A THESIS SUBMITTED TO

THE GRADUATE SCHOOL OF SOCIAL SCIENCES

OF

MIDDLE EAST TECHNICAL UNIVERSITY

BY

ERDOĞDU SATIK

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR

THE DEGREE OF DOCTOR OF PHILOSOPHY

IN

THE PROGRAMME OF SCIENCE AND TECHNOLOGY POLICY STUDIES

FEBRURARY 2013

Approval of the Graduate School of Social Sciences

_____

Prof. Dr. Meliha Altunışık

Director

I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Doctor of Philosophy.

_____

Prof. Dr. Erkan Erdil

Head of Department

This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Doctor of Philosophy.

_____	_____
Prof. Dr. Hüseyin Özel	Prof. Dr. Erkan Erdil
Co-Supervisor	Supervisor

Examining Committee Members

Prof. Dr. Y. Eyüp Özveren	(METU, ECON)	_____
Prof. Dr. Erkan Erdil	(METU, STPS)	_____
Assoc. Prof. Dr. M. Teoman Pamukçu	(METU, STPS)	_____
Assist. Prof. Dr. Hasan Cömert	(METU, ECON)	_____
Prof. Dr. Hüseyin Özel	(HU, ECON)	_____

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Name, Last Name : Erdoğdu Satık

Signature :

ABSTRACT

THE CROSSROADS OF KNOWLEDGE AND FINANCIALIZATION

Satık, Erdoğdu

Ph.D., Program of Science and Technology Policy Studies

Supervisor : Prof. Dr. Erkan Erdil

Co-Supervisor: Prof. Dr. Hüseyin Özel

Februrary 2013, 163 pages

This thesis questions the connection between knowledge and finance and advances an account that links both in a two-folded way. The first level departs from what separates the two opposite views or alternative explanations about the value of knowledge. The source and essence of the extra profits in information goods or commodities, such as digital media contents and software, featuring increasing returns to scale owing to their peculiar cost structure manifested by a high fixed cost and very low constant marginal cost, is what separates the two views about the value of knowledge.

In light of the near-decomposability/modularity hypothesis, the extra profits in information commodities should arise from 'information hiding,' which is intrinsic to nearly-decomposable systems or modular architecture because they are built on an ignorance on the parts in regard to the other parts and the whole of system. Such (hidden) design information that gives rise to parts or modules creates, at the same time, the future paths of action or (real) options, according to real-options perspective. When the two perspectives are combined, knowledge production, as distinct from subsequent knowledge commodity production, basically becomes an option creation process. Then, it becomes possible to argue that the concurrence of knowledge and finance is not a coincidence at all because the logics of accumulation is no different but almost identical, which is the second level of the two-folded account attempted in this study.

The main contribution of this thesis is to build an account that links financialization to knowledge via the notion of modularity. Such an account sees financialization as a reflection and consequence of a value-driven permanent innovation economy developed under the 'IT paradigm' in order to exploit a surplus peculiar and intrinsic to the modular structure that makes 'information hiding' an integral part of such architectures since they are by definition built on an ignorance on the parts in regard to the other parts and the whole of system.

Keywords: financialization, information commodities, modularity, nearly-decomposable, real options

ÖZ

BİLGİ VE FİNANSALLAŞMANIN KESİŞEN YOLLARI

Satık, Erdoğdu

Doktora, Bilim ve Teknoloji Politikası Çalışmaları

Tez Yöneticisi : Prof. Dr. Erkan Erdil

Ortak Tez Yöneticisi: Prof. Dr. Hüseyin Özel

Şubat 2013, 163 sayfa

Bu tezde bilgi ve finans arasındaki ilişki sorgulanarak, ikisi arasında bağ kuran iki katmanlı bir açıklama ileri sürülmektedir. İlk katman, bilginin değerine ilişkin mevcut görüşlerin ayrı düştükleri noktadan yola çıkmaktadır. Yüksek geliştirme maliyetlerine karşılık çok düşük çoğaltma ve üretim maliyeti olan yazılım ya da dijital içerik gibi bilişim ürünleri üzerinden elde edilebilen gereğinden yüksek karların kökeni ve niteliği, bilginin değerine ilişkin görüşlerin temel ayrışma noktasını oluşturmaktadır.

Bilişim ürünlerindeki yüksek kazançlara ilişkin bu düğümü sistemlerin bölümlenebilirliği ya da modülerlik ilkesi ışığında çözmek mümkündür. Modülerlik

ya da sistemlerin bölümlenebilirliği, parçaların birbirleri ve sistemin bütünü ile ilgisizlik durumu olup, parçaların ve bütünün sistemlerin tasarım bilgilerine gerek olmaksızın işlevlerini yerine getirebilmeleri özelliğidir. Başka bir deyişle, modülerlik ya da sistemlerin bölümlenebilirliği, sistemlerin tasarım bilgilerinin gizliliğini öngörmektedir. Modülerliğin hem kendisini tanımlayan hem de kendiliğinden ortaya çıkan bir yan ürünü olan bu gizli tasarım bilgisi, aslında bilginin değerinin de kaynağını oluşturmaktadır. Sistemlerin bölümlenebilirlik ilkesi ışığında tasarlanması sonucu ortaya çıkan modüllerin, sistemlerin gelecekte evrilebileceği alternatifler olarak algılanması ise finansta gerçek opsiyonlar denen bakış açısına denk gelmektedir. Bilişim ürünleri üretiminin giderek bir prototip ve bunu izleyen çoğaltma aşamalarından oluşan bir sürece dönüştüğü göz önüne alınırsa, bu iki aşamalı yapının ilk aşaması finanstaki opsiyon yaratma aşamasına karşılık düşmektedir. Bu bakışla, prototip, ya da çoğaltma aşaması için gerekli bilginin üretildiği ilk aşama ile finanstaki opsiyon yaratmanın temel mantıklarının aslında birbirlerinden pek farklı olmadığı da ileri sürülebilir hale gelmektedir. İki sürecin temel mantıklarındaki bu paralellik ise, bu tezde geliştirilen iki katmanlı açıklamanın üst katmanını oluşturmaktadır.

Bu tezin temel katkısı, bilgi ve finansallaşma arasında, modülerleştirme kavramı üzerinden bir bağ kurmaktır. Kurulan bu bağla, finansallaşmanın aslında modüler yapılara içkin, gömülü, dolayısıyla da saklı ve gizli, bilgiye ilişkin artığın sürekli yenilik yoluyla yeniden üretimi ve elde edilmesine yönelik olarak kurgulu bir ekonominin yansıması ve sonucu olduğu ortaya çıkmaktadır.

Anahtar Kelimeler: bilişim ürünleri, finansallaşma, gerçek opsiyon, modülerlik, sistemlerin bölümlenebilirliği

To my son and wife

ACKNOWLEDGMENTS

I would like to express my deepest gratitude to Prof. Dr. Erkan Erdil, Prof. Dr. Eyüp Özveren and Prof. Dr. Hüseyin Özel for their patience, support and guidance throughout the research.

TABLE OF CONTENTS

LIST OF TABLES

TABLES

LIST OF FIGURES

FIGURES

CHAPTER 1

INTRODUCTION

The current economic crisis which began in the second half of 2007 shows little signs of ending and, instead, may well be deepening globally. The subprime mortgage crisis that has begun with a decline in the U.S. housing market went beyond a financial crisis and quickly spread worldwide.

Prior to the financial crisis of 2007–2008, the global economic activities had a certain pattern, which might be referred to as an 'international division of labour,' where much of production, excluding knowledge production, was located in the Far East, particularly in China, and finance besides knowledge production mostly located in Western centers, led by the USA and Britain. Unlike the post-war economic world order that prioritized self-sufficiency either at the country level or firm level, which internalized much if not all of production processes, the restructuring that could be dated back to the early 1970s; the collapse of the Bretton Woods system, to be exact, brought a diffusion and an internationalization of production in particular. Such new restructuring and reorganization of business processes globally was referred to in a variety of ways in the literature; post-Fordism(industrialism) initially, knowledge/information(al)(-based) economy/society/capitalism later for a long time. When the reconfiguration of global business processes was joined by a rise of the financial sector at a further stage, the characterizations about economy/society/capitalism started to be coined more in the ways to evoke finance as in finance/financial(ized) capitalism or financialization (of accumulation/capitalism) and so on.

The blames for the crisis after the crisis, however, mostly fell on 'finance,' as if it were the sole driver of the reconfiguration process since its very beginnings. Almost all earlier characterizations about economy/society/capitalism were forgotten, except for the most

recent one. There was just one published article, as opposed to an overwhelming majority, blaming the crisis on knowledge economy: 'The Crash of the Knowledge Economy' by Pagano and Rossi (2009). Given the burst of the dot.com/new economy bubble that embodied both knowledge and finance aspects of the most common characterizations about economy/society/capitalism in 2001, just six years before 2007, such a reversal in the characterizations before the crisis and the blames after the crisis is puzzling.

It is puzzling because it manifests an understanding that does not spare a fair weight to the prospect of finance just as a state that the whole global restructuring process might have taken on at a certain, namely, towards final, stage. In fact, from the early 1980s until the global crisis, the global restructuring process was mainly driven by and under the 'IT[1] paradigm' (Berger, 2012). In other words, 'the IT industry came to provide the basic paradigm for thinking about industrial change', which has 'shaped our conceptions about organizing an entire economy,' via its basic postulate on modularization and the resultant location decisions that hinges on it (Berger, 2012). In addition to providing the basic paradigm, ICTs[2] enabled and supported the global business processes as their basic carrier in very concrete terms. Then, the accounts that mostly rely on 'finance' should not only be missing a significant portion of the whole but also the real driver of the process.

Departing from such a premise, this thesis questions the connection between knowledge and finance aspects of the most common characterizations about economy/society/capitalism and advances an account that links both. The ultimate aim of this thesis is to reconsider the contemporary processes of economic value creation in a relatively new context of financialization. An account that links knowledge and finance is constructed and handled in a two-folded way. The first level departs from what separates the two opposite views or alternative explanations about the value of knowledge. What separates the two views about the value of knowledge is the source

1 standing for Information Technology.
2 standing for Information and Communication Technologies.

and nature of the extra profits in information goods or commodities, such as digital media contents and software, featuring increasing returns to scale owing to their peculiar cost structure manifested by a high fixed cost and very low constant marginal cost. One of the views, which might be referred to as '(pseudo) knowledge theories of value' as in the capital theories of value' (Hakken, 2003: 325), sees the origin of the extra profits in information commodities as knowledge itself and thus ascribes an intrinsic value to knowledge itself. An alternate view rejects the idea and axiom of intrinsic value with respect to any factors of production and regards such income due to any factors of production as unearned and a result of an artificially created scarcity, namely, as rent.

This disagreement on the nature and source of the extra profits in information commodities can be resolved by deploying the near-decomposability (Simon, 1962: 477) or modularity idea. The extra profits in information commodities needs to follow from 'information hiding' in light of the near-decomposability/modularity hypothesis because nearly-decomposable or modular systems are built and rest on an ignorance on the parts in regard to the other parts and the whole of system so that 'information hiding' becomes intrinsic to such systems.

The parts or modules represent the future courses of action or (real) options at the same time, in line with the real-options perspective. When the notion of modularity is combined with the real-options perspective, knowledge production, as distinct from subsequent knowledge commodity production, basically turns into an option creation process, which takes us to the second level of the two-folded account attempted in this study. Then, it becomes possible to argue that the concurrence of knowledge and finance is not a coincidence at all because the logics of accumulation in either of them is no different but almost identical.

Modularization that 'IT paradigm' rests upon, thus, enables a division of business processes along the lines of conception and execution, while giving rise to a surplus to knowledge at the same time. With the separation of product definition, research and development, and design from manufacturing and production, what follows is a

relocation of the separated activities on the basis of their comparative advantage and subsequent division of labor, where more advanced industrial countries with better educated populations would focus on conception processes (R & D, design, distribution) while less-developed economies would concentrate on execution, that is, manufacturing because it becomes a standardized, repetitive activity requiring relatively low levels of skill and experience, which is described evocatively as value chain capitalism, or better yet, 'lego capitalism' (Berger, 2005).

The restructuring of business processes globally in line with a modularly conceived world under the 'IT paradigm,' however, leaves behind vacuums that need to be filled, which takes us to the conception of the financialization as 'privatized Keynesianism' (Crouch, 2009: 382). The shift from in-house to outsourced manufacturing translates as a relocation of jobs in case of offshore outsourcing and usually accompanied by a rising level of individual indebtedness. In a sense, consumer debt is substituted for Keynesianism or Keynesian demand management that had collapsed or been deliberately undermined since the 1980s. 'Instead of governments taking on debt to stimulate the economy' (Crouch, 2009: 390), individuals do so in a way to replace public with private debt, which eventually has proved to be unsustainable.

Crouch's notion of privatized Keynesianism corresponds to a form of financialization based on securities and securitization that deploys debt-based mechanisms as a work-around to the problem of aggregate demand/realization. It should not be a coincidence that it is the dominant form of financialization in the core countries and particularly in the US. The unsustainability of such work-arounds, however, is one of the lessons of the crisis. It also set limits to the extent of modularity.

The main contribution of this thesis is to construct an account that links financialization to knowledge via the notion of modularity. Such an account sees financialization as a surface appearance and consequence of a value-driven permanent innovation economy that developed under the 'IT paradigm' in order to capture a surplus peculiar and intrinsic to the modular structure that makes 'information hiding' an integral part of such

architectures since they are by definition built on an ignorance on the parts in regard to the other parts and the whole of system. The remaining chapters of this thesis are organized as follows:

Chapter 2 reviews the notion and different conceptions of financialization and its encounters with the digital. The chapter concludes that the logic of immateriality intrinsic to the digital reproducibility drives the process of 'demonetized financialization' through semiotic manipulation in self-referential financial markets leading to fictitious values that need to be devalorized from time to time.

Chapter 3 takes a historical stance and traces financialization as over-leveraging starting from the English financial revolution in which the different forms and functions of money are fused as a precondition of a monetary production economy. The chapter views the process of financialization experienced before the 2007-2009 financial crisis as a sort of 'demonetized' excessive money creation complemented by a specific form of speculation. After highlighting the association between money and production, it questions the source of money in initiating and sustaining financialization and concludes with the qualification of the money created during the process of financialization.

Chapter 4 focuses on the issue of the connection between knowledge and financialization. The linkage between financialization and innovation is tackled at several levels in this chapter. The difference of opinion on the classification of the extra profits in knowledge commodities is first reconciled by employing the notion of 'information hiding' in nearly-decomposable or modular systems. Taking into account the distinction between knowledge production and knowledge commodity production, and hence *sequentiality* between the two, an analogy between knowledge production and option creation is established, which also serves to reveal the parallelism between the logics of accumulation intrinsic to derivatives and knowledge commodity production. The chapter concludes that information hiding intrinsic to nearly-decomposable or modular systems is what drives innovation race as option creation at the first instance and financialization in turn.

Finally, Chapter 5 presents the conclusions and policy implications of this thesis.

CHAPTER 2

FINANCIALIZATION IN TIMES OF DIGITAL REPRODUCIBILITY

2.1 Introduction

The most recent characterizations of capitalism just before the financial crisis of 2007/2009 mostly fell under two broad categories: finance-led or knowledge(-based). Neither of the proponents of these two categories, though, managed to break the tie and prevail. However, the most of the blames regarding the financial crisis of 2007/2009 went to the financialized capitalism. Interestingly, almost none put their bets on knowledge-based economy alone except Pagano and Rossi (2009). Schizophrenia in or of capitalism is a popular topic but if we cannot attribute these two different characterizations about the same object for about the same time period and space -globe- to only selective perception, then, there must be an explanation about the connection between the two and its characteristics. Strangely, however, there is not much around, except the thesis of cognitive capitalism.

In company with knowledge and finance in characterizing capitalism should be globalization. What was globalizing was, however, neither finance nor knowledge but production. Whereas production was outsourced and offshored, and hence globalized, knowledge and finance was kept in the center. Of course, there was an orderly creation of financial markets everywhere but they could not go beyond being outposts in function (Callari, 2008: 703). While new enclosures were erected to protect knowledge-intensive property rights, the center was put in charge of the creation of new knowledge or innovation.

The main interest of this study is financialization and its connection with knowledge(-based) economy, if such connection exists in any way at all. It aims to synthesize and provide an account of how capitalism have been reconfigured in recent times in a way to be more, than ever, prone to financialization. This recent wave of financialization is characterized as 'demonetized' by Nesvetailova (2010: 128) because the huge financial expansion before the outbreak of the crisis was not accompanied by a similar monetary expansion (Nesvetailova, 2010: 131). On the contrary and paradoxically, most economies were less ‘monetized’ in terms of their share of M1 or ‘narrow money’ (cash and currency deposits in circulation), which has been declining in the overall money supply in all major economies over the past few decades (Nesvetailova, 2010: 131).

There are two narrative models of financialization in the literature with a similarity in approaching and defining financialization. One of the models is Marx's capital devalorization and the other is Adams' financial subinfeudation. Both view financialization as a detachment or divergence from a sort of fundamental values.

John Adams (1983), in a rather early, but at the same time, farsighted article, entitled 'Financial Subinfeudation and the Penchant for Real Investment,' aiming to link deindustrialization to the rise of finance provides a framework to put financialization into perspective. Adams refers to the process, perhaps metaphorically, as financial subinfeudation. Possibly, the notion of financialization was not in circulation yet but the metaphor of financial subinfeudation had some advantages too, in contrast to the concept of financialization. As a notion, financial subinfeudation evokes some salient aspects of financialization; for instance, its intrinsic association with the notion of claim, the claims-making and insertion into the ladder of appropriatory claims, which is, in fact, what financialization as a process is all about. Also, it becomes possible, to a great extent, to get rid of some of its inherent weaknesses as a notion such as looseness and ambiguity.

The thesis of Adams' analysis, a comparison between the United States in very early 1980s and Bengal in the seventeenth and eighteenth centuries is that a static or declining *productive base*, agricultural in one and industrial in the other, is accompanied by the expansion and elaboration of *claims* to that base. This process of insertion into the ladder of appropriatory claims is subinfeudation, according to Adams, and it is "financial subinfeudation," when it involves financial elements (Adams, 1983).

There are two constituents; *productive base* and *claims* to that base, and a relationship between the two in Adams' argument. The relationship between the *productive base* and the *claims* to *productive base* can be imagined as a function in set theoretic terms, which is to some extent, particularly in precapitalist formations, and hence, the *productive base* as the domain and the claims as the codomain. However, the relationship is not unidirectional, even in precapitalist formations, a disturbance on the domain, *productive base*, originating from the codomain, *claims*, is given. In fact, with respect to financialization, what concerns us is that disturbance. Such a disturbance is monetary or financial in both cases but the major difference between the two is that it is possibly a singular or one-time event in precapitalist formations while it is definitely a process, i.e., a continuous one in capitalism.

Claims are in fact what Marx called fictitious capital, which is usually defined as "tradable paper claims to wealth" in the literature, though, Marx never provided a precise definition of this concept. Fictitious capital is basically the capitalization of future earnings; they are titles to income, to a share of the surplus value extracted by productive capital. Marx identifies securities and "interest bearing paper" as fictitious capital.

A very early and crude question is what if the growth of *claims* to *productive base* diverges from and exceeds the growth of *productive base*? The divergence between the productive base and the claims to productive base or the detachment of the claims to

productive base from the productive base is key to the notion of financialization. Financialization refers to a delinking of the financial from the material basis of the economy (Perelman, 2003: 115). Then, an account of financialization must elaborate the two elements; productive base and claims to that base, and the relationship between the two as in Adams' framework. For Adams, a deterioration in *productive base* provacates *claims* to that base. The deterioration can also be read to include any weakening in the correspondence between *claims* and *productive base*: a *productive base* may evolve or change in such a way that *claims* in their form may loose their effectiveness.

Table 1: Divergence between Global Financial Assets and World GDP

	Global Financial Assets				Global Financial Assets/
Year	Equity	Total	World GDP	Equity/World GDP	World GDP
1980	3	12	10,0	0,3	1,2
1990	10	48	21,2	0,5	2,3
1995	18	70	28,4	0,6	2,5
2000	37	112	37,0	1,0	3,0
2001	33	114	38,5	0,9	3,0
2002	26	113	39,9	0,7	2,8
2003	33	126	42,3	0,8	3,0
2004	38	139	45,5	0,8	3,1
2005	45	155	48,6	0,9	3,2
2006	54	174	52,3	1,0	3,3
2007	62	194	56,8	1,1	3,4
2008	37	178	60,7	0,6	2,9

Marx's capital devalorization model provides an account of a detachment of values of capital goods from their fundamental values. Such a divergence in fact is possible not only for capital goods but any goods, for Marx. This is because it is not possible to calculate the appropriate amount of value transferred from the constant capital in advance without knowing future reproduction, replacement in neoclassical terms, values of constant capital. This proposition is valid for all cases where fixed capital is used, that is, not only in Marxian terms but also in neoclassical terms. Such a calculation is made possible only by assuming future reproduction, i.e., replacement, values of constant capital and a certain depreciation pattern. The robustness of those estimations based on

such assumptions, though, is controversial, given the rapid decline, even collapse in the value of capital goods due to new technologies.

Capitalists with substantial market power can avoid and postpone the necessary price adjustments for some time. However, such postponement not only distorts their prices in goods market but also in financial markets, i.e., their share prices because the price system will be effectively attributing excessive values to capital goods. According to Perelman, Marx called these claims to excess values ‘fictitious capitals’ (Perelman, 1999: 724).

It is obvious that the fictitious part of capital will increase and accumulate during an upswing distorting the price system, which can no longer give the proper signals. For the continued functioning of the system, the accumulated fictitious values is required to be destroyed through a crisis. Thus, a financial creative destruction brings prices back in line with values (Perelman, 1999: 726).

Nesvetailova attributes the process of 'demonetized financialization' to a higher velocity of circulation of money through financial innovation, as if financial markets have invented their own money. It is possible to enrich Nesvetailova's invented money argument through a scrutiny of fiat money or currency. After the switch to fiat money or currency, the distance between a financial instrument and fiat money gets shortened, which is a significant change in representational sense: the universal equivalent is no longer also in a physical commodity-form, as in gold. With this change in form, it starts to function as a claim or title to future labor, not as a representation of past or dead labor as in commodity money according to Betancourt (2010).

Thus, not only its reference for value disappears, and becomes self-referential, but also the fine distinction between a currency and a financial instrument.

The important part of this argument is about its future orientation or the futurity. It not only eliminates the most important dissimilarity between a money and a financial instrument but also the last barrier in front of financialization. Thus, the transition to a fiat currency from the 'gold standard,' is at the same time a transition to a financial economy based on immateriality, for Betancourt. Immateriality is an illusion of reproducibility of value without any expenditure in the digital age, which is created by what Betancourt calls ‘the aura of the digital’ (Betancourt, 2010). This immaterialism, defined as values created without productive action by Betancourt, becomes a shared mental model with the rise of the digital and underlies the logic of financialization, as well because financial markets are the locus of exchange of immateriality.

Being severed from the limitations of the physical commodity-form, the economy starts to follow a new cycle, which is a new cyclicality notionally similar to Marx’s formation of fictitious capitals and capital devalorization. This is a cycle where claims against future production expand until they encounter their limiting factor: labor, which Betancourt ironically calls this constraint the scarcity of capital (Betancourt, 2010).

The thesis advanced in this chapter, which is based on Betancourt’s analysis, is that the process of ‘demonetized financialization’ is the upswing of a new cyclicality that have emerged as a result of the logic of immateriality intrinsic to the digital reproducibility that drives fictitious values until claims against future production become impossible to cover by future capacity of labor. The study will proceed in accordance with Adams' framework: a first part will review the changes in productive base in times of digital reproducibility; a second part will deal with claims to productive base in times of digital reproducibility. A conclusion will follow.

2.2 Immateriality and Productive Base

Immaterialism as a pervasive logic in Betancourt's analysis has not only repercussions in both real and financial economy but also some correspondence and fit with other drivers of financialization such as fiat currency that feeds each other.

Immaterialism is an illusion by and extension of logic of reproducibility intrinsic to the digital to the whole of life. The logic of digital reproducibility is different from all previous reproducibilities before the digital: it is perfect so much so that it is indistinguishable from the original, and hence, equal to the original, and it is costless.

Rullani provides a hint to this illusion by developing an insight to the value of knowledge. According to Rullani, with modernity, a particular type of knowledge, reproducible knowledge is started to be used systematically in the production of economic value. The reproducible knowledge is the knowledge of science and technology. Every time a new product is made, using previous knowledge, the value grows, while the costs grow much less because the previous knowledge is used. A *serial* production of many identical objects has the advantage of the value multiplier (**n**) or the number of reuses of knowledge. If one assumes a unitary value (**v**) for each product, the resulting total value becomes roughly **V = nv.** As **n** increases, value goes up. The modern times therefore enjoys the multiplicative power of serial production in contrast to the artisan or craft production of the pre-modern world, with a higher **v** but no contribution of multiplication (Rullani, 2007: 210).

The multiplication is the lesson we learned in modern times. The costless part came in digital times. The response to that should be the propagation, which represents a paradigm change in development from accumulation to propagation, for Rullani, the value of knowledge is now driven by the composition of three factors: **V = f(n,v,p)**;

where **p** stands for propagation, speed of diffusion or sharing rate (Pasquinelli, 2008: 97). This path of development operates through external channels, spreading from one enterprise to another through clusters, networks and so on, according to Rullani.

In Adams' analysis, claims to productive base in Bengal are based on claims to land, which is a very material basis. The Earth, according to Deleuze and Guattari (2000:141), is the surface on which the whole process of production is inscribed and recorded. The Earth is a, and the first, form of, what Deleuze and Guattari called, socius, which is the imaginary surface upon which the control and coordination of material social flows take place (Patton, 2000: 89). The essential task of the socious is to code the flows of desire and matter which make up a society. Deleuze and Guattari's concept of coding entails a wedding of desire to the particular mode of production and is relevant only for precapitalist societies, so a code could also be understood as a dominant ideology or mythology. Capitalism is the only social formation which is defined by 'the generalized decoding of flows'. The notion of "coding" is therefore not relevant much for and entirely accurate with respect to capitalism because flows are not to control and coordinate but to capture. With the emergence of capitalism thus comes a regime of flow surplus in place of a code surplus. In other words, precapitalist formations involve the extraction of a code surplus while capitalism extracts a surplus of flux or 'flow surplus.' Capitalism, then, decodes by eliminating its material bases.

Mutation of Capitalism

Capitalism itself is in flux too. One of the most notable stylized facts of the world economy since the late 1960s is the rapid decline in manufacturing employment in industrialized countries, which has not only raised concerns about deindustrialization but also inspired Adams' analysis in particular and the thesis of transition from industrial to post-industrial or information society advanced by Bell (Bell, 1973).

In Postscript on Control Societies, Deleuze summarizes Foucault's confinement thesis and advances his thesis on the transformations from societies of discipline to societies of control, linking them to a now familiar mutation of capitalism. Deleuze summarizes that mutation of capitalism as follows:

> ... nineteenth-century capitalism was concentrative, directed toward production and proprietorial. Thus it made the factory into a site of confinement,... But capitalism in its present form is no longer directed toward production, which is often transferred to remote parts of the Third World,... It's directed toward metaproduction. It no longer buys raw materials and no longer sells finished products: it buys finished products or assembles them from parts. What it seeks to sell is services, and what it seeks to buy activities. It's a capitalism no longer directed toward production but toward products, that is, toward sales or markets. Thus it is essentially dispersive, with factories giving way to businesses (Deleuze, 1995: 178-179).

Metaproduction

However, this is just a mutation, it did not either start from a different species or end up in a new species. The metaproduction capitalism that Deleuze refers to is in fact a, perhaps repressed from time to time, peculiarity of capitalism and originates from its core tendencies. It was identified long ago by Marx within the core processes of capitalism in the general formula of capital: Money-Commodity-Money', or M-C-M', which is a differentia specifica of capitalism because *money that circulates in that manner is thereby transformed into, becomes capital*. For Marx, C-M-C or C-C is a characteristic of non-capitalist or pre-capitalist economic formations and M-C-M' is what distinguishes a capitalist economy from them because M in C-M-C only mediates or eases the exchange and hence only money, but M in M-C-M' assumes the function of capital. M-C-M' is not a form peculiar to only merchants' capital but industrial capital too. In the case of financial capital, M-C-M' is abridged to M-M'. Non-financial capital

cannot eliminate C altogether but acts like as if it is ever possible. Financial or non-financial, capital tends to revert to the money form. Financialization roughly refers to this tendency, if it is increasingly the employment of money capital in the financial markets or in speculation to make more money and bypassing the route of commodity production. Then, in Marx's terms, financialization entails a movement from a pattern of M-C-M' to M-M'.

Thus, C in Marx's general formula of capital is the main problematic for capitalists. C means concreteness, rigidity, capital invested and hence missed opportunities for capitalists in Arrighi's (1994) opinion, while M represents liquidity, flexibility, choice and hence freedom. Capitalists put up with C for the sake of M', which means expanded liquidity, flexibility, and freedom of choice. C represents uncertainty; particularly from new technologies, new products and new processes. Any fortune tied to C is in danger of erosion. Hence, capital is always in search of ways to escape such risks and get rid of C. Thus, Marx's general formula of capital points out to a desire for M-M' instead of M-C-M' and hence an intrinsic tendency of capitalism toward metaproduction and financialization.

The phenomenon of capital devalorization lies behind this reluctance of capitalism. Marx claimed that new technology destroyed capital values so rapidly that no factory ever covered its original investment (Perelman, 1999: 722). The continual threat of devalorization thus introduces uncertainty into capital values and reluctance to invest in long-lived capital goods. The threat of devalorization has implications and complications beyond productive base, for Marx, it is is the main driver of fictitious capital and hence financialization.

Universal Labor

If non-financial capital cannot eliminate C altogether, then, it should minimize its exposure to C. For a minimum C, there seems to be a perfect fit, not suggested but, mentioned by Marx: the products of what Marx called universal labor. Universal labor can be used over and over without depreciating (Perelman, 2003: 305). Universal labor is all scientific labor, all discovery and all invention (Marx, 1977: 71). This labor is composed of partly the living and partly the labors of those who have gone before (Marx, 1977: 71). In terms of Marx's general formula of capital, once knowledge is produced, that is, after the initial investment, C is minimal, even close to zero. Then, it is really a movement from M-C-M' to M-M', though not perfect. There is also a change in the qualification of M, which is not really sales revenue as it will be clear later.

Commodification

However, knowledge as universal labor is difficult to commodify. Before going on with the intricacies of the commodification of knowledge, it is more convenient to start with the commodification itself.

According to Polanyi, a market economy is in fact a system of markets, in Polanyi's own terminology, the system of price-making markets. The commodification is the mechanism to connect these markets to each other; that is, the inputs and outputs of each market must be commodities, if they are not, they must be commodified fictitiously. The commodity form thus provides an interface and mediates between markets in the system of markets. If a market is surrounded by markets, that is, supplied by a market and supplies to a market, the system functions smoothly. But if a market requires a non-market input, such as labor, land or money, which are not commodities by their very nature but artificially so, hence fictitious commodities as suggested by Polanyi, then, for

that market to function it needs to come in commodity form, that is, simply it should have a price tag on it (Polanyi, 2001 [1944]).

Knowledge Commodification

Contemporary capitalism is widely seen as a knowledge-based economy on the grounds that knowledge has become the most important factor of production and the key to economic competitiveness. The debate on the fictitiousness of knowledge, as previously advanced by Jessop (2007: 116), in line with Polanyi's analysis of fictitious commodities does not take into account the process how knowledge is commodified. The most important fact regarding the commodification of knowledge is that despite the extraordinary and well-documented trend towards the over-propertization of knowledge, the markets for knowledge are still far from emerging. Instead, the knowledge economy has bypassed this missing knowledge markets impediment by creating surrogate markets for knowledge. The emergence of the new market for knowledge-intensive property rights is, however, carried through financial markets specialized in trading knowledge-intensive property rights. The two prime examples are venture capital and securitization of intangibles.

For Antonelli and Teubal, venture capitalism is a major institutional innovation that has paved the way to the emergence of new surrogate markets for knowledge, i.e. financial markets specialized in trading knowledge-intensive property rights (Antonelli and Teubal, 2008: 163). Orsi and Coriat, drawing attention to the emergence of a form of finance-driven innovation, argues that, for the promotion of innovation, a particular institutional complementarity between intellectual property rights (IPR) regime and financial market regulations that allow the Initial Public Offer (IPO) of not-yet-profitable firms with IPRs as their assets has been constructed in the US (2006: 170). Serfati calls this complementarity the *financialization* of intangibles, i.e., securitization

of intangibles. In this way, IPRs are transformed into a financial instrument or security by means of *special purpose entities (vehicles)* (Serfati, 2008: 36).

The commodification of knowledge through the mediation of financial markets is perhaps a sign of a deeper relationship between knowledge and finance. A possible connection between financialization and knowledge at the commodity level is developed by Teixeira and Rotta based on Prado's insight on the process how knowledge is commodified (Teixeira and Rotta, 2009: 1).

Knowledge is inherently difficult to commodify because knowledge is difficult to value, or rather, it is valueless; its marginal cost is almost zero in neoclassical sense or for Marx, the value of commodities is determined not by the labor-time required to produce them, but rather by the labor-time required to reproduce them, which is almost nil for knowledge. Prado's insight is that (valueless) knowledge commodities are in fact not sold but loaned or lent, which is even the case in legal terms because the property rights of holders of knowledge commodities are rather limited. The 'buyer' (borrower) has only use rights but not ownership: the consumer is only a user, not the owner of the commodity. The producer cannot sell knowledge as a commodity, but transfer the right to use; it is thus transformed into a financial institution that lends its products and demands payments in return. Knowledge turns into loanable capital. This transformation should have some behavioral repercussions as well. Then, it may be concluded that intellectual property rights are financial by their very nature: the transaction is not a sale or purchase but rather a loan or borrowing; the revenue from that transaction is also financial.

Intellectual property rights thus represent the conversion of the products of what Marx called universal labor into an entirely new type of commodity. A knowledge-based economy is the one that increasingly engages in the production of (valueless) commodities. The modern financial dynamics conceptualized as financialization or

finance-dominated capitalism have thus its origins and foundations in the production sphere and are just a reflection of production process.

Immaterial Labor

Marx's observations on 'fixed capital' are indeed prolific. Apart from universal labor and devalorization, we are debtful to Marx for the notions such as 'general intellect' and 'immaterial labor'. 'General intellect' is a concept from Marx's 'Fragment on Machines', a section of the Grundrisse, and refers the knowledge objectified in fixed capital and embedded in the automated system of machinery (Virno, 2007). 'Cognitive capitalism' is capital's appropriation of general intellect (Dyer-Witheford, 2005: 76). Although Marx never makes explicit use of the term 'immaterial labor', his 'Fragment on Machines' seems to inspire the term. 'Immaterial labor' is a term that applies to the form of work characteristic of the era of general intellect, which is defined as the labor that produces the informational, cultural, or affective element of the commodity (Dyer-Witheford, 2005: 76). For Hardt and Negri, immaterial labor "creates immaterial products, such as knowledge, information, communication, a relationship or an emotional response" (2004: 108). In fact, it is not the labor which is immaterial but its products (Hardt and Negri, 2004: 109).

Hardt and Negri (2000) departs from these categories to theorize a new world order: under the hegemony of immaterial labor, networks become the dominant organizational form throughout society; including on the level of international power and organization in the form of 'Empire' (Trott, 2007: 207).

This strand of literature, which is called Autonomist Marxism, is rather active in financialization debate as well. Particularly, French contributers of this strand focus on positive externalities and see financialization as a result of the governance, in fact,

capture, of externalities. From the subject matter of this study, the governance or capture, of externalities is a valuable contribution but it introduces an indeterminacy at different levels. For instance, externalities may enlarge the productive base if they can be captured but they may deteriorate it if they cannot be captured. And the effectiveness of claims thus becomes significant. Also, such indeterminacy would definitely give rise to clams-making process, and hence financialization. This indeterminacy is illustrated by Boutang through the dependency of Google on human querying as labor. Boutang suggests that, in searching, in fact we are working for Google: clickwork! Every second, 15 million people are clicking and feeding data to Google. What Google is selling is not an ordinary service, but a metaservice, one that depends on human contribution. Boutang likens this human activity to that of the worker bee, and claims that the economy of Google is dependent on the pollination of these bees (Boutang, 2009). The pollination analogy symbolizes not only the notion of governance of externalities but also flow and flow surplus. Furthermore, it reveals the difficulty in valuing them and claims based on them and hence, their appropriation (by dispossession).

The rejection of 'law of value' through the claim 'value beyond measure' (Hardt and Negri, 2000: 355), or ‘immeasurability’ further contributes to the indeterminacy. Marx also argues for the impossibility of estimating values for goods, capital goods included, due to the so-called transformation problem but this does not amount to a denial of values. Instead, it is what leads to a divergence between values and prices of goods. Therefore, Marx’s approach should be adopted to resolve this indeterminacy. From another aspect, such a rejection amounts to a full-fledged self-referentiality in the financial sphere, which means 'the sky's the limit'. If there is no limit, then, there is no need for adjustments, corrections and crises. Financialization presupposes some sort of fundamental values, though, not like as in neoclassical theory because it is, by definition, the divergence between the values (of productive base) and the prices (of claims to productive base).

The term “cognitive capitalism” is not only a critical alternative to overambitious conceptions such as information society, new economy, knowledge(-based) economy or society or network society and so on but also overcomes both the sterility of those conceptions and their disconnectedness, stemming from that sterility. Thus, it enables linking knowledge with financialization while the literature based on the sterile conceptions shies away from connecting both phenomena, perhaps, intentionally.

Betancourt’s immateriality notion does not exclude immaterial labor concept of Autonomist Marxism and need to reject labor value theory as required by Autonomist Marxism. On the contrary, they are adopted and become part of the analysis so that the abovementioned indeterminacy does not interfere.

According to Betancourt, the digital is a semiotic realm where the meaning of a work is separated from the physical representation of that work. The 'aura of the digital,' for Betancourt, describes an ideology that claims a transformation of objects into a semiotically-based immateriality, which is most obvious in the relationship of a digital 'copy' to the digital 'original.' This immaterialism originating from the digital dominates the political economy by deploying financialization as a vehicle for the semiotic development of wealth and accumulation without physical production. Financialization is thus an epiphenomenon, a symptom, of another distinct process (Betancourt, 2010).

Immateriality may prevail for long interludes of time but future labor capacity is the constraint. When the claims on labor exceed the ability to meet those claims, the claims need to be devalorized.

2.3 Immateriality and Claims-Making

According to Hilferding, in a stock exchange, capitalist property appears in its pure form, as a claim to a yield and the value of any property seems to be determined by its yield, a purely quantitative relationship (Hilferding, [1910] 1981: 149). The neoclassical efficient market hypothesis asserts that a market in which prices always fully reflect available information is efficient and hence market prices should always reflect underlying fundamental values. So, the neoclassical theory does not accept any divergence of values and prices.

The divergence between values and prices may not only originate from productive base or the real economy but also financial sector. The efficient market hypothesis in this regard is challenged by several strands such as behavioral finance or experimental economics but the most promising and complementary one with respect to the subject matter of this study is the self-referential hypothesis advanced by Orléan (2005).

Orléan confronts what he calls 'hetero-referential' approaches which claim that a reference exists outside of the (financial) market (such as the real economy) from a very elementary but distinguishing aspect. For Orléan, the financial market itself is the only relevant point of reference for prices. 'Hetero-referential' approaches assume the existence of objective economic forces that automatically correct any deviations from the so-called fundamental values (Orléan, 2005: 23).

However, this does not amount to a complete denial of economic realities. The self-referential hypothesis only denies the existence of an automatic relationship between prices and fundamental values as claimed by the efficient market hypothesis. This enables long interludes of prices at 'deviant' levels (Orléan, 2005: 24). Toporowski's theory of capital market inflation offers a complementary view to the self-referentiality

of financial markets. Toporowski's theory of capital market inflation holds that the actual value of a capital market is determined by the inflow of funds into that market. Most of that inflow is taken out by the net issue of bonds by governments, and a large part of the remainder is taken out by the net issue of securities by corporations. The balance, or net excess inflow, forms the market's liquidity. When the demand for financial securities exceeds the amount of money that holders and issuers of those securities are prepared to take out of the market, prices rise (Toporowski 2008, 7). As prices rise, the demand for those assets increases, which is enhanced by a speculative demand to benefit from capital gains (Toporowski 2008, 8). When the net excess inflow increases over an extended period of time, capital markets, especially equity markets, inflate. In Toporowski's opinion, financial inflation due to excess demand is mainly caused by pension funds. The increased flow of funds to capital markets was not accompanied by the presupposed forthcoming of equity issues, instead, ended up in an excess demand for financial assets, and hence financial inflation, according to Toporowski (Toporowski 2008, 8). Toporowski defines the process of inflating capital markets as financialization.

Thus, the self-referential hypothesis now fits perfectly to the framework and very basic assertion of this study; which is the divergence between the value of productive base and the prices of claims to productive base.

2.4 Financializing Capitalism

The transition to fiat currency on August 15, 1971 marks the transition to a financial economy. Fiat currency means a system where money, and by extension all financial assets, does not have a standard unit of value, such as gold, against which its value can be objectively measured (Yeldan, 2009).

The period from the collapse of the Bretton Woods system onwards witnessed a worldwide financial deregulation and liberalization and a proliferation of financial instruments, later accompanied by the development of ICT to foster all. The active promotion of equity ownership by governments in the Anglo-Saxon economies beginning from 1980s during the Reagan and Thatcher governments set the stage for a new era (Dore, 2008: 1106):

> … The reason for governments promoting equity ownership in the 1980s and 1990s was increasingly a belief that a plentiful supply of equity capital promoted *innovation*, and hence the competitiveness of the economy. Specific measures adopted have included selective tax deductions for equity investments in unlisted securities (intended for venture firms,...), a relaxation of the "safe investment" restrictions on pension funds permitting them to put more into equities, and encouragement of a shift from defined benefit pensions in which employers bore the risks of yield fluctuations, to defined contribution pensions in which the pensioner chooses his investments and bears the risk of their yielding poorly (Dore, 2008: 1106, italics mine).

In 1992, however, at a time in which the USA seemed to be lagging behind, but not very long ago from the discussions of the New Economy took off in the latter half of the 1990s when the rapid growth of the American economy established the United States as the model, Michael Porter, reporting the findings of a research project on competitiveness in a paper entitled Capital Disadvantage: America's Failing Capital Investment System concluded that the US system was misallocating resources and jeopardizing US competitiveness:

> To compete effectively in international markets, a nation's businesses must continuously innovate and upgrade their competitive advantages. Innovation and upgrading come from sustained investment in physical as well as intangible assets-things like employee skills and supplier relationships. Today the changing

nature of competition and the increasing pressure of globalization make investment the most critical determinant of competitive advantage.

Yet the U.S. system of allocating investment capital both within and across companies is failing. This puts American companies in a range of industries at a serious disadvantage in global competition and ultimately threatens the long-term growth of the U.S.Economy (Porter, 1992: 65).

Porter's discontent may be clarified to some extent by Grabel's speculation-led development argument. Grabel's speculation-led development argument, though developed in reference to financial liberalization (FL) undertaken in developing countries, is relevant for developed countries as well, as suggested by Grabel herself (Grabel, 1995:130). Grabel's argument is based on an elaboration of the nature of investment projects to be undertaken after FL. For that, Grabel produce a typology of investment projects in terms of risk/return profiles, as in Table 1.

Table 2: Typology of Investment Projects

		Risk	
		Low	High
Expected Return	Low	Type A projects	
	High	Type B projects	Type C projects

FL ends up in higher interest rates[3] and hence higher borrowing costs, which will discourage Type A but Type B and C investment projects because Type A kind *prudent* projects are no longer viable at high rates (given their low expected returns). The

[3] Real long-term interest rates remained close to 4-5 percent from 1980 until 1995 while they were well below 2 percent during the 1960s.

potential for tendency in speculative activities and hence financial fragility in Minskian sense afterwards is obvious. The Type C kind of investment opportunities will flourish after a *regime shift* to FL and, in effect, then, FL amplifies the pressure to speculate. This is what Grabel referred as speculation-led development and why modern financial markets are especially prone to speculation (Grabel, 1995:135-6).

However, the USA's laggard position had been reversed in a very short time with no major change in financial sphere. By the end of the 1990s, what was perceived as falling behind in the first half of the 1990s had become the model to imitate. In March 1994, the Agreement on Trade-related Aspects of Intellectual Property Rights (TRIPs), had been signed as part of the agreement founding the World Trade Organization (WTO). Intellectual property rights (IPRs) have thus been globalized: Intellectual property (IP) protection has been extended to all WTO members and a more effective enforcement mechanism has been put in place. In addition, a linkage between intellectual property rights and finance had been instituted. This did not only turn innovation into an object of speculation but also led to the emergence of a form of finance-driven innovation (Orsi and Coriat, 2006: 170).

According to Reati and Toporowski, the financing mechanisms of innovation in advanced capitalist economies can be broadly divided into two: *speculative* and *accommodating;* which roughly corresponds to the distinction between speculation and enterprise in Keynes's General Theory (1936).

Speculative mechanisms are driven by expectations of refinancing possibilities in the financial markets, for Reati and Toporowski. Refinancing refers to the (re)sale of a loan or a security, previously issued to finance a certain investment, in the financial markets by its holders to other parties. The profit expectation on such transactions drives refinancing and the profits are not paid out of the proceeds of the investment but by someone who is willing to buy the loan or securities at a higher price than the original

value of the financing. That higher price depends on the liquidity in the financial markets. If there is excessive liquidity, then securities prices will be rising, and there will be a good market for speculative finance. If there is insufficient liquidity in the markets, then it will be difficult or impossible to refinance at a profit (Reati and Toporowski, 2004: 416).

Speculative financing mechanisms are momentary and hence they cannot be reliable and stable financing sources due to their excessive dependence on liquidity in financial markets. Speculative finance may dry up if financial markets become less liquid. Thus, speculative finance is an inconstant volatile source of finance for technological innovation.

Accommodating financing mechanisms, in contradistinction to speculative financing mechanisms, are driven by the profit expectations of entrepreneurs with the knowledge of the potential of the innovation, not irrelevant parties with a fleeting relation (Reati and Toporowski, 2004: 416). Speculative financing mechanisms are not only specific to financing innovation but extends to the whole of non-financial sector, which is possible to study by means of the Post-Keynesian theory of the firm.

The Post-Keynesian theory of the firm especially focuses on investment decisions and does not presuppose small firms in perfectly competitive markets. In contradistinction to the neoclassical approach, the Post-Keynesian theory of the firm studies price-maker big businesses in oligopolistic markets. Profit maximization is not the ultimate objective for firms. The primary objectives of the Post-Keynesian firm are growth and power. Profits are pursued for the achievement of the final objective which is firm's survival and firm's power increase. Both survival and power crystallizes in growth. By means of growth objectives, firms spread their sphere of influence and they reduce uncertainty which weighs on their future. Profits are a prerequisite for growth because they release the financial constraint on accumulation. Firms seek profits because it will allow them to

grow. Finance raised externally, as debt or equity, is not a substitute for but complementary to retained earnings. For external finance, firms must prove their capacity to generate profits. In addition, firms need to provide a constant stream of dividends to shareholders to keep them quiet (Lavoie, 1992: 94-148; Dallery, 2008).

The Post-Keynesian theory of the firm envisages two major constraints facing a firm: the finance frontier and the expansion frontier, which is visualized as a simple two-curve diagram that links profit rates and accumulation rates. The finance frontier indicates the required profit rate for a given growth strategy. The expansion frontier associates the realizable profit rates for each growth strategies. When the two frontiers are combined in a diagram, the various objectives such as the profit maximization or growth maximization can be represented visually. The intersection of the two curves give the growth maximization, which is represented by the point A in Figure 1, and different from the profit maximization, being the peak of the expansion frontier.

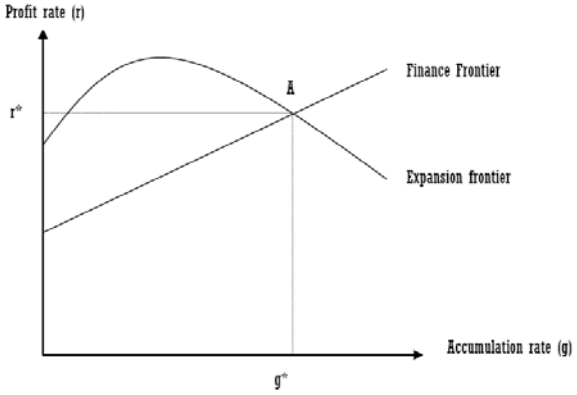

Figure 1: Finance & Expansion Frontiers

Financialization in the sense of shareholder value maximization would require a firm to be run in a way to move away from the growth maximization towards the profit maximization position. The strength of shareholder value orientation will determine how far away this move will be. A full blown move to the profit maximization in fact deprives a firm from survival. This is the case of the shareholder

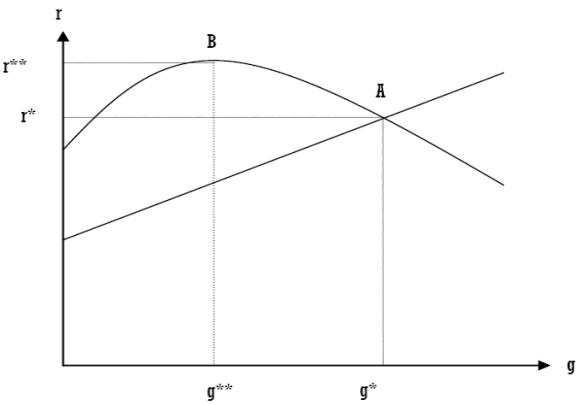

Figure 2: Shareholder value maximization

value ideology, as argued by Lazonick and O'Sullivan (2000), forcing firms from *retain and invest* to *downsize and distribute*. Again, as pointed out by Lazonick and O'Sullivan, a full move to the profit maximization presents a paradox for an innovating firm at the same time: how to finance innovation, which is not a concern at all in neoclassical principal-agent theory because principals, not the managers, are the ones to decide where to invest surplus funds. However, for survival, firms are required to innovate, then, depending on the management's autonomy and ability to conceal their strategy, they may continue to do so but not for long under shareholder dominance. Shareholder value orientation can thus be represented as a move from the point A to the point B in Figure 2.

This is exactly the Stockhammer's framework; the increased power of shareholders as a result of financialization leads to the firm to move away from the growth maximization, which is the intersection of the two frontiers, towards the profit maximization position in line with the shareholder value maximization. This way of reasoning presupposes that shareholders are only compensated through dividends and does not take into account the compensation through capital gains. Or it assumes away the financial activities of firms. However, under *f*inancialization, firms increasingly engage in the financial activities so much so that they might not have even any ongoing nonfinancial activities or positive returns from them for long as in the case of the new economy startup firms but are provided external finance by the financial system. The most extreme case of this is the use of a company's own stock as a currency to compensate personnel and acquire other companies (Lazonick, 2005: 35). The question is how to take them into account in the context of the Post-Keynesian theory of the firm, specifically to impose them onto constraints of the finance frontier and the expansion frontier.

To be able to do that, one can either simply shift up the expansion frontier to cover the financial activities or assume that the expansion frontier is a combination of two expansion frontiers; one for the financial activities and one for the nonfinancial

activities, which amounts to the same thing. As for the finance frontier, it needs to move up but not in a parallel way because the firm's external financing potential may increase without any increase in its profits thanks to share price increases.

In sum, one modification to the Post-Keynesian firm behavior in this study is that the Post-Keynesian firm is not a price taker not only in goods markets, as originally assumed, but also in capital markets for its shares. This is because the market making activities of firms for their own issued equity by themselves might have increased particularly after the disappearance of traditional market making with the dominance of electronic trading in stock exchanges. Also, the increased importance of share prices for other sources of external financing requires a firm to regulate its own share price.

Thus, a full compliance to the shareholder value ideology, may not be observed through the intervention of some other mechanisms in a way to alleviate pressures from the shareholder value maximization. Toporowski's theory of capital market inflation is such a mechanism even to rescue the growth maximization strategy. Financial inflation, i.e., share price increases, comes on top of the rate of return as an addition in the form of capital gains. Thanks to share price increases that compensate shareholders by means of virtual capital gains, the firm does not need to move from the point A to the point B but instead to the point C in effect.

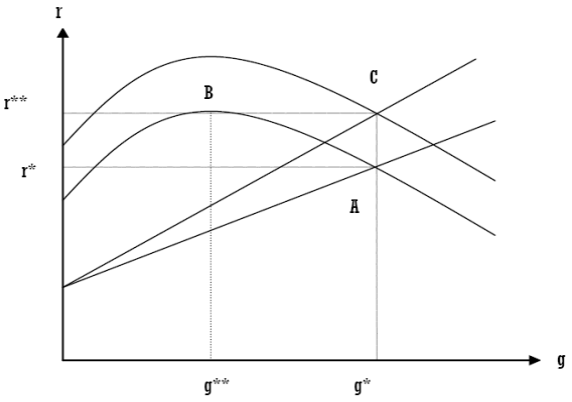

Figure 3: Growth through financial inflation

As long as share prices keep rising, shareholders are compensated to a great extent by the newcomers to the market, not by the firm itself. Even dividends may go down by relieving the firm from that duty to some extent. This is because due to diversified

portfolios, as Crotty (1990: 534) has argued, stockholders typically have only a fleeting relation with any particular enterprise and what shareholders care is the total return, capital gains included.

The self-referential financial markets thus seems to find ways of self-expansion. Such a tireless self-expansion cannot be an indication of a full independence of financial markets. Financial markets can manage without money for long interludes but not for good. They may even have invented to create liquidity by themselves to some extent or make central banks to accommodate their liquidity needs but as long as securities are denoted in terms of money or unless money is endogenized in some way, financial markets are never self-referential in terms of liquidity.

2.5 Separation of Production and Valorization

The metaproduction capitalism, as referred by Deleuze, however, could not manage to fix and stabilize itself by introducing non-capitalist elements, as suggested by Rosa Luxemburg. Perhaps, the new global division of labor; in the form of knowledge and finance in the center and production in the periphery, was not a fix at all. Luxemburg's conclusion about capitalism that it can exist only in an 'impure' and 'open' setting, so it needs to expand to non-capitalist areas comes after her questioning the problem of the 'monetization' of the surplus. Luxemburg's misunderstood, but unresolved, emphasis and insistence on the necessity for capitalists to 'monetize' the surplus value, that is, to realize it against money, which is reexamined by Bellofiore and Passarella (2009: 98-115) in a monetary circuitist perspective, is a much more valid and legitimate question in a context of the new global division of labor. As Arvidsson calls attention to the growing separation between production and valorization in informational capitalism and the fulfillment of valorization by financial markets, then, the monetization problem in informational capitalism must have been not only much more valid and legitimate but also more acute than under a monetary production economy, which is prevailed by a

unity of production and valorization.

Luxemburg's monetization problem can be simply stated as where the money backing the expansion of capital (M'-M expressed in the general formula of the valorization process; M-C-M') comes from (Bellofiore and Passarella, 2009: 107). Luxemburg's critics, however, completely misunderstood her question. The problem, they argued, can be easily avoided by supposing an increase of money through gold producers or a higher velocity of circulation of money. Luxemburg's point was that capitalists set in motion the process by injecting purchasing power but what capitalists get at the end as money could only be the money they themselves brought into the system unless a way is found to add new money 'from outside'. So Luxemburg claimed that capitalism would require 'impure' and 'open' (that is, non-capitalist) settings not only to survive but prosper (Bellofiore and Passarella, 2009: 100-107).

In industrial capitalism, the point of valorization was the consumer or goods market. Production and monetization in the sense of valorization were close and connected through the factory and its vertically integrated distribution network. A key tendency of Post-Fordism, however, is the growing importance of financial markets and their substitution of goods markets to some extent in the valorization process (Arvidsson, 2006a: 132).

Valorization is a French word which means 'to make useful, to use, to exploit'. Valorization is the expansion of capital (M-M') that corresponds to what Marx calls the 'self-valorization' of capital.' The valorization process is expressed by the general formula; M-C-M'.

In line with Luxemburg's terminology, monetization seems the appropriate term rather than valorization or realization. Marx uses the term 'valorization' in relation to

production and prefers 'realization' in case of circulation (Arthur, 2006: 2). In order to be able to distinguish from those usages and emphasize a certain aspect of the process, 'monetization' seems like the right terminology. In addition, there is a sort of established usage as in 'IP (Intellectual Property) monetization,' perhaps, in need of generalization to the whole of informational and financial capitalism literatures. Knowledge valorization, which is a relatively new term with its origins in the European Commission and defined as the transfer of knowledge from one party to another for economic benefit (Andriessen, 2005), seems to lack the necessary stress on monetization.

There are two main mechanisms of valorization, though, neither of them is specific to the 'new economy' or the 'old economy' but they may be peculiar to one. It might be appropriate to proceed through an example common to both. For instance, brands can be valorized in two ways. First, brands may extract a 'premium price,' in the sense what consumers are prepared to pay extra for a certain brand of good, which is not specific to either the 'new economy' or the 'old economy.' Second, brand value may be realized on financial markets in the form of share prices or easier access to capital, which is, more peculiar to the 'new economy' (Arvidsson, 2005: 250). Then, valorization, the expansion of capital (M-M'), has two parts; a part coming from goods market and another part coming from financial markets. We are more familiar with the first, which is peculiar to the 'old economy.' The second part gained more prominence with the increased profile of 'new economy.' It is possible to call this second part valorization through financial markets or financialization. Financialization in this sense can be seen as a fix to the valorization process of the new economy.

Marx believed that capital is 'self-valorizing' but the 'self-valorization' required some special construction for knowledge monetization as a disconnected and self-referential financial markets.

2.6 America's Chronic Current Account Deficit

America's current account has been in deficit every year but one, 1991, since 1982. Before 1982, the U.S. current account deficits were small and temporary. Since 1982, the United States has experienced large and persistent current account deficits. After a year in surplus in 1991, it steadily rose as a share of gross domestic product (GDP) to a record high of 6.1% of GDP in 2005 and 2006. It fell slightly in 2007 and 2008, and reached 3% of GDP in 2009.

By accounting identity, the current account deficit is equal to net inflows of foreign capital and the steady financing of the current account deficit has depended heavily on official capital inflows since 2002. Official capital inflows have exceeded $200 billion per year since 2003, and $400 billion since 2006.

In terms of productive base and claims to productive base framework, the chronic current account deficits mean a permanent source of claims, which is an ongoing hot issue as global imbalances debate and seems far from resolution. Apart from that and the long term fictitiousness of those claims, the chronic US current account deficits is also a permanent source of demand by foreigners for the US financial assets because they would be looking for higher returns for their dollar balances rather than keeping them idle, which would translate to financial inflation and its cascades on domestic investors for both financial investment and consumption in turn. Such an expansion due to financial inflation is itself definitely fictitious in Marx's terms of 'fictitious capitals.'

2.7 Conclusion

Financialization, defined as the divergence of the financial from the material basis of the economy, has been noted long ago by Marx, though, he attributed that divergence to

capital devalorization, and hence, the productive base. With the increased self-referentiality of financial markets, the divergence originating from financial economy and even the independent movements of the financial and the material bases from each other for long interludes of time became possible. Such a bidirectional financialization seems what we have experienced before the financial crisis of 2007/2009.

Immateriality of Finance

For Betancourt, immateriality is an illusion, an illusion of infinite resources; as if there is an infinite amount of wealth that can be extracted from a finite resource, which is like a belief in magic or superstition as a result of projecting the digital logic, according to which, in principle, an infinite number of any digital work can be produced with no cost and a change or loss in quality, onto other realms of life. Thus, the digital technology leads to a belief in accumulation without production and the end of scarcity. Then, immateriality is subjective; not only because it is an illusion but it depends on viewpoints or standpoints. Both the illusion and subjectivity springs from losing and missing the sight of the whole (process) so that what is physical, does not disappear or vanish but, becomes invisible.

Take the drone war carried out in Pakistan, Afghanistan and Iraq to fight terrorism and terrorists. Drone pilots sit in air-conditioned rooms far away from the anti-terror wars in Pakistan, Afghanistan and Iraq. They guide their weapons systems with joysticks and monitors. The remote warriors work with a high degree of precision and at a fraction of the cost of a fighter jet (Spiegel Online, 2010):

> The main monitor shows an aerial image of a street, live and from a considerable height. Two people can be seen walking out of a building, getting into a truck, and driving off, followed by the computer's crosshairs. "Three, two, one," the man counts down, then presses a red button: "Impact."

> The truck disappears in an explosion. "Excellent job," the man says (Spiegel Online, 2010).

The whole thing looks like a computer game but it is not; people are killed with a click of a mouse. The ability to kill with just a press of a button from the CIA headquarters in Virginia raises the question of just how faceless modern warfare can be (Spiegel Online, 2010).

Flying drones might turn war into a video game, which used to be a very serious business. Wars are not even declared anymore. Furthermore, the drone war is documented, downloaded, and hence, accessible for everyone. It is even possible to see the videos on YouTube. We can see more but experience less. War turns for some into a form of entertainment that soldiers call 'war porn' (Spiegel Online, 2010).

Take also the (drone) production carried out in remote parts of the World. Drone pilots sit in air-conditioned trading rooms far away from the sweathouses in remote parts of the World. They guide their apparatus of capture with mouses and monitors. The remote laborers work with a high degree of precision and at a fraction of the cost of its immaterial counterpart.

Castells sees

> The outcome of this process of financial globalization may be that we have created an Automaton, at the core of our economies, decisively conditioning our lives. Humankind’s nightmare of seeing our machines taking control of our world seems on the edge of becoming reality-not in the form of robots that eliminate jobs or government computers that police our lives, but as an electronically based system of financial transactions (Castells, 2001).

The conflation of information technologies and finance in electronic markets constitute an on-screen reality that lacks an off-screen counterpart as in the drone war with a diminishing relevance of physical setting (Beunza and Stark, 2004: 370-1). The trading rooms are populated by non-human 'intelligent agents,' the computer programs executing automatic trades, referred to by the traders themselves as 'robots' (Beunza and Stark, 2004: 378). Just like warriors, to see opportunities this time instead of dangers, traders put on the financial equivalent of infrared goggles that provide them with the trader's equivalent of night-vision.

The information technologies combined with the technology of finance mediates to create the immaterial reality, just like a vanish effect performance by an illusionist that makes something disappear. Thus, the logic of immateriality intrinsic to the digital reproducibility drives the process of 'demonetized financialization' through semiotic manipulation in self-referential financial markets leading to fictitious values that need to be devalorized from time to time.

CHAPTER 3

LEVERAGING FINANCIAL REVOLUTION

... But the capital does not exist twice over, once as the capital value of the ownership titles, the shares, and then again as the capital actually invested or to be invested in the enterprises in question. It exists only in the latter form, and the share is nothing but an ownership title, pro rata, to the surplus-value which this capital is to realize. ... (Marx,597)

Axiom number one. Inflation depends on the growth of money. Axiom number two. Asset price bubbles depend on the growth of credit (Kindleberger and Aliber, 2005: 55).

3.1 Introduction

Although Marx usually operates with an implicit ontology (Gould, 1978: xi), that is, he does not generally make or present explicit ontological statements in his works, his stance is totally different when it comes to dealing with fictitious capital as seen in the extract above. Marx's choice even in naming the concept as fictitious capital reveals his emphasis on the basis of value of such capital as not-yet-existent (future) value in addition to confirming his stance in this regard.

Such an explicit ontological argument is perhaps to stress the split character of capitalism and warn in this respect: it pretends and operates as if it exists but learns that it does not exist from time to time. Perhaps, the history, that is, the choices made as the history unfolds, is the explanation for this split character. It might be really the case that it was not this way at the start but somehow in some way later inserted into the whole structure of capitalism. It is the task of this chapter to track the history for clues in this respect.

Marx provides us where to start with:

> With the development of interest-bearing capital and the credit system, all capital seems to be duplicated, and at some points triplicated, by the various ways in which the same capital, or even the same claim, appears in various hands in different guises. The greater part of this 'money capital' is purely fictitious (Marx, 1991: 601).

The credit seems the thing that should be focused on in Marx's opinion. The credit may be in fact what makes fictitious capital possible at the start but also impossible its continued existence later. To see this, one needs to combine the valorization of fictitious capital, M-S-M' where the S stands for any kind of security, such as stock, with the regular and familiar valorization, M-C-M', as previously done by Hilferding (1981[1910], 113):

M – C - M' ...
|
S
|
M'
.
.
.

In order not to confuse the valorizations in these two 'spaces,' let us refer them as ΔC and ΔS. When the two streams of ΔC and ΔS, are capitalized, they should be equal or not much far apart because the latter is only a representation or derivative of the former. However, what we observe is periods of divergence followed by adjustments or cycles of leveraging and deleveraging in a more fashionable jargon. The capitalized values in the latter type of valorization inflate for some time until they really look fictitious to some and they start to deflate from that moment on until they come in line with the capitalized values of the valorization in commodities, which is followed by other cycles

of inflation and deflation and so on.

Since 'All these securities actually represent nothing but accumulated claims, legal titles, to future production' (Marx, 1991: 599), the future production, i.e., $\Sigma\Delta C_{it}$ sets the maximum magnitude of the valorization in securities, i.e., $\Sigma\Delta S_{it}$ or $\Sigma\Delta S_{it} \leq \Sigma\Delta C_{it}$. Due to the famous realization problem, the valorization in commodities, i.e., ΔC, is managed through credit; which translates as the future accumulation of credit $\Sigma\Delta C_{it}$. If the valorization in securities is based on credit also, then, the future credit volume increases by their sum, $\Sigma\Delta C_{it}+\Sigma\Delta S_{it}$, which needs to be settled through the future production, that is, again, $\Sigma\Delta C_{it}$; which brings us to an absurdity: $\Sigma\Delta C_{it} \geq \Sigma\Delta C_{it}+\Sigma\Delta S_{it}$. The future, however, does not exist twice over, once as the pulled proceeds from future economic activities into the present, making future production and future income available for present and twice as claims to it or its representation, through credit or debt, which is somewhat different from Marx's original argument but also an ontological argument.

Any income extracted from the future production by means of credit financed fictitious capital then falls into the category of 'accumulation by dispossession' in Harvey's (2005: 159) terms or primitive accumulation because it is just another round of distribution apart from the one that fictitious capital owes its existence, which is similar to an unearned increment, that is, rent in Ricardian sense. To make it clear, the origin of fictitious capital as a claim to income entitles its owners to just one and final round of distribution but fictitious capital bought on credit entitles its holders to a sort of preferred round of distribution inserted before, and hence prior to, the regular one deducted from the valorization in commodities, which turns fictitious capital to an instrument of value capture or rent extraction.

Thus, fictitious capital gives rise to and even becomes an expression of a disconnect between effort and gain or result, which was deemed as the foundational in the emergence of capitalism by some authors such as Weber (2005) because the Protestant work ethic condemned idleness, unearned income and the 'reallocation of property by

chance' and attributed advancement and improvement to effort or toil, i.e., labor. Such a disconnect between effort and result, however, rises with and also finds its legitimization in the electronics revolution according to Davis (2002: 24) since with the extension of electronic production, 'robots produce goods,' virtually and actually in the absence of workers, and at the same time, any proportionality that exists between effort and result degenerates when incredible fortunes are made completely out of scale to effort (Davis, 2002: 25). Then, fictitious capital also finds its legitimization in the electronics revolution.

As noted by Marx 'all capital seems to be duplicated, and … triplicated' by means of credit or debt. Marx in fact points out to the phenomenon and process of leveraging - duplicated … triplicated- and its lever: credit. Kindleberger and Aliber (2005: 55) on their book on financial crises state that

> Most expansions of money and credit do not lead to a mania; there are many more economic expansions than there are manias. But every mania has been associated with the expansion of credit.

However, the general interpretation on Marx's notion of fictitious capital concentrates more on the 'fictitiousness' as such. A more nuanced approach in this regard should build on top of such a given. This can be done by shifting the stress on leveraging aspect. Leverage in general and particularly in finance refers to the use of credit capital - borrowed money- to expand activity. Such a talk of leveraging and deleveraging, though, bears the danger of their normalization, which might be truthful to some extent.

Geanakoplos (2010) has recently proposed a theory of Leverage Cycle. Geanakoplos theorizes that the leverage in addition to the interest rate, as assumed by standard economic theory till now, is also determined simultaneously in a loan market through supply and demand. In good times, lenders usually do not require collateral leading to a higher leverage. In bad times, however, the lenders demand more collateral ending up in declined leverage or deleveraging. Geanakoplos drives and derives an important

implication of his theory that central banks might consider monitoring and regulating leverage as well as interest rates. A central bank can smooth economic activity by curtailing leverage in normal or ebullient times and propping up leverage in anxious times in Geanakoplos' opinion.

Geanakoplos' Leverage Cycle theory is important and inspiring, though, with a very narrow focus, because it is not situated within a broader historical perspective and perhaps just a respecification and acknowledgement of previous theories such as Fisher's debt-deflation theory and Minsky's Financial Instability Hypothesis. These shortages of Geanakoplos' Leverage Cycle theory, however, can be remedied by combining and reinterpreting it within Arrighi's (1994: 6) Braudel's (1984: 246) 'financial expansion' inspired treatment of cyclical financialization perspective. Thus, a continuity between Geanakoplos' micro and Arrighi's systemic approaches can be established through Marx's macro and integrative stance and the resultant approach can be used as a lens in our historical journey to determine how capitalism became or was structured so prone to leveraging.

The recent experience just before the great recession shows that 'capital seems to be' nearly quadrupled in size relative to GDP and reached a level more than three times as large as the total worldwide GDP according to a report by McKinsey & Co. (2009) on the value of global financial assets. For the 10 developed economies (Canada, France, Germany, Italy, Japan, Spain, South Korea, Switzerland, UK and US), the total debt increased from 200% of GDP in 1995 to more than 300% of GDP by 2008. The US total debt reached 296% in Q2 of 2009, which was well below some other major economies, however, it is much higher at more than 350% if asset-backed securities issued by the financial sector are included.

The future pulled into the present before the great recession is not a minor figure relative to the future but multiples of the present. If a duplicated magnitude may be melted away in about 10 years of time at an annual degrowth rate of 7 %, then, the question is how long it would take the multiplicated debt figures to vanish and at what degrowth rate.

Capitalism thrives on anti-systematicity (Vandenberghe, 2008: 878) but the unheard levels of over-leveraging before the great recession and the impasse on that became anti-systemic for capitalism itself. It is perhaps too much to expect capitalism to be preemptively preventive on leveraging and it may have a tendency to leveraging but the level of over-leveraging this time requires us to look back and see where and when the sea change happened.

This chapter attempts to trace the process of financialization experienced before the 2007-2009 financial crisis that comprises a sort of 'demonetized' excessive money creation complemented by a specific form of speculation through a backward glance. After highlighting some features of financialization, it reviews the construction of the new money, through the fusion of different forms and functions of money, as the key input of a monetary production economy. It moves to the association between money and production, and the ontological insight about their unity by TME. Later, the chapter questions what would happen when the asserted ontological unity degenerates in some way. The other major source of money in initiating and sustaining financialization is the next topic. A new kind of speculation regime that organizes all the process is the last topic and the paper concludes with the question of the qualification of the money created during the process of financialization.

3.2 Leveraging and Financialization

The term financialization began to gain popularity in the 1990s. It is difficult to track the first usage of the term but the current use of the term 'financialization' owes much to the work of Kevin Phillips, who employed it in his books *Boiling Point* (1993) and *Arrogant Capital* (1994), defining financialization as 'a prolonged split between the divergent real and financial economies'. In 1994, Giovanni Arrighi used the concept interchangeably with financial expansion, borrowing from Braudel, in *The Long Twentieth Century* to refer to a recurrent pattern of historical capitalism as world system.

Polanyi identified *haute finance* as an institution that is pivotal to the nineteenth century international balance-of-power system (Özveren, 2010: 7) but with a function not directly related to finance (Özveren, 2010: 8), perhaps to distinguish from Hilferding's notion of finance capital, which had direct relevance to finance and financialization from power and coordinated action aspects, though, ignored by the current literature. However, the fulfillment of coordination function in an oligopolistic market structure by a certain set of organizations or institutions, performed by banks in Hilferding's finance capital vs. rules and institutions, such as rating agencies or IMF, in financialization era, is a common theme in both eras of domination by finance.

It is strange and difficult to comprehend that financialization as a term started to be used so lately, though, its main features such as a recurrent pattern in time and dominance has been identified long before. Even, some authors, Graeber, for example, points out to the existence of such a pattern of Polanyian oscillation between debt/money expansion and cash for the last 5000 years (Graeber, 2010), which is supported by the lost tradition of debt cancellations (Hudson, 1995) to some extent.

Before proceeding more, it is possible to use the lever of leveraging to clarify and remove some ambiguity from the notion of financialization, which is increasingly referred in an indefinite or unspecified manner. In its current deployment, it looks like the notion of financialization covers leveraging, as it is nicely exemplified by Arrighi's Braudel's 'financial expansion' inspired financialization notion. Thus, this study will treat leveraging as a subset of financialization.

3.3 Mechanism of Extraction

Capitalism may be prone to leveraging and proceeds through cycles of leveraging and deleveraging as pointed out by some important theoreticians such as Marx with his

notion of fictitious capital, Braudel with financial expansions versus material expansions, Arrighi with Braudel inspired cyclical financialization, Hudson (1995) with the lost tradition of debt cancellations and, last but not least, Graeber with a pattern of Polanyian oscillation between debt/money expansion and cash for the last 5000 years but somehow managed leveraging better till the Great Recession. The Great Recession perhaps revealed that the only barrier before leveraging was itself, or fictitious capital: leveraging ends up 'fictitious.'

Then, the focus should be on the management aspect of leveraging, not in the sense how it is managed per se but rather how capitalism avoided the level of leveraging seen in the Great Recession before the Great Recession.

Based on a table called 'Total Wall Street Bailout Cost' (2010), which is compiled and updated monthly by the Real Economy Project of the Center for Media and Democracy (CMD), the sum total disbursed by the US federal agencies in supporting the financial sector since the meltdown in 2007-2008 have reached $4.7 trillion as of September 24, 2010, with a potential maximum exposure estimate of $14 trillion. The Federal Reserve is the major source of the bailout funds according to the table.

This bailout figure and the great portion in it disbursed by the Federal Reserve in the aftermath of the credit crisis eases both qualifying what that amount is and hence the presentation of the argument in this chapter in a backward way. There is no doubt that the bailout figure is money. Its provision mostly by the Federal Reserve removes any doubts on its attribution and definition. Thus, it is possible to call the end result of the process (of leveraging) experienced before the crisis as monetization. What about the process (of leveraging) itself?

The process itself seems 'demonetized' to a great extent! This is mainly because the most of the monetization came in the aftermath of the crisis and the monetized amount, that is, the bailout figure, represents the settlement need for clearing the debts accumulated during the process since it is provided by the federal agency acting as the settlement institution and lender of last resort in the interbank market and in accordance with the debts accrued. The larger part of the bailout figure must reflect the deferred settlement need for the whole system and hence a deferred monetization. However, it is difficult to qualify this amount because it is in a sort of gray or blurred area. It is not exactly money on the one hand because it was needed to be transformed into money and that money was not perfect unless it was monetized somehow before the crisis. However, one way or another, it seemed like money or near money at least because it entitled its holders to money even in the aftermath of the crisis. The certain thing about it that it was a sort of money. What was not certain is its quality. Therefore, let us refer it ambiguously leveraging for now.

Mary Mellor, however, in a recent book, The Future of Money (2010) refers to the 'demonetized' leveraging as money creation. Mellor basically argues that the privatization of money by banks has led to financialization and the financial crisis of 2007-2009. According to Mellor, the private control of banking and finance is fundamentally flawed, as exposed by the need for state intervention for bailing out the banking and financial system after the crisis as all bank-created credit which is designated as the national currency becomes a liability on the state. Mellor's notion of ‘privatization of money’ refers to private ownership and control of money issue, that is, money creation. As bank credit issue is the main engine of money creation in modern societies, debt-based money builds a growth dynamics of its own as with the compound interest charged and ending up in pyramid schemes dependent on new participants continually joining in. Given the public nature of money that makes the financial system a public liability, there is no case for its private ownership and control for Mellor. Mellor deploys all related and relevant notions such as money, financialization, credit and so on,

perhaps due to a lack of exact notion such as leveraging. What Mellor is basically referring is in fact leveraging, not money creation as it is made explicit by her phrases such as 'all bank-created credit which is designated as the national currency' or 'debt-based money and since money creation before the crisis and the bailout, that is, its monetization in the aftermath of the crisis are a contradiction in terms -'It exists only in the latter form'. Therefore, 'money creation' phrases used by some original authors are put in quotes to remind that they in fact refer to leveraging and should be read in that way.

Econophysics is an interdisciplinary field applying mathematical methods of statistical physics to social, economic, and financial problems (Yakovenko, 2010: 430). For Yakovenko, the economy is a promising target for applications of statistical mechanics because it is a big statistical system with millions of participating agents. Inspired from the conservation of energy, a fundamental law of equilibrium in statistical physics, where energy does not disappear but only changes its form, Yakovenko argues that such a conserved quantity is money after questioning both if there is any counterpart to energy and what it is in the economy.

The so-called conservation law, which is an extension of conservation of energy to money and even debt issues (Yakovenko 2010 433) in this literature, however, commits a fundamental fallacy because it misses a fundamental distinction between transactions and income (Gallegati et al., 2006: 5). Even, borrowing according to the econophysics literature still satisfies a generalized conservation law of the total money (net worth), which is defined as the sum of positive (cash M) and negative (debt D): $M-D=M_b$, where M_b is the original amount of money in the system, the monetary base (Yakovenko, 2010: 433).

Money in quantitative sense seems conserved but it is not where the conservation principle should be looked for; it is with respect to value or purchasing power, which is

breached because debt enables the agents to buy goods without producing anything in exchange (Yakovenko, 2010: 433) and may even disturb the prices that nonborrower agents are going to pay. In addition, if debt is a future value or purchasing power pulled into the present, then, how can it be value conserving? M and D do the same function in the present: they buy a commodity or an asset, and hence, they should be summed: M+D.

In this study, money is regarded as an accounting device (Yakovenko, 2010: 431) or a method and technology of record keeping (Cockshott et al., 2009: 211, 232) as in the econophysics literature. The physical medium of money is not essential and money's identification with a substance is seen as an illusion that arose from a particular stage in its technological evolution in this literature (Cockshott et al., 2009: 232). Coins or paper money are imperfect token-based methods of record keeping, capable only recording positive numbers (Cockshott et al., 2009: 211). Money in the form of coins and notes can be considered as 'portable credit/debt' (Gardiner, 2004). Money is itself a credit or claim and money cannot be created without the creation of debt. But not all credit is money (Ingham, 2011:18). The acceptance of a personal acknowledgment of debt (IOU) by another party is necessary but not sufficient, a third party is required. Transferability to or its acceptance by an anonymous third party makes it money. 'Money is transferable credit' (Ingham, 2011:18).

Nuri (2002) claims a conservation law of money-energy but, far from salvaging the quantity theory of money, clarifies his definition of money-energy as 'underlying value' in contradistinction to 'nominal value,' suggests that the cases of stock dilution, counterfeiting and seigniorage; i.e., extraction through monetary expansion in general, can be studied with the thermodynamic equation for the special case of constant temperature, known as Boyle's law: $p_1v_1=p_2v_2$, where p refers to 1/P and v to MV in Fisher's MV=PY equation while originally p and v referred to pressure and volume. In all these cases of extraction, an amount of value x is extracted from an initial total value.

Boyle's law adapted for extraction states that under 'constant temperature,' that is, constant GDP, 'money/energy,' in Nuri's terms but 'value' in 'classical econophysics,' terms due to the centrality of the concepts of energy and labour in classical paradigms of physics and economics, is conserved under changes in the money stock; which might be called the law of conservation of 'money/energy.'

When a certain stock of shares or money, v_1 is increased by a certain amount of x; $v_2=v_1+x$, then, $p_1v_1=p_2(v_1+x)$, or, $p_2=p_1[v_1/(v_1+x)]$. A new value, p_2, as a fraction of the old value, p_1, is required to obtain the same level at a greater volume, which means inflation. In other words, extraction is realized by means of inflation. With the newly issued shares, the issuers manage to own a higher part of a company, though, their individual shares loose in value or depreciate.

Especially, the case of stock dilution has a striking correspondence with financialization as an instrument of extraction when it is viewed as a generalized or collective dilution case, justifying Toporowski's definition of financialization as financial inflation (Toporowski, 2008, 145). Inflation, required for extraction in cases of financialization, should take place in two rounds, however, financial and goods. Financial inflation alone is not enough, unless those assets subjected to inflation can be converted into money with their new values. For singular cases of stock dilution, it may be fair to assume a simultaneous valorization and realization but not for a collective one. Then, there must be a second round of extraction through monetary expansion, which requires a high and speedy goods inflation. There was not such a period of high inflation, except the financial one, before the financial crisis of 2007-2009. High financial inflation together with low inflation in goods is even a characteristic of the period before the crisis, which should mean that the extraction was not complete. In other words, the assets have been valorized but not realized before the crisis. Any injections of cash after the crisis serve to realize those valorized values.

Another specificity of the period before the financial crisis of 2007-2009 is speculation, which is not only due to its ubiquity but also its performativity. The objects of speculation seemed like in queue, waiting for their turn to come one by one. It was oil for some time and some other metal or a stock for another. It was like an open buffet but the actors seemed to know what they were doing and sure that they would pick the winners all the time.

This brings us to the main argument in this section: The process of financialization (or financial expansion in Braudel's terms) before the 2007-2009 financial crisis was in fact a period of leveraging in the sense of inflating financial asset prices by means of credit, and hence, with a missing or deferred monetization part during the process, which explains both the 'demonetized' financialization claim of the previous chapter and monetization that comes after it, which needs to be followed up by a period of deleveraging to make a cycle and a specific speculation regime that mediated a concerted investment behavior in the period. The end result was a pyramidal and 'self-referential' debt system as strong as its weakest link.

According to Rossi, there were two structural flaws that lead to excessive 'money creation' and hence the 2007–9 big financial crisis: (i) a missing institution for the international settlement of cross-border transactions, i.e., a world central bank, and (ii) the absence of a structural divide, and the confusion in turn, concerning the two main functions, namely, monetary and financial intermediation, in banking activities (Rossi, 2010). These two structural flaws were possibly not mutually exclusive, in particular, the former might have a part in both inducing and aggravating the latter. Furthermore, a novel form of speculation, specific to American finance, as identified by Knafo (2009), embodied in an organized or coordinated investment, was in company, helping itself by blowing the money itself created into bubbles.

3.4 Constructing Monetary Production Economy

It would be good to go as back as 5000 years to identify patterns but the beginnings and seeds of what Keynes referred to as a 'monetary production economy' is possibly found in the seventeenth century when signifiers of private debt gradually evolved into widely accepted and then legally enforceable means of payment (Ingham, 2004: 187). Financial revolutions, particularly, the one in England, seem like good start.

Financial revolutions preceded, it is claimed, often by decades, the high growth phases of the capitalist economies. The best known "financial revolution" is the English, which was sparked by the Glorious Revolution of 1688. A financial revolution comprises of well-managed public finances, stable monetary arrangements, a sophisticated central bank, a smoothly-functioning banking system, securities markets, and corporations. Fratianni and Spinelli (2006: 259) identify three pillars of 'financial revolutions': (i)innovations in financial institutions, instruments, and markets; (ii) an institutional mechanism through which the debtor commits not to renege on debt; and (iii) the presence of a public bank.

Ingham, however, adopts a different stance, which is possibly a more fruitful one regarding the issue of financialization and hence embraced by this study. The most important consequence of the English financial revolution is the successful reintegration and hybridization of the different forms and functions of money (e.g., coinage vs. credit, public vs. private money and money of account vs. medium of exchange), according to Ingham.

According to Ingham, "Schumpeter insisted and Weber strongly implied that credit-money is a dynamic force that is specific to capitalism" (Ingham, 2003: 305). The differentia specifica of capitalism is to be found in its particular monetary institutions, in

which privately contracted credit relations are routinely ‘monetized’ by the linkages between the state and its creditors, the central bank and the banking system (Ingham, 2003: 302). Money is one of the most important pieces of social technology ever developed (Ingham, 1999: 103) because the production of an elastic supply of credit-money by banks and states as the differentia specifica of capitalism is pivotal in expanding society's ‘infrastructural power’ (Ingham, 2008: 67) and enabling entrepreneurial activity as insisted by Schumpeter (Ingham, 2003: 297).

Ingham’s point on money’s expansionary power as a social technology deserves elaboration. It connects to leveraging in particular and financialization in general, as with Arrighi’s interchangeable use of financial expansion. Also, the chapter will question later money’s such expansionary power as a sort of corrupted functioning rather than normal.

3.4.1 Fusion of Monies

The critical development of the reintegration and hybridization of the different forms and functions of money occurred in two steps, according to Ingham: the creation of a single monetary space for a national coinage into which credit money was later gradually introduced and inserted (Ingham, 2004: 204).

The critical stage in our version of cold fusion is immediately after the fall of Rome in the middle of the fourth century AD, when its money also disappeared with its fall. The two basic functions of money as a unit of account and means of payment became inoperable as well. Rapidly shifting political boundaries, the promiscuous circulation of coins across them, not even to mention competing moneys of account, thus became the norm (Ingham, 2004: 188).

The transformation of the social relation of debt into the typically capitalist form of credit money must concur in which signifiers of debt became anonymously transferable to third parties for Ingham. The materialization of the process may be divided roughly into two steps according to Ingham. First, in the sixteenth century across the part of Europe dominated by Latin Christianity, forms of private money such as bills of exchange -and later, promissory notes- were used in commerce, and existed alongside the plethora of diverse coinages of the states and principalities. Second, during the late seventeenth century, some states outside Latin Christianity, most notably Holland and England, integrated this monetary technique with public deposit banking and began to issue 'fiduciary' money. In this way, the bill of exchange, as a form of private money, gradually evolved to become a part of the public currency. By means of this incorporation into a sphere of monetary sovereignty, private promises to pay now became a more extensive and stable form of public money. The bankers' bill money flourished in those regions where a balance of power allowed them to function (Ingham, 2004: 196-203).

The two forms of money were antithetical and antagonistic. Paradoxically, the first step in the creation of stable monetary spaces that could sustain credit money was the strengthening of metallic monetary sovereignty, which does not favor private money at first at all (Ingham, 2004: 203).

By the late seventeenth century, the two forms of money -private credit and public metallic coinage- were available but unevenly spread across Europe. However, they remained structurally distinct and their respective producers, that is, states and capitalist traders, remained in conflict. The settlement came from the establishment of the Bank of England with its monopoly to deal in bills of exchange. The purchase of bills at a discount before maturity was, in addition to being a source of monopoly profits for the Bank, the means by which the banking system as a whole became integrated and the supply of credit money (bills and notes) influenced by the Bank through its discount rate

(Ingham, 2004: 210).

The two main sources of capitalist credit money that had originated in Italian banking practice, that is, the public debt in the form of state bonds and private debt in the form of bills of exchange, were now combined for the first time in the operation of a single institution. But of critical importance, these forms of money were introduced into an existing sovereign monetary space defined by an integrated money of account and means of payment based on the metallic standard (Ingham, 2004: 210). Thus, leveraging has become inserted into the institutional structure of the monetary system and the nuances basically between credit and money but all along the whole continuum perhaps lost its relevance.

3.4.2 Money and Production

Kiyotaki and Moore (2001: 3) reraise the classic question about money: Why should anyone be willing to hold a stuff with no intrinsic value? And they repeat the classic answer and explanation to the classic question: people find it difficult to barter; it's hard for people to find a 'double coincidence of wants' so they use money to buy goods.

> Notice that for this argument to hold together, there has to be set of mutually-sustaining beliefs, stretching off to infinity. I was willing to hold money yesterday because I believed the dentist would accept it today. She is willing to hold money today because she believes someone else will accept it tomorrow. And so on. If there were a known end-point to history, the entire structure of beliefs would collapse back from the end (Kiyotaki and Moore, 2001: 3).

Tobin reminded that we owe the escape from this logical impasse to the expectation that the end of the world for any definite time is not shared by all with certainty because we

always do, always will, assign some probability to its continuation (Tobin, 1992: 774). However, Weir (2007: 12) argues that the end of production represents such an endpoint; the end of production would produce that result; a collapse of the entire structure of beliefs back from the end:

> And indeed as soon as it is known that production is to cease, no-one would accept money as to accept it would mean holding it when no further exchange is possible, and so would be to accept something worthless. Since no one will accept money in the last transaction, they will not be willing to accept it in the last-but-one transaction, and so it will not be acceptable in the transaction prior to this, and so on by backward induction to the point at which the cessation of production becomes anticipated. It follows that the same process is relevant when a reduction in production is anticipated rather than a complete cessation, with a corresponding reduction in the acceptability of money occurring. The converse-a rise in the value of money when an increase in production is anticipated-can also be predicted. In this way the perceived value of money can be linked to future expectations of production capacity and the expected utility value of production output. It is because money represents future production of goods that it can itself be worthless tokens and represent real wealth to its holders (Weir, 2007: 12).

Weir is not alone on his ontological insight about the union of money and production.

3.4.3 Monetary Production Economy

Keynes spoke of ‘monetary theory of production’ and ‘monetary production economy’ but he did not have any implication with respect to the ontologicalness of the union of money and production but his abovementioned conceptualizations shows his awareness about the peculiarity of the relationship between the two.

Capitalism as a ‘monetary production economy’ is based on money; not only in the sense of the availability of an elastic supply of credit money but also as a coordination device. The rise of capitalism separated the workplace from the home but, at the same time, made the coordination an economy-wide problem. In a non-family situation, contracting in general is expensive. Money comes to rescue here because the coordination is done with credit in capitalism (Schmid, 2004: 184).

For Keynes (1973), a monetary economy is that in “which money plays apart of its own and affects motives and decisions. Specifically using Marx’s formulae of “simple circulation of commodities”(C-M-C) and the “circulation of money as capital” (M-C-M'), Keynes views the M-C-M’ economy as the one providing a realistic description of modern economic systems:

> The distinction between a co-operative economy and an entrepreneur economy bears some relation to a pregnant observation made by Karl Marx, -though the subsequent use to which he put this observation was highly illogical. He pointed out that the nature of production in the actual world is not, as economists seem often to suppose, a case of C-M-C', i.e. of exchanging commodity (or effort) for money in order to obtain another commodity (or effort). That may be the standpoint of the private consumer. But it is not the attitude of business, which is a case of M-C-M', i.e. of parting with money for commodity (or effort) in order to obtain more money (Keynes, 1979).

A monetary theory of production is one in which money plays a central and indispensable role in the process of production. Monetary production means producing and realizing money values. The central problem in a monetary economy is the realization of the value of output in money terms; that is, the conversion of output into money or selling the product for money (Dillard, 1980: 265).

> By the sale of the output the business man in industry "realizes" his gains. To "realize" means to convert salable goods into money values. The sale is the last step in the process and the end of the business man's endeavor. … The vital point of production with him is the vendibility of the output, its convertibility into money values, not its serviceability for the needs of mankind (Veblen, 1904)).

3.4.4 Unity of Money and Production According to TME

Keynes views an economy in which money plays a part of its own and affects motives and decisions as a monetary production economy. There is a school of thought that not only follow Keynes' footsteps in this regard but also goes further by pointing out the role that money plays in the process of production is more than being central and indispensable. This is the theory of money emissions (TME), the Schmitt-Cencini variant of the French circuit school, that emerged in France (Dijon) and Switzerland (Fribourg) in the late 1950s under the lead of Bernard Schmitt. For TME, money and production are one and inseparable, which amounts to an approach going beyond the rhetoric of integrating money and production. For TME, the unity of money and production is not merely a semantic clarification but goes beyond that and comes close to a crucial ontological statement.

The Schmitt-Cencini macroeconomic circuit story starts with the notion of money as a pure numerical form. Money is the numerical form of output in TME (Cencini, 2001: 76) It is crucial to stress the accounting nature of money in TME. Banks are pivotal as double-entry book-keepers, emitting money in a simultaneous creation and destruction of their acknowledgment of debt. Bank money is essentially numerical, a numéraire, as referred by Walras, which is, and must be kept, analytically separate from money income. Banks issue or create money with each payment, and money is immediately destroyed at the end of each payment. Through the payment of wages, an *absolute exchange* occurs, which transforms real output into money income, i.e. which identifies

income with output.

When firms viewed as a whole, a product can only be defined by the social relationship between labor and output. This aggregate relationship enables the conceptual integration of money and output through the payment of production costs, which are identical to wages from a macroeconomic standpoint, owing to the fact that inter-firm purchases cancel out (Rossi, 2006: 124). At the very instant wages are paid, production is defined by the physical product itself. Thus, the payment of wages integrates money and output and fuse them in money-income, wherein money has acquired a real content and output a numerical form (Cencini, 1995: 15). Money thus acquires a positive value and therefore a positive purchasing power over economic output through this conceptual association (Cencini 2001:117).

This exclusive role of labor in the formation of economic value as the sole factor of production in the production process enables to identify the payment of wages as a conceptual justification for the existence of money. In TME, money is defined as the numerical form of output whose appropriation by income holders has only been made possible through the mediation of labor and the payment of wages regardless of the existence of other physical inputs in the production process. Labor is thus the conceptual tool that defines production.

Through the payment of wages, money and output meet, fusing in a unique object called 'income':

> Now, the only payment that is not concerned with the purchase of a product, and that does not require the presence of a positive income, is that defining the remuneration of labor. In fact, while the payment of all the other factors of production' implies the pre-existence of money both as a unit of account and as an income,

> the remuneration of labor is completely original: it is this operation that allows for the transformation of (nominal) money into income (real money) (Cencini, 1995:14).

3.4.5 Vanishing Production

The question is what if the asserted ontological unity or integrated condition of money and production degenerates in some way. This question may seem absurd if this condition is really ontological. It is a valid question if it is constituted or constructed in some way. It is valid in case when one owes its ontology the other as well. Money seems in a dependent ontology to wages in TME story. To rephrase the question: what would happen in case of vanishing production, i.e., metaproduction, if the macroeconomic circuit goes on functioning as if the presumed unity or integrated condition of money and production prevail?

This issue resembles in fact or reminds at least what can be called the 'backing view' of the real bills doctrine: What if a financial asset lacks any real backing in production, i.e., labor in TME story. It is an issue for TME and regarded as a pathological case by TME. When a credit line is extended *ex nihilo* by banks for a firm's payment in the labor market, this does not pose a problem at the macroeconomic level since the payment of wages associates the newly-created bank deposit(s) with a newly-produced output, thus preserving the money–output relation in terms of the production-backed version of the real bills doctrine. However, when a credit line is extended *ex nihilo* by banks for a payment, for instance, in financial markets, on which no value-added process takes place in macroeconomic terms, which is a creation of bank deposits to which no (newly-produced) output corresponds, the money-to-output relationship becomes unbalanced in terms of the production-backed version of the real bills doctrine. If these newly-formed bank deposits are spent on the market for produced goods, the probable result is an increase in the consumer price level.

If, however, they are spent on purchasing real or financial assets, the result is a rise in assets prices or asset price inflation; real or financial (Rossi, 2010: 4).

For TME, the object of the underlying payment is key. In this respect, wages are unique: the only sole object of the underlying payment that does not require a preexistent income or bank deposit. The problem is that there is no way of discriminating between wage and nonwage payments if the banking system do not recognize and record them so, i.e., separately and require for the latter a preexistent bank deposit.

To be able to clarify this case, it is worth to resort to the help of the distinction between money and income and the double process of intermediation, i.e., monetary and financial, carried out by banks as developed by the TME. According to Cencini, a vast majority of economists have a tendency of reducing the double process of intermediation, that is, monetary and financial, by banks to financial intermediation because they are not very careful in distinguishing between money and income (Cencini, 2010: 48).

When bank B pays agent C on behalf of agent A, both A and C are simultaneously debited and credited by B. Thus, a circular flow is what best defines bank money. A bank issues money every time a payment is carried out, and it does so by debiting and crediting both the payer and the payee. Monetary intermediation of banks consists in providing the economy with the money flow required to convey payments. As a matter of fact, banks carry out a financial intermediation, as well as a monetary one, each time a payment occurs, i.e., both intermediations are present in every payment (Cencini, 2010: 49). The function of monetary intermediation is to issue always *ex nihilo* numerical units necessary for carrying out a payment, which is simultaneously created and destroyed leaving a book-keeping mark. The function of financial intermediation is to assign a title to those numbers. If there is no entry for a preexistent bank deposit, i.e., income, it is a mere *ex nihilo* assignment of title to those numbers, which is specific to

production. If there is a corresponding preexistent bank deposit, then, it means a change in the title of the associated bank deposit.

> Hence, since numbers have no intrinsic value, it is not surprising that banks can freely issue any amount of nominal money required by the economy. The problem of over-emission would arise only if banks created wealth by issuing money (Cencini, 1995: 21).

The problem of over-emission arises if banks are not careful in verifying the preexistence of bank deposits in nonwage or nonproduction payments. It is not that banks create wealth but issue more titles for the same wealth, which brings us back to Adams' metaphor of financial subinfeudation in the previous chapter. In fact, there is not much to make banks not to do so. According to Cencini,

> Among the authors who have most contributed to our understanding of bank money, Ricardo is at the forefront. His monetary writings are an outstanding example of rigorous and creative analysis, and his suggestion to structure the Bank of England by distinguishing between a monetary and a financial department still deserves all our admiration and attention (Cencini, 2005: 258).

In accordance with Ricardo’s suggestion, the 1844 Bank Act introduced a reform that made the Bank of England to organize its book-keeping recording in two separate departments; one dealing with money emissions the other with financial intermediations (Rossi, 2010: 7).

> Ricardo had the great merit of showing that the emission of money does not amount to the creation of a positive purchasing power, and that monetary stability requires the emission of money to be backed by a financial intermediation allowing for the transformation of nominal into real money (Cencini, 2005: 258).

For Cencini, Ricardo's insight was that:

> Money creation and financial intermediation are two distinct functions. Nominal money is created in order to provide the economy with a numerical standard, whereas it is only after it is transformed into income that money becomes the object of financial intermediation. While nominal money is literally created, real money (income) derives from production, which is why credit must be backed by a financial intermediation instead of being wrongly identified with money creation (Cencini, 2005:259).

Perhaps, what Cencini had in mind is a sort of value conservation principle as in the econophysics. TME tolerates ex nihilo monetization only in case of wage payments, in all other cases it requires a preexistent bank deposit. If labor is the sole source of value, an ex nihilo money creation for wage payments conserves value. Ex nihilo money creation for all other purposes is a breach of value conservation principle for TME, and hence, monetization or monetary intermediation should be accompanied by financial intermediation in all nonwage payments. The principle of conservation in this case may even serve distinguishing between and defining money and debt, instead of considering both value conserving; and debt as anti or negative money, because debt is issued to disturb and capture or extract value. For TME, the object of the underlying payment is key. In this respect, wages are unique: the only sole object of the underlying payment that does not require a preexistent income or bank deposit.

Ricardo's analysis provided a norm and a strategy to pursue monetary stability according to Cencini:

> If monetary stability is to be achieved, the emission of money must not be greater than what is required by the financial intermediation carried out by banks on behalf of the real economy: this is the central message conveyed by Ricardo's analysis. In order to avoid the inflationary increase of money, every monetary emission must be related to a financial

> intermediation, since it is only under these conditions that bank loans are not financed out of a purely nominal money but out of a positive income generated by production (Cencini, 2005: 259).

The Glass–Steagall Act as a byproduct of the Great Depression of the 1930s provided a framework that helped the US banking sector to distinguish the monetary and financial intermediary functions until it was disposed by the Financial Services Modernization Act in 1999, which legally abolished any separations between commercial banks' activities and those of investment banks and hence blurred any distinction between the monetary and financial intermediary functions in the books of banking institutions.

Thus, it became possible for any bank to lend for purely speculative activities, that is, an amount that it had not yet recognized or recorded as income in its books: all it had to do, in this respect, was to create the number of money units whose expenditure on the financial market gives rise to new bank deposits (Rossi, 2010: 4).Then, it is possible to argue for an inverse relationship between production and over-emission of claims on wealth as in Adams' analysis of of financial subinfeudation (Adams, 1983).

3.5 Non-system of International Payments

America's chronic current account deficits, which was in deficit every year but one, 1991, since 1982, was mentioned in the previous chapter. 'Having to supply other countries with dollars for their cross-border payments, the United States must run chronic balance-of-payments deficits in order to maintain steady outflows of dollars to the rest of the world' (Guttmann, 2008: 11) but as a result and matter of fact, the United States never pays to the rest of the world; just issues its own acknowledgments of debt and the dollars thus paid never leave the US banking system, where they remain necessarily deposited.

While these deposited dollars are recorded as assets in the creditor countries' banking systems, they are at the same time invested in the US, either directly or indirectly, through the purchase of Treasury bills, securities, or other financial claims. Thus, the rest of the world is never paid finally as bank deposits never leave the monetary space defined by the banking system in which they are recorded and remain recorded in their books as deposits. As a result, these dollars do double finance the US, i.e., both its imports and financial markets or securities due to a missing payment finality, that is, the discharge of a liability for ever. The issue of payment finality can be comprehended through a comparison with settlements in domestic transactions; when an obligation due to a transaction is discharged in domestic transactions, it does not lead to or require any further action, which seems not the case for cross-border transactions of those countries whose currency is used as if it were a reserve asset at the international level. Thus, America's chronic current account deficits provide a continued flow of funds to its financial markets in addition to the privilege of buying without paying. Unless an international settlement institution, i.e., a central bank of national central banks, is put into place, with the task of issuing a means of final payment for cross-border transactions that homogenizes the various currencies involved in the international monetary economy, the problematic of the final settlement of international transactions would go on (Rossi, 2010: 423).

This must be the most upfront and plain vanilla case that capital, specifically, deposits, may exist twice over, once in the US banking system and twice as credits or receivables in the creditor countries' banking systems because the rest of the world is never paid finally.

3.6 Coordinated Investment Regime

Knafo's observation of a modern and different form of speculation specific to American finance completes the scenery before the 2007–9 financial crisis. Although his pick in

labeling the pattern he observed as a form of speculation may be seen as an overstretching of the notion of speculation because the main feature of the pattern is an organized or coordinated investment behavior, while speculation and any sort of coordinated investment behavior must be mutually exclusive normally.

At the outset Knafo establishes a distinction between what could be labeled premodern and modern forms of speculation. The traditional form of speculation, which is labeled as premodern speculation by Knafo, consisted essentially various types of arbitrage as speculators sought to exploit price differentials among various markets. The most recognizable embodiment of the modern form of speculation is a financial bubble, that is, a rapid process of financial asset inflation. The main and distinguishing feature of the second and more modern form of speculation is its collective nature. Indeed, bubbles require and involve a social process as growing numbers of people invest in the same assets and hence prices soar, thus investments become coordinated as everyone starts to profit from investing in the same direction. In addition, bubbles require a constant injection of new capital to sustain the process, as previously explained in this chapter (Knafo, 2009: 130-4).

According to Knafo, these modern forms of speculation took shape through new institutions based on three types of innovations. The first innovation involved the engagement of an ever-growing amount of participants in financial markets; a sort of the socialization of high finance. Having a growing number of people and a lot of capital is no guarantee, people and money must be coordinated. Innovations such as technical analysis and rating agencies have been crucial for this purpose. Finally, a third component of this speculative framework has been the development of various financial instruments. In this regard, the practice of securitization helped both to enlarge the repertory of financial instruments and financial actors to pass on their liabilities in order to generate new resources for further transactions.

Combined with the other two types of innovations, securitization provided a key institutional foundation for the development of speculation and its increasing centrality in the American economy (Knafo, 2009: 137-9).

3.7 Conclusion

At the start of this chapter, the process of financialization before the 2007-2009 financial crisis was argued as an endogenous 'money creation' process, strangely, with a missing or deferred monetization part. Such a statement may seem inconsistent at first look: some sort of money creation that does not include monetization somehow! If one imagines that there are different kinds of monies and, then, such a statement may make sense.

The problem in the process of financialization before the 2007-2009 financial crisis seems not in issuing such money but transforming them to the central bank money. There is no problem in qualifying the money created after the bailouts; which is the central bank money. The problem is in qualifying the stuff created before the 2007-2009 financial crisis. It is difficult to view it as bank money because it lacks the feature of transformability that exists in the bank money, even though the monetization after the bailouts was done through association with banks. Here, the transformability needs to be clarified: bank monies are not to be transformed to the central bank money but they are transformable. The clearing function of central banks in payment systems builds in this feature of transformability into the national monetary spaces as an indirect and automatic transformation mechanism of bank monies to the central bank money.

The monetization after the bailouts means a de facto recognition of the stuff created before the 2007-2009 financial crisis as money.

In this respect, the money created before the 2007-2009 financial crisis is similar to the bills of exchange before the English financial revolution, as if they are not yet incorporated to the public money.

According to Cencini, the problem of over-emission would arise if banks create wealth by issuing money (Cencini, 1995: 21). Cencini with this statement points out to a possibility of wealth or capital issuance fictitiously whereas restricting such act to banks only and the end result to money. However, banks may not be the only actors and the sole source of fictitious capital. TME is quite restrictive in this regard, it focuses on banks and money only. In times of financial disintermediation, banks are not the main and sole players in financial sectors any more, though they may still be the major players. The important thing is that there are now other players too and they are quite busy also in what they are doing.

The pyramidal debt scheme constructed, at arm's length from the banking system, during the process of financialization operated on the principle of minimum liquidity, i.e., money, either by deferring any requirement for liquidity as further as possible or issuing their own acknowledgments of debt, that is their own IOUs if it is not possible to defer. Securitization in this regard is the prime example of both issuing IOUs and excluding banks in a certain sense from the process. Such a policy created both less need for and a false sense of liquidity. In TME terms, this translates as an imbalance between monetary and financial intermediations, as the exchange of claims, the former surpassed by the latter, with no corresponding monetization, and hence an income gap. This was also reversal of the procedure depicted by TME: Banks first issue money through the payment of wages, which means income is created by production, and then, claims on that income can be exchanged, which need not to be sequential but at least simultaneous, otherwise fictitious due to a missing item. In financialization, however, first claims on income is exchanged with no corresponding monetization of production, that is, income. In other words, claims on income which is not yet materialized, and hence fictitious, is

exchanged. Deferred monetization is in fact deferred, i.e., future, income, that is, production. After the bailouts, monetization deferred is fulfilled but what about necessarily corresponding income? It still misses and hence requires a redistribution of income.

The question is that such money should have any recognition as money. This is of course a normative question. If TME's presumed ontological unity between money and production is correct, such money lacking any backing in production is an anomaly and a pathology.

TME in fact identifies sources of fictitious capital and ways to avoid it. TME suggests banks to organize their activity in three departments: the monetary, the financial and the fixed capital departments. Whereas the first two departments are needed to account for the logical distinction between money and income, the third is required to avoid profits already invested in the production of capital goods still being available on the financial market (Cencini, 2001: 204). Otherwise, such profits are artificially duplicated in financial markets, generating a continued flow of funds to financial markets.

Ingham's notion of money as the fusion of two forms of money -private credit and public metallic coinage- may help in both sorting out and integrating all the mess. Ingham mentions a stepwise paradox that requires the primacy of public money and does not favor private money at first at all in setting up a monetary system: the creation of a stable monetary space. Why? The key issue is the control of abuses. The heterogeneity of private sector makes its coordination and control of abuse in money creation rather difficult at first, which is also a problem afterwards but the emergence of such a problem at start makes its institutionalization impossible.

It is possible to argue that the system somehow managed leveraging till the neoliberal counter revolution. This is because the system tolerated leveraging as long as it is associated with the production. The Keynesian intervention was perhaps the only conscious design effort in favor of the management of leveraging. The neoliberal counter revolution was, however, a conscious action to redesign the system in favor of leveraging and dismantle any of its connection with production.

CHAPTER 4

SEPARATING PRODUCTION FROM CAPITAL

4.1 Introduction

'Nothing' is increasingly what spreads and proliferates around the world, according to George Ritzer's The Globalization of Nothing (2004). By nothing, Ritzer means '(largely) empty forms that are centrally conceived and controlled and relatively devoid of distinctive content.' Seeing 'an elective affinity between globalization and nothing,' Ritzer advances the argument that 'globalization tends to involve the spread of nothing throughout the world' because 'it is easier to export empty forms (nothing) throughout the globe than it is forms that are loaded with content (something)' (Ritzer and Ryan, 2002: 51).

The archetypical 'global commodities,' such as iPhones, T-shirts, and cups of coffee, are all products of globalized production processes that has significant contributions in the profits of the firms that organize those processes, according to Smith (2012). These prototypical 'global commodities' serve as the instruments of value capture that transfers value from the countries where it is created, in Smith's opinion.

The global proliferation of nullities is due to the relative cost advantage in their reproduction, according to Ritzer:

> empty forms have other advantages from the point of view of globalization including the fact that since they are so minimalist, they are easy to replicate over and over and they have a cost advantage since they are relatively inexpensive to reproduce (Ritzer and Ryan, 2002: 51-2).

For Vercellone (2010: 92), 'the logic of expropriation of cognitive capitalism that develops itself under the form of rent' gives rise to such commodities with a peculiar ontology, which is defined by costless reproducibility, indivisibility, non-rivalry, etc. Primitive accumulation, which is 'original accumulation' and thus an element of the pre-history of capitalism proper, for Marx, establishes and develops itself under the form of rent. Such permanence of primitive accumulation, which Harvey refers to as 'accumulation by dispossession,' corresponds roughly to the now extinct notion of unearned income taken over from classical political economy. Classical political economy views and defines rent as the excess over the cost of production, and hence, unearned, which thus needs to be picked out from prices in accordance with the labor theory of value (Hudson, 2012).

Rent as a concept, for Vercellone, enables not only unveiling the artificial creation of scarcity by institutional mechanisms such as Intellectual Property Rights but also linking finance in general and financialization in particular to knowledge(-based) economy or cognitive capitalism:

> a rent whereof finance is only one of the expressions even if it often synthesizes all of them through the transformation of fictitious commodities into fictitious capital (Vercellone, 2010: 92).

This situates the appropriation and realization of value in informational capitalism to an extended, society-wide process of finance-centered accumulation, whereby it becomes a part of it.

This chapter is in charge of connecting both financialization and innovation; financial as well as technological and relate the current asymmetric international division of labor in economic activities, where much of production, excluding knowledge production, is located in the Far East, and especially in China, and finance mostly located in Western

centers, led by the USA and Britain, to such an association between the two, according to the original plan of this thesis.

It looks as if there is a sort of Chinese wall that separates financialization and innovation topics. Even in terms of some closely related notions such as information and knowledge, the information barrier between the two seems still in place. Although the former, financialization, is relatively recent, both are the most popular and frequent ways of characterizing roughly the same object (society or economy) for roughly the same time period.

Unfortunately, there is also not much available in the literature in a way that relates or, at least, croscuts both issues. Even the recent enormous literature that has emerged after and about the Great Recession lacks such a variety. There is, for instance, just one article by Pagano and Rossi (2009) in that literature that puts the blame on the knowledge economy via its trend towards the over-propertization of knowledge leading to an investment strike that has manifested itself as a saving glut. Interestingly, Pagano and Rossi do not reserve a part for either financialization in particular or finance in general. The rest of that enormous literature about the Great Recession tends towards financialization but cannot spare even one in a way to connect both issues.

There remains, then, just one theoretical framework; the so-called cognitive capitalism hypothesis or approach that senses and tries to establish a connection between what goes on in the financial sphere and the developments in the so-called knowledge(-based) economy/society. The cognitive capitalism approach is a spin off theoretical development from the post-workerist current, which emerged as a response to systematize the previously advanced 'immaterial labor' thesis into a coherent and unified research program that includes Yann Moulier-Boutang, Carlo Vercellone, Antonella Corsani and Bernard Paulré among its major figures.

Perez (2002) also conceives a relationship between technological and financial innovations but rather in a particular way as the financing of technological revolutions that accentuates the very long run. In other words, in Perez's view, one gives rise to the other but in very long time horizons.

This chapter will also try to reconstruct the sole theoretical framework by selectively fortifying its theoretical foundations. Rents are often seen as a means to identify a firm's critical resources in the Resource-based View (RBV) of the Firm originating from Penrose (1959). It is now a common critique about the RBV that its core logic contains circular reasoning that confuse effects for causes in the specification of the relationship between rents and resources (Truijens, 2003). The cognitive capitalism approach is in a similar position to the RBV in this respect. While acknowledging the centrality of Intellectual Property Rights (IPRs) in the artificial creation of scarcity on the one hand, it amounts to a tautological explanation to define the extra profit in the information industry as cognitive rent on the other, which undermines the credibility of cognitive capitalism hypothesis. A second aspect that undermines the power of cognitive capitalism hypothesis is its reliance on institutional mechanisms solely in the artificial creation of scarcity. The cognitive capitalism hypothesis is silent on what would happen when IPRs are not perfectly effective and/or costly to enforce. There exists, however, an instrument for such cases; modularity. Modularity can even be used to protect IPRs themselves and support any protection mechanisms in place. In addition, modularity view makes possible the valuation of such institutional mechanisms but more importantly, enables separating production from capital and thus conceiving how knowledge surpasses capital.

The chapter starts first tracing value in the context of 'value question.' The concurrence of financialization with the rise of the rhetoric on 'value creation' in knowledge(-based) economy distracts attention from mediation towards 'value creation,' and gradually, 'value question' turns into a vicious circle. The first part of this chapter that traces the

'value question' in its new contexts is on the verge of such a distraction. That track is changed with an understanding of 'value creation' as the trigger of 'autonomization of value' in the second part of the chapter. When financialization is started to be seen as increasing 'mediatedness' of economic activity, then, it becomes possible to situate knowledge just as an additional layer of mediation rivaling capital.

The literature on financialization tries to comprehend financialization usually as a new phase in capitalist accumulation. Krippner (2005: 174), for instance, defines financialization as 'a pattern of accumulation' in which profits are realized mostly through financial channels rather than through trade and commodity production. In other words, with financialization, M-C-M' is thought to be reduced to M-M', while remaining silent on what happens to the unavoidable middle term.4 Such a silence on the middle term, however, makes the wrong impression that the immediate appearance is right, that is, the middle term really disappears, which is, however, not true at all. On the contrary, that reduction in appearance corresponds to an increased distance in a sense and more economic transactions in turn.

4.2 Converging Value Notions

Davis and Meyer (1998: 101), in their book Blur, note that markets for real goods and services are increasingly behaving like financial markets and thus becomes a part of a 'blur economy':

> The concept of value is one last area of convergence between the markets for financial instruments and real goods and services. Our mind set toward value in real goods has always been oriented toward component costs. ... In financial dealings, by contrast, we

---

4 . For Marx (1978: 137), 'The production process appears simply as an unavoidable middle term, a necessary evil for the purpose of moneymaking.'

> assign value by focusing on the potential for future returns. *Future flow, not past stock accumulation, is the essence of financial activity*. More often now, this mind-set is migrating to how we value real goods (Davis and Meyer, 1998: 101-2).

The value notion hinted at but not articulated by Davis and Meyer is use value, more specifically, the possible or promise of use value. The future potential that seems to emerge as the new converged basis of value in the markets for real goods and services corresponds to what Marx refers as 'the possible use-value and hence the prospective exchange-value' (Marx, 1863). The convergence observed by Davis and Meyer in value concepts of the two kinds of markets is not something unexpected and completely out of consideration for a dialectical theory of value that reserves a place for the prominence of use-values in some cases and times. In fact, Marx has such a dialectical theory of value, which is different from a plain labor theory of value and anticipates the prominence of use-values as the determinant of exchange-value for labor, money, (fixed and financial) assets, and non-commodity, i.e., fictitious, commodities in general, which includes some real goods and services, such as, newly developed (technological) products, according to Keen (2002).

Although the relevant value notion is use value, in a more refined and specific way, it is the possible, as Marx referred, potential or promise of use value, which is what sets the purchase in motion breaking circularity inherent in the exchange relation, discovered by Marx but left unsolved, according to Haug (2005). For use normally takes place after sale, use values cannot be realized before exchange, then, one does not buy on the basis of use values but rather on promises of use value. Haug thus introduces a third element into the duality of use and exchange value; a promise of use value that contains the conception of use value. Promises of use value involve images that appeal to consumer's senses and needs, which is termed 'commodity aesthetics' and considered as an illusion by Haug. Arvidsson and Colleoni (2012: 142) bring into light a similar argument by Gabriel Tarde, who suggested long ago that in an ever more mediatized economy the

value of goods would increasingly depend on the public perceptions of their 'truth, beauty, and utility.' Marx's 'autonomization [Verselbstständigung] of value' notion tries to trace such mediated forms (Marx, 1978: 185). There are, however, so rare references to Marx's 'autonomization of value' notion in the literature that one is lead to think that there is a sort of avoidance, which may be due to either a perception about it as a Hegelian mumbo-jumbo or its embrace as an implicit recognition of labor value theory. The former possibly originates from an attitude that views Hegel's notion of spirit as boiling down to spirituality eventually. Some recent approaches to Spirit in Hegel's notion of spirit, however, view spirit as something that is realized or objectified and thus leading to the emergence and establishment of new norms. In other words, such an account of objective spirit also provides a foundation for a theory of institutions (Boldyrev and Herrmann-Pillath, 2012).

Mind, or Spirit (Geist), for Hegel, is equal to reason and externalist in such a way to equate the mind with a sort of 'objective spirit,' which denotes the structures of the external world that is due to human action and includes both a collection of individual minds and their products (Boldyrev and Herrmann-Pillath, 2012). Departing from Hegel's philosophy of mind, Clark and Chalmers (1998) introduces the concept of the 'extended mind,' in part to go beyond the standard Cartesian idea that cognition is something that happens in a private mental space, 'in the head.'

> For Hegel, the mind is not simply externalized but also extended because we cognitively engage with such institutions. In this conception, social institutions, like cultural practices and legal systems, are pieces of the mind, externalized in their specific time and place, and activated in ways that extend our cognitive processes when we engage with them. We create these institutions via our own (shared) mental processes, or we inherit them as products constituted in mental processes already accomplished by others. We then use these institutions instrumentally to do further cognitive work such as solving problems and controlling behavior like tools or technology, external to cognitive processes, but in ways that extend our cognitive reach (Crisafi and Gallagher, 2010: 125).

Marx’s 'autonomization of value' notion is a respecification of the Hegelian notion of 'objectivation' that involves the same externalization and extension processes of mind, not restricted to value but traced via value.

> The broad notion of human institutions as the projection of man’s inner reality is not unique. For Hegel, social evolution consisted of just such a process of the emergence of the «inner» into the «outer», i.e. into the day-to-day institutional forms of society. Not surprisingly in The Economic and Philosophic Manuscripts of 1844 (EPM), Marx echoed this theme as well, positing man’s self expression as his «Ausserung» (or «outering») of his inner self (Rotstein, 2006: 263).

Marx’s shift in emphasis to value rather than autonomization aspect in his 'autonomization of value' notion ends up concealing institutions. Fortunately, the varieties on the Hegelian notion of 'objectivation' is not limited to Marx’s 'autonomization of value' notion, which seems like a fertile source of inspiration for other thinkers as well. Thomasberger (2003) notes down that Polanyi often uses the Hegelian term 'objectivation' instead of institutions in his (German) writings during 1920s. In The Great Transformation (2001 [1944]), however, the notions of 'self-regulation,' 'institutional separation’, and 'disembedding' are substituted for the terms 'objectivation,' 'reification,' and 'alienation' by Polanyi, according to Thomasberger (2005). Furthermore, while departing from the same source of inspiration,that is, the Hegelian notion of 'objectivation' like Marx, Polanyi adopts the neoclassical or marginalist value theory (Dale, 2010: 103) instead of the labor theory of value, unlike Marx. This much should suffice to alleviate worries about the view that Marx’s 'autonomization of value' notion amounts to an implicit recognition of labor value theory.

Even if the issue of the Hegelian notion of 'objectivation' as their common source of inspiration is left aside and whether autonomization is formulated as a separation from

use-values as in Marxian sense or community/society in Polanyian sense, there is a sort of first and big separation common in their origin. What was originally separated was production; production was moving out of the home, putting an end to the close interweaving of work, home and community, both refer to this original big separation.

This big separation is what gives rise to a certain kind of abstraction: abstract space. According to Varnelis (2010), Lefebvre (1991) in 'The Production of Space' identifies three successive spatial regimes: absolute space, historical space, and abstract space.

> In the regime of absolute space, humans value spaces for their natural qualities, defining them as sacred, only to obliterate their natural characteristics with constructions and interventions. Historical space evolves out of absolute space, as humans value spaces that have been the object of accumulated human habitation and events. The most recent of the three, abstract space, emerges when humans quantify territory, assigning value through capitalist and bureaucratic organizations (Varnelis, 2010).

> Abstract space, Lefebvre writes, subordinates all spatial models to its inexorable, mathematical logic. But abstract space is a process, not an end point; rather than a homogeneous condition, it is the process of creating spatial homogenization, producing a form of space based on value. In making the world exchangeable, abstraction is fundamental for investment, trade, and management, allowing machines and humans to be interchangeable and interoperable, not just within their respective categories, but between them as well. Abstraction unmoores objects and individuals from their contexts, allowing them to circulate freely, traded for their exchange-value (Varnelis, 2010).

Financialization, then, is just 'a mutation in the production of value from space' in that process of abstract space , according to Varnelis (2010). Such a derived notion of financialization by Varnelis from Lefebvre's scheme requires reiterating Lefebvre's thesis that underlines (social) space as a (social) product, and views space not as 'a cultural superstructure determined by a mode of production, but rather a construction

that is both produced within a society and serves to reproduce that society' (Varnelis, 2010).

After this long detour, it is possible to say that values are not only distorted as in the artificial scarcity creation but also mediated increasingly. According to Davis and Meyer, the convergence in value notions is relatively a recent development that has taken place in the new knowledge economy due to speed, connectivity, and intangibles, which are causing 'a meltdown' and eventually a blurring 'in traditional boundaries.' Unlike Davis and Meyer, Arvidsson observes a sort of 'separation' in such an economy:

> Informational capitalism is characterized by a growing separation between production and valorization. The production of immaterial values like knowledge, affect and sociality increasingly takes place in autonomous processes of technologically empowered communication that unfolds among users themselves. Their valorization occurs through the ability to appropriate a share of the global surplus, which is distributed on financial markets (Arvidsson, 2006b).

Valorization in the new knowledge economy shifts from markets for real goods and services to financial markets, according to Arvidsson. Although Arvidsson's observation is not in conflict with Davis and Meyer's, one question remains: why actors are not indifferent between the two kinds of markets and favor one over the other, given convergence in value notions. Enabling the collection of the future inflows from markets for real goods and services in advance transformed into certainty equivalents in financial markets is definitely an advantage favoring valorization in financial markets but not free and hence an arbitrage opportunity.

To complicate matters further, there is also what D'Aveni refers as a 'commodity trap' idea that sees a convergence in use value promises and values of commodities after their divergent start. According to D'Aveni's (2010) book, 'Beating the Commodity Trap,' a

'commodity trap' happens when a company sees its competitive position being eroded so that it can no longer command a premium price in its market. 'Commodity Trap' basically refers to commoditization, for D'Aveni and it is when a product becomes indistinguishable from others like it and consumers buy on price alone -so it becomes a commodity. Everything commoditizes over time and becomes a commodity, eventually, according to D'Aveni. The fear of commoditization may thus induce a rush for valorization in financial markets.

As opposed to the temporariness of premium prices emphasized in the commoditization idea, premium prices are attributed to a cognitive rent by the analytical hypothesis of cognitive capitalism, which is encapsulated in the paragraph above by Arvidsson. The cognitive capitalism approach raises in fact two important questions that challenges the Marxian tradition of value theory: The first is whether immaterial labor such as service labor is productive or not and the second is on the essence of the information industry's extra profits. After responding the question on immaterial labor affirmatively but arguing on its immeasurability, the extra profits observed in the information industry is attributed to and defined as cognitive rent (Ahn, 2012). If there exists a cognitive rent as advanced by the hypothesis of cognitive capitalism, it needs to be persistent and should not vanish in time, otherwise, it is not a rent as suggested by Marx with his differential rent argument. In addition, an account of what eases the capture of the cognitive rent in financial markets relative to real markets should be provided.

It would be worthwhile to reconsider Davis and Meyer's observation on the convergence of value notions between financial markets and real markets on the basis of use value (promises) under Steve Keen's (2002) reinterpretation of Marx's dialectical analysis of commodity. According to Keen's reinterpretation, Marx's dialectical theory of value, unlike the classical tradition that deems no role for use values in setting prices, recognizes the cases that use values may come to the fore in determining prices.

Marx’s dialectical theory of value originates from his dialectical analysis of commodity according to Keen (2002). Marx starts his work stating:

> The wealth of societies in which the capitalist mode of production prevails appears as an 'immense collection of commodities'; the individual commodity appears as its elementary form. Our investigation therefore begins with the analysis of the commodity (Marx, 1976: 125).

The commodity was the basic building block in capitalism for Marx, who referred to commodity as 'elementary form,' 'basic 'cells',' 'elementary cell,' 'basic unit' 'fundamental cell', and 'cell-form' because it accommodated a basic unity but more in a dialectical sense or duality (Marx, 1976: 125, 13, 16, 20, 20, 90).

Marx's dialectical analysis starts by treating any component of a society as a social unity and what Marx conceives as a unity is a 'complex' of entities with one or some aspects in the foreground while pushing the others into the background according to Keen (2002). The key and crucial unity in capitalism is the commodity with a unity that Marx saw between use value and exchange value where the Classical tradition set by Smith and Ricardo deemed no role for the former, and hence the dialectic of the commodity as the basis of Marx’s analysis in Keen's opinion.

It may be timely and useful to point out a usage dilemma between commoditization and commodificaton to prevent any future confusion. There is a differentiation of meaning developing spontaneously between the two. Commoditization, as referred by D'Aveni, is different from commodification as used by, for example, Polanyi (2001).

Though both refer to the idea of 'being turned into/become a commodity,' originally, what is 'being turned into a commodity' is not a commodity in commodificaton but a commodity in commoditization.[5]

4.3 Diverging Prices

The commoditization idea neither refers to a transformation, i.e., from a non-commodity to a commodity nor takes into account diverse features of a commodity in qualifying as such. It is one-dimensional; only price is under consideration. It is a move in terms of pricing: a move from one pricing structure to another; somehow[6] commodities are subject to a pricing structure which is valid normally for non-commodities initially and, in time, they normalize or move to the pricing structure which is valid for commodities.

The observation that there are 'two price levels' or structures in a capitalist economy is not unfamiliar at all and had been pronounced before by different authors, perhaps, most explicitly by Minsky. In fact, one essential aspect of Minsky's Financial Instability Hypothesis (1992, 2008) was the argument that there are two price levels in capitalism: consumer prices, which are largely set by a mark-up on the costs of production, and asset prices, which are determined by expectations and leverage. Ultimately, over the long run, these different price levels have to converge because the debt that finances asset purchases must be serviced by the sale of goods and services but, in the short term, a wedge between the two was possible in Minsky's opinion (Keen, 2001, 2002, 2009).

Such a notion of duality, though, not an explicit 'two price structures' can be traced in other thinkers as well; Minsky himself cites Keynes. Schumpeter was not explicit on the issue although he came very close by making an analytical distinction between circular

---

5 . Microprocessors are commoditized but love is commodified!

6 . I use 'somehow' here emphatically because neither an account on how and why it happens as such nor an excuse on failing to do so is provided.

flow and economic evolution. Schumpeter did not acknowledge explicitly the existence of two price systems in capitalist economies risking to undermine his circular flow analysis, according to Minsky, since his technique was essentially that of Walras and he denied that money plays a role except in innovation (Wray, 1994: 47).[7]

The proposition of two price systems in a capitalist economy as a key aspect of Minsky's theory not only finds a support and rigorous application, and hence, its origin, for example, in Volume 3 of Marx's Capital but also a philosophical foundation in Marx's dialectics according to Keen (2002). With the rise of commodity, identified by Marx as the key social unity in capitalism, capitalism makes value the determinant of exchange value by bringing exchange value into the foreground, and pushing use value into the background, where commensuration act itself renders some aspects invisible or irrelevant, which might thus have led the classical tradition set by Smith and Ricardo not to cast any part to use value in setting value.

For Marx, the value of a commodity refers to the necessary labor expended in its production, with the quantity of expended labor ultimately controlling the terms of exchange. This does not come, however, all of a sudden but through a historical development or evolution; 'exchange value' becomes the dominant form of value over use value with the emergence of a system of exchange as a result of the development of capitalism. This is why he discusses different value forms, that is, analytic characterizations of distinctly different stages in the evolution of markets or exchange. Before settling into an orderly phase in evolution, there is a first phase to begin with, what Marx calls, the Elementary or Accidental form of value in which goods are produced and then exchanged against each other but so occasionally and erratically that their exchange value begins to approach but does not fully reflect the quantities of labor embodied in them, that is, their 'true' value:

---

7 . Even though, it would not look fair to deem silence as denial by a person who made 'the premium which capitalism attaches to innovation' his declared manifesto for life!

> Every product of labor is, in all states of society, a use-value; but it is only at a definite historical epoch in a society's development that such a product becomes a commodity, viz., at the epoch when the labor spent on the production of a useful article becomes expressed as one of the objective qualities of that article, i.e., as its value (Marx, 1967).

Marx seems to restrict the evolution in this stage with Elementary or Accidental form of value to mostly markets or systems of exchange; the elements except the commodity itself. But what about the commodity itself? Do they not go through a development or evolution, that is, a commodification and commoditization?

The inclusion of commodities as a variable in the Elementary or Accidental form of value is obviously problematic because the heterogeneity that are brought in by commodities undermines the credibility of a claim that their value drift and settle into an average and, in addition, it presents a continuous distortion, for Marx's model, because there will always be some commodities going through that stage, particularly, if it becomes the rule of the game to avoid the 'commodity trap.' However, their exclusion is also a distortion of reality when it becomes the rule of the game.

4.4 Promise of Use Value

John McDermott (2004) in his book Economics in Real Time, unlike Minsky, instead of advancing an explicit argument on the existence of two price systems in capitalism, opts to differentiate value from price. McDermott jumps at the issue in fact where it is the most problematic; 'transformation problem' in Marx, that is, the difficulty of establishing a consistent relationship between values and prices. For McDermott, the concept of 'value,' introduced to make up for the theoretical deficiencies of actual prices, and the value subsystem, based on the constructs of 'utility' or 'labor-power' respectively in the neoclassical and Marxist microeconomics put forward to explain prices turn out to be merely 'price' under a disguised name. Thus, McDermott starts with reformulating a

value theory, which complements and enriches Keen's reconstruction of Minsky thesis with Marx's dialectical analysis of commodity.

McDermott gets his inspiration from Schumpeter's notion of 'creative destruction' which sees the discard of still usable capital equipment if newer, more cost efficient equipment that will lead to greater net returns is available as one of the virtues of capitalism. Schumpeter's idea of 'creative destruction' has an implicit value theory according to McDermott (2004: 130). What the idea illustrates is that what is destroyed and what is retained depends the productive prospects given the price relation between the old and the new, which also reminds two price levels in Minskian sense but McDermott develops a duality of price and value instead. Both price and value function in time but differently according to McDermott:

> Price represents the historical pull of past property values (costs) carried into the present and the future and demanding, as it were, to be made good. Value emphasizes the shedding or diminution of that sort of historical constraint in light of a less constrained future. Schematically, prices are in part validated or invalidated backward in time, and I think it apt to keep that implication. But value is most fruitfully thought of as the other, future pole of price, demanding that the worth or utility of a commodity or quasi service eventually depends on how it functions in the present and future. In that sense values are essentially confirmed or unconfirmed in forward time (McDermott, 2004: 138).

Thus, price belongs to past and backward-looking whereas value belongs to future and forward-looking in McDermott's duality of price and value. In such a setting, the rise of a tension between the two becomes of course inevitable. This tension between the old and the new or the historical prices and anticipated returns underlined by the notion of 'creative destruction' seems fruitful in the context of financialization as well.

McDermott's emphasis on value as forward-looking finds its counterpart with expectations in Minsky and use value in Marx but assets, for McDermott, is not just one category as in Minsky; he distinguishes between the old and the new ones and a large part of assets, fixed or financial, should belong to price and past in his taxonomy. There looks like an apparent conflict between categories; the future and expectations-oriented category in terms of value for McDermott is just the opposite of what's advanced by Minsky and Marx and vice versa. In addition, most of the commodities in McDermott's scheme, however, relate to future because a commodity for him is something incomplete in general or there are very few full or real commodities out there so much so his discussion on commodities starts by introducing the the analytical element of 'quasi service.' The 'quasi service,' in addition to its emphasis on incompleteness, as a theoretical element is intended to supersede Marx's bare minimums in commodities as 'use value' and accommodate 'marketing' as well. Despite the apparent conflicts, McDermott seems to correct Minsky's and Marx's approaches in such a way to serve to account for innovation and financialization.

McDermott views his theory as simultaneously a modified labor theory of value and a modified demand-driven subjective value theory. Just as Keynes (1936) postulated a rate of interest for every durable commodity in terms of itself, there exists a value for any commodity or asset under a common interest (discount) rate for McDermott. What McDermott have in mind is not exactly a Net Present Value (NPV) or the discounted cash flows mechanism. NPV would only be the baseline of his scheme at most.

> All actual prices are anchored more or less firmly in time past, that is,they reflect the actual or projected costs in commodities, including labor power, that entered into their production and distribution, and those costs are in part skewed by the property system, that is, a set of preexisting prices that, above and beyond their actual contribution to the creation of new commodities, are weighted toward the one-sided advantage of their owners. In the actual formation of prices, whatever else is true in an economy in which productive assets appear in the form of property, those prices will be pulled by that

> structure of preexisting property prices. At the same time, changes in productive methods and what is produced also react backward to revalidate or even destroy some of the preexisting property assets and their respective prices. But even this creative destruction occurs within narrow economic limits (McDermott, 2004: 139).

On top of prices comes an extra premium that results in values. That extra premium is not due to a cognitive rent as suggested by the hypothesis of cognitive capitalism but future promises. Prices are thus mapped into values. The introduction of ‘quasi service' with implicit future costs and benefits, the pronouncement of the concept of 'opportunity cost' together with the evaluation of the cost/benefit taking into account the time dimension brings us to such a mechanism. What McDermott does is to start with the exchange value as a base and add some extra for the use value on top of it in such a way to reflect all benefits for the lifetime of a commodity. Thus, instead of asserting and keeping two separate value or price systems, the two are combined.

The idea of 'commoditization' or 'commodity trap' also posits a premium included in prices, which is not specified relative to what but due to future prospects either in the form of innovativeness and/or benefits, somehow lost in due time. McDermott's reconstruction provides an account of why there could be a premium included in prices but not anything on relative to what. Here comes Marx’s dialectical analysis of commodity; the exchange value in Marx's analysis can be seen as a sort of base value or 'bare minimums' reflecting only the cost of production without any consideration towards future, that is, use value promises. Now, we can explain the base value and the premium but not the movement and the direction itself yet. We need something like the Marx's elementary or accidental form of value to start with; view commodities as open-ended promises, just as seen by McDermott and posit that their initial prices set higher than their costs of production and move towards their base exchange value as they are integrated into the system of reproduction.

The common interest (discount) rate used in transforming of prices into values is key in McDermott's analysis. It may not have any impact if it is value-neutral. The value-neutral rate should equal the growth rate of the social labor-power in an economy. When premiums are skewed in either way, in fact a general preference is exhibited. The interest rates above that rate will discount the future expected benefits more and skew their distribution in favor of 'property,' in McDermott's terms, to refer to the far end of assets in a continuum of assets and commodities -McDermott loosens the distinction between assets and commodities by substituting ‘quasi service' for commodities but at the same time he transforms a dichotomy to a continuum. There is still, however, pure assets and commodities at extreme ends of the continuum; the past accumulation represented by the (old) prices at one end and the anticipated benefits or (future) value at the other. The lower interest rates below the neutral rate would favor and amplify the future expected benefits against 'property.' McDermott notes the 'manner in which modern interest rates and money supplies are managed by the central banks in the advanced countries with the precise end in view to preserve existing property values.' In other words, there is a built-in tendency for the central banks in a modern economy to resolve the tension between historical prices and anticipated returns in such a way not to threaten the great bulk of the historically priced assets and depress their existing valuation; thus preserving property values (McDermott, 2004: 134).

This built-in tendency to preserve existing property values reminds one devalorization and fictitious capital and in fact translates into a built-in tendency to devalorization and the formation of fictitious capital as a result of devalorization. The opposite policy in interest rates, that is, below the neutral rate would not help much as well or end up in definancialization because it may stimulate excessive securitization this time, that is, the conversion of the anticipated returns into securities. It seems like a cure for devalorization and the formation of fictitious capital as a result of devalorization but securitization is the way to go to take advantage of the amplified anticipated returns under lower interest rates because the fictitious premiums due to those amplified

anticipated returns can be captured as capital gains in advance in their securitized form in financial markets this time, which supports Arvidsson's view on the tendency towards valorization in financial markets.

4.5 Nothings as Non-Commodity Commodities

After this long trace of the part and potential that use value promises have in setting prices, it is possible to conclude that conceptually and categorically there is nothing new in Davis and Meyer's observation on the convergence of value notions between financial markets and real markets. In other words, it seems like that there is no new species involved in the intensification of use value promises. Then, the question remains is that why they have become more visible than before. The answer must be related to the increase in their volume, the global spread and proliferation of nothings, as it was noted by Ritzer. If it became such a common tool applied in business, what is the recipe or know-how behind nothings?

For Ritzer, they are minimalist in their cost of production. The preceding discussion on use value promises in fact hinted at the features of nothings that can be summarized in the so-called category of 'non-commodity commodities,' as referred by Keen or 'fictitious commodities,' as referred by Polanyi. As is well known, not all things that have use-value have exchange-value; and not all things that have exchange-value have use-value. For Polanyi, for instance, land, labor, and money are not true commodities because the term 'commodity' applies to those which are produced for sale on a market. They are rather 'fictitious commodities', since they acquire a commodity form artificially, indeed, by mere assumption. Prices paid for such commodities reflect mostly their use value, actually, use value promises:

> What the buyer of an ordinary commodity buys is its use-value, what he pays is its value. What the borrower of the money buys is likewise its use-value as capital; but what does he pay for this? Certainly not its price or value, as with other commodities (Marx, 1991: 474).

What is paid for a pure commodity is its value; that is, exchange value but not for money because its cost of production and thus, exchange value is almost nil. Then, what is paid by the borrower of the money must reflect mostly its use value (promises), which may be extended to all commodified commodities. There are also 'not-yet-commoditized-commodities,' what is paid by their buyers mostly reflect their use value (promises) on top of their exchange value.

Commoditization and commodification are not independent processes. Though there may be a dispute and confusing sort of chicken-and-egg dilemma with respect to the first starter in their relationship but they proceed then on in an interactive fashion and co-evolve afterward. Commoditization posits the loss of a differentiating premium, mostly due to innovation, included in prices but more significantly the temporariness of such a position. The temporariness may either feed into a continued innovation or protection or both but D'Aveni's commodity trap idea advances the difficulty in prolonging innovativeness and thus requires a support by protection. The protection through intellectual property is (knowledge) commodification. The protection brought by the intellectual property, however, is not perfect, it may only retard the innovation by rivals but cannot provide it on a permanent basis given enough incentive. Though knowledge commodification cannot provide a perfect protection, it may compensate for it to some extent given liquid financial markets. The usual explanation that prioritize protection aspect in knowledge commodification is therefore not sufficient. The compensation through financial markets needs to be taken into consideration also. This discrepancy between the promise of an impossible perfect protection by knowledge commodification and its relative compensation in financial markets is perhaps what drives a wedge and

hence an arbitrage opportunity between real markets and financial markets on an intermittent basis, in between cycles because financial markets are impaired with an intrinsic over-valuation of returns, given capitalization.

4.6 Dialectic of Knowledge

Curry (1997) suggests the dialectical approach pioneered and applied by Marx to the study of capital to knowledge as well because it enables one 'to grasp a complex subject like knowledge in all its multiple determinations without unreasonably prioritizing any one of those determinations over the other' and treating 'knowledge as a process which "runs" alongside, and perhaps even modifies, the various other determinations of capital-as-a-process.'

Curry starts with first establishing a parallelism between the various determinations of capital-as-a-process identified by Marx and the various determinations of knowledge-in-process:

Table 3: Various Determinations of Capital-as-a-Process

Universal	Capital (value-in-process)	Knowledge
Particular	Structural Tendencies (M- MOP-/LP- C'- M')	Information
Individual	Individual actors (buyers, sellers, workers, firms, etc.)	Data

Curry (1997) here uses Hegel's theory of the syllogism, which is also employed by Marx to study the dialectical mediations connecting universality, particularity, and individuality (Smith, 1993: 16), which are the three moments of a concept that are not distinct or separate but as 'simply one and the same' (Fraser, 1997: 86). Hegel wants to understand the universal and particular not as separate, not as distinct phenomena but in

a contradictory unity (Fraser, 1997: 88). So the universal, particular and individual are all interrelated and the universal contains the particular and universal within itself. The dialectical approach sees these categories as superseding themselves and turning into their opposites. Universal moves through the particular and the individual. Yet this is not a one way process. There is a back and forth movement between these moments (Fraser, 1997: 87).

In the Gründrisse, Marx makes a distinction between general and determinate abstractions. General abstraction refers to the abstraction from concrete social circumstances which allows a common element amongst phenomena to be focused on (Marx, 1973). Determinate abstraction is a movement from the general to the particular or concrete. So Hegel's universal concept is Marx's general abstraction and Marx's determinate abstraction is Hegel's particular:

> In Marx's account, "Capital" is the moment of universality. From the inner nature of capital a number of distinct structural tendencies can be derived. In Hegelian terms these form the moment of particularity. And finally there are the acts of individual capitalists, individual wage laborers, and so on, whose acts are structured by those particular tendencies and thus also mediated with the inner nature of capital (Smith, 1993: 16).

Knowledge is a general abstraction in Marx's terms. This is mainly because knowledge usually exists in a non-specific, context-free and non-proprietary form (Curry, 1997). Information, however, relative to knowledge is a determinant abstraction. Knowledge is a general abstraction as long as it is outside of the direct nexus of capital. When it is subsumed under or within capital, i.e., put to work by capital, or more concretely, utilized as an input to a commodity, knowledge then becomes information, information then "splits off" from knowledge. And sometimes even they become one in those instances where information itself is the product such as books, newspapers, magazines, computer software, etc. This is the moment when knowledge is information and when

capital is commodity. The third moment or determinant in the conception of knowledge as process is data, according to Curry. Since computers can only work with digital data, they impose digital, whatever analog must be converted to digital to work on a computer.

Schumpeter's (1939) perception and conception of innovation as 'new combinations' captures the movement, from the universal, i.e., knowledge, to the particular, i.e., information very well in addition to implying that there already exist elements which are combined anew. In other words, Schumpeter's 'new combinations' notion itself is not only dialectical because it concentrates on the process and as a whole, i.e., knowledge-in-process but also it evokes a movement or a process.

4.7 Value of Knowledge as Determinant Abstraction

The dialectic of knowledge noted by Curry is not only limited to elucidating the distinction between knowledge as a general abstraction and information as a determinant abstraction but also its other determinations that results in developing an approach to the value of knowledge in the context of the 'value question.' Jeon (2011) approaches the 'value question' of knowledge through such a dialectic of knowledge by introducing a distinction between knowledge (=source) and commodity (=copy) inspired from the distinction between source and copy of a software.

Rieu (2009: 122) categorizes the approaches evaluating knowledge in the context of the 'value question' into two: a left-hand-side view and a right-hand-side view. The left-hand-side conception can be represented as follows:

Knowledge + other inputs (labor included) → **knowledge**.

As opposed to the left-hand-side conception, the right-hand-side view is represented as:

Labor power + other inputs → knowledge.

This is the right-hand-side view because knowledge explicitly appears only on the right-hand-side and disappears on the left-hand-side. Ironically, the right-hand-side conception complies with the conventional Marxian thinking which sees knowledge as embodied in labor power but not as a separate factor of production. As Carchedi (2011: 225) noted, knowledge, as the output of a production period, cannot become the input of a subsequent production period without being incorporated in the laborers' labor power.

The left-hand-side view corresponds more to and represents well the problematic conception of the recent pronunciations and discourses of knowledge(-based) economy, which reflects in fact a nonexistent circularity of production presumption. The circularity of production refers to a case "in which the same kind of commodities appear both among the means of production and among the products" as acknowledged by Sraffa (1960). Knowledge appearing on both sides of the equation in the left-hand-side view hints a circular process, which is not the case at all in reality. Rieu works out the mess through an interpretation of Sraffa that implies and lets fictitious commodities, such as land or labor, appear only on the left hand side of production equations but non-basic commodities only on the right hand side, which revises the left-hand-side conception in turn as follows:

Knowledge + other inputs → commodities (except knowledge).

Now, it becomes possible to see that each view in fact corresponds to a different stage in the production of information commodities and hence reflect a part of reality but not the totality. In order to explicate this, we need to employ Jeon's (2011) approach that envisages a stepwise production of information commodities by introducing a distinction between knowledge (=source) and commodity (=copy) separates production process into two. Knowledge production, thus, has to precede knowledge commodity production, with a separate production process dedicated to knowledge that the commodity-producing labor in the labor process presupposes and makes use of. Once knowledge production is completed, copies are mass-produced based on source. Knowledge does not create the value of commodities, but contributes to the productivity of commodity producing labor. Unlike fixed capital, use of knowledge in the labor process results in no wear and tear, and knowledge can be used an unlimited number of times as universal labor.

Jeon's approach in fact combines both the right-hand-side and the left-hand-side conceptions as follows:

> **Knowledge (= Labor power + other inputs) + other inputs → commodities** (except knowledge).

Knowledge production in Jeon's approach thus corresponds to the right-hand-side view and becomes the input of a subsequent knowledge commodity production as conceptualized by the revised left-hand-side view.

Now, it is possible to phrase the paradox about knowledge in terms of the 'value question.' In other words, the value of knowledge question can also be handled stepwise. Knowledge production stage cannot yield any exchange values but only use values, which becomes the input of the subsequent knowledge commodity production, which translates as no 'value question' (in terms of exchange value) for that stage. The 'value

question' for the subsequent knowledge commodity production represents in fact one of the rare areas of common ground between neoclassical price theory and the labor theory of value. A 'close to zero' marginal cost of production is echoed by a 'close to zero' socially necessary time needed for their reproduction, which means that there is also no 'value question' for the subsequent knowledge commodity production stage. Then, knowledge fits perfectly to Ritzer's 'nothing' notion. However, if there is no 'value question' for knowledge at all, what is all this fuss about knowledge as a new source of value?

4.8 Designers' Differential Advantage

This two-partite view of knowledge is important because it not only gives rise to the different views approaches, such as the discourses of knowledge(-based) economy and the hypothesis of cognitive capitalism etc., about knowledge, depending on whether one attributes value to knowledge production stage but also a sense of capital as noted by Boulding (1966 :5) long ago:

> Two processes may be distinguished here. The first might be called printing, in which a structure is able to reproduce itself by making a copy of itself out of the incoherent matter around it. The gene evidently operates in this way; the mass production of commodities is largely three-dimensional printing; and even the transmission of a good deal of knowledge by rote learning in the educational process falls into this category. Printing by itself, however, would never organize an evolutionary or developmental process. It would merely fill the whole universe with copies of an initial structure. There must therefore be a second process to which we might give the name of organizing. This is the kind of process, for instance, by which the coded information contained in the gene is able to *organize a phenotype* such as a man. This is the way in which a blueprint organizes the construction of a building. This is the way in which an idea creates an organization, or an image of the future governs an individual life.

Boulding draws a parallel to the well-known genotype-phenotype distinction in genetics and underlies such feature of the genotype that involves the power to undertake organizing a phenotype. A combination of printing and organizing, according to Boulding, is what drives the process of economic development.

> Thus we can think of capital essentially as knowledge imposed on the material world, in the first place by an organizing process which creates a producing organization and in the second case by a process akin to three-dimensional printing (Boulding, 1966 :5).

Such organizing includes design or configuration and fragmentation at the same time while designing. The point is not at all that such organizing give rise to value but rather make possible rent extraction via hiding by means of fragmentation or modularization in more technical terms. Also, this corresponds in fact just to the point of disagreement between the different approaches such as the discourses of knowledge(-based) economy and the hypothesis of cognitive capitalism etc. It represents a source of value for the former and rent for the latter, whereby prices reflect the relative scarcity of commodities. While this chapter agrees with the position that it is a source of rent, it draws apart in defining it as cognitive rent (Ahn, 2012) because even the phrase 'cognitive rent' itself involves an implicit recognition for the productivity of something that is unproductive. In other words, even the phrase 'cognitive rent' itself reflects an inconsistency and confusion by specifying a sort of rent as cognitive, which evokes the associations with productivity, whereas the sole source of such rent is a simple concealment that arise spontaneously with fragmentation or modularization that comes with the design act itself.

In order to be able to see it, it seems necessary to revisit the notion of near-decomposability put forward by Herbert Simon. Simon (1962 :477) notes a property, which he refers to as 'near decomposability,' that all hierarchies or complex systems, be they physical, social, biological, or artificial, have in common: 'they are organized into

hierarchical layers of parts, parts of parts, parts of parts of parts, and so on, in such a way that interactions among elements belonging to the same parts are much more intense than interactions among elements belonging to different parts,' (Egidi and Marengo,2004: 342) whereas interactions among elements belonging to different subunits are much more scarce. Recently, Simon's near-decomposability hypothesis has been renamed the 'modularity hypothesis' (Egidi and Marengo,2004: 342).

The decomposition of systems into relatively independent parts in line with Simon's near-decomposability principle, however, requires an ignorance on the parts in regard to the other parts and the whole of system, which may enable hiding information by the so-called system integrators (Pavitt, 2005: 81), whereby giving rise to their crucial role. Any design after a viable and much less vulnerable system would result in such an invisibility and ignorance. Parnas, a pioneer in Software Engineering, advocates the decomposition of systems into modules based on a principle that he refers to as 'information hiding' in his seminal paper 'On the Criteria to Be Used in Decomposing Systems into Modules,' published in 1972. Parnas presents two different ways, one based on the principle of 'information hiding' and the other not, to decompose a system in that paper that attempts to establish some criteria that can be used in decomposing systems into modules. Parnas's 'information hiding' principle to modularization is grounded in minimizing the required communication, coordination and hence dependencies among components (Parnas, 1972: 1056).

Information hiding is, then, intrinsic to nearly-decomposable systems and a byproduct of modular configuration or architecture. If it is so, modularity can also be used to serve hiding information and thus protecting intellectual property (IP), according to Baldwin and Henkel (2012).

4.9 Architecture-Based Comparative Advantage

In addition to its utilization in accounting for the nature and source of the extra profits in information commodities, the idea of 'near decomposability' is also employed to clarify the relationship between product architectures and supra-firm industrial structures by Fujimoto (2007). As one would expect from the reach of such structures, which necessarily goes beyond national borders, Fujimoto's attempt results in an updated version of Ricardo's theory of comparative advantage, which is referred to as 'an architecture-based comparative advantage hypothesis' by its theoretician (Fujimoto, 2007: 55). Fujimoto's architecture-based comparative advantage hypothesis modifies the generic logic of comparative advantage by Ricardo, which has suggested a fit between country characteristics and product attributes for a given country originally, by extending the scope of 'fit' in a way to include the one(s) 'between organizational capabilities in manufacturing and product-process architecture' (Fujimoto, 2007: 55). Fujimoto's architecture-based comparative advantage hypothesis anticipates an internationally competitive position or advantage for an industry given a fit between organizational capability in manufacturing and product process architecture. In Fujimoto's conception, there are two basic types of product-process architecture: (i) 'Integral architecture' with complex interdependence between product functions and product structures (such as automobiles, etc.); and (ii) 'Modular architecture' in which the relationship between a product’s functional and structural elements have a simple and clear one-to-one correspondence (such as personal computers, etc.) (Fujimoto, 2008: 7).

Fujimoto neither deals directly with nor extends his architecture-based comparative advantage hypothesis to engage with the issue of financialization in his writings. Therefore, it is not possible to have the first hand reflections of his theory. There is however, a complementarity and smooth continuity between his works and this chapter, which may serve towards a comparative advantage versus financialization trade–off and thus contribute drawing policy implications.

Although Fujimoto's works have a constant focus on Japan, he presents some interesting subhypotheses on architectural advantage for some countries such as America, China, Korea and Taiwan. The most relevant ones for this chapter are the ones about America and China. For America, as a country of immigrants in the past few centuries, it made sense to minimize coordination in order to make use of newcomers' capability as quick as possible. As a result, American industries tended to emphasize division of labor, specialization, standardization of work, clear job demarcation, and use of market mechanism, while minimizing coordination efforts. In the last decades of the 20th century, America rediscovered the power of a manufacturing system that economizes coordination cost as best exemplified by the Silicon Valley model. Thus, American firms' comparative advantage lies in certain *technology-intensive modular architecture goods*. (Fujimoto, 2008: 9).

China under the Communist Party regime adopted Soviet-style national innovation system, in which industrial R&D activities were highly concentrated at the national level. Manufacturing firms in China were virtually factories without R&D functions. When China changed tracks in the 1970s, many of its manufacturing firms were left without design for their new products, making them to license from abroad or copy. By the end of the 20th century, China managed to become a major exporter of *labor-intensive modular architecture goods* through a very different historical path compare, but complementary, to America, and in sharp contrast with postwar Japan as the major exporter of integral architecture products (Fujimoto, 2008: 9).

4.10 Power to Unmake Markets

Firstly, knowledge commodified and monopolized becomes a tool of monopoly rent extraction.

> Paradoxically, then, market power is not the power to make a market (since this implies freedom of entry) but to *unmake* it, to find ways of escaping the constraints - especially in terms of price - which market forces seek to impose (Kingston, 2000: 86).

In a market with few or no barriers to entry, prices are under constant downwards pressure. If profits or rents are to be earned, a market is not something desired but escaped (Kingston, 2000: 86). In this regard, Veblen has a well-deserved reputation as a theoretician. Veblen's theorizing is perhaps about unmaking markets more than anything else. A theory of markets seems like missing from Veblen's work but it is rather because Veblen's theory is mostly negative; what markets do not do rather than what they do (Waller, 2007: 88). Markets as a social institution receive limited attention in Veblen's theorizing because Veblen must be viewing them as a 'veil' over other institutions.

Secondly, knowledge can perform what is implicit in capital as universal, not in terms of value but perhaps in terms more valuable than capital. In fact, Veblen and the institutionalist approach that follows him perform better in handling those troublesome issues, such as 'value question,' confronted by the knowledge economy discourses. For Veblen, productivity is social. Since it is not intrinsic to labor power or capital goods; institutionalists reject the idea and axiom of intrinsic and immanent worth with respect to factors of production such as labor, knowledge, machines, or gifts of nature (Brown, 2005: 916-21). Veblen asserts that capital embodying the community's knowledge is turned into a means of capturing the community's social product, corresponding to an unearned income due to the capital ownership. While rejecting claims for excess distribution to any one of the factors of production, Veblen retaines the unearned income concept taken over from classical political economy. Classical political economy views and defines rent as the excess over the cost of production, and hence, unearned, which thus needs to be picked out from prices in accordance with the labor theory of value. We thus owe the notion of 'economic rent,' and its corollary idea of unearned income or increment, as the excess of price over 'real cost' to this classical position (Hudson, 2012).

Value theories serve to justify such excess or unearned increment to the factor of production claimed to be the major contributor in value creation.

Rent and its corollary unearned increment or income were, however, treated as taboo topics in the post-classical period because they were in breach with the neoclassical theory of distribution that assumes a remuneration to the factors of production according to their contribution or marginal productivities. It all thus became quiet around rent as unearned increment with almost one exception; Veblen. Veblen, instead, followed a just opposite path, in contrast to the majority of the post-classical economists, he adopted the theory of rent as unearned increment as his theory of capital by substituting 'capital'[8] for land (Niman, 2010: 419, Commons, 1989: 669):

> It will be seen here that Veblen reproduces the same explanation of differential advantages that Karl Marx had introduced in explaining Ricardo's law of rent. But Veblen has extended it to all differential advantages and all net incomes. With Ricardo ground rent was due to the greater productiveness of labor on better land, but with Marx ground rent was due to private ownership of land. In either case the owner did not produce anything corresponding to the rent received. Rent, according to Ricardo was a "transfer" of wealth, not a "creation of wealth." In this respect Ricardo, Marx. and Veblen agreed. But where Ricardo explained the unearned increment of land by the greater *productiveness* of labor employed on the better land, Marx. and Veblen explained it by the greater power of the private owner to *stop production*, since he *owned* the instrument of labor's greater productiveness. Marx reached his conclusion by the Hegelian process of contrasting common property with private property. If all land were held in common, then differential *productiveness* would not yield a rent to any individual. The total product would then be averaged just as a farmer averages the total product of good and poor land within his farm. Marx likewise extended his averaging process to the total capital of the country; thereby he reduced profits, rent, and interest to an average rate of profit, and

[8] . which is understood somewhat differently by Veblen, as it will be clear shortly, but nothing is lost in continuity in its usual sense.

> likewise extended it to the total social labor-power of the nation and reduced skilled labor to multiples of unskilled labor. Capital became, not individual capitalists, but aliquot parts of the nation's total power of ownership; labor became, not individual laborers, but aliquot parts of the nation's total power of production (Commons, 1989: 669).

> Veblen, on the other hand, of course did not commit the fallacy of averages. He extended the principle of differential advantages from Ricardo's rent to include also the entire range of profits, interest, and rent, whether derived from good-will, patents, franchises, land, or any title of ownership. Where Marx had made capital the average power of acquisition, Veblen made it a host of differential powers of acquisition. In all cases it is, however, exactly like the Ricardian rent of land, namely, different degrees of power to obtain "something for nothing," or, as Ricardo would have said, different degrees of power to "transfer" wealth without "creating" wealth (Commons, 1989: 669).

Veblen's approach seems to solve the difficulties encountered by classical political economy and Marx, and in this chapter, particularly, in the context of 'value question,' with respect to the theory of rent as unearned increment. When rent as an unearned increment is defined at commodity level, a kind of value theory is required. Veblen employs the theory of rent as unearned increment without the labor theory of value. As hinted at by Commons above, Veblen seems to manage this through an aggregation at a different level from commodity; capital, that saves from averaging per commodities and possibly with an additional simplifying assumption of a presumed perfect competition as counterfactual or benchmark. Capital level is the level where it is manifested empirically, such as a company.

> The foundation of Veblen's theory of capital is rooted in the special position knowledge holds in society. Knowledge forms the basis for the productive use of natural resources and is a community asset that, at its most fundamental level, is not owned by a single individual. Thus, Veblen's theory begins by laying the foundation for a system of property rights created to enable individuals to productively utilize knowledge that resides within

> the community as a whole. These property rights make it possible for the creation and ownership of capital in the form of industrial equipment. With growth in the scale and scope of the community comes the ability to monopolize a portion of the community's asset for pecuniary gain. Monopolization then leads to a form of economic servitude that is similar to slavery (Niman, 2010: 419).

4.11 Neoclassical Value-Blindness

According to Reati (2000: 483), all different varieties of economic theorization boil down to the two root paradigms; exchange ('catallactics') and production. The exchange paradigm provides the foundations for the marginalism or neoclassical theory whereas the production paradigm for the classical political economy. The exchange paradigm, as a crystallization of the mercantile era and stance, preceded the production paradigm, which came to dominance from the late 18th century to 1870s for about a century and superseded by the marginalism. While the classicals presupposed exchange and focused on production, the marginalists instead gave prominence to consumption. The primordial bifurcation between the two paradigms starts with their view regarding the nature of commodities; which is reproducibility for the classicals and scarcity for the marginalists, and extends to their stance vis-à-vis value, i.e. value creation versus value capture. While the exchange paradigm lacks a proper theory, even a sense, of value generation that sets out the source of value and hence profits and neatly juxtaposes the difference between value creation and value capture, .

4.12 Multiple Determinations of Knowledge as General Abstraction

As noted above, the dialectic of knowledge noted by Curry goes beyond elucidating the distinction between knowledge as a general abstraction and information as a determinant abstraction. Curry in that dialectic acknowledges knowledge as a general abstraction when it is in a non-specific, context-free and non-proprietary form, that is, 'pure'

knowledge. There seems to be multiple determinations of knowledge even when it is a general abstraction as in capital vs. fictitious capital, which is not foreseen by Curry. Knowledge in such a determination is what a derivative is to capital and itself is a derivative as well, literally.

The literature on financialization tries to comprehend financialization usually as a new phase in capitalist accumulation. Krippner (2005: 174), for instance, defines financialization as 'a pattern of accumulation' in which profits are realized mostly through financial channels rather than through trade and commodity production. In other words, with financialization, M-C-M' is thought to be reduced to M-M', while remaining silent on what happens to the unavoidable middle term.9 Such a silence on the middle term, however, makes the wrong impression that the immediate appearance is right, that is, the middle term really disappears, which is, however, not true at all. On the contrary, that reduction in appearance corresponds to an increased distance in a sense and more economic transactions in turn. As touched earlier, Marx's 'autonomization of value' notion tries to trace such a sense of distance (Marx, 1978: 185). In fact, Marx's whole theoretical apparatus, if one regards the whole project of Marx as Value → Money → Capital, very brutally, and the 'autonomization' of value as the core of such process, is devoted to trace such forms of mediation in economy:

> The product becomes a commodity; the commodity becomes exchange value; the exchange value of the commodity is its immanent money-property; this, its money-property, separates itself from it in the form of money, and achieves a general social existence (Marx, 1973).

---

9 . For Marx (1978: 137), 'The production process appears simply as an unavoidable middle term, a necessary evil for the purpose of moneymaking.'

Rotta and Teixeira (2011) attempt to situate under and define financialization as an outgrowth of Marx's 'autonomization of value' notion. Rotta and Teixeira thinks that Marx with his notion of 'autonomization of value' tries to show that capital is a social form with an inherent paradoxical tendency to become 'autonomized,' that is, to separate and distance itself from and hence to undermine its own basis; real surplus value creation. Autonomization, for Rotta and Teixeira, involves and implies the introduction and insertion of new ontological layers of mediation between social forms and their bases.

> The development of capital is, therefore, just a matter of developing what is presupposed - i.e. present as a potentiality - in its essence: the ever growing separation of social forms from their own material supports. Money, capital, accumulation of capital, interest-bearing capital and fictitious capital are all higher forms of the core tendency of autonomization (Rotta and Teixeira, 2011).

More importantly, such a theoretical transitivity would not only enable defining financialization within an extended context of the 'autonomization' of value, i.e., Value → Money → Capital → Fictitious Capital, but also situating knowledge into such context. Kockelman similarly develops the so-called economic detachment construct to characterize and gauge the degree of 'splitting up' of any economic process due to indirect (versus direct) provision through the relative distance -temporal, spatial, or personal- between various actors, actions, and things within 'an intricate time-space-person system' as it takes place in Polanyi's (2001: 52) description of the Kula. Kockelman do not mention Marx's 'autonomization of value' notion but views economic detachment as 'a way of generalizing a key point of Karl Marx' by quoting the following:

> Circulation bursts through all restrictions as to time, place, and individuals, imposed by direct barter, and this it effects by splitting up, into the antithesis of a sale and a purchase, the direct identity that in barter does exist between the alienation of one's own and the

acquisition of some other man’s product (Marx, 1967).

The 'splitting up' that Kockelman refers to in fact echoes the definition provided for the notion of autonomization as the introduction of new layers of ontological mediation between social forms and their material bases by Rotta and Teixeira (2012: 5). The interest in both notions is in the degree of 'mediatedness;' the 'splitting up' or the addition of new layers of ontological mediation that increases 'mediatedness.' What seems as reduction or elimination in the move from M-C-M' to M-M' on the one hand is in fact an increase in the degree of 'mediatedness' on the other. Rotta and Teixeira's employment of the notion of autonomization aims to situate financialization under the larger movement of autonomization whereas financialization is not mentioned by Kockelman specifically, though, it is not completely out of consideration as it is made obvious by his following statement: Indeed, financial derivatives push detachment to the extreme (Kockelman, 2007: 166).

Financialization then simply becomes a higher stage reached in the development of capital. The distorted view of financialization as the reduction of M-C-M' to M-M' which in fact needs to be comprehended as the increased layers of mediation. Chiliatto-Leite et al. (2011) bid this accumulation logic one level up than the financialization literature. Derivatives lift the pattern of accumulation up to the level of simply ΔM:

> In the new form of accumulation provided by derivatives markets, there is a fundamental specificity: The valorization process with derivatives is “independent” from an initial amount of investment. In that stage, the fictitious capital assumes its most abstract form. If before that, the formula of valorization was shown as M-M", where M"=M+ΔM, after the constitution of derivatives it turns to a form seen simply as ΔM*. The notation ΔM* suggests, first, a “nonexistence” of prior money-capital side (M), and, second, denotes a difference in the nature of the operation of the gain (Chiliatto-Leite et al., 2011).

The two poles or extreme ends of M and M' in the general formula of capital that seemed almost irreducible are now bracketed. Chiliatto-Leite et al. base their argument on the prominence of derivatives as the model of accumulation on the observation of a different, or rather nonexistent, notion of ownership implicit in derivatives borrowed from Bryan and Rafferty (2006). In derivatives, ownership involves neither ownership rights to corporate assets nor of corporate shares, but ownership of financial claims whose value varies with the value of corporate (and other) assets according to Bryan and Rafferty. With derivatives, asset ownership is uncoupled from any necessary direct ownership connection to commodities, financial assets or corporations (Bryan and Rafferty, 2006: 68). Thus, the derivative form of ownership changes the relationship between capital and ownership. Bryan and Rafferty (2006: 71) identify a shift in the form of ownership of capital from owner capitalists to the joint stock company to financial derivatives and call this evolution the three degrees of separation of capital from ownership. The first separation involves the process in which the worker is separated from possession and ownership of the means of production. The second separation involves the formation of the joint stock company in which company ownership is separated from production. The third separation involves the process by which capital ownership is separated from company ownership.

> Accordingly, with derivatives the very concept of 'capital' and its ownership is separated from the ownership of both direct physical assets (the first separation) and legal representations of those physical assets (the second separation) (Bryan and Rafferty, 2006: 75).

This scheme of separations identified by Bryan and Rafferty is reminiscent and even a recitation of Marx's 'autonomization of value' notion. The studies by Paulani (2009) and Rotta and Teixeira (2012) view and define financialization within an extended context of the 'autonomization' of value, i.e., Value → Money → Capital → Fictitious Capital. Rotta and Teixeira even strive to situate knowledge commodities into this context via

rent in knowledge commodities. Thus, financialization, for Rotta and Teixeira, becomes 'a specific historical outgrowth of autonomization, and as such is the autonomization of value in relation to use-values.'

Departing from Marx's notion of 'capital as commodity' in Capital Volume III, Hoca (2012) develops and suggests the notion of 'commodification of capital' to refer to capital extended to anyone or to any institution for a return rather than its direct employment in production. Hoca, with this new notion of 'commodification of capital' aims to unleash and revitalize Hilferding's important concept of 'finance capital' and put into service in an age of financialization but also offers support to the extended 'autonomization' of value view advanced by Rotta and Teixeira.

The extended 'autonomization' of value view identifies a separation of capital into real and fictitious and defines financialization in the separated and thus autonomized fictitious part. What about the remained real part? The remained real capital seems to be subjected to a further separation between its knowledge content and material form and the knowledge part is even commodified, thus autonomized. That part, however, is not considered under the extended autonomization movement, either because knowledge is presumed as 'not value' or a use-value. If we proceed from the use-value aspect, use value, according to Rotta and Teixeira, is the material support of value and thus knowledge cannot be a use value:

> It is highly important to differentiate between the material support of the information (the actual material CD, DVD, flash drive, magnetic tape, or any other artifact) and the information itself (the actual knowledge-commodity, i.e. instruction, technique, information, formulae, software, songs, movies, etc.). The material aspect of the object is only the bearer of the knowledge commodity. The immaterial aspect of the object or service is the actual knowledge-commodity.

> Our approach is about the intangible, not the tangible part. The material support is necessary only to allow the circulation of the immaterial content (Rotta and Teixeira, 2012: 9).

Knowledge is 'not value' but not a use-value in this context either. It is antithetical to the material support or form. Although it is 'not value,' it is parallel to value and thus related to the essence or content in the Hegelian sense. In this case, it is more appropriate to extend ‘autonomization’ notion to include knowledge as well, in addition to value. We may still refer it as 'commodification of knowledge' to distinguish from 'commodification of capital' but at least draw attention to their relatedness.

Alternatively, it is possible to regard knowledge as a new layer of mediation added in the context of Kockelman's modes of economic detachment notion. In fact, Fleissner (2010: 390) for instance devotes a separate layer for information society in his scheme depending on the redistributionary feature of unproductive immaterial products. Rather or more than the redistributionary feature of knowledge commodities, knowledge as a new layer of mediation deserves a separate layer in Fleissner's scheme.

After this diversion, we can go on with where we left with Chiliatto-Leite et al. Chiliatto-Leite et al. interpret the evolution on the separation of capital from ownership identified by Bryan and Rafferty as a new model of accumulation and extends its logic to the whole, while remaining silent, again, on what happens to the unavoidable middle term; that is, how the rest of the system, i.e., real economy, would respond and adjust to it.

In addition to the avoided unavoidable middle term, Chiliatto-Leite et al., and in fact the whole financialization literature, are not explicit enough on how this new logic of accumulation links to or inserts and imposes itself on the circuit of capital. The comprehension and conception of the economy in terms of distinct circuits of capital

originates with Marx in Capital. Marx's 'circuit' diagram that illustrates such a view can be represented as follows:

$$M - C - P - C' - M' \rightarrow M - C - P - C' - M' \rightarrow \ldots \rightarrow \infty$$

·————————————· circuit of money capital, M, … , M';

·————————————· circuit of commodity capital, C, … , C';

·————————————· circuit of productive capital, P, … , P'.

From Marx's 'circuit' diagram, it is possible to see that access to the interest-bearing capital or share capital can be granted at only M nodes because the nodes of M represent the interface or point of interconnection between the 'circuit of interest-bearing capital' and the circuit of money capital. Marx himself hints how the interest-bearing capital is linked or inserted to the circuit of capital in Chapter 21 of Volume III with the following notation:

$$M - M - C - M' - M'$$

which shows the possibility of borrowing and repaying the money capital.

To comprehend the pattern of new accumulation as simply ΔM or bracketing the general formula of capital is thus only possible as a logic behind that pattern, if not metaphorically, because the circuit of money capital is not identical to the 'circuit of interest-bearing capital' or finance capital. Marx specifies the circuit of interest bearing capital outside the 'real' circuit of capital. Although a derivative, unlike the interest-bearing capital or share capital, has the ability to connect to any node, that is, M, C or P, in the circuit of capital, which may be seen as direct access, what interests us is, however, the indirect, in a sense, derivative, access.

It is now possible to argue and relate the current international division of labor in economic activities to the extended ‘autonomization’ that includes 'commodification of capital' and 'commodification of knowledge.' The current international division of labor in economic activities refers to the case where much of production, knowledge production excluded, is located in the Far East, and especially in China, and finance mostly located in Western centers, lead by the USA and Britain.

The question on the avoided unavoidable middle term can be handled at two levels; the core and periphery. For the former, Chiliatto-Leite et al. is indeed right; the new model of accumulation implicit in derivatives is emulated in the real economy as well. To see this, the link between derivatives and downside risk needs to be clarified. Chiliatto-Leite et al. shifts attention very early to ΔM, or upside potential from downside loss or risk, which is the main motivator and driver for derivatives, particularly, options in fact.

> … derivatives reflect the choices of investors who are 'downside risk averse' (i.e., especially averse to losses rather than volatility), unlike ordinary equities, whose purchasers can be assumed (at least in theory) to be motivated by some notion of correlation-based diversification (Pedersen, 2001: 251).

In other words, the main reason for why people buy derivatives is downside risk aversion, not diversification, where the probability of losses are either reduced or entirely removed with derivatives. And this would be even more true for real economy, specifically, when knowledge, in addition to and together with capital, becomes prominent as an organizing principle of economic life, particularly production. More specifically, the possession and monopolization of knowledge becomes more important than, and replaces, capital ownership, to a great extent because knowledge reduces or removes the probability of downside losses in contradistinction to capital ownership. This is mainly operationalized in two major ways: by prioritizing knowledge over other investments as investment kind, as manifested by knowledge-based hypotheses, and

structuring investments in an option-like manner, that is, holding knowledge instead of capital in investments, as manifested by the empirics of 'offshore outsourcing' or 'international fragmentation of production,' because modularity itself embeds options to do so (Kogut, 2008: 191).

The most significant feature of options that imposes them both as a valuation technique, for instance, in knowledge commodities and as a model in structuring operations, such as, production, is that they give an option holder the possibility of a large upside gain while protecting from downside loss and risk. The new logic of accumulation identified by Chiliatto-Leite et al. as ΔM in financial capital with derivatives seems to find its counterpart in the circuit of industrial capital with the so-called real options inherent in knowledge.

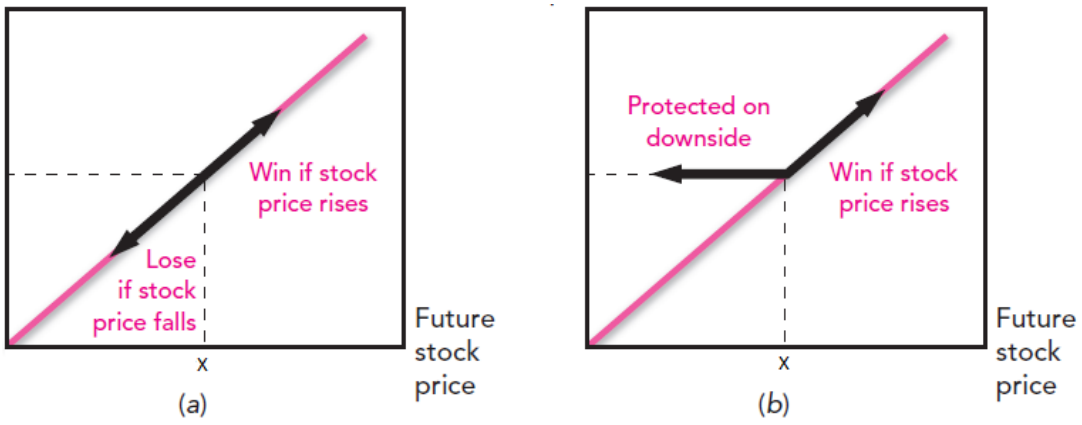

Figure 4: A position in an asset versus a position in a call option

Panel (a) in Figure 4 shows the payoffs from buying and holding a stock at, say, $X, which is valid for any kind of investment or **capital** ownership. It corresponds to the second separation in Bryan and Rafferty's scheme of three degrees of separation of capital from ownership. Panel (b) shows the payoffs from an investment strategy that

retains the upside potential of the same stock but gives complete downside protection. The investment strategy that enables to retain only the upside potential getting rid of downside loss is a call option.

The real-option analysis have their roots in the financial options. Basically there are two types of (financial) options; which are call option and the put option. Call option allows the option holder (buyer of call option) to buy the underlying asset (which can be stocks) at a predetermined exercise price. The option holder exercises the option if the asset's price is higher than the strike price. The exercise gives the option holder a profit, equal to the difference between the current price of underlying asset and the strike price. If the price of the asset (stock) goes down, the option holder is under no obligation to buy, and the option expires without exercise. The maximum potential loss is the total amount that option holder paid to buy it in the first place, which differentiates a position in the underlying asset from the position in the option to buy the same underlying asset (Subedi, 2005: 90).

The term 'real options' refers to a nonfinancial (real) asset, such as a production facility or an R&D patent. The real-options perspective thus adopts and applies the thinking behind financial options to evaluate physical, or real, assets. Real options logic views initial investments as exploratory and non-committal and attempts to identify implicit options embedded in, or attached to, physical or real assets through an initial round of exploratory investments and then value such options in terms of option valuation, otherwise, solely based on the discounted cash flows that reduce values dramatically, and thus make investments in such projects infeasible (Bailey et al., 2003: 4). The major advantage of the real-options approach over standard valuation techniques such as the NPV is that it incorporates the flexibility owing to future decisions, whereas the latter kind of tools are static in this respect. For options logic imposes embedding a decision point (to exercise an option or not) for every stage in the future course of action, the real-options approach ends up evaluating only the positive outcomes that would emerge

(the good state of the world), and avoid negative outcomes by stopping or abandoning further exposure in bad states of the world. Stopping investment or further exposure is the key in limiting downside risk. Sequentiality is critical in the real-options perspective; for it is not only instrumental in setting the initial analogy between an investment decision and options but also where flexibility value resides in.

Panel (b) in the above figure corresponds to the third separation in Bryan and Rafferty's scheme of three degrees of separation of capital from ownership and explains (i) the economic rationale behind the new logic of accumulation, ΔM as proposed by Chiliatto-Leite et al. and (ii) the motivation behind knowledge production, and provides (iii) a valuation model for knowledge commodities and (iv) a model to emulate in structuring operations, such as, production.

Production is not discarded altogether. If it is supposed that it is a combination of conception, i.e., knowledge production, and execution, i.e., knowledge commodity production, simply, the latter part is dispensed with while the former is kept within. The most characteristic feature of the retained part, however, lies in its ability to emulate ΔM with a 'nonexistence' of prior money-capital; M and upside potential, which is made possible by the notion of ownership implicit in options.

Jeon's attempt to theorize the role of knowledge in the determination of the value of commodities by drawing from the South Korean controversy on the value and price of information commodities such as computer software and digital music has been touched upon above. As stated above, Jeon introduces a distinction and hence *sequentiality* between knowledge (=source) and commodity (=copy) similar to the distinction between source and copy of a software, which is key in projecting and implementing the real-options perspective to knowledge commodities. Knowledge production precedes knowledge commodity production, with a separate production process dedicated to knowledge that becomes the input of the subsequent knowledge commodity production.

After the completion of knowledge production, copies are mass-produced based on source. Inspired from Jeon's approach, knowledge (=source) production can be seen as analogous to option creation and its cost as an up-front premium paid in buying a call option that corresponds to the horizontal part in Figure III or any call option profit diagram. Combining knowledge (=source) production with the subsequent knowledge commodity (=copy) production yields a diagram similar to the one in Figure III or any call option profit diagram. In short, a call option resides in knowledge; in fact, knowledge itself is a (natural) call option. Jeon's approach that exposes the *sequentiality* between knowledge (=source) production with the subsequent knowledge commodity (=copy) production discloses the call option hidden and embedded in knowledge at the same time.

This is, however, another determination of knowledge, in the dialectic of knowledge elaborated by Curry, when it is a general abstraction, separate from 'pure' knowledge as general abstraction, just as in the relationship between capital and fictitious capital, which makes sense only under the ‘autonomization’ notion. Curry even puts down his anticipation of an autonomy in writing:

> The interesting part comes when the economy is sufficiently developed to the point where knowledge attains a certain autonomy in the process (like finance capital) (Curry, 1997).

But he does not speculate any further. Anyhow, this is another use of knowledge that gives rise to another use value.

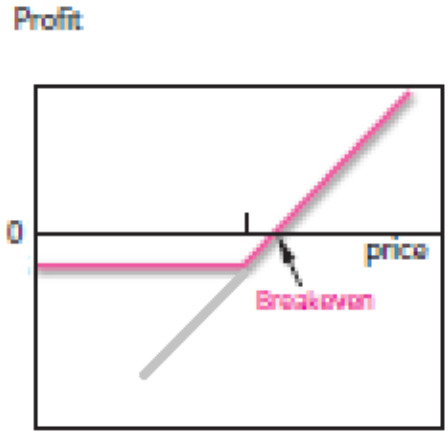

Figure 5: Profit diagram for a call option or knowledge

At the same time, this is what gives rise to the transcendent feature of knowledge compare with capital; its power to eliminate downside risk or loss, which is the gray part in Figure 5. With the removed downside loss; the continuous line in Figure 5 start to represent the transformed transcendent feature of knowledge. The horizontal part corresponds to knowledge (=source) production while the upward sloping part corresponds to the subsequent knowledge commodity (=copy) production.

Furthermore, besides eliminating downside risk or loss, it is even possible to collect the upside potential gain in advance, long before the actual knowledge commodity production, and lock to a certain amount of profits on the condition that there exists a liquid financial market for commodified knowledge to monetize intellectual property rights, which accounts for the tendency towards valorization in financial markets and avoidance from real markets observed and identified by Arvidsson.

The notion of a synthetic instrument, or replicating portfolio, is central to financial engineering according to Neftci (2008: 47). All financial instruments are imagined as bundles of cash flows and all cash flows can be engineered to yield cash flows more desirable in some respects; that is, synthetic instruments that replicate the behavior of an instrument or a portfolio in terms of cash flows.

The offshore outsourcing replicates a call option synthetically because it removes the lower part in Panel (a) that corresponds to downside losses while keeping the upper part in Panel (a) that corresponds to upside gains. The end result is a payoff diagram for a call option similar to the one in Panel (b) or a profit diagram similar to the one in Figure 4. The offshore outsourcing ends up having cash flows from the upside potential of offshore production while eliminating downside losses, particularly, due to technodepreciation or devalorization. Knowledge replicates capital synthetically to a better extent, by only retaining its upside potential but getting rid of its downside potential. In other words, knowledge not only replicates but surpasses capital.

The modularity view of complex systems also sees designs as fundamentally options with associated economic option value, which follows from uncertainty about the final design at the start. Uncertainty regarding the final outcome leads to uncertainty about the design's eventual value. Uncertainty about final value in turn furnishes new designs with 'option-like' properties because an option in finance refers to 'the right but not the obligation' to choose a course of action and having an associated payoff. What makes a (modular) design an option, however, is that some courses of action, namely, the low-valued outcomes do not have to be pursued, which limits the downside potential of a risky design (Baldwin and Clark, 2006: 181-2).

Chiliatto-Leite et al.'s proposed ΔM logic of accumulation, as diagrammed in Figure 5, is thus emulated through knowledge by core countries. The answer to what would happen in the periphery would be the asymmetrical image of the core. In other words, the dispensed part of production with its carved out upside potential and remaining downside risks would go to and owned by, in the sense of capital ownership, offshore; which would mimic a put option as in Figure 6:

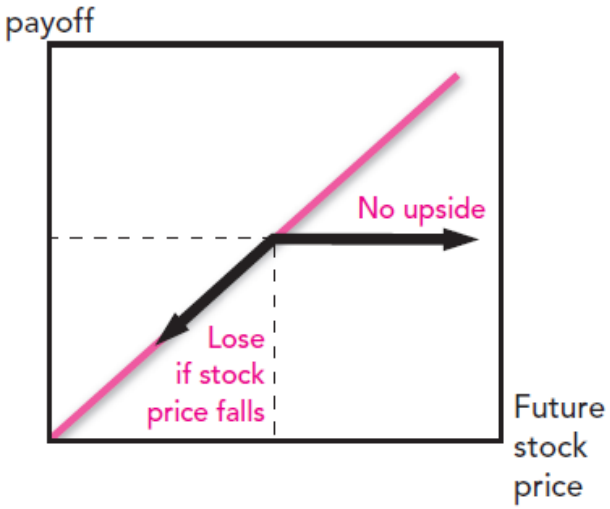

Figure 6: The counterpart position on the new global division of labor

Then, it becomes possible to argue that the recent changes phrased in terms of knowledge are not due to knowledge per se or its supersession of capital as a factor of production in terms of value creation but instead a simple projection of ΔM logic of accumulation to a whole new array of things and their rearrangement in terms of this new logic of accumulation. It becomes somewhat difficult to decide whether this is a continuation and expansion of financialization or something beyond financialization, which is to some extent implicit in Chiliatto-Leite et al.'s proposed new ΔM logic of accumulation with ΔM. As pointed out earlier, ΔM brackets M-M', that is, financialization. Leaving aside its categorization, such a simple bracketing makes the connection between financialization and knowledge manifest.

Now, equipped with the paradigmatic contribution of real-options perspective, it is possible to reconsider the question on the current global division of labor in terms of Marx's circuits of capital. The current division of activities, with much of the productive circuit of capital located in the Far East, and especially in China, whilst Western centers specialize in finance capital, has some important implications. The fall of the modern corporation as the dominant paradigm of industrial organization and the consecutive emergence and rise of the so-called 'modular production networks' as the new dominant

paradigm and model of industrial organization that frees innovation from the shackles of large-scale investment in fixed capital pointed out by Sturgeon (2002: 451-2) exemplifies knowledge in charge of organizing economic life. In addition to the large-scale investment undertaken for the production, the modular production saves from the burden of devalorization, which is perhaps more restraining in terms of innovation, by eliminating production altogether. The production outsourced to offshore extends the rationale for knowledge commodification further. This time, due to the apparent need, the protection of the intellectual property seems more justified but financial markets offer a precaution against imitation in addition to their regular premium over real markets. At the same time, the modularity may increase and speed up innovation by letting each firm in the network to focus more on innovation in their own dedicated part.

Of course, the global circuits of manufacturing and finance are not necessarily disconnected but it is also clear that production and finance are not as tightly connected as before due to increased 'mediatedness.' On the contrary, they are loosely connected as hinted by the permanent imbalances of trade between East and West. Financial flows would not also be congruent with the needs of the productive circuit. The relative detachedness of these circuits increases the possibility and probability of disarticulation between them, as reflected by the huge oversupply of finance capital, which is not necessarily connected to creative uses in the real economy, instead, exhausts its creative potential in financial innovation (Ackroyd, 2012).

4.13 Conclusion

Implicit in the discourses of knowledge(-based) economy is that capital as a factor of production is not as important as before and knowledge has become a substitute for capital and even surpassed capital in its contribution to value creation. Such discourses, however, face difficulty in substantiating their claim. It is advanced in this chapter that what is possibly wrong with such claims is in sequencing their constituent parts. There

are in fact two constituents in those claims. The first part views knowledge as a factor of production and proceeds dealing with knowledge in terms of 'value question.' If the knowledge is in some way determined as the factor that contributes most, then, it would proceed to the second part that would deal with how knowledge substitutes for capital. Well, since there is no satisfactory and conclusive outcome regarding the first part, as of now, because knowledge is simply valueless, a vicious cycle sets in and it becomes impossible to proceed further to the next part.

After dealing with such impasses, this chapter has also attempted to proceed to the second constituent part of those claims, that is, how knowledge substitutes for capital. In fact, two instances of such a substitution is identified via the real options approach.

The identification of the instances of knowledge in substituting for capital seems sufficient to advance a claim for an association between knowledge and financialization but it is also possible to elucidate such a connection through the mediating position undertaken by knowledge. To see this, it is necessary to think about what is going on in terms of mediation when M-C-M' mutates to M-M'. Although Marx often identifies M-M' with a specific form of capital; interest-bearing capital, he also seems to have an abstract sense for it, as the representation of a process:

> M-M'. Here we have the original starting-point of capital,money in the formula M-C-M', reduced to the two extremes M-M', where M' = M + ΔM, money that creates more money. This is the original and general formula for capital reduced to a meaningless abbreviation.

Based on such an abstract understanding of M-C-M' and M-M', it then becomes possible to define financialization as the move from M-C-M' to M-M'. The move from M-C-M' to M-M' does not represent an elimination of mediation at all but rather its mutation. The Hegelian notion of 'objectivation' or externalization is more self-descriptive in this respect than Marx’s autonomization of value notion. Mediation is taken over by some

other entities, such as institutions inserted into the process. For Marx, M-M' seems like the terminal or ultimate in the movement of capital but it is rather ΔM as proposed by Chiliatto-Leite et al. ΔM is accomplished by derivatives as suggested by Chiliatto-Leite et al. or knowledge as advanced in this chapter and mediated by some institutions like intellectual property rights and a market for them.

Backhaus (1992), reminding Marx's reproach to Ricardo for 'not developing the different moments in the conceptual determination of value', redirects it to Marx himself; to what extent Marx himself delivers what he expects from Ricardo. This question exposes the most serious flaw in Marx's work, according to Backhaus; 'the work he handed over to us falls short of this goal and remains but a *fragment*.' In Backhaus's opinion, Marx assumes an objective concept of value although these (value) forms are 'neither merely subjective, that is mere thought, nor something merely objective; rather they are both' just like Hegel's spirit, which is always subjective-objective. Just like Hegel, who deals with empirical matters instead of deriving value as the objectification of the subject, Marx also stands off from the subjective aspect of economic categories such as value or capital, for Backhaus. Value, however, is something thought and hence something subjective; it cannot be studied just like a subject matter in the realm of natural sciences. Money or capital would then amount to paper or machines only. Consequently, 'How the two forms of the subject-object dialectic interpenetrate' in terms of value 'is a question which remains unclear to this day: the question has not even been posed' according to Backhaus (1992: 54-89).

The subject matter of this chapter thus requires a subjective-objective stance rather than bringing one only to the fore:

> If one applies a dialectical methodology, the rise of transnational informational capitalism is neither only a subjective, nor only an objective transformation, but is based on a subject–object dialectic. Objective approaches are techno-deterministic and ignore how

> forms of labor and agency have changed, subjective approaches ignore that technology is a force that shapes and is shaped by agency. Hence both technology-oriented objective and the subjective knowledge-oriented approaches are insufficient. But at the same time they are right in stressing one pole of a dialectic of a larger framework: The notion of transnational informational capitalism sublates both lines of thinking dialectically because information and networks have both an objective and a subjective aspect, they transform the means of production and the relations of production. … The notion of transnational informational capitalism grasps this subject–object dialectic, it conceptualizes contemporary capitalism based on the rise of cognitive, communicative, and co-operative labor that is interconnected with the rise of technologies and goods that objectify human cognition, communication, and co-operation. Informational capitalism is based on the dialectical interconnection of subjective knowledge and knowledge objectified in information technologies. The reason why this approach is better grounded is that dialectics allow reality to be conceived of as complex and dynamic, which questions one dimensional and static accounts of reality (Fuchs, 2012: 6-7).

Fictitious capital is designated as the ultimate distance attained by value in its objectivation by Marx. Knowledge, as a split or spin off from capital or value just like and parallel to fictitious capital, is, however, something abstract and hence something subjective, and thus seems to fall under what is not elaborated by Marx, as advanced by Backhaus.

Conventional valuation methods such as the the discounted cash flows mechanisms fail to recognize flexibility or modularity that might have (use) value. The extension of option pricing to valuation unveils such previously 'unrecognized' value in flexibility by embedding a sort of subjective standpoint into the future courses of action, which results in the consideration of only the positive outcomes as opposed to all future courses of action in the conventional discounting techniques. Such flexibility is interestingly intrinsic to knowledge that does not require any option-like structuring for the future courses of action and arises from its sequential and universal nature, which seems like

confusingly leading to ascriptions of intrinsic value to knowledge itself. In effect, it is as if there is not much of a difference between the two but the latter ends up in a vicious cycle of value questions and pseudo knowledge theories of value that 'merely place a knowledge gloss on what remain basically capital theories of value' (Hakken, 2003: 325) and turns on justifying rent or unearned increment to knowledge. Furthermore, such flawed ascriptions of value culminate in frenzies such as the new economy or the dot-com crisis and even the 2008 crisis. Unable to justify the strikingly high market valuations, academics and market professionals increasingly start to resort to the pseudo knowledge theories of value. The pseudo knowledge theories of value, however, cannot recognize and isolate flexibility, instead ascribe value across-the-board to knowledge. Thus, some even theorize the so-called 'global surplus' specific to knowledge and exclusively 'distributed on financial markets.' The recognition of the flexibility and modularity is, however, indispensable for not only avoiding across-the-board over valuations but also filtering them out in different contexts such as outsourcing.

The subtitle of Edward Steinfeld's book Playing Our Game: Why China's Rise Doesn't Threaten the West (2010) encapsulates both the idea of 'information hiding' inherent in modular architecture and at the same time a paradox that emerged in the recent round of globalization: China's economic rise is not seen as a threat to the West. The answer to the question raised in the subtitle is implicit in the title; it is because China is playing their game, not its own. Thus, 'what we are witnessing in China today is neither a repeat of Japan's rise in the twentieth century nor Germany's in the nineteenth,' in Steinfeld's opinion (2010: 74).

The paradox is that despite some noteworthy advantages, such as diffusion of manufacturing and even innovation from the core to the periphery, this time, which were not available for the former risers, Steinfeld insists that China will not finish up 'the game of global catch up.' Steinfeld is also insistful in his book to leave the answer to the question he raised in the subtitle implicit; China needs to play its own game; which

should be read as designing its own nearly-decomposable systems or modular architectures in accordance with Simon's notion to be able to capture the value that itself creates, when deciphered.

CHAPTER 5

CONCLUSION

This thesis sought to demonstrate financialization as a result of a reconfiguration of global business processes around the pursuit of modularity as a principle of design, initially but a driver of international competitive advantage later, which ended up in a new 'international division of labour' during the last quarter of the 20th century.

At the start of that period, Japan was the only major exporter of manufacturing goods from Asia. It was soon joined by Korea, Taiwan, Hong Kong and Singapore as exporters of relatively standardized goods and lastly by China as a major exporter of certain labor intensive goods. Asia has become a global center of manufacturing during the last quarter of the 20th century while turning China into a global factory in the 1990s. In the meantime, Japan has also been apparently surpassed by China, Korea and Taiwan in some technology-intensive products such as DRAM, CD media, DVD recorder, etc., which were deemed to be Japan's stronghold for long. Interestingly, the US managed to stage a come back as a center of digital network goods and softwares before the end of the 20th century.

As a result, a new 'international division of labour', with which much of production, excluding knowledge production, is located in Asia, particularly in China, and knowledge production mostly in Western centers, particularly in the USA, has emerged. At a later stage, finance sided with knowledge production.

While it became almost impossible to make sense of such various phenomena together and simultaneously using available theoretical frameworks, the world went through a massive financial crisis in 2007-08. This thesis, thus, attempted such a theoretical framework that accounts all these various phenomena together and simultaneously but it

needs to address two more issues for a fairly thorough treatment of its subject matter before ending up; (i) the local and (ii) the future implications.

Financialization and Turkey

Turkey is one of the difficult cases in the context of financialization. A modularization driven account of financialization presented in this thesis has not much relevance for Turkey because it has neither a leading or design position in modular production nor contributes much to modular production. It is not, however, possible for Turkey to isolate itself from a worldwide spread of financialization at the same time. There are basically two channels of transmission of financialization to developing or peripheral countries; via either the government debt market (Ertürk, 2003: 186) and the accumulation of international reserves (Lapavitsas, 2009: 118), both of which are valid in case of Turkey.

According to Becker et al. (2010: 228), two main forms of financialization needs to be distinguished: financialization based on the second circuit of fictitious capital, as referred by Marx, i.e. securities, and financialization based on interest-bearing capital and, thus, on high interest rates. In most (semi-)peripheral countries, financialization is critically dependent on capital inflows and usually characterized by a rather rigid and overvalued exchange rate and high level of interest rates, which is often sustained by central banks (Becker et al., 2010: 229). Thus, the former form of financialization under such a taxonomy would be more peculiar to the core countries, whereas the latter to the (semi-)peripheral countries and financialization in Turkey tends towards the former form.

Becker et al. (2010) provide a second taxonomy that considers the size of the social base of financialization. Historically, the more familiar type of financialization mainly involves the bourgeoisie and the upper middle strata, which might be referred to as 'elite' financialization. The second type of financialization is characterized by the credit financed acquisitions of real estate or consumer durables against stagnating or declining real wages, as in the US just before the Great Recession, which might be referred to as

'mass-based' or 'popular' financialization. In terms of its social base, it is still too early to feature financialization in Turkey as mass-based but it all depends on the speed of capital inflows.

Up until its last crisis in 2001, all of Turkey's former affairs with financial expansion ended up with a crisis in the past. The Turkish economy experienced almost periodic crises in 1994, 2000 and 2001, managing to squeeze three crises within a time frame of less than a decade. The recent crisis-free period after the last one in 2001 has already lasted longer than any other in the past.

The abundance of global liquidity set the stage for a crisis-free decade. The decade after the 2001 crisis coincided with an unusually favorable global liquidity condition mainly due to the financialization process as 'privatized Keynesianism' in the core that enabled Turkey to attract large inflows of short-term and long-term foreign capital. The opportunity and convenience of a single-party government ruling after the fragmented coalition politics of the 1990s must have contributed positively at this front. Such liquidity generation and abundance seems to persist in the post-crisis conditions owing to a need for the clearance of the past debt relationships via monetization.

The Turkish economy seems managing to take advantage of the favorable cycle of global liquidity, which looks like riding out the crisis on the surfboard of financialization but such a cyclical approach to the capital account is not the most appropriate because it leaves a country to the mercy of developments in external financial markets (Rodrik, 2012: 42). High current account deficits make Turkey vulnerable to reversals in capital inflows. Instead of a complete financial openness, a counter-cyclical one that encourages inflows when finance is scarce and discourages inflows when finance is plentiful would be more proper.

Future of Financialization

A glance into the future can be epitomized through the following two questions: (i) Does the financial crisis in 2007-08 mark the end of financialization? and (ii) Can 'it' happen

again? In order to answer these questions, it seems first necessary to establish the uniqueness of what the world went through during the last quarter of the 20th century.

The time period under consideration witnessed the diffusion of ICT as a general purpose technology. ICT is often considered to be a general purpose technology, much like steam and electricity in earlier times, with broader economic impact through multiple applications. A rapid surge in ICT investments is observable for the period between 1995-2000, which is followed by a slow down after 2000 or the dot-com crisis (The Conference Board, 2011). The diffusion of ICT as a general purpose technology should be seen as the background color of a theme of the 'IT paradigm'.

A second aspect of the uniqueness of what the world went through during the last quarter of the 20th century can be easily seen in terms of the new international division of labor. The preceding chapter presented Fujimoto's subhypotheses that underline not only the uniqueness of America's and China's own historical paths but also the complementarity between the two. Combined with the diffusion of ICT as a general purpose technology, what we deal with is unique at several levels. Given such uniqueness, the financial crisis in 2007-08 seems to mark the end of financialization in the way it has unfolded, which does not mean at all that it may not emerge in other ways now unthinkable.

The 'Chinamerica' model's sustainability in the long-term also requires a resolution to the problem of the financialization as 'privatized Keynesianism' or aggregate demand/realization in the US. Aside from a resolution, there is no clue so far as to its conception as a problem of aggregate demand/realization in the US rather than a prevalence of a certain anti-outsourcing mood.

Finally, 'integral architecture' as opposed to 'modular architecture,' as dichotomized by Fujimoto in his architecture-based comparative advantage hypothesis, seems not a cure against a modularity driven endogenous financialization as manifested in the euro crisis for Germany. Although Fujimoto does not have any specific subhypothesis for Germany, Germany presents a similar case to Japan as a major exporter of integral architecture products but in a somewhat better position with a better protected product line than

Japan because its products seem not under threat from modular architecture as much as in Japan's case. The Germany's path, however, is based on some unique advantages that the country developed historically, such as brand recognition and manufacturing quality, which is certainly difficult to replicate. However, the regional economic integration that Germany is in and has a big part in shaping the Germany's path looks like not sustainable currently. In comparison to the US, Germany seems to have managed to shift the bill due to its way of overcoming the problem of aggregate demand/realization but that does not mean that it can get away with it without bearing some part of it.

Modular architectures seems to offer an opportunity to ease and accelerate market entry for developing countries, as in China's case but that opportunity should be handled carefully, given the difficulties in capturing the value created, as in China's case and coping with its effects, as in the US.

Turkey should approach modular architectures and production cautiously. That does not mean that they should be avoided altogether but rather considered selectively when, particularly, they seem to be the only way of market entry and technology acquisition. Otherwise, modular architectures should be handled carefully.

REFERENCES

Ackroyd, S., (2012), *Economy, Class, Ideology and the Transformation of the Organisational Field in Britain and the USA: A Neo-Marxian View*, Online: http://www.britsoc.co.uk/media/39288/Ackroyd_Batt_Plenary_Paper.pdf.

Adams, J. (1983), Financial Subinfeudation and the Penchant for Real Investment, *Journal of Economic Issues*, 17(2): 485-94.

Ahn, H., (2012), *Value Theory in Cognitive Capitalism and Basic Income*, Online: http://courses.umass.edu/econ804/Ahn.pdf.

Andriessen, D. G. (2005), Value, valuation and Valorisation, in Swarte, S.(Ed.) Inspirerend innoveren; meerwaarde door kennis. Den Haag: Kvie, available at: http://www.openinnovation.eu/download/ValueValuationandValorisation.pdf.

Antonelli, C., Teubal, M. (2008), Knowledge intensive property rights and the evolution of venture capitalism, Journal of Institutional Economics, 4(2): 163-182.

Arrighi, G. (1994), *The Long Twentieth Century. Money, Power, and the Origins of Our Times*, London: Verso.

Arvidsson, A. (2005), Brands: A critical perspective, *Journal of Consumer Culture*, 5(2): 235-258.

Arvidsson, A. (2006a), *Brands: Meaning and Value in Media Culture*, London: Routledge.

Arvidsson, A., (2006b), *The ethical surplus and its monetization*, Online: www.unmediated.org/archives/2006/06/the_ethical_sur.php.

Arvidsson, A. and Colleoni, E. (2012), Value in Informational Capitalism and on the Internet, The Information Society, 28 (3): 135-150.

Backhaus, H.G. (1992), Between Philosophy and Science: Marx's Social Economy as

Critical Theory, in Bonefeld, W. et al. (eds), *Open Marxism*, vol. I, London: Pluto.

Badalian, L., and V. Krivorotov, (2011), Looking for a Single Root-Cause of Both Crises: The 2008 Crisis of Derivatives and the Unfolding European Debt Crisis. A New Reading of the Ricardian Law of Diminishing Returns, *Journal of Innovation Economics*, 8(2): 173–99.

Badalian, L., and V. Krivorotov, (2012), "A Financialized Monetary Economy of Production," by Andrea Fumagalli and Stefano Lucarelli: A Comment, *International Journal of Political Economy*, 41(1): 97–109.

Bailey, W. Bhandari, A. Faiz, S. Srinavasan, S. and Weeds, H., (2003), Unlocking the Value of Real Options, *Oilfield Review*, Winter 2003, Vol. 15(4): 4-19.

Baldwin, C. Y., K. B. Clark. 2006. Modularity in the design of complex engineering system. S. D. Braha, A. A. Minai, Y. Bar- Yam, eds. Complex Engineered Systems: Science Meets Technology. Springer, New York, 175–205.

Baldwin, C. Y. and J. Henkel (2011), The Impact of Modularity on Intellectual Property and Value Appropriation, Working Paper 12-040, Harvard Business School, Cambridge, MA,Online: http://www.hbs.edu/research/pdf/12-040.pdf.

Becker, J., Jäger, J., Leubolt, B. and R. Weissenbacher (2010), Peripheral Financialization and Vulnerability to Crisis: A Regulationist Perspective, *Competition and Change*, 14 (3-4): 225-247.

Bell, D. (1973), *The Coming of Post-Industrial Society: A Venture in Social Forecasting*, New York: Basic Books.

Beilharz P. (2004), The Globalization of Nothing: A Review Symposium of George. Ritzer's The Globalization of Nothing, *Thesis Eleven*, 76 (1): 103–114.

Berger, S. and the MIT Industrial Performance Center (2005), *How We Compete*, New York: Doubleday.

Berger, S. (2012), Toward a Third Industrial Divide?, in Paul Osterman (Ed.), *Economy*

and Society: Essays in Honor of Michael J. Piore, Cambridge, MA: MIT Press, 65-88.

Beunza, D. and D. Stark (2004), Tools of the Trade: The Socio-Technology of Arbitrage in a Wall Street Trading Room, *Industrial and Corporate Change*, 13(2): 369-400.

Boldyrev, I., and Herrmann-Pillath, C., (2012), *Hegel's 'Objective Spirit' and its Contemporary Relevance for the Philosophy of Economics*, Online: http://www.frankfurt-school.de/clicnetclm/fileDownload.do?goid=000000396049AB4.

Boulding, K.E. (1966), The Economics of Knowledge and the Knowledge of Economics, American Economic Review, 56(1/2): 1-13.

Boutang, Y. M., (2009), Are we all just Google's worker bees? available at: http://networkcultures.org/wpmu/query/2009/11/13/yann-moulier-boutang-asks-are-we-all-just-googles-worker-bees/comment-page-1/.

Braudel, F. (1984), *The Perspective of the World, Civilization & Capitalism 15th-18th Century*, Volume 3, NewYork: Harper&Row.

Brown C. (2005), Is there an institutional theory of distribution?, *Journal of Economic Issues*, 30(4): 915-31.

Bryan, D. and Rafferty, M., (2006), *Capitalism with Derivatives: A Political Economy of Financial Derivatives*, Capital and Class, London: Palgrave Macmillan.

Carchedi G., (2011), *Behind the Crisis: Marx's Dialectics of Value and Knowledge*, Leiden: Brill.

Castells, M. (2001), Information technology and global capitalism, in W. Hutton and A. Giddens. (eds.) *On The Edge: Living with global capitalism*, London: Vintage.

Cencini, A. (1995), *Monetary Theory, National and International*, London and New York: Routledge.

Cencini, A. (2001), *Monetary Macroeconomics, a New Approach*, London and New York: Routledge.

Cencini, A. (2005), *Macroeconomic Foundations of Macroeconomics*, London and New York: Routledge.

Cencini, A. (2010), For a New System of International Payments, *Banks and Bank Systems*, 5(1):47-57.

Chiliatto-Leite, M. V., P. Rossi and G. S. Mello (2011), *The fourth dimension: The derivatives in a financialized capitalism*, Online: http://daadpartnership.htw-berlin.de/fileadmin/Workshops/2011_Campinas/Papers/Leite_Rossi_Mello_The-fourth-dimension.pdf.

Clark, A., and Chalmers, D. J., (1998), 'The Extended Mind', *Analysis*, 58(1): 7-19.

Cockshott, W. P., Cottrell, A. F., Michaelson, G. J., Wright, I. P., and V. M. Yakovenko (2009), *Classical Econophysics*, London: Routledge.

Commons, J. R., (1989[1934]), *Institutional Economics: Its Place in Political Economy*, Rutherford, M.(Ed.), News Brunswick, N.J : Transaction Publishers.

Crisafi, A. and Gallagher S., (2010), Hegel and the extended mind, *Artificial Intelligence & Society*, 25 (1): 123-29.

Crotty, J. (1990), Owner-management conflict and financial theories of investment instability: a critical assessment of Keynes, Tobin, and Minsky, *Journal of Post Keynesian Economics*, 12(4): 519-542.

Crouch, Colin (2009), Privatized Keynesianism: An Unacknowledged Policy Regime, *British Journal of Politics and International Relations*, 11(3): 382-399.

Curry, J., (1997), *The Dialectic of Knowledge-in-Production:Value Creation in Late Capitalism and the Rise of Knowledge-Centered Production*, Electronic Journal of Sociology, Online: http://www.sociology.org/content/vol002.003/curry.html.

Dallery, T., (2009), Post-Keynesian Theories of the Firm under Financialization, *Review of Radical Political Economics*, 41(4): 492-515.

D'Aveni, R.A., (2010), *Beating the Commodity Trap*, Boston MA: Harvard Business School Press.

Dale, G. (2010), Karl Polanyi: The Limits of the Market, Cambridge: Polity Press.

Davis, S., and Meyer, C., (1998), *Blur: The Speed of Change in the Connected Economy*, Reading, MA: Addison-Wesley.

Davis, J. (2002), Speculative Capital, mimeo, available online at: http://www.gocatgo.com/texts/speccap4.pdf

Davis, J. (2003), Speculative Capital in the Global Age, *Race & Class*, 44 (3): 1-22.

Deleuze, G. (1995), Postscript on Control Societies, in Negotiations, Columbia University Press, New York, NY: 177-182.

Deutschmann, C., (2011), A pragmatist theory of capitalism, *Socio-Economic Review*, 9 (1): 83-106.

Dillard, D. (1980), A monetary theory of production: Keynes and the Institutionalists, *Journal of Economic Issues*, 14 (2): 255–73.

Dyer-Witheford, N. (2005) 'Cognitive Capitalism and the Contested Campus', in G. Cox and J. Krysa (eds) *Engineering Culture: On 'The Author as (Digital) Producer'*. New York: Autonomedia.

Dore, R. (2008), Financialization of the global economy, *Industrial and Corporate Change*, 17(6):1097-1112.

Egidi , M. and Marengo, L. (2004), Near-decomposability, Organization, and Evolution: Some Notes on Herbert Simon's Contribution, In: Augier, M., March, J. G. (Eds.), Models of a Man: Essays in Memory of Herbert A. Simon, Cambridge, MA: The

MIT Press, 335-350.

Ernst, D. (2005), Limits to Modularity: reflections on recent developments in chip design, *Industry and Innovation*, 12(3): 303-335.

Erturk, I. (2003), Governance or Financialisation: The Turkish Case, *Competition and Change*, 7(4): 185-204.

Fleissner, P.K., (2010), From the Appearance of the Economy to Its Essence and Back: Methodological Preconditions on How to Analyze Crises, *World Review of Political Economy*, 1(3): 388-406.

Fraser, I., (1997), Two of a Kind: Hegel, Marx, Dialectic and Form, *Capital & Class*, 61: 81-106.

Fratianni, M., F. Spinelli (2006), Italian city-states and financial evolution, *European Review of Economic History*, 10(03): 257–78.

Fuchs, C. (2012), Capitalism or Information Society? The Fundamental Question of the Present Structure of Society, European Journal of Social Theory, OnlineFirst article published on November 20, 2012.

Fujimoto, T. (2007), Architecture-based Comparative Advantage: A Design Information View of Manufacturing, *Evolutionary and Institutional Economics Review*, Vol. 4(1): 55-112.

Fujimoto, T. (2008), Architecture-based Comparative Advantage in Japan and Asia, In: Mitsuishi, M., Ueda, K., Kimura, F. (eds.) *Manufacturing Systems and Technologies for the New Frontier*, Springer, London, 7-10.

Gallegati, M., Keen, S., Lux, T., Ormerod, P. (2006), Worrying Trends in Econophysics, *Physica A*, 370(1): 1-6.

Gardiner, G. (2004), The Primacy of Trade Debts in the Development of Money, In: Wray (ed.)*Credit and State Theories of Money: The Contributions of A. Mitchell Innes*, Cheltenham: Edward Elgar, 128-172.

Geanakoplos, J. (2010), The Leverage Cycle, in D.Acemoglu, K. Rogoff, and M. Woodford (eds.), *NBER Macro-economics Annual 2009*, vol. 24, University of Chicago Press: Chicago, 1-65.

Gould, C. (1978), *Marx's Social Ontology: Individuality and Community in Marx's Theory of Social Reality*, Cambridge, MA: MIT Press.

Graeber, D. (2009), Debt: The first five thousand years, *Mute*, 12, http://www.eurozine.com/articles/2009-08-20-graeber-en.html.

Guttmann, R. (2008), A Primer on Finance-Led Capitalism and Its Crisis », *Revue de la régulation*, n°3/4, http://regulation.revues.org/index5843.html.

Grabel, I. (1995), Speculation-Led Economic Development: A Post-Keynesian Interpretation of Financial Liberalization Programs, International Review of Applied Economics, 9(2), pp. 127-149.

Hakken, D., (2003), *The knowledge landscapes of cyberspace*, New York: Routledge.

Hardt, M. and A. Negri (2000), *Empire*, Cambridge, MA: Harvard University.

Harvey, D. (2003), *The new imperialism*, Oxford University Press, Oxford.

Harvey, D. (2005), *A Brief History of Neoliberalism*. Oxford: Oxford University Press.

Haug, W.F., (2005), *New Elements for a Theory of Commodity Aesthetics*, Online: http://www.wolfgangfritzhaug.inkrit.de/documents/NewElementsCommodityAesthetics.pdf.

Hilferding, R. (1981[1910]), *Finance Capital: A Study of the Latest Phase of Capitalist Development*, London: Routledge.

Hoca, B., (2012), A suggestion for a new definition of the concept of finance capital using Marx's notion of 'capital as commodity', *Cambridge Journal of Economics*,

36(2): 419-434.

Hornborg, A., (2003), The Unequal Exchange of Time and Space: Toward a Non-Normative Ecological Theory of Exploitation, *Journal of Ecological Anthropology*, 7(1): 4-10.

Hudis, P., (2005), *Directly and Indirectly Social Labor: What Kind of Human Relations Can Transcend Capitalism?*, *US Marxist-Humanists*, Online: http://www.internationalmarxisthumanist.org/uploads/hudis-article-Directly-and-Indirectly-Social-Labor.pdf.

Hudson, M. (1995), *The Lost Tradition of Biblical Debt Cancellations*, New York: Henry George School of SocialScience.

Hudson, M., (2012), *Veblen's Institutionalist Elaboration of Rent Theory*, Jerome Levy Economics Institute Working Paper No. 729, Online: http://www.levyinstitute.org/pubs/wp_729.pdf.

Ingham, G. (1999), Money is a Social Relation, In: Fleetwood S. (ed.) *Critical Realism in Economics*, London: Routledge, 103-124.

Ingham, G. (1999), Capitalism, Money and Banking: A Critique of Recent Historical Sociology, *British Journal of Sociology*, 50(1): 76–96.

Ingham, G. (2003), Schumpeter and Weber on the Institutions of Capitalism: Solving Swedberg's "Puzzle", *Journal of Classical Sociology*, 3(3):297–309.

Ingham, G. 2004, *The Nature of Money*, Cambridge, Polity.

Ingham, G. (2004). The emergence of capitalist credit money, in: Wray, L. (ed.), *Credit and State Theories of Money*, Cheltenham and Northampton: Edward Elgar, 173–222.

Ingham, G. (2008), *Capitalism*, Cambridge: Polity.

Ingham, G. (2011), The Ontology of Money, *Twill*, 14: 15-22.

Jeon, H., (2011), The Value and Price of Information Commodities: An Assessment of the South Korean Controversy, in Paul Zarembka, Radhika Desai (ed.) *Revitalizing Marxist Theory for Today's Capitalism (Research in Political Economy, Volume 27)*, Emerald Group Publishing Limited: 191-222.

Jessop, B. (2007), Knowledge as a fictitious commodity: insights and limits of a Polanyian analysis, In A. Bugra & K. Agartan (Eds.), Reading Karl Polanyi for the 21st century (15–133). New York: Palgrave.

Keen, S., (2001), Minsky's Thesis: Keynesian or Marxian? in Bellofiori, R. and Ferri, P. (eds), Financial Keynesianism and Market Instability, Aldershot: Edward Elgar: 106–20.

Keen, S., (2002), A classical foundation for the non-neoclassical economics of the 21st century, Online: http://ces.univ-paris1.fr/membre/seminaire/heterodoxies/Pdf/Keen02.pdf.

Keen, S., (2009), A Marx for Post Keynesians, Online: http://www.debtdeflation.com/blogs/wp-content/uploads/papers/Amfpk.pdf.

Keynes, J. M. (1971-89), The Collected Writings of John Maynard Keynes, vols. I-XXX, London: Macmillan.

Keynes, J. M. (2008 [1936]), The General Theory of Employment, Interest, and Money, Atlantic Publishers, New Delhi.

Kindleberger C.P. and R.Z. Aliber (2005), *Manias, Panics, and Crashes: A History of Financial Crises*, Hoboken, NJ: Wiley.

Kingston, W. (2000), A Spectre is Haunting the World: The Spectre of Global Capitalism, Journal of Evolutionary Economics, 10(1/2): 83-108.

Kiyotaki, N. and J. Moore (2001), Evil Is the Root of All Money, *Clarendon Lectures*, Oxford, Mimeo.

Knafo, S. (2009), Liberalisation and the Political Economy of Financial Bubbles, *Competition and Change*, 13(2): 129-45.

Kockelman, P., (2007), From status to contract revisited, *Anthropological Theory*, 7(2): 151–76.

Kogut, B., (2008), *Knowledge, Options & Institutions*, Oxford: OxfordUniversity Press.

Krippner, G. R., (2005), The financialization of the American economy, *Socio-Economic Review*, 3(2): 173-208.

Lapavitsas, Costas (2009), Financialisation Embroils Developing Countries, *Papeles de Europa*, 19 (2009): 108-139.

Lapavitsas, C., (2011), Theorizing Financialization, *Work, Employment and Society*, 25(4)611–626.

Latour, B., (1994), On technical mediation, *Common Knowledge*, 3(2): 29-64.

Lavoie, M. (1992), Foundations of Post Keynesian Analysis, Aldershot, Edward Elgar.

Lazonick, W. & O'Sullivan, M. (2000), Maximising shareholder value: A new ideology for corporate governance, Economy and Society, 29(1): 13-35.

Lazonick, W. (2005), *Evolution of the new economy business model*, available at: www.thebhc.org/publications/BEHonline/2005/lazonick.pdf.

Lazzarato, M. (2007), Strategies of the political entrepreneur, *SubStance*, 36(1): 87-97.

Lefebvre, H. (1991) The Production of Space: Oxford: Blackwell.

Nesvetailova, A. (2010), The Crisis of Invented Money: Liquidity Illusion and the Global Credit Meltdown, *Theoretical Inquiries in Law*, 11(1): 125-147.

Marengo, L., C. Pasquali and M. Valente (2005), Decomposability and Modularity of Economic Interactions, in Callebaut W. and Rasskin-Gutman D. (eds.), *Modularity. Understanding the Development and Evolution of Natural Complex Systems*, Cambridge, MA., MIT Press, 383-408.

Marx, K. (1977), *Capital: a critique of political economy*, Vol. III. New York: International Publishers.

Marx, K. (1991[1894]), Capital, Volume 3, London: Penguin Classics.

Marx, K., (1863), Theories of Surplus Value, Progress Publishers, Online: http://www.marxists.org/archive/marx/works/1863/theories-surplus-value/.

Marx, K., (1973[1857]), *Grundrisse*, Harmondsworth: Penguin, Online: www.marxists.org/archive/marx/works/1857/grundrisse/

Marx, K., (1976[1867]), Capital, Volume 1, London: Penguin Classics.

Marx, K., (1967[1867]), Capital. Volume 1, New York: International Publishers, Online: www.marxists.org/archive/marx/works/1867-c1/ch01.htm#S3a.

Marx, K., (1978[1884]), Capital, Volume 2, London: Penguin Classics.

Marx, K., (1991[1894]), Capital, Volume 3, London: Penguin Classics.

McDermott, J., (2004), *Economics in Real Time: A Theoretical Reconstruction*, Ann Arbor: University of Michigan Press.

McKinsey Global Institute (2009), *Global Capital Markets: Entering a New Era*, London: McKinsey and Company.

Mellor, M. (2010), *The Future of Money: From Financial Crisis to Public Resource*, London: Pluto Press.

Mészáros, I., (1970), Marx's Theory of Alienation, Online: http://www.marxists.org/archive/meszaros/works/alien/index.htm.

Millberg, W. (2008), Shifting sources and uses of profits: Sustaining U.S. financialization with global value chains, *Economy and Society*, 37(3): 420-451.

Milberg W., Winkler D. (2010), Financialisation and the dynamics of offshoring in the USA, *Cambridge Journal of Economics*, 34 (2): 275-293.

Minsky, H. P., (2008 [1986]), *Stabilizing an Unstable Economy*, New York: McGrawHill.

Minsky, H. P., (1992), *The Financial Instability Hypothesis*, Jerome Levy Economics Institute Working Paper No. 74, Online: http://www.levyinstitute.org/pubs/wp74.pdf.

Neftci, S., (2008), *Principles of Financial Engineering*, Elsevier Academic Press: New York.

Niman, N.B., (2010), Henry George and the development of Thorstein Veblen's theory of capital, *Journal of the History of Economic Thought*, 32(3): 419-31.

Nitzan, J., and Bichler, S., (2009), *Capital as Power: A Study of Order and Creorder*, London and New York: Routledge.

Nuri, V. Z. (2002), *Fractional Reserve Banking as Economic Parasitism*, mimeo, available online at: http://www.thetransitioner.org/wiki/tiki-index.php?page=Vladimir+Nuri.

Orléan, A. (2005), The Self-Referential Hypothesis in Finance, in J. P. Touffut (ed.), The Stability of Finance in Europe, Paris: Albin Michel, available at: http://www.pse.ens.fr/orlean/depot/publi/CHA2005tSELF.pdf.

Orsi, F. & B. Coriat (2006), 'The new role and status of intellectual property rights in contemporary capitalism', *Competition and Change*, 1(2): 162–179.

Özveren, E. (2010), Karl Polanyi's Conception of Institutions, Mimeo.

Pagano U. and M. A. Rossi. (2009), The crash of the knowledge economy, *Cambridge Journal of Economics*, 33(4): 665-683.

Pagano, U. and M.A. Rossi (2009) The Crash of the Knowledge Economy, Cambridge Journal of Economics, 33(4), 665–83.

Parnas, D. L. (1972), On the criteria to be used in decomposing systems into modules. Communications of the ACM, 15 (12): 1053-1058.

Pasquinelli, M. (2008), Animal Spirits: A Bestiary of the Commons, Rotterdam: NAi Publishers / Institute of NetworkCultures.

Paulani, L. M., (2009), The Autonomization of the Truly Social Forms in Marx`s Theory: Comments on Money in Contemporaneous Capitalism, Online: http://actuelmarx.u-paris10.fr/cm6/com/MI6_Eco_Paulani_Leda.doc

Pavitt, K. (2005), Specialization and system integration: Where manufacture and services still meet. In: Prencipe, A., Davies, A. & Hobday, M. (eds) The Business of Systems Integration, Oxford and New York: Oxford University Press, 78 – 91.

Pedersen, C., (2001), Derivatives and downside risk, *Derivatives Use, Trading and Regulation*, 7(3): 251–268.

Peirce, C. S. (1901), MS 692, quoted in Sebeok, T. (1981), "You Know My Method:" In Sebeok, T. "The Play of Musement." Bloomington, IA: Indiana.

Penrose, E. (2009 [1959]) The Theory of the Growth of the Firm, Oxford, UK: Oxford University Press.

Perelman, M. (1999), Marx, devalorisation, and the theory of value, *Cambridge Journal of Economics*, 23 (6): 719-728.

Perelman, M. (2003), Intellectual property rights and the commodity form: New

dimensions in the legislated transfer of surplus value, *Review of Radical Political Economics*, 35(3): 304-311.

Perez, C. (2002), Technological Revolutions and Financial Capital. The Dynamics of Bubbles and Golden Ages, E. Elgar, Cheltenham.

Peters, M., & Bulut, E. (2011). Cognitive capitalism, education, and digital labor. New York: Peter Lang.

Phillips, K. (1993), *Boiling Point: Democrats, Republicans, and the Decline of Middle Class Prosperity*, New York: Random House.

Phillips, K. P. (1994), *Arrogant Capital: Washington, Wall Street, and the Frustration of American Politics*, Boston: Little, Brown.

Polanyi, K. (2001 [1944]), *The Great Transformation: The Political and Economic Origins of Our Time*, Boston, MA, Beacon Press.

Porter, M. E. (1992), Capital disadvantage: America's failing capital investment system, Harvard Business Review, 70(5): 65-82.

Reati, A. (2000), The complementarity of the Post Keynesian and Marxian paradigms: The case of labor value. Cahiers économiques de Bruxelles, 168(4): 481–510.

Reati, A. & Toporowski, J. (2004), An Economic Policy for the Fifth Long Wave, *BNL Quarterly Review*, 57(231): 395-437.

Rieu, D., (2009), *Value and Exploitation in the Networked Economy*, Second Conference of International Forum on Comparative Political Economy of Globilization.

Ritzer, G. and Ryan, M., (2002), The Globalization of Nothing, Social Thought & Research, 25 (1–2): 51-81.

Rodrik, D. (2012), The Turkish Economy after the Global Financial Crisis, *Ekonomi-tek*, 1 (1): 41-61.

Rossi, S. (2006), The Theory of Money Emissions, in Arestis, P. and Sawyer, M.(eds), *A Handbook of Alternative Monetary Economics*, Edward Elgar, Cheltenham and Northampton, 121–138.

Rossi, S. (2007), *Money and Payments in Theory and Practice*, London and New York: Routledge.

Rossi, S. (2010), The 2007-9 Financial Crisis: An Endogenous-money View, *Studi e Note di Economia*, (15)3: 413-430.

Rotstein, A., (2006), The market, mind and rationality. From Vienna to Paris and back, *Revue européenne des sciences sociales*, 44(134): 259-269.

Rotta., T.N. And Teixeira, R.A., (2011), A Marxian Theory of Financialization, Online: http://anpec.org.br/encontro/2011/inscricao/arquivos/000-a0309b6d38271a4c9f03cd6110c16d0e.docx.

Rotta., T.N. And Teixeira, R.A., (2012), Valueless Knowledge-Commodities and Financialization, Review of Radical Political Economics, forthcoming.

Rullani E. (2002), *From development through accumulation to development through propagation: Small enterprises, clusters and social capital in the new emerging Europe*, East West Cluster Conference, 28-31 October 2002, OECD, LEED Programme, Udine, Italy.

Rullani, E., (2007), Art and Economy: Value Creation in Cognitive Capitalism, in *Producta50*, YProductions, Barcelona: 206-258.

Schmid, A. A. (2004), *Conflict and Cooperation: Institutional and Behavioral Economics*, Blackwell, Oxford.

Schumpeter, J. (1939), Business Cycles (2vols), McGraw-Hill, New York.

Serfati, C. (2008), Financial Dimensions of transnational corporations, global value chain and technological innovation, Journal of Innovation Economics, 2008/2-n°

2: 35-61.

Simmel, G., (2004 [1900]), The Philosophy of Money, London: Routledge.

Simon, H. (1962), The Architecture of Complexity, Proceedings of the American Philosophical Society, 106(6): 467-82.

Smith, T., (1993), *Dialectical Social Theory and its Critics: from Hegel to Analytical Marxism and Postmodernism*, State University of New York Press, Albany, NY.

Smith, John, 2012, "Outsourcing, Financialisation and the Crisis", International Journal of Management Concepts and Philosophy, 6(1/2):19 – 44.

Spiegel Online, (2010, March 12), Spiegel Online International, available at: http://www.spiegel.de/international/world/0,1518,682420,00.html.

Sraffa, P., (1960), *Production of Commodities by Means of Commodities*, Cambridge University Press, Cambridge, UK.

Steinfeld, E. S. (2010), *Playing our game: Why China's rise doesn't threaten the West*, Oxford: Oxford University Press.

Stockhammer, E. (2004), Financialization and The Slowdown of Accumulation, *Cambridge Journal of Economics*, 28(5): 719-741.

Stockhammer, E. (2008). Some stylized facts on the finance-dominated accumulation regime. *Competition and Change*, 12(2): 189-207.

Sturgeon, T., (2002), Modular Production Networks: A New American Model of Industrial Organization, *Industrial and Corporate Change*, 11(3): 451-96.

Subedi, D., (2005), Real Option As The Tool For Valuation And Strategic Guidance For The Post-Industrial Organizations, Journal of Business & Economics Research (JBER), 3(4): 89-96, Online: http://journals.cluteonline.com/index.php/JBER/article/view/2769/2817.

Teixeira, R. A., and T. N. Rotta (2009) Modern rent-bearing capital: New enclosures, knowledge-rent and the reproduction of valueless commodities, Unpublished manuscript, University of Sao Paulo.

Thomasberger, C., (2003), Freedom and Responsibility, Online: http://people.f3.htw-berlin.de/Professoren/Thomasberger/pdf/Polanyi4.pdf.

Thomasberger, C., (2005), The Polarity of Human Freedom and the Self-Regulating Market, Online: http://people.f3.htw-berlin.de/Professoren/Thomasberger/pdf/Polanyi3.pdf.

Toporowski, J., (2009), The economics and culture of financial inflation, *Competition and Change*, 13(2): 145-156.

Total Wall Street Bailout Cost (2010), *SourceWatch*, Center for Media and Democracy: http://www.sourcewatch.org/index.php?title=Total_Wall_Street_Bailout_Cost.

Truijens, O. (2003), A Critical Review of the Resource-based View of the Firm, University of Amsterdam, Netherlands, Sprouts Working Papers on Information Systems 3(6), Online: http://sprouts.aisnet.org/146/1/2003-16.pdf.

van Ark, B., Gupta., A. and A.A. Erumban (2011), Measuring the Contribution of ICT to Economic Growth, In: B. van Ark (ed.), The Linked World: How ICT Is Transforming Societies, Cultures, and Economies, The Conference Board, 5-8.

Vandenberghe, F. (2008), Deleuzian Capitalism, *Philosophy & Social Criticism*, 34(8): 877-903.

Varnelis, K. (2010), Space: Pervasive Simultaneity and the Financialization of Everyday Life, Online: http://varnelis.net/book/export/html/1249.

Veblen, T. B. (1904), *The theory of business enterprise*, New York: Scribner.

Vercellone, C., (2010), The Crisis of the Law of Value and the Becoming-Rent of Profit, in *Crisis in the Global Economy*, edited by Fumagalli A. & Mezzadra S., New York: Semiotext(e), 85-118.

Virno, P., (2007), General intellect, Historical Materialism, (15)3: 3-8.

Waller, W. T. (2007), Veblen's missing theory of markets and exchange, or can you have an economic theory without a theory of market exchange?, in Janet T. Knoedler, Robert E. Prasch and Dell P. Champlin (eds), Thorstein Veblen and the Revival of Free Market Capitalism, Cheltenham, UK and and Northampton, MA, USA: Edward Elgar, 87-126.

Wray, L. R., (1994), Government Deficits, Liquidity Preference, and Schumpeterian Innovation, *Economies et Societés*, No. 1-2: 39-59.

Weber, M. (2005[1905]), *The Protestant Ethic and the Spirit of Capitalism*, London/New York: Routledge.

Yakovenko,V. M. (2010), Statistical mechanics of money, debt, and energy consumption, Science and Culture, 76 (9-10): 430-436.

Yeldan, E., (2009), On the Nature and Causes of the Collapse of the Wealth of Nations, 2007-2008: The End of a Façade Called Globalization, Working Papers wp197, Political Economy Research Institute, University of Massachusetts at Amherst.

APPENDICIES

APPENDIX A

CURRICULUM VITAE

PERSONAL INFORMATION

Surname, Name: Satık, Erdoğdu
Nationality: Turkish (TC)
Date and Place of Birth: 26 November 1962, Gelibolu
Marital Status: Married
Phone: +90 312 204 63 91
Fax: +90 312 212 87 86
email: erdogdu.satik@hazine.gov.tr

EDUCATION

Degree	Institution	Year of Graduation
MA	Brandeis University, International Economics and Finance	1994
BS	METU, Management	1986
High School	Gelibolu Lisesi, Gelibolu, Çanakkale	1980

WORK EXPERIENCE

Year	Place	Enrollment
2003-Present	Undersecretariat of Treasury	Expert
2000-2003	Turkish Embassy, London	Economic Counsellor
1987-2000	Undersecretariat of Treasury	Expert
1986-1987	Aselsan	Management Accountant

APPENDIX B

TURKISH SUMMARY

BİLGİ VE FİNANSALLAŞMANIN KESİŞEN YOLLARI

2007 yılının ikinci yarısında başlayan ekonomik kriz sona ermek bir yana giderek yayılmakta ve derinleşmektedir. ABD'deki konut fiyatlarındaki düşüşlerin yol açtığı ipotekli konut kredileri krizi kısa zamanda bir mali krize dönüşmüş ve ABD dışına yayılmaya başlamıştır.

2007-2008 mali krizi öncesinde, küresel ekonomik faaliyetler bilgi üretimi dışında üretimin Uzak Doğu'da ve özellikle Çin'de yoğunlaştığı, bilgi üretiminin finans ile birlikte, ABD ve İngiltere'nin başı çektiği Batılı ülkelerce üstlenildiği, bir iş bölümü içindeydi. Ülke ve firma düzeyinde kendi kendine yeterliliğin bir yansıması olarak üretim süreçlerinin çoğunun içselleştirildiği savaş sonrası dünya ekonomik düzeninin tersine, 1970'lerin başında Bretton Woods sisteminin çöküşü sonrası, üretimin hem coğrafyasının çeşitlendiği hem de giderek uluslararasılaştığı bir dönem başladı. Üretim ve iş yapma süreçlerinin küresel olarak yeniden yapılandırılması ve örgütlenmesi literatürde önceleri post-Fordizm, daha sonra da uzun bir zaman, bilgi toplumu kavramlarıyla karşılandı. Bu manzaranın çok sonraları, 90'larda, kazandığı finans tonu ile kullanılan kavramlar da, finans(al) kapitalizm örneğinde olduğu gibi finansla ilintili olmaya başladı ve finansın yükselişini vurgulayan finansallaşma gibi yeni bir kavram da ortaya çıktı.

Kriz sonrası krize ilişkin analizlerle birlikte, hem daha önceki post-Fordizm ya da bilgi toplumu gibi kavramlar sanki hafızalardan silinmiş gibi, hem de ekonomik faaliyetlerin küresel boyutta yeniden yapılandırılması ve örgütlenmesinde bilişim ve bilgi teknolojilerinin hiç payı yokmuş gibi, finansla ve finansallaşma ile ilgili nitelemeler ve suçlamalar daha da yoğunlaştı. Kriz sonrası oluşan krize ilişkin literatürde yayınlanan

makalelerden sadece birisi, Pagano ve Rossi'ye ait 'Bilgi Ekonomisinin Çöküşü' (2009), bilgi ekonomisini krizde sorumlu görüyordu. Çok değil, 2007'deki krizden sadece altı yıl önce, 2007'deki krizin neredeyse provası, bir anlamda da öncüsü gibi olan ve bilgi ile finansın harmanlanmasının en tipik örnek yeni ekonomi/dot.com balonunun patladığı da unutulmuşa benziyordu.

Burada amaç yalnızca bir dengesizliğe işaret etmek değil, bu bakış açısının içerdiği önemli bir mantık hatasına dikkat çekmektir: Finans uzun bir sürecin sadece belli bir aşamasıysa, belki de son, aşamasıysa, önceki aşamalar ve bunların finansal aşamaya dönüşümü göz ardı edilmiş olmaktadır. Oysa ki, 1980'lerin başından krize kadar, küresel yeniden yapılanma sürecinin temel sürükleyicisi 'bilişim paradigması'dır (Berger, 2012). Bir başka deyişle, bilişim sektörü sadece endüstriyel değişime ilişkin bakışı değil, modülerleştirme ve onun uzantısı yerleşim kararlarına ilşkin temel önermesiyle ekonominin tümünün nasıl yapılandırılması gerektiği konusunda temel yaklaşımı belirler hale gelmişti (Berger, 2012). Temel paradigma olmasının yanında, bilişim ve iletişim teknolojileri küresel ekonomik süreçleri hem mümkün kıldı hem de bu süreçlerin en somut biçimde bizzat taşıyıcısı oldu. O zaman, finansı bu kadar öne çıkaran açıklamalar hem bütünün büyük bir bölümünü hem de sürecin asıl sürükleyicisini gözden kaçırmakta olabilir.

Bu noktadan hareketle, bu tez bilgi ve finans arasındaki ilişkiyi sorgulayarak, ekonomi/toplum/kapitalizmi betimlemede son zamanlarda kullanılan bu iki en yaygın niteleme arasında bağ kuran bir açıklama ileri sürmektedir. Tezin nihai amacı, günümüzün ekonomik değer yaratma süreçlerini, görece olarak daha yeni olan finansallaşma bağlamında yeniden ele almak ve değerlendirmektir. Bilgi ve finansı biribirine bağlayan bu açıklama, iki katmanlı olarak geliştirilmektedir. İlk katman, bilginin değerine ilişkin mevcut görüşlerin ayrı düştükleri noktadan yola çıkmaktadır. Yüksek geliştirme maliyetlerine karşılık çok düşük çoğaltma ve üretim maliyeti olan yazılım ya da dijital içerik gibi bilişim ürünleri üzerinden elde edilebilen yüksek karların kökeni ve niteliği, bilginin değerine ilişkin görüşlerin temel ayrışma noktasını oluşturmaktadır. Sermaye değer kuramanının bilgi ile güncellenmiş hali olan bu bakış,

yüksek karların altında yatan nedeni bilginin kendisi, yani, bilişim ürünlerindeki (daha yüksek) bilgi içeriği olarak görmektedir. Üretim faktörlerin değer bağlamında belirleyiciğini kabul etmeyen alternatif görüşe göre ise, sözkonusu yüksek karlar yapay bir kıtlık sonucunda elde edilen haksız kazanç, bir başka deyişle, ranttır.

Bilişim ürünlerindeki yüksek kazançlara ilişkin bu düğümü sistemlerin bölümlenebilirliği ya da modülerlik ilkesi ışığında çözmek mümkündür. Modülerlik ya da sistemlerin bölümlenebilirliği, parçaların birbirleri ve sistemin bütünü ile ilgisizlik durumu olup, parçaların ve bütünün sistemlerin tasarım bilgilerine gerek olmaksızın işlevlerini yerine getirebilmeleri özelliğidir. Başka bir deyişle, modülerlik ya da sistemlerin bölümlenebilirliği, sistemlerin tasarım bilgilerinin gizliliğini öngörmektedir. Modülerliğin hem kendisini tanımlayan hem de kendiliğinden ortaya çıkan bir yan ürünü olan bu gizli tasarım bilgisi, aslında bilginin değerinin de kaynağını oluşturmaktadır. Bilişim ürünlerindeki yüksek kazançlar, modüler yapılara içkin, gömülü, dolayısıyla da saklı ve gizli, tasarım bilgisi sonucu oluşan yapay kıtlığın yarattığı rantlardır.

Sistemlerin bölümlenebilirlik ilkesi ışığında tasarlanması sonucu ortaya çıkan modüllerin, sistemlerin gelecekte evrilebileceği alternatifler olarak algılanması ise finansta gerçek opsiyonlar denen bakış açısına denk gelmektedir. Bilişim ürünleri üretiminin giderek bir prototip ve bunu izleyen çoğaltma aşamalarından oluşan bir sürece dönüştüğü göz önüne alınırsa, bu iki aşamalı yapının ilk aşaması finanstaki opsiyon yaratma aşamasına karşılık düşmektedir. Bu bakışla, prototip, ya da çoğaltma aşaması için gerekli bilginin üretildiği ilk aşama ile finanstaki opsiyon yaratmanın temel mantıklarının aslında birbirlerinden pek farklı olmadığı da ileri sürülebilir hale gelmektedir. İki sürecin temel mantıklarındaki bu paralellik ise, bu tezde geliştirilen iki katmanlı açıklamanın üst katmanını oluşturmaktadır. Böylece, bilgi ve finansın birlikteliklerinin, bir tesadüften ziyade, iki sürecin temel mantıklarındaki paralellikten kaynaklandığı öne sürülebilir.

Bilişim paradigmasının temelinde yatan modülerleştirme, iş yapma süreçlerinin de tasarım ve uygulama aşamaları etrafında yeniden yapılandırılarak bölünmesini ve birbirinden bağımsız hale gelen ürün tanımlama ve geliştirme, araştırma ve geliştirme,

tasarım ve üretim gibi işlevlerin dünyanın farklı yerlerinde uygulamaya aktarımını mümkün kılmaktadır. Karşılaştırmalı üstünlükler çerçevesinde, eğitim düzeyi görece yüksek çalışan nüfusları ile gelişmiş ülkelerin tasarımda, daha düşük eğitimli az gelişmiş ekonomilerin, standart hale gelen ve sürekli kendini tekrarlaması nedeniyle fazla bir beceri ve tecrübe gerektirmeyen uygulama ya da üretim işlevlerinde yoğunlaştığı yeni bir işbölümü ortaya çıkmaktadır.

İş yapma süreçlerinin bilişim paradigması altında, modüler bir anlayışla küresel olarak yeniden yapılandırılarak konuşlandırılması ardında doldurulması zor boşluklar bırakmakta, işleri dünyanın başka bölgelerine kaydırılanların işşizlikleri nedeniyle toplam talepte kayıplar ve buna devletlerin kalıcı ve temelli makro çözümler getirememesi ya da getirmeme inadı ise bireylerin boçlanarak kendi çözümlerini oluşturmalarına yol açmaktadır. 'Özelleştirilmiş Keynescilik' olarak da adlandırılan bu bireysel temelli, özel çözümler aslında finansallaşmanın bir başka görünümüdür. 2007-8 krizi, geçmişteki Keynesgil talep yönetimine benzer sonuçlar doğuran bu bireysel temelli özel çözümlerin çok sürdürülebilir olmadığını, dolayısıyla da modüler anlayışın kapsama alanındaki bir başka kısıtı da ortaya koymuştur.

Bu tezin temel katkısı, bilgi ve finansallaşma arasında, modülerleştirme kavramı üzerinden bir bağ kurmaktır. Kurulan bu bağla, finansallaşmanın aslında modüler yapılara içkin, gömülü, dolayısıyla da saklı ve gizli, bilgiye ilişkin artığın sürekli yenilik yoluyla yeniden üretimi ve elde edilmesine yönelik olarak kurgulu bir ekonominin yansıması ve sonucu olduğu ortaya çıkmaktadır.

Finansallaşma

Finansallaşma kavramının özünde 'gerçek' ya da 'olması gereken' değerlerden sapma ya da kopuş algısı yatmaktadır. Sermayenin birisi reel diğeri finansal olan iki farklı dolaşım kanalı, çok önceleri Hilferding (1981[1910], 113) tarafından yapıldığı gibi birlikte ele alındığında, finansal olan kanal reel kanalın bir sonucu ya da yansıması olması gereği nedeniyle, ikisi arasında çok farklılık bulunmaması gerekmektedir.

M – C - M’ ...
|
S
|
M’
.
.
.

Ancak, gerçek hayat genellikle bu beklentiyle örtüşmemekte, finansalın reelden sapması bazan aşırı düzeylere ulaşabilmektedir. Örneğin, 1980 yılında Dünyanın tümü için mali varlıkların hasılaya oranı 1.2 iken, 2000 yılından itibaren bu değer 3'e sıçramış ve 2000'li yılların tümünde bu seviyede kalabilmiştir. Bu kopukluk haline ilişki belli bir farkındalığın bulunduğunu, Marx'ın hayali sermaye kavramında olduğu gibi, çeşitli yazarlarda gözlemlemek mümkündür. Ancak bu duruma ilişkin özel bir kavramın, finansallaşma, ortaya çıkması 1990'lı yılları bulmuştur. Literatürde, finansallaşma kavramını ilk kez kimin kullandığına ilşkin kesin bir bilgi olmamakla bilikte, Kevin Phillips'in 1993 yılında basılan 'Boiling Point' adlı kitabı, kavrama, 'reel ve finansal ekonomiler arasındaki uzunca süren ayrışma olarak tanımlayarak, yer vermektedir. Arrighi de 1994 yılında basılan 'The Long Twentieth Century' adlı kitabında, finansallaşma kavramını, Braudel'in finansal genişleme kavramının yerine kullanmaktadır. Finansallaşma kavramı ile finansal piyasa ve kurumların ekonomideki önem ve ağırlıklarının artması durumu anlatılır hale gelmiştir.

Finansal ile reelin ayrışmasının nedenlerine ilişkin spekülasyonlar oldukça çeşitlidir. Örneğin, Marx bu ayrışmanın kökeninde teknolojik yenilenme sonucu sermayenin değer kaybını görmektedir. Adams (1983) ise üretimden pay kapma savaşının yoğunlaşmasından kaynaklandığını düşünmektedir.

Finansal ile reelin ayrışması iddiasındaki finansallaşma savının en sorunlu yanı ise ayrışmanın saptanmasının değere ilişkin temel bir varsayım gerektirmesidir. Değere

ilişkin teorilerin çeşitliliği ve bu konudaki anlaşmazlıklar göz önüne alındığında, böyle bir varsayım yapmanın güçlüğü ortaya çıkmaktadır. Belli bir değer kuramından hareket edilmesi durumunda bile, her duruma uygulanabilir bir değer kuramı da mevcut değildir. Değere ilişkin varsayım olmaması durumunda ise finansallaşma daha çok hissedilen ama tespiti zor ve aşırı göreceli bir kavram haline dönüşmektedir.

Bilginin değeri

İlaveten, bilginin değeri hususu daha da karmaşık ve tartışmalı bir görünüm arz etmektedir. Bilginin değerine ilişkin kuramları, kabaca ikiye ayırmak mümkündür. Birinci grup bilginin kendisine bir değer atfetmekte ve bilişim ürünlerin değerinin bilginin değerinden kaynaklandığını ileri sürmektedir. Diğer grup ise bilgi dahil üretim faktörlerinin içkin bir değeri olmadığını, bilişim ürünleri üzerinden elde edilen kazançların bu ürünlerin kendi değerinden çok oluşturulan yapay kıtlık sonucu edinilen rantlar olduğunu öne sürmektedir. İki görüşte kendi içinde sorunlar barındırmaktadır. İlk görüşte bilgi bir değer kuramına dönüştürülürken, ikinci görüş bilginin değere katkısını tümüyle yadsımakta ve değerin ölçülemezliği gibi bir uca kayabilmektedir. İki iddiayı şematik olarak sunmak mümkündür:

(I) Bilgi + diğer girdiler (emek dahil) → **bilgi**

(II) İşgücü + diğer girdiler → bilgi

İlk görüşe ilişkin şema, bilginin hem girdi hem de çıktı olduğu kabuluyle, bu görüşün döngüsel bir üretim süreci öngördüğünü, dolayısıyla, döngüsel bir mantık hatası içerdiğini ortaya koymaktadır. İkinci görüşe ilişkin şemada benzer bir mantık hatası bulunmamaktadır.

İlk görüşün döngüsel mantık hatasını, bilginin sadece girdi olabileceği kabuluyle düzeltmek mümkündür:

(III) Bilgi + diğer girdiler → ürünler (bilgi hariç)

Düzeltilmiş akış şemasını, aslında iki görüşün bir birleşimi olarak da görmek mümkündür:

(IV) Bilgi (= İşgücü + diğer girdiler) + diğer girdiler → ürünler (bilgi hariç).

Son şemaya göre bilişim ürünleri üretiminin iki aşamalı bir süreç olduğu görülmektedir.

Bu aşamada, bilginin değeri sorusu tekrar ele alınırsa, ikinci aşamanın değer bakımından hiçbir soru işareti barındırmadığını, ilk aşamanın ise, Marxist bir yaklaşımla, sadece kullanım değerleri ile sonuçlandığı, ve bunun bir değişim değeri ifade etmesinin gerekmediği, görülebilir. Bu şekilde bilginin değerinin olmadığını kesinlikle söylemek mümkün olamasa da, bu olasılığı tümüyle göz ardı etmemek gerektiği sonucuna varmak mümkündür.

Bu durumda, bilişim ürünleri üzerinden elde edilen kazançların kendi değerlerinden çok oluşturulan yapay kıtlığın yansıması olduğunu iddia eden ikinci görüşü tekrar ele alarak, sözkonusu yapay kıtlığın nasıl oluşturulduğuna bakmak gerekmektedir.

Yapay kıtlığın fikri mülkiyet hakları yoluyla oluşturulduğuna dair neredeyse genel bir uzlaşı bulunmaktadır. Bu uzlaşının çok sağlam dayanakları bulunmamaktadır. Fikri mülkiyet hakları sözkonusu yapay kıtlığı ancak geçici olarak oluşturabilir. İnsana ilişkin bazı çok temel nitelikler üzerine ambargo konulamadıkça, bir şeyi yapmanın bir başka yolu muhakkak vardır. Örneğin, 'dokunma'yı koruma altına almadıkça, daha doğrusu, yasaklamadıkça, dokunma yoluyla çalışan ekranlara ilişkin fikri mülkiyet hakları ancak geçici bir koruma sağlayabilir.

Bu durumda, bilişim ürünlerindeki yapay kıtlığın temelinde fikri mülkiyet haklarının dışında bir şeyin yatması gerekir.

Modülerlik

Bilginin değerine ilişkin görüşler arasındaki düğümü sistemlerin bölümlenebilirliği ya da modülerlik ilkesi ışığında çözmek mümkündür. Modülerlik parçaların birbirleri ve sistemin bütünü ile ilgisizlik durumu olup, parçaların ve bütünün sistemlerin tasarım bilgilerine gerek olmaksızın işlevlerini yerine getirebilmeleri özelliği ve durumudur. Modüler sistemler sistemler tasarım bilgilerinin gizliliğini öngörmektedir. Tasarım bilgilerinin gizliliği, modülerliğin hem kendisini tanımlamakta hem de kendiliğinden ortaya çıkan bir yan ürünü olmaktadır. Sözkonusu gizli tasarım bilgisi, bilişim ürünlerindeki yapay kıtlığı oluşturmanın fikri mülkiyet haklarından daha önde gelen bir

aracıdır, dolayısıyla, bilginin değerinin de kaynağını oluşturmaktadır. Modülerlik fikri mülkiyet haklarını korumanın da en önemli yolu olmaktadır (Baldwin and Henkel, 2012).

Gerçek opsiyonlar

Modüler yapılara ait modülleri sistemin gelecekte evrilebileceği alternatiflerin nüvesi olarak da görmek mümkündür. Bu bakış, hem sözkonusu sistemlerin değerlenmesine ilişkin bir yaklaşım barındırmakta, hem de bilgi ve finansın temel mantıklarındaki benzerliği ortaya çıkarmaktadır. Bu bakışla, bilgi üretimi aslında finansdaki opsiyon oluşturmaya karşılık gelmektedir. Bilişim ürünleri üretiminin iki aşamalı bir süreç olarak kavranması ile ilk aşamanın artık bir prototip oluşturma ve ikinci aşamanın da prototipin çoğaltılmasından oluşan bir sürece dönüştüğü görülmektedir. Prototip ve opsiyon oluşturmanın temel mantıkları neredeyse özdeştir. Bu durumda, bilginin kendisi de bir opsiyon olmaktadır.

Modülerliğin bir başka sonucu küresel ekonomik faaliyetlerin yeniden yapılandırılmasıdır. Daha önce tek bir firmada toplanan işlevler yeniden ayrılmakta ve maliyet bakımından en avantajlı yerlerde yerine getirilebilmektedir. Bu noktada, önemli bir sonuçta sermaye ve üretim arasında daha önceki birliktelik ve ayrılmazlık artık geçerliliğini yitirmiş, bilgi sermayeyi ikame eder hale gelmiştir. Artık dünyanın bir yerinde üretim yapmak için, orada yatırım yapmaya hatta üretim tesisinin mülkiyetine bile gerek bulunmamaktadır. Böylece, bilgi sermayeyinin ötesine geçmektedir.

Küresel işbölümü de bilgi etrafında gerçekleşmekte, bilgiyi elinde tutanlar ve yeniden üretebilenler ile bu süreçlerin dışında kalanlar arasında bir bölünme ortaya çıkmaktadır. Bu bölünmenin dezavantajı ise finanstaki opsiyonların çalışma şekliyle daha da çarpıcı bir biçimde ortaya çıkmaktadır. Finansal opsiyonlar, satın alma hakkı ile satma hakkı olmak üzere iki türdür. Satın alma hakkı veren opsiyonların cazibesi bir varlıktaki zarar riskinden kurtulma imkanı sağlamasındadır. Diğer bir deyişle, opsiyonlar bir varlığa ilişkin nakit akımlarının, kabaca, kar ve zarar şeklinde ikiye bölünmesini sağlamaktadır. Küresel işbölümü de aynı kaba mantığın uzantısı şeklinde karların merkez ülkelerde, zararların ya da yüklerin çevre ülkelerde yoğunlaşmasına hizmet etmektedir.

Finansallaşma bu durumda, küresel ekonomik faaliyetlerin, önce bir tasarım ilkesi olarak ortaya çıkan ve daha sonra uluslararası rekabetin temel sürükleyicisine dönüşen, modülerlik etrafında yeniden yapılandırılmasıyla 20. yüzyılın son çeyreğinde oluşan yeni uluslararası işbölümünün bir yansıması ve sonucu olmaktadır.

Finansallaşmaya ilişkin beklentiler

Bu dönüşümü, bilgi üretimi dışında kalan üretimin Asya ve özellikle Çin'e, bilgi üretiminin ise finans ile birlikte ABD başta olmak üzere batılı ülkelere yerleştirildiği yeni bir iş bölümü olarak görmek mümkündür. Bütün bu değişim ve dönüşümü mevcut kuramlarla bir çerçeveye oturtmak mümkün değilken, yaşanan kriz tabloyu daha da karmaşık hale getirmiştir. Bu nedenle, bu tezin öncelikli amacı bu değişim ve dönüşümü anlamlandıracak bir çerçeve oluşturmaktı. Tezi sona erdirmeden, iki konuya daha değinmek yerinde olacaktır: (i) geleceğe yönelik ve (ii) Türkiye'ye ilişkin beklentiler.

Geleceğe dönük tahminler, iki soru altında özetlenebilir: (i) 2007-08 krizi finansallaşmanın sonuna gelindiğinin bir işareti olabilir mi? (ii) Finansallaşma dalgasının tekrarı mümkün mü? Bu soruların yanıtlanması için, 20. yüzyılın son çeyreğinde Dünyada yaşananların biricikliğinin tespitini yapmak gerekiyor.

Sözkonusu dönemin başında, Japonya Asya'nın neredeyse tek imalat sanayii malları ihracatçısı ülke konumundaydı. Japonya'nın ardından Kore, Tayvan, Hong Kong ve Singapur görece standart malların ihracatçısı konumuna ulaştı. Bu gruba emek yoğun mallar ile Çin'in 1990'lardaki katılımı ile Asya, 20. yüzyılın son çeyreğinde, Dünya'nın üretim merkezine, Çin de fabrikası durumuna dönüşmüş oldu. Japonya bu katılımlarla, DRAM, CD ve DVD cihazları gibi teknoloji yoğun ürünlerde pazar kaybı yaşamaya başladı. ABD'nin dijital ağ malları ve yazılım merkezi haline gelerek 20. Yüzyılın sonlarında sergilediği dönüşümü de bu resme eklemek gerekmektedir.

Sözkonusu dönemin en temel özelliği bilişim ve iletişim teknolojilerin genel amaçlı bir teknoloji olarak yaygınlaşması olmaktadır. Bilişim ve iletişim teknolojilerinin, daha önceki genel amaçlı teknolojiler olan buhar ve elektriğe benzer özellikleri ve kapsamlı ekonomik yansımaları bulunmaktadır. Bilişim ve iletişim teknolojilerine ilişkin

yatırımlar1995-2000 yılları arasında yoğunlaşmış, 2000 sonrası yeni ekonomi krizi ile birlikte yavaşlamıştır (The Conference Board, 2011). Bilişim ve iletişim teknolojilerin genel amaçlı bir teknoloji olarak yaygınlaşmasının 'bilişim paradigması'nın zeminini oluştuğu düşünülebilir.

20. yüzyılın son çeyreğinde ortaya çıkan yeni uluslararası iş bölümü, kriz öncesi dönemin biricikliğinin ikinci boyutudur. Fujimoto'nun ABD ve Çin hakkındaki ve birbirini tamamlayıcılıklarına ilişkin hipotezleri biricikliğe ilişkin bir başka boyuta işaret etmektedir. Hepsi birarada dikkate alındığında, 20. yüzyılın son çeyreğinde Dünyada yaşananların tekrarlanabilirliğinin zorluğu açıktır. Bu bakımdan, krize gidişte yaşanan finansallaşmanın bir tekrarı mümkün olmasa da, şimdi akla gelmeyen bir şekilde ortaya çıkması tümüyle ihtimal dışı değildir.

Ayrıca, 'Chinamerica' model'inin sürdürülebilirliği 'Özelleştirilmiş Keynescilik' ya da ABD'nin talep eksikliği sorununa bir çözüm geliştirebilmesine bağlı görünmektedir. Ancak, çözüm geliştirmek bir yana, yurt dışı tedarik karşıtı hava dışında, sorunun algılanabildiğine ilişkin bir belirti bulunmamaktadır.

Fujimoto'nun modüler yapıya karşı bütünleşik yapıya yatkınlığı öne çıkararak güncelleştirdiği karşılaştırmalı üstünlükler hipotezi çerçevesinde, bütünleşik yapıların modüler yapı kaynaklı finansallaşmaya karşı bir çözüm olarak düşünülmesinin de çok doğru bir yaklaşım olamayacağı, Euro kriziyle, özellikle Almanya bağlamında, görülmüştür. Almanya'nın ABD'ye göre bütünleşik yapıları öne çıkaran modeli finansallaşmaya yatkın olmamakla birlikte, talep eksikliği açısından ABD ile benzerlik göstermektedir. Almanya'nın ABD'ye göre avantajlı olduğu yön uyguladığı modelin faturasından kaçınma imkanı olmaktadır. Ancak Almanya'nın bu yolu seçmesi, içinde bulunduğu bölgesel işbirliğinin de sonunu getirecektir.

Finansallaşma ve Türkiye

Bu tezde geliştirilen modülerleşmeye dayalı finansallaşma modelinin Türkiye bağlamında çok fazla geçerliliği bulunmamaktadır. Türkiye'nin modüler üretime taraf olmamasından kaynaklanan bu durum, Türkiye'nin finansallaşmadan izole olduğu

anlamına gelmemektedir. Finansallaşma çevre ülkelere genelde iki yolla bulaşmaktadır; devlet borçlanma piyasası (Ertürk, 2003: 186) ve uluslararası rezerv biriktirme (Lapavitsas, 2009: 118). Türkiye bağlamında bu iki kanal da sözkonusudur.

Çevre ülkelerde finansallaşma analizleri için yararlı bir sınıflandırma Becker v.d. (2010: 228) tarafından önerilmektedir. Enstruman bazlı olan bu sınıflandırmada, finansallaşma menkul kıymetlere dayalı finansallaşma ve faizli enstrumanlara dayalı finansallaşma olarak ikiye ayrılmaktadır. Bu sınıflandırmada, birinci tür finansallaşma daha çok merkez ülkelerine, ikinci tür finansallaşma ise daha çok çevre ülkelerine özgü olmaktadır. Bilindiği gibi, çoğu çevre ülkelerinde finansallaşma sermaye girişlerine bağlı olup, merkez bankalarının yüksek faiz düşük kur uygulamalarıyla yurt içine aktarılmaktadır. Bu sınıflandırmaya göre Türkiye'deki finansallaşma faize dayalı olan ikinci türdür. Becker v.d. Tarafından önerilen ikinci bir sınıflandırma ise finansallaşmanın sosyal tabanıyla ya da yaygınlığıyla ilgilidir. Bu sınıflandırmada, birinci tür finansallaşma daha çok üst sınıfları ya da gelir gruplarını içeren elit finansallaşmadır. Bu sınıflandırmada, ikinci tür finansallaşma, kriz öncesi ABD'de olduğu gibi, gayrı menkul ve dayanıklı tüketim mallarının kredi ile edinildiği kitlesel ya da popüler finansallaşmadır. Türkiye'deki finansallaşmanın kitlesel olduğunu söylemek için henüz erken olmakla birlikte, finansallaşmanın kitleselleşmesi sermaye akımlarının hızına bağlıdır.

Türkiye'nin 2001'deki son krize değin tüm finansal genişlemeleri geçmişte krizle sona ermiştir. Türkiye ekonomisi 10 yıl içinde, 1994, 2000 ve 2001 yıllarında olmak üzere, neredeyse periyodik hale gelen üç kriz yaşamıştır. Son krizsiz dönem, geçmişteki krizsiz dönemlerden çok daha uzun sürmüş bulunmaktadır.

Türkiye ekonomisinin krizsiz bu döneminde en önemli etken, sözkonusu dönemde yaşanan global likidite bolluğudur. 2001'deki son krizden bu yana merkez ülkelerdeki 'Özelleştirilmiş Keynescilik' kaynaklı finansallaşma olağanüstü global likidite bolluğuna yol açmıştır. İlaveten, 1990'lı yıllardaki bölünmüş koalisyonlar sonrası gelen tek partili hükümet yapısının da bu yönde bu ortama olumlu katkıda bulunmuş olması gerektiği düşünülebilir. Olumlu global likidite şartlarının kriz sonrası artan parasallaşma gereği

nedeniyle devamı beklenmelidir.

Türkiye'nin olumlu global likidite ortamını lehine kullanma iştahı, sermaye hesabının yönetimi açısından doğru bir yaklaşım değildir. Ülkeyi dış piyasalara fazlasıyla bağımlı kılan bu yaklaşım, sermaye akımlarında olabilecek tersine dönüşler durumunda da ülkeyi risk altına sokmaktadır. Sermaye akımlarında izlenmesi gereken politika, mevcut konjonktürel politikanın tam tersi olmalı; likidite bolluğu sırasında sermaye akımlarını yavaşlatmalı, likidite azaldığında sermaye akımlarını teşvik etmelidir.

APPENDIX C

TEZ FOTOKOPİSİ İZİN FORMU

ENSTİTÜ

Fen Bilimleri Enstitüsü ☐

Sosyal Bilimler Enstitüsü ☐

Uygulamalı Matematik Enstitüsü ☐

Enformatik Enstitüsü ☐

Deniz Bilimleri Enstitüsü ☐

YAZARIN

Soyadı :
Adı :
Bölümü :

TEZİN ADI (İngilizce) :

TEZİN TÜRÜ : Yüksek Lisans ☐ Doktora ☐

1. Tezimin tamamından kaynak gösterilmek şartıyla fotokopi alınabilir. ☐
2. Tezimin içindekiler sayfası, özet, indeks sayfalarından ve/veya bir bölümünden kaynak gösterilmek şartıyla fotokopi alınabilir. ☐
3. Tezimden bir bir (1) yıl süreyle fotokopi alınamaz. ☐

TEZİN KÜTÜPHANEYE TESLİM TARİHİ: