Pontifícia Universidade Católica
do Rio de Janeiro

THIAGO ALVES BRAZ

Money, derivatives, sociotechnical networks: an essay on the cartographies of contemporary finance.

Dissertação de Mestrado

Dissertation presented to the Programa de Pós-graduação em Relações Internacionais of PUC-Rio in partial fulfillment of the requirements for the degree of Mestre em Relações Internacionais.

Advisor: Prof. James Matthew Davies

Rio de Janeiro
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Abstract

Braz, Thiago Alves; Davies, James Mathews (Advisor). **Money, Derivatives, Sociotechnical Networks: an essay on the cartographies of contemporary finance**. Rio de Janeiro, 2017. 82p. Dissertação de Mestrado – Instituto de Relações Internacionais, Pontifícia Universidade Católica do Rio de Janeiro.

Running across the intersecting lines that bind and separate the domains of international political economy, international political sociology and human geography, this research sets out to investigate derivatives as both money-form and monetary institutions and practices. To this end, the study draws inspiration, in general, from what has been termed in the social sciences as the "practical turn" and, in particular, from theoretical and methodological approaches associated with the Actor-Network Theory. By unpacking the notion of financialization and decentering finance, this investigation seeks to grasp actions, practices, objects, strategies that bring together, sustain, authorize and give form to systematic, albeit contingent and unstable, financial and monetary orderings. In the light of the subprime mortgage market of the United States of America, the study will, on the one hand, shed light to mechanisms of assembly of sociotechnical monetary and financial networks, and, on the other hand, unveil the topological workings that dislocate and amplify racial and gendered lines of exclusion. This work of mapping, so I argue, shall open up spaces for critical engagement and shall indicate the limits and possibilities deriving from multiple modes of dissent.

Keywords

Derivatives; dispositive; topology; subprime mortgages; racial/gendered exclusions; Black-owned banks; LETS.

Resumo

Braz, Thiago Alves; Davies, James Mathews (Orientador). **Dinheiro, Derivativos, Redes Sociotécnicas: um ensaio sobre cartografias das finanças contemporâneas**. Rio de Janeiro, 2017. 82p. Dissertação de Mestrado - Instituto de Relações Internacionais, Pontifícia Universidade Católica do Rio de Janeiro.

Percorrendo as linhas de interseção que conectam e separam as disciplinas economia política internacional, sociologia política internacional e geografia humana, a presente pesquisa se propõe a investigar derivativos financeiros como tanto forma de dinheiro quanto instituição e práticas monetárias. Para tanto, o estudo busca inspiração, de modo geral, no que foi cunhado "virada prática" nas ciências sociais, e de modo particular, nas abordagens teórico-metodológicas associadas à Teoria do Ator-Rede (TAR). Por meio do desempacotamento da noção de financeirização bem como de um descentramento das finanças, a pesquisa intenta capturar ações, práticas, objetos e estratégias que reúnem, sustentam, autorizam e dão forma à ordenamentos monetários e financeiros sistemáticos – muito embora restando contingentes e instáveis. À luz do mercado de hipotecas *subprime* dos Estados Unidos da América, o estudo pretende, de um lado, desvelar mecanismos de assemblagem de redes sociotécnicas monetárias e financeiras e, de outro lado, lançar luz sobre dinâmicas topológicas que deslocam e amplificam linhas de exclusão/expropriação raciais e de gênero. Este trabalho de mapeamento, no nosso entendimento, abre espaço para engajamento político e crítico com uma temática pretensamente técnica, ao passo que sinaliza limites e possibilidades que derivam de modos e formas de dissenso.

Palavras-chave

Derivativos; dispositivos; hipotecas *subprime*; topologia; exclusões raciais/de gênero; bancos de propriedade negra; LETS.

Table of content

1. Introduction

In May 2016, the book Makers and Takers: The Rise of Finance and the Fall of American Business, by CNN global economic analyst Rana Fohoorar, claims that as of today only 15% of the money in the Unites States (US) monetary and financial markets is channeled to the 'real' economy. US-citizen from Iranian descent, Fohoorar argues that the most profitable corporations in the country have invested more money in stock buyback – a financial strategy aimed at raising the value of stocks – than in research and development. And most of promised state regulatory mechanisms, following the subprime financial crisis that spread through global market networks, have not materialized. Profiting from the spotlight offered by her privileged position in mass media business, Rana has used her book to lead a sort of campaign for more investment in the 'real' economy. In April 20th of the preceding year, the Wall Street Journal reported that from 2006 to 2014 the number of homeowners that went through foreclosure amounted to over 9 million and only 27% were expected to be able to become homeowners again. Foreclosures, precedence of speculative profiteering over productive investment, significantly lower rates of employment within the sector whilst taking a quarter of all national corporate profit (FOHOORAR, 2016), furthering short-termism are just some of social costs that have been credited in the account of financialization, as the 'beast' has come to be known, to use Gibson-Graham's word (1996 *apud:* de Goede, 2005). Bearing Gibson-Graham's words in mind in the sense of taking caution while pursuing the project of understanding the beast so as to not end up producing it (*Ibidem*: 150), this study will focus on derivatives as money-form and institutional practices. At stake here is an attempt to avoid reproducing a singular, coherent and unified totalizing depiction of the politico-economical 'phenomenon'. In its constantly mutating forms, capitalism might be better viewed as "a perpetually unfinished project" (THRIFT, 2001: 376) the terms and conditions of which are constantly negotiated and contested by multiple actors on multiple sites.

The capital-labor frame will also be displaced in favor of different epistemological perspectives. The scenario depicted by Fohoorar from the standpoint of labor speaks for itself and, therefore, if I decide to shift the lens is definitely not because the deleterious effects of derivatives trading for workers are

deemed unimportant. Rather, there is also another sense in which the picture offered by researchers such as Fohoorar seems to speak for itself. Insofar as derivatives are not a recent development within global capitalism, the extent to which they have spread to the detriment of, and regardless of, the impacts on the so-called 'real' economy seem to significantly signal to important dynamics in monetary and financial valuations that chances are have not been sufficiently or properly scrutinized. In this sense, the *démarche* that will follow throughout these lines expresses an attempt to grasp derivative in its own terms. This implies that often axiomatically charged dichotomous constructs opposing money economy and 'real' economy, productive capital and fictitious capital, labor and capital will be held in suspension, in an clear effort to assess other forms, dynamics, mediations in money and value that unfold through derivatives trading practices. Of great importance, additionally, are the potentially different terms under which different subjects have been negotiating their subject positions on multiple sites - the categories which resonate to them through everyday transactions with money and value systems.

To this end, this study runs across the intersecting lines that bind and separate the domains of international political economy, international political sociology and human geography. Methodologically, it draws inspiration, in general, from what has become represented in the social sciences in terms of the "practical turn". More particularly, inspiration comes from the theoretical and methodological approaches associated with the Actor-Network Theory. In the endeavor to unpack the notion of financialization and decenter contemporary finance from the state and global capitalist class, this investigation seeks to grasp actions, practices, objects, strategies of connectivity that bring together, regulate and give form to systematic, albeit contingent and unstable, financial and monetary orderings that cut across different institutional settings. The ensuing cartographies will inform the type of politics that authorizes and confers legitimacy to such orderings. In the light of the subprime mortgage market of the United States of America, the study will cast light not only to the mechanisms of assembly of sociotechnical monetary and financial networks, but also to the topological workings that dislocate and amplify racial and gendered lines and rhythms of exclusion. This work of mapping, so I argue, shall open up spaces for

critical engagement and shall illuminate limits and possibilities deriving from the modes of dissent under scrutiny.

The work is structured in three chapters comprising 4 sections each. In the first chapter, I delve into the derivatives as a monetary form. The chapter cuts across historical and theoretical debates about money-forms. However, instead of engaging directly with debates about a general theory of money, the chapter will approach this debate only transversally with the aim of understanding what derivatives actually do as a money object.

Building on the Actor-Network Theory, the second chapter assesses derivatives as a sociotechnical network. With the United States subprime mortgage market as the analytical setting, this is where I answer question about what kind of connectors, processes and strategies of connectivity, and, most importantly, what politics. The framing of a politics of calculation, then, illuminates the particular topological operations performed by derivatives trading. Here, racial and gendered dynamics of exclusions are scrutinized.

The third and final chapter delves into the different modes of dissent and alternative monetary and economic geographies. Special attention is drawn to the Black-owned banks and the Local Exchange Trade Schemes. The questions that will guide the study of these different micropolitical experiments revolve around the limits and possibilities that they embody.

2. Speculations on the question of derivative as money

2.1 Introduction: facing the puzzle

Most contemporary formal instruments of money, in general, and derivatives, in particular, have been framed as operating as money of account or some variation of the concept, such as virtual money. In this perspective, what these new forms of money supposedly do, along these lines, is to basically represent credit-debt relations denominated in an abstract money of account. Harking back to developments in private finance and commercial banking from the seventeenth century to the present-day, these novel money-forms, albeit performing some kind of time-space coordination and reconfiguration across, and to a great extent independently of, states jurisdictions, when understood essentially as money of account, tend to be perceived as circumscribed and constrained by the sovereign spaces of money-as-currency. The dynamics, in which these money-forms would be intervening, according to this framework, are read off and interpreted on the basis of a credit model. The distinctive characters of such contemporary money objects hence tend to be coded in such reductionist terms as the 'progressive dematerialization of money'. This epithet is manifestly intent on shedding light, on the one hand, to the varied degrees of decoupling of money from "real economy" – the sphere of both production and exchange – and, on the other hand, to the virtualization and fetishization of money with all its implications as far as risk is concerned.

Notwithstanding, by revisiting some conceptual framework on theories of money and on theories of finance, I argue in this chapter that this recurrent pathway to framing these innovative monetary forms is ill-taken, in that it tends to divert us from grasping the crucially distinctive features of derivative-as-money; and not only in its risk-related activities, but also in the way it is written on as well as actively writes the real-monetary economy couplet. Furthermore, as shall be developed in detail on the second chapter, these notions more often than not end up obfuscating the specific materiality inherent in these so-called "virtual monies". Crucial political activities take place in these spaces that cannot possibly be captured by such conceptual frameworks which are broadly found in the critical literature on contemporary finance as well as on some of the contemporary theoretical work on money.

The chapter is then structured in three sections. The first is devoted to a brief historical review of the modern monetary developments and, more specifically, to a critical assessment of the narrative of the progressive dematerialization of money. Directions and venues to an alternative approach to dealing with these contemporary money-forms will begin to be sketched out. In the second section, the relationship between money and capital is reframed in the light of derivatives as both a monetary practice and institution. Along the way, namely by articulating derivatives with some theories of money, the distinctive characteristics of derivate as a money-form will be mapped out. The third section, then, concludes this chapter by positing an alternative perspective to the dichotomous scheme opposing a 'real' economy, commonly cast in terms of a sphere of real wealth and real value, on the side, monetary economy, often viewed as the domain of the fictitious and specious transactions, on the other. This reframing shall prevent from falling onto axiomatic claims about financialization, and thus alternatively prompt us to critical theoretical engagement with the material and practical workings of derivatives as novel money object.

2.2 A critical view on the narrative of the dematerialization of money

On the grounds of an historical account of modern monetary developments, Leyshon and Thrift, in the seminal work entitled *Money/Space: Geographies of Monetary Transformation* (1997), list out five main forms of money: (i) primitive or premodern money; (ii) commodity money; (iii) money of account; (iv) state money; (v) virtual money. Their work is important for the purposes of this chapter in that it not only shows the transformations in monetary artifacts throughout the course of modern history, but also, and most importantly, makes clear and explicit the interpretative and theoretical pathway leading to the conceptualization of a progressive dematerialization of money and its relations with risk.

The first money-form, designated as premodern or primitive money, is characterized as a monetary object of single, culturally specific purpose. In spatially narrow and small-scale economies, these *soi-disant* premodern monies are said to perform each a range of different redistributive and reciprocal

functions. Modern money, in stark contrast, is often depicted, in Polanyian terms, as "all-purpose money" (1968 *apud*: LEYSHON & THRIFT, 1997: 6), prominently in the light of its alleged ability to carry out all four different main functions of modern money-form. Drawing from the Marxian literature, especially from the Grundrisse (2011), these functions are medium of exchange, measure of value (unit of account), means of settlement (payment), and store of value (universal commodity). It should be noted, nevertheless, that this distinction made between specific-purpose and all-purpose monies, albeit in many ways analytically valuable, should be taken with caution, insofar as no modern monetary instrument has ever proven to be capable of executing all four functions simultaneously. Only under very rare circumstances are legal tender notes, for instance, used as a store of value; coins and notes, in turn, may stand as units of value, yet they cannot at the present time embody value themselves. Not to mention, as Zelizer (1989; 2000) and Dodd (1994; 2011; 2012) have shown in their compelling sociological and ethnographical investigations, that no modern money-form has been able to fully exercise a modern homogenizing force, when operating as universal medium of exchange, purportedly freed of any cultural and social mediation. Each and every monetary instrument is dependent upon specific institutions and practices which, in turn, are always socially and culturally contingent and embedded. It shall be added that a complex chain of mediations and translations throughout a range of sociotechnical networks has to be in action so as to hold any– historical – monetary formation together.

The second monetary instrument, commodity money, emerged from the advent of coinage, and as novel monetary practice meant that, once coins were made out of precious metals, money could operate as both a means of exchange and store of value. In effect, this linkage between money and precious metals instituted by official mint and the large-scale mining that followed from it furthered the deployment of massive slave work in an emerging extractive economy, the purpose of which revolved essentially around the intensive search for, and accumulation of, reserves. The coexistence of differing coinage systems paved the way to the rise of an increasingly powerful and strategic group, the bankers, whose skills and expertise notably in dealing with rival coinage systems were vital to the new monetary economy (LEYSHON & THRIFT, *op. cit.*).

However, the collapse of the Holy Roman Empire led to the debacle of the dominance of the varied coinage systems in many parts of Europe, a situation that endured for several centuries. It was only with the rise of the European monarchical state that commodity money was to recover a prevailing status again. Taxation and standardization aimed at financing royal military and economic ambitions were the main driving forces of the revival of the commodity form of money (*Ibidem*: 9).The relevance of the role of mercenaries to this development should not be underestimated. Given that no political allegiance was required from mercenaries and that consequently they also enjoyed a considerable amount of economic autonomy, the ensuing payments for their military services needed to be sufficiently standardized in ways that would ensure acceptability across different jurisdiction. This dearth of a stricter connection between money and political and administrative control pave the way for territorial control in what can be called a "taxation-coinage multiplier" (INGHAM, 2004: 106).

As the third form of money, money of account is described by Leyshon and Thrift as having emerged in the eleventh century and further developed in the twelfth and thirteenth centuries. This money-form would have unfolded, so they argue, as the result of monarchical rulers' need to raise funds, especially by circumventing the limits imposed by commodity money. Money of account is thus associated with the increase of credit money. However, it must be added at this point that there exists a competing account with regard to the rise of money of account, which is compellingly provided by theorists like Ingham (2004). Drawing on the work of the numismatist Philip Grierson (1977) and on the investigations by the British economist Mitchell-Innes (1913), Ingham argues that the origin of money itself lies not in premodern or commodity money-form pertaining to less complex and narrower domains of exchange. Rather, the "proper" of money should be found, as he puts it, in a notion of measure of – abstract – value, i. e. a money of account. Ingham draws on the historical record according to which debt-credit relations denominated in a money of account preceded the first coins by about 2000 years. Quoting Innes (INNES, 1913: 396 *apud*: INGHAM, 2004: 46), he maintains that "[b]abylonian clay tablets (*shubati*) from around 2500 BC represented acknowledgement of indebtedness measured in a money of account." From Grierson's thesis, in turn, Ingham draws the notion

advanced by the nineteenth century German historical school according to which the idea of money harks back to a table of tariffs for the calculation of debts to be paid in compensation for injuries and damages, established by institutions such as *wergeld*, which translates to worthpayment (*Ibidem*: 310). My interest in this chapter, nonetheless, being chiefly centered on monetary practices, money-forms, and their material implications, an effort at the establishment of a *telos* of money, or of a particular point of origin, or the nature of money is beyond the purview of this work; it should be, notwithstanding, noted that there remains some controversies in relation to – and these remain in the present-day academic context an open debate around – the rise of money of account.

That being said, the novel measure of value provided by money of account is almost exclusively related to accounting purposes. Central to this development, in addition to and going hand in hand with the growing specialization in Treasury, was the institution of tallies in the middle of the twelfth century as a decisive step towards a credit-based economy. A wooden stick whose surface was used for registering differing amount which served as durable receipts, the tally, in fact, conferred assignability and transferability of debt obligations in ways that evaded the limits of and pressures on minting – and consequently on commodity money. With the growing dissemination of tallies, space-time coordination became increasingly a hurdle in the advancement of the growing transnational economy. And in order to address such a drawback, a new private finance market emerged, notably in which tallies could be sold at a discount. This incipient institution in merchant banking was located in London, at the time the main market in which tallies were issued. In effect a key driver of the inchoate merchant banking and, consequently, of the creation of a series of new financial instruments – bill of exchange and later on cheques – was namely the complexification of international trade. To the extent that settlement of transactions growingly proceeded by means of assignment of debts, and therefore money underwent significant qualitative and quantitative transformations, a new monetary form designated as finance bills, or more simply as ‘bank money’, was issued without any specific requirements of future commodity exchange. As a consequence, even bills of exchange started to hold no particular correspondence

with supply of commodities. In effect, these changes foreshadow the rise of an international capital market.

It follows from the above that the great diffusion of money of account entailed the dislocation of control of money supply and the regulation of the increasingly international financial system from the state to the private sphere. The early seventeenth century witnessed a network of goldsmith-bankers develop short-term debt markets, counting on their voluptuous gold reserves (QUINN, 1995 *apud*: LEYSHON & THRIFT, 1997). At a fast pace, bank notes and cheques became consolidated means of payment. It was only in the second half of the seventeenth century that the state managed to effectively reclaim the reins of the financial market. And crucial to this move was the development of the fourth monetary instrument: state money, which was basically tied to the national (royal) debt, and stemmed from innovations within the institution of public banks. Although public banks existed since as long ago as the early fifteenth century, it was only by means of financial innovations produced within the Bank of England, in the period ranging from the end of the seventeenth century to the late nineteenth centuries, that state money was consolidated and the state's contested role in the regulation of the financial market was reestablished, and also in response to a succession of financial crises – it must be added.

Originally founded to trade in public debt, the Bank of England became, by means of the Bank Act of 1844, the lender of last resort, an institution that rapidly spread throughout the globe. In such new position, the state effectively embraced the role of guarantor of the national public debt, on the grounds of its capability of printing money. In effect, the aftermath of the Second World War marked the apex of state – credit – money, and it was in that very period that an international system began to take form. The constitution of the Bretton Woods agreements and all related post-conflict settlements marked the beginning of a new arrangement of global governance. At the international sphere, the role of lender of last resort was taken up by the World Bank, the International Monetary Fund (IMF), and to a certain degree by central banks by means of central bank swaps, circumventing the jurisdiction of the IMF. It goes without that saying that these developments, aiming at a concerted degree of macroeconomic stability and

coordination, did not take place without contestation, especially if we take account of the growing power of banks, the internationally knitted networks of private financial institutions and the evolving practices of commercial lending of the time. I shall return to this historical formation, so to speak, further ahead when I will delve into the materiality of derivatives-as-money. At this point it is important to carry on with the conceptual and theoretical investigation on money objects.

The last category of money-form in Leyshon and Thrift's (1997: 19) historical reading is designated as virtual money, or "book entry money", and it is especially at this juncture that our views on contemporary financial and monetary innovations distance from one another more pronouncedly. The geographers depict virtual money as follows:

> This is money reduced to a numeraire — Walras in action. Money becomes an activated double book entry, a spontaneous acknowledgement of debt that is no longer a commodity. This new system of fleeting instants is based on quasi-private institutions and on the full range of instruments of fictitious capital (Hart 1986). 'Money is accepted on the belief that whoever offered it will make it good in the future. Money is to that extent partly a fiction, the stuff that dreams are made of (Desai 1988: xiii). (LEYSHON & THRIFT, *op. cit.*: 19-20).

Seeking nevertheless to fend off the financialism[1], more often than not built around Braudrillard's conceptual framework – revolving around ideas of the simulacrum and on the *unrepresentable* –, Leyshon and Thrift rebut a notion of virtual money cast as being all about "'messagerie' constantly circulating intentions in an electronic space" (*Ibidem*: 20), and effectively draw attention to the dimension of the social, political and material practices that give rise to this money-form. Yet no further word is given with regards to the specific relationship between the notion of virtual money and that of fictitious capital, at least beyond the functionalist view of a dematerialized money-form being instrumental to a fictitious mode of capitalist accumulation. In addition, the relationship between this 'virtual money' and money of account is also left underdeveloped, insofar as

[1] At the other far-end of an continuum, in opposition to the productionism that has marked most work in International Political Economy, particularly within the Marxian tradition, financialism is a term which is meant to describe a reading of financial dynamics in term of crisscrossing flux, unburdened by the sphere of the so-called 'real economy', tracing trajectories of a fully disembedded market of signs (see Pike et al., 2010).

the authors only point to the *soi-disant* "'return' of money of account" as one possible interpretation of this monetary form (*Idem*). What exactly differentiates virtual money from money of account remains rather unclear. The only distinctive trait of virtual money is to be conveyed, in Leyshon and Thrift's account, through the notion of the historical dematerialization of money. As they assert:

> Money is no longer a commodity which is transported hither and thither. It no longer even consists of paper, in the main. Increasingly, money is a set of double entries briefly etched in computer memories. (LEYSHON & THRIFT, *op. cit.*: 21).

A possible focus directed to the electronic platforms onto which the registering of credit and debt is displaced seems, in my understanding, of little relevance. It is not technology *per se* that matters most. As to the linkage between money and its historical commodity form, like gold or any other precious metal, vast theoretical work has shown that productionist views attempting to "ground the essential properties of money in a commodity" (INGHAM, 2004: 316) are inadequate, in that any link between money and its commodity form is never determinate; and, it shall be added, there has been a confirmed level of autonomy enjoyed by movements within the monetary sphere from what develops within the domain of production. Even in the old days of bullion and commodity monies, debasement, the strategy of devaluation of money by the recall of the existent coins for subsequent recoinage at slightly different sizes and shapes, was a common tactic that monarchical governments in need of resources to finance military projects repeatedly resorted to. And even though they help monarchs in raising funds, given that money of account continued to be people's reference to count money in their daily exchanges, there was no immediate impact on the level of prices, as the orthodox economic theory would have suggested (see INGHAM, *op. cit.*: 110-112). Hence, the notion of dematerialization of money objects seems inaccurate or irrelevant to capture what has been termed as the progressive 'autonomization' of money. Further ahead, though, centering more specifically on derivatives as a new monetary technology, now purported in terms of 'postmodern money', Leyshon and Thrift provide some illuminating elements, notwithstanding this rather bewildering category which they have chosen to describe them.

The British geographers see derivatives operating a sort of the *bracketing* of time, space and risk in highly complex credit-debit relations. Once the future is colonized, to borrow from Giddens, in a system of deferred payments, derivatives would be performing what they designate as a 'bracketing of time'. And as a variety of transactions between several individuals is bundled together in collateralized assets, derivatives are able to carry out the 'bracketing of space'; and, finally, as they are meant to hedge risk, despite the eventual effect of preemptively amounting to higher systemic risk, derivatives would execute the 'bracketing of risk'. Leyshon and Thrift then call attention to the higher costs associated with building trust in this highly complex international credit system (1997*:* 287-290). In effect, what they term "bracketing" bears similarities with what I would rather call *binding*, drawing from the work of Bryan and Rafferty (2007). I will develop this notion in detail some lines ahead. Of central relevance at this point is to devote some extra lines to pondering over the precise relationship between derivatives-as-money and fictitious capital, which I believe will pave the way to develop my critical views on the idea of the decoupling of a monetary economy from 'real' economy, which, in turn, is not further developed in Leyshon and Thrift's work, at least not beyond the image of derivatives-as-money as a form of electronic tally.

From the Marxian thesis derives the notion that, once money abstracts from its particularities to become its own presupposition, means and ends across capitalist circulation and, along the way, embodies the power to control and regulate production and circulation, money transforms itself into capital, its modern universalizing form. As capitalist circulation embodied money in its capital form, production and exchange are subsumed. Henceforth, established as the universal form of wealth, money functions as one mediator between capital and labor, the couplet cast as the structural opposition within capitalism, according to the German philosopher (MARX, 2011: chap. 3). From this it follows that to the extent that credit money in the contemporary form of money of account or, in Leyshon and Thrifts's parlance, of 'virtual' or 'postmodern' money expresses this power of organizing circulation and production, it can be inferred that we stand in face of fictitious capital or, in less formalist and more functionalist terms, in face of a money-form that serves the purpose of fictitious

capital. One example can be found in LiPuma and Lee's formulation when, following Saber, they state that:

> [f]inancial derivatives are therefore important because they are the 'functional form that speculative capital assumes' in the marketplace (Saber, 1999: 128-9); and because they are the structural form that circulates and globalizes risk. (LIPUMA & LEE, 2005: 407).

It is precisely by following this track and drawing from Polanyi's work on 'progressive commodification' that Bob Jessop distinguishes between functioning capital, as capital invested in production and therefore profit-generating, and – fictitious – interest-bearing capital, as value deducted from production and 'metamorphosed' into profit-generating capital (and eventually drifting to speculative and Ponzi schemes). The choice of the notion of metamorphosis in Jessop's work is meant to convey the idea that no value can be derived from any sphere other than production. The rents yielded in financial arbitrage or securitization figure in his reading as a fiction or an elusive deformation. Drawing on the notion of a progressive fetishization, Jessop (2015: 29) argues that "interest-bearing capital is the most fetish-like form of money because interest makes it appear that capital, not labour –power, creates surplus value". Alluding to the prevalence of the sphere of production over the monetary economy, he asserts that the real movement of value will always re-impose itself, which, in turn, will end up in crisis. Here, despite the instructive light shed on the interplay between capital and derivatives-as-money, there persists a formalist and functionalist notion of derivative as a money object.

The functionalist approach casts current financial monetary developments in terms of extension of credit – as fictitious money in productionist view – aimed at overcoming problems of liquidity and profitability at the production level. Finance, hence, plays an instrumental role to capitalist accumulation and, once speculative or hedging moves start to bear fruits, these innovations become instrumental to a kind of 'finance-led capitalist accumulation', as in the parlance of the regulation school. At the last instance, credit expansion through financial instruments relies on the movement of value derived from the production sphere, as seen in Jessop's account. Nevertheless, here is where the notion of structural limits at production level slips into the analysis, precluding proper scrutiny of

derivatives as a monetary practice and forestalling a conceptualization of 'speculation' unburdened by axiomatic accounts of what the economy should be like. The idea of the "real economy" setting limits on the advance of finance, and resulting in inevitable crisis and the consequent 'flight to quality'[2], is of little analytical value, in that it purports the circular idea that financial crisis result from the decoupling from production level with its defined limits, which we only know existed because the crisis erupt (KNAFO, 2015). As it will be made explicit throughout this work, production and speculation follow quite distinctive pathways in competitive environments: whereas fierce competition has the effect of reducing the profit margins in the productive sphere, in speculative realm, higher return rates are predicated upon increased competition, attracting more investors to the market and hence pushing the asset price to higher levels (*Ibidem*). And, as a matter of fact, significant amounts of value-forms are amassed along the way. This understanding should lead us to analyze monetary and financial dynamics in their own terms. Critical inquiry should be directed to modes of agency, interpretive models, or, in a nutshell, the sociotechnical agencies accounting for such recurrent speculative bubbles with all ensuing devastating effects. Indeed, the pathway opened by the notion of dematerialization of money signaling to the disembedding of money-forms from a commodity forms – and therefore from the real economy – fails not only to capture the crucial features of derivatives-as-money. But due to the formalism that embeds most structuralist frameworks, it also proves inadequate to offer a practical gaze into financialized processes. In the lines that follow I will begin to address these issues, namely, by reassessing the relation between capital and money through the analysis of derivatives as money-form.

2.3 Reframing money-capital relation through derivatives

In the orthodox finance theory, derivatives are chiefly framed in terms of its technical efficiency in risk management, with some approaches even extending its sphere of action to the inter-personal and spatial efficiency in allocation. Here,

[2] The notion of « flight to quality » is commonly used both in the economic literature and the specialized media in order to describe the movement of capital towards safer forms of assets, and in admittedly safer currencies such as the US dollar.

notwithstanding the fact that even institutions such as the International Monetary Fund (IMF) and the Bank for International Settlement (BIS) do include derivatives in their official listing of global monetary forms, derivatives-as-money is not effectively an object of theorization, nor do they figure as an important axis of analysis. The common neoclassic notion of money in terms of a *numéraire*, an neutral veil whose function is essentially to lubricate the gears of exchange, can be held as one of the main reasons for the dearth of interest in money, in general, and in modern monetary objects, in particular. For if one takes money to be one such veil, derivatives are conceived as "facilitators of hedging – mending the holes in the veil – but they are not part of the veil itself." (BRYAN & RAFFERTY, 2007: 138). Fundamentally following neoclassical views in the underlying premises, a significant number of critical work has been produced casting derivatives as speculative practices that are deleterious to production and, therefore, to the real economy as sketched above. And if, on the one hand, this critique has the merit of shedding light to pernicious effects of securitization that tend to be normalized and authorized both in the mainstream economic thinking as a simple matter of precise calculation of risks and in the media coverage as an immanently technical affair, on the other hand, this frame not only reinforces the conceptualization of derivatives as a set of tools aimed at risk management, in orthodox neoclassical lexicon or, at speculation, in critical parlance, but also ends up casting a veil over the monetary side of derivative as a money-form. As result, the inherently political ramifications of derivatives as a monetary practice are left unheeded.

One seminal critical work on derivatives that actually inquires into the monetary work of derivatives is LiPuma and Lee's *Financial Derivatives and Globalization of Risk* (2004). Along the lines of a credit model coupled with the abstraction of risk, the authors depict this "moneyness" inherent in derivatives as follows:

> More than simply monetizing time in a specifically (post)modern way, the character of financial derivatives gives substance to a new form or realization of money, what amounts to an extension of credit money. A new form of money comes into being because, structurally, its foundation is neither the intrinsic source of value thought to inhere in precious metals nor the authority of the state, but rather a mutual

> interdependence founded on the necessity to mitigate uncertainties (im)posed by the future performance of distant monetized spaces; and because, functionally, it does not serve either as a store of value or as a medium of exchange but as an embodiment of a discrete flow of quantified simultaneous time. (*Ibidem*: 133-4).

Two basic characteristics of derivative-as-money stand out of the passage. Assuming that derivatives is purported to be destitute of use value – an idea, I shall point out, that is in many ways disputable – the first characteristic is self-referentiality. Since neither an underlying asset nor the state is able to underwrite this temporary monetization of spaces, the benchmark of this form of money is their own notional value. Derivative construed as credit-money is the second characteristic according to the North-American anthropologists. Clearly, however, none of these features can be said to be distinctive of derivatives. As matter of fact, those are true to most forms of fiat money. In contradistinction, I sketch out, following Bryan and Rafferty (2007) two specific characteristics which are distinctively proper to derivatives: the first being *binding*, which is not entirely dissimilar to bracketing as in Leyshon and Thrift's words. It is, nevertheless, my understanding that binding best captures what derivatives actually do, in that it is not only about a sort of temporary suspension of time, of a multiplicity space and of risk, as the latter term suggests; it is neither about the "stilling of the frenetic crossings of the global political economy in advance of arrival" as in Amoore's (2011: 19) stylistic formulation. To properly grasp binding it may be useful to look at the Bretton Woods institutions and monetary practices for some contrast.

The postwar dollar-gold system founded by the Bretton Woods institutions and the internationally concerted effort under the New Deal agreement represented a model of stability, manifestly aimed at the full employment and at the constitution of a stable economic world order strong enough to curb nationalism. The decades of the 1970s and 1980s, however, opened up a new period marked by the emergence of a new conception of stability. Built upon the ruins of the Bretton Woods system and the welfare state, this new model of stability had derivatives at its material basis. To the extent that value was no longer formally underwritten or backstopped by the state (COOPER, 2015), it fell upon this unfolding dispositive of securitization the role of aggregate risk management and of purveyor of stability, so to speak. It is effectively this position

that the notion of binding is meant to capture. The derivative contract is not regulated as an insurance contract, notwithstanding its recurrent designation as one such genre of agreement, the seller of securities, consequently, is not obligated to proceed with any prior statistical calculations of the event under consideration nor is she constrained to supply any reserves. That is why Mehrling (2011 *apud*.: COOPER, *op. cit.*: 397) asserts that issuers of derivative should be viewed as "private dealers or speculators of last resort" within a shadow banking system, leveraging liquidity for uninsured assets. As far as the shift of temporal frame is concerned, the comparison with the previous regime is illuminating: if the Keynes-inspired model fostered a linkage of the present to future by means of a series of insurances guaranteed at state level, the derivative model basically sought to price the future in the present and, by doing that, prompted up a kind of 'actionability' (AMOORE, 2011) in the present time on the basis of future events. In other words, the future consequences of an eventuality that may never materialize become the very grounds for present actions (MASSUMI, 2005 *apud*: AMOORE, *op. cit.*). Such 'space of actionability', so to speak, has been to a great extent displaced from the public to the private sphere, from political authority to everyday and institutional investors/borrowers, thus cutting across and connecting multiple institutional and everyday ordinary settings. In the light of a certain clash of temporalities between the private finance actors and state authorities that may struggle to respond in a timely fashion, Achile Mbembe (1999 *apud*: LIPUMA & LEE, 2004: 173), for instance, draws attention to the "temporality of a technologically accelerated finance capital which seems to be overwhelming if not tyrannizing" Southern Africa's economies and states. In effect, this spatio-temporal binding encompasses not only risk-related leads but also some particular money functions, such as a unit of account, in that it provides a certain standard against which exchange can be furthered, and as a store of value, through objectification of risk and pricing of volatility.

The heightened leverage capacity that derivatives offer, it must be stressed, is deeply intertwined with the fact that there is no requirement of ownership of the underlying asset, like the dollar, the oil, the Treasury bond, the house etc. What is, in fact, needed is only exposure to – mostly indexable – risk ascribed to the particular asset or the asset category. And as Bryan and Rafferty

(2007: 140) note, this "separation from asset ownership is the key to the money function of derivatives, for it gives a liquidity and transferability not possessed by the wheat, the oil, the bonds or the equities themselves." At this juncture, one could counter that binding is not, at the last instance, dissociated from what has already been said by both the orthodox and their critics: the distinctive character of derivatives could still be translated into space-time compression, and the debates that potentially ensue could still be cloistered around notions of efficiency or speculation. And that would be, it should be pointed, fairly accurate. However, as stated at the beginning of this section, binding is just one side of the coin – and the one side to which many theorists and commentators seem to limit their analytical or theoretical scope. The other side, which accounts for the novelty and distinctiveness of derivatives as a money-form, is referred to as *blending.*

The dissection of the attributes of different types of assets and their assembly into one derivative product is the process that blending is meant to depict. Here, again, it is thanks to this separation from the underlying asset ownership that blending is made possible. It may be useful to sketch this monetary role by taking convertible bonds as an example. Created by the Myron Scholes, Nobel Prize winner and inventor of the Black and Scholes pricing model, convertible bonds are a debt security that comprises an option to convert it to shares, once the latter is outperforming the former. This option can be exercised at certain time throughout the lifetime of the contract. What precisely this innovation entailed is the blurring of the distinction between debt and equity, as well as the rise of a hybrid security which is, in fact, a blend of debt and equity. First introduced in the decades of 1950s and 1960s, these financial securities have spawned through the course of years a series of other derivative products which, in fact, blend a gamut of different attributes together. To the extent that willingness of exposure and not the ownership of any underlying asset itself is key, any customer-tailored products connecting disparate elements – like interest payment streams on a car loan and projection of corporate performances gauged by an index – can possibly be assembled to meet given exposure needs, whilst following a risk/reward logic. In this sense, Bryan and Rafferty (2007: 141) can assert that,

> [e]ach derivative product is a package of conversion of one form of capital to another – whether this is a simple commodity futures contract or a complex conversion of a particular currency index to a particular stock market index. When all these products are taken together, they form a complex web of conversions, a ***system of derivatives***, in which any 'bit' of capital, anywhere and with any time or spatial profile, can be measured against any other 'bit' of capital, and on an on-going basis. (emphasis in original).

What this means for money and the new monetary object and dynamics under scrutiny in this study is that the blending process cannot be captured by the recurring credit model where what is at play is basically the workings of a new form of credit-money. The hybridity fostered through blending gives form to a type of money that embodies the characteristics of capital and at the same time to a capital that embodies characteristics of money (*Ibidem*: 142). However, it should be emphasized straightforwardly, we are not facing merely hybrid composites here. Conversion is an 'entitlement', so to speak, that requires continuous assessment, calculation and comparison of rates of return of different forms of capital. Hence follows, in conjugation with an imperative of continued calculation, an intensification of competition between multiple forms of capital. In effect, it is important to note, by delving into the details of monetary practices and institutions surrounding the notion of derivatives, it is possible to apprehend a different framing of the relation between money and capital that goes beyond the more formalist view of money turned capital through the regulation and control of production and exchange. Central to the process of blending is *capital commensuration* that has been only possible through derivatives: it is derivative that renders virtually all forms of capitals, independently of time and space, commensurable. In effect, in the course of commensuration processes, derivatives also encompass, it must be underlined, monetary functions of money of account and of store of value.

It follows from this that it is not self-referentiality or the technology that improves on space-time coordination that definitely mark the distinctiveness of derivatives-as-money. Its value being determined through competition propped up by relative valuations of underlying assets, derivatives cannot be taken as wholly self-referential or just virtual money, without entirely missing the point. As Bryan and Rafferty (*Ibidem*: 142) put it,

> derivatives are, within themselves, computational – they embody systems of calculation that commensurate different forms of capital according to notional competitive norms. They are, in this sense, a universalizing force.

In this sense, one of the crucial characteristics of derivatives, rather than self-referentiality, is *self-transformation* – a notion that also contests the idea, mistakenly grounded on credit models, of financialization being a 'more of the same' phenomenon, a moniker used to describe the intensification of already known capitalist dynamics, as in most neo-Marxist and regulation theory account. It must be added that, in stark contrast to the formalist views prevailing within both schools of thought, in which money is seen as playing an essentially instrumental role of serving a fictitious capital, to which, in turn, an "ontological autonomy" is often ascribed in the realm of capitalism (GILL, 1991: 52 *apud*: LEYSHON & THRIFT, 1997: 265), the reframing of money-capital relationship in derivatives proposed in this section does not preclude reflexivity. The inherent feature of capital commensuration is performed through a sociotechnical dispositive that is reliant upon both human and nonhuman agency as will be further developed in the next chapter. In effect, this understanding of derivatives breaks open the access to the material, cultural and sociological underpinnings of this new capitalist money-form.

2.4 Conclusion: in between the 'real'/'money' economy

If Ingham (2001: 316) is right – and I reckon that he is – when he points out to the centrality of the creation of 'bank money' through bank lending to the constitution of capitalist enterprise and, consequently, to capitalism, the conception of money of account as abstract accounting of debt-credit relation is clearly insufficient to grasp the most contemporary monetary developments that I set out to investigate in this research. The financial innovations arising in the decades 1970s and 1980s cannot be properly captured in reference only to a credit theory of money. Under no circumstances should these financial dispositives be viewed solely as matter of accounting operations on electronic books of any kind. As I have demonstrated in this chapter, derivatives are not just about claims to abstract debt values or to credit obligations, "they are themselves computations of relative values, embodying social relations of competition, not just trust, power,

promises and obligations" (BRYAN & RAFFERTY, 2007: 145). Hence it follows that the conceptual juxtaposition between real economy and monetary economy or even between production realm and monetary sphere fails to adequately apprehend derivatives. As the case of the convertible bonds illustrates, value cannot be dissociated from the profit rates stemming from production or the real economy on one way or another. As Bryan and Rafferty (*Idem*) perfectly summarize, "derivatives are distinctly capitalist money rather than just money within capitalism", in that they embody social relations of competition among multiple forms of money/capital.

Another reason why money of account cannot be the most adequate depiction of derivatives is related to the state, as the ultimate source of trust and legitimacy, and money-as-currency conceived as a sort of underwriter of any other monetary form. Aligning himself with the Charlatists, the proponents of a state theory of money[3], and relying on the clear-cut distinction and autonomy between economic relations and monetary relations, Ingham (2004: 187) argues that:

> [t]he extension of monetary relations across time and space requires impersonal *trust* and *legitimacy*. Historically, this has been the work of states. Monetary space is circumscribed by the authoritative money of account that defines the abstract value that constitutes the legal means of payment for unilateral debt settlement. (emphasis in original).

Here, the underlying premise is that money-as-currency, as itself the underlying token of value, can be, at the last instance, converted into other objects embodying intrinsic value, as long as there exist related guarantees emanating from the state. An attentive consideration of the international arena, though, renders the inconsistency of such reading plainly evident. Construed for the purpose of this debate in reference to a terrain of multiple monies of account, the international realm is destitute of any authoritative mechanism capable of reconciling these variegated monies of account in a trustworthy and stable way. This goes to show that trust and stability cannot be the grounds on which monetary (dis)order lies.

[3] The state theory of money posits that money is a creation of the state, which, in turn, establishes the abstract money of account and the means of payments authorized to represent it. As to the validity of money, the theory ascertains that the payment of taxes and state's payment for the services and goods supplied by the citizens are the ultimate guarantees of acceptance of any particular form of money. Hence, no commodity form is ever required to provide money with value.

Given that volatile exchange rates and the differing interest rates that stem from them are not only the condition of possibility of derivatives but also their primary objects of intervention, derivatives-as-money give form to transnational connectivity across different monetary spaces, both at the micro-level and macro-level. Whilst states may struggle to provide stability or, most precisely in view of current fact, low inflation, building on trust and inducing scarcity of money supply, within its own territorial jurisdiction without being able to advance beyond the national space, derivatives offer inconstant standards of equivalences in current exchange across multiple time-spaces. Therefore, the notion of state money subscribing derivatives-as-money is not sustainable, given that taken as both monetary practice and an institution, derivatives floats vastly beyond state control. In this sense, Bryan and Rafferty (2007: 147-148) precisely note that:

> [t]he 'redeemability' of a derivative contract depends not so much on the reliability of states' monetary units (for this reliability is itself the object of some derivatives) as on the reliability of parties to derivative contracts (a role that non-state actors, such as ratings agencies, derivative industry associations, investment banks and auditing firms, help to monitor). It is here we see elaborate measures (such as credit ratings and margin calls and credit derivatives themselves, such as credit default swaps) used to support reputation financially. This is a system of private, not state guarantee.

Hence, it follows that if the 'real' economy and 'monetary' economy stand not in an exclusive but rather constitutive relation, the same is true for derivatives and the national currency.

That said, circulating through intersecting lines, situated in an inbetween sphere, derivatives as a monetary practice can be construed as productive, in that, by means of sociotechnical apparatus purportedly designed to tackle uncertainty, they enact, in Mirowski's (2006: 275-6 *apud*: BRYAN & RAFFERTY, 2007: 149) words, "the working fiction of a stable monetary standard". In this perspective, derivatives can also be understood as commodity money, the substance of which is an amalgamation of information, presumptions, knowledges, prejudice, noise, all put together in order to tag a price on a range of differing money-forms and value-forms. The blending capacity of derivatives renders the particularities of specific forms of money transmutable and performatively enacts an abstract money-form, the workings of which, in turn,

sutures different moments and events into a system of derivatives. And by doing this suturing of concrete and abstract, particular and universal, derivatives disrupt the distinction between a real economy and money economy, the private and the public, polity and society, culture and nature. And derivatives run across these dividing lines.

3. Derivatives as sociotechnical networks

3.1 Introduction: a distributed-agency perspective on derivatives

In this chapter, I take the task of analyzing how these processes of binding and blending play out in the materiality of the US financial and monetary subprime networks. To this end, I will firstly develop the notion of sociotechnical networks drawing from Latour's Actor-Network Theory (ANT) and some conceptual categories advanced by theorists associated with the Science and Technology Studies. This section is intent on sketching the theoretical framework guiding our ensuing investigation of the subprime market network. The analysis of the subprime market networks will shed light to the strategies of standardization, classification and deferral connecting and delineating trajectories across space-time. In the light of the financial puzzle previously recomposed, the third section would be centered on the question of what politics of calculation means and, crucially, what its material ramifications are. The chapter concludes with reflections on modes of racial/gendered exclusions authorized by derivatives which operate in the interstices of multiple financial networks.

As developed in the previous chapter, the process of binding inherent in derivatives suggests specific cartographic practices that give form to different monetary and financial networks, the particularities of which will depend not only on the underlying asset but also on the chain of mediations binding and conferring meaning to multiple actors/actants. The gamut of actors that come together may range from the state, the media, the different groups of money capitalists and to what economic geographers like Leyshon and Thrift (1997), drawing from Science and Technologies Studies (STS) term "machine intelligence", notably in reference to the developments in information technology and integrated information and communications system, often times involving use of artificial intelligence technologies. Drawing from the Actor-Network-Theory (ANT) and Latour-cum-Deleuze-inspired conceptions of space, the notion of network deployed along these lines can be better understood, in the light of Latour's re-articulation of the concept of the social via the sociology of Gabriel Tarde.

Not conceiving the social as a domain on itself, dissociated from other fields such as biology, physics and chemistry, Tarde held the social as a principle

of connections and criticized what in Durkheim he perceived as the abandonment of the duty of explaining society - an estrangement facilitated by a gesture of inversion between cause and effect which, in turn, would have freed him to carry on with his own political project of forging a social engineering (LATOUR, 2005). Indeed, Latour's tracing of the ways in which the 'social fluid[4]' circulated through its etymology are rather illuminating. The root *sequi* indicates follow, accompany, while *socius* in latin refers to associate, companion, hence, in several languages, the primary use of the term denoted following, engaging in, joining and, finally, having in common with another. Throughout the centuries, however, the scope of the social, Latour notes, was progressively reduced from a notion applicable to every and any association to what is left after the other domains of knowledge – economics, psychology, politics, law etc. – have removed their fair share of the associations. In this sense, the processual character of such operation of assemblage progressively fades as its qualifying character (as an adjective) – a rather peculiar qualifier denoting self-retention, closure and solidity – takes precedence. What this implies to the sociological practice is the use of a prêt-à-porter conception of society, which supposedly fits anyone, anywhere at any time. However, how such semantic variations have been produced over the years remains to be explained.

The concept of society appears in the 18th century and, as a construct of a sociology with scientistic aspirations, it lies upon it the double task of assembling the political body and of assembling the social body, to solve or, more precisely, to displace, the paradox of sovereignty, expressed by the political representation of multitude by a representing body, to whom it should submit. However, as society is assumed to be a correlate of the political body, it's not possible to assemble, in the terms of Latour, the collective anymore, just as, at the very moment that the existence of society is presumed to correspond to the substance of the political body, one loses track of the task of tracing the contours of the body constantly (re-)formed by political activity. In this perspective, Latour asserts that:

[4] One of the images that Tarde conjures up in reference to 'the social' is social fluid that circulates and takes on ever-changing and only provisional shapes (Latour, 2015).

> it does not require much effort to see that a virtual and always present entity is exactly the opposite of what is needed for the collective to be assembled: if it is already there, the practical means to compose it are no longer traceable; if it's total, the practical means to totalize it are no longer visible; if it's virtual, the practical means to realize, visualize, and collect it have disappeared from view. As long as we detect behind the collective the shadow of society and behind the society the shadow of Leviathan, no science of the social can proceed forward. To put it more bluntly: either there is society or there is sociology. (LATOUR, *op. cit.*: 163; emphasis in original).

It is thus by abandoning aspirations to the political relevance guaranteed by the status of science of society and retrieving the meaning of the social as a traces of association of dissimilar elements, as a contingent movement of these associations, that the study of the social should be reformulated in the sense of the exercise of mapping of associations.

This reorientation of the engagement with social and political processes should guide us when tackling monetary networks as a material formation, a systematic ordering that remains open, provisional and subject to constant changes. In order to take this step of following and recomposing these interest-bearing and risk-based financial assemblages circulating and operating in a nomadic fashion, it seems crucial to keep in mind a Deleuzo-Guattarian notion of radical relationality, in which human and nonhuman come together and act in a space, which is itself also a systematic, albeit contingent and dynamic, ordering that derives from particular politics of connectivity or of assemblage. Just as crucial is to hold on to a processual and immanent perspective that does not work with a presupposition of an 'outside' composed of social forces that determine the 'inside', or of a 'global' force acting upon a self-contained 'local'. For Massey (2005: 183), for instance, who comes from that same theoretical lineage, the space is conceptualized in terms of "as relational and as the sphere of multiplicity, (…) an essential part of the character of, and perpetually reconfigured through, political engagement". In effect, this conception implies a politics of connectivity as well as politics of openness and closure (*Ibidem*: 180), whereby what really matters is less the degree of openness/closure than the, so to speak, regulative ideal – be it explicit or implicit –, and the power-geometries that regulate movement and access. This view implies that there exists not a global 'out there' or 'up there'; neither is there a local as a victim of global spaces or as a mere

function to the bigger global space. As Latour (2005: 204) puts it, "no place dominates enough to be global and no place is self-contained enough to be local." In effect, the theory of the action inherent to this perspective does not presuppose an "outside" composed of social forces that determine the "inside". Inside and outside are predicaments of a participant observer. Building on Tarde's notion of complex composites, Thrift (2006: 140) recalls that the "small can be as complex as large, and indeed that the smaller can be the bigger entity, that the world is heterarchic through and through with the same method pertaining at all levels, and that the big foregrounds some of the features of the small." Furthermore, this theory of action is built upon the understanding that the capacity to act and attribute meaning to actions can never be dissociated from cultural, material artifacts such as "prostheses, tools, equipment, technical devices, algorithms and so on" (CALLON, 2009; 2010), and therefore not only human actors but also nonhuman *actants*[5] are to be equally taken into account. Indeed, since agency or, to borrow from Deleuze, *agencement* is distributed across the network, there is no single point of origin of any given action, and the actor/actant is itself also a network, a historical formation in constant tension and activity, whose definition lies not in a certain nature but rather in the type of action and the difference that it produces within the network.

That being said, derivatives-as-money are framed, here, as a money-form that is constituted by different networks of actors and actants. Money in its derivative phenomenological existence is hence construed, as Leyshon and Thift (1997: 185) put it, as "a series of transactional networks, bound together by the communication of information, which allow certain forms of uncertainty to be at least controlled if not eliminated, and which depend for their upkeep on often distinctive concepts, texts and instruments" moving through a chain of mediations and translations. The binding process thus implies a certain politics of assemblage that, as it can be inferred from the associated blending process sketched in the previous chapter, is premised upon a particular politics of calculation – chiefly centered on capital commensuration. In the next section, I will begin to assess, to collect and to (re)compose the materiality of derivatives as networks with its

[5] The term actants is borrowed from the field of semiotics and, in the ANT perspective, is used to refer to the 'actorhood' of nonhumans. This 'actorhood' is intrinsically related to the capacity to produce difference and meaning within a given network.

nodes and mediators, taking as the analytical setting the subprime financial market of the United States of America. This task of mapping the trajectories of derivatives-as-network will allow us to answer the question of what precise political and material effects of what I have been calling politics of calculation are.

3.2 Subprime mortgage networks in the United States of America

The rise of the subprime market is intrinsically related to disputes and controversies over the role of banking institutions in the complicated scenario following the collapse of the Bretton Woods System. From former risk-absorbers, banks then sought new strategic positionings that would result in considerable profit margins. At stake was the expansion of their customer base to encompass other market segments, thus yielding substantive fee-based income (DYMSKI, 2009). The foray into low-income, racialized minorities was intensified by the creation and circulation of new financial assets, coupled with the emergence of outlets for higher risk debt: the subprime mortgage market thus took shape.

In a context of low-cost liquidity, the growing US housing markets, buttressed by very ambitious marketing plans and highly aggressive sales techniques, paved the way to the advance of subprime financing well beyond the limits of minoritized urban areas. Even people who traditionally would rather steer clear of the mortgage lending circuits ended up taking a stake in it. Mortgage loans signed by those previously reckoned 'unbankable' – purportedly on grounds of low and unstable income, such as workers on temporary employment contract or self-employed, or on the basis of unsound credit histories, due to either no borrowing record at all or previous defaults on debt payments – saw an annual increase of 25% from 1994 to 2003 (LANGLEY, 2008). In this period, subprime loans effectively outperformed its prime modality. It should be noted that the latter already exhibited an important growth rate. Ameriquest, Countrywide, National City and New Century Mortgage are names of some of the businesses that, thanks to the subprime mortgage lending boom, became big financial institutions. Some acquisitions also ensued, such as Associated First Capital which was taken over by Citigroup in 2000 and House International bought by

HSBC in 2003. Gigantic corporations engaging in acquisitions looked for channels not only into subprime lending markets but also into the customer financing operations which registered the highest rates of return. Blackburn (2006) noted that, in the early 2000s, big finance houses were joining retailers in order to gain market shares in a soaring consumer debt market which, by the end of 2005, ran at 130 per cent of the personal annual disposable debt. As the social fabric linking realtors, retailers, brokers and international investors was being swiftly stiched, subprime loans saw another uptrend as from 2003 and 2007, with new originations totaling up to approximately $625 billion (USD) (Langley, 2008). In ways not dissimilar to any other type of finance, the value chain in subprime finance hinges upon seemingly safer assets that generate regular income streams and that can both exert the function of collateral and of profit generation, on the one side, and rents on riskier investment or speculation, on the other. The geography drawn in this movement is predicated upon a specific sociotechnical dispositive constituted around a technocratic notion of 'default risk'. Hence, the one first nodal point of this calculative sociotechnical dispositive that I will delve into is *credit rating* in conjugation with *risk-based pricing*.

In what appears to be an advertisement piece that could possibly be part of broader public campaign, the magazine *the Banker* published an article entitled *Turning bad credits in profit*. At the very beginning of the text, one reads the following:

> Mortgage banks everywhere hear the news: ex-bankrupt businesspeople, struggling divorcees, freelancers and the self-employed are your best customers not your worst. Stop trying to lend at low margin to accountants, lawyers and civil servants who are reliable but earn the bank peanuts. Instead, find the customers who used to be turned away; by using modern techniques, in credit scoring and securitization, they can be transformed into profitable business. (KOCHAN, 2001:1)

Such call signals and lauds deep transformations that had already been set apace within financial institutions throughout the previous two decades. Customer-oriented organizational approaches and new business models have been deployed in order to identify "a particular geography of revenues which were previously considered trivial or off-limits" (LEYSHON & THRIFT, 2007: 101). Credit rating and marketing strategies triggered other important developments. Sorting,

stratification and pricing of this market segment into particular sets, categorized on the basis of estimated probabilities of default, was a further development of credit scoring. Graduated rates of interest were ascribed according to the probability of default: the higher the perceived default risk, the higher the interest rates charged. Originally instituted in the home and car insurance sectors in the middle of the decade of the 1980s, risk-based pricing was mechanism that authorized lenders to charge policy-holders reckoned as 'high risk' significantly higher premiums, on grounds of residence in postcode areas or of a poor credit claims record (LANGLEY, 2008). Likewise, the uncertainties related to future payment flows from borrowers became preemptively wrapped up into the present by means of stratified risk calculations and pricing decision (*Ibidem*: 475). In partnership with specialist credit rating companies such as Experian and Equifax, the government-sponsored enterprises (GSEs)[6] Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac), set up standards that allowed for the development of automated software underwriting system which, to the extent they spread through the mortgage market, reinforced the importance of credit scoring, segmentation and risk-based pricing (LEYSHON & THRIFT, *op. cit.*; LANGLEY, 2008). Central to ensuring standardization across the mortgage network was Fair Isaac Corportation score, widely known FICO score. The "*rule of thumb",* as this kind of model is commonly referred to in financial jargon, established 620 as the credit score cutoff distinguishing subprime borrowers from their prime counterpart (KEYS ET AL., 2010). As from the middle of the decade of 1990s onwards, FICO score has become the most widely used credit indicator by lenders, rating firms and investors.

The second node of the subprime financial network is not entirely a novelty. Understood as the conversion of illiquid assets into liquid securities, *securitization of mortgage* was first established in the US by agencies such as Fannie Mae and Freddie, in the context of the New Deal regime, in order to facilitate credit flows in the mortgage market (LEYSHON & THRIFT, 2007). A

[6] Government-sponsored enterprises are privately owned yet publicly chartered institutions created by the US congress in 1938, in the context of the New Deal agreement, with the aim of intervening into capital market in ways that improve credit-debt relations within strategically targeted market sectors.

secondary market was thus rising with the purported objective of fostering home ownership by low-income households. Yet the market segments targeted at the time were not as diversified, so to speak, as they would become a few decades later. Multiple mortgage loans were bought, repackaged into securities (a bond) and, it must be emphasized, underwritten by the GSEs – which means that default risk was absorbed by Fannie Mae and Freddie Mac in exchange for commissions and fees, even though those securities had already been sold to investors in the capital market. The US government also defined a certain amount of mortgage loans that should be held in the balance sheet, namely as asset, and not sold to investors. When it came to GSEs' operations, a set of prudential rules applying to the banking sector was effectively waived by the US government. As a matter of fact, this private-public arrangement established that Fannie Mae and Freddie Mac should be able to raise funds in the capital market at the same rate as the US Treasury (Atlantico, 2013), and, in circumstances of liquidity shortage, the government would, in accordance with the charter, bail them out. Thus mortgage-backed securities (MBS) fundamentally consist of a 'pool' of future obligations of mortgagors that, once turned into a financial security and sold in the secondary market – instead of held and kept in accounting books – could then be moved off balance sheets. This device played a pivotal role to the expansion of mortgage loans, on the one side, and for asset growth, on the other. However, in order to reach lower income segments within this arrangement, other important shifts were still to be produced.

Especially since the early 2000s, the role of GSEs has been increasingly transferred to the private non-agency sector. As the FICO scores gained currency within investment banks and hedge funds, propping up increased demand for securitized loans, the screening practices of these institutions have also undergone significant qualitative changes. Keys et al. (2010) developed an econometric study that suggests that the FICO score had a bearing upon hedge funds' and banks' screening practices. The findings point out that the spread of FICO score would have narrowed down the space for subjective assessment based on 'soft information' (qualitative data) and therefore privileged 'hard information' (quantitative data) in a more expedited assessment process. Of paramount importance to the spread of the subprime mortgage network into new terrains, in

addition, was the creation of what has been termed *structured finance*, an offshoot of securitization.

In simple terms, structured finance refers to the process whereby MBSs are sliced and diced into collateralized debt obligations (CDO), with specific rewards established according to risk class. Admittedly, such development would not have been possible without the intervention of another set of actors: risk rating agencies such as Moodys, Standard and Poors and Fitch. Risk-rating firms provided specific scores, B or C, for each and every subprime MBS, and therefore offered not only an important standard of equivalence to investors willing to participate in the market, but also a means to safely distinguish a bond backed by subprime MBS from, for instance, a AAA-rated bond backed by a prime MBS. The complex financial engineering inherent to CDOs could possibly be better fathomed through the depiction of the certain operations performed through the so-called Special Purpose Entities (SPEs). Extremely important *conduits* in modern financial networks, Special Purpose Entities, also known as Special Purpose Vehicles (SPVs), are legally created, albeit in many aspects shady, institutions which are commonly in charge of acquiring loans or other forms of debt and pooling them into financial assets – securities – to be traded in secondary markets. SPE did not have any physical location or a group of employees. Crucially, they performed the role of *conduits* through which certain processes and artifact, so to speak, were authorized to circulate. Leaving dodgy tax schemes aside, SPV could be an especially valuable option for sponsors – i. e. banks or any institution that create a SPV – when it comes to financing projects and adjusting risk positions (GORTON & SOULELES, 2005), in that, as explained above, securitization goes hand in hand with off-balance sheet debts thus allowing for leveraged positions. In addition, SPVs are not subjected to the prudential rules applying to banks and other non-financial institutions. Off-balance sheet debts pooled in MBS can be unbundled, segmented and then reassembled in a CDO, which comprises three distinctive tranches normally named equity, mezzanine and senior – categories defined in reference to investors and not borrowers. To the extent that it disperses and at the same time concentrates risk as it shall be made clear, this operation effectively broadens the range of investors that SPV are effectively able to lure into the market, especially those more risk-averse

international investors who would take a chance at 'B and C lending' provided that it would be possible for them to derive considerably higher return rates. Thus following a risk/reward scheme set in three tranches, the senior tranche has priority in the receipt of the payments in case of certain level of defaults or pre-payments, and, as a consequence of the lower risk perceived, senior-tranche investors are given the lowest return rate amount. Conversely, the equity tranche being the riskiest of all three tranches pays the highest return rate yet, should defaults or pre-payments ensue, has the least priority on payments.

In effect, what followed from this innovative calculative device was a series of additional derivative techniques aimed at mitigating risk associated with securitized and collateralized bonds. As Langley (2008) points out, a number of investors holding equity tranche procured themselves buy-back options whereby they could obligate the issuer to buy the obligation back should the stream of payments be interrupted. Furthermore, another such genre of derivative product that escalated this ambiguous capacity to disperse and concentrate risk, simultaneously, was the credit default swaps (CDS). CDS provided subprime investors with the possibility of an insurance against defaults. In exchange for a percentage of interests upon debts, insurance firms would back up investors in case of default or any credit event intervening on the regular stream of payments. Moreover, as part of the agreement, the credit/risk rating ascribed to the insurer, to all effects, overrode, so to speak, the specific rating attributed to the insured instrument. To illustrate: say for instance an AA-rated insurer providing insurance via CDS on an equity-tranche of B-rated bond backed by subprime securities; given that the money as per the agreement would have to flow from the AA insurer in the case of defaults, the subprime instrument would then be reckoned as an AA obligation, on the assumption that the AA insurer might have the funds to cover the subprime investor should payment streams from borrowers on the other end of the chain be cut off. This development also paved the way for the access of more investors in the subprime lending networks. In addition, as Langley (*Ibidem*: 478) notes, the spread of CDS in a highly volatile market also prompted hedge

funds to bet on defaults and, then, derive significant yields from 'shorting'[7] as defaults eventually materialized.

The last but in no way less important node that further stretched out, and intensified the rhythms of, the subprime networks are the *adjustable interest-rate mortgages* (ARM), marketed in terms of affordability products. Conceived with the purported objective of improving home-ownership, ARMs emerged in the early 2000s, in a context in which the number of interest-only mortgages were increasing significantly. By 2005, new originations with no provision for the payment of the principal borrowed attained 27% of all mortgage loans in the US mortgage market. A new customer-tailored product combining significantly lower rates for generally the first two or three years of contract with a shortened repayment schedule would gain currency across subprime networks. After the end of the 'teaser period', the interest rates would be adjusted at substantially higher levels. Premised upon the continuity of a scenario of rising house prices and low-cost liquidity, this derivative proved to be rather ambiguous with regard to its purported claim to affordability. For if, in the first instance, following the spread of ARMs, home-ownership rates reached nearly 70% in 2004 in the US (SAMUELS, 2007 *apud*: LANGLEY 2008), in the last instance, the payment of principal borrowed had been lost sight of. Not to mention that the rising house prices coupled with payment options set by ARMs, prompted borrowers to, once past the teaser period, remortgage their house and cash out the difference worth of equity, which, in turn, was increasingly channeled to consumer debt networks and not to the higher repayments of remortgages as possibly expected. Indeed, it also encouraged an intensive process of continuous deferral of payments and, consequently, of the associated risk. At play, centrally, in this device is the transfer of the risk associate with interest rate volatility from lending actors, as set by the previously predominant fixed-interest rate repayment products, towards borrowers, inasmuch as the latter are supposed to manage themselves the interest rate risk once signing interest-only adjustable ARMs. Borrowers, then, were compelled, as Langley (2008) notes, to act as the leveraged investors leading the entrepreneurial task of providing themselves with a house. Lenders who, as per

[7] Shorting or short-selling refers to the practice of selling securities either not owned or just borrowed by the seller, anticipating that their price shall fall and then sell them for profit (see BLACKBURN, 2006, for an account of financial practices stemming from trade in derivatives).

the preceding fixed rate contract, would have to absorb the risk of variations in interest rates were freed from such responsibility, thanks to interest-only ARM that effectively *translated* risk transfer to affordability.

The depiction of subprime networks by means of the three main sociotechnical devices sketched above – securitization and risk-based pricing, structured finance, adjustable rate mortgage products - hints at particular modes of mediation and to specific strategies of connectivity through which Hayek's image loom large. In a Hayekian ideal of sociability cast in terms of rational economic organization (HAYEK, 1945), information circumscribed, and potentially only available, to the micro-context of each 'man on the spot' should be set to circulate efficiently by means of a price system, which, in turn, reduces costs associated with coordination and transaction. In his own words, these problems of market coordination and communication could be solved:

> by constructing and constantly using ***rates of equivalence*** (or 'values', or 'marginal rates of substitution') i. e., by attaching to each kind of scarce resource a ***numerical index which cannot be derived from any property possessed by that particular thing***, but which reflects, or in which is condensed, its significance in the view of the whole means-end structure. In any small change he will have to consider only these quantitative indices (or 'values') in which all the relevant information is concentrated; and by adjusting the quantities one by one, he can appropriately rearrange his dispositions without having to solve the whole puzzle ab initio, or without needing at any stage to survey it at once in all its ramifications. (*Ibidem*: 525, emphasis added).

For Hayek the precise information folded into a figure is not what really matters, but rather the capacity of "prices to act to coordinate the separate actions of different individuals" (Ibidem: 526). Insofar as information – here understood as presumptions, knowledge, prejudice, and why not noise – is continuously translated into prices through the mediation of sociotechnical calculative devices which, in turn, by means of alleged standards of equivalence and stratification, allow for the continued translation of debts into equity (capital) as well as for the conversion of volatility and uncertainty into highly profitable assets. In Hayek's imaginary, pricing systems – as a knowledge regime revolving around financial modeling and derivatives – must be celebrated in that they embody the possibility of ceaselessly collecting and transmitting information across market networks and

improving market efficiency. Hence they give form to the libertarian utopia of "a world of continuous and complete markets in which every thinkable uncertainty can be bought and sold at an intrinsic fair price" (de GOEDE, 2005: 140). To borrow the terms of Randy Martin (2002), a "sociality of ownership" and "sociality of risk" can be thus enacted, fraught with ambiguities and tensions, as shall be made clearer in the next section. In the light US subprime mortgage networks, it is possible to grasp what I call, following Langley (2008, 2008b) a politics of calculation through which this complex social assemblage is knitted together. And it is to this calculative form of politics, to its ambiguities and unequal effects that I will turn in the next sections.

3.3 Politics of calculation: contingencies and limits

Purportedly conceived so as to enable hedging against default, what derivatives seem to achieve, as demonstrated above, is a continuous deferral of risk across monetary networks that it enacts. Given that contingency is the ultimate source of profitability within derivative markets, the attainment of a risk-free equilibrium position seems at least inconsistent. As Cooper and Konings (2015: 245) noted, drawing on the works of Elie Ayache and Bryan and Rafferty, "financial derivative contractualizes the failure of measure and of 'unknowability' of fundamental value in an era marked by floating exchange rates". In effect, instead of mechanism of protection against overall market volatility, what derivatives entail is risk diffusion to unknown time-spaces, whilst opening up a space for highly profitable trade in volatility.

As sketched out earlier, while the volume of assets exhibited exponential growth, driven crucially by off-balance sheet accounting, no match funding was required. To the extent that mortgage originations proliferated, generating commission and fee-based income, and credit rating processes were expedited through automated underwriting, with potentially decisive implications for screening practices, "the collective uncertainties of mortgagors necessarily escaped calculation" (LANGLEY, 2008: 482). If risk-based pricing calculates default risk of individual borrowers, based on the individual credit record, so as to fit her into one thin set, no socioeconomic variable, for instance, is taken into

account. Such limitation tend to escalate, once subprime mortgages are packaged into MBS and structured into collateralized debt instruments, through operations that are dependent upon ratings provided by risk-rating firms, the calculations of which are unable to account for collective uncertainties. Not to mention the potential conflict of interest that can emerge, given that rating firms are paid by their customers, derivative-issuing companies, to assess the value of their assets. It must be noted that structured finance enacts a marketplace in which what is, in the last analysis, traded is not a commodified and liquefied asset as in the case of ABSs and MBSs. Rather, investors find in CDOs a space for negotiation of default risk positions (LANGLEY, 2008b).

Furthermore, as seen in the previous section, the spread of interest-only ARMs heightened subprime borrowers' risk exposure in that it fell upon them the responsibility of absorbing and managing risk. In this sense, these transformations further a neoliberal ethos of self-help and self-organization, whereby subprime borrowers are compelled to take up the split subject positions of investors-borrowers-entrepreneurs and decide when to take a 'refi' and what to do with the amount cashed out in equity while the dream of actual home-ownership fades away in face of the reality of negative amortization. A complex system of deferral, in conjugation with 'unmatch funding', is intensified and thus amounts to what in financial parlance is referred to systemic risk and to what I would rather call systemic uncertainty, so as to emphasize the impossibility of calculating contingencies.

Premised upon the capacity to shut contingency off by ascribing an intrinsic value to uncertainty, modern financial modeling have, in fact, triggered what Merton (1995) has termed "financial-innovation spiral", that is:

> [t]he proliferation of new trading markets in standardized securities, such as futures, options, and swaps, makes possible the creation of a wide range of new financial products, many custom-designed and sold OTC[8] by financial intermediaries to meet selected needs of investors and corporate issuers. Next, volume in the new markets expands further as the intermediaries themselves trade simply to hedge their own exposures from the products they sold. […] New markets also evolve as some successful products become standardized and their source of distribution moves from intermediaries to

[8] Over-The-Counter

> markets. Success of these trading markets and custom products then encourages investment in creating additional markets and products, and so on it goes, spiraling toward the theoretically limiting case of complete markets and zero marginal transactions costs. (*Ibidem*: 10-11).

The teleological category posited by Merton suggests that, to the extent that hedging capacity is not socially distributed in equal terms and that, most importantly, the derivative standards of equivalence are not consistent or trustworthy, derivatives as a sociotechnical device seem to have less to do with insurance against risk than with relentless and limitless, as it were, march to the pursuit of a liberal (or libertarian) ideal of market completion. As a matter of fact, economists may admit that risk-free equilibrium is not feasible yet, as Cooper and Konings (2015) note, they seem not to be willing to reject their assumptions of intrinsic value, as the actual limit of their models.

Capital commensuration embodied in derivatives as monetary practice opens up venues for competitive profit-oriented activity. Here, it is important to emphasize that if in capitalist mode of production an intensification of competition entails declining profit rates, monetary and financial dynamics run in the overtly opposite direction, insofar as the more people invest in the asset category, the higher their profit rates will be (KNAFO, 2012), a situation that can be clearly observed in the subprime mortgage markets. This implies that asset inflations and eventual bubbles that repeatedly develop and collapse should not be fathomed as the result of a growing chasm between investment expectations and what production is actually able to deliver (*Ididem*: 860). Rather, intensified competition, as demonstrated in the first chapter, is inherently constitutive of derivatives as monetary practice and sociotechnical dispositive. A series of limits are effectively strained and displaced to open up new spaces for profit-generation. This is the reason why notion of limits in the production level lends little analytical value to the framing of the dynamics stemming from derivative trading.

Thus, by displacing the lines that separate and bind ‘economy’ and ‘society’, derivatives also foster a technocratic rationale by which disputes and settlements tend to revolve around questions of good or bad figures, good or bad borrowers/lenders, as the mainstream media and orthodox academic debates that followed the 2007-2008 financial crises, all too clearly illustrate. While it should

be clear at this point that numbers do not just depict a given realities, but rather enact them (THRIFT, 2011; MAURER, 2003); "calculations", as Langley (2008b: 131) puts it, "recasts political questions as technical issues to be solved, and is therefore 'thought to reduce the space of the political and to limit the possibility for disagreement'." Crucial political, social and economic debates are undercut by a sociotechnical dispositive. Hence, the framing of what has come to be known as financialization as sets of depoliticizing processes. Sets of cartographic processes that obfuscate and naturalize the asymmetries of power upon which it draws and by which it is drawn.

3.4 Conclusion: racial inclusive exclusions and interstitial finance

The New Deal monetary arrangement is often lauded for the degree of protection and well-being granted to workers in the US and in Europe. Under the assumption that money creation is a public good that is fundamental to long-term socioeconomic stability, the New Deal state would come to be established as the insurer of deposits held by private banking institutions. Such monetary ordering opened up space for setting a social democratic agenda which translated to substantial improvement of living standards. The growth in home-ownership from the immediate postwar period until the middle of 1980s is one such indicative of household betterment. None the less, what is often cast aside by this frame is that this allegedly generalized sense of prosperity was coextensive with substantial exclusions of racialized minorities.

From the outset, the Fordist-Keynesian consensus, an expression of a postwar cross-class compromise, set the "Fordist family wage" as the ground of a series of social entitlements, such as social insurance, welfare and credit programs. In this sense, it privileged the white male unionized worker to the detriment of people of color and women of all races, who were commonly engaged in nonstandard and seasonal employment (COOPER, 2015). So far as housing is concerned, it must be noted that up until 1970s, most US cities had some sort of legal provision – mainly racial covenants between home-buyers and home-sellers – preventing people of color from home-ownership. Landlords were even allowed to charge higher rentals from racialized minorities. This situation led people from African and Latino descent, a significant amount of who had

migrated from the South due to labor shortage following World Wars I and II, to end up in inner cities on the basis of rental housing.

In the early 1930s, Roosevelt created two organizations with the aim of improving home-ownership rates. The first, founded in 1933, was Home Owners' Loan Corporation (HOLC) and was designed to prevent small home owners in difficulty to meet their mortgage obligations from foreclosures. One primary measure taken through HOLC was to refinance a great amount of mortgage loans that were on the verge of default, and to shift them from the formerly prevailing short-term interest-only modality into longer-term, fixed-rate amortized ones. In the following year, the second organization, the Federal Housing Administration (FHA), was set up so as to provide state insurance on mortgage loans issued by private banks. It is in this emerging public-private model that Fannie Mae – the Federal National Mortgage Association created In 1938 – will be instituted in order to serve as a conduit, as mentioned earlier, for channeling these loans to institutional investors, in the form of derivative securities (COOPER, *op. cit.*: 401-3). Notwithstanding the extended capacity of lending enjoyed by commercial banks, thanks to securitization and federal state underwriting, FHA guidelines prescribed restrictive zoning ordinances and covenants on homes which precluded funding homes from minoritized areas and racialized borrowers (GERENA, 2007; DYMSKI, 2009: 152-153). In addition, no private lending institutions were found in these areas, and the so-called 'vanilla mortgages' – with long-term schedule, fixed rate and positive amortization – were premised upon the figure of the New Deal/Fordist borrower – white, male, unionized industrial worker.

Building on the Civil Rights Movement's momentum, people of color from the rural South and women protested against the lack of access to the New Deal provisions and against exclusion to inner-city ghettos. Riots then erupted throughout cities like Chicago, Philadelphia and New York in the mid-1960s. Legislation was, then, passed with the aim of extending anti-discrimination norms to lending market, such as the 1968 Fair Housing Act and the 1974 Equal Credit Opportunity Act. As the community started to become more mixed and a sort of multi-racial community militancy organized and gained strength, additional legal provisions were passed so as to outlaw practices of redlining as well as to ensure that mechanisms for loan monitoring were put in place – these were, respectively,

the 1977 Community Reinvestment Act (CRA) and 1975 Home Mortgage Disclosure Act (HMDA) (COOPER, *op. cit.*: 405; DYMSKI, *op. cit.*: 154). In effect, HMDA supplied advocates with demographic data on the mortgages loans – disaggregated by race, gender, income and the like – that banks were required to report on an annual basis. With one such means to trace where money was actually heading, advocates could better frame their demands and so they did. Once disparities began to be systematically spotted and denounced, as it was proved that mortgage loans were still being signed much less frequently in low-income minoritized areas, bank representatives claimed that they were not practicing redlining, but rather that it was a matter of highly risky operations that they were not willing to undertake at that point. Insofar as competition is key in any market economies, economics theorists and practitioners would argue in support, lenders should not be forced to venture in any opportunity (DYMSKI, *op. cit.*: 154).

Following the collapse of the Bretton Woods system and the crisis of thrift industry[9] in the 1980s, a series of transformation that were already in course were amplified and intensified, with material ramifications across the monetary and financial networks, as developed in the previous sections. As Dymski (2009: 151) puts it, "[b]anks and financial relations are not passive elements in accumulation processes, simply facilitating exploitation in production; they are active elements that independently impact the trajectory of crises." If during the Bretton Woods period, financial mathematics did not inspire much respect and confidence among investors and bankers, in the early 1970s, Fischer Black and Myron Scholes, with the collaboration of Robert Merton, developed, by drawing on the thesis of the French physicist Louis Bachelier, an option-pricing formula that would not only further derivative trading but also vest financial mathematical modeling with its long-awaited scientific authority. Following intensive political and academic debates, in 1976, three years after the creation of the Black-Scholes model, a future market in US Treasury bills was launched in the Chicago Mercantile Exchange. Cast in terms of a powerful means of mitigating societal risk, Black-Scholes option pricing formula legitimated and authorized the post-

[9] Savings and loan industry chiefly based on the originate-and-hold model would be increasingly replaced by the originate-and-distribute model.

Bretton Woods financial and monetary institutions and practices that ensued. In 1997 the BS model became consolidated as their inventors were awarded the Bank of Sweden Prize in Economics by the Nobel Academy (de GOEDE, 2005: 128-131). As international risk-averse investors, on the one end, could be bound with overseas uninsured borrowers, on the other, through derivative networks, the foray into lower-income minoritized households could be unleashed.

Until this point overrepresented in the unbanked and 'unbankable' categories, people of color increasingly were awarded access into credit markets, notably at the cost of extortionary interest rates and of significantly higher commissions and fees. As Langley (2008: 475) notes citing Dymski, "in theory at least, the '[t]he higher interest rates (and higher fees) charged' by subprime lenders ensured that loans would 'remain profitable even if a fairly high default rate is realized'." From 1993 to 1999, the subprime lending showed a rise of 900 per cent, whilst other mortgage loans decreased in volume. A study based on 2000 HMDA data demonstrated that the US nationals from African descent were more than twice as likely as whites to sign an subprime loan agreement, whilst for Latinos this percentage was over 40-220 (DYMSKY, *op. cit.*: 164). It follows from this that the notion of financial exclusion could no longer adequately be grasped by a inclusion/exclusion frame embodied in redlining as a discriminatory practice of denial of access on grounds of sex and race – though it goes without saying that such practice has not completely disappeared. The racialized, gendered financial excluded have been written into the lending and credit networks, by means of sociotechnical devices built around notions of calculable risk and risk-based pricing. Novel discriminatory and exclusionary practices could thus unfold, displacing exclusion and embodying it into "exploitative greenlining" (NEWMAN & WYLY, 2004: 53 *apud*: LANGLEY, 2008b: 163). As Langley puts it:

> [t]he new inequalities of price arise out of both the disjunctions between, and complex intersections and overlaps that bind, 'mainstream' and 'alternative' networks of everyday borrowing. The demarcation and diagramming of an abnormal and alternative space of financial exclusion actually makes possible the charging of relatively high rates of interest by lenders present in that realm, while the operations of the alternative and specialist lenders that occupy that space entail close

> connections with mainstream financial and capital market networks. (LANGLEY, *op. cit.*: 169).

In this sense, the notion of "interstitial finance", as suggested by Rob Aitken (2006) seems to cast clarifying light to the topological workings of derivatives with its power effects. As a sociotechnical dispositive, derivatives not only enact worlds (see ARADAU & HUYSMAN, 2013), binding and folding everyday events into the rhythms of modern finance, but also effectively redraws and dislocates "processes of filtering, partition and hierarchization" (MEZZADRA & NIELSON, 2012: 59). Building upon extant asymmetries of power, derivative devices open up "spaces of calculability" (CALLON 1998; LAW, 2004) for profit generation by those with hedging capacity, on the one hand, and for expropriation, dispossession and exclusion of those who are deprived of the same capability. In the context of disputes over access to lending and credit markets and social protection in the US, this politics of calculation also underwrites practices of bordering (see WALKER 2010; WALKER AND BIGO, 2007). In effect, these calculative practices authorize practices of discrimination and exclusion. "[T]here is always", as Walker (2003: 274) notes, "a politics to the authorization of politics, an ultimately groundless ground (…) a demand for justification that cannot be finally justified." In this sense, the politics of calculation provides the justification for a politics of border, understood as practices of discrimination and exclusion. At stake here is also the understanding of borders as not just site of affirmation of separation; boundaries, borders and limit lines are also site of affirmation of particular kinds of relations (WALKER, 2010). In effect, contemporary finance entail the displacement of the lines that formerly separated and connected the white, male, Fordist worker, on the one side, and the gendered, racialized, 'unbankable', on the other. While a mode of exclusionary inclusion arising from the workings of interstitial finance, the bordering lines move to differentiate and bind the white, mostly male, prime borrower, on the one side, and the racialized, gendered subprime borrower, on the other. Viewed as sites of intensive political activities, the borders also inform the terms and conditions under which subject positions are negotiated.

As for the libertarian utopia of continuous and complete markets, predicated upon the continuous codification of uncertainties and contingencies

into calculable risk, interstitial finance, while operating transversally, weave and blur the linkages between 'global' capital market networks and 'local', high-interest lending networks. Across these topological workings, derivative sociotechnical dispositive opens up disputed spaces of calculability that have rewritten unequal relations of socioeconomic power. The rising levels of inequality at the global level can be read against the backdrop of these sociotechnical networks. A recent study on global inequality by Oxfam, for instance, claims that as few as 8 men account for the same wealth as the half of the world population, the 3.6 billion poorest people (Oxfam, 2017). The mounting levels of inequality can be illuminated not only in the light of the realities enacted by derivatives network, but also by the deleterious effects produced once the networks disassembled.

It was around May 2007 that the monetary and financial derivative networks began to disrupt. The impact of significant increases in mortgage delinquencies, first transmitted through structured finance, hit hard first Hedge Funds holding the riskiest tranches of subprime mortgage CDOs. Major depository institutions in difficulty of liquidating their positions, such as UBS and BNP Paribas, closed funds that kept investment in subprime MBSs. As the inflated housing prices began to decline and liquidity drained from broader capital markets, major investment banks that in the previous years had exhibited impressive amounts of profits from MBS and CDO trading now incurred in massive financial losses deriving from the same trade (LANGLEY, 2008). Around 80 subprime mortgage firms were closed down in the first seven months of 2007. Other major banks such as Goldman Sachs continued to originate and market securities backed by subprime mortgages, whilst seeking to reduce their position in such market, which amounted to escalating further the disruptive effects of the crisis (DYMSKI, 2009). In an environment of heightened systemic uncertainty, representatives and authorities from the European Central Bank, the Federal Reserve and central banks in Japan, Canada and Australia gathered as of 9 and 10 of August 2007 to issue emergency multi-billion dollar loans at lower interest rates to inject liquidity into international money markets and thus mitigate the effects of the credit crunch (LANGLEY, *op. cit.*: 485). In the following year, Fannie Mae and Freddie Mac were nationalized. At the other end of circuit,

systematic foreclosures ensued in low-income minoritized areas in cities like Detroit and Cleveland, depriving particularly people of African and Latino descent and single mothers of a place to live. It was only in the mid-2007s that foreclosures started to reach white, middle-class families in the urban and suburban areas in the states of Florida, California, Arizona and Nevada. By the end of 2007, 2 million people had lost their homes and an additional 4 million were on the verge of being evicted (HARVEY, 2010). From 2006 to 2014, the number of homeowners who went through foreclosure amounted to over 9.3 million, of those only 27% were expected to become homeowners again, according to a 2015 report by National Association of Realtors (The Wall Street Journal, April 20th 2015).

In effect, the task of mapping of complex monetary and financial networks renders a number of tensions, conflicts and limits more intelligible, thus opening up space for critical engagement. As I move on to the final considerations of this chapter, I would like to highlight three specific strategies of connectivity that have underpinned the politics of calculation. The notion of strategy deployed here dovetails with the conception advanced by Best (2015: 25), that is "the constellation of practices that are linked to their connection to a concrete problem, to a way of defining and tackling it". The first strategy consists in *standardization* which is furthered by the multiple – though flawed – standards of equivalence, deriving from credit/risk rating and risk valuation, which, as shown above, are paramount to capital commensuration. The second strategy refers to work of *classification* or *categorization*, by means of credit rate, racial/gendered profiling, risk rating, which subjectivize and authorize extortion, exclusion and dispossession. Finally, the process of *deferral* is pivotal for the topological and rhythmic workings of derivatives, in terms of blending and binding, which extends and amplifies the reach of the network as well as dislocates and intensifies uncertainties. Crucially signaling to the power-knowledge nexus, derivatives as a sociotechnical device embodies and expresses particular power relations and the systematic yet contingent orderings that derive from them. In no way is it possible to vest a method with neutrality in that it is constitutive part of a triangulation of power-knowledge-methods that enact realities (ARADAU & HUYSMAN, *op. cit.*). This understanding is of paramount relevance in that, as

Cooper and Konings (2015: 247) note, before derivatives enjoyed widespread legitimacy, Hayek's antipositivist lens had already identified the inevitability of contingency, stemming from the lack of foundations for value and stability, and, as a consequence, the necessity for speculation. On the other hand, Hayek's views also express a faith in the possibility of a neutral form of money, an idea that still seems to bring together, in different ways, both liberals and libertarians, one the one side, and communitarians, on the other. Siding with Cooper and Konings (*Ibidem*), I must stress that modes of dissent within, and critical engagement with, monetary institutions and practices must not be premised upon such normative ideal, and, it seems crucial to take the path of accessing and assessing, critically, these interstitial spaces of money, measure and value. In the final chapter, I shall ponder over limits and possibilities associated with different modes of dissent in money and value networks.

4. Money and Dissent

4.1 Introduction: micropolitics of money

With focus redirected to practices and sociotechnical *agencements* that enact and give meaning to derivatives network I have attempted to decenter finance and unpack financialization in ways that shed clarifying light to multiple processes, connectors, nodes, mediations, strategies and authorizations. As I now turn to the analysis of different modes of dissent and their political re-appropriations and recreations of money and value-forms, I will examine microtechnologies that enact networks that operate on different terms and potentially disrupt and displace power relations (NORTH, 1999). "Micro" here should definitely not recast modern binaries of macro/micro and global/local. As seen in the previous chapter, those are predicaments of the participant observer and not referents emanating from actors/actants. In the Deleuzo-Guattarian metaphysics the micro and macro are the same and yet operate in different registers (DELEUZE & GUATTARI, 1972). Crucially, I draw on the Foucaultian notions of microtechnologies and micropolitics to shed light to the processes and techniques of resistance and dissent that unfold on the fractures and frictions of financial power. Inasmuch as no single locus of financial power is assumed to exist, multiple modes of dissent have 'eventualized' and materialized in alternative money-forms and exchange networks.

Indeed, the commonsensical response to the deleterious material effects of contemporary finance has been re-regulation, a strategy that not only implies centering political (im)possibilities on the spheres of state, state cooperation and global governance, but also is based on distorted premises. First of all, regulation translates into the establishment of some reporting requirement and the return of some so-called prudential rules, whereas the knowledge regimes and regulative ideals that underpin and give form to contemporary finance remain largely unquestioned and, most crucially, shielded from public scrutiny and debate. Secondly, it should not be neglected the extent to which regulation figures among the conditions of possibilities of the recent developments in financial and monetary institutions, which also means that regulation lies on the same epistemological and hence normative grounds as modern finance (de GOEDE,

2005). In this sense, re-regulation offers as rather depoliticizing response to the question of re-politicizing money and finance.

One pathway that has been explored but will not be analyzed in length in this chapter is money-art. In the era of the so-called financialization, many artists have delved into the conflictive representational workings of money/capital whereby, says Haiven (2015: 41) "money is supposed to represent value yet never quite does" and thus they have increasingly attracted academic interest (LANGLEY, 2008b, de GOEDE, 2005; HAIVEN, *op. cit.*). Some interesting interventions have been made by the Italian conceptual artist Cesare Pietroiusti, who uses his artist's fee as the medium for his creative work, namely by turning the money notes invalid; with his artwork he seeks to render explicit the aesthetic/ethic work that gives form and value to money. Another prominent money-artist is Argentinian Máximo Gonzáles, who also uses money in his installations, transforming 'real' paper money into thread and yarns out of which he has made beautiful tapestries, casting light to how money is interwoven in human day-to-day dramas (see HAIVEN, *op. cit.*: 54-58).

However, while money-art may embody what de Goede (2005: 168) refers to as a politics of disturbance, by denaturalizing and making strange our everyday monetary practice, money-art is unable to provide alternative modes of engagement with money beyond the limits of the artistic setting. To that extent, the issues that money-art brings to light more often than not tend to be framed in mere terms of representation and language games whilst the materiality they supposedly inform has remained either unclear or obfuscated. In this sense, it can produce depoliticizing effects. Even the politics of disturbance has a rather limited reach in that the artwork of these artists has chiefly circulated within the circuits of upper-class market economy.

Hence, in this chapter I sketch out in detail two different modes of dissent: the Black-owned banks and the Local Exchange Trading Schemes (LETSs). In order to offer a description of the former, I draw on the limited historical accounts available, whilst for the LETSs I count on a series of fieldwork and ethnographic studies carried out by Anglo-Saxon researchers that allow us to grasp practices and heterogeneous actors that are brought together in these alternative economic

geographies. Along the way, I point out to limits and possibilities associated with each of both micropolitical technologies.

4.2 Black-owned banks

Building on a long tradition of entrepreneurship that harks back to the very beginning of the hideous institution of slavery within the US territory, people of African descent, in face of the denial of access to depository institutions and of exclusion from the New Deal provisions, set out to create their own banks. As a matter of fact, the first one such effort dates back to 1851, when a formal meeting was held by Black church ministers, business persons and the like with the overall objective of improving Black people's socioeconomic conditions. At that moment it was agreed upon that, in order to achieve this goal, a mutual savings bank must be established by Negroes, fostering savings and thrift within the Black communities as well as assisting Blacks with their entrepreneurial initiatives and home-ownership (PIERCE, 1971 *apud*: AMMONS, 1996). As some historical records reveal, many of the Africans who landed in the Americas following the institution of slavery were taken from their commercial posts across the West coast of the African continent. Indeed, prior to the arrival of the Europeans in the 14th century, many were engineers, doctors, lawyers, business people and so forth. Some historical studies (see ANDERSON, 1993; PIERCE, 1971) have shown that, even under the institution of the Transatlantic Slave Trade, not only free Blacks but also enslaved Blacks did engage in business activities. Against all odds, some enslaved Blacks occasionally sold their services and a few managed to keep small businesses. Thus, an informal network, comprising Blacks who had gathered as much money so as to buy their own freedom, and mutual aid societies pooled their money to offer a series of services to Negro people, sometimes including financing (GERENA, 2007). Hence, the enterprise of setting a bank off the ground did not come out of the blue in the postwar context, but rather signals to a long diasporic tradition of entrepreneurship and multiple collective strategies.

Nevertheless, with the advent of the Civil War in 1861, the plan to establish the first Black-owned bank had to be postponed. In the aftermath and during the Civil War, most Blacks, particularly soldiers, held accounts in Freedman's Bank. Founded in 1865 by the Federal Government and administered by Union generals, Freedman's Bank was represented as a secure ground for

Black soldiers, refugee camp workers and emancipated Blacks to place their money. Notwithstanding, following the banking Panic of 1873 arising from the bankruptcy case of a distinguished railroad financier and series of associated events, Freedman's Savings, a bank purportedly designed to support recently emancipated Blacks, collapsed. This context, in effect, nurtured an increased feeling of suspicion among Black communities vis-à-vis the white banking system (*Ibidem*: 47).

The last years of the Reconstruction era (1865 – 1877), a period in which Blacks are thought to have enjoyed a certain degree of material freedom, were marked by exclusion of Black people from banking services, either through outright rejection or by means of the imposition of higher interest rates on Black borrowers. After the Reconstruction era, the Jim Crow laws institutionalized racial segregation in the Southern states and municipalities. While racial segregation were patent in the Northern state as well, especially in the light of the unequal conditions of access to a series of services and goods, including credit and mortgage loans, the Northern racial segregation remained a *de facto* and not *de jure* reality. It was precisely in this context that the 1851 plan of a Black-owned bank was revived. Mutual-aid societies that organized during the Reconstruction period and Black churches played a significant role in the endeavor that began to materialize in the late 1880s, with financing the creation of industrial loans firms, nursing homes, catering and credit union (AMMONS, *op. cit.*). Profession training was also provided within these organizations, a development that proved paramount to the formation of the future financial leaders of the Black communities. Thus, notwithstanding the several legal and social barriers, Black business and Black ownership rates increased after the Civil War (GERENA, *op. cit*., 47). And as the charter of the incorporation would later attest, the majority of the Black-owned Banks were created with the aim of supplying the capital and credit needed for the establishment of chain stores, printing shops, newspapers, nursing homes for the elderly and to finance projects led by the mutual-aid societies and the fraternal societies; crucially, the objective was also to provide the banking and lending services that were being denied to the Negro population in the non-minority depository institutions (AMMONS, *op. cit.*: 471). It was in March 1888 that the United Order of True Reformers obtained the first charter in

Virginia and the two first Black-owned banks were established in the Fifth District. From 1888 to 1928, more than 50 Black-owned banks opened for business across the country.

However, two major crises, the first in 1893 and the second in 1907, struck hard the US financial system, which coupled with the limited horizon for business opportunities, forced many of the Black-owned banks to close their doors. Few decades later, the stock market crash and the Great Depression that ensued would take their tolls on the entire national banking system. The outbreak of the World Wars in turn triggered massive displacement of people of color from the South to the North of the US territory, particularly in search for work that had vanished in their Southern cities. With the Northbound migration flow, many Southern Black-owned banks, as a result of a significant drop in their asset base, closed down. The period spanning from 1929 to 1953 saw the creation of only 5 new black-owned banks (AMMONS, *op. cit.*). A few Black-owned banks have been particularly successful in going through such difficult times though, however potentially at the expense of a community-based project. It seems to be the case of the St. Luke Penny Savings Bank, which, founded in Richmond in 1903 by fraternal society, initially provided low-cost mortgages to Black community. At certain point, it expanded the scope of its business beyond the Black community so as to operate as depository for Richmond's utility and tax payments. St Luke Penny Savings eventually took over two Black-owned banks in the decade of 1930s and became Consolidated Bank & Trust, which in the present day operates as a subsidiary of Abigail Adams National Bancorp (GERENA, *op. cit.*: 48). Whereas the scenario was devastating for most of the banks, for Black-owned banks it was significantly more dramatic.

The postwar period, as developed earlier, witnessed a significant decline in the well-being of the Black population. Exclusion from Federal Government's housing policies and incentives; rejection from workers union; heightened competition, as a consequence of the arrival of Europeans who had fled the war, for the traditionally racialized jobs; and redlining by mainstream commercial banks were among the factors that dwarfed the socioeconomic prospects for Black communities. It was not until the late 1960s and 1970s, with the rise of the Civil

Rights Movement and the increased support by the Federal government – in which, it must be stressed, the participation of Blacks grew substantially – that Black-owned banks will experience a sort of resurge. It is important to note, however, that the inchoate dislocation of the strict lines dividing Black and white districts that materialized following a series of legal provisions, such as the Community Reinvestment Act of 1977, produced the ambiguous effect of heightening competition for Black-owned banks that now had to compete with mainstream banks. In this new context, a significant number of Black-owned banks were either taken over by mainstream banks or closed down (*Ibidem*). Nonetheless, given that discrimination does not disappear miraculously by means of law enforcement and that, consequently, redlining was widely practiced within mainstream banks, there remained to be a substantial pent-up demand for financial services from Black and Latino communities.

Policies and legal provisions enacted by the Kennedy and Carter administrations, such as the Minority Bank Deposit Program, established by the latter, furthered the increase of deposits in minority-owned banks and helped give a new lease of life to Black-owned banks and businesses (*Ibidem:* 48). It is estimated that, from 1954 to 1969, 17 black-owned banks were established, and from 1970 to 1979, this number rose to 34, which figures as the best period for Black-owned banking after consolidation in the turn of century (AMMONS, *op. cit.*: 479). Increased participation in Carter administration and a shift of investment strategies, whereby Black-owned banks diversified their investments and directed a considerable proportion of their total assets to Treasury and municipal bonds, account for much of the success of the period, according to economists (*Ibidem*). Substantive amount of Federal government deposits fueled Black-owned banks. As a result, despite the recession of the mid-1970s, Black-owned businesses thrived. Economics analysts pointed out that the Carter administration proved very receptive and supportive to Blacks' project aimed at socioeconomic betterment (McCOY, 1992 *apud*: AMMONS, *op. cit.*: 481). But in what could be perceived by some, with the benefit of hindsight, as a backlash, the period opened up by the Republican administrations of Ronald Reagan and George H. W. Bush will be marked by a severe decline in the number of existent

banks of all stripes, skyrocketed unemployment rates and heightened competition in the financial sector, affecting particularly Black and minority groups.

Today, the number of Black-owned banks amount to over 20 across the US territory, according to the map of the Blackout Coalition[10], a racial justice militancy group. In 2016 following killings of Black people by white policemen, the 'Bank Black' campaign was launched aiming to prompt Blacks to move their money to Black-owned banks, in what has been cast in terms of Black-dollar activism.

From this precis of the Negroes' struggle and fight against socioeconomic and financial exclusion, can be derived some elements of great relevance for the purpose of the discussion that I propose in this chapter. It is undeniable that Black-owned banks played the paramount role of opening up then-inexistent spaces for the provision of a series of services for Negroes as well as of giving support to different entrepreneurial projects, thus serving the purpose of humanizing and dignifying Blacks and Black communities. The collective mode of organization, sometimes secretively led within fraternal and mutual-aid organization, must be highlighted as an alternative of, and disruptive of, the normative ideals of self-help, self-constitution and self-organization that underpin and are embodied in multiple neoliberal institutions. Premised upon the cooperation and mutuality, Black-owned depository institutions represent a mode of dissent that possibly foreshadows the credit unions that would only emerge in the US in early 20th century. Nonetheless, when it comes to the modes of engagement with money economy and money practices, this historical account also sheds light to some limits.

While Black-owned banking may be read in terms of a potential response to racial exclusion, when considered from the perspective of a monetary institution and practices, it was not without ambiguities which in turn tended to reduce further possibilities of dissent. It goes without saying that in a context of access-denial to credit and lending, those institutions must be viewed less as a

[10] The map of the Black-owned banks can be found at the website of the Blackout Coalition (http://blackoutcoalition.org/)

wholesale alternative to the extant monetary institutions and practices than as substitute to those excluded on grounds of skin color.

Moreover, limited money base deriving from the lack of regular income among the majority of Blacks put Black-owned banks in a vulnerable position in which their survival in difficult times, to a great extent, has tended to hinge on Governmental assistance and incentives or on the acquisition by mainstream banks. Not to mention the negative impact of this scenario in terms of the capacity for further monetary innovation, especially with regard to the money economy, at large. Fierce competition, following the enactment of legal provisions and financial incentives for racial desegregation, has prompted Black-owned banks to embrace broader market-oriented strategies that sit uneasily with the original purpose of community development.

On the other hand, according to economists who have been studying Black-owned banks (GERENA, *op. cit.*: 48) many Black-owned banks – in stark contrast to what we have seen happen in the subprime mortgage markets –, have consistently endeavored to maintain sound, long-term relationship with their customers and place their relationship at the basis for their risk-management practices. In opposition to an 'at-a-distance', cost-efficient customer assessment and to the separation from origination and risk absorption as common features of subprime lending, these Black-owned banks seem to base their credit and lending practices on notions of mutuality and reciprocity. This finding suggests that community development is still at the heart of many Black-owned banks, despite repeated claims from different social and market segments that the existence of minority-owned banks is no longer justifiable.

4.3 Local Exchange Trading Schemes

Local Exchange Trading Schemes (LETS) can be described in terms of a community-based network of exchange, production and consumption articulated around a local currency without the direct intervention of – albeit not completely unrelated to – the national currency (LEE, 1996; de GOEDE, 2005). The first experiences of the genre date back to 1930s when alternative currencies, scrip

money, were created in different localities across the globe in order to fight poverty and unemployment in the context of the Great Depression. Many experiments in full course in countries like Austria and the US were abandoned in face of strong state opposition expressed in mainly terms of legal sanctions (WILLIAM, 1999; de GOEDE, *op. cit.*: 166). It was not until 1983, with the establishment of the first LETS in Canada, by the self-employed Michael Linton, that this economic and sociopolitical experimentation took shape again. In a context of national currency shortage following the closure of a great externally owned employer in his town in British Columbia, Linton set out to establish what came to be known as LETS. In 1986, Linton presented a paper advocating for LETS at the 'Other Economic Summit', a critical, alternative forum that takes place alongside the G7 Summit, and thus his ideas began to circulate through the UK (*Ibidem*). The early 1990s witnessed sudden acceleration in the creation of LETS, especially across the English-speaking industrialized world (LEE, *op. cit.*:1377).

Primarily expressed by members in terms of an alternative means of exchange, the geography of LETS is enacted through a set of practices and procedures that often involve the use of some kind of technology, at least a computer namely for the work of accounting for credits and debts. Membership is open to all upon the payment of a fee. Members are provided with an electronic account that starts with a zero balance. Needs and offers expressed either in reference to products and services are published in a directory made available to all participants. Transactions are effected as negotiated on a one-to-one basis and they may be measured in the local currency or in a mix of local and national currencies. Once a member commissions work, a correspondent credit is created for the payment of that work. This payment is made through a cheque, backed solely by the commitment of the issuer to gain credits from other or the same member, at her convenience, so that the account can then balance out at zero again. Since there is no form of time coordination, it is possible for some people to go into debt or accumulate credit but, given that the account of the member commissioning work will be credited at the same time as the account of member delivering service or product will be debited, the network balance will zero out altogether. There is no local money circulation, transactions are recorded on

cheques and sent to the accountant or treasurer for system update. Details of all transactions taking place within the network are systematically publicized (NORTH, 1999; LEE, *op. cit.*: 1378). In this sense, the mode of regulation of these economic geographies translates into indirect public accountability, face-to-face trading, and community-based exchange driving the money supply.

When it comes to dissident valuation systems, so to speak, LETSs have struggled to ensure effective alternative standards of measurement and, to that extent, ambivalence has been current currency in the variegated forms of valuation that have unfolded. The HOUR scheme, in New York, for instance, is based on a unit of Hour indexed to an hour of work, which due to the US tax-income system that assess income yielded from barter, translates into the exchange rate of one Hour to ten Dollars. Hours do circulate in paper notes that come in five denominations: an eighth, a quarter, a half, one and two Hours (MAURER, *op. cit.*). Admittedly as a consequence of state recognition for purposes of tax assessment and payment, the Hour has been accepted as means of payment across a series of mainstream businesses and the change of transactions paid in Hours can be obtained in dollars – a situation that triggers a series of practical and political ambiguities. To the extent that the Hour has expanded its boundaries beyond the community-based system of value and enjoyed certain level of recognition by state authority, it has become another referent to the standard US dollar and grasped as a complementary means of payment in people's everyday exchange.

In the UK, many local currencies, like the 'Bobbins', are established in relation to the national currency, which has the ambiguous effect of, on the one side, facilitating the expansion of the network, and, on the other, of hindering the capacity to offer an alternative value system in its own terms. If the guiding principle is to value work according to no measure other than time or availability, as advocated by the anarchist network within the Bobbins network (NORTH, *op. cit.*), the persistent reference to the national currency and, consequently to the broader capitalist economy, may well corrode this capacity for the creation of new referent based on principles of solidarity and mutuality. Not to mention the

possibility of exploitation through undervalued/devalued exchange rates in one such double-currency system.

Another source of ambiguities and ambivalence with regards to LETS alternative valuation model concerns the need for surplus generation and redistribution across the network in order to finance the manifest objectives of expansion of LETSs' activities and bounds. As Lee (1996: 1385) summarizes the viewpoint of these participants:

> LETS will remain only marginally ameliorative and largely irrelevant to the lives of the poor unless they are able to provide for basic needs. On the supply side, business membership can ease cash-flow and liquidity problems and expand the market both for inputs and for outputs and so offset tendencies for LETS to undermine local businesses at the same time as allowing the use of local currencies over a large part of the (local) economy.

This particular disputed issue, among many others, points out not only to the heterogeneity of actors with their conflicting views within LETSs, but also to a trade-off with regards to scope and reach of the network (*Ibidem*). The idea of a community-based moral economy is disputed by seemingly irreconcilable perspectives such as, on the one hand, anarchists who, for instance, voiced against what they perceive to be a commodification of mutuality (NORTH, *op. cit.*: 77) and even sometimes refuse to report their activities to accountants, and, vested with a more pragmatic view, people like Linton himself and the people around him, who face the question of business participation in LETS in mere terms of a cost-benefit analysis vis-à-vis the vision of the expansion of LETSs. Other competing views on LETSs are enthusiastically expressed by a number of participants in terms of an opportunity to engage with an "enduring social and cosmic order" connecting people "on a human scale" (quoted in LEE, 1996: 1392).

Crucially, gender and class patterns of inequality undercut LETS community-based geography. Besides the gendered division of labor that is reproduced within LETS, Lee (1996) observed how men, more often than not,

gain an edge in price negotiations to the detriment of women. Unsurprisingly, class and status, as Lee noted, had a bearing upon debates over the rate assigned to different jobs. William (1996) in turn identified significant inequalities deriving from methods of valuation premised upon skills and status, and noted that low-income households and the unemployed received relatively less for the services they offered. In the Bobbins network, for instance, it has been reported that middle-class members whose skills are highly valued in the national money economy, when engaging in Bobbins-only deals – thus no mixed currency payment – have tended to charge a *pro rata* for Bobbins (NORTH, 1999: 79). "LETS, in certain senses," says one anarchist participant, "is beginning to mirror the money economy and the capitalist class system" (quoted in NORTH, *op. cit.*: 80).

As it can be inferred at this point, while businesses may see in LETSs a profitable ground to thrive in many aspects, some workers, especially low-skilled ones, have tended to face LETS with mistrust, particularly in light of the degree of insecurity and the dearth of social protection. It comes as no surprise that most researches currently available point to an overall membership profile that can be represented in terms of a majority of employed greens and alternative life-stylers, despite, according to William (1996), a growing number of unemployed. For some participants, LETS are "middle-class hobby" in which exclusions also materialize along lines of taste and life-style (quoted in LEE, *op. cit.*: 1397). "People who belong to LETS tend to want to eat properly", says one participant (quoted in LEE, *op. cit.*: 1388).

The relationship between LETSs and Social Security offices is another source of tension and conflicts that effectively puts the professed principles and boundaries of network to test. In the UK, the Department of Social Security (DSS) has attempted as much as possible to dissuade their beneficiaries from participating in LETSs, on the grounds that their benefits shall be affected. The expansion of LETS networks in ways that reach and assemble people such as SS dependents seems to be increasingly creating tensions with state authority and further inciting its regulatory power. Additionally, the lack of privacy and confidentiality with regard to personal information has also been reported by a

participant who received telephone call for a LETS service request by a phony LETS participant, as she would later found out when she checked the directory data base (NORTH, *op. cit.*).

LETSs have been recognized for enacting a new moral economic geography that has provided some material betterment for some of its member and a long-lost sense of community for others, thus fostering new engagements with money and work. On the other hand, the imported and sometimes heightened patterns of inequality, the tensions and ambivalences regarding its methods of valuation, and the strategies, if any, regarding the relationship with state authority – which, it must be stressed, has been intensely surveilling them – have significantly reduced its potential as a mode of dissent and micropolitical experimentation. Relatively low levels of trading – attributed to lack of time, communication issues, distance, lack of expertise and so on – have curtailed the possibilities of cultural innovation and, as a consequence, the possibilities of generation of new methods of valuation. To that extent, as a money practice LETS scrip monies have been reduced to a complementary means of payment alongside many others. Most importantly, it must be noted that the "do-it-yourself economic geography" (LEE, *op. cit.*: 1381) that maintains and sometimes amplifies extant patterns of inequality, predicated upon a moral philosophy expressed in terms of a simple negation of political economy, run the risk of becoming the perfect playground for all that LETSs claim to combat.

4.4 Conclusion: politics at the margin and unknown futures

In this chapter, I offered a depiction and a critical perspective on different modes of dissent embodied in multiple proposals of engagement with money. Two distinct community-based monetary networks were object of scrutiny in more detail, the Black-owned banks and LETS networks. At stake, most importantly were, on the one side, the potential to politicize financial and monetary institutions and practices and, on the other, the creative and strategic capacity to effect change and offer alternatives as far as value-form and measurement are concerned.

LETSs have shed light to the abstract and conventional aspects that underlie money as both an institution and a set of practices, and thus have served the purpose of denaturalizing and re-politicizing money. Additionally, attempts to generating novel standards of valuation are to be stressed. On the other hand, the volunteerism and the moral philosophy that inform most of LETSs' ambiguous and, sometimes, conflictive practices undermine their capacity to figure as alternative, critical countercultural space and, in addition, may put the disenfranchised in even more risky positions. To a great extent, the idea that seems to hover over many LETS networks as a political experiment is expressed, paradoxically, in terms of a depoliticizing assumption that it is possible to transcend political economy, as Lee (1996: 1392) captures in his ethnographic research. Here, again, it is possible to identify the persistent normative ideal of the possibility of a neutral money that, as noted above, casts a veil upon the multiple relations of inequalities along lines of gender, class and, most probably, race.

With regard to the Black alternative, it must be noted that, notwithstanding the political appropriation of 'Black dollars', so to speak, as form of tool to combat racial exclusion with the gamut of new sociopolitical meanings that this gesture effectively vests money with, crucial day-to-day monetary practices associated with money economy and contemporary finance remain out of sight and largely unquestioned, especially in contemporary 'Bank Black' or 'Black dollar' forms of activism. To a certain extent, this is also true to the Black-owned banks of today, the strategy of which can be understood as acting in both ways: politicizing and depoliticizing. If it in the past Black-owned banks opened critical and potential space for the Black community not only to survive but also attain greater degree of citizenship-humanity, today, on the other hand, Black-owned banks provide little in terms of broader, alternative money codes, institutions and practices. By saying this – it must be highlighted, in no way am I siding with those who claim that there remains no reason for Blank-owned banks to be in operation and resisting. Rather, my argument conveys temporal nuances and hence is predicated upon the notion that possibly it is time for Blacks to collectively rethink and reformulate their politico-economic strategies and agendas, drawing on past, present and future times.

Crucially, Black-owned banks and all strategies that have accompanied and supported them throughout the US history figure as a remarkable form of politics at the margins – an interstitial form of dissent politics that has managed to access and transform the multiple spaces of authoritative power, and, it shall be stressed, without transcendental aspirations as to a pure space, unstained by political economy and politics. That being said, what alternatives Blacks envision and elaborate in the face of contemporary finance remains an open question. If the increasingly disputed spaces of Black-owned banks and their highly contested forms of long-term relationship grounded on principles mutuality and reciprocity will survive in an era fraught with derivatives, short-termist calculative logic remains also an open question.

To conclude, I shall devote some lines to the question of unknown futures and the (in)securities deriving from them. In her final thoughts on the fifth chapter of her book, *Virtue, Fortune and Faith: a genealogy of finance* (2005), de Goede advocates for need to break open the conception of security from its mathematical and scientific frame that has been translated into profitable market instruments via securitization. As seen, futures have been colonized and sold through financial securities and authorized by calculative, mathematical performances. From Constatinou (2000 *apud*: de GOEDE, op. cit.: 174), de Goede draws an alternative concept of security expressed in terms of the condition of being "secured in danger":

> The state of being "secure in danger" can be interpreted as a different way of dealing with Fortuna; pertaining not to the desire to dominate and master her, but to a desire to learn to live with instability and to respect the indeterminacy of life as a locus of democratic openness. In this alternative sense, "Security is . . . not a given or permanent condition but continuous, spiritual, seafaring agon. To emerge secure, one must free oneself and withdraw from the obsessive mental cares one is commonly submerged to. To remain afloat one must . . . learn to live with fluctuidity and instability.

For de Goede (*Ibidem*), "[r]ecognition of the limits of human capacity to predict and control the future enables […] the indeterminate future to be transformed into an open political domain", in stark contrast to the current authoritatively predefined horizon of alternatives presented by the cartographies of contemporary finance. While I definitely subscribe to de Goede's call to question notions of

security so as to open space for democratic practice, I should, however, contend that a proposition on such basis may turn out ineffective and even counterproductive if not accompanied by relentless attention to the productions and reproductions of patterns and modes of inequality – thus fostering an ethos of responsibility. At stake also is the understanding that 'security in danger' holds a plethora of meanings to distinct people in different subject positions, in different contexts. And while breaking open space for democratic practice is undoubtedly crucial, the question that will always be begging, immediately after, is 'for which demo?' While equality is chiefly framed in terms of a normative ideal that should orient democracy, equality must, perhaps most pressingly, be understood as condition of possibility of democratic practice. Thus, the potentiality and value of any form of politics of dissent seems, in my view, to hinge upon the constant, contextually-informed critical reflections and sensibilities as to patterns, modes and processes of (re)production of inequalities and generation of marginality, in ways that translates into deliberative actions to improve on equity.

5. Conclusion

In the first chapter, I showed the distinctiveness of derivatives as money-form which has been left unattended in the accounts grounded on mistaken credit models. The functions performed by derivatives are not limited to credit and risk management/speculation. As hybrid form of money-capital or capital-money, derivatives can be cast in terms of the most capitalist form of money in that they embody competition among different forms of capitals across multiple time-spaces. As a form of money, derivatives may be understood as a commodity money, the substance of which is information coded in prices, which means intrinsic value attributed to the risk associated to certain events. Crucially, by means of computational calculative devices, derivatives offer the possibility of capital commensuration, independently of time and space. In this sense, besides the money functions of money of account, means of exchange, standard of value, derivatives perform functions of *binding* and *blending* that enact complex and intensive monetary and financial networks. While binding refers to the processes related to risk hedging, blending relates to the calculative processes by means of which debt and equity become blurred. In this sense, I demonstrated that derivatives do not inhabit the bounded spheres of a money economy that produces deleterious effects on the real economy. Rather, they circulate in between the money/'real' economy divide, displacing and blurring the bordering lines.

Drawing on the distributed-agency-centered perspective and the conceptual framework of the ANT, I sketched the subprime mortgage market network. Here, I offered a depiction of how standards of equivalences constructed by means of calculative sociotechnical dispositives – risk-based pricing, credit rating and securitization – enact derivative monetary networks. Innovative instruments such as the interest-only ARMs, operating as connectors, have extended and intensified the reach of the network. With a focus directed to practices, objects and process, I showed that interest-only ARMs assemble, on the one side, more risk-averse international investors, namely by translating higher risk into higher returns through structured financing, and, on the other side, by translating risk transfer from lenders to borrowers in terms of affordable products aimed at increasing ownership rates, they also assemble a greater number of subprime borrowers. This is significant insofar as it sheds lights to the ways in

which borrowers have also negotiated their subject positions around notions of entrepreneurship and leveraged investment, especially in light of adherence to interest-only ARMs. The growth in the trade in hybrid ARMs escalated an intensive mechanism of deferral of risk and extension of network in ways that stretched out the limits, pushing the prices to higher levels and precipitating the bursting of the bubble. By mapping the assembly of the subprime mortgage network and describing the processes that pave the way for disassembly, I render explicit that, in stark contrast to what is seen in the production sphere, in which heightened competition produces corrosive effects in profit rates, in financial and monetary networks, the higher the number of investors participating in the market, the higher the returns rates that they are able to earn.

The strategies of connectivity expressed in terms of *standardization*, *classification* and *categorization* and *deferral* pointed to a particular politics of calculation that fosters modes of socialization articulated around notions of ownership and risk. This mode of exclusionary politics, so I argued, operates by displacing the boundaries separating economy and polity, on grounds of a technocratic notion of default risk. Premised upon the scientific authority with which financial mathematics was vested in the early 1970s, the politics of calculation forecloses the space for political debate and public scrutiny in that it reduces all important social, economic and political issue to supposedly technical question of risk hedging. Along the way, novel dynamics of exclusion, dispossession and expropriation materialize whilst a process of seemingly limitless commercialization of risks is triggered. I demonstrated that the topological workings of finance have underwritten different modes of hierarchization, discrimination and exclusion along lines of race and gender.

In the third chapter, I sketched out multiple modes of dissent and traced alternative economic geographies that have emerged in response to financial exclusion and exploitative greenlining. By critically pondering over the limits and possibilities and potentialities opened up by micropolitical experimentations such as the Black-owned banks networks, on the one side, and the LETS networks, on the other, I offered a critical perspective on how modes of dissent in theory and practice could profit from more reflexive and critical engagement with the modes, patterns of inequality while struggling to devise new modes of exchange, and

measures and forms of value. It must be clear at this point nurturing an ideal of neutral money-form, unburdened by the political economy and out of the bounds of the polity, is not only counterproductive but irresponsible on multiple grounds. The ant-like work of running and laboring across various borders and interstices, as crucial sites in which inequalities and marginalities (re-)materializes, may prove very fecund, as, in general terms, the Black-owned banks experience seems to suggest.

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