The World in Transition: The Great Recession, Conflict and Imperialist Rivalry in the 21st Century

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Contents

Economics and the 'Manchester system'

Urban Sušnik

Exactly a hundred years ago, in his *magnum opus*, The General Theory of Employment, Interest and Money, Keynes saw capitalism as a system with many faults, yet he nevertheless believed in its redeeming qualities and he therefore set out to try and keep intact the system of private initiative, whilst augmenting it with a more active role of the state, which would alleviate some of the grievances that a large part of the populace had with the status quo. Keynes (2003) finds two main faults of what he also calls the 'Manchester system': the first is its inability to provide full employment, the second is its arbitrary and inequitable distribution of wealth and income. Fast forward just shy of a century and we see a prominent French economist, Thomas Piketty, writing a bestselling book where, using different methods, his conclusions are very of Keynes: capitalism is a wonderful system and all that it requires in its current iteration is some minor tweaks. While the two authors use completely different approaches to get to their conclusions, their social philosophy is nevertheless very similar. Their aim is essentially to harvest the productive capacity of capitalism, while somehow trying to distribute the spoils that it produces, bringing about what come call capitalism with a human face or what I have called the enlightened capitalism (Sušnik, 2016, p. 160). The main tenet of this social philosophy is a general belief that capitalism as a system of production can somehow be tamed to produce, more or less, only the desired results.

I think this view, while certainly noble, is ultimately flawed and rests on a mechanistic view of capitalism. In 1943 Kalecki disputed Keynes' view of being able to maintain full employment policies for protracted periods of time, because the business and the rentier classes would be against this sort of an arrangement. Kalecki understood that for the Manchester system to operate - in order for the system of production to work as it had - what was required was a constant reminder to the worker that she or he can get fired. But this is only a credible threat if by being fired the worker's livelihood is somehow threatened, which cannot be the case in a system of full employment. In other words, what happens is that the system of discipline in *production* breaks apart. Kalecki (1943) notes, that this does not have to be so, and that full employment can

be attained in capitalism, if there is some other social pressure put upon the workers to accept the general rules in the capitalist mode of production and he points to fascism being able to provide this, by employing political measures that produce a similar sort of coercion for the working class. However, without this exogenous coercive stimulus, capitalism cannot function with permanent full employment and while the reasons often listed by mainstream economists have mainly to do with inflationary pressures, those pressures are not the cause of the problem, they are the consequence of a breakdown in the normal working of the system, which is built on a principle of scarce employment opportunities to maintain social discipline.

While a lot of snarky remarks have been directed at Adam Smith and the now infamous and often misinterpreted concept of the 'invisible hand', there is something to be said for capitalism being essentially a spontaneous system with certain immanent tendencies. And therein lies the problem for Keynes and Piketty. According to their mechanistic vision of capitalism, we can keep its incredible productivity, whilst at the same time getting rid of its inequities, yet what they fail to see is that those very same inequities are what ensures its productivity as well. There is indeed an invisible hand that regulates the workings of the Manchester system, but it is not just the benign hand of Adam Smith in the sphere of exchange, it is also the grotesque paw of Karl Marx and his reserve army of labour in the sphere of production. The normal workings of capitalism require a constant presence of unemployment because this is how the system maintains social discipline in the sphere of commodity production. It is therefore complete correct to view capitalism as a spontaneous order, much in the same way as Hayek, Smith and Marx saw it. And one can also see why the system is efficient in comparison to previous societal arrangements, because in the feudal mode of production or within a slave holding society, you actually needed to employ a group of people to force another group of people to work.

This was not only inefficient because one group of people did not do socially productive work, but because even the group of people that did do productive work (serfs, slaves), was not as motivated as workers under capitalism. Because if you don't work hard in comparison to your peers in capitalism, you will get fired. Stockhammer and Ramskogler (2008) make an interesting observation on this point as well, saying that in other modes of production your fate was sealed and certain, whereas the mechanism

that keeps workers on their toes in capitalism is uncertainty regarding the state of future employment. A worker's future and his incentives are much more aligned with their employer than in any previous mode of production, if a company succeeds you keep your job, if it does not, you are out of work, whereas if a new feudal lord took over some land, the serfs did not lose their livelihood – their life was usually much the same as it had been under previous management.

If the state were to wish and alleviate unemployment in some sort of Keynesian fashion, this will not be welcomed by the capitalist class, because then the very nature of this spontaneous order in which they themselves are the upper echelon of society, becomes threatened. This is why, through most of its history, the capitalist state has in fact been in favour of policies which helped fuel capitalist production, very consciously promoting, either at home or abroad, the conditions that fostered the 'spontaneous' operation of capitalism. Karl Polanyi claimed that *laissez-faire* capitalism was in fact a planned system and that it was the centrally planned economies which were actually a historical fluke. This does not mean, however, that once instituted, even though in a very conscious intervenistic fashion, the Manchester system does not conform to some inescapable tendencies. It also means that certain requirements, such as the existence of a reserve army of the unemployed, have to be met in order for the system to operate smoothly, without any conscious outside intervention.

Of course, the normal workings of the system are not only characterised by its maintenance of social discipline by producing uncertainty with regards to future income flows and thus the livelihood for the majority of the population. As Shaikh (2016, p.14) puts it, competition pits seller against seller, seller against buyer, buyer against buyer, capital against capital, capital against labour and labour against labour. It is a war of everybody against everybody, *bellum omnium contra omnes*. And while capitalism has lots of critics, there is a sort of grotesque beauty in how it can regulate itself, simply by the manifestation of its own inner tendencies. Businesses are in the business of actively cutting costs, because that not only makes them more profitable at existing prices, but it allows them a safety buffer in the future – actively minimising costs is an insurance policy in an uncertain world. This process by itself makes sure that there is always a steady stream of new unemployed. However, it would be wrong to assume that this is always the case and in an economic upswing, it can very well be the case, that as firms compete, this stream of technologically redundant workers will be dwarfed by new hiring,

due to a general increase in demand. As this shift occurs unemployment decreases and eventually labour starts to ask for higher money wages, if it seems likely that the high levels of employment are going to be maintained for the foreseeable future. This can effectively have one of two results: either firms increase prices along with the wage increase, leading to inflation, or prices stay the same, leading to an increase in real wages and a decline in real profits. Note that without any state intervention, or any other *conscious* outside intervention, this state of things cannot but decay as quickly as it came to be, for once profits decline, firms start thinking of new ways to cut costs, some firms will not be able to repay their financial obligations, which means they will go under, their capitals destroyed and their workers losing their jobs, all of which will by itself create new unemployment and bring down wage demands by the workers.

Traditional economics tries to capture the essence of social reality through the lenses of methodological individualism, looking at the world through the eyes of an individual maximising her or his utility. Yet within the spontaneous order of capitalist production, there are very few things that are left to the individual, because the underlying logic of the system limits the amount of options that one can choose from. To maintain competitiveness over the long run, firms are forced to preemptively cut costs, workers are forced to look for jobs irrespective of their preferences and financial capital is forced to move from one industry to another, or from one country to another in search of higher returns, irrespective of the chaos it leaves in its wake. These, and many others are simply the unintended quintessential emergent properties and logical outcomes of production being organised as a constant jockeying for greater profits (Shaikh, 2016, p. 14). Building your analysis from the ground up, starting with the individual, does not make sense in a complex system, which largely determines the actions of the individuals in the first place. By doing that you are essentially employing an ideological exercise by trying to prove, that the system somehow exists because of these individual actions and is therefore a reflection of the individual, with her or his wants essentially determining social reality.

This is a very archaic way of thinking about complex systems. Additionally, there is a huge discrepancy between the actual world and canonical neoclassical models. Of course, these discrepancies can be explained with various imperfections, much in the same way that the geocentric view of the solar system could explain how the solar system moves about, if additional assumptions were added into the fold. These same

movements could be explained by a simple shift to the heliocentric model, with no need for any additional assumptions. When we talk about complex social systems, and forgetting the ideological implications of methodological individualism, the main reason why you need to study them differently are basically analytical. Taleb (2016) gives a good explanation of this:

'The main idea behind complex systems is that the ensemble behaves in way not predicted by the components. The interactions matter more than the nature of the units. Studying individual ants will never *(one can safely say never for most such situations), never give us an idea on how the ant colony operates. For that, one needs to understand an ant colony as an ant colony, no less, no more, not a collection of ants. This is called an "emergent" property of the whole, by which* parts *and* whole *differ because what matters is the interactions between such parts.'*

Going back one hundred years, Keynes had already begun to grasp that complex social systems, require a different analytical toolset to the one that had been provided at the time by traditional economic theory. To be sure, Keynes was not quite able to rid himself of the old modes of thought, yet by the time he had written The General Theory, he had already understood that actions of the individual do not always translate into the aggregate. In other words, there is a discrepancy between the maximising agent and the actual results that come about. A chasm opens between the intentions of the individual and the aggregate consequences, something that is impossible within bounds of traditional theory, where there is no difference if the economy is made up of one person or of a million people, for each person is a complete microcosm of society.

Yet once we allow for this gap in the intentions and the actual consequences, one has to question the validity and usefulness of methodological individualism in trying to understand a complex system like capitalism. In fact, not only is methodological individualism not helpful in understanding capitalism, it might in fact obscure our study of it. Or as Patnaik (2009, p. 71) explains:

'A mysterious element interposes itself between the intentions in their totality and the outcome in its totality. In such a situation, it is this element that demands center stage in analysis: the analysis of individual motivations and actions then becomes altogether secondary. Methodological individualism then, in a strict sense, that is, unless used merely to flesh out an analysis centering on this mysterious element (in which case we would hardly be justified in calling it methodological individualism at all), becomes a real obstacle to understanding.'

There are various reasons why methodological individualism became so prominent in economics, but one of those reasons is the attempt of trying to show that the spontaneous order of capitalism is not only incredibly productive, but that it is able to produce optimal outcomes both on the level of the individual and society, where the latter is simply the sum of the former. Which is why in this universe if you know the motivations of the individual, you also know the aggregate results. A great shift took place in economic theory as marginalism transcended classical political economy. For what Walrasian theory claims is that a free market society best promotes the fulfilment of individual self-interest, whereas classical political economy only argues that by allowing enlightened self-interest to flourish, social progress is achieved (Patnaik, 2011, p. 5). Note, however, that in Smith, there is no claim that capitalism best fulfils the individuals self-interest, what Smith claims instead is, that if all agents strive towards their self-interest, independently of their struggles, we see an increase in the wealth of the nation (Patnaik, 2011, p. 5). In other words, the Smithian view is already a complex view, where actions of the individuals have a different, and in his view very positive, aggregate result. That is not to say, however, that the system caters to the whims of the individual's utility function, quite the opposite could be true! Smith made a complex argument in favour of capitalism, essentially saying that in spite of it being a system of *bellum omnium contra omnes*, the aggregate result of these struggles increase the material wealth of the nation, and is thus seen as being beneficial.

Now some people might agree with this assessment and some people might disagree, but at least it is honest and factually correct – capitalism has indeed been able to produce more goods than any other system in history by being able to harness the incredible power of enlightened self-interest as described by Smith. Whether you find the method by which this was done distasteful is up to you. The claim by neoclassical utilitarian calculus is different, what Walras and co want to convince us is that capitalism also makes us happy by making our utility functions flourish. Now this is an altogether different argument from the one made by Adam Smith, who makes no such bold claims about the well-being of the individual, his argument is simply that capitalism, for all its faults, increases the material wealth of nations. Smith, while giving his opinion on the Manchester system, leaves the cost benefit analysis to the individual and her or his personal views. We immediately see why this could be a problem: some people might not agree that the increase in the wealth of nations, as Smith put it, is worth the price.

The reasons for employing neoclassical utilitarian calculus, firmly grounded in methodological individualism, is because there is no debate whether the system fulfils the desires of the individual or not. This is because there is no gap between the individual and society, the latter is simply a reflection of the motivations of the former. The difference between Keynes, Smith, Marx and modern analysis of complex systems could not be further apart. Despite this editorial, this journal is aimed at presenting works and points of view featuring all manner of methodological creatures. The idealistic aim of the journal is that by giving a venue where different points of view come together, we can come up with a better understanding of the economy and the society in general, through actual discourse on different levels, whether it be a discourse on methodology, pure theory, a contribution in ethics or empirical studies. We are the digital tower of Babylon, a house of all faiths, the Review of Economics and Economic Methodology, published by the Movement for Economic pluralism.

Yet in the end, we may well turn out to be a chimera, a unicorn or some other manner of non-existent mythical creature, for the Manchester system is far less enlightened than both Mr Keynes and Mr Piketty like to imagine. It is not simply that capitalism continuously fails to produce enough jobs and that it creates centralisation of wealth in the hands of the very few; even the composition of production, succumbs to its internal logic. As a direct consequence of these tendencies, a large part of the social product in the capitalist economies has to be diverted towards manufacturing consent and support for the existing social arrangement. Because in its normal functioning capitalism creates unemployment, poverty and disparities in wealth, it follows, *ipso facto* that institutions need to be in place, which can mitigate the effects of these tendencies. These institutions are endogenous to the system and change with it through time, depending on the specific historical circumstances.

The fact that capitalism needs an institutional superstructure to legitimize it represents an inefficient use of resources. These are resources used to keep in check the potential political instabilities which would endanger the future operation of the system. Obviously if one could limit the reasons for these instabilities in the first place, less energy would have to go into socially unproductive activities. When we think about specific institutions that make up the superstructure, look no further than the state, which for most of its existence, has helped foster the *laissez-faire* system. We can go back to the old institutions of the Roman Empire that fall under the rubric of *panem et circenses*,

bread and games, and see that these institutions are just as important in capitalism, as they were back then. Finally, the Manchester system has, for the most part, support amongst the professional class, by which I mean lawyers, social scientists and academia in general. And this is the main problem that I feel no amount of open discussion can resolve, because if you are a member of a class that receives the surplus product without having produced it, then you will be blind to its very existence and the process by which it came to be. Much like a modern-day Don Quixote, this publication aims at trying to transcend materialistic determinism, believing that a fruitful scientific discussion between different paradigms is not only possible but also necessary. Perhaps we are just Kantians foolishly hoping to escape the prisoner's dilemma, but with that being said, how can we hope to break out of this prison, if we don't even try?

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From Paucity to Inefficiency: The Case of Democratic Economic Governance

Tej Gonza

Abstract

The participatory governance on the workplace remains rare. Control does not follow ownership by logical necessity; why, then, is the capitalist enterprise so prevalent? Oliver Williamson, Michael Jensen, Henry Hansmann and some other scholars take the paucity of labour-managed firms (*i.e.* the prevalence of capitalist firm) as the evidence for the inefficiency of democratic governance. For support to this proposition, they turn to the early characterization of the evolutionary dynamics on competitive markets by Armen Alchian (1950). He argues that firms are selected for according to their relative profits, and that the relatively profitable production behaviour prevails on the markets. Similarly, the Efficiency Branch argues that it is the relatively efficient organizational form that prevails on the markets. Thus; if we observe an organizational form to be rare, this means that it is relatively inefficient. In my thesis, I show that the evolutionary argument employed in support of this proposition is incomplete. Prevalence consists of both differential survival and differential birth, therefore, we should also be able to explain how different organizational modes enter the markets. I introduce the appropriation hypothesis that suggests that capitalist enterprise is formed more often because it allows easier appropriation of benefits for certain groups, and not necessarily because it is technologically superior. As long as we define inefficiency in the terms of technological inefficiency, we cannot take the paucity of labour-managed firms as the evidence for their inefficiency.

Keywords: participatory governance, evolutionary theory of firm, efficiency, cooperative enterprises

JEL classification: A11, B13, B15, B21, B52, L23, P13

1. Introduction

"Jesus Christ, the monkeys are going to run the zoo?" A reply from a financier to a loan application by workers, who wanted to buy the Vermont Asbestos Group (in Doucouliagos, 1990).

The democratic ideal has not yet found its place into the workplace, at least not to the extent it is accepted in the political sphere. A timocracy – one share one vote – rather than democracy – one person one vote – enjoys the status quo. It is the capital owners that enjoy the control over the decisions about production, allocation and distribution, and not workers, to whom the decisions actually apply.[1] Only half a million of the workers participated in the decision making some two decades ago in the European Union (Bonin et. al. 1993).[2] Given that there is more than 200 million people in the labour force (source: *Eurostat*), this was roughly 0.2 percent of the labour force. Today, the degree of workers' participation has not increased much. The numbers vary from country to country (Italy has the highest presence of workers' participation with 2.5 percent of non-agricultural labour force involved), however we can safely conclude that LMFs are rare.[3] This leaves the following and very relevant question open: Why is the democratic economic governance so rare?[4]

Many argue that the efficiency considerations are the essential element in understanding the organizational demography – the way frequency of organizational forms change in the population of firms. Some even go so far to say that the efficiency being the main case, one can infer relative efficiency from relative prevalence of different organizational forms. "If we *observe* that a particular form of ownership is dominant in a given industry, this is a *strong indication* that the form is less costly than other forms of ownership would be in that industry." (Hansmann, 1996: 22, my emphasis). Hansmann here proposes that the low prevalence of LMFs implies their relative inefficiency.[5] I

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[1] See Appendix 1 for some preliminary conceptual work on the control dimension, which delimits labour and capital management. Labour managed enterprise is designated as LMF, and capital managed firm as CMF. Other terms employed in the paper are used as synonyms.

[2] Profit sharing, for example, is relatively prevalent form of workers' engagement. In the United States, Employee Stock Ownership (contribution plans where the contributions are typically shares of stock in the company) employs over 15 million people, which is roughly 10% of the all employment in 2015 (Bernstein, 2016). This is a large part of the labour force, and we could hardly classify profit sharing enterprise as a marginal organizational form.

[3] For similar conclusions, see Fakhfakh *et. al.* (2009), Artz and Kim (2011), Schwartz (2012), Zanotti (2012) and Groot and Linde (2015).

[4] That is, why is capital enterprise so pervasive form of economic governance. The paucity of LMFs and the prevalence of CMFs are two sides of the same coin. This is so because I define an organizational form alongside the control; if control is in the hands of capital, it is a CMF, if control is in the hands of the labour, it is a LMF. This is discussed in section 1.2.

[5] See Appendix 2 for the discussion on the concept of efficiency as employed in this paper.

call this the efficiency inference thesis (henceforth, the Thesis). The more visible scholars that share this position are Oliver Williamson, Michael Jensen, William Meckling, Armen Alchian, Harold Demsetz, Scott Arnold, and Henry Hansmann. Following Williamson (1985: 26), I call this group the 'Efficiency Branch'. The Thesis is used in order to support the theoretical framework proposed by the Efficiency Branch that suggests that LMFs are less efficient than LMFs. It supposedly provides operational content that alternative theories lack – because there is no theoretical consensus about the efficiency of democratic governance, the prevalence of capitalist structures supposedly grants authority to the Efficiency Branch in this open scholarly debate with immense practical implications.

The main aim of this paper is to question the proposition that the paucity of self-management implies its relative inefficiency, and so to undermine the authority of the Efficiency Branch on this issue. I defend my claim with the following structure. In the second section, I introduce the Thesis and trace its origins back to the evolutionary argument by Armen Alchian (1950) and Milton Friedman (1953). In the third section, I show why the evolutionary argument that underlines the thesis is incomplete. Theoretical speculations that both emergence and survival of organizational forms should be considered are supported with some empirical qualifications, which indicate that the main difference between LMFs and CMFs is that the latter are formed much more often. In the last section I introduce Williamson's explanation of this along the lines of boundedly rational intentionality. I argue for an alternative explanation that breaks the ties between emergence and efficiency by speculating that CMFs emerge more often because they allow appropriation of higher individual benefits for agents who have vested interests in the capitalist enterprise.

2. The Efficiency Inference Thesis

Competitive markets select more efficient institutions of production from less efficient ones. Whether an economic organization is efficient or not is ultimately decided on the markets, and the superior organizational form will eventually prevail in the population. The organizational forms that we generally observe are the organizational forms that outcompeted the alternatives and, therefore, must in one way or another be more efficient.

Or so the story goes. The story told by the Efficiency Branch, which tries to support their theoretical framework that indicates the inefficiency of democratic enterprise with its paucity. Before going any further, I need to delimit the concept of efficiency in order to make justice to the claim I am making. The Efficiency Branch looks at the paucity of LMFs in order to defend their theoretical territory, within which they develop reasons for the inefficiency of LMFs. The two main arguments relate to workers' effort (free riding problem) and costs of decision making. So when the Efficiency Branch argues that CMFs are more efficient, what they really mean is that workers free ride less and that there are lower costs of the decision making. The concept of efficiency as I use it in this paper thus relates to these two dimensions, which is part of what Williamson (1981) calls the third level of organizational efficiency – the efficiency of internal organization of labour and authority. The efficiency of an organizational structure is not assessed in relation to some global category (such as Pareto efficiency), but in the comparative institutional terms (Coase, 1964; Williamson, 1975, 1981, 1985, 1989, 1991; Alchian and Demsetz, 1976, 1979; Demsetz, 1991; Jensen and Meckling, 1976, 1983; Fama and Jensen; 1983). In a nutshell; LMFs are relatively inefficient if the authority structure within LMFs discourages the efforts of workers more than the structure in CMFs, and/or if the democratic decision making process incurs higher costs than the top-down authoritative process.[6] The Efficiency Branch insists that the paucity of LMFs supports this propositions.

In this section I show that the theoretical link between the efficiency and prevalence has its beginnings in Alchian's (1950) seminal paper *Uncertainty, Evolution, and Economic Theory*. Alchian established the evolutionary link between profitability and prevalence to show that predictions about economy can be made within the neoclassical framework. I show that this argument was later rather uncritically adopted by the Efficiency Branch to establish the correspondence between the paucity of LMFs and their relative inefficiency.

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[6] These claims have already been widely disputed on both theoretical (Dow and Putterman, 2000; Dow, 2003; Weitzman and Kruse, 1990; Bonin, Jones and Putterman, 1993; Zusman, 1992; Pencavel, 1992; Schwartz, 2012) and the empirical grounds (Baker, 1988; Bonin et. al., 1993; Wagner, 1994). For the case of this paper I assume (an assumption that seems to be strongly supported in the literature) that no consensus is yet established around the debate about the efficiency of self-managed enterprise, and there are no conclusive arguments that it is inefficient. However, a brief look at the literature indicates that the situation might even be the opposite of what the Efficiency Branch suggests. Some suggest that LMFs are actually more efficient than CMFs (Hodgson, 1982; Bowles and Gintis, 1993; Dow and Putterman, 2000; Dow, 2003; Schwartz, 2012).

2.1 Alchian's and Friedman's Hypothesis

"The realization of profits is the criterion according to which successful and surviving firms are selected," so that "if all firms are slightly different […], those who have their fixed internal conditions closer to […] the optimum position [in a given environment] will have a greater probability of survival. They will grow relative to other firms and become the prevailing type […]" In general, in a competitive environment "the force of competitive survival [will] eliminate higher cost firms." (Alchian, 1950).

Alchian (1950) proposed an evolutionary solution to the marginal controversy in the 1930s and 1940s. He argued that the entrepreneurial intentions are irrelevant in order to predict the macroeconomic dynamics. The criterion of viability of a firm – and so the production decisions of the firms on industry level, and ultimately the behaviour of businessmen itself – is determined in relation to the viability of other firms. Profits that are necessary for firms' survival and reproduction are scarce, and so those firms that *better* comply with the profit maximization criteria can only realize positive profits. On competitive markets the impersonal forces seek to it that "those who realize positive profits are survivors; those who suffer losses disappear" (Alchian, 1950: 213). To paraphrase Alchian, even in the world of fools there would still be profits for those who are a bit less foolish, or just lucky. This position is clearly one of the comparative kind – survival of a firm depends on the *relative* foolishness of the firm. The prevalent behaviour, Alchian argues, will be the one that best complies with the marginalist criterion.

This insight is essential for the purpose at hand and worthy of more nuanced consideration. It suggests that the relative profitability determines the tendencies on the markets and ultimately determines the outcome, that is, the prevalence of the production behaviour on competitive markets. Alchian made this point in order defend the position that one may predict the direction of the change in an economy using the framework of the neoclassical theory of firm - by looking at the relative profitability of the behaviour between the competing firms, we can predict which behaviour will prevail. For example, when the real wages rise, *ceteris absentibus,* labour/capital ratio decreases. It is important to note here that the *ceteris absentibus* clause must also manifest in the open system for the actual phenomena that is the object of our analysis. The firms that employ more labour will become less profitable, therefore they will disappear from the

markets, *other things being absent*[7]. While Alchian aimed to provide a reason for successful predictions in the face of uncertainty, he indirectly defended the view that the prevalent firm behaviour is relatively profitable solution to the requirements of the competitive markets. The argument along these lines was also developed by Milton Friedman (1953). They both made the knowledge about the motives of businessmen redundant by employing the evolutionary metaphor, however they disagree about the qualitative outcome of the evolutionary processes on the competitive markets. In order to defend the profit maximizing hypothesis, Friedman (1953: 22) cites the process of "natural selection [that] helps to validate the hypothesis or, rather, given natural selection, acceptance of the hypothesis can be based largely on the judgement that it summarizes appropriately the conditions for survival."[8] The competition favours firms that manage to secure maximum positive profits, while others will eventually be eliminated from the markets. The prevalent firms will be the efficient firms, because inefficient firms are "unlikely [to] remain in business for long" (*ibid.*).

I showed that the early evolutionary argument by Alchian (1950) and Friedman (1953) defends the proposition that the prevalence of firm's behaviour indicates its relative profitability. It must be noted that such evidence is not empirical (or factual as Friedman calls its) nor analytical, because there is neither an empirical nor a definitional link between the prevalence and the profitability. The link is established on theoretical level that follows the natural selection argument (Vromen, 1996: 37). While for the purpose of Alchian's and Friedman's papers the validity of such 'evidence' is not actually relevant, it serves a paramount function in the debate surrounding the paucity of LMFs.

2.2 Does Paucity of LMFs Justify Our Belief in Their Relative Inefficiency?

"Those organizations survive that are able to deliver the activities or products at the lowest price while covering costs." "In [a competitive] environment, *observed* behaviour and institutions will tend toward the optimal because those far from it will continually tend toward extinction." (Jensen, 1983: 322, 331-2, my emphasis)

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[7] For example, the assumption *ceteris paribus* prevent the speculation that higher wages might lead to higher productivity of workers that may compensate for higher costs of production.

[8] This is an obvious point of departure between Friedman and Alchian. Friedman (1953) insisted that profit maximization results from the competition among the firms, while Alchian was careful to argue that positive profits are *sufficient* for survival, and that the globally optimal equilibrium might not result. This disagreement is irrelevant for the point of this chapter.

The proposition that the prevalent organizational forms are more efficient than their competing alternatives is the core proposition of the Efficiency Branch.[9] The adherents of the Efficiency Branch distance from the neoclassical methodology – all of the scholars are part of the New Institutional School (NIE), while it should be noted that not all proponents of the NIE are part of the Efficiency Branch - and study the internal structure of economic enterprise with a focus on ownership and control aspects of the firm. Instead of profitability, as was the case with Alchian (1950) and Friedman (1953), they discuss the efficiency of different structural arrangements. They cease to talk about the competition among 'black-boxes', but rather assume that there is selection for more efficient organizational forms.

Scholars within the Efficiency Branch believe that "widely *observed* organization forms are efficient because they are selected for" (Vromen, 1996: 79, my emphasis). The competition on the markets ensures survival of the organizational form that "delivers the product demanded by customers at the lowest price while covering costs. Variation in costs stems from a variation in contract structure, which varies from firm to firm" (Jensen and Meckling, 1976). Oliver Williamson takes a similar position. He relies on the "efficacy of competition to preserve a sort between more and less efficient modes and to shift resources in favour of the former" (1985: 22), while he is careful to note that it is *more* and not *the most* efficient organizational form that is selected for (ibid.: 35). Williamson and Ouchi maintain that over time "those integrations move that have better rationality properties [*i.e.* are more efficient] tend to have better survival properties" (Williamson and Ouchi, 1983: 389).[10] What all of them seem to assume (and only rarely expose in greater detail) is that the more efficient organizational form attains higher profits in relation to the less efficient form. The more efficient form spreads in the population of firms because other forms either imitate the efficient one by restructuring appropriately, or because less efficient forms die out by the means of bankruptcy. Differential efficiency of organizational forms causes their differential survival, and while efficiency is not the *only* case that is relevant for the prevalence of an organizational form, it is the *main* case.[11]

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[9] See Vromen (1996: 51-82) for a more detailed exposition of this position.
[10] Others within the Branch (Alchian, Demsetz, Hansmann and Arnold) take similar position.
[11] The point that efficiency is »the main case« is repeated by Williamson over and over again. See for example Williamson (1975, 1980, 1985, 1991).

The Efficiency Branch studies the dynamics on competitive markets through the 'efficiency-lenses' alone. This allows them to say that the dominant economic enterprise must continuously outperform, in efficiency terms, the marginal enterprise. If relatively prevalent, then relatively efficiency. In the light of the Thesis, if a theoretical framework predicts one form to be more efficient than the other, the prevalence of the first grants the empirical support to the hypothesis. As was briefly exposed in the introduction, the labour managed firms have historically been only a marginal phenomenon. And "it is no accident that hierarchy is ubiquitous within all organizations of any size" (Williamson, 1980: 35) because "simple hierarchy can do everything the peer group [LMF] can do and more" (Williamson, 1975: 54). Scarcity of LMFs implies their relative inefficiency. It should again be noted that there is no direct empirical or definitional link, while Williamson (and others) also do not predict novel facts *in this case*[12], which makes the notion of evidence somehow loose. It is established theoretically and is grounded on the evolutionary argument developed by Alchian and Friedman.

Arnold (1995) and Hansmann (1996) provide more contemporary attempts to link the paucity of LMFs with their relative inefficiency. Like his forerunners, Arnold (1995: ix, my emphasis) relies on the evolutionary hypothesis to show that "the policies, procedures, and organizational forms that are found in free enterprise systems *exist* or *persist*[13] because they are efficient". The paucity of democratic governance, he concludes, implies that it must be an inefficient response to the economic environment. Hansmann similarly argues that due to "market selection", "higher-cost forms of organization tend to be driven out of business by their lower-cost competitors" (Hansmann, 1996: 22). Hansmann argues that the inefficiencies of the participatory economic governance are reduced in situations where not many workers have to take the decision making positions, or where there is not much disagreement among them. Hansmann (1996: 91-2) says that "the most striking *evidence* of the high costs of collective decision making is the scarcity of employee-owned firms", and concludes that "if costs associated with

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[12] I do not claim that this is true for Transaction Costs Economics in general. Williamson (1985: 130; 1999) has repeatedly cited an example of the successful predictions of novel facts. The prediction of the change from U-form to M-form organization is supposedly an example of a success story (Williamson, 1991). If this is true, the general framework is granted the empirical support, which then supports TCE in the case of workers' management as well. These claims have, however, come under scrutiny. The empirical evidence has indicated some contradiction with the predictions of Williamson's framework (see Robert David and Shin-Kap Han, 2004; Carter and Hodgson, 2006).

[13] As will be clear later, the distinction between *exist* and *persist* is very important if not crucial. I can already tease the reader by saying that *existence* of an institution implies (at the very least) *persistence* and *emergence*.

collective self-governance were not a problem, employee ownership would be far more widespread than it is".[14] Because Hansmann defines the circumstances where we should expect more labour management, this allows for more nuanced predictions,[15] but the general point stands. Prevalence is taken to indicate relative efficiency. And because the nature of this link is theoretical, the strength of such evidence is conditioned by the validity of the evolutionary hypothesis. Efficient structures must necessarily prevail in the population of organizational forms.

2.3 Concluding Remarks

Organizational forms compete for prevalence on competitive markets. Jensen, Meckling, Williamson, Alchian, Demsetz, Arnold and Hansmann employ this logic in order to take prevalence of capital managed firms as the evidence for their relative efficiency against self-managed enterprises. In order to do so, they have to operate within the boundaries of *ceteris absentibus* and assume that all other potential intervening factors are absent (or negligible) that might explain prevalence independently of efficiency considerations.

But we do not live in the world of 'everything else being absent'. If there are other causal factors that are relevant for organizational demography, the Thesis comes under attack. In the next section I illustrate that it follows from the evolutionary theory that the efficiency-explanation should account for *both* survival and emergence of enterprises.

3. The Evolutionary Argument Reconsidered: An Incomplete Conception of Evolution

The theoretical discussion on labour management is not anywhere near consensus. One side advocates it on the basis of both, the normative and the efficiency applications. The Efficiency Branch on the other hand claims its inferior efficiency in relation

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[14] From what Hansmann is saying it is clear that the concept of efficiency in the Thesis (if relatively prevalent, then relatively efficient) is very narrow – Hansmann suggests that paucity of LMFs implies higher costs of democratic decision making!

[15] Williamson's framework does not allow such predictions, because it predicts a universal inefficiency of LMFs. Hansmann's hypothesis is more easily checked against the data, and so potentially refuted. The problem is, however, that the predictions of his framework are not fully compatible with empirical data. The success of Mondragon and the workers' buyouts of financially troubled capitalist enterprises counter his predictions (see section 3.2.2). Thus it would be difficult to claim that his framework complies with Lakatosian or even Popperian ideal.

to CMFs. If we suppose that LMFs may be at least as efficient as CMFs, it remains to be explained why are there so few of them.

"The basic dilemma is this: If producer cooperatives mitigate the disabilities that many social scientists and social commentators associate with Authority Relation, why is the record of producer cooperatives so weak?" (Williamson, 1985: 265)

Taking the paucity of LMFs as factual, the dilemma may be solved in many different ways. One way to solve it would be to establish a consensus on the theoretical and empirical level. If LMFs are somehow proven to be relatively inefficient, there is no dilemma - the Thesis stands. If LMFs are somehow proven to be relatively efficient, however, this resolves the dilemma because it indirectly undermines the validity of the Thesis. The lack of consensus in the literature on the issue, and the fact that I am in no position to claim or defend one, I will rather try to solve the dilemma by going directly after the theoretical support for the Thesis. I will be interested, therefore, whether the prevalent organizational modes must necessarily be more efficient solutions.

In this section I argue that the Thesis is the result of the misconception of evolutionary dynamics. In most arguments developed, the Efficiency Branch assumes that relative prevalence is reducible to relative survival of an organizational form. I show that this misconception has its roots in the adaptationist programme of the early evolutionary biology. Next, I show that the natural selection operates through both, differential survival and differential birth. In this section I also consider the empirical data on organizational demography, to see where to search for an explanation of differential prevalence between LMFs and CMFs.

3.1. The Efficiency Branch and the Adaptationism

The Efficiency Branch adopted Alchian's evolutionary argument in order to account for the prevalence of the capitalist enterprise. But they have done so in a rather careless way. "The operation of alleged selection pressures is […] neither an object of study nor even a falsifiable proposition but rather an article of faith" (Granovetter, 1985: 503). The idea that evolution favours CMFs because they are efficient (adapted) solutions to the requirements of the markets (environment) has its origins in the so called adaptationist programme of the evolutionary biology in the early 19th century. Some of the early attempts explained the prevalent traits in a population by deviating from

strictly Darwinian understanding of the evolutionary process. Some of these attempts resulted in the infamous 'adaptationist programme'. Adaptationists consider natural selection as the most important *cause* of the evolution, a cause that shapes a population continuously towards the state of global or local optimality. They do not necessarily deny other evolutionary forces. The essential characteristic for the purpose of this paper is that the predictions according to natural selection under the *ceteris absentibus* clause yield predictions that are good enough approximations of the evolutionary outcomes in the open systems (Sober, 1987).

The Thesis proposed by the Efficiency Branch is characterized with the adaptationist flavour. The prevalence of the hierarchical mode of economic governance supposedly indicates better adaptation – adaptation to the requirements of the competitive markets. They insist that the efficiency is not the only factor of prevalence, but that it is the main factor, and as such sufficient to understand the organizational demography on the long run. A relatively efficient organizational form necessarily prevails. Therefore, *if a prediction on the basis of the efficiency framework complies with the actual prevalence of an organizational form, this supports the hypothesis that the prediction is derived from.* The following may illustrate this point. Williamson (1980: 35) maintains that "historical evidence [i.e. *enduring paucity*] disclose that nonhierarchical modes are mainly of ephemeral duration [i.e. *have low survival rate*]"; thus assuming that the survival of an organizational form determines the relative prevalence of a form. Survival is, in turn, reduced to efficiency; "those organizations *survive* that are able to deliver the activities and products at the lowest price while covering costs [*i.e.* the efficient organizations]" (Jensen, 1983: 331). The differential efficiency supposedly drives the evolution of organizational forms. It is this proposition that resembles the adaptationist programme, and it is this proposition that allows them to infer relative efficiency from relative prevalence. The evolutionary argument in support of the Thesis is, however, incomplete.

In 1979, Stephen Jay Gould and Richard Lewontin wrote the paper *The Spandrels of San Marco and the Panglossian Paradigm: A Critique of the Adaptationist Programme* and opened a serious contemporary debate on the issue of adaptationism. They have reminded us that *natural selection itself* does not necessarily promote organisms with efficiently

adapted traits.[16] For example, if the birth rate of a relatively ill-adapted individual sufficiently exceeds the birth rate of a relatively well-adapted individual, the former will prevail in the population. Elliot Sober (1993) also deals extensively with the explanation of the prevalence of a trait in a population, and similarly insists that both differential survival and differential reproduction rate *jointly* contribute to differential prevalence of a trait. He argues that, contrary to what the adaptationist maintained, different causal factors are relevant for the prevalence of a trait, which makes it very difficult to infer one hypothesized – even if the main – factor from the prevalence itself. That is, if one trait prevails, it does not necessarily prevail because it has a higher biological fitness. The following example may help to illustrate this point. Through mutation, trait X is introduced in the population of traits Y. We develop a theory that argues that X makes an animal faster, thus helping it escape the predator. (Assume for the purpose at hand that death from a predator is the only possible cause of dying.) Through time, we observe that X is spreading relative to Y, until gradually most of the animals are endowed with X. Can we infer higher survival rate (greater speed) from the prevalence of trait X? Even if we neglect the influence of drift, pleiotropy, or other possible causes of evolution outside natural selection, this inference is problematic. Say that X - in addition to its influence, whatever it may be, on the survival rate - *doubles the fecundity* of the individuals endowed with X. Since natural selection always favours higher birth rate, the mutated trait could prevail in a population despite the neutral or even *detrimental* effect of X on the speed of an animal. We cannot infer survival rate from prevalence, simply because there is an alternative cause of prevalence than the differential survival.

3.2 Some Empirical Qualifications

"The number of LMFs at any point in time […] depends on past rates of creation and destruction as well as past rates at which KMFs have become LMFs, and vice versa. […] Understanding these processes is therefore an important objective in explaining why LMFs remain rare." (Dow, 2003: 207)

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[16] In addition to this, they also disputed the idea that evolution can be reduced to natural selection itself. Evolution, as emphasized by Darwin himself, is much more than natural selection, and we should not presuppose that the observed trait is the outcome of the gradual adaptation to the requirements of the environment. Pleiotropy, mutation, drift and migration are only few examples of the evolution of a trait without natural selection.

By analogy to the discussion on adaptationism above, similar concerns arise with the evolutionary argument that underlies the Thesis. The empirical data about the organizational demography – namely the populational dynamics of the democratic and capitalist enterprise - help us to see that survival rate is not by itself sufficient to understand the paucity of LMFs and prevalence of CMFs. I introduce limited yet telling data on (i) the emergence and (ii) disappearance in this subsection.

(i) The birth rate serves the analogy for the unequal rate by which capitalist and democratic enterprises are formed, that is, how often they emerge. Economic enterprises can be created *de novo*, through novel assemblage of technologies and inputs that were previously not combined. The novel creation of workers' managed firms has been far below the creation of capital managed firms. Aldrich and Stern (1983) show that throughout the history, the creation of workers managed firms has represented only a small fraction of the total number of economic enterprises that are created. The birth *rate* is increasing - total number of formations divided by the number of enterprises already in existence increased at the end of 20th century, and even overcome the birth *rate* of CMFs (Ben-Ner, 1988). However, the *absolute* discrepancies of birth between LMFs and CMFs remain large. In the past and today, LMFs are much less often created than CMFs (Dow, 2003; Perotin, 2006; Podivinsky and Stewart, 2007; Arando *et. al,* 2009). Podivinsky and Steward (2007) find out that on every LMFs that was created in the period between 1976 and 1985, 1000 CMFs were created. The empirical evidence thus indicates that "the creation of new KMFs far outpaces the creation of new LMFs in all years and in all Western economies", thus labour managed firms "are rare because in absolute numbers they are created much less often than KMFs" (Dow, 2003: 208,227).

An economic enterprise can also come in existence with transformation; an existing form may be transformed in a different type of organizational mode when the source of authority, the objectives, or the internal organization are altered (Ben-Ner, 1988). Transformation is the other side of the degeneration coin – degeneration of LMF is its transformation into a CMF. Empirical evidence (Ben-Ner, 1988, 1988b) shows that LMFs often degenerate into CMFs – CMFs often emerge from LMFs. The opposite, however, is not true (Dow, 2003: 213). The transformation of LMFs into CMFs was found to be significant especially in taxi-driving cooperatives, plywood cooperatives, and barrel-making cooperatives (Bonin et. al., 1993). LMFs degenerate in CMFs often,

which implies that CMFs are created often through transfer or transformation from LMFs. The reverse is not true. While some LMFs are formed from unprofitable CMFs, "the majority of [LMFs] in existence were created from scratch" (Bonin et. al. 1993). Overall, LMFs more often degenerate into CMFs than vice versa (Ben-Ner, 1988, 1988b; Bonin et. al., 1993; Dow, 2003). Thus, transformation and transfer both contribute to the relative paucity of LMFs.

(ii) The survival rate serves the analogy for the disappearance of organizational forms *that were already in existence*. An economic enterprise may disappear through transformation. This was already taken in consideration above. An organizational form may also die out for the financial reasons. This is commonly designated as the survival of a firm and is one of the more reliable indicators of the efficiency of an organizational structure. The evidence that is available about the survival of labour managed firms suggests that they survive more commonly than capital managed firms (Bonin *et. al.* 1993; Ben-Ner, 1988; Staber, 1993; Perotin, 1997; Dow, 2003 Zanotti, 2012). The self-managed enterprises within the Mondragon group, for example, have excellent survival record with practically no demise (Whyte and Whyte, 1989). Long-established LMFs have usually much greater survival than comparable CMFs (Bonin et. al., 1993), while this also applies to the young LMFs (Cornforth, 1983). Dow (2003: 227) concludes that "LMFs are not rare because they fail disproportionately often. Once created, they appear robust".

The data suggests that LMFs have higher (or at the very least equal) survival rates, while they are more often degenerated into CMFs. CMFs are also more often created from the scratch. This leaves us with the following empirical proposition: CMFs and LMFs go bankrupt to a largely similar degree, while the first are formed much more often than the second. Thus, to explain the differential prevalence, we should find the explanation for the difference in the emergence between LMFs and CMFs.

3.3 Concluding Remarks

I have argued that the evolutionary argument underlining the Thesis resembles the adaptationist ideas. The criticism of the adaptationist programme extends to the Thesis employed by the Efficiency Branch. A brief look at the empirical data reveals a complicated story behind the organizational demography, and suggests that we should find

the explanation of the differential formation rates. Do the incentive scheme and the costs of decision making explain the lower emergence rate of LMFs?

4. An Attempt to Solve the Dilemma: Is Differential Formation Independent of Efficiency?

From the evolutionary metaphor, it follows that the differential formation between LMFs and CMFs is relevant factor of their relative prevalence, while the empirical data shows that it may even be the crucial facto to understand the paucity of LMFs. Now if we assume, for the sake of the argument, that differential survival implies differences in efficiency of an organizational structure, we should also provide a hypothesis that explains higher formation of CMFs in terms of their superior efficiency, if we are to accept the validity of the thesis.

While the Efficiency Branch is largely quiet on the emergence side of the story, Williamson (1975, 1985, 1991) explains higher formation rate of CMFs. In this section, I argue that his explanation does not do justice to the behavioural and environmental assumptions of his own theoretical framework. I argue that when individuals contract in the opportunist manner, this does not necessarily promote more efficient organizational structure. The reason is that certain interest groups (owners of the capital, highly qualified workers, and the existing members of workers' cooperatives) can appropriate higher individual profits – higher *personal efficiency* - in the capitalist enterprise independently of its potential lower technological efficiency.

4.1 Formation of Efficient Forms: Williamson's Hypothesis

Alchian's (1950) evolutionary argument does not need the visible hand to promote profitable firms in the circumstances of uncertainty. Alchian (*ibid.*: 220, my emphasis) is careful in saying that "the *observed prevalence* of a type of behaviour depends upon both [the] probability of viability [survival] and the probability of the different types being submitted to the economic system", but goes on to disregard this point as potentially problematic by saying that "there is much evidence for believing that these two probabilities are interrelated", and that even if the probabilities are not highly correlated, the aggregate behaviour would shift in a predictable way towards the more efficient solutions. His account of evolution on competitive markets ultimately relies

on the selection pressures to promote profitable firms in the population. The Efficiency Branch largely followed Alchian's reliance on the selection forces of competitive markets. On few occasions, however, one can find statements that indicate that "the fact that [the workers' controlled enterprise] *seldom arises* out of voluntary arrangements among individuals strongly suggests that co-determination or industrial democracy is less efficient than the alternatives which grow up and survive in a competitive environment" (Jensen and Meckling, 1979: 473, my emphasis).

Williamson provides a causal link between emergence and efficiency, and maintains that the intentional explanation helps to explain how more efficient organizations arise.[17] "The ultimate choice of governance structures requires balancing the costs and benefits of these alternative governance systems" (Joskow, 1991: 125). Governance structures are chosen on the basis of their relative efficiency. Thus, the differences in the formation rates of LMFs and CMFs can and should be explained by the choice of boundedly rational individuals who are able to recognize relative efficiency of different organizational forms. The full argument in support of the Thesis would in this case be the following. Efficient organizational forms are more often introduced in the population of firms that the less efficient forms, and the less efficient forms that find a way into the markets are sooner or later eliminated by the more efficient forms.

Criticism was raised against the argument that boundedly rational individuals can infallibly recognize relative efficiency of an economic enterprises. "If agents cannot cope with contracts featuring complex contingencies […], it is doubtful that they can select in advance an efficient decision making procedure to use in adapting to future circumstances" (Dow, 1987: 23). Information impediments, constraints on rationality, and complexity of the environment are some of the core pillars of the New Institutional Economics framework and do not allow an infallible prediction about what organizational structure is more efficient in future environmental contingencies.

If one thinks about setting up businesses, how do individuals actually choose the form of business, presumably that they try to choose the more efficient one? That is, how do they *know* that workers will invest more effort and that the decision making is

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[17] These attempts are scattered in the literature (see for example Williamson 1975, 1981: 574, 1986, 1987, 1991). Governance structures are conceived as implicit or explicit contractual relationships (Williamson, 1979); the choice for relatively efficient governance structure by opportunist individuals results in preferable contractual relationship, or the more beneficial contractual relationship manifests in relative efficient enterprise. Williamson (1975, 1985) remains unclear about what is the actually the case.

cheaper in CMFs? They may learn this from studying the organizational theory. The emergence of an organizational form would in this case not be the evidence for the theory that CMFs are more efficient, but rather the manifestation of the hypothesis in a performative sense – theory would not explain, but breach the epistemological boundaries and *create* the higher emergence of CMFs.[18] Contracting individuals could also look at the empirical records and decide for the capitalist enterprise on the basis that is simply more prevalent than the labour-managed enterprise.[19] Such explanation obviously begs the question; it assumes that prevalence indicates efficiency, while Williamson is actually trying to *explain* why prevalence indicates efficiency. He is trying to explain differential formation of organizational forms with the deliberate choice of the more efficient structures, but would have to assume that the prevalent organizational structure is the more efficient organizational structure. This would reintroduce the initial question: Does selection on the markets eliminate the inefficient, and promote the efficient forms? Last but not least, the question opens whether individuals are actually interested in more efficient organizational form, or do they engage with the enterprise that promotes their personal interests better? The appropriability hypothesis argues that it is the former, and suggests that opportunist contracting is independent of the technological efficiency of the organizational structure that is manifested by the contract.

4.2 Formation of Inefficient Forms: The Appropriation Hypothesis

"[A] method of production does not have to be [more efficient] to be *adopted*; innovation depends as much on economic and social institutions." (Marglin, 1974: 64, my emphasis)

"While transaction cost economics admit to the need for a more fully developed theory of the selection process, it asks that selection arguments be applied symmetrically. If

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[18] See MacKenzie (2008) on the performativity of economic theory.

[19] Many scholars have argued that agents adjust their preferences in favour of the capitalist enterprise because of the mere familiarity with this form of economic enterprise (Damachi and Seibel, 1982; Gamson and Levin, 1984; Elster, 1989; Doucouliagos, 1990; George, 1997; Schwartz, 2012). The 'familiarity principle' implies that preferences can be reinforced and even acquired by a repeated exposure to stimuli (Zajonc, 2001). It may help to explain reluctance - especially of workers - to join labour managed firm, which enduring paucity makes it a rather marginal phenomenon. This has some empirical support. In his extensive empirical study of American plywood cooperatives, Roeber's (1974) found out that at first adverse workers had re-adapted their preferences through experience of working for a cooperative.

efficiency outcomes are purportedly defeated, what is the selection process by which this defeat is realized?" (Williamson, 1987: 623)

Marglin insists that emergence may depend on social as well as the economic institutions, implying that the efficiency can be defeated. Williamson asks what the selection process that promotes (potentially) less efficient organizational forms is? The main aim of this section is to show that higher formation of capitalist enterprise is independent of its technological efficiency. The appropriability hypothesis provides an explanation that helps me in defending this claim. The benefits of an organizational structure flows, at least proximately, to those in control. Thus, control in itself is desirable (Marglin, 1974). CMFs make possible appropriation of higher benefits for specific interest groups that prefer CMFs *independently of their technological efficiency*. I introduce two ways in which the appropriation hypothesis helps to explain the empirical qualifications from the section 3.2. The hypothesis (i) provides a plausible explanation of why CMFs are created more frequently from the scratch, and (ii) suggests why LMFs often degenerate into CFMs. These are two plausible reasons why CMFs prevail on the markets, while LMFs remain a marginal phenomenon (Marglin, 1974, 1984; Bowles and Gintis, 1976; Putterman, 1982; Horvat, 1982; Ben-Ner, 1988; Dow, 1993, 2003).

4.2.1 Novel Creation: Access to Finance and Labour

"The formation of a new firm requires *premeditation and planning by entrepreneurs*, the assumption of the risk of losses, *the provision of capital*, and the *bearing of set-up costs*." (Ben-Ner, 1988b: 289, my emphasis)

'*Premeditation and planning*' demands qualified labour, which is in limited supply for LMFs. '*The provision of capital*' and '*bearing of set-up costs*' requires either workers' own assets, which are limited due to their low endowments, or investors' willingness to invest into democratic enterprise, which is similarly limited. I argue that the appropriability hypothesis helps to explain qualified labour and start-up capital are in shortage for a self-managed enterprise, but not for the capitalist firm. Because both are necessary for the novel creation of a firm (Ben-Ner, 1988b; Dow, 2003), this helps to explain differential emergence between two forms of economic governance. I start with the access to financial capital, and continue with the access to skilled-labour.

Workers face limited wealth and liquidity constraints (Bowles and Gintis, 1996: 95) and are generally averse to risks; they prefer small wages with lower variance to higher

wages with higher variance (Ben-Ner, 1988b). They must thus access the capital by external sources - leasing, debt finance, or equity finance. While the "access to finance is crucial to firm formation" (Dow, 2003: 236), LMFs cannot rely on leasing only, and have problems in accessing both debt and equity finance. In the literature, the area of finance has been recognized as one of the most promising places to search for the explanation of low novel creation of labour managed firms (Bonin et. al., 1993; Bowles and Gintis, 1994, 1996; Putterman, 2006; Dow and Putterman, 2000; Dreze, 1993; Dow, 2003). I will pass over in silence the problems with leasing in debt finance, and show why capitalist enterprise has an easier access to equity finance.[20]

Equity financing is raising capital by selling the shares of an enterprise. Workers within self-managed enterprise could finance their activity and reallocate risks by selling non-voting equity shares, and retain their control over the company. Investors would buy a share of the company and profit from its increase in value (or loose from its decrease in value) – like with voting shares, they would receive the dividends. The efficiency of an economic enterprise does not depend on the control of the capital providers. The equity holders within the prevalent capitalist enterprise usually do not have any real interests to participate in the decision making, because their shares are often small and stakes relatively insignificant. The position in the literature is that shareholders do not require to exercise control in the firm for the firm to be efficiently governed (Putterman, 1988). Non-voting equity is thus an alternative that would not radically change the way economic organizations are conventionally governed.

Despite this, the data shows that "there are few documented cases in which workers' cooperatives have used non-voting equity" (Dow, 2003: 248; see also Bonin et. al, 1993). The explanation that was proposed in the literature is that this is so because workers will not abide to the interests of the shareholders like the managers do in a capitalist enterprise. Non-voting equity owners have no control over the decision process within a LMF, and so no control over the distribution of the revenue stream. Workers may manipulate the residual so to benefit themselves and not the owners of the non-voting shares. Dividends may be substantially lowered by workers, who may rather invest into high wages, good working conditions, and other perks that benefit themselves, but lower the benefits of the investors.

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[20] In order to defend my claim, it is sufficient to show that one of the three is limited for LMFs independently of their efficiency.

Investors' interests are better served in a capitalist enterprise, despite its *potential* technological inefficiency. Marglin (1974, 1984) provides an explanation along these lines. He argues that bosses in the capitalist enterprise distribute and appropriate larger share of the revenue stream than a capitalist in the workers' controlled enterprise could, which is the main reason why the former flourish in relation to the later. The reason is that in the capitalist corporation, owners incentivize managers to increase the dividends by other means than increasing the efficiency of the enterprise. Managers may reduce wages, outsource low-skilled labour, automatize production and substitute less skilled workers, intensify the discipline with more intrusive inspection etc. He suggests that even if workers' participation increases the productivity of an economic enterprise, the investors may appropriate *higher* benefits in the less productive enterprise, because the fruits of potential technological improvements in LMFs go to workers.

This argument has been developed further in a more contemporary literature. Dow (2003) provides an example of how rent-appropriability hypothesis prevents the creation of LMFs. Consider a non-contractible relationship-specific investment that workers try to access in order to start their business. The necessary investment is not redeployable to the alternative use, making leasing infeasible. Say that workers are unable to raise the capital from personal savings, or simply unwilling to do so because of their risk aversion. Assume further that debt finance is costly because workers lack collateral to secure their investment. Workers may turn to non-voting equity finance. Dow argues that workers would face difficulty in accessing this tapping this financial resource, if a comparable project is available for the investors in the capitalist-hierarchical enterprise. The reason is that capital managed firms "are an attractive vehicle for the appropriation of entrepreneurial rents, while LMFs are not" (Dow, 2003: 210). The argument is, again, that the rents are much more easily appropriable in CMFs, where the ultimate control right resides on owners of the capital. The investors will not be willing to invest their resources in workers' controlled firms, because the *ex post* distribution of quasi-rents cannot be known prior to the investment and cannot be specified in the incomplete contracts. Workers, in their right to control over the residual, will probably withhold greater share of the revenues and leave less for the investors. Therefore, LMFs as

"organizations in which ex ante participation constraint is violated will not flourish in the long run regardless of their potential ex post productivity" (Dow, 1993a: 119).[21]

The appropriability hypothesis ultimately depends on the values that investors hold. Assuming, quite reasonably, that in general the pecuniary interests prevail over the democratic values, we can conclude that investors will not be interested in buying non-voting equities in order to provide start-up capital to workers when a viable alternative investment in a CMF is available. The empirical data supports the hypothesis (Ben-Ner, 1988b; Bonin, Jones and Putterman, 1993; Dow; 2003). I follow Bonin, Jones, and Putterman (1993: 1316) in their conclusion that "the weight of theoretical reasoning and [empirical] evidence convinces us that the explanation of the relative scarcity of [LMFs] lies in the nexus between decision making and financial support." The rent appropriation hypothesis is an important explanation of the low novel creation of LMFs. Importantly, this explanation is independent of the technological efficiency of an organizational form (see for similar conclusions Marglin, 1974; Dow, 1993, 2003; Bonin et. al. 1993; Ben-Ner, 1988b).

The novel creation of an organizational forms does not depend only on access to finance but is conditioned by another factor of production. "What must happen in order for an LMF to be created? Most obviously, a number of labor suppliers who agree on the merits of a common project must be assembled" (Dow, 2003: 208). Labour is necessary to start the business enterprise, and as such conditions the emergence on an economic enterprise. Mixed labour-coalitions are necessary for the novel creation of LMFs (Margin, 1974; Ben-Ner, 1988; George, 1997). The reason is that in today's highly specialized and technologically advanced economy, manual and low-skilled workers often lack the necessary skills, and diverse profile of labour is necessary within the LMF coalition in order to efficiently deal with the aforementioned areas of business. The appropriation hypothesis provides a viable explanation why "self-interested [professionals and highly-skilled labour] will not choose to establish a worker-owned firm and share entrepreneurial profits with others, if the establishment of a capitalist firm is a viable alternative." (Ben-Ner, 1988b: 290).

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[21] See Olson (1965), Ben-Ner (1988b) and Rosenberg and Birdzell (1986) for their version of the appropriability argument. They point out that despite the potential efficiency gains of workers' cooperatives, investor-managed firms are more likely to attract the start-up capital because of easier appropriability of rents. Rosenberg and Birdzell (1986: 316) conclude that one might expect more CMFs because far more of them are likely to be born, and that more are born because the rent is more readily appropriable.

Marglin's (1974) argument extends, if pushed, to explain why managers are likely to favour the employment in a capitalist firm. The reason is that they can appropriate larger share of the pecuniary and status pie there than in a LMF. In a capitalist enterprise, managers receive the control rights and authority from the absentee owners. Owners appropriately incentivize managers in order to make unpopular decisions, which increase profits – and so dividends -, but do not necessarily lead to higher technological efficiency of the enterprise; for those in control (capitalists and managers), the situation is often a win-win situation. Fiat might be exploited to increase the residual by decreasing wages, imposing higher production quotas, neglecting health issues, lowering the employment etc.

In the workers-manged firms, managers face two-dimensional loss; higher wages and higher status are more easily appropriated in CMFs. The first reason why managers are largely reluctant to form LMF coalitions because their remuneration decreases substantially. Wage differentials are usually set to a maximum ratio, which decisively limits the managerial pay. Wage differentials are usually around 3:1, in biggest and labour-wise more diverse corporations this ratio raises. For example, in Mondragon group, this ratio is 6:1 (Morris, 1992). In capitalist enterprises, these numbers raise up to 500:1 (source: PayScale). In addition to loss of income, managers also lose professional and social status by working in LMFs. There are two sides to managerial status in CMFs. First is the status on the workplace; workers' managed enterprise largely undermines the traditional authoritative function of managers and "dramatically alters the role and status of professional managers" (George, 1997). True, management is given control rights in order to efficiently govern the enterprise, but LMFs usually establish supervisory committees made up of worker representatives to control for the abuse of power (Horvat, 1982). Managers are directly responsible to workers, and cannot make opportunist decisions that would benefit them individually, but harm the workers. If they do, they are promptly removed. Managers become agents of the workers, which undermines the traditional class distinction and takes away their status within the workplace. Second is the status outside the workplace. As was suggested above, the wages of professionals in CMFs skyrocket relative to manual workers' wages, and allow the former high ceremonial standard of living. In addition to the fact that managers can afford less 'things', they can afford less 'status'. Social status is a positional good that can be built through - what Veblen (1899) called - 'conspicuous consumption'. Conspicuous consumption relates to spending money on luxury goods and services of which the

'unserviceability' functions to signal wealth and economic power. Often, signalling and economic power are valued in itself, and not for the instrumental functions. Thus, LMFs decrease the material and the ceremonial standard of living.

Marglin's early account of the rent-appropriability hypothesis focuses on managers and investors, but the same applies to other professionals. Highly payed labourers are disincentivized to join LMFS because the low-wage differentials affect them in a similar way they affect managers. So long as they are primarily motivated by the pecuniary rewards and status, which they derive from position in the workplace and acquired wealth, they will prefer to join CMFs. One example of highly-skilled labour being reluctant to join a LMF coalition was when the Mondragon group established its own cooperative hospital. The cooperative hospital had difficulties forming coalitions with doctors that would be willing to adjust to the wage-differential ceilings (Gilman, 1983).

Low-skilled workers have most to benefit by becoming members of LMFs. But it is also true that they may perceive high opportunity costs in forming LMF coalitions. This, however, does not imply that there *actually* are such costs. Costs may arise if manual workers are expected to get familiar with the necessary institutional and technological requirements. But this should not be expected from them; different profiles of labour should form LMF coalitions and each should have a role that is suitable to his or her profession. The problem is that these highly-skilled labourers are often reluctant to involve in a novel creation of a LMF, or even join an existing LMF. One could push the argument and claim that some opportunity costs remain for the workers; regardless of whether the coalition consists of diverse profiles of labour, setting up an economic enterprise requires time that could be productively employed for wages in CMFs. While there may actually be immediate costs for the delayed wages by workers – and while this may actually play a role in their decision not to start a LMF -, this does not imply that the formation of LMFs actually incurs net costs (inefficiencies) on workers. Costs are compensated with the benefits for workers as the members of LMFs (Ben-Ner, 1988).

In a nutshell, non-voting equity capital and highly skilled labour may be limited for LMFs because CMFs serve better the interests of the suppliers of these production factors, which are necessary to start the business enterprise. This may help to explain the discrepancies in the novel creation between LMFs and CMFs. Another means of organizational emergence has to be considered – transformation of LMFs into CMFs.

4.2.2 Transformation: Members' Opportunism

Beatrice Potter (1890) long ago asserted that workers' managed firms, once in existence, would inevitably degenerate by putting on restrictions to membership and by hiring wage-labour instead of new members of the cooperative. Until today, this remains a widely discussed issue. Indeed, empirical evidence suggests that LMFs frequently transform into CMFs. Degeneration is an important factor of the organizational demise, and is relevant in our exploration of the populational demography. The appropriability hypothesis suggests that in pursuit of the expected fruits of future success of a LMF, *members of LMFs hire wage-workers, or replace retired members with wage-workers instead of hiring new members*. Doing so, they secure higher share of the residual, which otherwise they would have to divide among new members. The possibility to hire wage-workers provides a possible explanation of the degeneration of LMFs into CMFs.

I have defined a worker-owned firm as an organization in which the ultimate right to decision-making rests primarily in the hands of the workers. The workers that have control rights in a LMF, are *members* of the LMF. They can hire new members of the cooperative, or wage-labourers without control rights. Members, like owners of the capitalist enterprise, share profits and losses of the enterprise, whereas hired workers only receive fixed wages and are not entitled to the residual. Ben-Ner (1988b) develops a comprehensive theoretical framework that studies life-cycles of labour-managed firms. Members of a LMF have, at any point in time, the right to hire new members or new fixed-wage earners. Ben-Ner develops an account that shows why an increase in the profitability of workers' managed firms leads to the expansion by employing wage labourers rather than employing new members of the cooperative. The reason is that for the *existing* number of members, their income is maximized by behaving the same as capitalist who maximize profits. Income of a member consists of revenues minus competitive returns paid to the production factors that are not owned by the firm, which includes the wages of members and fixed wage earners. If they would hire another member, she would be entitled to the remuneration that is above the market wage, that is, above her opportunity costs of accepting a job at another enterprise. For this reason, the members may prefer to pay her the market wage – hire her for a fixed-wage – and enjoy the distributed fruits of her labour. The same holds when member retire or quit their jobs; if new members are hired, the expected future profits will be

distributed among more people, decreasing the expected net for existing workers. Thus, the decision to hire another member is a decision to distribute the net – that is, the difference between the income and the wage - among more members. This net may either be positive or negative, dependent on future prospects of the firm; thus the expectations of future business and the technological efficiency of an enterprise play an important role in this explanation.

Workers-managers of the profitable enterprises are thus incentivized to hire wage labourers instead of new members with control rights. The argument applies for the firm that is expanding and looking for new employees, or to the situation in which one of the existing members of a LMF retires or quits the job, and the replacement is sought. As a consequence, a worker-managed firm may experience a gradual demise; membership will decrease and limit to only few individuals when most of the previous members will retire or quit their job. Because of turnouts and retirements only few initial members will eventually remain in control "until a complete transformation into a capitalist firm has occurred" (Ben-Ner, 1988b: 300). Then workers' manged firm "will become a KMF in all but name" (Dow, 2003: 222).

Empirical evidence provides support to the hypothesis. Craig, Ben and Pencavel (1992) provided data on membership as a percentage of the employment in plywood cooperatives. They found a statistically significant trend that indicates the increasing employment of wage-workers. Berman (1982: 84-5) similarly finds that the plywood companies, once established as worker-managed, have rarely expanded by hiring new members; rather, wage-labour was employed in order to address for the demands of the markets. Finally, Ben-Ner (1988) observes that wage-workers occupy a large fraction of the workforce in the European self-managed enterprises. The appropriability hypothesis yet again provides a plausible account of the higher formation of CMFs, and may thus help to explain the relative paucity of democratic governance. Unlike the previous two explanations, the efficiency of self-managed enterprise plays a role in the explanation of LMF degeneration; but the opposite role that the Efficiency Branch would suggest - more efficient LMFs have higher chances of degeneration (Dow, 2003: 221).

4.3 Concluding Remarks

I have argued that the rational design hypothesis proposed by Williamson does not provide a strong enough account to explain the higher emergence of CMFs in terms of their superior efficiency. While the problems already arise in granting the proposition that individuals infallibly recognize the contractual relationship that leads to more efficient organizational forms, the main argument that I have proposed is that the opportunist contracting does not necessarily lead to technologically more efficient enterprises. It must be the case that the beneficial factors exceed the impediments that the formation of an organizational mode implies, if the mode is to be created (Ben-Ner, 1988b; Bonin et. al., 1933). When it comes to self-managed enterprises, we can find the setbacks in the reluctance of investors to invest into non-voting equity, in the aversion of professional labour to form LMF coalitions, and in members' opportunist hiring of the wage labour. CMFs enjoy higher formation rates because they enable opportunism for some powerful groups with vested interests in the capitalist enterprise. Ben-Ner (1988b: 289) argues that "strategic collections of self-interested individuals [….] design and redesign their organizations to best meet their interests". He shows that the efficient structures have higher formation rates *as long* as efficiency is "defined relative to members' goals" (1988b: 298), but maintains that this does not mean that efficiency is linked to the organizational form *per se*. "The nexus between [organizational] efficiency and selection forces is broken by appropriation obstacles" (Dow, 1987: 33). I do not claim to have provided *the* explanation of the paucity of LMFs. Other factors contribute to their lower formation relative to CMFs. Many remain unaddressed. But the appropriability hypothesis provides a plausible solution to the bewildering dilemma; LMFs do not have to be inefficient to be rare.

5. Conclusion

Organizational form with the capital owner on the top of the hierarchical pyramid, the so called hierarchical command structures have been, roughly since the end of 19th century, the prevalent institutional arrangement of economic production. But we should always try to keep our heads safely away from the Hume's guillotine. Whatever is, is not necessarily legitimized in being. Is paucity of LMFs justified? There are at least two ways in which we can try to justify the prevalence of an economic enterprise - economically and philosophically.

Economically, the paucity of democratic governance would be justified if capitalist firm would better employ resources in order to produce things that we humans strive for in order to meet our biological needs, or to satisfy our desire for ceremonial reasons. One way to argue that CMFs are more efficient is to develop theoretical arguments for inefficiency of LMFs. For the lack of such consensus in the literature, an alternative has been proposed by Oliver Williamson, Armen Alchian, Michael Jensen, William Meckling, Harold Demsetz, Scott Arnold and Henry Hansmann: the mere fact that LMFs are rare (and CMFs prevalent) indicates inferior efficiency of the LMFs (superior efficiency of CMFs). If true, *the paucity of LMFs would legitimize itself on the economic grounds.*

In this paper, I have questioned the proposition along these lines. I have argued that the fact that CMFs are prevalent does not necessarily imply that they are efficient. Again, it is important to be conceptually clear about what is meant by efficiency. If the Efficiency Branch is to defend their theory with the paucity of LMFs, hey have to show that the paucity implies lower efforts by workers-members and higher costs of the democratic decision making. The empirical data about the organizational demography indicates that we should focus on the differential emergence in order to explain the paucity of LMFs. Their lower emergence can be explained with the appropriability hypothesis, which suggests that the capitalist enterprise makes possible an easier appropriation of benefits for specific groups of agents. The explanation along these lines is independent of the efficiency of LMFs - *potentially* less efficient CMFs may allow higher rents and status for some agents than *potentially* more efficient LMFs. This provides a solution to the dilemma showing that the Thesis is false. Relative prevalence does not necessarily imply relative inefficiency.

Another way to justify the paucity of LMFs is to provide philosophical arguments for capitalist enterprise. I have avoided this path in this paper, but a brief look to the literature reveals strong arguments that argue for ethical superiority of LMFs over CMFs. Self-managed enterprise was defended on the grounds of equality (Miller, 1989; Plant, 1989), democracy (Dahl, 1970; Archer, 1996), inalienability (Elleman, 1992), human dignity (Skalicky, 1975; Elleman, 1992), and community (Walzer, 1983). Oliver Williamson (1985: 271) admits himself that the capitalist firm falls short of the Kantian imperative in that it treats workers as the means to the ends of the capital owners. I

will pass over these relevant arguments, which together with the main claim defended in this paper point me to the final remarks.

The '*what is, ought to be corollary*' that has been employed in the debate about the democratic governance has, in addition to purely intellectual relevance, imperative political implications also. If true, it would imply that CMFs prevail because they should prevail, competitive markets tend to promote the better adapted solution to the economic problem, and thus justify a conservative political attitude regarding this issue. If the claim of my paper holds, however, the political action *is* called for. The prevalence does not indicate organizational efficiency, and if LMFs turn out to be more efficient, they should be pursued by political means. Subsidies that provide the necessary start-up capital, raising awareness about the benefits of LMFs among the workers, educating citizens in order to overcome the present stigma on the self-management, changing the way workers are taught their profession, and other measures might all be justified. At the very least, the paucity of LMFs does not suggest that these measures are not justified.

Appendix 1

The early accounts on the labour and capital management discussed the firm from a perspective of the neoclassical methodology. Ownership and control had no relevance in the theory of firm; the main difference between workers' cooperatives and capitalist firms was that the first maximized the income per worker, and the second maximized profits. The quantity of production was the only variable, and efficiency was assessed in relation to the global optimal of Pareto optimality. The relevant question was: Will labour managed firm produce a quantity that makes it efficient? This changed with the rise of the New Institutional Economics (NIE). The firm was no longer a simple production function, but a bundle of ownership and control rights. The following four properties define a firm (Dow and Putterman, 2000):

• The right to appropriate the residual claims of the firm

• The property right over the net value of physical assets of the firm

• The right to transfer the bundle of rights

• The right to control the production decisions of the firm

The first three bundles are ownership rights. The right to appropriate the residual claims is the property right defined over profits. Profits are the net value of the revenues earned by selling a commodity with the costs of the capital (interests), land (rent) and labour (wage) deducted. The property rights over the net value of physical assets imply the right to the value of the factory, equipment and machinery, which are depreciated in the production process. The right to transfer the bundle of rights is the ability to transfer the bundle on mutually agreeable terms. NIE holds that an economic enterprise can only be efficient if the ownership rights are accompanied with the control rights (Alchian and Demsetz, 1972; Klein, Crawford, and Alchian 1978; Williamson 1985).

The fourth dimension are the control rights. Control rights must be defined in order to remedy the necessary incompleteness of the contractual relationship; to avoid exploitation of this incompleteness in self-favourable ways. There are different methods of control, but only two are relevant for the purpose at hand. One is the authoritative relationship or centralized monitoring set up by the owners of the capital, and usually executed by hired managers (Coase, 1937, 1989; Alchian and Demsetz, 1972; Jensen

and Meckling, 1979; Williamson, 1975). Another way is to implement a democratic mechanism of control (Dow and Putterman, 2000; Dow, 2003; Putterman, 2006). Doing so, an equal control is guaranteed over the issues that arise within the contractually unspecified domain either by the means of direct participation or representative democracy. When the participation is direct, workers have opportunity to personally influence decision making, by suggesting changes in the operation of the enterprise, or voting on the issues suggested by other employees. The representative system implies that workers influence decision-making indirectly, through an elected or appointed representative. The important point is that ownership does not imply control, or *vice versa*. The ability to disentangle the two introduces the possibility for workers to control the firm without their ownership over all the assets. Although some have proposed that the separation incurs costs (this is examined in the third chapter), there is nothing that logically links ownership and control.

There are roughly three main characteristics that define a workers' cooperative: (i) participation in decisions of the firm, (ii) profit sharing, and (iii) employee ownership (Bonin, Jones and Putterman, 1993). I take that participation in the decision making conditions the LMF. That is, as long as workers are in full control over the objectives of an enterprise and the distribution of its revenue stream, the enterprise classifies as workers' governed. The broad definition of workers' control implies equal decision-making rights about the decision made within the firms, independently of workers' skill, post, or capital contribution (Vanek, 1975; Bonin and Putterman, 1987). What are control rights? On one level, control refers to determining the objectives of the firm, the positions of the people within the firm (including the appointment of management), and their functions. On another level, control implies decisions about the conditions of work, the quality and price of the output, and the distribution of revenue stream among wages, funds and other investments. (Ben-Ner and Jones, 1995). While additional defining taxonomies were made in order to further classify different forms of control within the self-manged firms, it is not necessary to dwell into deeper conceptual issues that arise around the matter of control. Simply, labour managed firms (LMFs) are firms where control rights are held by suppliers of labour, while capital managed firms (CMFs) are firms where suppliers of financial capital have the control rights. Whenever I will use the terms 'workers' cooperative', 'workers' managed', 'workers' controlled', 'labour managed' or 'labour controlled' firm, and the like, the reader should take these as synonyms. Similarly, whenever I refer to 'capitalist firm',

'hierarchical enterprise', 'modern corporation' and the like, I have in mind an economic organization with hierarchical control structure.

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The lowest in the world and falling? Explaining the movements of income inequality in Slovenia during the financial crisis

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Abstract

Gini coefficient in Slovenia is one of the lowest among the OECD countries and some recent findings show that in the last decade it further declined, despite the period of economic crisis that normally contributes to its increase. In our article we build upon existing empirical and theoretical studies on the topic that examined the levels of income inequality of Slovenia and other OECD countries in the past two decades and provide statistically grounded explanations for the fluctuations in Slovenian income inequality during the crisis by employing cointegration analysis. We calculate a series of inequality indices (e.g. Gini, Mehran, Piesch, Theil) for our sample of SORS 1993-2012 data on Slovenian employed population and derive the decomposition of Gini coefficient by the source of income. By using cointegration analysis, we examine the interrelationship of Gini coefficient and numerous other macroeconomic variables (e.g. GDP, unemployment levels, inflation). We show that several macroeconomic aggregates and social variables are related to inequality indices, but, interestingly, not including the levels of unemployment, which we use as a main explanation of the trend in the Slovenian income inequality in times of the financial crisis. In conclusion we reflect on the findings and their consequences for research and policy purposes.

1. Introduction

During the last financial crisis and in its aftermath, the topic of social and income inequality, its determinants, and consequences gained a widespread popularity. Even though it has been the focus of research for many economists, Anthony Atkinson (2015), Joseph Stiglitz (2015a; 2015b), Steven Fazzari and Barry Cynamon (2013; 2015; 2016), Branko Milanović (2006), Thomas Piketty (2014) to mention just a few, the popularity outside the realms of academic world arrived with the publishing of the Thomas Piketty's work The Capital in the 21st Century.

The above mentioned authors have been using different approaches to measure inequality and have identified different determinants of it, but the underlying conclusion for all of them has been that regardless of different historic, institutional and macroeconomic settings, inequality is one of the inherent causes of the economic crisis of capitalism.

Jan Rivkin (White, 2015) offers a brief systematic overview and trend development of the broadly specified main determinants of inequality, some of which are also included in our analysis.

Firstly, he identifies a decline in bargaining power of unions and lower social classes (also Podgursky, 1980), a determinant that Herzer (2016) analysed on the case of the USA and concluded that despite some evidence to the contrary (e.g. Partridge, Rickman & Levernier, 1996), a unilateral negative relationship between the intensity of the bargaining power of labour unions and income inequality exists due to the changes in distribution of income that follow a decrease in union presence.

Secondly, Rivkin points out class divergence as an issue of entire society and not only of the directly affected lower and middle class, and he explains it as a consequence of a disintegration of connection between companies and communities. His stance echoes the work of John Galbraith (1972; 1973), according to whom companies have a social responsibility to participate in education of workers, to participate in a development of public and common goods and to be more involved in a community they are set in, as that would alleviate some of the pressure that lower and middle class are facing and simultaneously benefit companies involved in the long run.

Thirdly, with the introduction of Ricardo's theory of comparative advantages in international trade, the effects of globalization on inequality decline were believed to be positive, as wages in developing countries would increase for unskilled labour and stagnate for skilled labour, thus closing/decreasing the gap (The Economist, 2014; IMF, 2007). This theory, however, has often been criticised (e.g. IMF, 2007; White, 2015) – overall impact of globalization turned out to be positive in absolute terms, as living standard of everyone, including the worst off individuals in developing countries, improved, but at the same time the income gap increased as well. IMF (2007) published a report arguing that the impact of globalization can be divided into two parts; while trade globalization contributes to a decrease, financial globalization contributes to an increase in income inequality, while their cumulative impact is still smaller than the one of technological advances. Authors also argue that liberalization of trade barriers and emphasis on wider education and credit availability would mitigate negative impacts of globalization.

Fourthly, different authors (e.g. IMF, 2007; Cardoso, Paes de Barros & Urani, 1995; OECD, 2012), recognize education and educational opportunities as important determinants of income inequality. Cardoso, Paes de Barros and Urani (1995) observed a significant explanatory value of education in their analysis of unemployment and inflation on the case of Brazil in the 1980s, but it was mostly limited to long-term trends in inequality, and education failed to explain short term oscilations of inequality. Stiglitz argues that inequality of opportunities in the US (and indirectly also income inequality) is highly dependent on the income and education of parents, and social mobility is significantly smaller than in the rest of developed world. Others (Hendel, Shapiro & Willen, 2004; OECD, 2012) argue that an increase in general educational level of a country, if achieved without corresponding policies that ensure more equal distribution of education opportunities, increases inequality as it moves a portion of disadvantaged individuals into a pool of educated ones, while simultaneously decreasing wages for unskilled labour and increasing skilled labour wages, hence increasing the income gap.

Fifthly, Milanovic and Van der Weide (2014) explain their findings through the mechanism of 'social separatism', in which they assume that in a time of high inequality, the investments in public goods (e.g. education, health, infrastructure), which are essential for real income growth of lower and middle class, decline as rich prefer to keep the means for their own use, resulting in a further increase in income inequality. Anderson,

de Renzion and Levy (2006) warn that the extent and strategy of an increase in investments in public goods and its impact on poverty levels are highly dependent on the country, »the structure of its economy and its initial physical public capital stock«.

Joseph Stiglitz (2015a; 2015b) argues that the previously dominant belief that inequality is caused by the imbalance of power between workers and capitalists should now be replaced with the analysis of the relationship between debt holders and equity holders. He also argues that the distribution of wealth is more unbalanced than the distribution of income, as one part of the population inherited their wealth (capitalists), while the rest accumulated it through savings (workers). General inequality increases with an increase of wealth to income ratio, and it is sensitive to changes in a ratio between r and g, which is also one of the premises that Piketty builds upon.

Piketty (2014) argues that even though $r > g$ is an established assumption of most macroeconomic models, r (the net rate of return to capital) being larger than g (the growth rate of output) has potentially strong magnifying effect on inequality and causes an 'inherent contradiction of capitalism'. As Srakar and Verbič (2015) synthesize, the contribution of Piketty's analysis that mostly remains on a descriptive level is in its refusal to use mathematized economic models, while it still provides a systematic overview of the complexity of the issue. In light of rising disapproval of capitalism ensuing from the global economic crisis, his work also ignited a new wave of methodological pluralist and heterodox approaches to economics.

Anthony Atkinson (2015) and Fazzari and Cynamon (2013; 2015; 2016) argue that in order to decrease social inequality and with it correlated limited social mobility, policies, strengthening the progressive tax system, an implementation of the universal basic income, and widening of the social net should be implemented, governments should aim towards achieving higher employment, introducing careful changes in fiscal and monetary policies, enforcing institutional changes that would facilitate wage growth and higher gender, and class equality in income distribution etc.

Despite being a very stern opponent of income and social inequality, Ghosh (2015) acknowledges that a certain level of inequality in society is beneficial as it incentivises individuals to innovate, work harder and strive for progress, however she emphasizes there is a very thin line between acceptable level of inequality and prohibitive, harmful levels that perpetuate and increase social gap and decrease social mobility.

In the past two decades, a number of authors focused on the inequality related analysis of situation in Slovenia. Tomc and Pešec analysed socio-professional categories in Slovenia and discovered that differences between lower and middle category (class) are larger than between middle and top category, while differences between active and inactive research participants were also significant (as cited in Srakar & Verbič, 2015).

Dragoš and Leskošek examined the connection between social wealth and social inequality and identified three main types of simplifications; simplifications of social complexity, simplifications that are a result of ideological convictions and transitional losses of resources due to denationalisation and privatization, all of which affect analysed communities and behaviour of individuals (as cited in Srakar & Verbič, 2015).

Stanovnik (1997) discovered that characteristics of Slovenian economically worse off segments are converging towards characteristics of comparable socio-economic classes in other European countries, while studies done by Stanovnik and Verbič (2005; 2008; 2012; 2013; 2014) using empirical methodology also used by Piketty, explore the fluctuations of income inequality in Slovenia after it gained independence in 1991 (as cited in Srakar & Verbič, 2015). The authors discovered that controlling for the impact of initial years of transition, the increase in income inequality was neutralized through redistributive progressive taxation and through changes in institutional settings, while real income and consequently welfare were steadily increasing.

Penner, Kanjuo Mrčela, Bandelj and Petersen (2012) discovered that gender income inequality in private and public sector increased significantly between 1993 and 2007, but Leskovšek and Dragoš (2014) conclude, that Slovenia possesses capacities to cope with the issue (as cited in Srakar & Verbič, 2015). It is worth noting that despite an increase in income inequality, Slovenia presently remains one of the countries with the lowest Gini coefficient not only in OECD, but globally (OECD, 2013) and most recent findings (Srakar & Verbič, 2015) show, that income inequality in Slovenia in the past decade decreased despite economic crisis, prompting a question of what are the key determinants and causes behind such unusual decrease, a question that this paper attempts to answer (as cited in Srakar & Verbič, 2015).

In our article, we want to test the following main hypotheses:

H1: *Inequality in Slovenia in years 1993-2012 was strongly related to several macroeconomic variables, including level of GDP, inflation and general government expenditure.*

H2: *Inequality in Slovenia in years 1993-2012 was strongly related to several social variables, including unemployment variables, social contributions and the level of older population.*

H3: *The drops in Slovenian inequality in the years of the financial crisis were matched by movements of macroeconomic and/or social aggregates/variables.*

In the following section we provide a brief description of the data and methodologies used, which include a series of inequality indices (e.g. Gini, Mehran, Piesch, Kakwani, Theil) and a decomposition of Gini coefficient by the source of income and gender. The third section contains the results of cointegration analysis and some basic findings related to the interrelationship of Gini coefficient and various macroeconomic variables examined, while in the final, fourth part key observations and conclusions are explained.

2. Methodology

The primary source of data was obtained by the Statistical Office of the Republic of Slovenia (SORS). Using Statistical Register of Employment (SRE), the annual (for the period 1993-2012) selection of the population of employees was done, who met the following two criteria: (a) full-time employed (which means that a person is working at least 36 hours per week) and (b) an employee of the same employer throughout the year. The data were obtained in tabular form for 14 income groups, depending on the employment sector (private and public), and gender (male, female), so that we have created for each income group and year four tables, which included broken sources of taxable income, as well as income tax and social security contributions. Tables covered the period from 1993 to 2012, which has enabled us to observe the developments in the economic crisis, which most previous studies did not cover.

Methodological analysis starts by calculating the indicators of income inequality. In doing so, the basic measure used is the Gini coefficient, which is the most commonly used measure of the uneven distribution of income and wealth. Gini coefficient is defined as the ratio on a scale between 0 and 1, the lower the ratio, the more equal the distribution, and the higher it is, the more uneven the distribution. The value 0 represents perfect equality (everyone having exactly the same revenue / property) while value 1 represents perfect inequality (all income / property is concentrated in only one individual).

In the analysis, we use the calculation of three related indicators of income inequality. Firstly, we use the Mehran and Piesch indices of inequality that have similar interpretations, but the weights used in the calculations are different. Mehran index is more sensitive to changes at the bottom of the income distribution, while Piesch is more sensitive to changes in the upper part of the income distribution. In addition to these three dimensions, we also use the Theil index of inequality, which is a measure of inequality based on the information theory, and was created by the econometrician Henri Theil in 1967. When calculating the value attributed to each event we evaluate the event which is highly likely as of low value, as the information on his occurrence has not overly surprised us. Thus, the value of the information for the event to occur with a probability of 1 is equal to 0. Conversely, the occurrence of an unlikely event attributed to a high value (Kolenko, 2003).

Finally, we use cointegration analysis to evaluate the relationships between a set of chosen macroeconomic and social variables and our calculated inequality measures. We use Johansen trace test of cointegration. The common objective of cointegration tests is to determine if there exists a long-run relationship among all test variables (see e.g. Mencet, Firat & Sayin, 2006). All of these tests are designed to find the stationary linear combinations of vector time series, and in all of these tests a number of cointegrating factors must be determined. If the hypothesis is accepted, the error term (u_t) is not stationary and this means that y_t and x_t series are not integrated. If the latter one is rejected, y_t and x_t are cointegrated. Note that since the unit root tests test the null hypothesis of a unit root, most cointegration tests test the null hypothesis of no cointegration.

On the other hand, sometimes regressing stationary data may eliminate the permanent components, leaving only the relations among the remaining stochastic components of the time series which may be pure noise, when what is of economic interest are actually the relations between the permanent components. Rudebusch (1992; 1993) demonstrates that standard unit root tests have low power against estimated trend stationary alternatives. In addition, Perron (1989) shows that standard unit root tests cannot always distinguish unit root from stationary processes that contain segmented or shifted trends. Nevertheless, some later research (Harvey, 1993; Engel and Morley, 2001; Morley, Nelson, et al., 2003; Morley, 2004; Sinclair, 2004) suggests that unobserved components models can provide a useful framework for representing economic

time series which contain unit roots, including those that are cointegrated. These series can be modelled as containing an unobserved permanent component, representing the stochastic trend, and an unobserved transitory component, representing the stationary component of the series (for more see also Morley and Sinclair, 2005). This could be a solution for studying the relationships, discovered in our analysis in more detail in future, when the length of time series will allow for improved econometric modelling.

3. Results

a. Basic indices

Figure 1 shows the movement of the Gini coefficient for the entire sample in the period 1993-2012. After the initial substantial growth between 1993 and 1999, in the years 2000 to 2005, we see stagnation or even a small drop, then mild growth in the very beginning of the crisis (2007 and 2008), followed by a significant decline between 2009 and 2012. It is interesting that the first part of the fall (2009 and 2010) was led by the private sector, while the later decline in income inequality is expressed primarily in the public sector.

Figure 1: Gini coefficient, 1993-2012
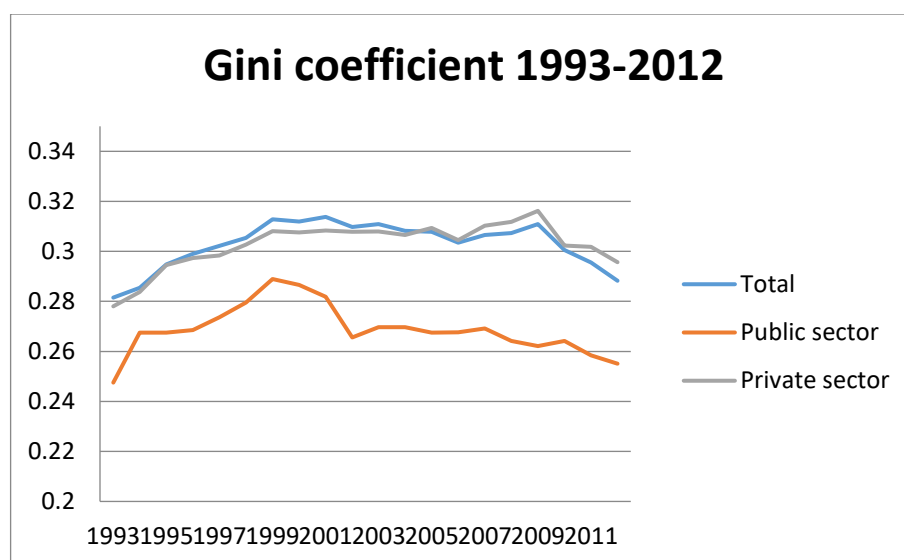
Source: Own calculations.

Figure 2 shows the correlation of movement with different dimensions of inequality. Comparison of Gini, Mehran and Piesch Inequality Index shows that Piesch index always has the highest value, while Mehran always the lowest value. Nevertheless, all

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three indexes speak the same story as an argument in favour of the thesis that the observed decline in income inequality has not been a consequence of specific developments either at the bottom or the top (such as a loss of better paid jobs, which would lead to a reduction in inequality at the expense of increased general poverty). The same story is shown also by the Theil index, but is expected to be far more sensitive to changes, although this sensitivity was not expressed in any way during the economic crisis. This shows us that for the rest of our research, the focus on Gini coefficient alone is sufficient, as it is a sufficiently reliable reflection of trends in income inequality during the observation period.

Figure 2: Movements in different inequality indices (1993=100)
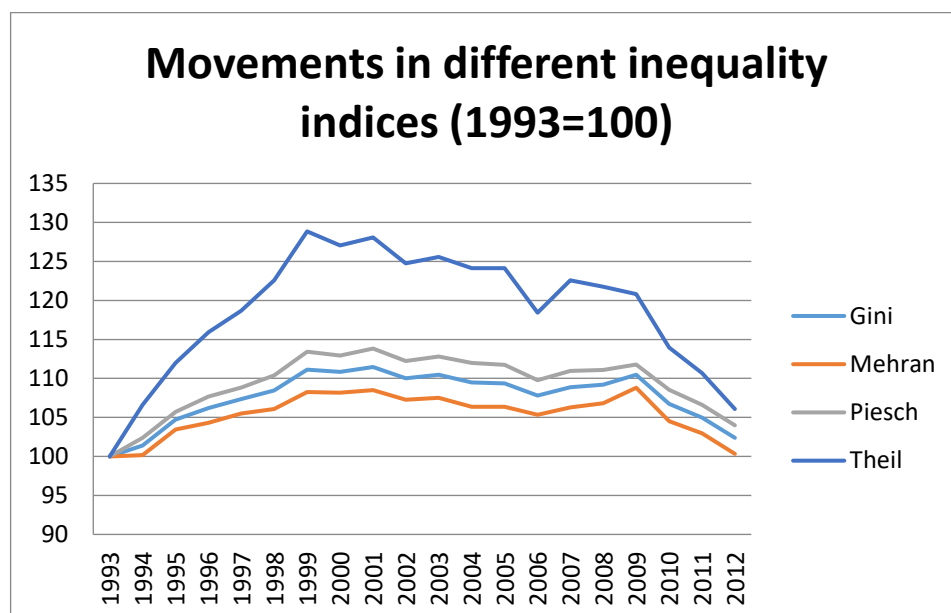
Source: Own calculations.

Here we used the decomposition of the Gini coefficient on the contribution of taxes, social security contributions and the net income to the level of inequality. Figure 3 shows the contribution of inequalities in taxes. We can see a relatively balanced picture until 2006, while after the Bajuk's tax reform after 2007, the disparity in taxes has fallen sharply, but later began to rise, although it still did not reach the previous levels. It is interesting to observe a decline in the contribution of taxes to the Gini coefficient in the years 2010-2012, which is specifically expressed in the public sector.

Figure 3: Contribution of taxes (Personal Income Tax) to the value of Gini coefficient

% contribution of taxes (PIT) to the value of Gini coefficient
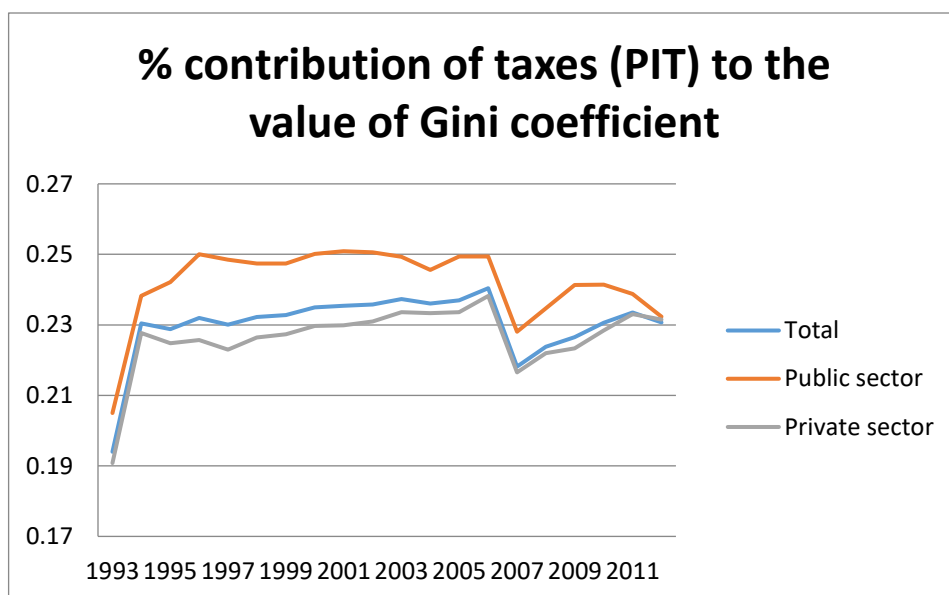
Source: Own calculations.

Figure 4 shows the dynamics of the contribution of social security contributions to the Gini coefficient. Particularly important are developments after 2007, when a considerable discrepancy between the public and private sectors has occurred. In 2010, the contribution to overall income inequality in the private sector decreased significantly, while the trend in the public sector went in the opposite direction and has increased, particularly in 2012. The latter may be due to some initial layoffs after the introduction of the Law on Balancing Public Finances (ZUJF), but it could also be a consequence of a higher minimum wage, which resulted in the preservation of various forms of income for employees in the private sector. It is also important that the net effect of the two movements reduced total contribution from social contributions to the overall Gini coefficient.

Figure 4: Contribution of social contributions to the level of Gini coefficient

% contribution of social contributions to the level of Gini coefficient
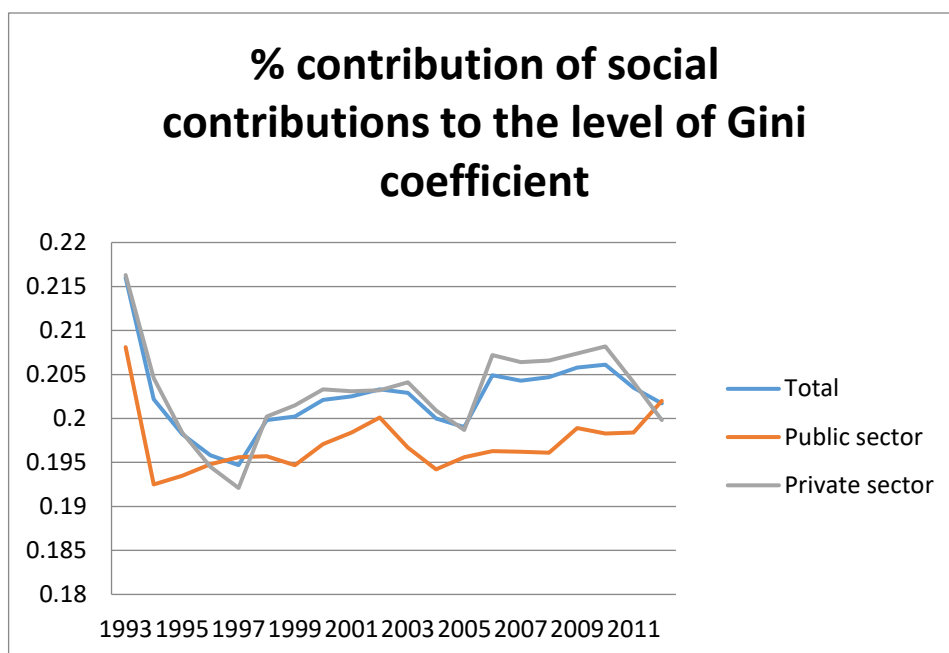
Source: Own calculations.

The most important and largest component of the Gini coefficient is the net income, where not exactly the same trends as previously can be observed during the economic crisis (see Figure 5). Firstly, the public and private sectors do not differ significantly. Secondly, in the years 2009 to 2012 there has been an increase in the impact of inequality in net income to the value of the Gini coefficient. Especially in the last two years, it has seen a stronger influence in the private sector, but it is difficult to conclude only on the basis of this, whether the observed trend of declining income inequality could be attributed to the public or private sector.

Figure 5: Contribution of net incomes to the level of Gini coefficient

% contribution of net incomes to the level of Gini coefficient
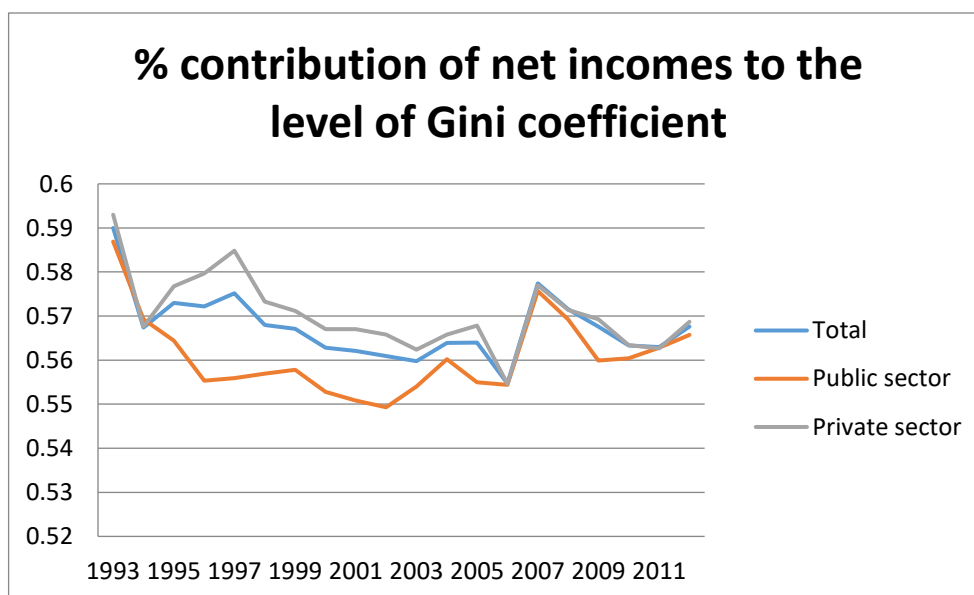
Source: Own calculations.

b. Macroeconomic aggregates

In the second part of the analysis we look into relationships of a chosen set of macro-economic variables and the previously calculated level of Gini coefficient. To this end we use 12 Slovenian macroeconomic aggregates, derived from the OECD database, namely:

- Adjusted net national income per capita (constant 2005 US$)
- Consumer price index (2010 = 100)
- Final consumption expenditure (constant 2005 US$)
- Foreign direct investment, net (BoP[22], current US$)
- GDP per capita (constant 2005 US$)
- General government final consumption expenditure (% of GDP)
- Gross national expenditure (% of GDP)
- Gross savings (% of GDP)
- Household final consumption expenditure (constant 2005 US$)
- Interest payments (current LCU[23])
- Net domestic credit (current LCU)
- Net foreign assets (current LCU)

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[22] Balance of payments.
[23] Local Currency Unit.

All the variables have been shown to be of integration order I(2)[24]. In the figure below we firstly present co-movements in their values and the level of Gini index, that show the relationships of basic variables and the stationarity-adjusted second-differenced values.

Figure 6 shows the co-movements between the Gini coefficient and adjusted net national income per capita. From the right side of the picture we cannot observe a significant cointegration – sometimes the levels of second differences are positively and sometimes negatively correlated. We will see later (see Table 1) that results of cointegration analysis confirm this observation.

Figure 6: Co-movements between adjusted net national income per capita and Gini index (Left: non-transformed variables; Right: second differences)

Source: Own calculations.

Figure 7 shows the relationship of inequality index and inflation. Again, no relationship can be observed. It has to be noted that in some of the results of the cointegration tests, presence of relationship between inequality and inflation has been confirmed, which would have to be better researched and reflected for future purposes.

Figure 7: Co-movements between consumer price index and Gini index (Left: non-transformed variables; Right: second differences)

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[24] The results were derived using basic stationarity tests (ADF, KPSS) and are not reported here.

Source: Own calculations.

In Figure 8 we see the results of the relationship between final consumption expenditure and Gini index. As seen from Table 1, here cointegration can be confirmed, as seen from the right part of the figure, in particular for the years before the financial crisis, while during the financial crisis this relationship appears blurred and much weaker.
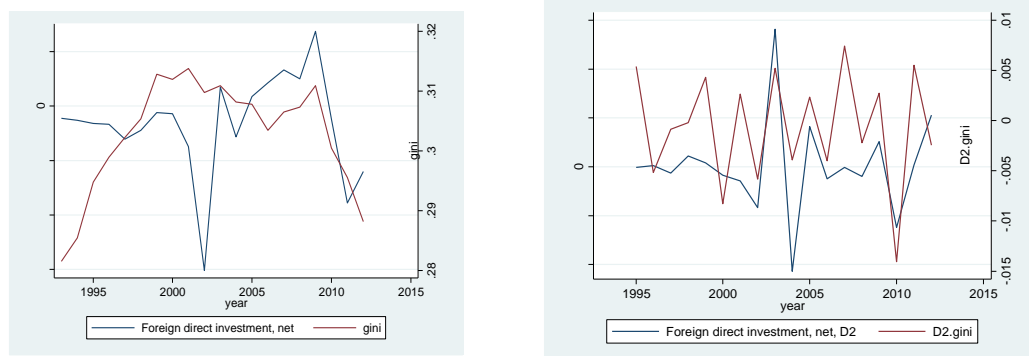
Figure 8: Co-movements between final consumption expenditure and Gini index (Left: non-transformed variables; Right: second differences)
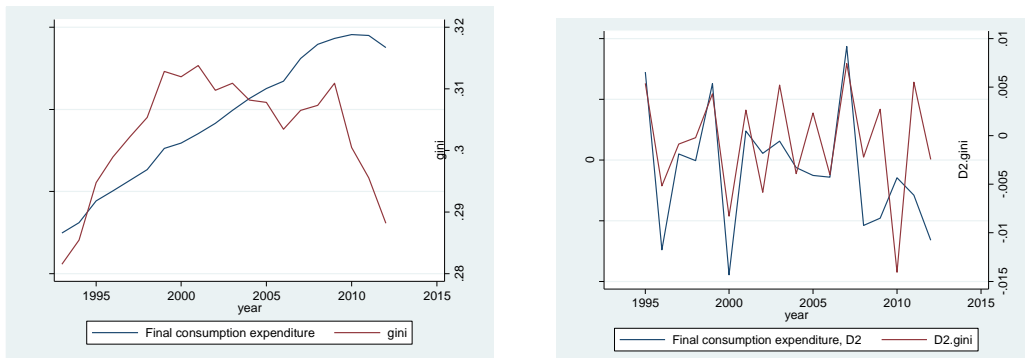
Source: Own calculations.

Also, the relationship between foreign direct investments and Gini index exists and is confirmed in Table 1. The relationship seems strong throughout the observed period, which can be seen in the right part of Figure 9.

Figure 9: Co-movements between foreign direct investment and Gini index (Left: non-transformed variables; Right: second differences)

Source: Own calculations.

Interestingly, no particular relationship between GDP per capita and inequality could be confirmed for Slovenia (see Table 1). Nevertheless, the right part of Figure 10 shows a negative trend (in accordance with expectations – higher positive changes in the level of GDP are related to higher negative changes in inequality).
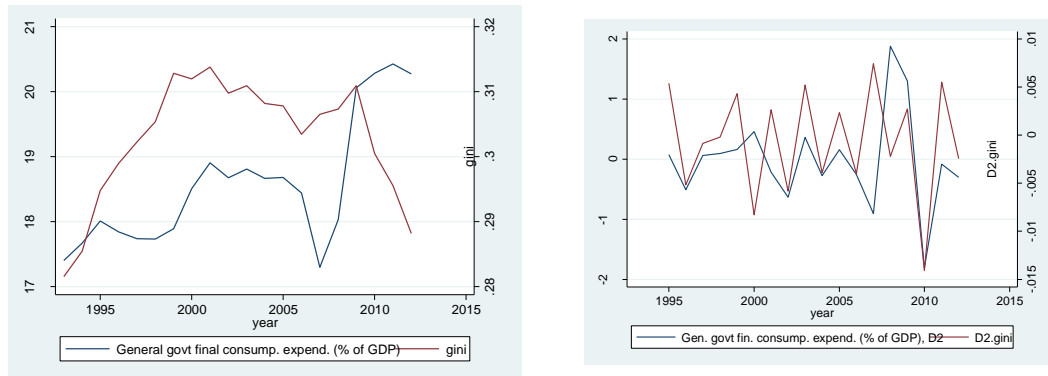
Figure 10: Co-movements between GDP per capita and Gini index (Left: non-transformed variables; Right: second differences)

Source: Own calculations.

Figure 11 shows the relationship between general government consumption expenditure and the level of Gini index. There are some positive and negative co-movements, which result in the final no-cointegration relationship, as observed from Table 1.
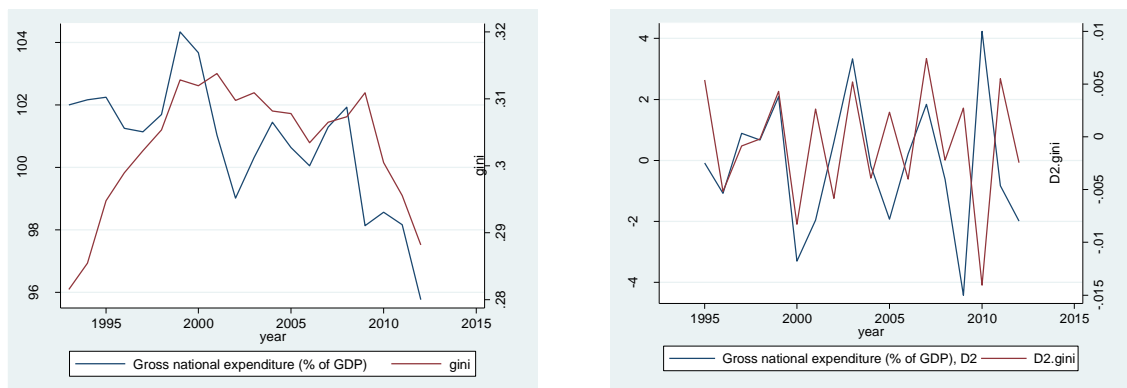
Figure 11: Co-movements between general government consumption expenditure and Gini index (Left: non-transformed variables; Right: second differences)

Source: Own calculations.

Also, we cannot confirm a relationship between gross national expenditure and the level of Gini index, which can again be seen from both the right part of the Figure 12 and the results in Table 1.
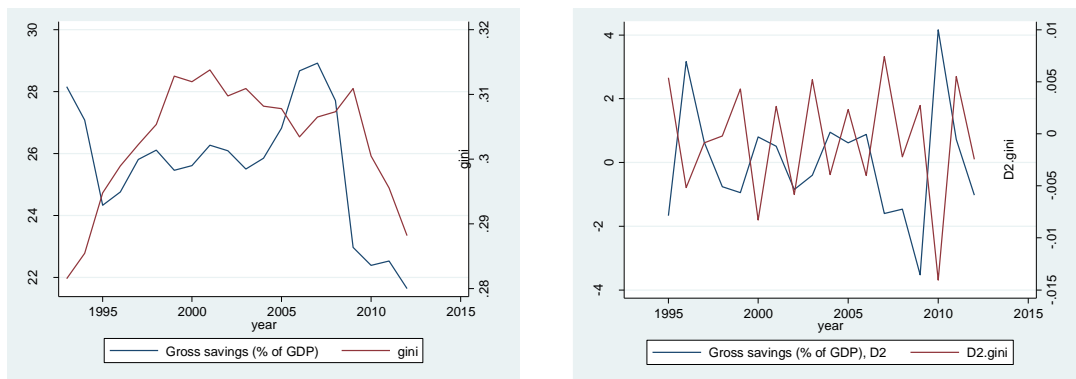
Figure 12: Co-movements between gross national expenditure and Gini index (Left: non-transformed variables; Right: second differences)

Source: Own calculations.

There is also no visible statistical relationship between the level of gross savings and Gini index. Again, several positive and negative co-movements can be seen in Figure 13 and results of Johansen's cointegration tests cannot confirm any relationship.
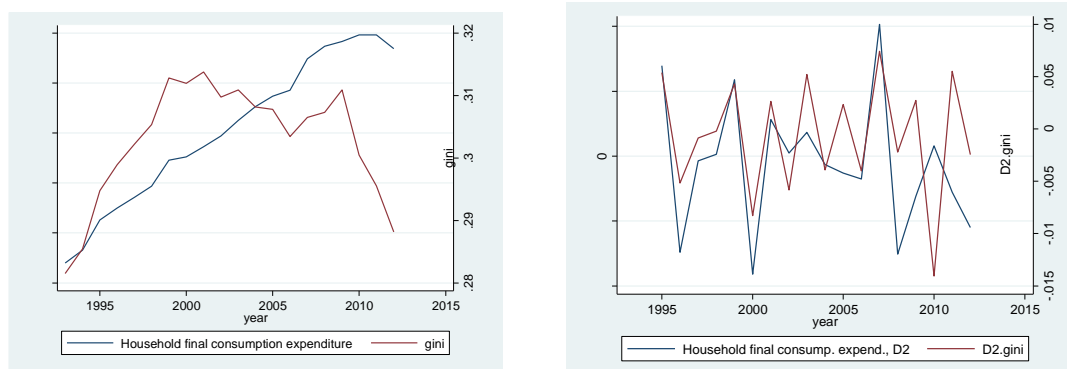
Figure 13: Co-movements between gross savings and Gini index (Left: non-transformed variables; Right: second differences)

Source: Own calculations.

On the other hand, as Figure 14 shows, there is a relationship between household final consumption expenditure and Gini index, although seeming different for the period before and during the financial crisis (which is in accordance with the results of Figure 8, explained previously).

Figure 14: Co-movements between household final consumption expenditure and Gini index (Left: non-transformed variables; Right: second differences)

Source: Own calculations.

Interestingly, relationship between interest payments and Gini index can be confirmed, as seen from Table 1. This could be in particular related to the financial crisis, where the interest payments became particularly strong determinants of Slovenian macroeconomic condition. Also, from the right side of Figure 15 we can confirm different co-movements in times of the financial crisis and before it.
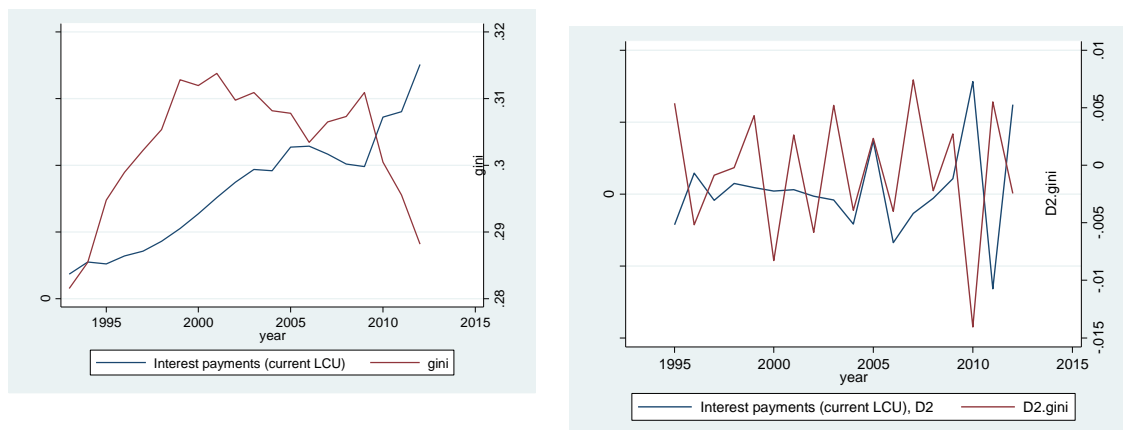
Figure 15: Co-movements between interest payments and Gini index (Left: non-transformed variables; Right: second differences)

Source: Own calculations.

Also, as can be seen in Figure 16, relationship between net domestic credit and Gini index is confirmed from the results of Table 1. Again, the relationship seems to be conditioned by the financial crisis where the response has been exactly the opposite as before. Further tests of the presence of structural breaks would be needed to better explore this (and previously observed) different co-movements in times of the financial crisis.

Figure 16: Co-movements between net domestic credit and Gini index (Left: non-transformed variables; Right: second differences)
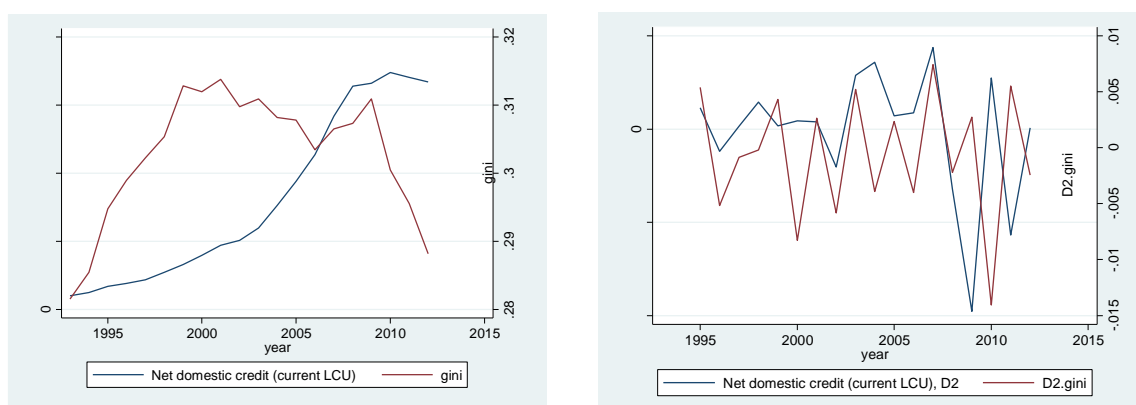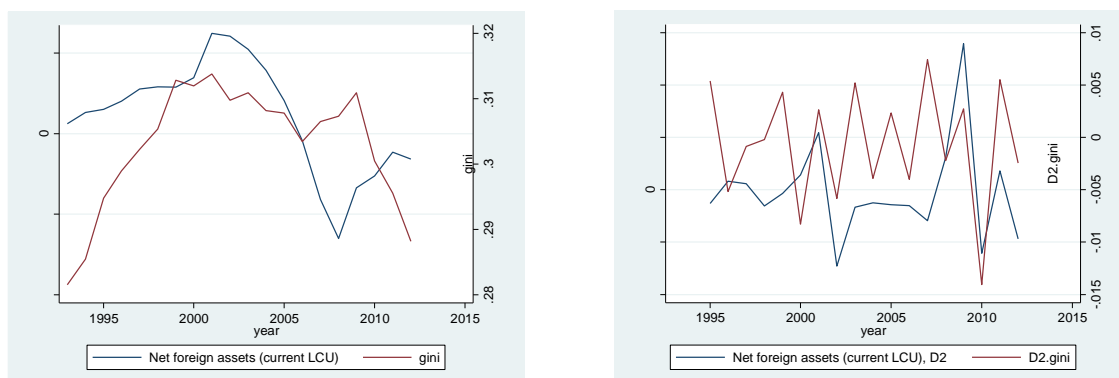

Source: Own calculations.

Finally, as shown in the Figure 17, net foreign assets are positively and strongly related to the level of Gini index, which is in accordance with Figure 9. Interestingly, foreign

capital position seems very strongly and consistently related to the level of inequality, at least for Slovenia, which is particularly interesting considering the problems that Slovenia had with attracting foreign direct investments (being among the EU countries with their lowest share per capita). It is possible that the found relationship is either the consequence of a) problems in the modelling which didn't control sufficiently for small sample problems; b) we are modelling the stochastic component in two variables which seem particular to Slovenia, characterized by extremely low level of inequality on the one hand and very low level of FDI investments as well. It would be interesting in future to also model this stochastic component separately and explore its determinants and behaviour.

Figure 17: Co-movements between net foreign assets and Gini index (Left: non-transformed variables; Right: second differences)

Source: Own calculations.

At the end, Table 1 shows the results of statistical tests. Six variables were confirmed as related to the level of inequality: final consumption expenditure and household final consumption expenditure; foreign direct investment and net foreign assets; interest payments; and net domestic credit. Clearly, the levels of domestic private consumption and the level of foreign investments are the most related to inequality in Slovenia, with GDP per capita and general government expenditure being far behind. Again, we note that this could be a consequence of modelling the stochastic part of the variables which should be separately modelled and explored better in future and could be the cause of some of the cointegration relationships. We also note that many variables that show cointegration properties are highly correlated (e.g. final consumption expenditure and

household final consumption expenditure) which is in the nature of cointegration analysis, being a solution to the spurious correlation problem in the time series context (see e.g. Johansen, 2007). Nevertheless, the findings could have important consequences for understanding the movements of inequality not only in Slovenia but in other countries as well, if applied to other datasets.

Table 1: Results of cointegration tests, macroeconomic aggregates, all variables are taken in first differences.

Variable	Cointegrating variable	Trace statistic (lags=2)		5% Critical value		Cointegration yes/no
		rank 0	rank 1	rank 0	rank 1	
Gini	Adj. net nat. inc. p.c.	216.412	71.073	181.700	37.400	no
	Consum. price index	200.427	56.179	181.700	37.400	no
	Final consumpt. exp.	2.0177*	0.0000	181.700	37.400	yes
	FDI	13.799*	0.0000	181.700	37.400	yes
	GDP per capita	212.297	65.945	181.700	37.400	no
	Gen. govt cons. exp.	404.807	106.648	181.700	37.400	no
	Gross nation. exp.	252.056	54.745	181.700	37.400	no
	Gross savings	244.809	69.897	181.700	37.400	no
	Hh fin. cons. exp.	6.813*	0.0000	181.700	37.400	yes
	Interest payments	4.758*	0.0000	181.700	37.400	yes
	Net domestic credit	1.636*	0.0000	181.700	37.400	yes
	Net foreign assets	11.070*	0.0000	181.700	37.400	yes

Note: Statistical significance: * – 5%. Source: Own calculations.

Figure 18: Co-movements between age dependency ratio and Gini index (Left: non-transformed variables; Right: second differences)
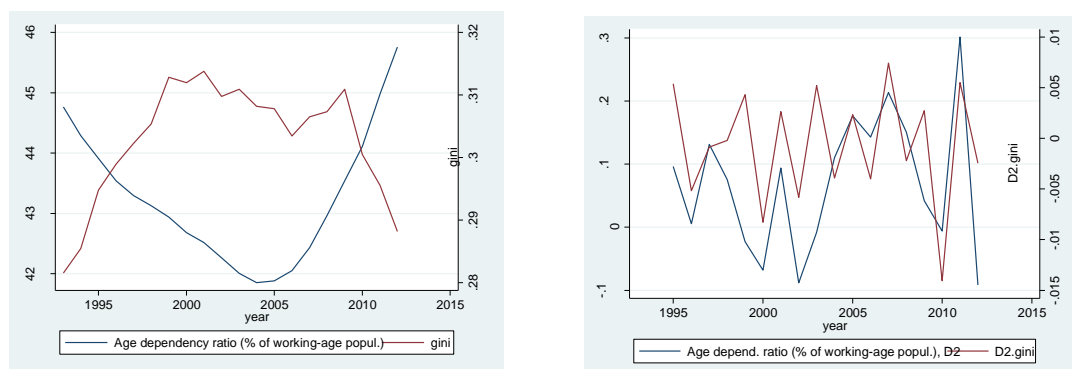
Source: Own calculations.

Labour force participation rate is not related to inequality, as shown in Figure 19. Interestingly and as will be seen later, employment levels were not related to inequality in Slovenia in years 1993-2012, which seems surprising and is perhaps a consequence

of the choice of dataset which includes only employed persons (but this has to be tested further in future).

Figure 19: Co-movements between labor force participation rate and Gini index (Left: non-transformed variables; Right: second differences)

Source: Own calculations.

Also, the share of labour force with tertiary education is not related to the level of Gini index, although with some clear negative (and expected) co-movements, as shown in the left part of Figure 20.

Figure 20: Co-movements between % labour force with tertiary education and Gini index (Left: non-transformed variables; Right: second differences)

Source: Own calculations.

The size of older (65+) population is not related to inequality, which is visible from both results of Table 2 and left part of Figure 21. It is therefore interesting to see that

age dependency ratio is related to inequalities, as opposed to the level of older population, which is not related to inequality, but that can probably be explained by the level of older population being a rather crude indicator, showing an almost linear rising trend for Slovenia in the period 1993-2012.

Figure 21: Co-movements between population, aged 65 and above and Gini index (Left: non-transformed variables; Right: second differences)

Source: Own calculations.

Interestingly, the share of rural population is strongly (Table 2) and negatively (left part of Figure 22) related to the level of inequality. This would be an indicator that Slovenian inequality among the employed workers is more related to the inequality among the urban population which is clearly seen in the left part of the Figure 22. Again, this would surely demand a better explanation that exceeds the depth of analysis of this paper, which only offers a robust conclusion.

Figure 22: Co-movements between % of rural population and Gini index (Left: non-transformed variables; Right: second differences)

Source: Own calculations.

The share (in revenue composition; see Figure 23) and level of social contributions (Figure 24) is significantly related to inequality. This is hardly surprising, as social contributions were used in the calculation of the Gini index, and is presented here mainly as robustness verification and probably needs no further explanation.

Figure 23: Co-movements between social contributions as % of revenue and Gini index (Left: non-transformed variables; Right: second differences)
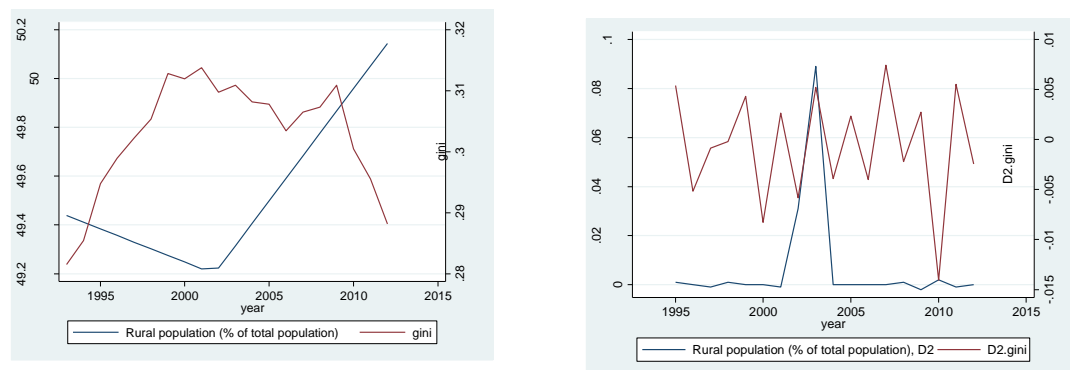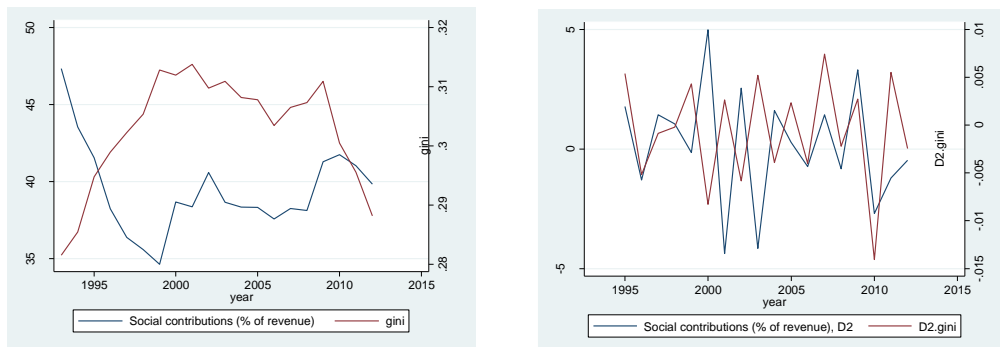

Source: Own calculations.

Figure 24: Co-movements between social contributions and Gini index (Left: non-transformed variables; Right: second differences)

Source: Own calculations.

The final part of the analysis presents relationship between different employment variables and the level of inequality. Interestingly, no employment variable is in any sense related to the level of inequality. This holds, firstly, for the share of unemployed with both primary (Figure 25), secondary (Figure 26), as well as tertiary (Figure 27) education.

Figure 25: Co-movements between % of unemployed with primary education and Gini index (Left: non-transformed variables; Right: second differences)

Source: Own calculations.

Figure 26: Co-movements between % of unemployed with secondary education and Gini index (Left: non-transformed variables; Right: second differences)

Source: Own calculations.

Figure 27: Co-movements between % of unemployed with tertiary education and Gini index (Left: non-transformed variables; Right: second differences)

Source: Own calculations.

Next, this observation holds also for the total share of unemployed, although here the trace statistic is the closest to statistical significance (see Table 2). As can be seen from the Figure 28 (left part), in particular during the financial crisis, the level of unemployment was negatively related to inequality which could provide a clear explanation for the observed trend of falling (calculated) inequality during the financial crisis: in our sample we included only the employed persons and if we would include a different dataset, one that would include the active workforce in total, the results could completely change their sign and significance.
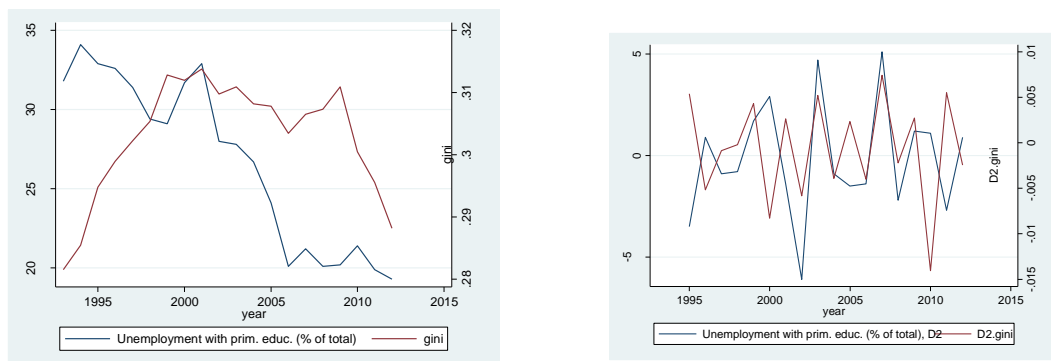
Figure 28: Co-movements between % of unemployed in total and Gini index (Left: non-transformed variables; Right: second differences)
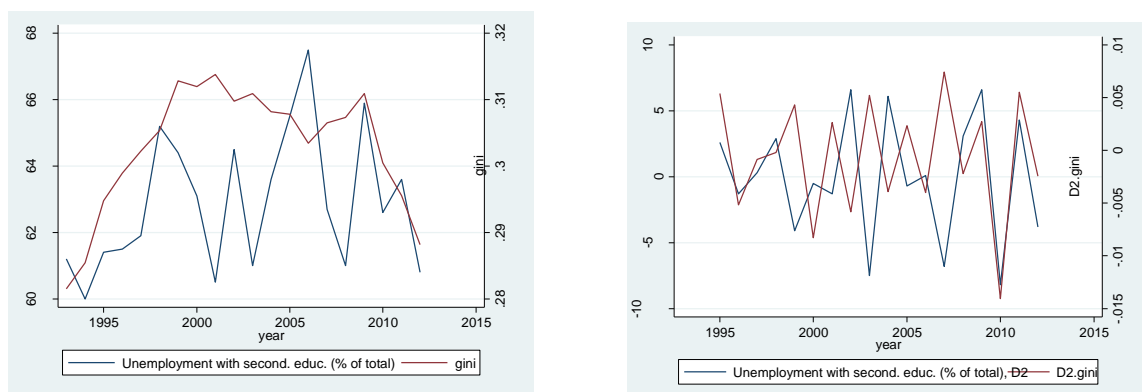

Source: Own calculations.

Also, no relationship to vulnerable employment could be observed (Figure 29), although here the visual results are more in accordance with expectations: less vulnerable employment appears related to also less inequality in general.

Figure 29: Co-movements between % of vulnerable employment and Gini index (Left: non-transformed variables; Right: second differences)

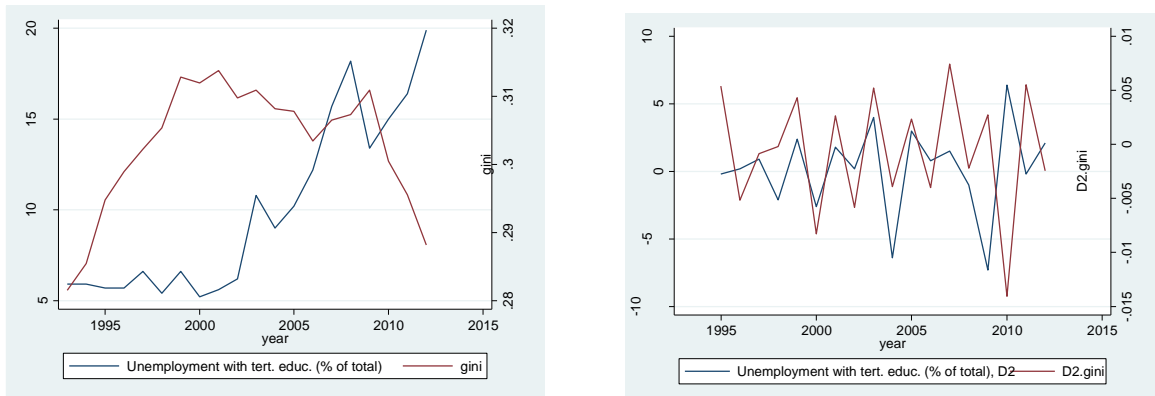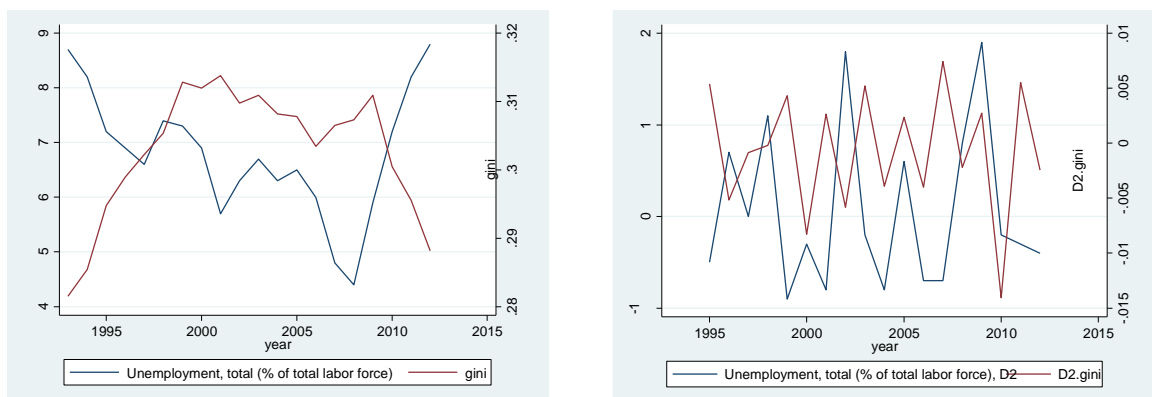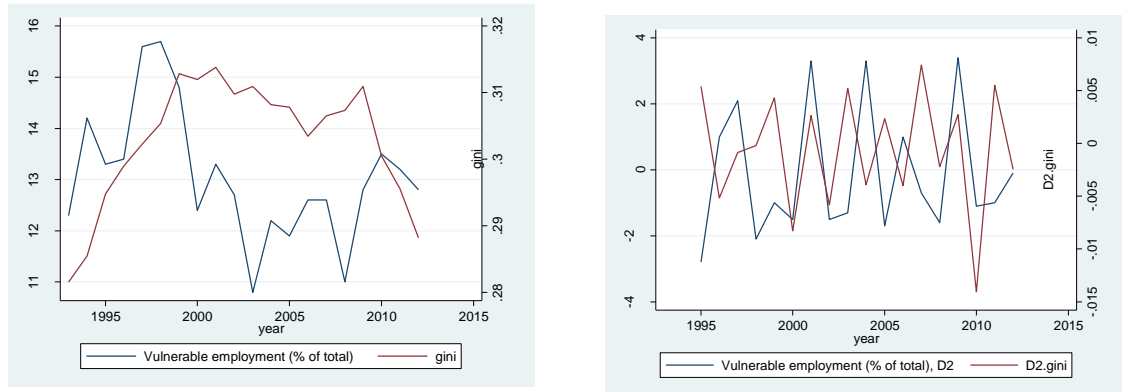Source: Own calculations.

Finally, no visible relationship can be ascertained between the share of wage and salaried workers and Gini index, which is clearly confirmed from both Figure 30 and the results in Table 2.

Figure 30: Co-movements between % of wage and salaried workers and Gini index (Left: non-transformed variables; Right: second differences)

Source: Own calculations.

The results in Table 2 serve as a confirmation of the previous explanations. In total, four variables seem related to the level of inequality: age dependency ratio, share of rural population, and two variables related to social contributions. In particular, we

were able to discern no statistically significant relationship to the employment varia-
bles, which is an interesting finding and could be a consequence of the used dataset.

Table 2: Results of cointegration tests, social variables, all variables are taken in first differ-
ences.

Varia-ble	Cointegrating varia-ble	Trace statistic (lags=2)		5% Critical value		Cointegra-tion yes/no
		rank 0	rank 1	rank 0	rank 1	
Gini	Age depend. ratio	11.265*	50.666	181.700	37.400	yes
	Lab. f. partic. rate	289.373	63.143	181.700	37.400	no
	% lab. force tert educ	247.986	56.344	181.700	37.400	no
	Population 65+	215.356	49.638	181.700	37.400	no
	% of rural popul.	13.032*	57.316	181.700	37.400	yes
	Social contributions	3.579*	0.0000	181.700	37.400	yes
	Soc. contr. % of rev.	17.457*	43.090	181.700	37.400	yes
	% unemp. prim educ	233.302	70.308	181.700	37.400	no
	% unemp. sec educ	215.548	59.680	181.700	37.400	no
	% unemp. tert educ	394.689	112.456	181.700	37.400	no
	% unemp. total	196.271	75.036	181.700	37.400	no
	% vulner. employ.	199.551	43.295	181.700	37.400	no
	% wage/salar. work.	206.541	45.569	181.700	37.400	no

Note: Statistical significance: * – 5%. Source: Own calculations.

4. Discussion and conclusion

In conclusion, let's firstly shortly summarize the findings:

- The level of inequality, as measured on the basis of used dataset, has been falling in
  times of the financial crisis, which seems in opposition ot the theories in the literature
  (in particular, Piketty 2014).

- The differences could not be attributed to either the choice of the measure of inequal-
  ity nor to the decomposition of the Gini index.

- The level of inequality was shown to be related to several macroeconomic aggregates,
  in particular: final consumption expenditure and household final consumption ex-
  penditure; foreign direct investment and net foreign assets; interest payments; and net
  domestic credit.

- Clearly, the levels of domestic private consumption and the level of foreign invest-
  ments are the most related to inequality in Slovenia, with GDP per capita and general

government expenditure being far behind. This could have important consequences for understanding the movements of inequality in Slovenia and wider, if applied to other datasets.

- As for the relationship to the »social« variables, in total, four variables seem related to the level of inequality: age dependency ratio, share of rural population, and two variables related to social contributions. In particular, we were able to discern no statistically significant relationship to the employment variables, which is an interesting finding and could be a consequence of the used dataset.

There seem several different explanations for the observed trend of dropping inequality during the financial crisis in Slovenia. The main one, appearing from our analysis, seems related to the dataset: as we include only the employed people we neglect the influence of significantly raised unemployment in Slovenia. Another explanation is related to the raise in minimal wage, which would clearly have to have a strong effect on the level of inequality, as shown in the literature. Finally, institutional reasons show that the specific character of Slovenian institutional environment could be another reason for the observed trend. Nevertheless, all the above explanations have to be further explored and tested in the analysis. Our analysis, nevertheless, provided an important step forward in exploring not just inequality in Slovenia but also in a broader sense and we provided, to our knowledge, a novel methodology to study inequality, which should be developed in future research to get a significantly better insight into the determinants of economic and social inequality in general.

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Institutions and Economic Development: A More Complete View to Understanding Economic Growth

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Abstract

The Great Crisis has opened a vivid discussion on the shortcomings of the mainstream economics. Neoclassical economics itself is insufficient in explaining the complex reality. This paper therefore introduces an alternative economic approach to analysing economic growth and development, which provides a more realistic insight into the causes of the wealth of nations. We utilize the "toolbox" of institutional economics and try to find the ultimate causes of differences in the economic development between countries. Via four real-world cases we show how political and economic institutions affect economies and thus determine economic growth.

Keywords: development, institutions

JEL codes: B15, O25, O24, O43

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1. Introduction

Why are some countries rich and others poor? This question of economic growth and prosperity of nations has puzzled economists for centuries, beginning with the Father of Economics Adam Smith and other classical authors, who believed the causes of wealth to be associated with the accumulation of factors of production. Following the decline of classical economic theory in the last quarter of the 19th century, analysis of market equilibrium became the predominant form of economics; in other words, paradigm of growth (a dynamic concept) was replaced by the paradigm of equilibrium (static concept), which has remained in the framework of the neoclassical economic theory up to this day. The issue of economic growth has been dealt with by other heterodox economists, who criticized the abstract approach of mainstream economics in understanding the complex reality of growth - they have attempted to take into consideration the characteristics of national economies, and thus develop a more comprehensive analysis of the causes of wealth of nations. Unfortunately, these economic theories have remained in the shadow of the dominant neoclassical paradigm.

The purpose of this paper is to present a somehow more complete economic approach to analysing economic growth and development. More specifically, to present that the framework of institutional economics provides a more realistic insight into the causes of wealth of nations.

We begin our appraisal with a review of development of institutional economics; this provides a basis for further discussion of the institutional approach to analysing economic growth. In section 3 we focus on the application of this approach to real-world examples. In section 4 we examine the empirical approaches used by economists to systematically assess the impact of institutions on economic growth. Section 5 concludes.

2. Short Introduction into Development of Institutional Economics

The term "institutional economics" was first used by American economist Walton Hamilton at the conference of the American Economic Association in 1918. Institutional economists view market as a social space, where institutions, in contrast to the neoclassical economics' supply and demand, play a key role. The main shortcoming of

traditional institutional economics has been a lack of systematic and comprehensive empirical analysis (Hodgson, 2000).

In the 20th century traditional institutional economics was "replaced" by more popular new institutional economics (NIE), which tries to integrate new theoretical insights such as the theory of organizations, transaction costs, ownership rights, etc. into mainstream neoclassical economics. The same as members of traditional institutional economics, new institutional economists emphasizes that the dominant economics is strong in theory, but weak in explaining economic reality, because it studies only »*the circulation of blood without a body«*. He continues that the focus of economists has to be the analysis of the economic system, where goods and services are exchanged, because that process is essential for human well-being. This exchange is based on various institutions that *"govern the performance of an economy, and it is this that gives the NIE its importance for economists."* (Coase, 1998)

We would like to emphasize, that NIE does not change the general methodology of neoclassical economics, as it is based on similar underlying assumptions, however, it does take into consideration the environment in which the agents function and that gives the NIE additional explanatory power in understanding the economic development.

Before moving on we ought to look at key features of the NIE (Joskow, 2004; North, 1993):

➢ institutions in society are not understood in a narrow, formalized sense, but as a key component of the economy (social, political, legal and economic norms);
➢ dynamically analyses technology and technological progress and impact of institutions;
➢ is aware of limitations of the basic concepts of neoclassical economics and introduces a new analytical and empirical methods into economic analysis
➢ interdisciplinary: views economics from different angles and takes into account the knowledge of other disciplines (sociology, history, law, biology, psychology);
➢ emphasizes the non-universality of economic theory.

At this point we have to answer what institutions basically are. Menard & Shirley (2011) describe them as *"all rules or forms of conduct, which are devised with the intention of reducing*

uncertainty (as a consequence of imperfect information and limited rationality), controlling the environment/game and lowering transaction costs." Table 1 shows various classifications of institutions.

Proponents of the institutional economics systematically study the relationship between the relevant institutions and economic reality based on four levels of social analysis. Most economists are focusing on the analysis of the 2nd and 3rd level; namely institutional environment and governance. On the one hand, the 1st level represents restrictions to higher levels but on the other hand the nature of these embedded institutions is subject to slow changes, therefore economists do not pay much attention to it. The NIE does not directly deal with 4th level either, because this stage of analysis is the field of neoclassical economics (efficient allocation). In contrast, 2nd and 3rd levels are subject to faster changes; according to Williamson, there are first-order economizing (*»get the formal rules right«*) and second-order economizing (*»get the governance structures right«*). Therefore, institutional economists focus mainly on the analysis of the institutional environment and institutions of governance (Williamson, 2000).

3. Institutional Economics and Economic Development

We have come to the point, when we can finally discuss the introductory line of this paper - why are some countries rich and others poor?

If we just glimpse at the data on human development index (an index, which is based on three equally weighted components: longevity, knowledge and standard of living), we find out that the most developed countries in the world in year 2011 were The Netherlands, US, New Zealand, Canada, Ireland, Germany and Sweden (values of HDI index equal to 0.91) and the poorest were Congo, Niger, Burundi and Mozambique (values HDI index from 0.29 to 0.32) (Economics Online: Economic Development, 2016). The standard mainstream economics reasons to such differences would be in either poorer technology, lack of physical capital, less educated people, shorter life expectancy, poorer infrastructure, inefficient allocation of resources etc. in poorer countries. It is true that these factors decrease the economic activity, but "*they are not causes of growth, they are growth"*, that is why we need to find the fundamental causes of poverty. The right questions to ask at this point would be why poor countries invest

less in physical and human capital, why is their production inefficiently organized etc. (Gottfries, 2013). Because of institutions, or to put it differently *"institutions are one of the ultimate causes of growth"*! That is why institutional economics emphasizes the importance of analysing institutional environment of the country in order to fully understand the economic development (Williamson, 2000).

Economic and political institutions have had an important impact on the economic growth. That is why Daron Acemoglu and James Robinson (2010) developed a model based on relations between three elements: (1) economic institutions, (2) political power and (3) political institutions. Economic institutions have a major impact on growth. They directly influence investments in physical and human capital, technology and organization of production. Therefore, economic institutions determine the size of potential GDP and play a major role in the distribution of added value among social groups. Acemoglu and Robinson (2010) believe collective decisions of society have a great impact on the equilibrium of economic institutions, because institutions have different outcomes for individuals and social groups. The winner in that process is the social group that has more political power. In their model, political power is divided into de jure and de facto political power. De jure political power originates from political institutions, while de facto political power originates from the ability of a social group to assert their interests, which itself depends on the distribution of resources. The key factor in the model is persistence. The mechanism of persistence influences political institutions and the distribution of recourses, which are also determined by collective decisions of society. Collective decisions, as we have already seen, depend on the distribution of political power. This creates central mechanism of persistence: political institutions allocate the de jure political power and the social group that has that power shapes political institutions in their favour. The second mechanism of persistence comes out of the distribution of resources: the social group that is relatively richer has more de facto political power and can therefore influence political and economic institutions that comply with their interests. Authors also emphasize the importance of critical junctures that shape the evolution of institutions (Acemoglu et al., 2004).

Countries have different political and economic institutions, which is why Acemoglu and Robinson (2010) classify them into inclusive and extractive institutions. Inclusive

economic institutions encourage the participation of citizens in economic activities, where they can show their talents and qualities. The main characteristics of inclusive institutions are widely-spread property rights, impartial legal system and efficient supply of public service, which provides all citizens with the same starting position. Inclusive economic institutions therefore accelerate economic activity, productivity growth and welfare. On the other hand, extractive economic institutions can also lead to growth, which is as we will see unsustainable. Governing elites invest in some sectors in order to extract profit for themselves. This growth differs from the growth under inclusive institutions, as it does not cause creative destruction, which is necessary for endurable economics growth (new technologies, processes, innovations etc.). Creative destruction causes a different distribution of economic resources, which influences the de facto political power of the social group. That is why the governing elite may find themselves on the "losing" side, which is why they rather start slowing down the technological progress.

Apart from that Acemoglu and Robinson (2010) also distinguish between inclusive and extractive political institutions. Inclusive political institutions should fulfil two conditions: they must be centralized and plural at the same time. Otherwise the institutions are classified as extractive. Extractive political institutions concentrate the political power in governing elites which have full power. These extractive political institutions enable elites to control the economic institutions. On the other hand, inclusive political institutions enable widely distributed political power and allocation of resources throughout the society.

4. Real-World Examples: Institutions and Growth Dynamics

This section will put theory to the test; via four real-world cases we will see how the political and economic institutions have affected economies and thus determined long-term growth and development of nations.

First Case Study: Latin vs. North America

Looking at USA (North America) and Mexico (Latin America) gives us an illustrative example of why institutions matter; if we want to fully explain today's institutional differences between these two countries, we have to analyse their historical evolution

since the era of colonization. As we know Latin America was mostly colonized by two European imperial powers - Spain and Portugal. Their method of colonization was based on the subjugation of the indigenous ruler. This way they established an exploitative rule over all other natives - this marks the beginning of extractive institutions called "Encomienda". All the wealth of Latin America was consequently canalized to imperial forces and this further strengthened the rule of extractive institutions (Acemoglu & Robinson, 2010).

During the period of most intense colonization of Latin America, England was a minor European power, which was recovering from civil war. After its triumph in the naval battle with Spain, England consolidated its maritime power and began colonizing North America; not because it would have been economically attractive, but because it was the only American territory that remained uncolonized. The purpose of the English Empire was the same as that of Spain and Portugal; to obtain as much gold and silver as they possibly can. However, they soon realized that the situation in North America did not allow that. One of the Presidents of the Virginia Company was thinking as follows: *"There are no gold or precious metals, and the indigenous people could not be forced to work or provide food. The colonists will have to be the ones who will work!"* He requested from his home country not to send more gold seekers, but rather to send people with a "real profession" (i.e. masons, fishermen, farmers...). Soon after they devised incentives for settlers in the form of the "head right system", which gave every man 50 acres of land and a further 50 acres for each family member. In 1619, General Assembly was established, where each man had the right to participate in the shaping of institutions - this marks the beginning of the development of inclusive institutions. Of course the elite was still fighting for their own interests, but their power was declining. Until 1720 the structure of institutions in all 13 British colonies was similar; there was no democracy (slaves' and women's rights etc.), but at least political power was widely spread. The influence of England started declining and in 1776 the colonies declared their independence (Acemoglu & Robinson, 2012).

A similar development of institutions continued on. Confusion in the Spanish Kingdom and the fear of colonial elites of losing privileges led to the declaration of independence of the colonies of Latin America from Spain. Consequently, exploitative regimes continued. On the other hand, evolution of inclusive institutions in North

America carried on. Civil war unfolded in the favour of the Union and slavery was slowly abolished (mainly in the northern part). After several years of political and economic instability, growth returned, while in independent Mexico political instability lasted for nearly 50 years. This instability has further affected economic as well as political institutions - property rights were not protected, monopolies have blocked economic incentives, in short the exploitation of people continued. Meanwhile economic institutions in the US were under the influence of the inclusive political institutions, which created incentives for all segments of the population. Patent laws were designed, and in the 19th century the banking industry gained momentum and lent money to promising new businesses, which stimulated economic growth. In the 20th century, the regimes of Latin America's countries became more democratic, but the centuries long tradition of exploitative institutions has been difficult to replace. To highlight this fact let us compare the differences in the accumulation of wealth of two businessmen, namely Bill Gates and Carlos Slim. They both are among the richest people in the world. Bill Gates made his fortune through innovation. Conversely, Carlos Slim, the Mexican tycoon, accumulated his wealth through monopolies, which he acquired during the privatization of the national telecom in 1990 (Acemoglu & Robinson, 2012).

We can see that the theory explains the relationship between the evolution of institutions in the US and Mexico and economic development quite well. However, we believe that today's US institutions are moving away from inclusive, which is currently being reflected in the development of the US economy. Especially after the 70s the economic ideology of the free market, which has been promoted by Milton Friedman, paved the way to broad deregulation (deregulation of the financial sector, tax reform ...), which, in our opinion, allowed enormous enrichment of a narrow elite at the expense of the middle class. This has increased their de facto political power, making it possible to further move away from institutions that facilitate economic incentives and wider participation of the crowd. Such dynamics of evolution in the direction of extractive institutions threatens the further sustainable development of the US economy.

Second Case Study: *critical junctures* **and institutions**

In the first case study we have explained the basic logic of the model developed by Acemoglu and Robinson. This case study will introduce us to the importance of specific shocks ("critical junctures") in the evolution of institutions. As we have seen in the previous case, the extractive institutions have appeared throughout history in Latin America; extractive political institutions (de jura political power) have led to extractive economic institutions, which allocate resources to the few in power and amplify their de facto political power in maintaining the status quo - we are talking about the vicious circle of poverty (Acemoglu & Robinson, 2012). However, certain critical junctures may produce changes in the political and economic institutions that lead to transitions. Institutional drift plays a key role in this process; it is smaller at the beginning, but then gets bigger, and so influences the evolution of these institutions. Let us look at the case of England.

After the fall of the Roman Empire, England's economic activity was gradually slowing; institutions like money, urban settlements, schools, etc., which were enforced by the Romans, were slowly disappearing and 5th century England became poor. However, that is precisely where the first inclusive institutions occurred, which consequently led to the Industrial Revolution about a thousand years later. "Black death" that affected medieval Europe and led to social, economic and political change played a major role in creating so called institutional drift. The plague in England created a labour shortage, which led to a fundamental change in feudalism, the social system in place in Europe at the time. Farmers came together in peasant uprisings and demanded more rights; their status was gradually improved. Their wages and consequently the de facto political power were slowly growing. England began institutionally diverging from the rest of Europe. Nevertheless, the 16th century political and economic institutions have not yet been sufficiently inclusive to allow technological progress, as evidenced by the story of the innovator William Lee, inventor of the knitting device, which would significantly speed up the process. His invention was presented to Queen Elizabeth I, unfortunately her answer was negative: *"Thou aimest high, Master Lee. Consider what thou the invention could do to my poor subjects. It would assuredly bring to them ruin by depriving them of employment, thus making them beggars."* The queen was obviously afraid that an innovation like this would lead to political instability due to unemployment, which

would undermine her political power (Acemoglu & Robinson, 2012). In the 16th century the second important shock followed, which has paved the way to inclusive institutions, namely the Atlantic trade. It generated higher profits for traders and other social groups, which strengthen their de facto political power. Conflicts between monarchs and other social groups, which had begun with the signing of Magna Charta, continued, which led to two key events: Civil War (1642) and the Glorious Revolution (1688). Both milestones hindered de jura political power of the king and shifted it to the parliament (Acemoglu et al, 2005). The government introduced a number of inclusive political (broader voting rights, the possibility of petitions, executive and legislative authority under the domain of the parliament) and economic institutions, which promoted investment, trade and innovation. These foundations later proved to be crucial for the beginning of the Industrial Revolution, as they enabled men like James Watt (inventor of the steam engine), Richard Arkwright (inventor of the spinning machine) etc. to realize their ideas and sell them for a profit. Technological progress, new businesses, investments and efficient use of talented workforce empowered by inclusive economic institutions brought about rapid growth and 19th century England became a global superpower. On the other hand, it is also interesting to ask why other countries have not produced similar industrial revolutions. A detailed analysis would be too extensive for this paper, however, we can highlight an example of the Habsburg Monarchy, which at that time concentrated political power to the monarch. This enabled him to maintain extractive institutions and fight against technological change; as Francis I said in Ljubljana in 1821: "I do not need savants, but good, honest citizens. Your task is to bring young men up to be this. He who serves me must teach what I order him. If anyone can't do this, or comes with new ideas, he can go, or I will remove him." (Acemoglu & Robinson, 2012)

Third Case Study: the ascent of the Floating City

The third case study highlights the dynamics of a virtuous cycle between inclusive political institutions and inclusive economic institutions, which is based on several mechanisms: (1) pluralistic inclusive political institutions make it difficult for dictators to do a unilateral appropriation of political power and ensure the rule of law, which treats every individual equally, (2) inclusive political institutions are accompanied by inclusive

economic institutions that create a dynamic economy, which prevents enormous accumulation of resources in the hands of individuals in a short term and (3) inclusive political institutions allow free media to report on threats to the inclusive. Despite this mechanism, we will see that in the case of Venice, a specific shock can also break the cycle and lead to extractive institutions (Acemoglu & Robinson, 2012).

In the Middle Ages, Venice was one of the richest part of the world with the most inclusive economic institutions, which were supported by inclusive political institutions. Venice became wealthy due to the growth of Mediterranean trade; from the east they were importing spices, from Byzantium processed products and slaves. At its peak Venice had 110,000 inhabitants, three times more than London at the time. One of the key economics institutions that promote the rapid growth of the population was *»commedna«* or a form of common equity company, which was established only for the duration of a trade mission. *»Commenda«* worked on the principle of two partners: one remained in Venice and invested the majority of the capital, while other travelled by boat to pick up raw materials. This was particularly encouraging for young people without assets, because they were able to climb up the social ladder. In case of a successful mission gains profits were shared in a ratio of 75% against 25% in favour of the greater investor. Government documents from that time point to big fluctuations of the political elite every year (up to 81%). Economic incentives and increasing equality in the distribution of economic resources had led to a more inclusive political system. However, such growth was accompanied by creative destruction: new faces took advantages of economic incentives and grew rich almost overnight, leading to a reduction of business and profit for existing elites and their political influence became declining. Therefore, there were tendencies in the Great Council to limit new faces in the ruling authority. Gradually, by the year 1297, various institutional bodies were becoming more closed for new entrants and their opportunities were cut off with "La Serrata" or "The Closure". Consequently, in 1315 the police was established to maintain political power of elites. With their increasing power, elites also had a greater impact on the change of economic institutions towards greater exploitation of the people. The beginning of the end of the Venetian growth came with the abolishment of the *»commeda«* institution and nationalization of trade in favour of the new Venetian aristocracy. By 1500 population decreased to 100,000. Today tourism is the only economic activity in Venice (Acemoglu & Robinson, 2012).

All things considered, the mechanism of a virtuous cycle is not perfect in the evolution of inclusive institutions because their development can be turned towards greater exploitation of the population.

Fourth Case Study: implications of *creative* destruction on economic development

As we discussed earlier, growth under inclusive institutions differs from growth under extractive institutions. Extractive institutions do not lead to creative destruction, which is necessary for the endurable growth of economy. In this section we will discuss the Soviet Union case.

After the First World War Lenin led the Bolshevik revolution. Until the 1980s many believed Lenin's social order was the future. Three years after Lenin died, Stalin became the "ruler" of USSR. He killed his opponents and continued with the industrialization of the Soviet Union. He wanted to achieve economic growth with government measures, which were financed via taxing the agricultural sector. In order to do that it was necessary to pursue an agricultural collectivization. This process led to "kolkhozes" (joint properties) and decreased production due to insufficient economic incentives. Regardless of the inefficient agricultural and industrial sector, the Soviet Union grew quickly. The reasons why are not difficult to understand. The productivity in heavy industry was high, which lead to growth under extractive institutions. This growth was not a consequence of creative destruction or technological progress; it came out of relocation of labour from the unproductive agricultural sector and accumulation of capital. But as we have already mentioned, that kind of growth is not endurable. Until the 1970 the growth slowed down. There are two main reason for that. Firstly, lack of economic initiatives. Secondly, there were no conditions that would enable growth just because of government measures as all inefficiently used production factors had been allocated to more productive sectors. Therefore, the Soviet Union started to shrink. The only sectors where it was allowed to innovate were military and space technology. If we analyse Soviet Union in detail, we can find a lot of examples of inefficient planning, which we will not discuss here due to space restrictions. However, the main point of this case study is not inefficient planning, even if it had been

efficient, it wouldn't have led to sustainable growth for as long as it kept blocking creative destructions (Acemoglu & Robinson, 2010).

5. Empirical analysis of institutional economics and new methodological approaches

In the previous chapter, we discussed qualitative examples of the impact of institutions on the economic development, which is affected also by other factors that theory does not take into account because of the interdependent nature of reality. Therefore, it is almost impossible to exclude the effects of other variables. This review will introduce us to the major studies that try to explain the direct impact of the different institutions and economic growth.

Generally, empirical studies have confirmed the positive impact of an inclusive institutional environment on the economic growth. In the article *»Determinants of Economic Growth in a Panel of Countries«* Roberto Barro (2003) analyses the impact of a wide range of variables on the economic growth on the basis of 113 countries. He notes that the growth of GDP p.c. is positively correlated with the level of education (human capital), life expectancy and the rule-of-law index, while correlation is negative with the following variables: fertility rate and high inflation rate. Statistically significant is also the correlation between growth and democracy of political systems, but it is not linear - it has the shape of an inverted letter U. In terms of our analysis the important variables are the-rule-of-law index and indicator of democracy as they both partially cover the quality of institutions and create positive incentives, which empower individuals to use their knowledge and skills and to participate in the process of development. In addition, they ensure the enforcement of property rights, which are a precondition for the efficient functioning of markets (Coase theorem). An interesting correlation is between growth and the indicator of democracy; it is first positive and then negative. If a country has a low baseline level of democracy, greater democratization leads to higher GDP growth. With further democratization the correlation is reversed and becomes negative as the public sector is increasing and becoming inefficient, and conflicts among various social groups are more frequent, which is not productive. A correlation between one of the fundamental concepts of institutional economics, namely the protection of property rights and economic growth was also analysed by Acemoglu et al. (2004).

Results are similar - countries with a higher protection of property rights have higher levels of GDP p.c. Knack and Keefer (1995) also reached a similar finding. However, we have to be careful with the interpretation of simple bivariate regressions, because the interpretation can also go in the opposite direction; only rich countries can afford a high level of protection of property rights. Therefore, there have been several attempts to develop a comprehensive index of quality of the institutions in the last decade, which could be effectively included in the complex regression analysis.

In the article *»Institutional Quality Dataset«,* Kunčič (2014) introduces a generic indicator of the quality of economic, legal and political institutions, which provides a comparative institutional analysis. He divides countries into five groups; in the first group are the countries with the poorest quality of legal, political and economic institutions, the quality of those is the highest in the fifth group. His comparative analysis shows that a lower quality of institutions leads to lower levels of income per capita or a lower level of development.

Levchenko (2004) draws attention to the importance of the quality of institutions (enforcement of contracts, protection of property rights, the rights of investors) in the international trade between north and south (N-S trade). He notes that institutional differences largely determine bilateral trade flows - international trade is higher in countries which have a relative comparative advantage in the quality of institutions. Anderson and Marcouiller (2000) also show that the correlation between inefficient enforcement of contracts, corruption and international trade is negative.

In hindsight, a set of methods and other empirical tools developed within institutional economics is becoming more widely used in the empirical analysis. Nevertheless, the authors of the articles that include institutions as endogenous variables stress out that there is still plenty of room for improvement in this field of economics.

6. Conclusion

This paper argues that the neoclassical "toolbox" itself is not sufficient in explaining the complex reality of nations' growth and development dynamics. The key problem of this branch of economics are too restrictive assumptions that might hide away the

complexity of everyday reality and would consequently not be useful in identifying the key drivers of economic growth and development. This paper therefore introduces a more complete view to understanding economic growth and development, which provides a comprehensive insight into the causes of the wealth of nations, namely institutional economics.

We claim that institutions play a key role in the economic development. According to Acemoglu and Robinson's model political and economic institutions have a major influence on sustainable economic growth. On one hand, inclusive economic institutions encourage the participation of broad masses of people in economic activities, which means they can enforce their talents and skills and thus contribute to the growth (see examples of USA and England). On the other hand, the extractive economic institutions often lead to unsustainable growth, as we saw in the cases of Latin America and the USSR. As we have seen, political power plays a key role in the establishment of economic institutions. It originates from the distribution of resources and political institutions. The latter are also divided into inclusive and extractive. Inclusive political institutions must satisfy two conditions: centralization and pluralism. If at least one of the conditions is not met, we talk about extractive political institutions, which usually concentrate political power in the hands of a ruling elite. Lastly, the case of England and Venice showed that institutions are subjected to specific shocks or critical junctures that can alter their evolution.

Such a comprehensive analysis of economic growth and development in our view presents a significant contribution to the relevance of economic theory. Differences in the wealth of nations are caused by discrepancies in the quality or inclusiveness of the institutional environment. Nations that have historically been able to develop inclusive institutions grow faster and achieve higher levels of prosperity. In contrast, nations that have extractive institutions lag behind. Due to this fundamental role of institutions we should not take them for granted. Institutions are result of historical and current interactions between individuals and social groups; a process that we must actively build together as economists. Only in this case will institutions serve the broader public interest and contribute to the collective well-being.

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Table 1: Classification of Institutions

Classification 1	Douglass North (degree of formality)	**Formal institutions**	statute or common law, regulations and any other rules to which people explicitly subscribe
		Informal institutions	norms, conventions, codes of conduct, which are not explicitly written down
Classification 2	Oliver E. Williamson (degree of embeddedness)	**Level 1: Embedded institutions**	informal institutions, customs, traditions, norms, religion
		Level 2: Institutional environment	formal rules of game - property (polity, judiciary, bureaucracy)
		Level 3: Institutions of governance	play of the game – contract (aligning governance structures with transactions)
		Level 4: Resource allocation and employment	prices and quantities; incentive alignment
Classification 3	Paul Joskow (subject categories)	**Legal institutions**	public or state devised legal institutions and private legal institutions
		Political institutions	electoral rules, political parties and rules of and limits of a government or state
		Economic institutions	ensuring a properly working market
		Social institutions	norms, beliefs, trust, civic cooperation, social capital and social networks

Source: North (2003), Joskow (2004), Williamson (2000)

Financing obstacles to the realization of 21ˢᵗ century socialism

Victor van den Werdeen

Abstract

In the following paper I introduce a 21st century alternative to the modern neoliberal economics order. I call such an alternative "21st century socialism" whose defining feature is the organization of all economic production through labor-managed (LMF) as opposed to capital managed firms (KMF). Such LMFs are characterized by democratic control of economic production by all those involved in the production process on the basis of one man-one vote. If such an economic system can be proven to be theoretically viable then it presents a real alternative to contemporary capitalism. However, in the literature one key obstacle to the formation and viability of LMFs has been identified: the lack of access to cost-efficient financing in the startup phase and inefficient investment decisions once the firm has come to exist. In the following paper, we examine the nature of these financing difficulties and hint at a possible solution.

1. Introduction

In line with the theme of the current issue of the journal: "the world in transition: the great recession, conflicts, and imperialist rivalry in the 21st century", this paper attempts to give a detailed analysis of an alternative form of economic organization to the dominant capitalist controlled firms of modern neoliberal economies. These hierarchical bastions of authority have always served as locus of conflict between capitalist and laborers since the Industrial Revolution. An LMF economy, or an economy of labor-managed firms would offer the true 21st socialist alternative to modern capitalism in reversing what Jossa (2014) calls the fundamental hiring relationship of capital and labor in capitalist economies; instead of capital hiring labor, labor now hires capital. The success of a complete labor-managed economy (LME) such as that envisioned by Jaroslav Vanek (1975) will of course depend on the existence of what Vanek calls "support structures" such as a national planning agency and a cooperative banking system. Nevertheless, it is worth examining the economic viability of such an economy, independent of the institutional context, and within the frames of orthodox economic theory. For if such firms can be shown to be viable even in the neoclassical fantasy world then orthodox economists have no effective strategy to challenge LMFs within the rhetoric of mainstream economics. The macroeconomic implications of an LME are beyond the scope of this paper, but the theme of the current journal issue invites us to reflect on the implications that an LME would have for imperialist rivalry. If imperialism is the characteristic and inevitable consequence of global capitalism as Lenin argued, then surely imperialism would not exist within the confines of a socialist system. For labor is distinguished from capital in one fundamental respect, capital is alienable and impersonal hence it has no bond or connection to any territory or land. It does not discriminate in its ruthless pursuit of profit. Labor on the other hand is the only uniquely human input and hence any decisions made by an LMF will take into account the welfare of the collective labor force when making economic decisions. And since laborers tend to reside in the areas they world, LMFs will also encourage greater concern for the welfare of the greater community even outside the employees of the firm. If the natural consequence of the spirit of solidarity and community engendered within the workplace is the spread of such a spirit throughout one's society and eventually other societies, then an LME can be seen as a potential antidote to zero-sum imperialism as the collective of workers eventually becomes the collective of all the world's

laborers; thus the interests and the collective welfare of the entire working community will become the sole goal of all economic organization/

As was said, labor-managed firms have long been invoked throughout history as a potential alternative paradigm to the hierarchical capital managed firms which define and dominate capitalist economies, even more so within the current epoch of neoliberalism. However, the potential for such labor-managed firms or LMFs to undermine the economic status quo of giant capital-managed corporations, depends on the economic viability of such organizations in the real world. Financing difficulties are frequently invoked in the LMF literature as one of the principal reasons accounting for the rarity of LMFs relative to KMFs. In this paper we will explore how financing difficulties plague LMFs in both the initial startup phase and once they have already come into existence. The financing difficulties which affect LMFs can broadly be classified as issues of underinvestment and occur with all classes of LMF financing: leasing, bond financing, and equity financing. If labor-managed firms are ever to challenge the central pillar of neoliberalism, control by unaccountable financial and monopoly capital instead of economic democracy, an effective solution to the LMF underinvestment issue must be found, which may require the use of a new class of financial instruments broadly taking the name, 'quasi-equity'.

2. Financing difficulties as an obstacle to LMF emergence

Neoclassical theories of labor-managed firms state that in a world of complete and perfectly competitive markets KMFs and LMFs would be symmetrical in their static and dynamic behavior. Such 'equivalence theorems' show that an economy of labor-managed firms will be as allocatively efficient as an economy of capital-managed firms (Dreze 1976, 1989, Dow 1996). The natural question that arises then is: if LMFs are as efficient as KMFs why do they occupy only a marginal place in Western market economies? Although there is no consensus answer to this perplexing question, the last four decades of research on the economics of LMFs has more or less converged on financing difficulties as the key barrier to the spread of LMFs in Western market economies. For example, Jacques Dreze asserts that "funding difficulties are the main reason why labor-managed firms are not spreading within capitalist economies" (1993, pg. 261). Specifically, the financing problems of LMFs enter at two points: before the LMF is created and once the LMF is already in existence. The first point of entry for LMF financing difficulties involves a combination of low worker wealth with credit

rationing in bond markets and non-voting equity markets which hamper the rate at which workers will pool resources to form LMFs (Dow and Putterman 2006). The second point of entry for financing difficulties plaguing LMFs is once such firms have already come into existence. The principal financing difficulty affecting incumbent LMFs is the much discussed 'underinvestment' phenomenon which leads first to depressing the private value per unit of capital of the LMF and hence the growth rate of the LMF relative to the KMF and secondly to the increased likelihood that worker-members of existing LMFs will sell their firms to capitalist investors (Dow 1993). In evolutionary terminology the first point of entry for funding difficulties is the lower rate of differential birth of LMFs as such firms have major difficulties getting off the ground. The second point of entry is the higher rate of differential death of LMFs relative to KMFs as underinvestment issues threaten slower-growing LMFs from being outcompeted by KMFs in competitive markets, resulting either in bankruptcy or degeneration into an investor controlled firm.

In order to make sense of the increased funding difficulties that LMFs face relative to KMFs during the formation stage it is necessary to invoke what Dow (2003) calls a "symmetry principle" which traces symmetrical behavior of LMFs and KMFs back to qualitative symmetries (in both a physical and institutional sense) of labor and capital inputs (pg. 118). The obvious corollary of such a "symmetry principle" is that any *asymmetrical* behavior between LMFs and KMFs must be ultimately derived from some qualitative asymmetry between capital and labor. The asymmetrical behavior of LMFs is evident from the fact that they are rare relative to KMFs and the fact that LMFs are seldom found in industries with large economies of scale, high capital intensity, or highly specialized physical assets. The fundamental asymmetry between capital and labor inputs can be termed the 'alienability' characteristic. The alienability of capital implies that the ownership of non-human assets can be shifted from one person to another while endowments of labor-time and skill cannot (ibid). Williamson (1985) likens this asymmetry to the difference between stocks and flows; while capital can provide its whole self to the firm as a stock labor can only supply a service flow. The fundamental asymmetry between labor and capital inputs is the source of the causal channel through which one potential cause (on the differential birth side) of LMF rarity can begin to be explained. The causal explanation of LMF rarity begins with a contingent fact which nonetheless is of enormous significance. The contingent fact is that on workers tend be suffer from limited wealth and liquidity constrains so the lack the

resources needed to finance jointly owned assets. Using back-of-the-envelope calculations data from 1988 Bowles and Gintis (1996) estimate that the average net worth of the least wealthy 80 per cent of American workers (half of which was tied up in homes and cars) was about $64,000 while the capital stock per employee was about $95,000. Thus the typical net worth of a worker is about half the value of the capita stock they typically work with. For this reason workers will have to rely on leasing, debt financing, or equity financing if they are to purchase the physical assets which will constitute the firm. As was established above capital is an alienable stock while labor is an inalienable service flow. Stocks can be leased *and* owned while service flows can only be leased. Leasing of capital assets as a cost-effective option for firms was ruled out in the beginning as costly information (information is costly to obtain and transmit) and asset specificity lead to costly monitoring of service flows and the threat of quasi-rent expropriation respectively (Alchian and Demsetz 1972 and Klein, Crawford, and Alchian 1978). Thus workers interested in creating a labor-managed firm will have to rely either on bond (loan capital) financing or equity (risk capital financing) to finance the firm's capital assets. In this scenario then an upfront investment of capital must be provided in exchange for future interest payments in the bond financing case or future dividend payments in the equity financing case. But once the stock of alienable capital has been committed, the LMF may be able to rely solely on internal financing from retained earnings for working capital and maintenance thus eliminating the need for the LMF to dip back into equity and bond markets (Dow 2003, pg. 237). Members of the LMF will thus face a problem of making "credible commitments" to capital in order to ensure investors that the LMF will not take advantage of an upfront capital investment by paying themselves higher wages, depreciating assets, or pursuing risky projects (ibid). The threat of non-renewal by investors has little force if assets are durable, retained earnings are healthy, or the firm is on the verge of bankruptcy. Such situations characterized by a divergence of incentives between principal (lenders) and agent (worker-borrowers) are termed 'moral hazard' problems, scenarios where the agent takes more risk since the principal bears the costs of these risks. Moral hazard problems involve *ex post* asymmetric information. Only after the contract has been created to informational asymmetries enter into the picture as the principal can neither control or costless verify the level of risk which the agent may undertake. Gui (1985) confirms the above moral hazard dilemma in the bond market arena as agent/worker liquidation (bankruptcy) depends on the realization of a stochastic variable, gross income from

production (value-added inclusive of capital costs) which is only observable to the worker-members. Workers (agents) can thus liquidate projects to avoid debt repayment which the lenders (principals) have no way of anticipating in situations of asymmetric information. Moral hazard dilemmas where informational asymmetries are ex post should be contrasted with so called adverse selection problems where informational asymmetries are *ex ante*, appearing even before the loan contract between principal and agent is signed. For example, if some borrowers have better skills or projects than others but lenders cannot distinguish between different quality projects ahead of time then borrowers will find it difficult to convince lenders that the probability of loan repayment is sufficiently high, leading to prohibitive interest rates and credit rationing once again. Symmetrically, adverse selection problems may also affect groups of workers who when confronted by a wealthy investor who offers to transfer his assets through a debt contract, cannot confirm the quality of the investor's project beforehand (Dow 2003, pg. 209).

To make matters worse because workers are poor they lack the funds necessary to make so called "trust investments" in their own projects which would signal to lenders or equity investors the likelihood the project succeeding. Furthermore because human capital is inalienable workers cannot offer their own future labor income as collateral that would be forfeited to banks in case of default (Hart and Moore 1994). Even if the Sertel-Dow market for membership rights is introduced, due to prohibitions on indentured servitude and the illiquidity of individual claims on the LMF's capital assets, it will be difficult to secure a loan using the membership right as collateral (Dow 1993, pg. 192). The overall outcome of the LMF's inability to make credible commitments to capital are high interest rates or outright credit rationing in the case of bond financing or a higher cost of capital (selling stock at a cheaper price) reflected in higher returns demanded by equity financiers (Stiglitz and Weiss 1981). Bowles and Gintis (1993) correctly stress the contested nature of exchange in bond markets as the promise by the borrower to repay the lender is enforceable only if the borrower is solvent at the time repayment is due, and the borrower's promise to repay is not amenable to third-party enforcement (pg. 32). The incentive incompatibility between creditors and borrowers is heightened by the fact that since workers receive employment rents, they profit from the firm's continued operation even when the future profits are expected to be negative whereas lenders will prefer that the LMF declare bankruptcy in such a situation (Gintis 1989). Equity financing in the case of the LMF can only be of the

non-voting equity type as granting owners of capital (even if they are workers) votes on the basis of the amount of capital supplied contradicts the fundamental tenet of worker self-management: one member one vote. Lack of worker wealth thus combines with the inability to make credible commitments to capital to make external financing for LMFs a bleak and costly option.
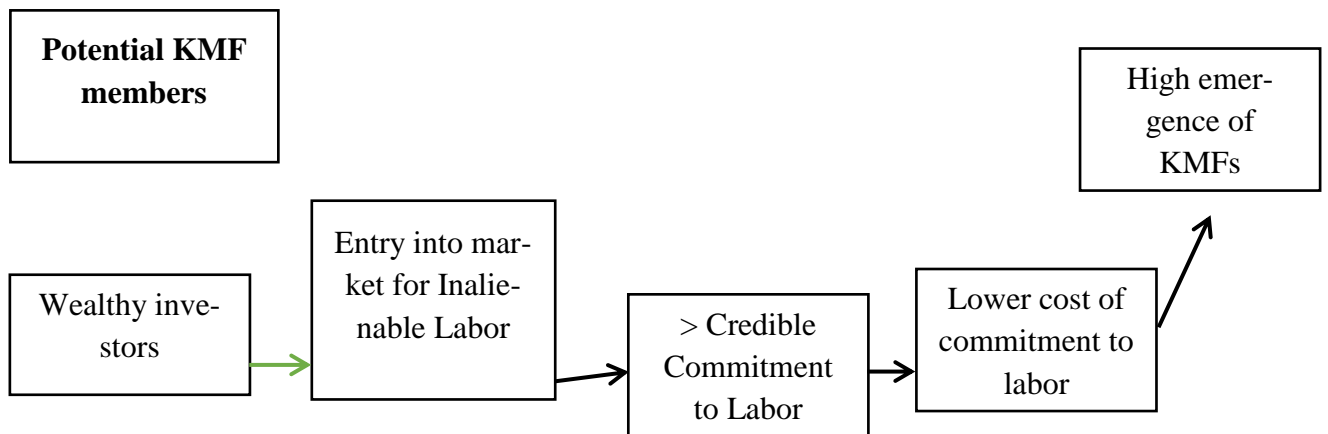
As Hodgson (1996) indicates such an obstacle as costly access to external financing could ensure that labor-managed firms are less numerous than hierarchical firms, even if in the best case scenario they suffer no efficiency disadvantages, because they are less likely to emerge in the first place. If the financing troubles which LMFs will face are as gloomy as concluded above then "…hierarchical firms may grow in size or number to swamp the non-hierarchical businesses, whatever the relative efficiencies" (ibid, pg. 103). It is important to stress that KMFs can in theory face the same difficulties in making credible commitments to capital that LMFs face. As Dow (2003) points out "…there are no data comparing the cost of external capital for KMFs and LMFs so it is impossible to determine directly whether LMFs are disadvantaged in the credit market relative to similar KMFs" (pg. 192). The fundamental difference, however, is that capital suppliers are wealthier than workers so they do not have to rely as much on incomplete capital markets to finance their firms and when they do go to capital markets for financing their higher level of wealth allows for financing on less costly and more favorable terms. Capital suppliers and the KMFs which they form, while facing less of the problem of making credible commitments to capital, are subject to the symmetrical problem of making credible commitments to the workers whose labor service flow they lease. But just because labor time is a service that is leased and not a stock to be bought there is an increased incentive to protect their reputation in the eyes of workers as KMFs will frequently have to dip back into the labor market to replace labor services lost through worker turnover.

To summarize the overall flow of the channel from labor-capital asymmetry to a lower emergence rate for LMFs the causal chain can be conceived of as thus:
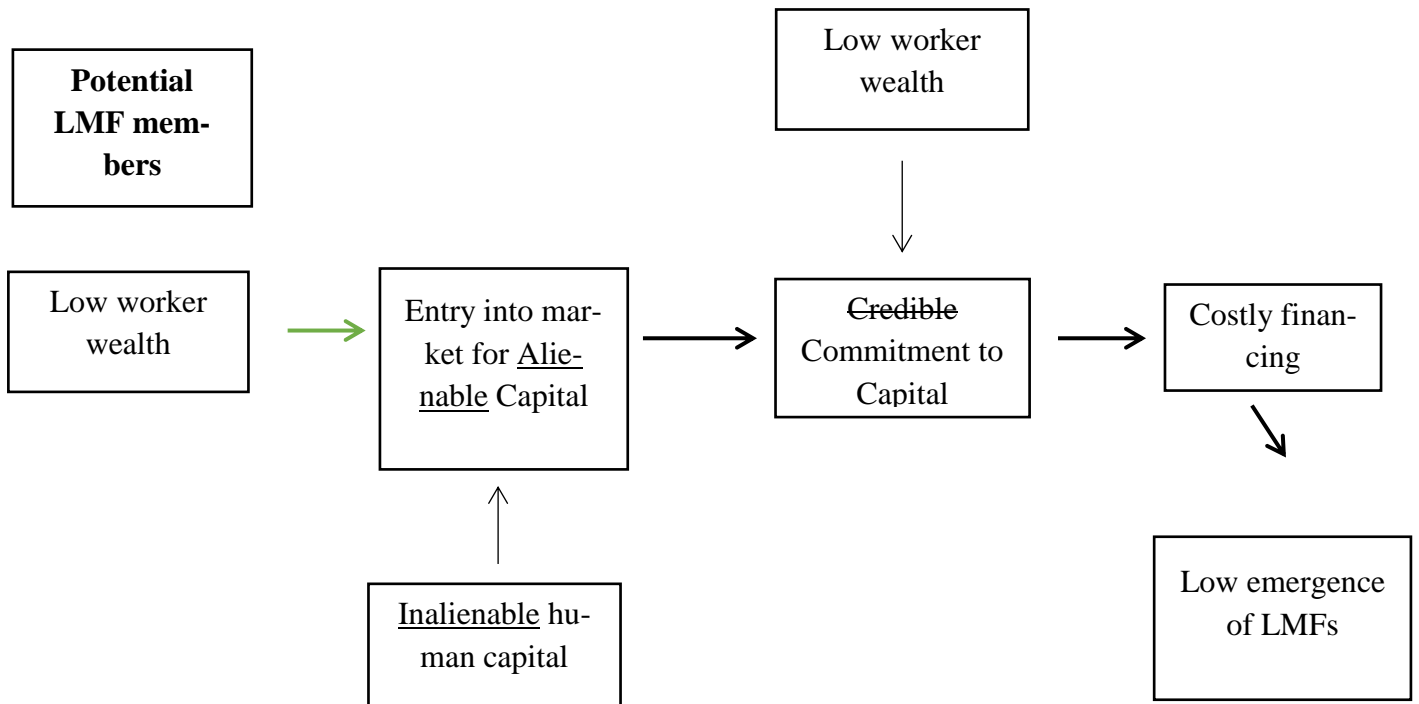
From the above flow chart it can be seen that the major causal factor (indicated by the bold arrow) which lead to the difficulty of making credible commitments to capital are the fact that capital is alienable. The other two factors, low worker wealth and the fact that inalienable human capital cannot serve as collateral, are best seen as auxiliary causes of low credibility commitments to capital. The orange color of the arrow leading from low worker wealth to entry of worker-members into capital markets is intended to show that the initial situation of low worker wealth is merely the trigger which begins but does not cause the flow of the causal channel from capital-labor asymmetry through lack of credible commitments to costly financing and low emergence. To repeat bold arrows indicate the flow of the *causal* channel while the orange arrow is only the trigger.

The symmetrical causal channel for the KMF can be summarized by the following flow chart.

Potential KMF members					High emergence of KMFs
	Wealthy investors	Entry into market for Inalienable Labor	> Credible Commitment to Labor	Lower cost of commitment to labor	

In contrast to the scenario facing potential LMF members, a high level of wealth for owners of substantial capital triggers their entry into the market for inalienable labor-power to which they can make a more credible commitment to (for the reputational reasons outlined above), leading to lower transaction costs in contracting labor, and ultimately a higher emergence rate for the KMF form. The qualitative asymmetry between labor and capital as pertains to the credibility of commitments to labor and capital can be put another way. While labor, since it is inalienable, can always pick up and leave if it is not satisfied by capital's promises, capital, as an alienable stock, does not have the same freedom to pick up and leave once it has been given to labor. As regards the differing costs of reputations for labor and capital respectively, while capital has to return frequently to the labor market since labor is always free to pick up and leave, once capital has been given over to labor, labor does not have to return to the capital market again as long capital remains firmly in its hands!

3. Underinvestment in the WMF. LMF*, and PC

Up until now we have been discussing the first point of entry for the financing difficulties faced by LMFs as a general category. In the following section we will be looking at the second point of entry for LMF financing difficulties; specifically, the issues of underinvestment which arise once self-managed firms have already come into existence. To continue with the evolutionary analogy, underinvestment issues in incumbent LMFs deals with the differential death (survival value) of such firms rather than their relative fecundity or probability of emergence. The central underinvestment issues which are attributed to self-managed firms in LMF financing literature are: the 'Furubotn-Pejovich effect' or horizon problem, the 'Vanek effect', and the risk-sharing

effect. Briefly, the Furubotn-Pejovich effect (first discussed by Pejovich (1969), Furubotn and Pejovich (1970), Furubotn (1971, 1976)) refers to the tendency of WMFs to underinvest when the time horizon within which worker-members expect to remain with the firm is shorter than the time period over which they will see the full returns on investments made from retained earnings. The reason for this 'horizon problem' is rooted in the fact that once partners of WMFs leave their firms they forfeit any rights to both the principal of their investments, the value of any assets created out of retained earnings, *and* any returns, reflected in the higher future dividends per worker resulting from the initial investment (Jossa 2014). The second financing problem encountered in the LMF literature is the so called 'Vanek effect' or the 'self-extinction' force (Vanek 1977). The 'Vanek effect' occurs when LMFs are financed exclusively from retained earnings (or internal financing) leading to the following distorting 'forces': (1) firms operate in the increasing returns to scale zone of production (output is too low) as the marginal product of labor lies above the level of the typical worker's marginal rate of time preference, (2) at any given level of capital the firm will attempt to reduce membership, (3) the gradual disinvestment and capital consumption undertaken in order to achieve the desired capital/output ratio, and (4) adjustments to the capital/labor ratio are always carried out by varying capital and never by increasing membership (George 1990, pg. 12). Vanek hypothesized that an LMF financed through retained earnings will become extinct over time because of the four forces listed above. The final category of financing perversities plaguing self-managed firms (LMFs) are classed as "risk-sharing effects", and refer to the problem of optimally allocating risk between workers and investors when LMFs are exclusively funded out of loan capital (external financing). The fundamental problem of optimal risk-sharing involves the purported conflict between risks and incentives within the Vanek LMF*. Full-debt financing protects workers from bearing the lower tail of enterprise risk through default (thus avoiding bond repayments) while allowing them to capture the upper tail of any extraordinary gains (McCain 1977). But if the worker's income is insured against such firm-specific risks via transferring the risk to lenders then they will have less of an incentive to repair and maintain the capital assets financed through loans in order to extract as much current income from its use as possible (Jensen and Meckling 1979). On the other hand if workers as residual claimants are made the equity-owners of their capital assets then they will have an incentive to optimally use and maintain the assets. But if the majority of assets are financed out of the workers' equity

then the worker shareholders could potentially lose all of their invested wealth as after liquidating the firm's assets, creditors and bondholders are paid before equity investors who might only scrap up a tiny residual in the realm of pennies on the dollar. Such a risk is amplified in the case of worker-owners who cannot diversify their portfolios by holding several membership rights in several firms.

Having analyzed how the WMF is plagued by both the Furubotn-Pejovich effect and the Vanek effect, it is now time to consider the investment behavior of that particular LMF, LMF* as we have called it, that is financed exclusively through bonds/loans or what Vanek (1975, 1977) calls external financing. Like the WMF but unlike the Western style PCs, partners of the LMF* lack individual property rights to firm's capital goods or assets, as the assets are *collectively* owned to use the terminology introduced above. Although LMFs* are prohibited from internal financing, in the sense of financing from retained earnings, there is nothing prohibiting such firms from loaning capital from its own members. Partners who choose to invest their private savings in debentures (an unsecured bond) of the firm, are granted the same rights as any holder of a debt security: the right to enjoy interest, to recoup the loaned capital on maturity, and to be able to sell the bonds at any moment on financial markets. Because an externally financed LMF* can sell bonds to its own internal constituents, Jossa (2014) rightly concludes that the internal vs. external financing distinction is the wrong line of demarcation to draw. Rather, he proposes that the distinction between a LMF* and a WMF should be drawn on the basis of LMFs which distinguish between labor income and capital income and those that do not. Labor income is taken to mean the average net income that a worker receives in virtue of his being a member of the firm while capital income is the return on capital accruing to holders of equity (dividends), bonds (interest rate), or leasing agreements (capital rental rate). A WMF, which is financed through retained earnings, makes no such distinction between capital and labor income as the income which partners receive derives both from their status as workers in the firm (with the corresponding right to the net income) and as contributors of capital, who accept reductions in dividends in order to finance fresh investments; dividends paid out from future retained earnings will thus reflect the new increased value of the firm's assets in addition to the worker's regular right to a share of the firm's profits. Returning to the financing issues faced by self-managed firm type LMF*, because the LMF* is exclusively financed from loan capital (whether the holders of the debentures are themselves partners or not), the partner's contribution to capital investment out of

retained earnings is zero and hence there can be no Furubotn-Pejovich effect (Jossa and Cuomo 1997). Jossa (2014) argues that the LMF*, although not exhibiting the F-P effect, may have a tendency to exclude efficient investments, which a profit-maximizing (PMF) twin would undertake, because lacking the ability to recover any part of capital LMF* members will only take into account the future income that will flow from the investment and not any variation in the firm's net worth.

As is well known, in a PMF a precondition for undertaking an investment project is that the internal rate of return (IRR), the discount/interest rate at which the net present value (NPV) of all cash flows is equal to zero, is greater or equal to the minimum acceptable rate of return (MARR), the minimum rate that the firm expects to earn when investing in the project (or the firm's weighted average cost of capital (WACC)). Equilibrium is reached when the IRR is equal to the MARR or:

$$RL_t \sum_{t=1}^{T} (1+r)^{-t} = C_0 \tag{1}$$

where RL is the annual gross income from the investment, r is the interest rate, t is any year, T the terminal year of the project, and C_0 is the purchase price of the machine or cost of capital. Jossa and Cuomo (1997) state the equilibrium condition of the marginal investment of one monetary unit as following:

$$\sum_{t=1}^{T} r_t (1+i)^{-t} - 1 = 0 \tag{2}$$

where the left-hand side of the equation represents as above the NPV of the future investment returns and the right-hand side is the cost of the investment equal to one monetary unit. In an LMF* where the worker-members do not bear the reductions in the capital value of the assets and whose only cost is to reimburse the bondholders with a quota of capital increased by the matured interest (principal plus interest), face a different investment constraint than both the PMF and WMF. However, even though the underinvestment effect facing an LMF* is different than the F-P effect which plagues the WMF, both result from the potentially truncated time horizon of the partner. In the case of the LMF* the limited time horizon of partners leads to a

distortionary effect on investment decisions which can result not only in underinvestment but a kind of "overinvestment" (Jossa 2014). A point of clarification is in order here. Jossa claims that the LMF* will experience a form of overinvestment if a project that is deemed inefficient in the long run but efficient during the time horizon of the partner is undertaken. However, it suffices to say that such projects even though they yield temporary efficient returns, will lead to a decrease in the total net worth of the firm in the long-run and hence remain an instance of underinvestment when seen in their totality. To see why an LMF* is said to make inefficient investments consider the investment constraints facing members of the LMF*. According to Jossa and Cuomo (1997) partners of the LMF* whose time horizons are shorter than the duration of the investment will have an incentive to make the marginal investment as long as:

$$\sum_{t=1}^{n} (r_t - d_t - i_t)(1 + i)^{-t} = 0 \tag{3}$$

where n is numbers of years the majority partner expects to remain with the firm, r_t the gross return on investment, d_t the annual rate of depreciation of investment, and i_t the market interest rate. Equation (3) states that the investment will only be made when the cost of investment represented by the depreciation and interest on loaned capital is equal to the returns on the investment. If n is shorter than the duration (in years) of the investment, T, then the partners of the LMF* have an incentive to make inefficient investments. That is to say, because the partners of the LMF* are only concerned with equalizing the flow of costs to the flow of returns in the years 1 to n, they will neglect the marginal investment constraint in the period from $n + 1$ to T. Because of the truncated time horizon, the members of LMF* will take on projects which on the whole are inefficient (the flow of costs is greater than the flow of returns), but within the years 1 to n are efficient. In contrast, WMF members (like members of PMFs) will never undertake inefficient investments as they have a vested interest in recovering the entire cost of capital, which they contributed through retained earnings not paid out in dividends (self-financing). The WMF will thus only undertake the marginal investment if equation (4) is satisfied:

$$\sum_{t=1}^{n} r_t(1+i)^{-t} - 1 = 0 \tag{4}$$

If the time period which the worker-members expect to remain with the firm (n) is shorter than the period in which the investment will provide returns (T) then the WMF experiences the F-P effect, with partners suffering a loss "…equal to the difference between the reduction of the dividends and the returns on the investment already obtained and withdrawn" (Jossa and Cuomo 1997, pg. 213). Formally a WMF experiencing the F-P effect will make a loss P on the marginal investment where:

$$P = \sum_{t=1}^{n} r_t(1+i)^{-t} - 1 < 0 \tag{5}$$

Thus a WMF member will use the marginal investment rule (4) instead of (3) which is employed by the profit-maximizing firm (PMF). Given n is less than T the internal rate of return of the WMF will be smaller than the PMF and hence WMFs exhibit the well-known tendency of underinvestment which has been widely discussed in the literature (Stephen 1984, Vanek 1975, Bonin and Putterman 1984). Jossa (2014) is correct to point out that the 'Furubotn-Pejovich' underinvestment effect is used rather loosely in the literature. He points out that the F-P may refer to two distinct underinvestment forces operating in the WMF: (1) partners forfeit their rights to a share of returns on the investment upon leaving the firm but are not denied reimbursement for their past capital contributions made through dividend reductions when the investment project is completed and (2) in addition to forfeiting their rights to the firm's net income the worker collective as a whole is prohibited from reimbursing partners through depreciation expenses due to 'capital maintenance requirement' (CMR) requiring WMFs to replace worn-out equipment and hence at a minimum to maintain the total value of capital assets at all times (Jossa 2014). To be clear, in a WMF workers do not the *right* of refund of their capital share at the time of their withdrawal given that they have no corresponding claims on the net worth of the firm upon leaving. They do however have an *incentive* to recover the past dividend deductions made for reasons of self-financing, during their tenure with the firm through cashing in on the returns to the

investment. A CMR ensures that not only is the right of refund forfeited but any possibility a partner had of recouping his share of the past self-financed investment.

Returning to the LMF*, it was concluded that such firms have a tendency to make inefficient investment decisions, arising from a distorted investment rule (3) where the time horizon (n) of the partner replaces the lifespan of the investment (T) in the upper limit of summation. The truncated time horizon of the LMF* member is a necessary but not a sufficient condition for the occurrence of inefficient investments. The sufficient condition for inefficient investments, which was alluded to above, is that LMF* members have an incentive to delay depreciation of externally financed capital goods. More specifically, since members of the LMF* do not have a right to the capital assets of the firm upon retirement they will not take into account the full cost of the investment (reductions in the capital value of assets). Nothing changes when LMF* partners are the ones who acquire bonds and become the firm's creditors, as the fact remains that no has a right to the net worth of the firm upon departure. Every partner in the LMF* thus has an incentive to squeeze as much profit out of the firm's net worth as long as they remain with the firm without any regard to the firm's net worth once they retire.

Depreciation of course refers to the process of allocating the costs of capital goods over their useful life and can either be done of the basis of matching the depreciation expense (the wearing out of the asset) to its contribution to production, or distributing the depreciation expense evenly across the lifespan of the capital good (straight-line depreciation), or attributing the entire cost to one year. Unlike the LMF*, members of the PMF and the WMF have an incentive to amortize (depreciate) the entire cost of the investment during the investment's lifetime. Consequently, for the PMF in equation (2) and the WMF in equation (4) $1 = d_t T$ or in other words the total depreciation expense of the capital asset whose life is T years is equal to the initial monetary cost of the investment 1. For an LMF* the investment rule described by equation (3) can be rearranged as:

$$\sum_{t=1}^{n} r_t(1 + i)^{-t} \tag{6}$$

$$= \sum_{t=1}^{n}(d_t + i_t)(1 + i)^{-t}$$

yielding the equivalence between the gross return on the investment and the cost of the loaned capital whose two components are depreciation d_t and interest i_t. When $n < T$, however, the members of the LMF* will have an incentive to delay amortization (fail to attribute depreciation expenses in accordance with asset use) in order to collect non-realized (future) profits yielding the inequality between the attributed costs and interest payments and the full monetary cost of the investment:

$$\sum_{t=1}^{n}(d_t + i_t)(1 + i)^{-t} < 1 \tag{7}$$

where $n < T$

Thus, unlike the WMF and PMF, the LMF* will undertake an investment even if the net return is less than its total cost so long as the net return of the investment during the n horizon is greater than the flow of costs in the same time period:

$$\sum_{t=1}^{n} r_t(1 + i)^{-t} \tag{8}$$

$$\geq \sum_{t=1}^{n}(d_t + i_t)(1 + i)^{-t}$$

Jossa and Cuomo (1997, pg. 227) show that equation (3) can be transformed into a 'profit equation' which only looks at the flow of costs and returns in one year:

$$rpK - dpK - ipK = D \tag{9}$$

where rpK is the gross return on depreciation, dpK the contribution of the capital asset to the productive process, and ipK the interest on the loan capital. Jossa and

Cuomo (1997) show that if mpK, the share of the value of loan capital pK which is reimbursed to the bondholders on a yearly basis, is less than dpK, or in other words if the attributed cost of capital (the depreciation expense) is less than the average return of capital, then LMF* members in time period t can distribute among themselves the higher dividend D' which represents the non-realized profits due to LMF* members in time period $t + 1$. Self-interested partners of the LMF* can reimburse bondholders at a lower rate than the rate at which capital goods are worn out and thus leave future LMF* members with the burden of a flow of investment costs (a higher mpK) which is larger than the flow of capital services resulting in lower average dividends for the would-be members. Jossa and Cuomo (1997)'s assertion that LMFs* have an incentive to undertake inefficient investment projects, which can result in underinvestment (including short-term "overinvestment"), is similar to the worry raised by Klein, Crawford, and Alchian (1978) that LMFs who lease their capital assets will have an incentive to wear them out as fast as possible (reducing depreciation expenses) in order to maximize present earnings.

Having looked at the investment shortcomings which in theory plague the WMF and LMF* but no the PMF, it worth looking at a third form which an LMF can take: the Western-style producer cooperatives (PCs). Following Putterman (1990), Ellerman (1992), and Jossa and Cuomo (1987) I will define a producer cooperative as an LMF where the net worth of the firm is contained in individually-owned, internal savings accounts or 'internal capital accounts' and individual bonds (like in the LMF*) are paid scarcity-reflecting interest rates. To use Dow's distinction, PCs are characterized by *individual* rather than collective asset ownership and may or may not issue *individually* owned membership rights (shares). Internal capital accounts (bearing the market interest rate) are credited with: any initial capital contributions made by the partners upon joining the PC, the quota of annual profits (either distributed equally or in accordance with the member's labor contribution), and any retained earnings which were not distributed as dividends but used to finance investment projects. The account is debited when withdrawals of agreed dividends are made by partners. Upon termination the individual capital accounts are closed and paid out to departing members in perpetual bonds which they member can either hold to collect interest or sell in a market for debt securities, either way recouping the full value of past contributions made to self-financing (Ellerman 1986, pg. 64). PCs will clearly not suffer from the F-P effect as all

of the firm's retained earnings which were converted into venture capital (deducted from the partners' dividends) are reimbursed to the individual partners upon departure. Unlike the WMF, in the PC the right of reimbursement of contributed capital is never touched so there is no incentive for the partner to recuperate the invested capital before leaving the firm. A reduction in the value of the partners' capital accounts can only occur during their tenure with the firm if the enterprise experiences a downturn in business leading to a decrease in the total net income. Although not experiencing the F-P effect, the PC unfortunately suffers from the same tendency to make inefficient investments as the LMF* does when a partner's time horizon is less than the duration of the investment project ($n < T$) and, paradoxically, just because partner's have a right to the reimbursement of past capital contributions (Jossa and Cuomo 1997, pg. 231). Because partners know they will be reimbursed for their capital contributions unconditionally , they have the same temptation as partners in the LMF* to delay amortization of capital and hence expropriate the profits from future would-be partners leading to a decrease of the firm's net worth in future periods. The potential for adopting inefficient projects leading to underinvestment in the long run is always lurking in the minds of the PC members as it is with members of the LMF*.

4. Saleable LMF Membership Rights: The Sertel-Dow proposal

So if producer cooperatives with internal capital accounts and labor-managed firms with 100 per cent bond financing both face the prospect of inefficient investments is there a way out of this financing quagmire? Dow pinpoints the crux of the problem when he makes clear that the problem with internal capital accounts is that members cannot capitalize on the present value of *future* investment returns (2003, pg. 155). Just as a market for membership rights was employed as a solution (albeit one among several) to the labor supply perversities discussed in the earlier chapter so Dow (1996, 2003) and Sertel (1982) propose tradeable membership rights as a solution to the underinvestment problems of the WMF, LMF*, and PC. A (perfect) market for membership rights mimics the stock market employed by joint-stock KMFs as every decision made by the firm reflects on the value of the members' shares, effectively making the time horizon of the partner equal to infinity. The Sertel-Dow labor-managed firm (SDLMF) thus follows the same investment rule as the PMF:

$$\sum_{t=1}^{T=\infty} r_t(1+i)^{-t} = 1 \qquad (10)$$

which implies the further rule that the entire value of capital be amortized over the course of its lifetime, so that:

$$d_t T = 1 \qquad (11)$$

This is the same constraint which both the LMF* and PC violate due to their myopic investment decisions. Earlier, it was mentioned that according to Dow individual membership rights are compatible with both collectively owned capital, owned by the firm *qua* legal entity, as well as individually owned capital, either in the form of individually owned machines or as in the case of the PC individually owned capital accounts. Saleable membership rights although not logically incompatible with internal capital accounts, make such accounts redundant as the present value of future net income already includes the value of the firm's net income upon the partner's departure. Furthermore, tradeable membership rights are compatible with any of the various forms of financing, specifically bonds, non-voting equity shares, retained earnings, or (what will become relevant later on) quasi-equity shares. While the WMF could only finance investment projects out of retained earnings and the LMF* by selling bonds, the entire buffet of financing methods is available to the SDLMF. The PC has the same flexibility in choosing its financing instruments as the SDLMF but it is still hampered by the inability to capitalize returns on investments that extend beyond its partner's tenure with the firm.

In searching for a possible solution to the inefficient problem facing the LMF* and PC, outlined by Jossa and Cuomo (1997), it is worth investigating further the potential for tradeable membership shares to alleviate the aforementioned problems. Jossa and Cuomo (1997) and Jossa (2014) of course disagree with Vanek (1977) who sees no potential for the LMF* to take on inefficient investments. Because Vanek (1977)'s conclusions are based on the highly idealized assumption that "…capita has infinite durability, and thus there are no problems of depreciation…", we will use the less restrictive LMF* model outlined by Jossa and Cuomo as our reference point. Moreover, since the LMF* and the PC exhibit identical investment behavior it will suffice to

compare the 100 per cent bond financed LMF* with the SDLMF. Lastly, even if the relative merits of tradeable membership rights outweigh their shortcomings, it must still be established which of the various financing instruments outlined above allocate risk between worker and investor in the most optimal way. The "risk-sharing effect", which is the third class of financing issues faced by the LMF, is paramount in determining the cost of finance, reflected in the size of the risk premium demanded by investors and, if tradeable membership rights, are issued on the price such shares can fetch on the market. As is well known, a higher debt-to-equity ratio (D/E) results in a lower share price and hence an increased cost of financing for a firm who must entice investors with lower earnings per share (E.P.S) (Banks 2007).

The first set of criticisms of LMF membership markets comes from Jossa and Cuomo (1997) and has more to do the potential of such markets to undermine the fabric of the LMF as a 'cooperative' enterprise. According to Meade (1972) in order to qualify as a cooperative enterprise two rules must be followed: (1) new members will only be taken on board if (a) the new member voluntarily wishes to join and (b) all (or possibly a majority of) the older members accept the new member; (2) incumbent members can only leave the firm if (a) the member wants to leave voluntarily and (b) all/a majority of incumbent members agree to his departure (pg. 414). Jossa and Cuomo's main worry is that a *free* market in membership rights would violate (1b) and (2b) as the collectivity would forfeit the right to decide who they can let in and out of the firm. But such an argument borders on strawman territory for Sertel (1982) recognizes that if a membership market is to be workable, then partnership deeds can only be transferred within regions of productive substitutability so a plumber will replace an electrician (pg. 14). To counteract Sertel's problem Dow recommends that instead of membership rights being sold directly to prospective replacements they are sold first to the firm so that insiders as a collective can internalize quality effects when selecting a replacement (2003, pg. 160). Thus there is no reason to think that a market for membership rights violates Meade's rules for a cooperative organization.

The second set of criticisms of a market for membership rights comes from Dow himself and have to do with the feasibility of implementing such a LMF share market in the real world. The limitations of a market of LMF control stems from the very same inalienability of labor which was said to account for the difficulty workers experience in procuring financing to create their own LMFs. Since membership shares in

the LMF are tied to the inalienable labor power of a worker, it is impossible to transfer a membership right to another worker without also replacing the labor service of the initial departing member. The market for LMF control will thus be subject to the same frictions as the labor market in a capitalist economy including: the fact that most workers can only hold one job at a time due to travel costs, workers tend to change jobs infrequently due to the costs of search, turnover, and relocation, and the fact that labor services are heterogeneous with different jobs requiring different sets of skills (Dow 2003, pg. 158). The upshot of these labor market imperfections is that a market for membership rights, unlike a stock market, will only become active and bring efficiency gains if there is a job opening while simultaneously someone else is looking for a job, and secondly that several membership markets will arise for every occupation which requires a qualitatively different set of skills. Imperfect markets for membership rights have a danger of becoming too numerous and when they do exist will be thin and non-market clearing. Dow (1993) links the imperfection of membership markets to under-investment of LMFs since a failure of incoming members to pay an entry fee equal to the full private value of membership will lead to an *undervaluation* of future investment returns for incumbent LMFs (pg. 191). The primary factors which prevent member-ship fees from being bid up to market-clearing levels include the combination of low worker wealth with credit rationing (which we pinned down earlier as the channel through which the creation of LMFs is impeded), the lack of government unemploy-ment insurance to protect risk-averse workers, with undiversified portfolios (workers can only usually hold one membership right unlike the unlimited number of shares available to stock market investors) from periods of economic downturn, and the ad-verse selection problem which arises when asymmetric information prevents outsiders from ascertaining the true expected future value of the firm which insiders know but have no incentive to disclose. Furthermore, as Ben-Ner (1988) points out, an LMF can easily degrade into a KMF if the supply price for membership rights is less than the demand price tempting incumbent LMF owners to hire workers for a fixed wage. The keys to correcting an imperfect membership market are as multifarious as the reasons preventing the market from clearing in the first place and whether imperfect member-ship markets will prove fatal to the growth, through underinvestment, of the LMF depends on how competitive the market for LMF control can be made. If we take credit and insurance market imperfections as the primary factors keeping membership share prices below the market clearing rate, then any of the following policies could

serve as possible solutions: direct extension of government credit to workers, or government guarantees to private lenders who finance worker membership fees, government income support for workers adversely affected by unforeseen shocks in the industry level, full disclosure of the risk level of incumbent LMFs through external monitoring, and the reliance on informal compensation packages when members depart like those found in Meade's (1972) Inegalitarian Cooperative (Dow 1993, pg. 194). The impact of financing on the establishment of a market clearing rate for membership shares operates on both the supply side and demand side of the equation. On the supply side, the equilibrium membership price reflects the value of jointly owned assets (the price of membership being the difference between the present value of the LMF's projected net worth and the market reservation wage) with a higher equity to debt ratio driving prices up. On the demand side, limited worker wealth in combination with credit rationing will cause prospective workers to undervalue the membership shares of the LMFs they wish to join. The main takeaway for our present investigation is that while a *perfect* market for membership rights as proposed by Dow and Sertel will solve the *underinvestment* problem present in LMFs* and PCs*, the establish of a competitive membership market, which is brought as close to theoretical market clearance as possible, depends on the resolution of our final financing problem: which method, non-voter equity, bonds, or quasi-equity shares, leads to the most optimal risk sharing agreement between risk-averse workers and risk-neutral creditors, and hence the most cost-effective solution to financing for the LMF. The answer to that question is beyond this scope of this paper however.

5. Conclusion

Financing difficulties, in the form of costly access to external financing, were said to exist at the LMF formation stage and during the course of an LMFs lifespan in the form of underinvestment. These two respective financing problems, one entering at the firm's birth and the other during a firm's active life, are consistent with those general class of hypotheses which seek to account for the rarity of LMFs on the basis of the capital constraints facing workers who are poor and risk averse. I argued that this general class of capital constraint arguments provide the causal link from the qualitative asymmetry between capital and labor (capital is alienable while labor is inalienable) to the low emergence rate of LMFs. In the last section I hinted whether equity-like 'risk

participation bonds' (McCain 1977) offering variable income obligations to bond holders can directly solve the start-up financing problems facing prospective worker-owners and indirectly solve, when combined with a market for membership rights, the underinvestment issues facing incumbent LMFs. If such a proposal were workable in practice it has the potential to undermine many of the arguments conceptually linking control rights to residual claimancy and asset ownership, hence providing a way of possible way to create a democratically controlled economy and challenge the intra-firm hierarchy of the neoliberal order.

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