to being of a particular school of thought. At best, it is seen that several schools exist, but none of them were directed at nor could provide a complete explanation of our social system (indeed the concept of it being a formal system, became current only recently, see the author D.H. Chester (2015) [10].)

By now, a satisfactory theory should have been established, to properly explain about the functioning of our social system, but this has not yet happened. Unfortunately, the diverse and competing ideas available have hindered the growth and establishment of a satisfactory structural theory. The implication is that there must be a good reason for these difficulties and their resulting confusion. With the many schools of thought available for providing theories about specific aspects, there are serious problems in the provision of a proper seamless description of the whole of our social system--of what it comprises and how it works. This situation is worsened because some of these failures in envisioning the structure were deliberately introduced, (see above). The purpose of this part of the paper is to explain where these difficulties lay and what they are. The second part of the paper "The Solution" is aimed at providing a more satisfactory, concise, initiating theory; the development of which is of a more practical kind.

Description

The reasons for the past failure to provide a satisfactory overall theory for our social system are presented below. They enable us to better understand the cause of these difficulties with regard to our subject, rather than to describe the subject itself.

Influence of Politics

Almost from the beginning of the classical descriptions of our social system, which is now recognized as being macroeconomics, the early writers chose to introduce political considerations. Indeed, initially the subject was not even called "economics" but was "political-science" instead. It was tacitly assumed that economics was a subject having many detailed aspects, many of which require a political approach, in order to make sense of what these various parts were doing and aiming at. However in practice, none of these political agendas were the same. They also required definition and description before their presentation, although many did attempt to more generally explain how a nation can benefit by having a good and ideal administration of a specific kind. But when it came to the challenge of monopolist behavior, the subject was deliberately confused, see above.

The Nature of the Subject

Having examined the several past ways of providing a clear explanation, the present writer has to accept that the subject of macroeconomics is a difficult one. It was thought to be a complex problem. Previous analyses contain many aspects which were loosely connected, but do have some significant inter-relationships. Because of the different internal characteristics of each part, it is hard to generalize about them all, especially when the ill-defined variables are the sole means for doing this. As will be seen in the second part of this paper, this situation should not lead to such great difficulties, but for many writers it did and still does. This is due to the problems of connecting the variables together and by the emphasis being placed on their differences rather than on their similarities.

The Confusion Between Micro- and Macro-Economics

When writing about the political-science, the economics of the society itself were not well defined, if at all. They tended to wander between what today we regard as either microeconomics or macroeconomics, without the differences between them being properly appreciated, explained, or understood. We ourselves are closely and personally connected with microeconomics actions, so it is hard for us to be truly objective in our viewing the whole situation and to adopt sufficiently distant a perspective for properly examining the macroeconomics situation. In fact this mixed situation was current up to about the 1930's. It only changed sufficiently, when J.M. Keynes [9] properly explained about the government being able to act independently, as a purely macroeconomics agent. Classically and previously, this role-playing entity was not expected to try to introduce or make any control changes. Occasionally and more recently, this confusion is still present and sometimes its expression is part of a deliberate gambit.

Even today, this subject is complicated by the unsubstantiated claim that macro- is the same as micro- but on a greater scale. Micro- is a very subjective matter, where the personal attitudes of the individual can easily affect the expression about what is being dealt with. On the other hand, Macro- by its very nature must be treated objectively, and any relationships with individuals or their aspects are irrelevant.

Lack of Scientific Attitude and Motivation

In the papers from the humanities side of our academic world, there is a strong tendency for the absence of a sufficient amount of suitable logic. This can be confusing, due to the lack of analytic development, which comes from a lost motivation for order and consistent flow of ideas. These writings often jump too early to the next aspect of the subject being currently discussed, and cease to formally or fully answer or explain the present one. This happens before the reader has properly clarified in his mind the present aspect of the subject or has fully assimilated it.

Need for Formality (as is common in scientific inquiry)

There is also a degree of confusion when different writers used different names to describe or explain the same thing. Unlike the scientists and engineers, who define their terms before using them, economists generally do not bother. This failing persists even today. For a formal theoretical science to be developed in a proper way, there are a number of preliminary steps which should be taken. These are:

(i) A statement of the axioms (which are regarded as self-evident, truths about the basic nature of the subject). Normally the axioms are regarded as being fixed general facts which are unlikely to change, unlike many of the subsequent assumptions. The author regards these axioms as fundamental to all of the logical work to follow. Many of the axioms in economics are often unstated without serious loss, like the rules of arithmetic. But those axioms which are directly related to the subject are of great significance and they cannot be ignored. In first place among them, is the reason why our subject of economics actually needs to be properly studied and applied.

(ii) A statement and explanation of the assumptions. Unlike axioms. these are not necessarily permanent, but with their acceptance they do provide the researcher with a base on which his/her theory can be supported. At this point in the discussion it is reasonable to regard the argument to follow as an hypothetical proposal, which is subject to adjustment, as development towards a better understanding eventually occurs. In the past there has been a great tendency to ignore the need to state the axioms and even the assumptions, which are taken to be true without having them listed. This has allowed all kinds of contradictions to creep in, unnoticed by both writer and reader.

(iii) Some definitions of the variables, must first be determined by considering the relevant aspects of each detailed subject. Without sufficient or properly defined variables, it would be impossible to proceed with the concept of change over a period of time. The variables are not assumptions and can be supplemented as it becomes useful (or necessary) to expand on previous concepts. This development may require the use of a number of schools of thinking, because at the start these variables are neither obvious nor necessarily clearly expressed. This matter is complicated in macroeconomics because more than one definition is possible and indeed may be applicable, even though in practice they subsequently both amount to the same quantity (as in demand and supply).

The resulting theory then combines the variables in what seems to be a common-sense way. Subsequently, it may not be seen to be absolutely true, and a better hypothesis may well be needed. But to begin without having any definition of what is being combined and manipulated, is unlikely to produce logical and consistent results.

It is these failures in past analytic descriptions, which is why there is so much present confusion in our subject. Many of our experts are still living in the past, and in view of the development of scientific thinking (from Victorian times, when popular-science was mostly about lists of subjects and their classification), this unhappy degree of intellectual dishonesty persists.

Love of Philosophy

The early classical writers in political-science had a great tendency to express their opinions in a philosophical manner too, as if the basis for their subject rests not on our social relationships but on the more basic nature of mankind. Although this may well be true in the deepest sense, it is a bit too profound for use in the more practical understanding about how our social system is connected and works. Much of this philosophy includes the semi-religious aspects of doing the correct, right, or ethical things, which an ideal situation requires and entails. However, these thoughts, interesting as they are, can be a serious distraction from the need for clear and precise explanations about ourselves within our community and the way by which we interact. Papers today are much less philosophical but their unstated and intuitive implications are still there, being attitudes to the subject under discussion.

The Language of Economics

Many writers in economics choose to use words in English which are not so commonly known, and in so doing they create difficulty for a student to mentally connect with his/her prior ideas on the same subject-matter. This comes about, being partly due to the classical education of these writers, where a wide range of vocabulary is available, and there is a tendency to explain matters using some less commonly adopted language. (For example, J.M. Keynes [9] writes about the "propensity to save", instead of simply about its rate.) This matter is further complicated since many words are introduced for specific meanings into our subject, which otherwise in more general use have slightly different meanings. (Words like "interest" and "profit" being good examples of this. Also the position of a capitalist in our society may be explained by either who he/she is, or what he/she does, or even left to the reader's imagination.)

Maintaining the Self-Standing of Doctorate-Holders

Due to the human relationships and internal politics within the teaching institutions, the average proposer and holder of doctorial theses, find that there is a compelling need to frequently produce new papers for use at conferences, etc., where he/her can receive (deserved) attention. Unfortunately, this need for staying in the fore-front of the field has resulted in much trivial or partly replicated material being provided. Some of it has only small changes--of a less significant kind than had the more basic issues and matters for development been better covered. What was already confusing is further tangled, by much additional discussion of a trifling, less meaningful and hurried kind.

Discussion

The greater freedom of expression of the humanities' writers, compared to that of the engineers and scientists, has enabled the authors of political-science related texts, to have introduced a great deal of variation in their treatments. These have evolved within the field of macroeconomics and they are associated with, but different from the above-listed points. The effect of this writing freedom is provided here.

Effect of Classical Writing Freedom

(i) a rich choice for words having slightly different meanings, which when applied to the more technical aspects creates an inability on the reader's part to connect the subjects, (ii) a lack of formal definition, of significant quantities (as variables), (iii) the absent, implied or vague basic axioms and assumptions. (iv) a shortage of logic among the arguments being used, and (v) failure to recognize the students' need, for study material to be brief, clear and precise.

Plagiarism and Academic Dishonesty

There is no constraint on the presentation of what apparently is new, but actually is not. This happens when different theories, being older ones, are dressed in new clothes, before being re-staged. For example, C.O. Roche's recent Modern Money Theory [11], is a re-run of part of the Keynesian Theory of Money [9], which was previously reworked in both Post-Keynesian and

Neo-Keynesian dissertations too. Each theory has a number of aspects, some of which are not new, but when presented with more modern ideas they appear to be. These theories are similar, although for the purpose of variation and to introduce a degree of improvement, they contain some significant small changes. However, in order to help develop the theory, it is acceptable when past details are given.

It is particularly on the political aspects of developing a related theory that this writer feels the need to be most critical. Within the history of the general development of our subject, there has clearly been some deliberate tampering of the theory, with the aim of sowing seeds of confusion. The resulting random harvest is not consistent, nor is it pleasing for the would-be gleaners of knowledge (our students). On this matter, the author is particular aware of the use of the term “capitalist” to cover not only the functionaries of stock-market operations but also those related to land ownership. The way that dynamic changes to the variables occur means that these two participants should not be taken together. Yet about 1899 the eminent economists John Bates Clark and Frank A. Fetter (1900) [5] along with others, deliberately chose to ignore this fact. This bias was with the encouragement if not the financial backing, of the big organizations of the monopolistic land-owners and producers. Their action created a confusing explanatory theory which has persisted until quite recently. It is where the investment activities of capitalists are falsely joined with those of land owners, as Professor Mason Gaffney and Fred Harrison (1994) [12] have clearly explained. Historically, this falsification was how the original proposal of Henry George [6], to introduce the Single Tax on Land Values, was fraudulently dismissed.

Avoidance of Diagrams

Another aspect of the past theoretical constructions is the failure to express the results in a clear modeling format. This may seem to be trivial to the humanists, but as scientists and engineers it is a vital matter, which can create or lead to a far better understanding and to permit analysis. In fact, a dynamic model which does not include all of the variables is unlikely to properly represent the reasons and ways for the anticipated time-dependent changes. On the subject of modeling, where work has been done, it has not been treated in a consistent way, due to the traditional nature of the humanist’s kind of intuitive thinking. There are few past or recent attempts for a model being developed which is sufficiently general, so as to be able to be modified as required, and to have the (seamless) capacity to cover any desired situation in the whole social system. Had this been achieved there would surely have resulted a far greater degree of consistency between the various theories.

The aim of presenting information about this subject in model form is three-fold. Firstly, it helps to explain general concepts, such as the circulation of money. Secondly, the model presentation provides the viewer with a good picture about how the structure of the system is arranged and connected. (This is a natural result of the development of our civilization with regard to the exchanges for money of goods, services, access rights, hire-fees, etc.) Thirdly, it allows some quantitative values to be introduced, so that a numerical analysis is possible. When this approach is used, we are able to better appreciate the limitation in past assumptions, due their less practical inclusion in the model in terms of the money-flows, the role-playing activities of agents, etc.

Concluding remarks for part one

Having reviewed the way that current macroeconomics theory often is badly presented and explained, it is proposed here that we begin to express it again, so that the above difficulties, problems and failures are no longer repeated. Of course we must not cut too deeply into some of the past theory or nothing of value will remain. However, having torn-down some of the past ways by which macroeconomic theory was erected, it is morally right and proper for the present writer to provide a better and suitable alternative, which does not contain the same problems, troubles and difficulties (or at least avoids most of them). Described below in considerable detail, is how this methodology should be presented. (Its practical application and use were given in a separate analytic study by D.H. Chester (2015) [10]).

PART TWO — THE SOLUTION — MODELING FOR A BETTER THEORY

Introducing the macroeconomic problem

A suitable macroeconomics model is needed, for the resolution of the general problem into a practical formulation that is fitting for subsequent analysis. Such a model is seen here to consist of a system, which has a number of individual elements that are interconnected. These two pre-conditions for understanding our society, the concept of it existing as a system, and for the ability of it to be modeled, are absolutely essential with regard to the philosophy and logical method of this presentation.

We need to represent a nation of several million families, having very many diverse attitudes and policies, which perform a variety of self-centered activities--each providing for his and her specific economic needs and livelihoods. Previously this variegated macroeconomics situation was partly treated as a simplified yet scaled-up version of what you or I might do, had we to fulfill a more general role, but one which still relates to our own performance and behavior. This approach does not allow for what many others would do, nor does it properly account for how their separate activities influence each other. Since the individual only plays a very small part, we find ourselves subjectively confined in a very limited situation, which fails to show how society at large acts and how it is arranged. Only by modeling the whole of society as a system, does it become possible to take a sufficiently less personal and more objective viewpoint.

Progress toward modeling system's structure

Envisaging the System

Within what was once a natural environment, the operation of our society has gradually, subtly and suitably, evolved to at least partly satisfy human needs. Were our concept of it to continue to appear as a collection of different individuals about which no general aspect is unique, it would become much too complex. Then we would be unable to understand how this motley mixture might work. We could only manage to make some general Platonic statements about it, but when we try to get at the facts, the subject would become vague and confusing, due to its complexity. At best, we would need to examine each person in society, and look at the various contributions he/she makes with respect to many of the others. Fortunately, this complicated presentation can be sorted into a number of separate kinds of specific activities.

A rather obvious general assumption is that our society has different parts that interact along specific paths. This is in the form of a mechanical system. Without losing completeness, the introduction some associated discrete elements is both possible and necessary, for us to increase our knowledge about it. This assumption of it being a system is the first essential step enabling us to understand how our society works.

Envisaging the Model

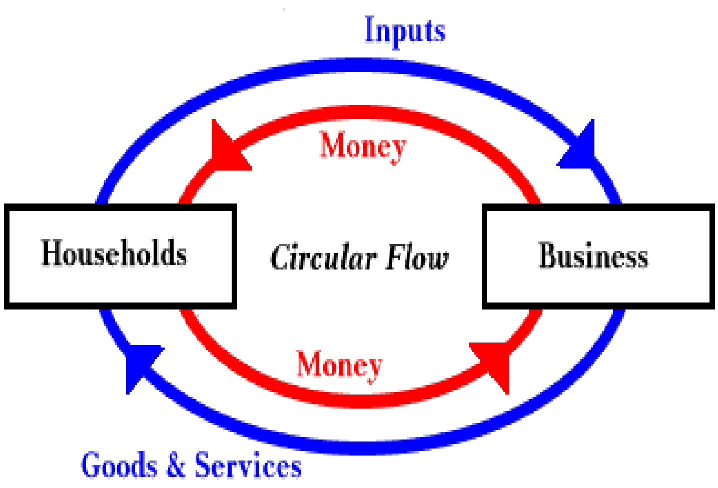
However, such a system and its connections still are too difficult to retain unaltered in our minds. Some of the details will change every time we mention another of its features! So we need to describe it in the form of a definite and particular diagram that is visible before us. The model for representing our social system here is derived essentially by using an organized, logical, process. It presents the arrangement of it in a most complete yet concise form, which meets Einstein's 1936 criterion [14], for a good scientific theory. This was that: "everything should be made as simple as possible, but without being over-simple". This approach begins from taking certain detailed existing ideas about our more-closely connected social relationships.

The engineering method of systems analysis is appropriate here. Our society is a man-made system, which has evolved, engineered and developed (however badly), so as to sustain us all. As a system, it works through a number of independent agencies (or entities), each having its own properties and connecting activities, to seamlessly represent our entire social system of national macroeconomics. Thus the complexity of the individuals is replaced by a more astute and exact method of definition and thought. (This model enables us to better analyze and understand how our social system works, see D.H. Chester [10].)

The development of a practical model of our social system

The Traditional Two-Sector Model and its Implications

Firstly we consider the simplest kind of situation, as described in past elementary economics text-books where a "two-sector system" is presented, as in the diagram below. This picture was originally shown by Frank H. Knight (1933) [15], where he named it "The Wheel of Wealth". It will be extended later, to cover the whole system.



The circular flow

This model consists only of Households and Business sectors. The Business sector is of producers who are farmers, transporters, industrialists, manufacturers, service-providers, etc. Workers from the Households sector are employed by the Business sector to provide laborious "Inputs" in the diagram--to grow, gather, refine, carry, fabricate, assemble and otherwise produce and supply all kinds of useful "Goods and Services"--whilst the Business sector manages the means and methods for these coordinated economic activities to take place.

Borrowing on the values that the new goods have just acquired, the Business sector (or producer) then remunerates the workers, paying wages for their efforts in making these output items. As soon as the goods are sold and paid for, this loan can be returned whilst starting another cycle of operation. (In practice this is a continuous process, with the simultaneous participation of many firms, investments and banks.)

The Households sector consists of a large number of families, who support and encourage their work-forces and spend their earnings on a range of durable and consumable goods and services, with which to provision, provide for and maintain themselves and their homes. Individual workers may each produce only a few kinds of goods (as output), but as Households they consume a greater variety, although each kind is used in much smaller quantities than what comes from their own specialized labor. Our prior knowledge of their combined efforts explains about how this simplified system interacts and works.

In this diagram, the circulation of the 2 money-flows (in red) is seen to oppose the flow of labor and of produce (in blue), so this model presents us with a general picture of the most basic kinds of economic functions. Here, all of the working activities are shown to produce all of the goods and services. Were it needed to show everybody's separate activity, the model would become very complex and impractical. However, with the additional assumption of aggregate activities, the total amounts of labor and produce are taken instead. Although each individual's contribution varies in quantity, quality, strength, etc., they are lumped together here, as being of a particular or idealized kind. These two assumptions, of the idealized participation and of the aggregate quantity, allow us to greatly simplify the representation.

What is not usually mentioned about this model is that by describing the situation in this way, these agents or entities have ceased to be real people who are actively contributing to our society. They have been transformed into *representations of the functions they perform*. So when more entities are added (see below), their treatment (as role-players) applies to their functions too, which perform idealized simplified aggregate activities. To emphasize this matter, the notation to be used for these entities below is set in CAPITAL LETTERS. Real people combine these roles and activities in mixed and variable amounts, so the same words with lower-case letters still apply to this more general situation.

Trading Exchanges and Multi-Sector Extension, to Represent the Whole Society

We will expand on the 2-sector illustration, to include in its most simple yet complete form all of the major aggregated macroeconomics activities, to better represent our whole society or Big Picture of the national economy. Our society has a natural and familiar form, from which these activities are hereby classified, according to all of the different *kinds of trading exchanges* that occur between the entities. Due to use of the two assumptions of idealized entities and aggregate money/goods flows, it is seen that only a limited number of these entities are needed to further describe the complete system. The statements of these two vital assumptions set off our thinking process along somewhat different lines to those of the past. It is surprising to the author that prior to this approach, nobody else seems to have taken it into consideration for our society at large, when viewed from this greater distance.

This discovery of a limited number of kinds of macroeconomics exchanges passing between what is found to be a comparatively small number of entities, logical as it now seems, has not been previously applied, although it is implied, in wanting to broaden the two-sector model. Indeed, one famous writer's work about the economy even claimed that some "withdrawals and injections" from the two-sector model are present, see R.G. Lipsey's "An Introduction to Positive Economics" (1963) [16], but for him to envisage additional sectors proved to be just too much!

The 10 Kinds of Macroeconomics Transactions

We now examine all of *the different kinds of macroeconomics trading exchanges* that actually occur within our system. This allows us to include the assumption of the aggregated functional activities, which have discrete natures. They are initiated and propagate from the various idealized entities (which may also be also expressed as role-players, having the ability to control one or more of their incoming and outgoing macro-economic flows and their related functions). All of the specific kinds of activities that occur in our social system are presented below. They fall into a comparatively small number of classes. Using algebraic notation, a bold-faced capital letter is used below, to indicate the flow of money for each category, along with brief descriptions of it. Suffices are added later, when the sub-divisions of these flows follow (in a table in section 7.5, below).

a) <u>4 Kinds of Taxes</u> **(T)**, obligatory periodic sums, which are paid to the GOVERNMENT. These are from earnings, purchases, capital gains combined with property, and site ownership. The various kinds of taxes that apply in practice, all fall into these 4 (or 5) categories.

b) <u>2 Kinds of Ground-Rents</u> **(R)**, are regularly conveyed to the LANDLORD, for the right of access to useful sites of land or other natural resources, (such as the electro-magnetic wave spectrum, for purposes of communication, etc).

c) <u>2 Kinds of Hire-Fees</u> **(H)**, are systematically remitted to the CAPITALIST for the right of access and use of certain durable (production) capital buildings, machinery, tools, vehicles, half-made goods, etc., to cover their investment cost, maintenance expenses and obsolescence. This includes that of home occupation, so an actual home-owner functions as both the house-holder within the HOUSEHOLDS entity and as a CAPITALIST.

d) A Money Transfer **(Hl)**, normally passes as a social "understanding". Such social understandings exist for example, between workers and consumers within a family, but are not shown here. However, in the case of the transfer between the LANDLORD and the CAPITALIST, which have other very different macro-economic properties (see below), this transfer activity is separated. (In certain earlier methods of teaching economic theory, it was wrongly claimed that they are the same, as by John Bates Clark and Frank Fetter [5], whilst this deliberate confusion has been properly clarified and explained by Professor Mason Gaffney and Fred Harrison [12]. Hopefully this past confusion is now ended.)

e) Wages **(W)**, earnings which are continuously remunerated to the workers within the HOUSEHOLDS, for their labor.

f) 3 Kinds of Purchases **(C)**, are particular and frequent payments when trading between the HOUSEHOLDS, the CAPITALIST and the GOVERNMENT.

g) 2 Capital Outlays **(I)** and **(M)**, as discrete money investments. They are in shares of limited-liability companies, in mortgages, and in national bonds from the Treasury, respectively. The non-redeemable shares subsequently may be sold as second-hand items, whilst the sums covering the mortgages and bonds (and sometimes certain preference shares too) are returned to their sources, after specified time intervals.

h) Savings **(S)**, are contractual time-limited returnable loans, borrowed by the FINANCE INSTITUTION.

i) 3 Kinds of Returning Interest **riΣ(I), rΣ(M), rsΣ(S)**, at different rates, are based on the specific kinds of investments, in company shares **(I)** , bonds **(M)** and savings **(S)** respectively. In the case of company shares, the interest is usually called dividends, although in practice it is the same thing. In some preference share investments, the dividend is created by issuing additional shares, instead of annually releasing discrete sums.

j) Landed Prospect Sales and Acquisitions **(Lsp)**, is an activity between different pairs of landlords, when land ownership changes hands (with help from the banks). The buyer's money is supplied to the buyer as a loan. After the sale and purchase, the sum is almost immediately returned by the seller to the same or another bank as a loan. Thus, on aggregate in this respect, the banks are no more than temporary lenders. The new landlords are often in debt, but they collect the ground-rent and speculate in the rising value of their prospects. Land is not regarded here in this model as being an item of durable capital goods, because it was not having been produced by using labor. Consequently its transaction and business require a separate classification.

Activities that are contained within an entity, such as the exchange of partly made goods (as working-capital within the PRODUCER entity), do not constitute a significant macro-economic function here. The scale of the model does not allow for this. This concept is illustrated and also applies to the last item j) above, where landlords buy and sell their sites between themselves, (with temporary bridging loans from the FINANCE INSTITUTION), with only the title deeds passing between the owners. So on aggregate for all 6 entities, in terms of trade, there is no significant action that involves pairs of the same kind of entity. Here it is contained solely within the LANDLORD. For this model the buildings and other more movable items are taken as being durable capital, and they do not fall into this category.

Throughout our social system, these various exchanges are continuous so that whilst certain loans are being returned others are being advanced elsewhere. Increases and reductions in the total money in the system can occur, with it accumulating in within the HOUSEHOLDS, for use in purchases. Money can be newly issued by the GOVERNMENT, or even being destroyed by them. What actually is being categorized here is a rate-of-flow of money and a corresponding return-rate of the values of the goods, services, access rights, valuable documents, etc., along regular paths. To properly explain all of these various types of macro-economic activities or functions, no other kinds of flows need to be listed.

The 6 Entities

Having covered all the trade-exchanges, the entities are identified as the pairs of role-players, between which the money-flows, goods, etc., are steadily passing. These functional entities are written here in capital letters, and each first (bold-face) letter being used to identify it in the 3rd and 4th columns of the table to follow, where they directly relate to the various kinds of macro-economic activities. The six entities are:

Landlord, households, capitalist, producer, government and finance-institution.

Each entity plays at least one unique, idealized and characteristic action, which has both in-flowing and out-flowing quantities. They are all needed to properly describe their role-playing functions and to cover all of the various exchange activities.

The above explanation about the form of these macro-economic exchanges of money and goods etc., runs parallel to the derivation of the entities themselves. This is a kind of chickenand-egg situation, because the entities seem to arise naturally and simultaneously with the more exact determination of the numerous social goods and money-transfer activities.

The "Business sector" of the previous diagram is now called the PRODUCER entity. What first seemed to be an impossibly complex set of transactions is reduced to these 10 categories: a) to j) above. In the following table, some rearrangement and sub-division of them is introduced, resulting in 20 kinds of exchange, as listed on their particular rows. The money flows on the left correspond and oppose the right-hand column flows of the various utilities of goods, private and public services, access rights, infrastructures and loans.

The Tabulated Various Flows, and the Diagram as a Model of our Social System

SUMMARY OF THE SUB-DIVIDED 20 KINDS OF MONEY-FLOW RATES AND UTILITIES				
DESCRIPTION OF MONEY-FLOW RATE AND ITS ALGEBRAIC SYMBOL		ENTITIES FROM/TO		RECIPROCAL FLOW- RATE OF WEALTH OR UTILITY
1.a) Tax on Personal Income	Th*	H	G	Social and National Security
2.a) Tax on Land-Value (Revenue)	Tl*	L	G	Improvements to Surroundings
3.a) Tax on Purchases (V.A.T.)	Tp*	P	G	Industrial/Rural Services
4.a) Tax on Property (Durable Goods)	Tc*	C	G	Social and Urban Services
5.b) Ground-Rent (on Residential Land)	Rhϕ	H	L	Access to Land for Living on
6.b) Ground-Rent (on Productive Land)	Rpϕ	P	L	Access to Land for Working on
7.c) Yield, within the Productive Process	Hpϕ	P	C	Use of Durable Capital Goods
8.c) Hire-Fees (Domestic)	Hhϕ	H	C	Use of Residences and "Non-Productive" Durable Goods
9.d) Organized Money-Transfer	Hl*	L	C	"Understanding" Between **C** & **L**
10.e) Wages (Gross Earnings)	Wp	P	H	For Labor (Service)
11.f) Purchases (Consumption)	Ch	H	P	For Consumer Goods/Services
12.f) Capital Outlay (True investments)	Cc	C	P	For Durable Capital Goods
13.f) National Appropriations	Cg	G	P	For Supply of Public Services, Goods and for Emergencies
14.g) Investments and Mortgages Loans	I	F	C	Shares and Contracts (Credits)
15.g) Bank Loans for Re-Circulation	M	F	G	National Bonds (Credits)
16.h) Savings (and Outgoing Loans)	S	H	F	Bank Certificates (Credits)
17.i) Dividend/Interest on Investments	ri Σ(I)	C	F	For the Use of Total Credit **Σ(I)**
18.i) Interest in National Bonds	r Σ(M)	G	F	For the Use of Total Credit **Σ(M)**
19.i) Interest on Savings	rs Σ(S)	F	H	For the Use of Total Credit **Σ(S)**
20.j) Land Sale and Purchase	Lsp	L	L	Within the same entity, not used

* Non-contractual, socially obligatory money-flow.

Σ( ) accumulated quantity.

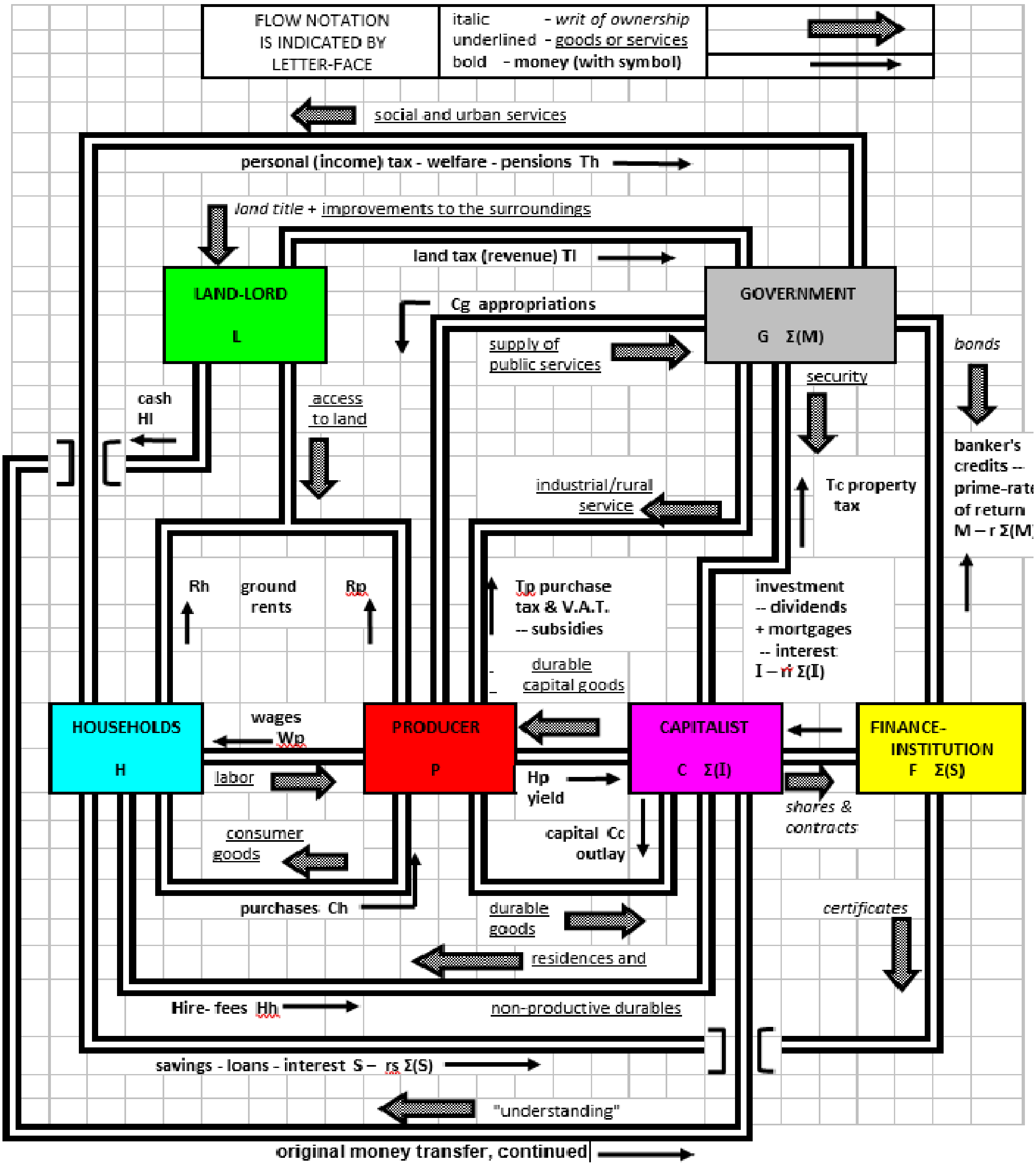
ϕ The return, for access rights to a site, as a hire-fee or the use of durable capital goods. In this latter case it covers their investment cost and interest, wear, maintenance, obsolescence, etc.

The small bracketed letters a) through to j), after each numbered line, correspond to the list of macroeconomics transactions in paragraph 7.3.

Item j) **L** to **L** is not used, but is given here for purposes of description in the text.

Money-flow rates and utilities

From this data one can draw the complete diagram or model of our macroeconomics social system, which is shown here. In the diagram, the money-flows are indicated by algebraic symbols and the thin black arrows. The goods, services, valuable legal documents, money being saved/loaned, access rights to natural resources or to the durable capital goods, etc., are indicated by the words and fat filled-in arrows. This diagram represents the structure of our macroeconomics or social system and completely models it. This model is a unique way for the presentation of the whole of our social system using the minimum complexity. It is intended for teaching and for research into the exact scientific application of theoretical macroeconomics and more widespread use.



Flow chart - and alternative model

Conclusions

This study provides an easily understood yet fully comprehensive seamless working-model, expressed as a diagram, for describing our social system. In this derivation, the smallest number and simplest, least kinds of features and details have been properly and formally assembled. This presentation accords with Einstein's criterion for a good scientific explanation or theory [10]. Consequently this model contains vital information of the minimum kind, suitable for mathematical analysis and theoretical scientific research.

In the past, similar assumptions have been made, often with only part of the system being considered and without any formal explanation about what is implied. It is hoped that by writing about them in the manner presented here, the reader can see not only where the past work misled many students, but can also appreciate the way that a more sensible and logical approach must inevitably take us and will help to better guide them. These few assumptions are impossible to avoid, if we wish to make sense out of the whole complicated array of our society, by the use of aggregated idealized role-playing entities (which began by implication, in 1933 by Frank Knight or even earlier). Often, the previous assumptions are unstated, which makes the older representation harder to comprehend.

Once this attitude is taken and the assumptions formally stated, the rest follows, as if we are logically being directed along it, by a guiding hand. In this approach, having decided to try to understand the whole thing, we are led into taking certain inevitable steps and proceeding in a specific manner. These activities mean that we find the money passing in one direction, on a reciprocal path and in exchange for the physical consumer-goods, durable capital goods, private and public services, valuable legal documents, savings and loans, access rights to natural resources or to the use of durable capital goods, etc.

This idealized solution, makes macroeconomics a true theoretical science, as compared to earlier methods and their resulting specifically chosen but more detailed models. Having first prepared the basis and later the new model, our results better explain both the nature and working of our existing social system. It greatly improves upon the past ways of describing it--about of what it consists, which previously and regrettably was a pseudo-science. Although the past explanations of theoretical macroeconomics have been much criticized for their failure to be sufficiently systematic and precise (and to attain an exact-science status), this achievement of a good scientific explanation was not reached until now

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Socialism and Marxian economics: An overview

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Abstract

There is an open question on whether Marx's works are still relevant today. Some believe that Marx created much more than just his works—they believe that Marx created a "religion", which has its consistent base of followers. However, works of Marx are often subject of misunderstandings. This paper will explore some of the famous Marx's concepts and will focus on detailed explanations regarding labour theory of value, capital accumulation, wages, tendency of the rate of profit to fall, the notion of crisis in Marx's works and class struggle between bourgeois and proletariat that was the central to the work of Marx. First part of the paper will describe the ideas of socialist economic thought that occurred before Karl Marx in details. The main, second part of the paper will describe and discuss the relevance of main Marx's ideas for today's society such as: (1) theory on commodity, value and circulation of commodity, (2) production process, (3) the law of the tendency of the rate of profit to fall, (4) crises, concentration of capital and decreasing competition, (5) wages. Finally, the last part of the paper, its conclusion, will discuss whether Karl Marx was right and to what extent, and will briefly discuss the failure of Marx's ideas in practice.

Keywords: Marx, socialism, communism, capitalism, crisis, competition

JEL classification: P10, P17, B00, B14, B30, B31

Introduction: Marx' life, works and influences

Karl Marx was born in 1818 in the German city of Trier. In his very early ages, Marx already started writing, e.g. *A young man's reflections on the choice of a career* was written when Marx was only 17 years old (Wolf, 2002). Marx entered the study of law in Bonn and a year later, transferred to Berlin. Apart from numerous accounts on this matter, his involvement in education and interest in the works of other scholars can be easily observed from his writings (Rima, 2001; Wolf, 2011). One such example would be the letter of Marx to his father in 1837, where Marx widely discussed all the things he had been able to accomplish in terms of his writing and furthermore, stated: "During the period of my poor health I had gotten to know Hegel from beginning to end, including most of his students" (Marx, 1837). The notion of Hegel in the letter is very interesting as Marx became quite interested in Hegel's ideas and had both adopted and applied some of them to his own work; while he widely criticised others (Rima, 2001). Already in his twenties, Karl Marx distanced himself from philosophy and started with more detailed studies in the fields of economics and political science. In 1841, Marx obtained his doctorate and had hopes for a perspective academic career (Wolf, 2011). However, as he did not succeed in his academic intentions, Marx became an editor of the magazine *Rheinische Zeitung* based in Cologne and even pursued what were thought to be "radical and anti-governmental lines of thought" (Wolf, 2002). Upon the loss of the job in the newspapers, Marx started with his frequent movements around Europe. He moved to Paris where he met Friedrich Engels, his associate with whom he had written numerous works (e.g. Communist Manifesto) and who completed *Capital II* and *Capital III* from Marx's original notes (Screpanti & Zamagi, 2005; Rima, 2001). Not so long after, he was expelled from France and moved to Belgium. He returned to Germany only in 1848, but only for a very brief period of time. (Wolf, 2002)

Some of the earlier writings of Marx include essays such as: *On Jewish question*, *Contribution to a critique of Hegel's philosophy of right*, *Theses on Feuerbach,* etc. Already in these early works, Marx strongly expressed his opinion on numerous topics. For example, in *Theses on Feuerbach*, he criticised philosophers stating: "Philosophers have only interpreted the world, in various ways; the point is to change it." (Marx, 1845) or in *Contribution to a critique of Hegel's philosophy of right,* he wrote one of his famously quoted lines: "Religion is the sigh of oppressed creature, the heart of heartless world, and the soul of soulless condition. It is the opium of the people." (Marx, 1843). Marx's early works, according to Wolf (2002), reflect three things: "his diagnosis of the ills of contemporary society; his critique of the state of existing theory; and his own attempts to provide a solution to the problems he has identified" (Wolf, 2002). In 1848, Marx and Engels published *Communist Manifesto*—manifesto that contrasts the status of capitalist and communist society that was predicted to emerge. Their *Communist Manifesto* largely deals with the differences between bourgeois and proletariat and, contrary to what one might expect, does not offer even a single brief description on how communist society would actually function.

In 1849, Marx moved to London where he stayed with his family until the rest of his life. During his time in London, there was account of only one job he had performed at the time—he held a position of European correspondent for *New York Tribune*. Marx was financially unstable, often relying on loans or contributions from sponsors for the basic income. (Rima, 2001) Marx dedicated his London era to economic analysis and, at that time, published his most significant work: *Capital I,* in 1867. Marx's first intentions were to create six books that would address the topics of capital, landed property, wage labour, the state, foreign trade, landed property and finally, the world market. Before the first book was published, he decided that four books will be published instead, "one each on the production process of capital, the circulation process of capital, the forms of the process as a whole and finally one on the history of the theory of capital" (Hardach, Karras, & Fine, 1978). However, only the first volume of *Capital* was fully written by Marx.

In his work within the field of economics, Marx widely criticised the work of classical economists (Screpanti & Zamagi, 2005) and many philosophers throughout history. He thought that political economy expressed bourgeois attitudes and criticised classical economists for their inadequate explanation of profits and capital, as well as historical component of capital. Finally, another critique of classical economists was, according to Marx, their focus on the process of exchange rather than production due to their inability to observe exploitation caused by capitalists' modes of production. (Screpanti & Zamagi, 2005)

The idea of socialism and analysis of basic principles of Marxian economics

Idea of socialism

The name of Karl Marx is often put as an equivalent to all socialist ideas that exist. However, socialist ideas did not begin with Marx. Screpanti and Zamagi (2005) believe that, in a way, Marx was synthesiser of this period. The idea of socialism appeared almost simultaneously in Great Britain and France in the twenties and thirties of the 19th century (Hardach et al., 1978). Early socialists opposed the ideas of classical economists such as Malthaus, Ricardo or Say, who believed that the social structure with ruling classes is some sort of natural law and one of the conditions for economic development of a country. Although early socialism was characterised by the presence of numerous heterogeneities, early socialists did agree that this new society to be created should be freed from exploitation. Hardach et al. (1978) state that early socialists can be grouped according to their beliefs about competition—whether they believed that there should be large number of smaller producers within an economic system or it should be comprised out of few mass producers. Screpanti and Zamagi (2005) note that the reason for great heterogeneity of socialist ideas emerges from the fact that socialism meant the change in the social relationship, the relationship that existed between labour and capital. Rima (2001) notes that socialists devised two ways in which societal change from capitalism to socialist system might occur and those are: philosophical radicalism and socialist-anarchist model. Philosophical radicalism is a model based on reforms: it advocated preservation of elements of the existing system and deeply rooted belief of classical liberalism that well-being of all can achieved by preservation of individual freedoms, but by imposing some government restrictions. Socialist-anarchist model is characterised by different views on how change will take place as they believed that state is largely protecting individual property rights only for the ruling class. What can be the drawback of both of these models is that their main proponents were members of intellectual elites, rather than members of working class. (Rima, 2001)

With the industrial revolution of 1848, the idea of socialism had become even more important and certainly, more widespread. Industrial revolution, besides revolutionising means of production, was believed to spread equality between members of society. That did not occur. Wealth in general did increase, but it was far from being equally spread across all members of the society. "As capitalism spread continuously into all areas of economic life, and while the resulting exploitation and emigration fuelled doubts as to benefits of the new mode of production, many economic proposals for improving the workers' situation increasingly took on a socialist character. This socialism manifested itself in that the economic individualism of capitalism was now opposed by the principle of cooperation - collective action which excluded individual competition and the pursuit of profit." (Hardach et al., 1978, pp. 16-30)

Some of the early socialists that can be mentioned are Joseph Proudhon and Thomas Hodgskin, both of which had very anarchist conceptions of change and how this new society should look like. Gracchus Babeuf had attempted to establish communist society at the end of eighteen century, but failed and was accused of conspiracy. Other names that can be mentioned are Thomas Spence, or Charles Hall, who proposed agrarian reforms. (Hardach et al., 1978) Jean Charles Leonard Simonde de Sismondi criticised Say's law implying that the reason it does not apply is due to inequality in distribution of income. His proposal for tackling the problem of inequality in distribution was to redistribute income from capitalists to workers. Sismondi is considered to be the forefather of the "social economy". (Screpanti & Zamagi, 2005)

Marx and Engels in their *Communist Manifesto* discussed some of the socialist and communist literature produced earlier and mentioned the existence of: revolutionary socialism, conservative or bourgeois socialism and critical utopian socialism and communism. Among the critical utopian socialism they mentioned several famous names linked to the idea of socialism: Saint-Simon, Fourier and Owen, stating that these socialists did anticipate the existing class divisions within the society. They further state: "Therefore, although the originators of these systems were, in many respects, revolutionary, their disciples have, in every case, formed mere reactionary sects. They hold fast by the original views of their masters, in opposition to progressive historical development of the proletariat." (Marx & Engels, 1848)

Saint-Simon was proponent of abolishment of competition and using state to enhance the progress in terms of science and production. His students equated the conditions granted to the workers under capitalism with the conditions granted to slaves. Fourier devised the theory about social units on different levels and system for land distribution. He also addressed the issue of alienation of labour. However, in the same way as Saint-Simon, Fourier believed that individual property should be preserved. At the same time in which Saint-Simon and Fourier devised theoretical aspects of socialism, English socialist, Owen, had different approach. Owen had applied some of the ideas in practice. He himself owned a factory and believed that factories in general are the central points of societies. Although admirable, his attempts to establish models of community were short-lived. So-called "Ricardian socialists" were followers of Owen: William Thompson, John Gray, John Francis Bray, Thomas Hodgskin[25] and Piercy Ravenston[26]. (Rima, 2001; Hardach et al., 1978; Screpanti & Zamagi, 2005)

Marx can be considered the father of modern socialism and belongs to the branch of scientific socialism[27]. Rima (2001) states that there are three influences on Marxian economic thought, one of them being early socialistic though that previously existed while the other two are: Hegel's philosophy of history and Ricardian economics (labour theory of value). Marx widely criticised some of the early socialist in various respects. It is important to mention that, at the time Marx wrote his most important work, capitalism was rooted into every pore of the society, which was not true for the times when some of early socialists' works were developed. Marx often argued that early socialist emphasised the importance of improving the standards of living for everyone, while in Marx's opinion, proletariat suffered the most by capitalism.

[25] Hodgskin's important contribution was distinguishing between natural and social price, where natural price is defined by the natural law and social price is the price that is being employed and present in the society.
[26] Piercy Ravenston is pseudonym used by unknown economist.
[27] As opposed to utopian socialism.

Mode of production involves means of production and technology related to the means of production, labour power and a set of relationships existing within a society[28]. (Rima, 2001) It gives power to the bourgeoisie class. Importance of mode of production for bourgeoisie class is illustrated by Marx and Engels: "The bourgeoisie cannot exist without constantly revolutionising the instruments of production, and thereby the relations of production, and with them the whole relations of society. Conservation of the old modes of production in unaltered form, was on the contrary, the first condition of existence for all earlier industrial classes. Constant revolutionising of production, uninterrupted disturbance of all social conditions, everlasting uncertainty and agitation distinguish the bourgeois epoch from all earlier ones." (Marx & Engels, 1848) Social change, in his opinion, is also dependent on the mode of production in use, as he stated in his book *A contribution to the critique of political economy:* "The mode of production of material life conditions the general process of social, political and intellectual life. It is not the consciousness of men that determines their existence, but their social existence that determines their consciousness. At a certain stage of development, the material productive forces of society come into conflict with the existing relations of production or–this merely expresses the same thing in legal terms–with the property relations within the framework of which they have operated hitherto. From forms of development of the productive forces these relations turn into their fetters. Then begins an era of social revolution. The changes in the economic foundation lead sooner or later to the transformation of the whole immense superstructure." (Marx, 1859). In the last passage, Marx indicates that technological developments in terms of mode of production can determine the societal life and culture. This idea is widely known as technological determinism[29].

Marx's idea of commodity, value and circulation of commodities

Marx began the first part of his *Capital* with very lengthy description on what constitutes the commodity. Commodity is, according to Marx, "an object outside us, a thing by its properties satisfies human wants of some sort or another" (Marx, 1887, p. 27). If the purpose of production of goods and services is their exchange, then those goods and services can be regarded as commodities.[30] (Kliman, 2007) There are two types of values[31] that a commodity can possess: use value and exchange value. The concepts of use and exchange values were first introduced by Aristotle, but Marx believed that Aristotle failed to attribute the value of the

[28] These social relationships can exists among capitalists, and between capitalist and workers. They relationship emerge from insitutions (e.g. socioeconomic, political, etc.) that exist in a society.
[29] Technological determinism is widely argued as a concept.
[30] Marx distinguishes between commodities and non-comodities.
[31] Value exists only if labour is exchanged through the competitive market.

commodity to the right factor. Use value is the defined by the utility it brings and "become a reality only by use or consumption" (Marx, 1887, p. 27). Marx argued that the person's own commodity (the one he/she owns or produces) essentially does not bring him/her any use value and hence, it becomes subject of exchange. Furthermore, Marx also explained that an object can have use value without having value if no labour was used in its production.

Exchange value constitutes a more complex matter—it is expressed quantitatively[32] which is subject to changes through different time periods and place. It represents the ratio of amount of commodities in use of one kind being exchanged for commodities in use of another kind. Exchange value is very important, as Marx states that it: "is the only form in which the value of commodities can manifest itself or be expressed". (Marx, 1887, p. 28) In its essence, exchange value also represents a social relationship—relationship between producers of different commodities. A necessary condition for the existence of exchange value is existence of the use value of a commodity.

Marx found an inspiration in Ricardo's labour theory of value that suggests that the value of one commodity is determined by the scarcity of that commodity and the amount of labour engaged in its production. Following the reasoning of Ricardo, Marx believed that value of commodity[33] is dependent upon socially necessary labour time, or average amount of time that is needed to produce certain commodity. In case when a certain, less skilled worker A requires more time than the worker B to produce the same commodity, the commodity of the first worker, worker A, does not have greater value. The value of an hour socially necessary labour time in both cases is the same. (Kliman, 2007) Value of commodity can be changed by changes in productivity which is affected by numerous factors, many of which are endogenous to individual worker or even factory: "average amount of skill of the workmen, the state of science, and the degree of its practical application, the social organisation of production, the extent and capabilities of the means of production, and by physical conditions" (Marx, 1887, p. 29).

There are two forms of expressing the value, according to Marx, and those are: relative and equivalent form. Relative form[34] means expression of value of one commodity in terms of use value of another commodity. Equivalent form implies that that commodity can be directly exchanged with other commodities. What is the universal form of value is value itself and as such, it can be expressed by any commodity that becomes money commodity[35]. Volume I of *Capital* described money as: "a crystal formed of necessity during the exchanges, whereby

[32] As opposed to expression in qualitative terms, given by its use value.
[33] Theory is applied only to commodities, according to the above-mentioned definition.
[34] Marx also mentioned expanded relative form of value meaning that one commodity is expressed in terms of many other, different commodities.
[35] For example, if the commodity of expression is gold, gold becomes money commodity.

different products of labour are practically equated to one another and thus by practice converted into commodities". (Marx, 1887, p. 61) Marx introduced the concept of fetishism, and while presenting it quite abstractly, explains the concept as imposed social relationship to the producers in relation to the comprehensive product of their labour which is not seen as the relationship between individual producers but as a relationship between the results of their labour.

"The circulation of commodities is starting-point of capital. The production of commodities, their circulation, and the more developed form of their circulation called commerce, these form the historical ground-work from which it [capital] rises." (Marx, 1887, p. 104) There are two ways in which circulation of commodities (Marx, 1887, pp. 104-110) can occur:

1. C-M-C, where commodity is transformed into money and the money is transformed back to commodity (in the simplest terms, process of selling and then buying). The process has creation of use value as an ultimate goal.
2. M-C-M, where money is transformed into commodity that is transformed back to money (where the whole point of the conversion can be understood as buying a commodity in order to make a sale). The goal of the process is creation of exchange value.

The second process of circulation of commodities represents transformation of money to capital. The exchange is pointless if the amount of money is constant. (Hardach et al., 1978) Therefore, Marx assumed that the exact form of the second circulation is M-C-M' where

$$M' = M + DM \qquad (1)$$

where DM is incremental value obtained from buying a commodity and selling it later. Marx's explanation of this incremental value goes as follows: "This increment or excess over the original value I call "surplus-value". The value originally advanced, therefore, not only remains intact while in circulation, but adds to itself a surplus-value or expands itself. It is this movement that converts it into capital." (Marx, 1887, p. 106) This process can be infinite because capital continuously accumulates itself and produces surplus value.

Production process: surplus value creation and labour exploitation

It is universally acknowledged that the basic goal of any company is profit maximisation. Marx described this as a wish of capitalist to create the surplus value in a production process: "Our capitalist has two objects in view: in the first place, he wants to produce a use-value that has a value in exchange, that is to say, an article destined to be sold, a commodity; and secondly, he desires to produce a commodity whose value should be greater than sum of the values of the commodities used in its production, that is, of the means of production and the labour-power, that he purchased with his good money in open market. His aim is to produce not only a use-value, but a commodity also; not only use-value, but value; not only value, but at the same time surplus-value." (Marx, 1887, p. 131) Qualifications of labour used in production process are not important for the process of creating surplus value. Allocation of labour to the production process of a commodity depends on social need for that particular commodity. (Kliman, 2007) Value of each commodity[36], according to Marx, can be split into three parts: (1) constant capital (*c*), (2) variable capital (*v*), and (3) surplus value (*s*), which can be expressed as:

$$C = c + v + s \tag{2}$$

Constant capital is related to the capital embodied in the means of production; variable capital is considered to be labour (i.e. wages paid to labourers), but labour which capitalist pay for the participation in value-creation process of production; while surplus value is the component of labour that is consumed, but is not paid for. In the Marxian spirit, it is believed that labour is at the heart of creating surplus value. Capitalists compensate labour for their labour power, which can be understood as the ability to work, but, however, this tends to be lower that the value created by labour. Creation of the surplus value can be represent by the simple formula:

$$s' = s / v \tag{3}$$

where s is surplus value itself and v is the variable capital outlay. Three factors that influence the rate of creation of surplus value/rate of exploitation (s') are: number of working hours in a day, productivity of labour and quantity of commodities that constitute the real wage of the labourer. (Rima, 2001, p. 232) As we know, technological progress increases the productivity of the workers, but Marx believed that it also increases their exploitation (increasing productivity as a result of technological progress will be discussed more in depth in the following section). In the part of *Economic and philosophical manuscripts*, Marx claimed that workers themselves are becoming commodities: "The worker becomes all the poorer the more wealth he produces, the more his production increases in power and size. The worker becomes an ever cheaper commodity the

[36] Commodity value can also be expressed by adding following two factors: (1) value of means of production used in production that is transfered into the commodity, and (2) additional value added created by labourers. (Kliman, 2007)

more commodities he creates. The devaluation of the world of men is in direct proportion to the increasing value of the world of things. Labour produces not only commodities; it produces itself and the worker as a commodity–and this at the same rate at which it produces commodities in general." (Marx, 1844) Workers are alienated from the products of their own labour and as the product of worker becomes more sophisticated, the life of worker becomes more complicated (and, as Marx describes it, the worker becomes more barbarian). Estranging labour from his/her work will eventually lead to estranging a person from him/herself. Marx concludes that estrangement of labour is the consequence of the private property and wages are remuneration for the estrangement. Even before Marx, alienation of labour was recognised by Adam Smith, however, Smith believed, that while this is certainly one of the disadvantages of capitalistic system, this is not an indication of the whole system being flawed.

Another instance where Marx and Engels very well illustrated their attitude towards the fairness of treatments of workers, is in the final section of *Communist Manifesto*, where they stated: "Let the ruling class tremble at a Communistic revolution. The proletarians have nothing to lose but their chains. They have a world to win. Working men of all countries, unite!." (Marx and Engels, 1848) Marx often wrote about exploitation of labour and the revolution in which proletariat would win over bourgeois. Communist society, that he believed will ultimately prevail, would significantly improve the conditions for the members of proletariat, as the proletarian revolution will mark the end of capitalism and beginning of transition of period. However, in his works, Marx does not describe how the revolution will occur or how the communist society will be organised. However, he did believe in the necessity of political transition period (Chattopadhyay, 1992). Hence, as the world has seen the failures of systems that were called communist, many argue that Marx was better at recognising of all the positive and negative sides of capitalism. On the other hand, the resemblance of Marx's works and these systems in practice is largely arguable. (Marx after communism, 2002)

Joan Robinson criticised Marx's class structure of society and descriptions of exploitation of labour believing that capitalism does involve consensus of interests of both workers and capitalists (Wolf, 2011). On the other hand, some of the economist, e.g. Coates, believe that the class structure still exist in the society and that globalisation made it even more apparent (Coates, 2000).

The law of the tendency of the rate of profit to fall

One of the most important laws proposed by Marx and presented in the third volume of *Capital* is the law of the tendency of the rate of profit to fall. Profit, according to Marx, is the additional value created through the process of production (i.e. additional value at the end of the production process compared to the beginning). Rate of profit is represented as the ratio of between surplus value and total amount of capital invested in production (where total amount of capital is comprised of both variable and constant capital). Profit is positively related to the rate of exploitation of labour, while it is negatively related to the proportions of variable and constant capital in total capital (organic composition of capital). Taking into account labour theory of value, even if the companies or industries have the same rates of surplus value, their profit rates can differ[37]. If this is the case, capital is likely to be shifted to more profitable industries. (Kliman, 2007)

According to the Marx's assumptions from *Capital I*, equalisation of the rate of surplus value occurs among sectors. In *Capital III*, Marx believed that it is the rate of profit that has a tendency towards equalisation. Advancement of technology leads to the increases in productivity. However, by considering the principles of labour theory of value and the fact that with increased productivity, less time is required to produce the same commodity, value of a commodity declines. If one firm in a single industry does introduce innovative production method that increases its productivity, its initial profits do increase. However, considering that competition follows the lead, costs of production fall overall in the industry and so does value. Although it might follow from the stated, Marx did not believe that competition caused the rates of profit to fall. By taking into consideration Marx's assumption on tendency of equalisation of rates of profit, general rate of profit across different industries falls. (Mattick, 1969; Kliman, 2007)

When introducing the law, Marx stated: "If it is further assumed that this gradual change in the composition of capital is not confined only to individual spheres of production, so that it involves changes in the average organic composition of the total capital of a certain society, then the gradual growth of constant capital in relation to variable capital must necessarily lead to gradual fall of the general rate of profit, so long as the rate of surplus-value, or the intensity of exploitation of labour by capital, remain the same." (Marx, 1894, p. 153) Organic composition of capital mentioned by Marx in the passage above is what would be today assumed as capital intensity and it is ratio of constant capital used in the production process to total capital used in process, where total capital is comprised of constant and variable capital. (Rima, 2001) Marx believed that, at the time, he was witnessing the tendency of declining variable capital in contrast with constant capital, however, that did not, in any way, lead to lower exploitation of labour. The law itself should not be regarded purely in absolute terms, but should be rather seen as the progressive tendency of declining profit. The law does not imply that rates of profit will fall indefinitely or constantly.

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[37] Marx spoke about the concept of equal rates of profit among industries, which he called average profit. In that case, price of production would be actual market price.

The law attracted large degree of criticism. One theorem that is believed to refute the law is Okishio theorem. Furthermore, recent researches widely criticise Marx's law on the tendency of the rate of profit to fall, although this law was accepted as such in the past. Allen (2009), on the data for Britain, showed that even the expansion of capital was constant, the rates of profit were generally low in the eighteenth century, increased by the middle of nineteenth century and were characterised by stability until the beginning of the World War I. Acemoglu and Robinson (2015), in their article *The rise and decline of general laws of capitalism,* claim that the reason for failure of Marx's laws lies in the fact that he did not account for endogenous technological change nor included the influence of the political or economic institutions on shaping the economy.

Thoughts on the possibility of crisis to emerge

Marx opposed the views of some of the classical economists, e.g. Ricardo, on the topic of possibility of crises to occur. (Hardach et al., 1978) While both Ricardo and Smith acknowledged the possibility of crises to occur, Marx believed that crises are not only possible, but that it is impossible to avoid the crises in the long-run. Furthermore, Marx assumed that crises do not last permanently.

Marx believed that Say's law that supply creating its own demand does not hold in the modern economy and there is a constant tendency of the economy to move towards disequilibrium. However, his rejection of the notion of Say's law can be largely disputed by looking at so-called reproduction schemes[38] that Marx established, and where reproduction equilibrium is reached when supply and demand of all goods are equal. (Screpanti & Zamagi, 2005)

Marx offered few views on potential causes of the emergence of crisis. Crises will keep increasing in their severity and will ultimately lead to the fall of capitalism. Furthermore, Marx believed that capitalistic system will constantly create crises considering that the main goal of production for capitalists is not satisfaction of social needs, but the accumulation of capital. In that sense, the emergence of crisis is related to the tendency of rate of profit to fall. Overproduction, without regards to demand, causes excess supply of goods and leads to over accumulation of capital. Overaccumulation of capital leads to increased demand for labour which further causes wages to rise. Increased wages lead to the falling profit, which further triggers lower investments[39] in the economy. Hence, overaccumulation of capital causes crisis.

Second explanation states that changes in consumption patterns have an effect on crises. The constraints on consumption emerge from unemployment and wage levels on the side of the

[38] Reproduction schemes determined the interdependencies between sectors in the economy in a way that they analyse amount of inputs from one sector needed for the production in another sector.

[39] In this case, capitalists tend to hoard profits that they earned.

workers; while on the side of capitalists, due to their wish to expand their already existing capital[40]. In the volume III of *Capital*, he states: "The ultimate reason for all real crises always remain the poverty and restricted consumption of the masses as opposed to the drive of capitalist production to develop the productive forces as though only the absolute consuming power of society constituted their limit." (Marx, 1894, p. 347) Finally, his third explanation is reliant on the existence of imperfect information in the markets.

Concentration of capital and decreasing competition

With the growth of fixed amount of constant capital and constant capital compared to variable capital in general, centralisation of capital occurs, meaning that the existing amount of capital is redistributed to fewer capitalists. Marx believed that the intensity of the struggle between capitalists is similar to the intensity of the struggle between capitalists and workers. Centralisation and concentration of capital comes from the idea that that the strongest players on the market will survive and win and drive the smaller ones out of businesses. As larger entities can achieve economies of scale easier and will often compete on the basis of price, smaller production entities will not be able to stay in the business. Marx pointed out that larger capital accumulation will lead to large industry concentration. In the volume I of *Capital*, he wrote: "Every individual capital is a larger or smaller concentration of means of production, with a corresponding command over a larger or smaller labour-army. Every accumulation becomes the means of new accumulation. With the increasing mass of wealth which functions as capital, accumulation increases the concentration of that wealth in the hands of individual capitalists, and thereby widens the basis of production on a large scale and of the specific methods of capitalist production." (Marx, 1887, p. 440) According to Marx, final stages of capitalism can end in unification of different companies and formation of cartels, occurrence of mergers, etc. (Rima, 2001) Finally, these companies could turn into monopolies. Due to many detrimental consequences that monopolies might bring, Marx predicts the social revolution led by proletariat in which capitalism will be overthrown and replaced by communism. One of the Marx's critiques of early socialists is that they either predicted better status for all classes or very peaceful revolutions. Marx himself, on the other hand, believed that revolution that will lead to change from capitalism to communism cannot be non violent.

Evidence for this prediction can be found in so-called the "great" merger movement that took place in United States of America in the period between 1895 and 1904 and brought changes in industrial structure and large industry concentrations. (Smythe, 2001) Numerous laws enforced

[40] Which will further worsen the situation of workers, as explained earlier.

by state made this impossible (or harder) to occur at later points of time, however, we can argue that some industries are becoming more and more concentrated today.

Wages

According to Marx, workers always produce more value than it is compensated by their wages. Demand for labour is dependent upon the rate of industrialisation. With increased industrialisation, the demand for labour will be lower and the so-called "reserve army"[41] will increase. The existence of "reserve army" does not have positive impact on the growth of wages. On the other hand, industrialisation raises productivity of labour. Workers are organised into unions, which prevents permanent decrease of real wages and which strive to influence the labour supply. Marx argues that labour unions are not strong enough to fight the decreasing share of wages or exploitation of labour. Decreasing share of wages means that workers are becoming relatively poorer compared to capitalists and this causes general dissatisfaction of the working class. In the volume I of *Capital*, Marx noted: "But hand-in-hand, with the increasing productivity of labour, goes, as we have seen, the cheapening of the labourer, therefore a higher rate of surplus-value, even when the real wages are rising. The latter never rise proportionally to the productive power of labour. The same value in variable capital therefore sets in movement more labour-power, and, therefore, more labour." (Marx, 1887, p. 423) In his writings, Marx stated, that in communism, every labourer should contribute to the society according to his/her abilities, while he/she will be rewarded according their needs.

What Marx believed will happen to wages is the subject of dispute: some believe that he believed that wages under capitalism are stagnant, while other group believes that Marx simply meant that the share of national income devoted to labour force will decline in the years to come. (Acemoglu & Robinson, 2015) If we take into account one of Kaldor's stylised facts[42], we can reject the latter interpretation of Marx's reasoning on wages. Acemoglu and Robinson (2015) quoted several studies that offer evidences that share of national income devoted to labour did not fall. However, by looking at the recent data, we can notice that Marx's prediction might hold true. OECD reports that labour income share was equal to 66 % in the 1990s, while it experienced about 4 percentage points drop in 2000s. The estimates are that technology brought to about 80 % decline in labour income share in OECD countries. (Labour pains, 2013)

[41] Term invented by Engels and which represents the unemployed in the capitalist society.
[42] Kaldor's facts set labour income share fixed at 2/3 of total national income.

Conclusion

Karl Marx, German philosopher, wrote some of his most influential works in the field of economics and is considered to be a father of modern socialism. He was proponent of scientific socialism believing that many of early socialists' ideas were utopian. His ideas, quite controversial at the time, opposed many of beliefs that were present in the nineteenth century society. On the other hand, Marx and his works were strongly influenced by many philosophers (e.g. Hegel), classical economists (e.g. Ricardo) and early socialists. The central part of Marx works is devoted to class struggle—differences in positions of bourgeois and proletariat classes in the society. Marx believed that bourgeois class was getting rich at the expense of members of proletariat who are main creators of value in the society. He believed that the workers are being deeply exploited. He wrote in this famous *Communist Manifesto*: "All that is solid melts into air." (Marx and Engels, 1848). This implies that Marx believed in the temporary nature of everything in the world, including bourgeois class being the ruling class. Large inequalities are present and persistent in today's society, however, they are probably not as dramatic as Marx have described them. Marx believed that changes within the society will not follow evolutionary track, but will rather result in revolution. Revolution of proletariat is, according to Marx, destined to overthrow capitalism. He believed that the change will first occur in most advanced, capitalist countries. (Marx after communism, 2002) In communist society, which can be sometimes seen as fairly utopian, everybody would contribute to the society's development according to their abilities, while they will be rewarded according to their needs. By looking at historical evidences, countries that declared themselves as communist, failed. On the other hand, it is fairly disputable to what extent Marx works (general laws) were really implemented in those societies or whether those countries could be regarded as very advanced at the time when change happened. Another cause of failure of these systems was that they rarely progressed from some developed stage of capitalism to communism, as it should have happened according to Marx. (Marx after communism, 2002) Roemer (1994) explained the reasons for the failure of Soviet-type economies: "(1) the allocation of most goods by an administrative apparatus under which producers were not forced to compete with each other, (2) direct control of firms by political units, and (3) noncompetitive, nondemocratic politics". Marx's ideal society, although widely mentioned, is not really well described by Marx himself—his best selling work *Communist Manifesto* does not really offer any description on how this system would function in practice.

Despite the points where Marx failed, and often those were the points of most importance for Marx himself, he continuously has number of followers and at the times of crisis, it appears that this number even grows. (Jeffries, 2012; Marx after communism, 2002) Labour theory of value where the value of the products is attributed to labour does not really hold true. The rate of declining profit law also does not hold true. Through the history, we did not witness stability and consistency of evidences supporting Marx's argument on declining competition that occurs due to centralisation or concentration of capital, or his argument about wages. Sometimes, Marx even correctly foreseen the effect, but was wrong about either its causes and consequences or both.

Many believe that Marx's most important contribution was not in the revolutionarily of his ideas or their correctness—it is in the analysis of capitalism as the system and implications of such system on the whole society. His analyses were often very deep and extensive (e.g. Marx's analysis on types of value). Despite whether Marx was right or wrong, he had left and important trace in the history of economic though and it cannot be argued that his works will still be discussed in the years to come.

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Choreography of Resolution: Conflict, Movement, and Neuroscience

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ABA Publishing, U.S., Chicago, Illinois
2013

The times of the 21. Century are bursting with options, wealth, knowledges, access to information, possibility, and technology. Yet to some environments this abundance pertaining to the technological development has not found its way or it has not been distributed via the market, institutional structures, public infrastructure nor other ways. Some parts of the world have not experienced the enrichment of their culture and expansion of social life but rather have witnessed destruction, death and a near extinction of their zeal, creative possibilities, social ties and communities. The intrusion of third parties, of countries with strategic interests, the weapons imports, the long-standing ethnic conflicts, the civil and economic tensions, and the clashes of religious influences can form an entangled nexus of tensions that escalate to a conflagration of conflicting ideas, emotions, principles, rules, calculations, laws, identities or a shared scarcity. These escalations and the use of physical force and weapons, cause suffering, losses, and create further entanglements in the broader conflict. The topic is of immense relevance for professionals dealing with economic growth, as in traumatized environments and communities facing violent destruction economic development is severely impeded. The setback experienced due to armed conflict and violent chaos takes away resources, courage, social capital, cultural capital, resilience, ideas, and business connections.

To attempt an exploration of new directions in conflict theory and practice, a project »Dancing at the Crossroads« has been established and after a four-year activity (2009 - 2013), the participants wrote the ground-breaking work: »Choreography of Resolution«. The central workshops have been held at the European Graduate School in Switzerland. In the book »Choreography of Resolution«, the authors – academic professionals, conflict intervenors, therapists, and specialists for conflict resolution present the recent endeavours in exploration of how the conflict is contained and entangled in communities and in individuals. They explore and present their findings about how the ongoing tension, small verbal or nonverbal manifestations of a particular conflict as well as the repercussions and consequences of escalated and damaging ones, have a severe impact on the emotional, spiritual, and social lives of individuals. Thus the severity, the role, the meanings of actions, and the origins are first and foremost to be looked for in the people. The expression of the experience and the analysis of the conflictual process are under some circumstances and capacities not possible and thus resolution with traditional mediating methods can prove to be ineffective. »The Choreography of Resolution« offers an inclusive approach including movement and dance, bringing together expertise that could add the missing approach in mediation.

In the first chapter of the Choreography of Resolution Emily Beausoleil argues for a greater consideration of neuro - scientific advancements of the areas that are important for conflict transformation: physiology of emotion, communication, receptivity, attunement, empathy, and creative thinking: »In a relatively short time, they have demonstrated the intimate and complex relationship between cognitive and »embodied« states, expanding vocabularies for understanding how movement affects patterns of thought and interaction – the patterns that either make change possible or render it impossible. This work reveals new possibilities for the value of dance in training third parties and in helping to shape the nature of interventions and formation of embodied approach tools.

In reference to these claims presented by one of the authors in »Choreography of Resolution«, we give a short overview and vantage points of concepts in embodied knowledge and embodied cognition: Considering the cognitive processes as a medium for decision making, Teed Rockwell proposed that the mind emerges not entirely from brain activity but from an interacting nexus of brain, body, and world. He endorses embodied cognition, holding that in the past neuroscience endorsed a form of Cartesian materialism, an indictment also issued by many other fields. Based on John Dewey's heritage, he argues that the brain and the body bring into existence the mind as a "behavioural field" in the environment. Significant for understanding the physically embodied and embedded nature of cognition are the various ways in which cognitive problems are offloaded onto physical processes, making two-way bodily interactions with the environment essential to cognitive success.

In the second chapter of the book Tara Ney and Emmy Humber remind us that the discipline of »conflict studies« is a newly invented one and is necessarily interdisciplinary: political science, law, sociology, psychology, humanities, and more recently, neurobiology are actively informing the field. Given the slow uptake of new advances, one of the possible explanations for the failure to incorporate these critical dimensions is »the possibility that they have become dominated and subsumed by more powerful but invisible discourses that influence law and politics, such as neoliberalism, bureaucratization, and institutionalism, which value rationality, efficiency and outcome«, write contributors Tara Ney and Emmy Humber.

The authors recognize the traditional (first - generation) models of dealing with conflict, called also interest-based as being steeped in the values of Enlightenment era thinking, firmly oriented to individualism. These approaches have had a major impact on Western practices of responding to disputes in business, organizations, criminal and civil law, public policy, urban planning, and international relations. Therefore, we are witnessing in the field of conflict resolution a substantial pluralist breakthrough in methodology and in critique by other social sciences that include concerns about ethical incoherence, cultural sensitivity, and a lack of emphasis on relationality, emotionality, physicality, and tacit experiences. Among the many ideas they expose the dance metaphor. Dance metaphors that focus on relationality are admittedly not ideologically neutral as scientific criteria would require them to be. However, assessing a methodological approach on the basis of how non - ideological it is has been deemed impossible even in economics. In economic science, Robert L. Heilbroner argues, the conception of rationality underlying economic theory is specific to the emergence of capitalism as a mode of production and that economics as a science cannot avoid confronting issues (especially the distribution of material wealth and power) that are inherently political and ideological. Duncan K. Foley argued that the concept of rationality connects economics firmly to the Hobbesian - Lockean tradition of political philosophy, which purports social research to explain the political and economic organization of modern society as the necessary outcome of the interaction of »naturally« constituted rational individuals confronting each other as competitors for scarce resources. To avoid the terrible consequences of anarchic struggle, these rational individual actors are supposed, according to this »just so« story, to agree to the institutions of property and political authority that constitute the framework of modern society that leads inexorably to sharp inequalities in economic wellbeing,

Chapters 3 – 6 elaborate on the analogies in the negotiation processes and conflict resolution to dance practice, giving alternative heuristic tools for a reorientation of understanding and the recognition of inevitability of the physical aspect of the resolution processes. The analogies are mostly narrating metaphors and expressions in conflictual and resolution content such as »choreography of negotiation«, »making a move«, the relevancy of »space« and can only be properly addressed if we bring the element of space into our analytical processing of conflict. Including the body into the cognitive apparatus opens the path for movement and dance scholars to research deeper into the role that the body plays in thinking, feeling, perception, decision, and other processes. It also paves the way for the recognition of dance as a possible tool for practitioners in the conflict resolution field. In the »Choreography of Resolution« the authors elaborate widely and systematically on which aspects of human functioning are particularly significant and relevant in the grounding of cognition, attitudes, and emotions in the physical cues from the elaborate body-wide network. With the body wide network they refer to the whole psychosomatic network of neurological, hormonal, gastrointestinal, and immune systems that keep the entire body in constant communication. On the basis of the new conceptualizations they further discuss the notions of embodied awareness, embodied empathy, the role of the left side of the brain and the right side of the brain in conflict development, and prepare the terrain for building interdisciplinary bridges between the rigorous, linear and verbal approaches and humanist, artistic approaches.

Chapters 7 and 8 focus extensively on developing different kinds of intelligences through dance, like kinesthetic and emotional intelligence. In the 9th chapter authors explore how to develop intuition through dance. Further on pedagogical tools and workshop and session ideas are being presented, in chapter 8 they refer to different aspects of intuition and discuss the importance of intuition in mediation and how to help develop it for it to be helpful instead of misleading, misunderstood, mistrained or ignored. A part of what creates struggles and pressures to escalate conflicts is also provided by the economic environment. To cope with the challenges in the environment, or consequences of escalated conflict, individuals use more or less ingenious reactions, responses, and strategies. In mediated conflicts, mediators assist negotiations and participate in »interdependent decision making«. Upgrading the logical and linear paradigm in conflict resolution, contemporary mediation suggests developing intuition for mediation practitioners that qualifies as the »system 1« way of thinking, according to Kahneman's theory (System 1: fast, intuitive, metaphorical, impressionistic, emotional, and unconscious). The authors of the book stress that even though we tend to identify ourselves with our »system 2« thinking – our rational, logical, calculating way, we are often actually more shaped by our »system 1«; that is why it is important for mediators to develop intuition and to recognize their own biases, sub - consciousness and be sensible to experience.

In the 10th chapter an internationally renowned modern dancer and choreographer Margie Gillis presents an in - depth guide with movement exercises with a purposeful design and a carefully studied framework and possibilities for application by mediation facilitators. She introduces the chapter by discussing how movement offers a space for discovery and for inclusion of somatic thinking. Based on her extensive practice through the years she suggests that the aesthetic frame of dance creates the possibility for increased receptivity as new solutions arise from mobility. For conflict transformation and resolution practice this embodied conflict transformation asks us to mobilize our muscles to reorganize the neural pathways that influence habitual responses. Investigating connections between neuromuscular responses and movement patterns will help illuminate how the physical is a constituent of the mental. In her repertory of somatic approaches, she offers guidelines for reflection and gives directions for coping with practical issues that might spring during the exercises.

The chapters 11 - 15 give extensive reports on actual studies of the cases in Ireland, Cambodia, and Liberia. They write about the Irish traditional step dancing as it has represented a form of resistance to oppressors, Cambodia's classical dance as a meaning making manifestation of political importance and Liberia's musicians and dancers uniting people and creating a calming atmosphere in anger and trauma-filled refugee camps during the civil war. Here the authors discuss the role of dance in conflict, the endeavours undertaken by the NGO's where dance and culture proved to play the central role in stabilizing post-conflict communities and describe successful practices including body-work in storytelling, confrontations, and revelations of emotional content of conflicts and in therapy for the victims of violent conflict or war. A skilled social psychologist can make use of the techniques for the insight into how social conflict is internalized in individuals and how internal conflict reciprocally expressed and externalized in cultural life and broader institutional framework.

In chapters 16 and 17 they suggest that through movement - based approaches, workplace conflict intervenors can help develop the notion of mindfulness that could, using creative physical movement in conjunction with conflict management and critical reflection, be useful in addressing workplace conflict linked to worldviews. They stress the possibility to overcome the automatic thought patterns linked to worldviews - like linear, hierarchical, and dichotomous thinking - through movement, and further on stress the importance of supportive, safe opportunities in organizations to paradigmatically shift to becoming places of safe emotional and creative expression, inclusion, and equal consideration.

Economists and empiricists of the social sciences could design and apply a myriad of observational techniques and of approaches for determining the important variables, descriptions of the patterns, measuring scales, etc.,… There is immense potential for the fields of behavioural and experimental economics to discover new factors that drive behaviour, or get closer to observing how the known factors behave under different tasks. Once researchers start developing methods of observation and analysis that combine empirics, comparative approaches in institutional systems and organizational studies, semiotic approaches, heuristics, cognitive science and other approaches, the field can open a pool of options for new knowledge about decision making and social interaction.

For the mediation and experimental field that combines traditional and somatic strategies the formalization of embodied knowledge could present quite a balancing exercise.

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