HIGH ART AND HIGH FINANCE: PERFORMING FINANCIALISATION IN THE ART MARKET

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A Thesis Submitted for the Degree of PhD
at the
University of St Andrews

2023

Identifiers to use to cite or link to this thesis:

DOI: https://doi.org/10.17630/sta/622
http://hdl.handle.net/10023/28486

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St Andrews

This thesis is submitted in partial fulfilment for the degree of

Doctor of Philosophy (PhD)

at the University of St Andrews

September 2023

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Acknowledgements

I would like to thank my supervisors Dr Philip Roscoe and Dr David Dowell for their dedicated support and guidance. I also thank my friends and family, and Louis the cat. Most of all, my sincerest thanks go to Sangyeon, with love.

Abstract

This research examines the financialisation of art within the tradition of STS-inflected market studies. The concept of financialisation has primarily emerged within political economy to analyse the discrepancy between booming finance and underperforming production. According to this body of literature, financialisation is fundamentally a political process revolving around the regime of accumulation. This presents a new challenge for market studies. In its earliest form, market studies maintained a political agnosticism that centred on calculation and calculative devices; their political implications and accompanying structural transitions have been largely unexplored. This study traces a material political economy of financialisation to construct the agencement of art finance. It examines a case study of ArtTactic, an art market analysis firm that offers regular art market reports, bespoke research for/to art market participants, and art finance education in the forms of lectures and podcasts. The study explores how financial devices are designed, introduced, and enacted in the art market. A specific mode of valuation and accumulation is enacted through the politics of market devices. ArtTactic conducts various performative works to implement these devices within and against the unique institutional structure of the art market. In navigating the multifaceted process of financialisation, I propose that this convergence can be further augmented by Bourdieu's thinking tools.

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I. Introduction

A billionaire investor steps into a Freeport warehouse in Luxembourg. As the heavy vault door swings open, they encounter one of the greatest art collections in the world, with no visitors. The air is carefully climate-controlled, maintaining a constant temperature and humidity level, while security cameras keep watch from every corner. Reviewing hundreds of terms and conditions, the investor signs the contract. Here, the aesthetic appeal of the artwork is inconsequential; their wealth manager has endorsed the artist as 'blue chip', and the art index attests to the artwork's robust investment potential. It will offer portfolio diversification against economic fluctuations. Alternately, it may serve as collateral in times of cash flow difficulties. The investor is not acquiring the artwork to display in their home; in fact, the artwork will never leave its confines, locked in storage indefinitely.

This is the increasingly financialised art world. Art is no longer just an aesthetic object for visual pleasure; it has become a financial asset, a tool for investment and wealth management. The concept of art as an investment has been particularly accelerated over the last two decades, propelled by the development of financial technologies and instruments. This mirrors the ascendancy of financial economies witnessed since the 1980s; finance has broadened its reach, extending its influence over a range of sectors and disciplines, thereby redefining their operations and value systems. Financialisation (Mader *et al.*, 2020: 39) is a concept that seeks to delineate and understand this transition. The process of financialisation has led to profound shifts in societal structures and norms; the financial logic increasingly plays a crucial role in everyday practices through its devices. This study traces the process of financialisaton through a single case study of ArtTactic, an art market analysis firm that offers regular art market reports, bespoke research for art market participants, and art finance education in the form of lectures and podcasts. It explores how financial devices are designed, introduced, and enacted in the art market. By analysing how these devices are interwoven into the fabric of the market, we can gain deeper insights into the dynamics of financialisation and its implications for the art market and beyond.

This research examines financialisation within the tradition of Science and Technology Studies (STS)-inflected market studies. The concept of financialisation has primarily emerged within the political economy to analyse the discrepancy between booming finance and poorly performing production (Lapavitsas, 2011). As Piketty (2014) nicely put it, the rate of return to capital (r) persistently exceeds the growth rate of the production (g). According to this body of literature, financialisation is fundamentally a political process revolving around the regime of accumulation (Krippner, 2005). This presents a new challenge for market studies. In its earliest form, market studies maintained a political agnosticism that centred on calculation and calculative devices (Callon & Muniesa, 2005b). The discussion on economisation (Çalışkan & Callon, 2010) or financialisation (Pellandini-Simányi, 2020) has developed around calculative agencies and their enactment; however, the politics of market devices and accompanying structural transitions have been largely unexplored. Recently, an increasing number of studies have discussed the micro-politics of socio-material devices (Beunza & Ferraro, 2019; MacKenzie, 2018; Roscoe & Mason, 2020). A temporal orientation to the present – to the constitution of the assemblages of market action – has resulted in less attention being paid to the political configuration of markets regarding power and distribution. Following recent innovations in market studies (Golka, 2021; MacKenzie, 2017; MacKenzie, 2018), this study aims to bridge the gap between financialisation and the politics of market devices.

Throughout the thesis, I suggest that the convergence between market studies and financialisation literature can be further augmented by adopting Bourdieu's thinking tools (1983, 1986, 1990a). Bourdieu (1997) states that the market is a space warped by the gravity of structural forces, encompassing material, discursive, and institutional arrangements. His notions of field and different forms of capital illuminate the complex interplay between divergent institutions, socio-cultural variables, and power relations, broadening the understanding of market and political struggles (Wacquant, 1989). Financialisation brings about new evolving forces and dynamics, transforming the landscape of the art market, within and against the "strange" game rules of the field (Coslor, 2011: 81). Bourdieu's thinking tools are useful to capture these empirical realities, complementing market studies' micro approaches on socio-material devices. It is the entanglement that must be meticulously observed prior to disassembly; even if human actions are the result of the function of neurons and synapses, we cannot examine a ballerina's movements with a microscope. Furthermore, Bourdieu's notion of habitus serves as a bridge between macro and micro analyses of financialisation, acting as the glue that organises market agencements (Gulledge *et al.*, 2015; Townley, 2014). It intertwines materials and discourses with human bodies, functioning as a force that fixates or accelerates transitions in specific fields.

In the course of this project, an innovative method of qualitative coding is developed, augmented by semantic network analysis (SMA) (Danowski, 1993; Drieger, 2013). By analysing digital texts produced by ArtTactic, the research investigates how material and discursive devices reconfigure art market practices. Besides its benefits as a method and its validity in research (that will be discussed in Chapter 3), there were some practical reasons for adopting this methodology. The initiation of this research in early 2020 coincided with the outbreak of the Covid-19 pandemic, which significantly constrained the collection of primary empirical data. Given the rich ethnographic tradition of market studies, securing access to informants became a significant challenge during the ensuing lockdown; conducting interviews or arranging participant observations were not feasible. Thus, the case method, using ArtTactic for the domain of research, was pursued. The company produces materials offering comprehensive information about various financialising devices in the market, which are also publicly accessible online. The textual data were collected from the company's four online lecture series, 43 podcasts, and six art market reports. The substantial volume of digitised texts (519,274 words) required an innovative methodology that would be both empirically and theoretically effective. SMA served as a useful methodology to navigate the company's textual artefacts, providing valuable epistemological insights. It enables the extraction of epistemological models from texts, allowing the drawing of shared cognitive maps from diversified discourses and, consequently, elucidating how texts frame the performation of market arrangements.

The study posits that financialisation represents the enactment of a specific mode of valuation and accumulation, achieved through the politics of market devices. Valuation and accumulation are the two cornerstones of this transformation; Muniesa et al. (2007: 3) assert that an economy is characterised by the formation of "valuation networks", while Krippner (2005: 173) defines financialisation as the transition in a "pattern of accumulation". These two perspectives, though distinct, are interwoven in the process of financialisation. At the heart of financialisation are the struggles and negotiations around the regime of accumulation; simultaneously, it embodies the mode of valuation that enables and facilitates this accumulation. Upon this understanding of financialisation, I propose that the performation of financialisation is a multifaceted process that entails a "material political economy" (MacKenzie, 2017: 174). ArtTactic's performative actions encompass translating the field, assembling networks of calculation and accumulation, and conducting performative works via discursive devices. These are socio-political attempts to create the “felicitous conditions” for the financialisation of art, enacting a mode of valuation and accumulation.

Throughout the research I will tackle a series of central questions. My primary inquiry will focus on the ways in which financial logic infiltrates and shapes the art market. Following this, I aim to identify the devices involved in this process and explore how they operate to enact a mode of valuation and accumulation. Finally, I will scrutinise the institutional arrangements within the art market, examining how they resist and negotiate with the newly introduced devices. This will also include an exploration of the necessary performative works required to mitigate this resistance. The research seeks to provide a more holistic understanding of financialisation and the felicitous conditions that enable such performation.

After the introduction, Chapter 2 provides a review of the key literature in theorising financialisation. It covers a colourful array of studies and disciplines, including political economy, market studies and preceding research on the financialisation of art. The review suggests that the concept of financialisation can be effectively integrated with market studies, and this convergence can be further enhanced by employing Bourdieu’s thinking tools. I conceptualise financialisation as a material political economy centred on the enactment of a mode of valuation and accumulation.

Chapter 3 presents the subject of research, the posed research questions, and the methodology implemented for the study. SMA is introduced in detail as a qualitative coding method, highlighting its methodological validity as well as its conceptual contribution. By utilising SMA, this chapter outlines ArtTactic's performative strategies and the cognitive map embedded in its discursive devices. SMA reveals the twofold role of ArtTactic's texts in this research, reflecting the intricate nature of their involvement in performation.

Chapter 4 sheds light on how ArtTactic navigates the shared game rules in the art market and provides its own understanding of its structures and practices. In analysing ArtTactic's portrayal of the art market, I present a thorough understanding of the intricacies of the art world – notably the incommensurability between art and money – and the strategies employed by the company to explore these complex dynamics. ArtTactic suggests a transition in the valorisation system from the institutional model to market-side model. The company's illustration of the art market is not only descriptive but also performative (MacKenzie *et al.*, 2007).

Chapter 5 identifies how ArtTactic attempts to create and extend the agencement (Hardie & MacKenzie, 2007) of financial valuation by introducing calculative devices. It investigates practical and theoretical mechanisms embedded in such devices to frame the art market as calculable. Markets are where different valuations compete for dominance; the company introduces various calculative devices to perform a specific mode of valuation. ArtTactic conducts diverse performative works to demonstrate these devices. The processes entail the dissemination of knowledge through educational platforms, complemented by hands-on workshops that leverage specific devices.

Chapter 6 examines how ArtTactic strives to assemble the agencement of accumulation, which is the other critical condition for financialisation. The concept of "accumulative devices" is introduced to tackle accumulation from a market studies' perspective. ArtTactic introduces horizontal, vertical and ancillary devices for accumulation; while horizontal devices expand the scope of accumulation to new areas of applications, vertical devices accelerate the circulation of capital within existing activities. ArtTactic justifies these devices not only through financial rationales but also via various socio-cultural accounts.

Chapter 7 discusses the implications of this research and directions for future studies. By revisiting ArtTactic's performative works, it suggests how to understand the multi-faceted process of financialisation. The performation of financialisation requires a holistic transformation of material, discursive and institutional arrangements that enable a specific mode of calculation and accumulation. I propose that Bourdieu's theoretical tools can contribute to the configuration of these arrangements. The chapter concludes with some managerial implications that can be derived from the analysis.

II. Literature Review

> When the [Aztecs] questioned Cortés as to why the Spaniards had such a passion for gold, the conquistador answered, "Because I and my companions suffer from a disease of the heart which can be cured only with gold." (…) the obsession for gold was indeed an *epidemic*. Even the bitterest of enemies lusted after the same useless yellow metal.
>
> – Yuval Harari, *Sapiens: A brief history of humankind*

1. Introduction

This chapter navigates the multi-faceted phenomenon of financialisation, a process which has attracted significant attention in various realms of the social sciences (Mader *et al.*, 2020). By examining the existing body of literature, I shall contextualise the concept of financialisation, identify its key dimensions and trace its evolution over the past few decades. The review covers a colourful array of studies, theories and disciplines which explore the drivers and consequences of financialisation, as well as its interplay with everyday life and the market devices that constitute financial economy. Theoretically, I seek to contribute to the economic sociology literature by investigating financialisation at the very intersection of different disciplines.

Divergences in theorising financialisation have been compared to a parable told in many Asian countries (Mader *et al.*, 2020). A group of blind people come across an elephant, having never encountered one before, and report how the beast seems to them. They find it different depending on where they feel; for one who touches its leg, it is much like a tree; for another who touches its trunk, it is a big snake; and another touching its side finds it like a wall. Similarly, different approaches lead to divergent arguments about the nature of financialisation, which are not necessarily mutually exclusive. Throughout the review, I introduce fragmented but interconnected approaches within studies of markets and financialisation and seek to reconcile these arguments into a collaged picture. This requires careful examination of the literature and additional observations of the object. Only by so doing can we seamlessly put together scattered and uneven images of the elephant.

The review, first of all, considers political economy approaches at different levels, exploring the origin of the concept and giving an account of the significance of its theoretical contributions. The review explains how financialisation is fundamentally a political process centred on accumulation and leads to the analysis of power and political relations which penetrate different layers of social life (Haiven, 2014; Hayes, 2021; Munro, 2012). Market studies influenced by Actor Network Theory (ANT) have had a tendency to overlook these power relations, which has resulted in major criticisms. This review suggests that the concept of financialisation can be converged with market studies (Çalışkan & Callon, 2009, 2010; MacKenzie *et al.*, 2007). Despite their different ontologies, the social struggles captured by political economy and market studies' analyses on economic performativity can successfully complement each other. Following recent cutting-edge works in market studies (Golka, 2021; MacKenzie, 2017; MacKenzie, 2018), the review bridges between macro and micro by examining the politics of daily life, which is inscribed in and functions through material and discursive devices. Additionally, I would suggest that this convergence can be further augmented by adopting Bourdieu's thinking tools, such as field, capital and habitus (Gulledge *et al.*, 2015; Townley, 2014). The market is not a homogeneous space where atomic individuals interact in isolation but a space 'bent' by the gravity of structural forces (Bourdieu, 1997); Bourdieu's theorisation of field and different forms of capital is useful for capturing these empirical realities. The literature review gradually zooms in from hegemonic powers to micro devices, then zooms out to reassemble the socio-political entanglements of market actors. Finally, the review gives a brief overview of the literature on the art market regarding the financialisation of art (Coslor, 2011; Upton-Hansen, 2018; Velthuis & Coslor, 2012) and valuation (Herrero, 2010; Pardo-Guerra, 2011; Plante *et al.*, 2021) from a sociological perspective.

2. Financialisation

'Financialisation' is a concept which seeks to explain the overgrowth of finance since the 1980s and the accompanying transitions which this change has brought to society. Despite the growing popularity of the concept over the past decade, its definitions and approaches vary amongst scholars. It encompasses a variety of social phenomena: the control of financial capital over industrial capital; the transition of the financial system from a bank-centric to a capital market-driven model; the rise of institutional investors and shareholder value; and the increase in household financial assets and debts (Van der Zwan, 2014). One of the most-cited definitions is that coined by Epstein (2005: 3): "Financialisation refers to the increasing importance of financial markets, financial motives, financial institutions and financial elites in the economy and its governing institutions, both at the national and international levels". Although Epstein's definition provides the most comprehensive description of financialisation in general, it is ambiguous in its deliberate broadness. From Epstein's standpoint, financialisation is only presented as fragments of indicators, and the cause of this phenomenon or its dynamics cannot be systematically examined – it is rather an *explanandum* (a phenomenon which has to be explained) than *explanans* (an explanation of the phenomenon), which requires a more detailed conceptualisation.

2.1. The Regime of Accumulation

Although there have been increasing sociological attempts to theorise financialisation, these analyses have mainly developed in the area of economic structure around capital and production. This is because the concept of financialisation has emerged within Marxist political economy to analyse the discrepancy between booming finance and poorly performing production (Lapavitsas, 2011). Financialisation is identified as a transition in the accumulation system; in other words, it raises the question of where profits are produced. Another widely quoted definition by Krippner (2005: 173) presents this approach: financialisation is "the pattern of accumulation in which profits are made increasingly through financial channels rather than through trade and commodity production". The financial sector, encompassing activities such as lending and investing becomes increasingly dominant over the traditional productive sectors, such as manufacturing, agriculture, and trade. Since the 1970s, the financial sector in the US and the UK has significantly increased its share of GDP, and this has lessened the dependence of the non-financial sector on productive activities while seeking capital gains in the market. In addition, the non-financial sector has been paying a progressively larger portion of its revenues to the financial market – in the form of interest, dividends and self-tenders –, resulting in a convergence of the global economy into a finance-centric model (Krippner, 2005).

The important aspect is the far-reaching nature of this transition. It transforms not only the relationships between industries, but also amongst countries, households and individuals. As corporations increasingly engage in financial activities seeking for capital gains, they become more exposed to global financial flows and fluctuations; this interdependence leads to a more interconnected and financialised global economy. The structural changes also affect individuals, providing new accumulation opportunities through asset ownership and access to credit and financial devices. Individuals adopt financial norms and values in their everyday life, shaping their decisions related to savings, consumption and investments. As market actors embrace these financial practices, they contribute to the reinforcement of the regime of accumulation centred around finance; this process further entrenches the financialisation of economies. The new regime of accumulation synchronises states, industries and individuals, drawing an ever-repeating fractal pattern. Microstructures internalise and mimic the macrostructure whilst the dominant ideology of finance boundlessly expands.

The Long Twentieth Century

The Long Twentieth Century (1994), Arrighi's ambitious work on the dynamics of capitalism traces the history of capitalist accumulation centring on hegemonic powers. He focused on the Genoese, from the fifteenth to the early seventeenth centuries; the Dutch, from the late sixteenth to the eighteenth; the British, from the late eighteenth to the early twentieth; and the US, which has continued today since the early twentieth century. Each of these cycles takes place within a world economic regime of accumulation, and the hegemonic power leads capitalist development by aligning the international political-economic order with their interests. According to Arrighi (1997: 154), the cycle of systemic accumulation represents the inherent logic of capitalist expansion that consists of two different stages of development: the stages of "material expansion" and "financial expansion". In the growth period of hegemonic power, its accumulation is characterised by the expansion of material production, whether it is industrial production or productive trade. Arrighi suggested that Marx's famous formula of capital M-C-M' (money-commodity-extended money) not only represents the logic of individual capitalist rationality but also the logic of the system. The stage of material expansion is the M-C phase, in which money is transformed into commodity capital, the financial expansion is the C-M' phase, where capital is not invested in productive activities but rather in financial activities (Arrighi, 1994: 8-9). The intensification of competition between capitals gradually erodes potential profit rates, which makes the cycle reach the stage of “signal crisis” – this is the point at which the cycle moves from material expansion to financial expansion. The cycle shifts to a new scheme of accumulation, where capitals seek to generate higher profits through financial instruments over productive investments.

The US economy, the hegemonic power of the twentieth century, experienced a material expansion in the period after the Second World War due to a rapid increase in productivity. It achieved unprecedented levels of productivity by internalising transaction costs through the vertical integration of industries (Arrighi, 1994). The role of finance was constrained to support productive sectors at this time since uncontrolled financial capital was widely identified as one of the main causes of the Great Depression. Internationally, it was not easy for the financial capital to exert much influence under the Bretton Woods system, where capital flows were controlled by the government with fixed exchange rates (Helleiner, 2010). The ‘*belle epoque’* ended in the 1970s as the US economy started to experience a steady decline in profit rates, and the growing concerns over inflation collapsed the Bretton Woods system. In the period of ‘stagflation’, occurring through the mid-1970s, transnational banks urged deregulation of the financial/foreign exchange markets and the new chairman of the FED, Paul Volcker, sought to restore the credibility of the dollar by aggressive tapering. The political transitions rapidly transformed the US economy – the high-interest rate in combination with the falling yield rate resulted in a shift of capital investment from the productive sector to the financial sector (Arrighi, 1994). Skyscrapers in the City of London replaced factories in Manchester and Birmingham and finance became one of the most profitable businesses. It was a time when the cycle entered into the stage of C-M’, or what Braudel (1992: 246) called the “autumn of the system”.

The Flexible Accumulation: M-C-M' and M-M'

At the industry level, the problem of decreasing profit rates brought severe issues to the productive sector, forcing them to focus increasingly on financial activities. Corporate finance began to shift from supporting industrial production to controlling and reconstructing it, and this shift marked the end of Fordist-Keynesian capitalism (Harvey, 2007). In *The Condition of Postmodernity*, Harvey (1989: 141) called the new regime of accumulation "flexible accumulation": a system in which labour, products and finance are constantly changing. He suggested that the Fordist-Keynesian economy significantly contributed to the post-war growth; however, this economic system had a fundamental flaw of "rigidities" in labour markets as well as state commitments (142). The rigidity of long-term and large-scale investment in mass production, highly regulated labour markets and the bloated bureaucracy of the welfare state were accused of precipitating the crisis in the 1970s. The 'shareholder revolution', which started in the 1980s, refers to the principle of maximising shareholder value in corporate management and was widely accepted throughout society. Companies changed their management strategies to promptly make shareholders' interest their top priority, and this gradually led to a reversed power relation between shareholders, and managers and employees (Deutschmann, 2011). According to Harvey (1989), however, what was genuinely innovative about flexible accumulation was the geographical and temporal flexibility achieved by the financial system, resulting in the rise of the precarious labour and working class. The flexibility of production, labour and consumption was the financial capital's spatial and temporal solution to the crisis, which fully exploited continuous innovation in technology and organisation (230-232).

In the Marxian general formula for capital, M, C, and M' respectively represent flexibility, rigidity and expanded flexibility (Arrighi, 1994). Although resources can be flexibly deployed in the form of money, under the phase of M-C, money is invested in a specific purpose (such as land, equipment, or facilities), narrowing down potential options of utilisation. On the other hand, the process of C-M' increases flexibility, which is enhanced from not only C but also M, since there is a quantitative increase in the amount of money through the cycle. According to Marx, the cycle accelerates with the development of capitalism. The circulation of M-C-M' is abridged to M-M' in the highly developed society as capital becomes "interest-bearing capital (IBC)" (Christophers & Fine, 2020: 20), where "money begets money" or "money that is worth more money" (Marx, 1890: 155). All social relations submerge into abstract monetary expansion; in his word, it is the most "fetishised" form of capital (Marx, 1992: 391-393). Christophers and Fine (2020) suggested that the concept of IBC must be at the centre of investigating financialisation. The IBC has expanded "intensively" and "extensively" over the past three decades, "within existing activities" and "to new areas of applications" (Christophers & Fine, 2020: 23); financialisation is both about the intensity and the extent of accumulation. If the ascendency of shareholder value under financialisation (Deutschmann, 2011; Froud *et al.*, 2006) is the intensive process that accelerates the circulation of M-(C)-M', financialisation of commodities (Tang & Xiong, 2010) is the extensive process that draws more middlemen (C) into the cycle of M-(C)-M' to expand its scope of accumulation. These are the two pillars of "flexible accumulation" (Harvey, 1989: 141), which drive capitals and corporations to participate increasingly in financial activities.

The Emergence of the Rentier Class

The new regime of accumulation driven by high finance led to the (re)emergence of a group of individuals: the rentier class. Keynes (2018: 334) denounced these particular economic elites as "functionless investors" who generate profits from capital ownership without any productive contribution. He argues that rentiers do not produce any additional value, enjoying income which is solely founded on scarcity. Here, the cycle is abridged to the circulation of M-M' as there is no productive activity involved in accumulation. Money seeks to increase its quantity through rent-generating financial channels – which are rapid and convenient – and further diminishes the efficiency of capital allocation. The diminishing profit rate of the productive sector is not only a cause but also an effect of the rise of the rentier class; for this reason, Keynes ardently advocated the "euthanasia of the rentier" through low-interest rates (Lapavitsas, 2011: 615). Despite Keynes' concerns, the rentiers' income share of the economy significantly increased worldwide from the late 1970s onwards due to the rapid growth of financial capitalism. Epstein and Jayadev's empirical research (2005) showed that the rentier share of the economy was much higher in the 1980s and 1990s than it had been in the 1970s in the majority of OECD (Organisation for Economic Cooperation and Development) countries. Between the 1970s and the 1990s, the rentier share of the economy went up from 11.48 per cent to 24.5 per cent in the UK, from 7 per cent to 15 per cent in South Korea, and from 24 per cent to 35 per cent in the US, and only two of the thirteen countries examined – Italy and Denmark – showed merely small negative differences (50).

The rentier class "benefited directly by virtue of the expansion of the markets that they operate in and the assets they hold", and also, "indirectly (…) through their rising political influence (…) to mould economic policies and structures in their interests" (Epstein & Jayadev, 2005: 46). In the 1980s, economic policies in the Anglosphere tried to keep real interest rates high for multiple reasons: to exhort balanced budgets to restrain inflation; to repress labour to protect the interests of rentiers; and to promote deregulation in financial markets (46-47). These practices transferred surplus values from the industrial capital – where the working/middle-class mostly earn incomes – to the financial capital – from which the rentier class collects gains –, which Harvey (2017: 63-83) described as “accumulation by dispossession”. Dumenil and Levy (2004) argued that the rise of the rentier economy was far from inevitable but rather the result of the collective political action of capitalist owners and institutions who sought to restore the class’s revenues and power. The rise in interest rates resulted in a massive capital influx from the real economy to the financial sector, and thus, increased social inequality. The rent of assets sharply increased, whereas the real income of the working and middle-class decreased dramatically. The new regime of accumulation was the victory of rentiers, “at the expense of wage-earners and households, who have faced stagnating real wages and increased indebtedness” (Van der Zwan, 2014: 105).

The discussion of political economy above shows how the rise of finance has affected and has been reinforced by states, industries and individuals. I have investigated the systemic transition of accumulation, exploring how the financial economy has control over other sectors, how shareholder value outweighs production and labour, and how the rentier class emerged. However, these arguments tend to identify financialisation as an abstract force separate from specific social contexts by defining its dynamics from a macro perspective. This can mislead to a dichotomy between abstract, macro global finance and regional, micro daily life, and the individual’s everyday life is set to be passively influenced by the operation of abstract finance (Langley, 2008). The economy does not exist in a vacuum but within the dynamics of real-world practice; an individual’s daily life is mediated by historical, cultural and moral factors within a specific social context, rather than directly exposed to the abstract and unilateral forces of global finance. The following section will show the “financialisation of daily life” (Haiven, 2014; Martin, 2002) that goes beyond these structural transitions. Financialisation is not only the transition in the regime of accumulation but the construction of dominant principles which create new modes of cultures, values and rationality in everyday life. This always involves governance as well as political struggles and negotiations at a micro level.

2.2. The Financialisation of Daily Life

The everyday life approach sheds light on how the logic of finance is implanted in ordinary people and impacts our socio-cultural behaviours. Haiven (2014: 18) referred to financialisation as the "deep penetration of financial ideas, tropes, logics and processes into the fabric of everyday life". What distinguishes this approach from the largely structuralist approaches is that individuals are not just passively constructed by the dominant ideology but rather actively adapt and adjust to financialisation. Individuals become "do-it-yourselfers" (Hayes, 2021: 5) who are willing to calculate and take risks; the lifestyle of households resembles corporate activities and is ingrained in their beings as a form of specific habitus (Gulledge *et al.*, 2015). Martin (2002: 3) wrote that "finance, the management of money's ebbs and flows, is not simply in the service of accessible wealth, but presents itself as a merger of business and life cycles, as a means for the acquisition of a self". In the world of financial efficiency, financial literacy is more than a means to increase wealth; it is also a way to develop the self. Fridman (2016) wrote that *Rich Dad Poor Dad*, a best-selling financial education book in by Kiyosaki and Lechter (2001), exemplifies how the logic of finance has penetrated the public sphere. What the authors repeatedly emphasised in the book is that one should build one's own financial system that generates money out of money through financial literacy. Successful investment – being a rich dad – is proof of wisdom that leads you to financial freedom, and failure in investment – being a poor dad – is related to social incapability. Financialisation encourages individuals to embrace a mentality where their identities become intrinsically linked to financial activities, emphasising successful financial management and accumulation as the primary makers of personal fulfilment. The book throws you a question: “Don’t you want to be a good dad?”

A Machine for Living: Indebtedness and Asset Ownership

Financialisation integrates finance into our daily lives on both sides of the balance sheet: indebtedness and asset ownership. They are the channels in which individuals and households face and acquire the logic of accumulation, being constructed as, in Aitken’s term, a “machine for living” (2020: 369). The economic crisis of 2008 clearly showed how finance had become an interwoven and dominant force in the everyday life of ordinary people. The catastrophe triggered by subprime mortgages in the US housing market – which is a perfect example of the combination of indebtedness and asset ownership – brought unemployment to millions and bankrupted thousands of companies beyond the City and Wall Street. Although the cause and effect are still a controversial topic amongst academics, many scholars agree that the crisis was primarily the result of a finance-driven model based on debt-financed consumption and asset-price inflation (Deutschmann, 2011; Krippner, 2010; Lapavitsas, 2011; Mader *et al.*, 2020). The global economy has been stimulated by the unprecedented rise of debt for decades which, unsurprisingly, has been followed by corresponding asset bubbles. These measures require more people to borrow and invest money through a wider range of financial channels, and as a result, individuals are subject to more debts (general consumption, mortgages, education loans) and more financialised assets (housing, pensions, insurance, money market funds) than ever before. Through these financial channels, individuals internalise and act upon the dominant logic of accumulation, in an attempt to acquire advanced financial subjectivity.

Debt is recognised as a critical force in the advent of financialisation by both the political economy and the everyday approaches (Montgomerie, 2020). Scholars of political economy see debt as integral to the regime of accumulation which creates economic inequality. Individuals and households, whose income has been stagnant or has declined in real terms, are increasingly dependent on debt to maintain consumption during periods of inflation. Particularly in the Anglo-American economies, “the mutual dependence of finance-led and consumption-dependent growth” has driven individuals to have high levels of indebtedness and low savings (Montgomerie, 2020: 381). The debt-driven economic expansion brings about not only greater inequality in society but also precariousness in individuals. From the everyday perspective, this enacts the normalisation processes which create financial subjectivities. Lazzarato (2012) argued that debt creates a specific morality, which is distinguished from but complementary to that of labour. The idea of “rewarded effort” in labour is amplified in creditor-debtor relations, as bonds are seen as a “promise” whereas debts are seen as a “fault” of financial management. In a creditor-debtor relationship, the power of debt functions as a micro-power that obliquely controls financial subjectivities. It is not directly repressive nor controlling but leaves the debtor free as long as the debt can be collected. Here, the power of debt can be seen in the way that the debtor’s actions and behaviours are “confined to the limits defined by the debt he has entered into” (Lazzarato, 2012: 30-31). This morality of debt justifies and reinforces the system of accumulation through “the lived experience” and “emotive elements” of financial practices (Montgomerie, 2020).

On the other side of the balance sheet, financialisation accelerates asset accumulation as well as expands its scope of application. The abridged circulation of M-M’ dominates the economy, and interest-bearing capital operates within various forms of financial or financialised assets. It cannot be overemphasised that this transition is not only about the mode of accumulation but also changes how individuals perceive debts, assets and beyond.

The normalisation process takes place by intervening in the rules of the game, including norms and values. Davis (2018) argued that if use value and symbolic value were respectively at the centre of industrial and post-Fordist economies, speculative value is indicative of financialised capitalism. Speculative value refers to “an estimation of future economic exchange value over and above the present” derived from “imagined futures and potential” of economic activities (Davis, 2018: 9-10). The normalisation of asset accumulation means that “capital’s imagination” becomes people’s imagination. The fictional narratives and futures inform social cooperative actions, such as constructing asset norms, accumulating assets, and becoming asset managers (Haiven, 2011; Hillig, 2019). In the financialised economy, individuals transform themselves from everyday savers into strategic investors, ultimately seeking to achieve financial freedom through speculative activities. Thatcher’s speech in 1988, quoted by Hillig (2019: 1465), well-presents the creation of financial selves through asset ownership:

> (…) you have to give people something to go for. We give them a ladder of opportunity and invite them to climb as high as they can. The sky is the limit and it’s working. More and more people owning their own home, owning shares, having a stake in society.

The capital’s imagination is amplified by asset ownership, through which individuals and households increasingly embrace financial selves. The untold story is that, in many cases, asset ownership is closely tied to high indebtedness and, more importantly, investment does not always succeed.

To sum up, financialisation is a force which compels everyone to become “a machine for living” whose self is realised through financial activities (Aitken, 2020: 369). It is “the rhizomatic and diffuse appearance of financial metaphors, practices, narratives, ideals, measurements, ideologies and identities throughout the social fabric” (Haiven, 2014: 4).

Taken together with the political economy, the daily life approach has some crucial implications for examining financialisation. First, financialisation is not an ultimate process toward the "end of history" (Fukuyama, 1989), but a transition in a specific political-economic context. The unprecedented rise of finance since the late twentieth century deeply infiltrates daily life and creates a new subjectivity of *homo oeconomicus*, looping back to structural changes. Second, the construction of *homo oeconomicus* premises a socio-political space of discourses, practices and institutions, such as indebtedness and asset ownership. Martin (2002: 101) stated that "to subject oneself to the reason of finance is to assure that henceforward one will never act alone (…) the information gathered, the risks taken, the gains realised will be affected by what other (actors) have done". The financial self, different from its presupposition as an atomic individual, is created by continually interacting with the arrangement that surrounds an individual. Therefore, analysis of financialisation must be centred on identifying how the arrangement is composed and the dynamics of actors within and around the space of finance. This requires a careful disassembly and reassembly of the object, encompassing theoretical, material and socio-cultural elements. The next section introduces some key conceptual tools to dissect the arrangement of finance from the perspective of market studies in line with the financialisation scholarship reviewed above.

3. Market Studies

Since Callon kick-started studies on the performative nature of economic theories, market studies have been developed by a group of scholars following the tradition of ANT (Callon, 1998). The main idea of *economic performativity* is that theories "do not describe an existing external economy, but bring that economy into being: economics performs the economy, creating the phenomena it describes" (MacKenzie & Millo, 2003: 108). According to Callon (1998), what we often refer to as 'the economy' is a theoretical framework – economics as a discipline – rather than practical activities – economy as a thing –. The world of economic efficiency (perfect market, general equilibrium and *homo oeconomicus*) is not a pre-existing reality that can be discovered and acted upon, but a condition which must be enacted. Borrowing from Mackenzie's (2008) famous analogy, economics is an "engine" that drives and constructs the market, not a "camera" that captures empirical facts in reality. The provocative thesis of economic performativity has been widely accepted, but has been criticised for ignoring cultural and political contexts. The programme has faced criticism of "describing a lot but explaining very little" (McFall & Ossandón, 2014: 20) about the subject, which largely resulted from ANT's initial refusal of the social (Fligstein & Goldstein, 2010; Krarup & Blok, 2011; Mirowski & Nik-Khah, 2007). This has led to various attempts to grasp "some of the most important processes going on underneath" (Mirowski & Nik-Khah, 2007: 217) in relation to value, power and culture (Beunza & Ferraro, 2019; MacKenzie, 2017; Palo *et al.*, 2018; Roscoe, 2014). This chapter provides a brief overview of ANT-inflected accounts of markets in order to understand financialisation as a mode of economisation that performs and meets resistance in the market. Some key concepts will be introduced to describe the conditions which economic theories can perform. Finally, I shall introduce the recent turn toward institutional, political entanglements of the economy, which have been often overlooked but pertain beyond the deflated materiality. This will help to understand how macro political economy and the financialisation of daily life are inextricably interwoven via – micro-sociological – material and discursive devices.

3.1. Economic Performativity

The concept of 'performativity' was originally coined by the language philosopher J.L. Austin (1975) to describe a situation in which an utterance does or accomplishes something rather than simply referring to it. The concept has been applied to various fields in the social sciences such as cultural studies (Lyotard, 1984), gender studies (Butler, 2011), economics and finance (Çalışkan & Callon, 2009, 2010; Callon, 1998; Hardie & MacKenzie, 2007; MacKenzie, 2008) and management studies (Beunza & Ferraro, 2019; Gond *et al.*, 2016; Palo *et al.*, 2018; Roscoe, 2014; Roscoe & Chillas, 2014). The economic performativity thesis, as well as the performative turn in management studies, is founded on Actor Network Theory (ANT). ANT proposes that all beings of nature and society are actors and that the world is constituted of complex and variable relations between these actors (Law, 1992). From this perspective, everything is both an actor and a network at the same time, "simultaneously an actor whose activity is networking heterogeneous elements and a network that is able to redefine and transform what it is made of" (Callon, 1987: 93) As an actor-network is defined only through its interaction with others, any stable theories of the actor *a priori* are to be avoided. Hardie and Mackenzie (2007: 3-4) state that "actors do not have inherent properties or a fixed ontology"; rather, "their characteristics are constituted by *agencements* of which they are made up". Deleuze and Guattari's notion of "*agencement*" – a portmanteau of *agencer* (to arrange) and *agence* (agency) – denotes an assemblage of heterogeneous elements including humans and non-humans, and at the same time, an actor with the agency. It is the condition that an actor can be meaningful, and thus, performative in a particular context (Hardie & MacKenzie, 2007).

Market Devices and Performativity: a Brief Overview

What is the economy made of, and what makes it function as it does? The performativity programme seeks to answer these questions by focusing on 'market devices', which are artefacts of co-ordination, the things which hold together a particular network through which economic 'calculation' is achieved (Muniesa *et al.*, 2007). Among sociologists investigating the economy, the matter of calculation (or rationality) has long been controversial. The well-known dispute between formalism and substantivism revolves around where the calculative agency is situated between individual and structure (Polanyi & MacIver, 1944). While formalists postulate individuals with innate instrumental rationality, substantivists presume that the economy is embedded and enmeshed in social structures. Following the tradition of ANT, Callon (2005: 4) rejected this dichotomy between individual and structure. He argued that the calculative agency reside neither in “an individual human being” nor “a human being embedded in institutions, conventions, personal relationships or groups”, but is distributed within socio-technical agencements. For Callon, an actor is “made up of human bodies but also of prostheses, tools, equipment, technical devices, algorithms, etc. – in other words, is made up of an agencement” (Hardie & MacKenzie, 2007: 58). An economic actor is “formatted, framed and equipped with” market devices that enable him/her to calculate, “taking the agencement (…) as the fundamental unit of decision making” (Callon, 1998: 51; Roscoe & Chillas, 2014: 801). The concept of socio-technical agencements – or market devices – helps us to understand the existence of *homo oeconomicus* in reality, without adopting the formalist’s assumption of individual rationality. Çalışkan and Callon (2009, 2010) referred to this process of assembly as “economisation”, which constitutes behaviours, organisations and institutions to be qualified as ‘economic’, being inscribed in material and discursive devices.

The notion of market devices opens up discussions on economic performativity. The variable ontology of agencements suggests that economic theories can be performative in so far as corresponding agencements are constructed (Hardie & MacKenzie, 2007). Callon (1998: 30) – provocatively – argued that “economy is embedded not in society but in economics”. Economics plays a constitutive role in markets, which frames the world as calculable and creates calculative agencies which enable the newly-framed world to function.

What makes his argument distinctive from Butler's gender performativity (2011), or other broadly similar approaches in sociology – such as Merton's self-fulfilling prophecy (1948) and Hacking's looping effect (1995) – is his emphasis on the material embeddedness of calculation (Guala, 2007: 157). For Callon, as Roscoe and Chillas (2014: 801) stated, "framing and commensuration, the interpretation of behaviour, and the stock of knowledge employed by participants are all embedded in the material infrastructures of the marketplaces as they are in language and cognition". From complex formulas to mundane objects, theories are inscribed in market devices and "performat" the elements in economic calculations (McFall & Ossandón, 2014). Mackenzie and Millo's (2003) empirical work on the development of the Chicago Board Options Exchange (CBOE) in the 1980s is an exemplary case study about economic performativity in the financial field. They showed how the introduction of the Black-Scholes model constructed peculiar calculative agencies and realised its own assumptions in the options market. An important point to note here is that the performation is not always linear and irresistible, but encounters "overflows" and "counter-performations" of the world, as can be seen from the market crash in 1987 (du Gay, 2010; MacKenzie, 2008). As Callon (1998) stated, the economic performation – more broadly, economisation – is a continuous process that is contested, reconfigured and restated by the ever-changing dynamics of actors in the market.

From Calculation to Valuation

Different arrangements of market devices, as well as "overflows" and "misfires" (MacKenzie, 2008), bring about different modes and powers of calculation. Empirical studies have shown a variety of, and often contradictory, market practices, and the calculation around quality-based goods has sparked prolific controversies in market studies (McFall & Ossandón, 2014). Various attempts have been made to bring quality into material calculation; for instance, Cochoy (2008) introduced the concept of “qualculation” to describe the situation in which “quality-based rational judgements” dominate. The matter of quality and calculation is especially important in investigating the financialisation of art as the art market is one of a kind in that value is not solely determined by economic calculation. The problem here is that the evaluation of quality – more often than not – circles back to “values” *a priori*, which market studies have already abandoned. Callon’s broad definition of calculation is intended to resolve these issues. His definition, which “starts by establishing distinctions between things or states of the world, and by imagining and estimating courses of action associated with those things or with those states as well as their consequences”, blurs the distinction between economic calculation and quality-based judgement (Callon & Muniesa, 2005a: 1231). In contrast, Kaprik distinguished evaluation (judgement) from calculation; judgement devices different from market devices are required to help to “dissipate the opacity of the market” for goods “with multidimensional, uncertain and incommensurable qualities” (Karpik, 2010: 44; McFall & Ossandón, 2014: 22). He gave a list of examples (such as psychotherapists, fine wines, restaurants, luxury brands) whose consumption is not solely based on price but dependent on different kinds of evaluation (the “singularities market"), which entails special devices such as rankings, reviews and trusts (Karpik, 2010).

Ironically, the two very different approaches meet similar criticism that both are not much different from the (neo-classical) economic models of how markets operate. Karpik (2010) validly criticised Callon’s risks of losing the cultural, institutional and organisational aspects of decision-making, which – unintentionally – makes his arguments resemble economic reductionism. Callon’s concept of calculation is fairly well applied to some cases (for example, the strawberry auction) but does not do enough to capture the diversity of markets depicted in empirical studies (McFall & Ossandón, 2014). In a different way, Karpik "reinforces the vision of the market in line with economists' models" by distinguishing the standard market and the singularities market (2014: 23). The dichotomy between the two markets implies the existence of the standard market which operates solely on the economic calculation, which can never be found in reality – it is to save judgement at the expense of calculation. Stark (2011) provided a more pragmatic solution to the controversies by turning away from calculation to valuation. He suggested a more general notion of 'valuing', which encompasses judgement and calculation but is distinct from values established *a priori*. It is a verb rather than a noun, a "practical situated action that is normally socially and materially distributed and equipped with devices and formulas" (McFall & Ossandón, 2014: 24), which is consistently challenged and reconfigured. The concept of valuation enables us to explore the empirical diversity of values without establishing ready-made frameworks of values. The market consists of diverse socio-technical agencements of valuation, where "different valuing dynamics" compete to perform and construct the economy (Boltanski & Thévenot, 2006). The pragmatic notion of valuation enables more nuanced discussions around different modes of valuation; it provides explanations about the construction of diverse values observed in the market, not reducing the economy into a matter of pure economic calculation nor postulating such calculations. What Callon described as calculation – which still involves judgement – is rather a specific mode of valuation embedded in economics and finance. From this perspective, financialisation refers to the process of constructing agencements of speculative valuation over other forms of valuation, and the accumulation of value takes place according to the dominant logic of finance.

3.2. The Politics of Market Devices

Since valuing agencies are distributed in socio-technical agencements, the status of actors equipped with market devices induces issues of power and powerlessness. It is the devices that create valuing power, and the unequal distribution of valuing agencies results in relations of domination. The power relations continuously loop back and reinforce themselves; agencies with power impose their valuations on others, through which they influence the distribution of values, and configure and reconfigure the organisation of markets (Bourdieu, 2005; Çalışkan & Callon, 2010; Fligstein, 2001). According to Beunza and Ferraro (2019: 517), "it is ironic (…) that the performativity (programme) would be criticised for not confronting the question of power", considering its theoretical vicinity to ANT. The early founders of ANT, Latour (2014) himself concerned much about the role of power in the constitution of society, and Law (1999) directly addressed the question of power in *Actor-Network Theory and After*. Recently, there has been a growing literature which seeks to examine the politics of markets by bridging the performativity thesis to various disciplines, such as political economy (Birch, 2019; Geiger, 2019; MacKenzie, 2017; MacKenzie, 2018) and organisational studies (Beunza & Ferraro, 2019; Palo *et al.*, 2018; Roscoe & Mason, 2020). It questions who holds values, where values are created, and who influences valuation; what arrangements of actants constitute valuation in the market. By bringing back politics and power to the performativity thesis, market studies are finally able to discuss the political nature of financialisation.

The Organisation of Markets: Revisiting ANT and Institutional Theory

Beunza and Ferraro (2019) argued that the political involvement in configuring markets has been bracketed under the term 'socio-technical agencements' – due to its emphasis on the assemblage of heterogeneous actors. Putting together an assemblage is never a smooth process but something which entails tedious conflicts and negotiations. They suggested the ANT's concept of 'translation' must be brought back to the performativity thesis to understand the "micro-political dynamics" of the market (516-517). The term 'translation', coined by Callon and Latour (1981: 279), refers to “all negotiations, intrigues, calculations, acts of persuasion and violence, thanks to which an actor or force takes, or causes to be conferred on itself, authority to speak or act on behalf of another actor”. In *Give Me a Laboratory and I Will Raise the World* (2014), Latour analyses Pasteur's scientific practices. His laboratory is the “obligatory passage point” where the “translation” of different social interests takes place in building networks. It displaces outside interests into its inside methods and practices, and in so doing, extends the network to “lever” the outside world (146-153). This process entails struggles and negotiations amongst heterogeneous actors, including humans (scientists, farmers, veterinarians and so on) and non-humans (the anthrax bacillus, inscription devices, farms and so on), whose interests must be translated into a shared language (Latour, 2014). The artefact of translation is often highly material. The effectiveness of translation is determined by the durability of networks, which can be enhanced by ‘black-boxing’: reducing the complexity of ‘juxtaposed’ elements into a single device (Callon, 1987: 93). As Latour (1987: 131) stated, “the simplest means of transforming (…) allies to a whole [which] acts as one” is “to build a machine” that is more durable and robust.

Financialisation is a political process which requires successful translations, and such a process is inscribed in market devices. The important point is that the material, yet political machines require ‘glue’ in order to be assembled, which is often described as “institutional” (Beunza & Ferraro, 2019). Institutions refer to “cognitive, normative and regulative structures and activities that provide stability and meaning to social behaviour”, such as norms, values and legitimacies (Scott, 2013: 33). These are the factors which foster or resist material transformations, and consequently, reshape the organisation of markets. Recently, an increasing number of studies have been conducted to reconcile economic performativity with institutional theory. MacKenzie (2017: 174) captured the transformation of financial markets brought by one of high-frequency trading (HFT) firms. He depicted how algorithms and electronic devices change the financial market, and the resistance met by the "performateur" for violating formal and informal norms. He referred to the political struggles around the introduction of new material devices as "a material political economy". Some scholars have taken more explicit approaches. Beunza and Ferraro (2019: 535) theorise the concept of "performative work", which designates "the necessary institutional work to enable translation and the subsequent adoption of the device". Roscoe and Mason (2020) investigated the materiality of "silent legitimacy" by comparing the success and failure of two different stock exchanges, and Roscoe (2022) explored the socio-material dimension of "morality" in the operations of a market maker. These arguments bridge performativity and institutional theory by identifying complex entanglements of socio-political struggles. This not only fills the gap in the material explanation of the economisation thesis but also enriches discussions about the normative and regulatory aspects of economic performativity.

Market Devices, Valuation and Accumulation

Pasteur's laboratory raised the world by extending a favourable network through translation (Latour, 2014); likewise, a successful (powerful) arrangement of market devices – both material and institutional – levers and constitutes the economy. The economy, or the regime of accumulation, is an arrangement of devices, which resulted from the complex politics of heterogeneous actors. The political nature of translation suggests that the process of building networks is not only persuasive but also coercive. The hegemonic actor exerts power on other actors and performs the market favourable to its mode of valuation (and accumulation). Roscoe (2014) investigated how dominant marketing discourses perform the construction of lay-investors. He elaborated on the "docile bodies" of finance performed by "entrepreneurial agencements of investment" (Roscoe, 2014: 201). Valuation is "constitutive of one's self"

(Fridman, 2016: 13); the economic performation creates a new subjectivity equipped with new valuing devices. The device of valuation (and accumulation) bridges power and subjectivity by bringing down the process of subjectification to a micro-level. Before market devices, a subject cannot exist, since it is a result of the relentless fight between living beings and devices. An economic agency is never a naked body, but an agencement of market devices, or a subjectivity with a series of apparatuses created by the dominant mode of valuation (and accumulation).

Bringing back political economy to market studies – or vice versa – integrates variegated approaches to financialisation at macro, meso and micro levels. The device is a "network of heterogeneous elements with a concrete strategic function", which is always located "at the intersection of power relations and relations of knowledge" (Agamben, 2009: 3). Financialisation, or the performation of finance, is a highly political process as it reflects struggles of actors around the regime of accumulation and, at a microscopic level, the mode of valuation enacted in the market. They are two sides of the same coin which continuously escalate each other, through which the power of the dominant is enacted. Another important point is that understanding financialisation as a political process around modes of valuation confronts the empirical reality of values, norms and legitimacies, which must be thoroughly explained. To reassemble the market, the structural conditions and constraints need to be disassembled. The recent turn toward institutional theories (Beunza & Ferraro, 2019; Roscoe & Mason, 2020) might be the result of such attempts. In the same vein, I would suggest that market studies can be further enhanced by investigating market devices through the lens of Bourdieu's thinking tools. In the following section, I shall show how his concept of field, capital and habitus as social facts can be interpreted in the studies of financialisation.

4. Pierre Bourdieu

Bourdieu has been rather an unwelcome figure for both Marxian political economy and ANT-influenced market studies. For political economy, his theories have been accused of providing a “soothing fantasmatic seal of political rigour” (Beasley-Murray, 2000: 101), failing to capture systematic exploitation derived from structural inequalities. According to Desan (2013), Bourdieu’s theorisation of economic capital tends to take the economy at face value and consequently obscures the regime of accumulation (M-C-M’) in the capitalist economy. On the other hand, market studies have criticised Bourdieu for his theories of the field and agent being overly structural, where “actors are immersed and sometimes drowned” in structures of the field (Callon, 1998: 267). One major criticism is the lack of attention paid to the micro-devices which construct agency, and this makes his theories more inclined to structures over individuals (Latour, 1996). Interestingly, these completely opposite criticisms very much resemble how the two hostile camps have critiqued each other; market studies’ tendency to ignore political struggles has been persistently criticised by political economy; political economy’s emphasis on structures has been viewed as a kind of determinism by ANT. In this chapter, on the contrary, I suggest that Bourdieu’s theories are more than compatible with both camps’ key ideas in as much as they share similar criticisms. His concepts of field and different forms of capital draw upon economic, social and cultural struggles in the market, and the notion of habitus provides clues for dissolving the dichotomy between structure and agent. Based on recent studies (Godechot, 2016; Gulledge *et al.*, 2015; Hinde & Dixon, 2016; Townley, 2014), I would argue that Bourdieu’s literature complements what the two different disciplines have overlooked, which is the way in which competing valuations are enacted through materials, institutions and everyday practices. The next section introduces some of Bourdieu’s key concepts as well as his analysis of the field of art, followed by his potential contributions.

4.1. Bourdieu's Thinking Tools

Bourdieu's work encompasses a vast range of intellectual terrains, including the sociology of education (Bourdieu, 1988), tastes and cultural consumption (Bourdieu, 2013), the creation and valuation of arts (Bourdieu, 1983), and the socio-cultural dynamics of the economy (Bourdieu, 2005). One of the primary concerns running through these broad subject areas is the power and class relation. Influenced by Althusser's reading of Marx, Bourdieu was keen to explore political manoeuvres and struggles around practice and capital (Townley, 2014). What distinguishes Bourdieu from the Marxian political economy is that his theories sought to reconcile the dualism between objectivism and subjectivism (Townley, 2014: 2). Whereas subjectivism holds that the truth primarily resides in individual experiences of the world, objectivism places emphasis on object relations which structure practices and how they are represented. Bourdieu broadened the political economy's accounts of power –in Marx's term, 'class' and 'exploitation'– to subjective position-taking and deployment around different forms of capital, in addition to objective structures which constrain dispositions and social practices (Townley, 2014: 3-4). His problematisation of and endeavours to overcome structure and agency (or subjectivism and objectivism) share many commonalities with those of the market studies, regardless of their ontological differences. However, the more important point is that he provided a set of ideas and vocabularies to describe socio-cultural "quasi-actants" (Krarup & Blok, 2011) beyond the politics of materials. His notions of field, capital and habitus are helpful for grasping complex social practices and representations, and furthermore, the agencements of actors and their organisations: the social. Bourdieu himself referred to these concepts as his "thinking tools" (Wacquant, 1989: 50). I would argue that, rather than *a priori* ontologies, these concepts can be used as epistemic tools to capture empirical realities.

Field, Capital and Habitus

Bourdieu defined field as “a space of objective relations between positions defined by their rank in the distribution of competing powers or species of capital” (Bourdieu & Wacquant, 1992: 113). Each field has its own relative autonomy which is incommensurable with other fields, and within the field, agents struggle for different ‘stakes’ under its ‘rules of the game’. He stated that, “in highly differentiated societies, the social cosmos is made up of a number of such relatively autonomous social microcosms”; for example, the fields of art, religion and economy follow each of their specific logics circulated in the field (98). Capital is a resource which individuals utilise to navigate this social space; it mainly “presents in three guises”: economic, social and cultural (Bourdieu, 1986: 46), and additionally as symbolic capital. Bourdieu acknowledged that economic capital functions as a critical component of power and agency across various fields; however, there are some specific capital acts within a field “whose logic is an inversion of the logic of the larger economy of the society” (1983: 29). Some of the most autonomous fields – such as the artistic and religious fields – possess reversed game rules opposed to those of the economy, which he describes as “interest in disinterestedness” (40). In these social spaces, agents acquire additional – social and cultural – capital by giving up economic profits, allowing them to take superior positions in power relations. It is important to note here that a field is not a definite structure, where homogenous actors are solely pursuing a perticular kind of capital. They strive to maximise the amount of capital within their resources, by carefully locating themselves among competing principles, and sometimes by challenging the dominant rules of the game in the field, namely, the conversion rate between capitals (Bourdieu, 2013). As Bourdieu contended, a field is at all times the site of a struggle amongst the actors and the heteronomous principles of hierarchisation (Bourdieu, 1983: 40).

If Bourdieu's concept of field and capital is useful for capturing different game rules for different fields, his other important concept of habitus is helpful for understanding the agents' social practices and strategies within the field. Habitus refers to the overall orientation of agents operating through social environments. It translates objective "relations of the field" into subjective "schemes of thoughts, perceptions and dispositions", through which individuals act and take positions within the field which they occupy (Townley, 2014: 9). The concept of habitus establishes a link between structure and agency; for Bourdieu, it is "structured structures predisposed to function as structuring structures" (1990b: 53), which simultaneously interact with the social world. Habitus is not immutable as determined by the structure of the field, but "a system of durable, transposable dispositions" and "the generative principle of regulated improvisations", albeit subject to some limitations and constraints (Bourdieu, 1990b: 57-58). Gulledge, Roscoe and Townley (2015) distinguish 'primary' habitus from 'specific' habitus; the former is "the product of family, early socialisation, class and education" (4); whereas the latter is "acquired through a relationship to a certain field" (Bourdieu, 1990a: 90). In this regard, financialisation in the art world means that the logic of finance becomes implanted (wittingly or unwittingly) in the dispositions of agents in the transitionary process, which ultimately leads to changes in their specific habitus. If financialisation changes the rules of the game, it is a gradual transition achieved through changes in habitus and subjectivity rather than the logic of finance immediately replacing the value system.

The Field of Art

The art world represents one of the most interesting fields in which to analyse the process of financialisation from the perspectives of economic sociology. The art world economy is not sufficiently explained using orthodox economics, and empirical studies show that agents in the field act in a highly different way from those in conventional markets (Coslor, 2011; Herrero, 2009; Velthuis, 2012; Velthuis & Coslor, 2012). According to Bourdieu (1996), the field of art is a relatively autonomous space wherein different rules of the game are applied. The tactics of “interest in disinterestedness” (Bourdieu, 1996: 216), with the rhetoric of art being priceless, is starkly opposed to economic calculation; in this sense, “talking prices” (Velthuis, 2007: 1) is not only vulgar but often against one’s interest. In *The Field of Cultural Production*, Bourdieu (1983) explained how the unique game rules in the art world are constructed, maintained and reproduced, relatively autonomously from outer society. It is a structural space of struggles where different positions and dispositions collide, resulting in constantly changing dynamics of the game played in the field. The question arising here is what precisely this ‘game’ is.

The modern debates around art can be dated back to Immanuel Kant. In his classic work, *The Critique of Judgment*, Kant (1987) suggested “disinterestedness” as the central principle of aesthetic judgment. He asserted that one can judge beauty correctly only when the contemplation of an object is made disinterestedly, as interest is intrinsically connected to sensations or goodness – for him, art or aesthetic judgment must be far beyond such interests. The romantic movement in the eighteenth – nineteenth centuries strove to realise Kantian aesthetics in the practice of art (Becker, 2008), whereas the early twentieth century modernism included formal experiments within the art form (e.g. abstract art) (Greenberg, 1982), which further reinforced the idea. The creed of modernism, ‘art for art’s sake’, elevated art to a self-contained world that does not borrow from or represent the outside world. From this perspective, art, if it is true art, must be utterly disinterested in the world, and thus, abstract and self-sufficient. Since the late twentieth century, the idea of ‘pure art’ has been constantly challenged by art theorists as well as sociologists such as Danto (1964), Dickie (1974) and Becker (1974). Art requires "the network of people whose cooperative activity, organised via their joint knowledge of conventional means of doing things, produce(s) the kind of artworks that the art world is noted for" (Becker, 2008: X). Despite the fact that art is a social construct which cannot be detached from society, the idea of art for art's sake remains an accepted game rule in the art world. The lonely genius aloof from the world – especially, from the reality of bread and butter – is still a popular image of the artist, and it anoints him/her as a "winning loser" (Bourdieu, 1983) within a narrative of purity. If *homo oecnomicus* is a fiction which performs in the economic field, "art for art's sake" might be another myth which prevails in the field of art.

In *The Rules of Art*, Bourdieu (1996) depicted the "reversed economy" in the field of art. He argued that the artistic field is a relatively autonomous, but at the same time, relatively dependent, universe wherein the symbolic values and the market values remain (relatively) independent of each other. It is the site of the "antagonistic coexistence" of production and circulation obeying inverse logic. At one pole, there is the non-monetary currency of symbolic capital which determines the value of "disinterestedness"; at the other pole, there is the economic logic that seeks immediate profits from the market (Bourdieu, 1996: 142). In this space, agents seek to position themselves across the spectrum between the pure to the commercial, and the idea of "art for art's sake" is the first and foremost strategy for gaining symbolic capital. In playing the "permanent double game between art and money" (8), agents in the field struggle to maximise the amount of capital with respect to the field and habitus. The currency of the different capitals depends on the "rules" governing the field from which it is generated (250). Whether the conception of artistic purity (or *homo oeconomicus*) is a myth or not, the collective game rule of the artistic field is embedded in agents' specific habitus and performs as the *sens pratique* (Bourdieu & Wacquant, 1992) of the art world. In the mostly autonomous field of art, what drives the agents would be symbolic capital such as reputation or recognition; in contrast, the financialisation of art means that the artistic field becomes more homologous with other fields, especially that of the financial economy.

4.2. Bourdieu's Contributions

Bourdieu contributed to the convergence of financialisation and market studies in two key ways. First, his concepts of field and different forms of capital enrich accounts of financialisation by introducing economies with divergent institutions, such as values or modes of valuation. This broadens aspects of political struggles from econocentric power relations to different combinations of socio-cultural variables, which have also been ignored by market studies' materialism. Economic performation (financialisation) requires performative works (Beunza & Ferraro, 2019) which translate cognitive structures and activities into market devices. They are not merely ontological fictions which must be disassembled, but observable, robust social facts functioning in realities (Gulledge *et al.*, 2015; Palo *et al.*, 2018; Roscoe & Mason, 2020). Bourdieu's theory provides useful thinking tools to capture these complex social practices and representations, how these elements play crucial roles in building market devices, and how they perform market activities. Second, the concept of habitus strengthens the bridge between macro and micro analyses of financialisation. The agencement of finance requires some glue for it to be assembled. Habitus is neither material nor discursive, but a system of internalised structures which performs or is performed in the organisation of market agencements. It fills the gap between macro and micro, subjectivism and objectivism, and structure and agency beyond materials, reflecting power relations between the dominant and the subordinate. If financialisation is not a solely material process of machinery and devices, we should be able to give more consideration to the quasi-actants (Krarup & Blok, 2011) involved in socio-political entanglements before fully dissecting them into flattened materials.

Field of Forces

In *Le Champ Économique,* Bourdieu wrote that a market is not a "heterogeneous, Newtonian space" but instead a "space of general relativity where massive bodies distort space in their localities" (1997: 52). The difference in resources – capital – gives particular structures – positions – to market agencements, which create a greater agencement of the economy – field – gravitating towards powerful ones (Bourdieu's terms in dashes). MacKenzie (2019b) emphasised these structural advantages and constraints in organising markets, referring to the social power relations in field theory. He quoted Fligstein's statement that "the social structures of markets are (…) fundamentally systems of power whereby incumbent [actors] use tactics and strategies to stabilise themselves and reproduce their position over challenger [actors]", noting that the effects of power are not always intentional (Fligstein, 2001: 69; MacKenzie, 2019b: 3). MacKenzie accepted Beunza and Ferraro's ideas (2019) that existing social relations and practices can be captured and "reincarnated" into "new (silicon) flesh"; for example, established bonds dealers developed a system of electronic trading which resembled existing practices (MacKenzie, 2019b). He suggested that there must be careful attention given to "systematic differences in organisations' positions in economic relations" and "the specific processes via which economic space is bent". This is an empirical question rather than an *a priori*, ontological one, which must be explained by accounts of structural power and its relations (MacKenzie, 2019b: 3-4).

Bourdieu's notions of field and capital help us to examine structural settings for different modes of valuation. While market studies have striven to disassemble social practices into texts and materials, their micro approaches consistently fail to provide commonsensical explanations about everyday activities and values. If financialisation is a political process to enact a specific mode of valuation, how can we capture this performation without describing existing values? In other words, if performation is to construct a different kind of agencement, how can we reassemble the assembled without knowing what is to be disassembled? The institutional concerns informed by Bourdieu's model allow us to explore the structural arrangement influencing different modes of valuation. They are not merely ontological fictions nor immutable settings which exist *a priori*, but on-going social facts which persistently affect performation. Fernandes, Mason and Chakrabarti (2019) showed how existing social arrangements act to shape and give rise to new forms of market engagement. They not only include flattened materials and infrastructures but also institutional elements such as rules and historical narratives. Individuals have multiple, sometimes contradictory motivations and resources, which gives rise to the complexity of social practices (Hinde & Dixon, 2016: 414). Godechot (2016) depicted "the bazaar of rationalities" which function in a trading room, which is heavily dependent on individuals' structural position within the field. He showed that – even in the most economised field – individuals are rooted in different value systems derived from their cultures and histories. Different individuals – or agencements of varied valuations – "all remain attached to the [practice] that enables them to be what they are" (Godechot, 2016: 428). Putting aside the material-semiotic ontology of ANT, the practice of valuation "mixes logic, emotions and institutions with moral, social and normative evaluations" (412). These are not just explanations but observable social facts which constitute realities. As Bourdieu contended, fields are structural spaces distorted by masses of various compounds, which are reincarnated into entanglements which structure the structure.

Financialising Habitus

Another important tool provided by Bourdieu's is his notion of habitus. A specific habitus (Gulledge *et al.*, 2015) is the embodied disposition in a given field, shared by agents as the *sens pratique*. It is the ability to effectively and effortlessly follow and take advantage of the rules of the game, agents feeling like 'fish in water' in a specific field (Wacquant, 1989). While the field is a space of gravity bent by power relations, the shared habitus functions as a force that fixates or accelerates transitions. The dominant continually modify the game rules by intervening in the field; not only regarding the competition for capital but also the transformation between different forms of capital (Hinde & Dixon, 2016: 412). In the field of dominant finance, individuals are induced to acquire the habitus of financial valuation, which is a kind of quasi-market device, neither material nor discursive. Along with other devices, socio-political entanglements are inscribed in habitus, and it is sometimes materialised and textualised into more rigid forms. It is the "product of the embodiment of the structures of the field (…), including the distribution of capital within the field", which "performs" the individual (Gulledge *et al.*, 2015: 20-21). The reassembled reality requires institutional works (Beunza & Ferraro, 2019) for existing ones and performing ones in the market – Bourdieu's theory provides useful thinking tools to capture these entanglements beyond materials. The birth of *homo oeconomicus* is achieved not only by arrangements of materials but also the interactive performation of discourses and habitus around the rules of the game. Necessary for the analysis is how the agencements of finance form and are formed by "practical knowledge and actions" in realities (Gulledge *et al.*, 2015: 21).

5. The Financialisation of Art

The discussion above provides important theoretical frameworks for analysing financialisation. It is the enactment of financial valuation and accumulation, constituting financial agents through the politics of socio-material devices. This raises questions about how this process unfolds in the art world, which is often referred to as a relatively autonomous field (Bourdieu, 1983). What makes the financialisation of art possible and how does it transform the art market? Although art has been historically considered a repository of value, it is only recently that art has become widely regarded as a financial investment (Gerlis, 2014; McAndrew, 2010). Continuous efforts have been made to legitimise art as a financial asset since the 1970s, particularly over the last two decades with the development of financial technologies. These attempts have encountered structural resistances derived from the different game rules of the art world (Bourdieu, 1983), creating complex dynamics of various actors. In this regard, Velthuis and Coslor (2012) posited that the financialisation of art is an incomplete, on-going project. Struggling and negotiating with these normative arrangements, art-financiers have introduced market devices (Muniesa *et al.*, 2007) which facilitate the financialisation of art, through which the logic of finance infiltrates the market. These devices include mundane objects such as auction catalogues and literary texts (Herrero, 2010; Pardo-Guerra, 2011) as well as art investment tools such as auction price data and art funds (Upton-Hansen, 2018). This section reviews some of the key academic literature which has tackled the financialisation of art and how it examines the factors which both enable and refrain the process. This will lead to the identification of research gaps which need to be further investigated.

5.1. Art and Money

The debate on the financialisation of art was initiated within financial communities to seek validity of art as an investment. Since the first studies proposed by Reitlinger's *The Economics of Taste* (1961), there has been a surge in research investigating the financial performance of art as an asset, including contributions by Baumol (1986), Ginsburgh and

Buelens (1992), Goetzmann (1993), Mei and Moses (2002) and Renneboog and Spaenjers (2013). Heavily based on financial models, the literature has examined the credibility of art as an investment assessing its unique characteristics compared with other assets. These studies did not fully approve art as an ideal investment asset, but they did pave the way for art investment by academically testing its financial viability. By contrast, many art historians and cultural critics have expressed aesthetic concerns about art becoming an asset class. Taylor (2011) asserted that art mirrors the abstract nature of the financial world, as it serves as a tool for boosting monetary value. This diminishes its critical role and ultimately strengthens the very frameworks and systems it should be scrutinising. It deteriorates aesthetics into "what Kant describes as low art or craft, Greenberg labels kitsch" (17), which only supports the reproduction of current systems. Haiven (2015: 39-40) also problematised the "crisis of representation" that arises from "a profound disconnection between the price of things and their actual value". From the perspective of 'art for art's sake', where the actual value of art is based on aesthetics, it is a crisis of aesthetics, and a crisis of art itself.

This literature review is not intended to examine whether art can be a sound investment or the meaning of financialisation in aesthetics. These arguments however show how scholarly actors in the two different fields attempt to theorise the phenomenon and, by so doing, construct favourable arrangements according to their game rules. Sociologists have paid attention to this aspect; how various actors – both academic and non-academic stakeholders – organise the art market in response to financialisation. While the scientisation of art investment is to design new products and legitimise financial activities, the aesthetic concerns against financialisation exemplify the "hostile worlds" view of the art world as described by Velthuis and Coslor (2012: 473). According to them, the art market holds an inherent conflict between art and money, and the incommensurable value of art becomes jeopardised once it is standardised and turned into a speculative object. This echoes Bourdieu’s theorisation of the dual structure in the art market, where ‘art for art’s sake’ or the reversed game rule partly apply. The financialisation of art is a socio-cultural process that requires a more nuanced understanding of the way in which it transforms the market; the unique structural conditions around norms and values need to be thoroughly navigated.

The Hostile Worlds

Coslor’s (2010) ethnographic research suggested that the hostile worlds view, which posits that money corrupts art, continues to operate within the contemporary art world. Although the notion of art for art’s sake has been consistently debunked, the creed is still held by various art world actors, resulting in the negation of the explicit financialisation of art. From this standpoint, art investment is considered as “parasitic” (Velthuis, 2007) and detrimental to the ideal of the art world; it “crunches down” art like “speculation in hedge funds, in pork bellies” (Coslor, 2010). Empirical studies have supported Bourdieu’s idea of the reversed economy (1983) or what Caves (2000) described as tensions between artistic and financial goals in the context of the financialisation of art. The prevalence of the hostile worlds view against financialising art demonstrates that the art market constitutes a relatively autonomous field where unique game rules apply; this creates a performativity effect reinforced by those who adhere to the hostile worlds view. However, Coslor (2010) also noted that the art market is not a homogeneous space solely governed by art for art’s sake. At the other end of spectrum, there are art finance promoters who are willing to make art commensurable with other investment assets. They describe art investment as “just like a normal investment” which can generate lucrative profits. Ivanova (2016) argued that the logic of financial speculation extends beyond investors and impacts producers regarding its creation and valorisation. According to Coslor, most art market participants fall between these two poles; it is a space where plural views on art, money and commensuration compete. The different beliefs lead to diverse behavioural repercussions in the market, which complicate the process of financialisation. The financialisation of art involves reconfiguring this "double game between art and money" (Bourdieu, 1996) and organising corresponding art market practices.

Negotiating with Art Investment

Coslor (2011) showed how actors in the art market respond to financialisation, drawing on and negotiating with the hostile worlds view. She examined the financiers' efforts to impose financial logic on the market as well as the gallerists' strategies to defend their interest without breaking the "strange rules" of the market. Instead of rendering the market more impersonal and anonymous in exchange for efficiency, the process of adopting finance involves delicate negotiations. For example, art dealers prefer to 'place' works with traditional collectors who are less likely to resell them, steering clear of financial speculators prone to 'flipping' (quickly reselling for financial gain) artworks (Coslor, 2010; Velthuis, 2007). This sometimes involves a verbal or legal contract of 'right of first refusal' by which clients must seek gallery permission before selling, or 'buy-back agreement' under which galleries buy back works if they decline to put them on the market. Selecting buyers contributes to 'controlling' prices in the art market, where prices should never drop (Velthuis, 2003), as it safeguards the reputations of represented artists. By various methods, gallerists promote "good behaviours" (Coslor, 2011: 20) which align with the artistic traditions, striving to tame the market by enlisting buyers in mutually beneficial positions. This not only adheres to the hostile worlds view but also ensures long-term financial returns. As Becker (2008) contended, the value of art stems from a network of shared understandings, rules and practices within the art world; disrupting these 'conventions' might result in disadvantages or even sanctions in the market.

5.2. Market Devices for Financialising Art

The studies have suggested that the financialisation of art is a complex phenomenon which has significant implications for the art market and beyond, providing extensive information and crucial insights on the topic. However, there are still some research gaps that need to be addressed; for example, researchers have yet to fully explore the role of market devices in shaping the market, especially how financial devices transform the valuation and accumulation of art. As the market studies literature suggests, economic agencies are embedded and distributed in market devices (Callon *et al.*, 2007); the transition of valuation and accumulation is subject to the adoption of accompanying devices. The examination of financialisation in the art market must therefore be preceded by investigating its valuation and accumulative devices. A series of studies within the tradition of market studies have provided essential groundwork for assessing this topic. Herrero (2010) examined auction catalogues as an important calculative device which creates conditions of economisation and Pardo Guerra (2011, 2013) explored the agencement of auction houses around valuation practices. In another area of the creative industries – the publishing industry –, Gulledge et al. (2015) investigated the role of the book proposal as a market device which economises those new to the field. These studies show how material and discursive devices enable economic calculations and thereby contribute to the construction of the art market.

Modes of Valuation and Accumulation

Plante, Free and Andon (2021) showed how modes of valuation are executed by employing devices in the art market. According to them, valuation is organised through the categorisation of artworks based on their cultural significance (for example, decorative, emerging, trending and blue-chip art) with the support of categorisation and valuation devices which address quality uncertainty. These devices are not automatic or uncontested; instead, they require actors to employ “cognitive processes, technical instruments and judgment” (Beckert & Musselin, 2013: 3) to convince others of their mode of valuation (such as interpreting, credentialing and projecting value). In this regard, valuations in the art market are socially constructed through a combination of interpretation and persuasion, which in turn shape the market as a device of their mode of valuation. Upton-Hansen (2018) tackled the shifting dynamics of valuation in the art market under financialisation. As he quoted Meniesa (2007: 381), after all, “an economy is, in its larger gist, the establishment of valuation networks”. Although still in their infancy, new devices have emerged which produce and process price data (such as art market data and art indices), enabling a mode of valuation embedded in finance. This development has led to the introduction of various market arrangements, such as wealth management, art funds and art lending. The market studies literature provides important grounds for navigating the financialisation of art by exploring the intricacies of financial valuation and the employment of market devices. Whereas Velthuis (2007) and Coslor (2010, 2011) – and more traditionally Becker (2008) and Bourdieu (1996) – focused on the institutional structure and struggles around the financialisation of art (or art and money in general), these studies offer explanations of how competing market devices construct modes of valuation and thereby organise such dynamics in the market.

Building on these works, this current study is designed to address the following research gaps which emerged from the examination of the financialisation of art. First, the existing literature on the financialisation of art lacks a thorough discussion of accumulation in the process of financialisation. Although studies have demonstrated the mechanism and the enactment of financial valuation in the art market, its relation to accumulation and the devices involved remain largely unexplored. As discussed earlier, financialisation is fundamentally a political process centred on accumulation; the regime of accumulation and the mode of valuation are two sides of the same coin which mutually reinforce each other. It is essential to understand the accumulative nature of financialisation, and this involves a careful examination of “accumulative devices”. Second, further considerations regarding the art market’s institutional structures are necessary. Although market studies have placed significant emphasis on socio-material devices, they have often overlooked the cognitive and normative structures which underpin the art market. The ‘hostile worlds’ view or ‘art for art’s sake’ perspective in the art world must be understood as rigid social facts which perform realities. Bourdieu’s concepts of field, capital and habitus are especially useful for capturing these social practices and representations, as they expand the scope of power struggles beyond economic relations to encompass various combinations of socio-cultural variables. Third, there is a need for deeper exploration of the complexities surrounding the adoption of market devices. Financialisation is a political process which necessitates the successful adoption of calculative and accumulative devices. This entails performative works which translate institutions, norms and values in the market and reconcile them with newly introduced market devices. A material political economy which elaborates on these resistances and negotiations is crucial for comprehending the process of financialisation. In the light of these research gaps, this study seeks to provide a more comprehensive understanding of the financialisation of art, examining how market devices for financialisation are adopted and integrated within the art market’s institutional structures.

III. Research Design

> When Theseus came to Crete, Ariadne, Minos' daughter, loved him so much that she betrayed her brother and saved the stranger, or she showed Theseus the way out of the Labyrinth. When Theseus had entered and killed the Minotaur, by Ariadne's advice he got out by unwinding the thread. (…)
>
> Gaius Julius Hyginus, *Fabulae 42*
> (translated by Mary Grant)

1. Research Outline

Drawing on the literature discussed in the previous chapter, the purpose of this study is to investigate the process of financialisation in the art market by exploring the performation of financialising market devices. The study seeks to understand how the agencement of art finance is constructed within the unique institutional arrangements of the art market, tracing performative works conducted by an art finance performateur. The primary questions which I shall investigate are as follows:

- How do financial logics infiltrate and shape the art market?
- What are the devices involved and how do they perform a mode of valuation and accumulation?
- How do the institutional arrangements of the art market resist and negotiate with these devices and what are the performative works required?

I shall seek to answer these questions through an empirical case study of *ArtTactic*, an art market research company operating in London. Eisenhardt (1989) stated that case studies are useful for generating theories through the constant juxtaposition and measure of realities, focusing on the dynamics present within single settings. The iterative nature of case study research enables researchers to refine their theoretical propositions and enhance their understanding of the phenomenon. This is especially relevant when studying intricate and on-going processes such as financialisation; researchers can not only ground their theories in empirical data but also refine and generate new theories by testing and evaluating the data. Yin (2009) suggested that a single case study can be employed to serve as a critical case which verifies, challenges and expands established theories. The accounts of financialisation reviewed in the previous chapter can be contested and extended through the case of ArtTactic; it offers an empirical case well fitted for investigating the enactment of financialising market devices. As discussed in the literature review, the study seeks to show that financialisation is not only an abstract force which structures the global economy but also a transition of everyday practices which involves the micro politics of socio-material devices. It sheds light on the performative works of ArtTactic to investigate the complex dynamics of financialisation.

1.1. ArtTactic

ArtTactic is an art market research firm utilising both quantitative data (such as a price database and index) and qualitative data (such as sentiment analysis) on the market. It provides regular art market analysis reports in partnership with Deloitte and Hiscox, as well as bespoke research for various art market participants. Additionally, the company engages in educating art world practitioners through various platforms, such as online courses, offline lectures, podcasts and weekly editorials. The company provides a variety of discursive devices to legitimise and support the concept of art as an asset class, including lectures, podcasts and reports. Anders Petterson, the founder and managing director of the company, regularly writes and lectures for educational institutions such as Sotheby's Institute of Art and Christie's Education. Before starting up ArtTactic in 2001, he read management (BSc, MSc) at the London School of Economics and Political Science and worked at JP Morgan.

ArtTactic targets wide audiences, encompassing both financiers – financialising actors – and traditional players in the art world – actors who are generally subject to financialisation. The company provides a normative understanding of the art world to the former and introduces financial devices to the latter. In so doing, ArtTactic strives to bridge the gap between the financial sector and the art market, shaping discourses around art finance and facilitating the financialisation process within the art world.

1.2. Rationale and Context

There are several compelling reasons for selecting ArtTactic as the focal point of the research. First, ArtTactic is a prominent company in the field of art market research, having provided market intelligence for over two decades. As one of the pioneers in the field, it has established a strong reputation as a reliable and authoritative provider of market information. The company's annual reports produced in collaboration with Deloitte and Hiscox are considered among the most credible sources for art market research along with the reports published by TEFAF. I first encountered ArtTactic in 2013 when I enrolled in a summer programme in Finance and the Art Market at Sotheby's Institute of Art. During the course, Petterson delivered lectures and seminars on the art finance market, introducing his company's work and the rationale behind it. As a business student and a passionate art enthusiast, I was captivated by the idea of art finance, which led me to pursue a master's degree in visual arts administration. A few years later, I reconnected with ArtTactic while preparing for my master's dissertation; as I explored art investment funds, the company's reports served as important and reliable resources for my research. Writing a dissertation about art investment, however, led me to adopt a more neutral and, at times, critical view of the financialisation of art. I learned that there is fundamental incommensurability between art and finance and became increasingly interested in the sociological aspects of financialisation.

As I decided to study further the financialisation of art for my PhD, the company evolved into the subject of my research. Recognising ArtTactic as an actor which performs the market was a pivotal shift in understanding the performative nature of financialisation. The company's unique position as both an observer and a performateur of the art market offers a rich context for examining the mechanisms of financialisation, significantly contributing to the literature on market studies.

There were also some pragmatic reasons for choosing ArtTactic as a case study. When this research commenced in early 2020, collecting empirical data was significantly limited due to the Covid-19 pandemic. Particularly during the periods of lock-down, it was impossible to guarantee access to informants; interviews or participant observations were not viable options for the research. My initial plan involved three observational field studies (an art price data company, an art investment fund and ArtTactic) with each playing a critical role in constructing calculative, accumulative and normative networks. However, given the circumstances, I chose ArtTactic as the sole domain for the case study since its materials offered comprehensive information about other financialising devices in the market. The company introduces and promotes various market devices which facilitate financialisation from art market data services to art investment funds operating in the market. This decision was especially valid considering the practical constraints at the time, as a large part of ArtTactic's data is publicly available online. To conduct a thorough analysis, I chose three sets of data closely related to the topic of art financialisation: six ArtTactic Deloitte Art and Finance Reports, four online lecture series on art finance and art market analysis, and 43 podcasts introducing art finance businesses and trends. These are digital artefacts which reveal the company's performative works and at the same time performing actors which shape the art market. The substantial volume of digitised texts (519,274 words) necessitated an innovative methodology that would be both empirically and theoretically effective. The next section introduces the research methods developed for analysing these textual data based on previous applications of semantic network analysis (SMA).

2. Methodology[1]

Since its inception, the market studies programme has concentrated on the socio-material assemblages of markets (Muniesa *et al.*, 2007), plotting a course between economics' 'black boxing' of everyday exchange practices and the postmodernist insistence that all is discourse. In methodological terms, this has been accompanied by a commitment to rich descriptions (Latour, 2007) of market operation, as well as a focus on how market agency is configured in these assemblages (Roscoe & Chillas, 2014), a process of network configuration sometimes termed 'agencing' (Onyas & Ryan, 2015; Stigzelius *et al.*, 2018). Alongside the mundane materialities of markets and market devices, texts have featured in market studies as simply one class of actor. Geiger and Finch (2016: 72) considered texts as "promissories that invoke and enable future markets", and Mason and Araujo (2021: 477), investigating UK healthcare reforms, adopted a position which treated texts as actors, capable of being "recruited into schemes of organised activity". The market studies literature here differs from the tradition of literary studies concerning the narrative construction of markets (Crosthwaite *et al.*, 2019; Hardin, 2017; La Berge, 2016) in its assertion that texts are not efficacious in and of themselves. Texts become efficacious only through their enrolment into a broader assemblage of market action. They are actors needing to be followed, mapped and described like any other, and herein lies a problem, especially in our digital world.

As markets have become increasingly digitised, so attention has shifted to the

[1] An edited version of this chapter is set to appear as a book chapter in the forthcoming handbook: Market Studies: Mapping, Theorizing, Impacting Market Action, *Cambridge University Press*, 2023.

platforms and digital infrastructures which constitute and perform contemporary marketplaces (Caliskan, 2020), with researchers seeking to unveil the digital apparatus of marketplaces and to hold a heterogeneous array of actors to account. Although it is perhaps a commonplace to note that digital infrastructures are accompanied by a proliferation of digital texts (video, audio and typescript), less attention has been paid to these texts *qua* actants, and the difficulties which they present to researchers, not least in terms of scale, mobility and proliferation. Whereas previous research has been able to identify a body of text and analyse it by close reading (Fernandes *et al.*, 2019; Geiger & Finch, 2016), traditional thematic coding simply cannot cope with the demands presented by digital texts. Alternative methods, such as a content analysis based on the frequency of terms, can analyse large datasets but produce a thin reading of the text, unable to discern relationships, patterns or structures. Texts make connections and draw boundaries; they comprise part of the socio-technical apparatus of markets, as they 'invoke and enable' new futures. Analysing texts is therefore a cartographic exercise as much as a discursive one; researchers must be attuned to how relationships are construed within texts, and what kind of markets are thereby enacted or performed (Callon, 1998), and by whom.

In this section, I shall discuss one such cartographical method: semantic network analysis (SMA) (Danowski, 1993; Drieger, 2013). A semantic network is a network of concepts generated from statements. The nodes in the network represent concepts in text or speech, and "by analysing links between concepts, the researcher can extract implicit meaning and interpret structural properties from networks of words" (Shim *et al.*, 2015: 58). In other words, attention to the structure of a text in terms of topographical relationships between key words can generate a picture of the underlying meanings, taken-for-granteds, and 'framings' of a speaker. Semantic network *analysis* is a computational process which generates graphical representations of relations between words or concepts as a tool for understanding how they constitute meaning (Christensen & Kenett, 2021; Schnegg & Bernard, 1996). Rather than a simple, descriptive analysis, words are mapped in terms of their frequency of appearance and their position in relation to other words. This section first introduces SMA as a methodology. I shall then explore how the methodology was applied in this current research, with a commentary on the individual steps of the method.

2.1. Semantic Network Analysis (SMA)

SMA is a computational process which examines relations between words or concepts to show how these constitute meaning: "network analysis us[es] written [or spoken] texts to identify salient words and concepts in order to extract underlying meanings and frames from the structure of concept networks" (Shim *et al.*, 2015: 58). Text can be seen as an interconnected system of signs or, to use Deleuze's term, a "rhizome of language representing a cognitive map" (Drieger, 2013: 4-6). Concepts and relationships are entangled into statements and compose a network of different meanings and discourses; language is not a well-ordered system but a rhizomic organism which sporadically and expandingly creates information. Semantic networks are therefore structures representing how knowledge is organised in text or speech. Each network is a structure of concepts formed from statements; in the jargon, a 'node' represents a concept which is a single ideational kernel, and an 'edge' represents a relationship which links two concepts together (Carley & Palmquist, 1992). Such networks disclose the 'cognitive maps' of the discourser(s); SMA can scale across speakers, institutions or groups to analyse the discourse of any collective.

Early-stage studies on semantic networks mainly focused on conceptualising methods and testing their effectiveness (Carley & Kaufer, 1993; Drieger, 2013). Since the early 1990s, computational implementations of SMA have enabled researchers to deal with a large volume of data and are now increasingly used in the social sciences. Scholars in various fields have adopted computational SMA, including sociology (Carley, 1993), political science (Baden, 2010; Maynard, 1997; Shim *et al.*, 2015) and organisation and management studies (Carley, 1997; Pardo-Guerra, 2020; Yang & Veil, 2017). The significant advantage of SMA is that it considers syntactic structures of a text whereas other computational methods using probability distribution (for example, topic models) are completely blind to contexts (Pardo-Guerra, 2020: 253). In other words, methods solely based on counting the frequency of words cannot tell the difference between two texts with the same words which contain different meanings as they do not consider relations between concepts. Computational SMA identifies structural properties through the recognition of relations between concepts and assigns them into thematic clusters using network theories (Paranyushkin, 2019: 2; Shim *et al.*, 2015: 58). SMA performs "a qualitative analysis through the use of quantitative procedures" (Danowski, 1993: 198) and thus has an appeal to qualitative researchers in search of consistency and mathematical rigour, especially in dealing with large datasets. From our perspective here, however, the appeal of SMA lies not in its computational apparatus but in its ability to generate connections – often unexpected – and antagonisms among concepts submerged in the datasets. Eco (1986) described the semantics of natural language as a "maze of language"; SMA provides an Ariadne's thread enabling us to explore and escape it.

Quantifying the Qualitative

The innovation of SMA is that it examines word-pair link strength – the number of times each word occurs with another – in a corpus. In this way, more than just counting single word frequency, it reveals the systemic features of a corpus and shows how concepts and collocations are interconnected as sematic networks (Yun & Park, 2018). The procedure for drawing a semantic network comprises three steps: first, counting word pairs in a corpus; second, drawing a co-occurrence matrix out of them; and third, visualising the matrix into a network.

The first step, counting word pairs, frequently employs a k-next-neighbourhood model to count combinations of word pairs within k words around a particular word (Danowski, 1993). Every word is connected with k predecessors and k successors in a sentence, consequently creating an undirected and weighted network of word relations. An undirected network does not distinguish between the order of nodes in a pairing and simply notes the relation; a weighted network notes the number of connections between nodes (Drieger, 2013: 6-7). On the basis of Miller's (1956) classic argument that short-term verbal memory can process seven plus or minus two meaningful units at a time, methodological convention considers the words which occur within a three-word wide window (k=3) to be connected (Danowski, 1993). For example, in the sentence 'ArtTactic is an art **market** analysis firm in London', if the width of the window (=k) is three, all word pairs around 'market' are as follows:

- *Sentence*: "ArtTactic [is [an [art **market** analysis] firm] in] London".
- *Word pairs*:

  (is – an), (is – art), (is – **market**),

  (an – art), (an – **market**), (an – analysis),

  (art – **market**), (art – analysis), (art – firm),

  (**market** – analysis), (**market** – firm), (**market** – in),

  (analysis – firm), (analysis – in),

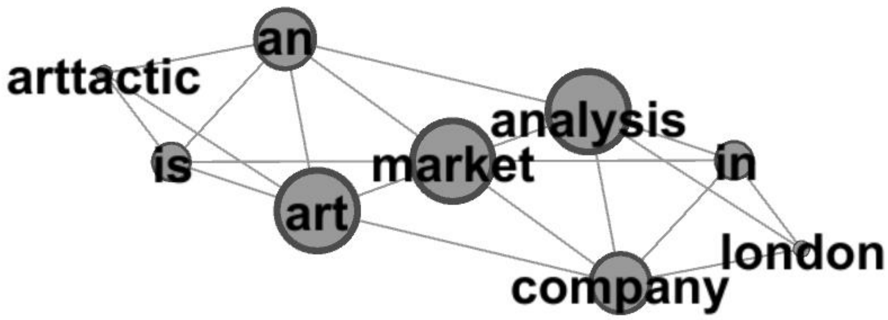
  (firm – in)

Amongst these, the word pairs pivoting around the word ‘market’ are (is – market), (an – market), (art – market), (market – analysis), (market – firm) and (market – in). The same procedure can be carried out by centring every single word in a sentence (ArtTactic, is, an, art, analysis, firm, in) and the scope of analysis can be expanded to a whole text. The window slides from the first word to the last word to obtain the frequency of pairs in the text. Table 1 shows the co-occurrence matrix derived from this process which demonstrates how often a particular word occurred with another word within the three-word window. In practice, although I have not done so here, it is usually necessary for the researcher to exclude some articles, prepositions and words without information, for example ‘is’, as they might distort the results.

Table 1. Co-occurrence Matrix of the Sentence

	arttactic	is	an	art	market	analysis	company	in	london
Arttactic		1	1	1	0	0	0	0	0
Is	1		1	1	1	0	0	0	0
An	1	1		1	1	1	0	0	0
Art	1	1	1		1	1	1	0	0
Market	0	1	1	1		1	1	1	0
Analysis	0	0	1	1	1		1	1	1
Company	0	0	0	1	1	1		1	1
In	0	0	0	0	1	1	1		1
London	0	0	0	0	0	1	1	1	

Figure 1. Semantic Network of the Sentence



For such a short sentence, the values of connection are necessarily one (as every word pair occurs only once) and little information is derived which is not immediately apparent to the reader. Nonetheless, to illustrate the process, I have drawn the network from the co-occurrence matrix, displaying how and to what extent the word pairs are interconnected (*see* Figure 1). The overall network structure is clearly visible: the diagram shows the degree of each node (the number of connections, or edges). The shape of the network has been computationally optimised to reflect the connections between nodes; each node represents the position of a word in a network, where its degree is measured by the number of adjacent nodes.

In Figure 1 the degrees of 'market', 'company' and 'London' are respectively six, five and three. Degree can be used as one of the proxies which measure the centrality of a particular node – how often and how diversely the word is paired in a network (Drieger, 2013). Edges represent the relations between two nodes, weighted by frequency. An edge connects the two words which are co-occurrent within a window; the number of co-occurrences is usually represented by the thickness of the edge. In Figure 1, the values of all the edges are one. The network can be further examined by statistical figures such as degree distribution and graph density. It is, in summary, a pretty picture and more: an immediately accessible and informationally rich representation of the structure of discourse. When expanded to a much larger dataset, it makes visible semantic structures which might remain invisible to a reader.

In a further, final, step, the network can be subdivided into clusters, or “processed by modularity class” (Borge-Holthoefer & Arenas, 2010). We can identify strongly connected word communities in a network by optimising modularity, which is the difference between the fraction of the edges which fall within the given groups and the expected fraction if the edges were distributed at random. Simply put, a cluster of words has more interconnection than would be found in a random scattering of words; each cluster represents a strong group of nodes and therefore maps out specific themes or complex concepts. The constituents of every resulting cluster have something in common and something that distinguishes them from another cluster. For example, drawing on the worked example in Table 4 (*see* 84-87), the most central words in cluster 3C-4 are ‘Luxembourg’, ‘tax’, ‘partner’ and ‘freeport’, from which the common theme of ‘tax’ might be readily ascertained.

Qualifying the Quantitative

Once a semantic network has been drawn, the next step is to code the material. Coding is an investigative process which inductively assigns attributes to words, sentences or paragraphs – first-order concepts – and builds them up to first-order themes and aggregate dimensions (Gioia *et al.*, 2013). Where traditional coding might use paper and highlighters or a computer-based system to identify these first-order concepts and themes, SMA has already done this work, and the network diagrams derived from it act as the initial point for investigation. The words or word networks identified by SMA are *in vivo* codes or coding categories, and word clusters represent first-order themes.

At this point, qualitative interpretation becomes vital in terms of extracting meaning. Because SMA focuses on individual words, its output is fragmented, and without a researcher's involvement (such as reading for meaning guided by SMA), it is difficult to extract meaning from semantic networks. Despite SMA's strength in capturing contextual relationships by exploring connections amongst concepts, a set of words without any prior knowledge does not provide much in the way of explanation. An interpreter is needed to ascertain what is the 'something in common' for each cluster and the points of difference from others, and thus to name and organise the first-order themes. Moreover, the process of SMA has already required a substantial degree of judgement from the researcher: the result of the computation can vary depending on parameter settings, such as size of window, drop words and resolution. As in any coding process, the researcher must deploy a knowledge of the empirical field, the theoretical framing and the project's research questions in order to be able to render the outputs meaningful and useful. A tension therefore remains in the utilisation of SMA; although it significantly contributes to qualitative methods by better satisfying scientific criteria such as reliability, intersubjective validity and reproducibility, it still requires human insight to draw out meanings from abstract words and numbers (Drieger, 2013).

I would argue, however, that SMA can contribute more to the study of markets than simply adding a layer of mathematical reliability to data analysis. I propose that the value of SMA lies in its ability to show more, in terms of depth, complexity and relationships, than traditional coding methods. The coded data reflect (a portion of) the discourser's mental models at the time they were created. SMA enables the researcher to extract cognitive maps, concerning both declarative (the presence, absence and frequency of concepts) and procedural (implicit or explicit procedures used by discourser) information (Carley, 1997: 536-537). The method is applicable to a single speaker, the textual output of an organization, or a collective of speakers/organisations depending on the demands of the research question (see, for example, Shem et al.'s (2015) analysis of policy framing around nuclear power). SMA reveals unexpected connections and complexities between different concepts and themes, which consequently contributes to the generation of new insights (Lee & Martin, 2015).

2.2. Research Methods

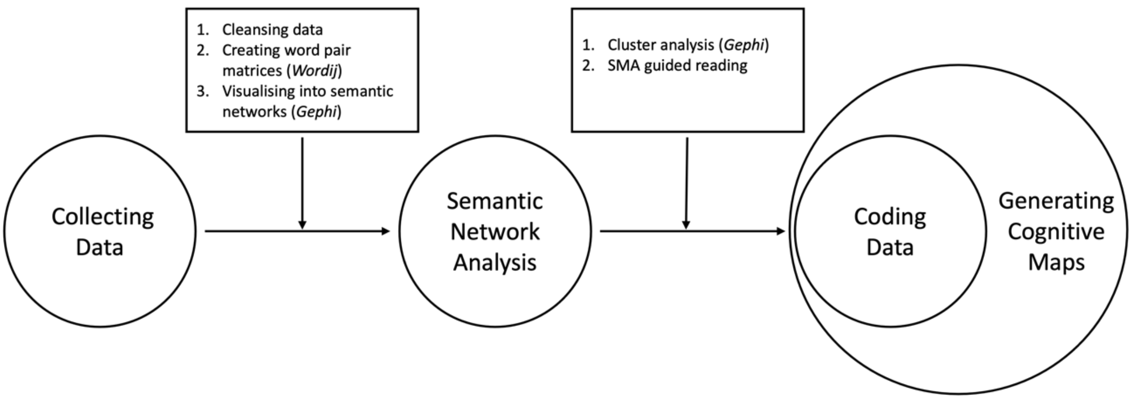
Data Collection

To navigate ArtTactic's mental models, three sets of data were collected for SMA. The first set of data was *ArtTactic Deloitte Art and Finance Reports* from 2011 to 2019. Between those dates, the company released six reports (2011, 2013, 2014, 2016, 2017 and 2019) in collaboration with Deloitte, all available free on its website. The text contains 335,093 words after data cleaning, forming the largest part of the overall data. The second set of data was retrieved from ArtTactic's continuing professional development (CPD) courses. ArtTactic provides four accredited online courses on art finance; three-level art market analysis courses (Level 1 *Big Data and the Art Market,* Level 2 *Artist Market Analysis,* and Level 3 *Market Value & Fair Value Analysis*) and *Art and Finance – Trends and Developments*. Each course consists of a series of lectures which were taken and transcribed by the researcher using NVivo transcription. The lecture series contains 79,137 words after relistening and data cleansing. Third, 43 ArtTactic podcasts introducing art finance businesses and analysing contemporary art markets were transcribed. Podcasts in five different categories (Art Funds, Art Insurance, Art Investment, Art Lending and ArtTactic Market Analysis) from May 2016 to Jan 2021 were selected and downloaded from the website. This added 105,098 words to the overall data, making a total of 519,274 words (1,360 pages in Microsoft Word) for the analysis. These substantial datasets are ideal for SMA, but not just because of their size. As discussed above, SMA is a mechanism for mapping the structures of discourse, bringing to the surface unexpected connections, both complementary and adversarial.

Data Analysis Procedures

For the analysis, two software packages were used, both open-source and widely available: the software used for calculating co-occurrence (*WORDij*) is open to the public (downloadable at www.wordij.net) and the visualisation software (*Gephi*) (also free at www.gephi.org) is very widely used in research communities. Both require some technical competence. The research was conducted as follows. First, I cleaned and adjusted the data to fit *WORDij 3.0* (Danowski, 2013), a software which explores texts and creates binary matrices of word pairs. I converted the reports and transcripts to text (txt.) files, removing unreadable data (images, graphs and tables) and modifying inaccurate transcription. Syntactically functional words (such as ‘a’, ‘an’, ‘the’ and ‘for’) and words with little information value (such as ‘do’, ‘get’ and ‘have’) were removed by using stop words. I applied the Porter stemming algorithm (Willett, 2006) to conflate different variants of a basic word; for instance, words with the same stems were counted as a single term (for example, finance, financial, financing → ‘finance’). Second, the frequency and co-occurrence of the words in the corpus were calculated using *WORDij 3.0*. The software generated semantic matrices and created a net file (.net), further analysed and visualised using *Gephi* (Bastian *et al.*, 2009). Different expressions of the same words (for example, data, database, datum) and words which had not been properly stemmed were further unified. Third, *Gephi* calculated degrees, centrality (eigenvector, closeness, betweenness), and network measures (average degree, network diameter and graph density). The data were visualised by Force Atlas 2 layout (Jacomy *et al.*, 2014) in *Gephi*, simulating physical systems to spatialise the network. Before clustering, I identified and compared most of the central words in the three texts. I confirmed that they shared similar themes and that the results of cluster analysis could be integrated to examine wider dimensions. Fourth, themes and dimensions were identified by cluster analysis, calculating the modularity class of the network (Blondel *et al.*, 2008). The resolution was set as default (=1) upon the researcher's judgement that it best illustrated different themes in the text. Communities which accounted for more than 2% of each network were considered. Fifteen themes were generated from central words and associations; these were combined into four overarching dimensions (second-order themes) regarding the financialisation of art. Fifth, the networks were rearranged by modularity (first attribute) and weighted degrees (second attribute) using circle pack layout. Clusters were categorised by second-order dimensions in different colours. Two distinctive areas were identified for qualitative interpretations. The graphs visualise the cognitive map of the company which reveals its mental models. Figure 2 summarises the procedures of SMA outlined in this section.

Figure 2. The Process of SMA



2.3. Methodological Implications

For many scholars, the appeal of SMA is its post-positivist rigour (Shim *et al.*, 2015). The forensics of communication are never a straightforward, fixed process but one that requires a holistic interpretation of texts and contexts. Although the qualitative nature of discourse analysis leads to flexible and creative interpretation of language, it is often criticised as lacking scholarly rigour as an analytic methodology . Scholars have suggested that it might compromise some scientific criteria, namely reliability, intersubjective validity and reproducibility (Nelson, 2020). SMA can reply to these critiques: “more than just ‘reading between the lines’, (…) it uses an *objective* and *quantitative* approach to reveal the hidden patterns” (Shim *et al.*, 2015: 58, my italics).

I would argue, however, that SMA can contribute more to the study of markets than simply adding a layer of mathematical rigour to data analysis. Market studies has from its inception pursued anthropologically inflected investigations that adhere to non-positivist standards of rigour, and the claim of better mathematics is not guaranteed to impress. I propose that the value of SMA lies in its ability to show more – in terms of depth, complexity and relationships – than traditional coding methods. If the challenge of analysing digital texts is one of cartography, SMA can help. It can generate visual maps of the discursive representations, showing how terms are weighted and how they are connected to others; it offers researchers a means of investigating the architecture of discourse. SMA can help researchers to extract epistemological models from texts and draw a shared cognitive map from discourses dispersed in time, place and authorship. In doing so, it can shed light on how texts structure the performation of market arrangements.

Conceptually, market studies often entail, or at least imply, an actor-network ontology (Callon & Muniesa, 2005a) predicated on networks of association between heterogeneous actors as the fundamental unit of analysis. Such networks are frequently conceptualised as rhizomic. As Latour (2007) and others have shown, networks compound each other, and the task of analysis is often to open networks within networks. Texts can be actors within such a network (Stigzelius *et al.*, 2018); as performative, discursive devices they carry networks within their structure. There is therefore a conceptual consistency between the search for socio-technical agencements within heterogeneous actor-networks and the mapping of the rhizomic semantic structures of texts. Researchers can zoom in from the socio-technical network to the texts circulating within them, continuing to map networks and translations. In epistemological terms, it is of a piece with market studies' constructivist approach. There is no methodological moment at which the text becomes 'just text'; it can be conceptualised throughout as actant, network, mobile, generative and agential (Roscoe, 2022). SMA offers a means of opening the 'black box' (Latour, 1999) of textual representation at a level and complexity unavailable to a standard textual analysis.

3. Results

3.1. Network Structures

Some abbreviated descriptive findings are presented here for illustrative purposes. These enable outline comparisons of the size, shape and density of network structures. The numbers are of interest in relative rather than absolute terms. This step is useful when working with multiple datasets, as is the case here. Table 2 shows a summary of the network measures for the semantic networks of the three data sets. It indicates that the structures of the networks are not distinctive. All three networks were sparse, with low density (=0.003, 0.001, 0.003), reflecting the varied themes appearing in each dataset. At the same time, their relatively high modularity (=0.479, 0.498, 0.307) suggests that the networks were tidily partitioned. This means that the networks had sparse connections between communities but dense connections within communities. The corpora comprise various themes with consistent statements; in other words, although the company's discursive outputs introduce diverse topics, each topic contains relatively coherent descriptions and arguments. The podcasts showed the lowest density value (0.001) as they regularly invited different guests and talked about diverse issues, whilst the lectures and reports had more linear formats.

Table 2. Summary of Network Measures

	LECTURES	PODCASTS	REPORTS
TOTAL NODES	1,173	1,672	3,683
AVERAGE DEGREE	3.228	2.099	10.502
NETWORK DIAMETER	11	8	8
AVERAGE PATH LENGTH	3.37	3.475	2.977
GRAPH DENSITY	0.003	0.001	0.003
MODULARITY	0.479	0.498	0.307

Table 3 displays the ten most central words in the three datasets. This was calculated by "eigenvector centrality" which counts "the number of nodes adjacent to a given node but weights each adjacent node by its centrality" (Borgatti *et al.*, 2018: 194). It is, in other words, a measure of the importance of a node *and* the importance of its neighbours – a multi-layers measure of 'centrality'. The table gives a quick overview of the key concepts in the three datasets, showing how the data were initially organised around shared central themes but rapidly diverged. The most central words were 'art' and 'market' for all three data sets, indicating that 'art market' was commonly the main theme. Nineteen of the top 50 words, such as 'art', 'market', 'data', 'invest' and 'auction', were present in all networks, whereas 20 words, including 'fund', 'finance', 'contemporary' and 'gallery' appeared only in two networks. The analysis suggests that the three corpora were substantially coherent and complementary, with repeated themes around 'art' and 'finance' (as classified with * and #, see note).

Table 3. Eigenvector Centrality

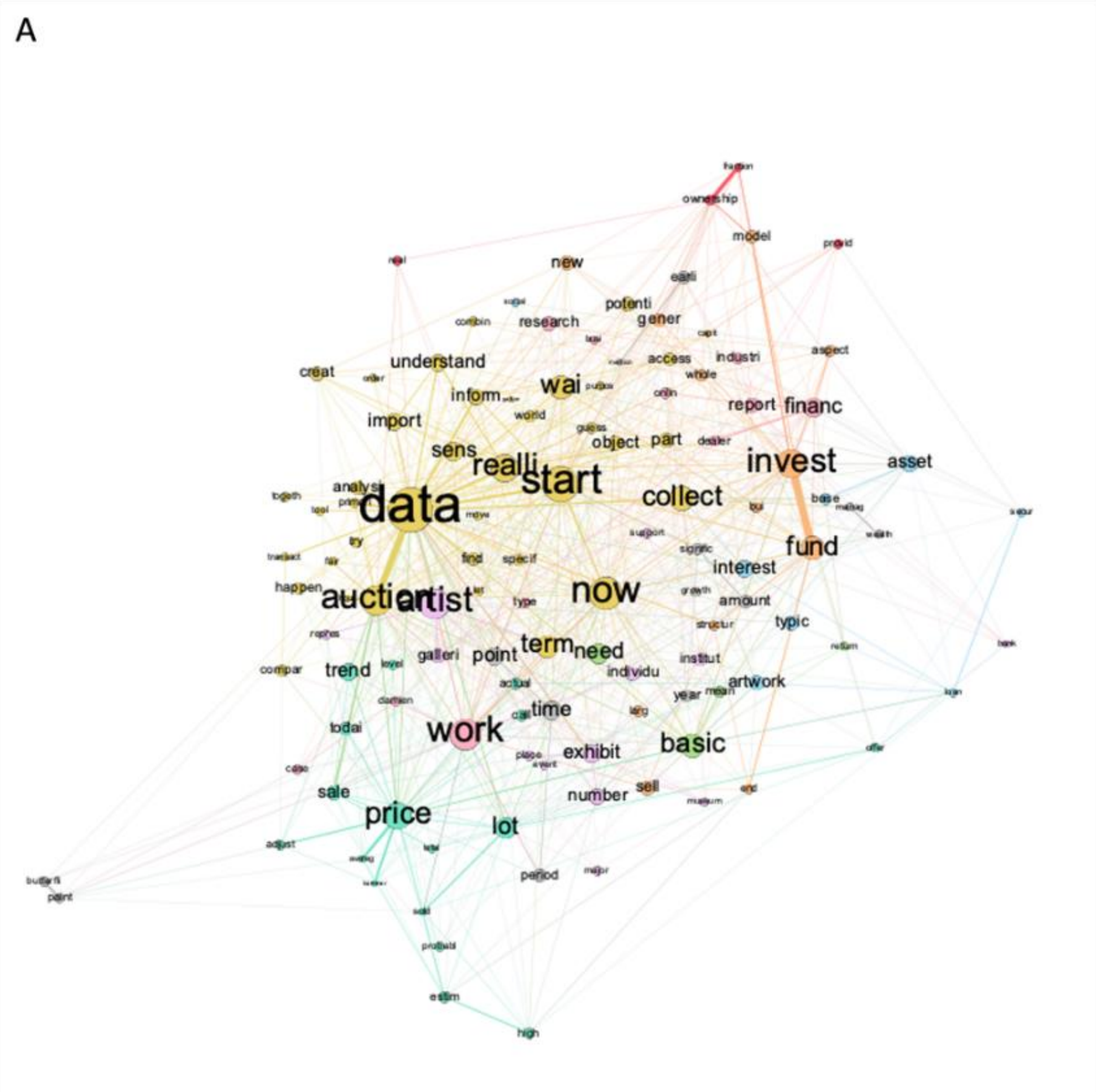
	LECTURES		PODCASTS		REPORTS	
	WORDS	EIGENVECTOR CENTRALITY	WORDS	EIGENVECTOR CENTRALITY	WORDS	EIGENVECTOR CENTRALITY
1	**market**	1	**art#**	1	**art#**	1
2	**art#**	0.961139	**market**	0.798703	**market**	0.758656
3	**data***	0.639272	*think*	0.767488	manag	0.588427
4	*think*	0.545822	realli	0.580948	**collect#**	0.581615
5	*start*	0.495431	**work**	0.516106	wealth*	0.561807
6	*now*	0.4574	**artist#**	0.508512	**invest***	0.537858
7	**invest***	0.432022	**auction#**	0.501353	*finance**	0.492871
8	**work**	0.420525	*lot*	0.411522	**new**	0.463303
9	**artist#**	0.419858	**collect#**	0.345964	increas	0.423067
10	**auction#**	0.417852	*sale*	0.342992	*fund**	0.418367
11	*realli*	0.382504	*thing*	0.314572	service	0.415686
12	**collect#**	0.353254	*sell*	0.308933	*asset**	0.401233
13	*fund**	0.338006	**price***	0.307064	industri	0.394707
14	**price***	0.336358	**artwork#**	0.304511	**auction#**	0.37659
15	basic	0.332898	**new**	0.296505	client	0.375429
16	*wai*	0.326469	*now*	0.286119	develop	0.369999
17	*term*	0.321994	**interest**	0.280186	provid	0.365336
18	*lot*	0.28875	*term*	0.277858	*privat*	0.361588
19	*financ**	0.276146	*wai*	0.272928	**work**	0.358501
20	**need**	0.270136	**report**	0.270669	bank*	0.352817
21	sens	0.268634	*start*	0.261386	risk*	0.349736
22	*time*	0.25445	*time*	0.256556	**report**	0.345975
23	*point*	0.243057	**data***	0.252989	profession	0.332498
24	**import**	0.241801	**year**	0.241207	**import**	0.329049
25	*asset**	0.240608	*point*	0.240979	busi	0.328228
26	**interest**	0.240196	*galleri#*	0.228212	global	0.326945
27	exhibit#	0.228468	weve	0.226334	*sale*	0.326206
28	understand	0.227499	**invest***	0.217718	offer	0.32562
29	*inform*	0.225675	theyr	0.215819	**year**	0.318693
30	part	0.218504	your	0.213234	survei	0.306041
31	trend	0.217233	*contemporary#*	0.211679	include	0.301634

32	**report**	0.213364	museum#	0.20862	**artwork#**	0.27821
33	**new**	0.212614	bui	0.206123	**interest**	0.272449
34	*thing*	0.212448	guess	0.203322	growth	0.268161
35	talk	0.210949	come	0.201987	cultur#	0.267694
36	research	0.200135	**import**	0.201365	**price***	0.26749
37	**gener**	0.199092	im	0.1994	lend*	0.2609
38	potenti	0.198396	see	0.196561	regul	0.259909
39	*number*	0.197276	don't	0.195381	**artist#**	0.259542
40	analysi	0.19368	**need**	0.193582	**need**	0.245295
41	creat	0.193147	high	0.191337	*number*	0.24461
42	**artwork#**	0.192962	*world*	0.184924	onlin	0.244084
43	object#	0.191351	guarante	0.180531	*inform*	0.241859
44	amount	0.191334	week	0.18032	*contemporary#*	0.238243
45	access	0.190568	hous	0.178285	*world*	0.235058
46	typic	0.187386	*privat*	0.178054	**gener**	0.234314
47	**year**	0.184517	**gener**	0.170525	**data***	0.232762
48	*galleri#*	0.182504	great	0.166686	remain	0.23174
49	*sell*	0.180803	dollar*	0.166262	posit	0.231398
50	today	0.179581	insur*	0.165988	major	0.230759

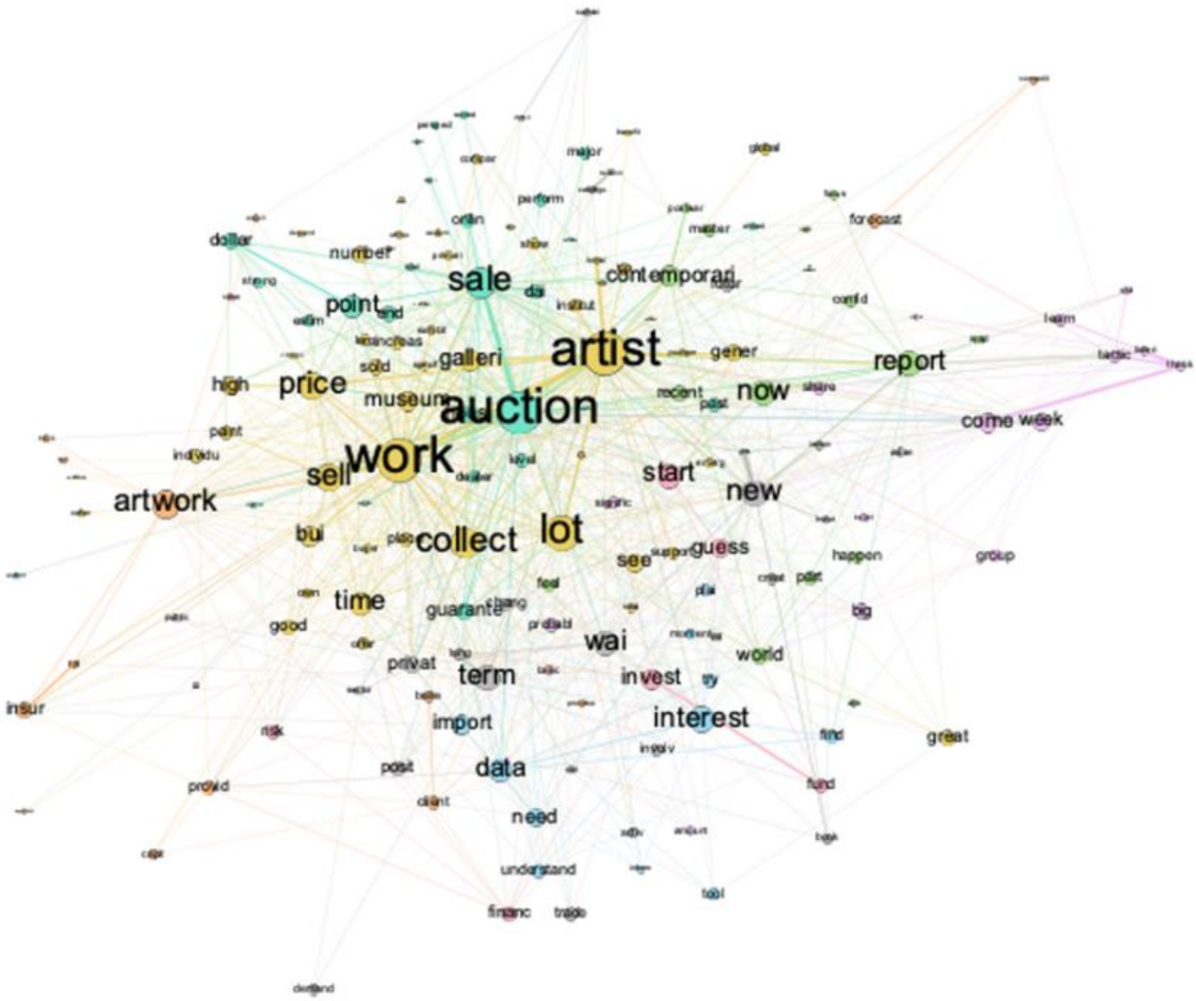
Note. Descending order by eigenvector centrality (normalised [0, 1]). Bold type indicates that the words were present in all three texts; italic type indicates that the words were present in two texts. Asterisks (*) indicate that the words were closely related to 'finance'; hashes (#) are linked to the concept of 'art'.

The semantic networks can now be shown graphically. Figure 3 visualises semantic networks of ArtTactic lectures (A), podcasts (B) and reports (C). The level of eigenvector centrality is represented by the size of nodes and labels (Drieger, 2013), the co-occurrence of words by the thickness of edges, and different clusters by different colours. Each network presents 10% of its total nodes with the highest eigenvector centrality, leaving 115 (A), 170 (B) and 370 (C) nodes, respectively. I removed the central words 'art' and 'market' from all networks as their high centrality merged too many nodes into one large group and consequently distorted the result (Jiang *et al.*, 2018). Also, words with little information value (such as ‘really’, ‘thing’, ‘we’ve’ and ‘I’m’) were removed. The semantic networks showed diversified structures with distributed local hubs, which can be further navigated by cluster analysis.

Figure 3. Semantic Networks of Lectures (A), Podcasts (B), and Reports (C)



B



artist
auction
work
sale
price
sell
artwork
collect
lot
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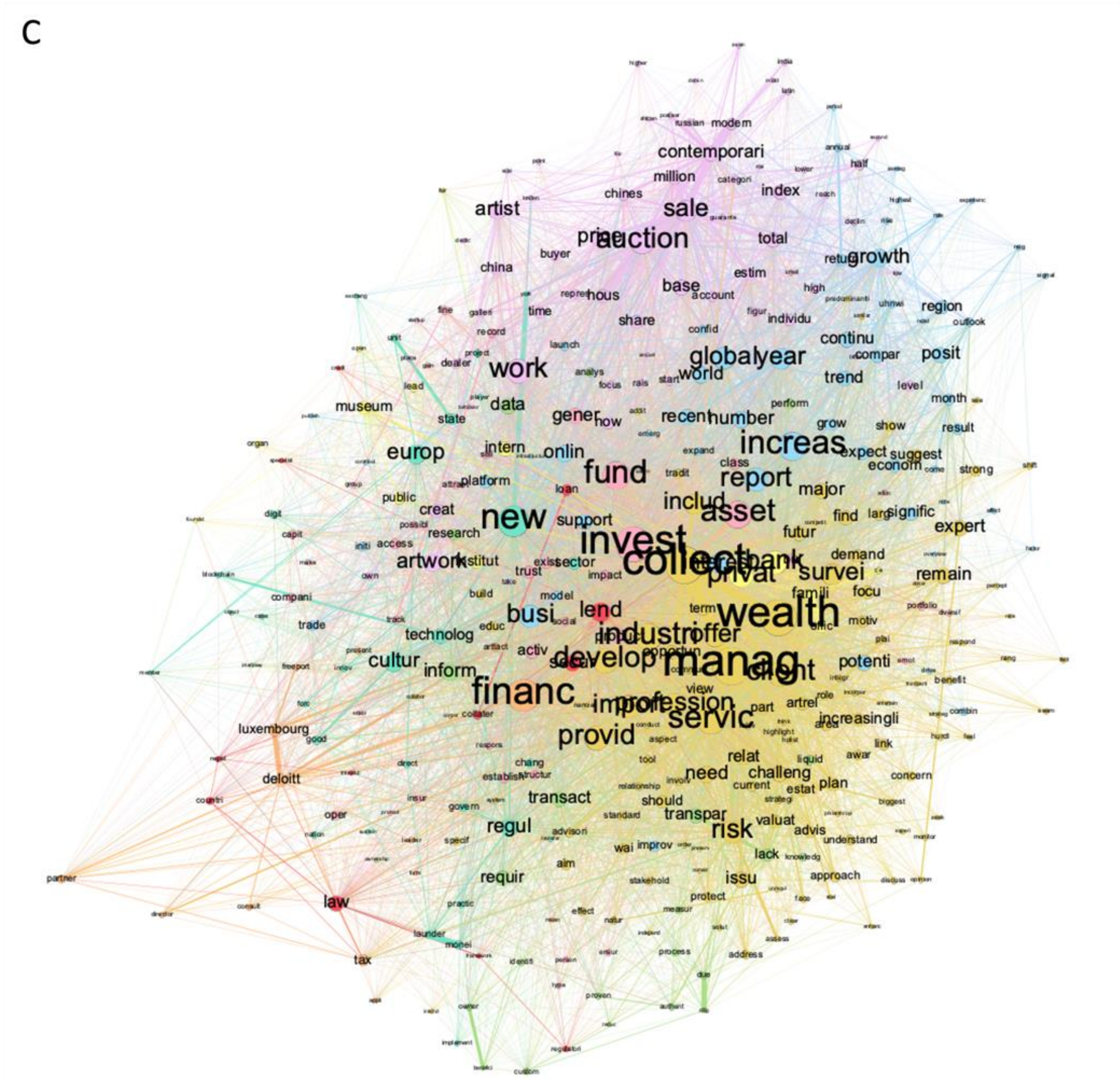
privat
guarante
major
perform
forecast
gener
recent
happen
group
big
risk
provid
client
posit
understand
financ
trade
tool
fund
find
great
demand



Note. Force Atlas 2 layout. Clusters (shown by shared colour) were identified by modularity. A summary of the cluster analysis is shown as Table 3.

3.2. Identifying Themes: Cluster Analysis

The network analysis identified important (and less important) concepts within the datasets. As noted, these concepts (nodes) stand as first-order *in vivo* codes and need to be combined into first-order themes. This can be done computationally through a process of cluster or modularity analysis. The process identifies clusters of nodes linked together by an above average, or above random, distribution of edges. It produces groups of concepts, all of which have something in common and are differentiated from other clusters in some way. Although the analysis generates these clusters, the researcher needs to identify what it is that the concepts have in common and this identification necessarily depends upon the researcher's own understanding of the field and reading of theory and the research questions at play. Modularity analysis detected 551 (lectures), 1,002 (podcasts), 1,382 (reports) subgroups in the networks; amongst them, clusters over 2% of each network were considered meaningful. Eight salient clusters were identified in the lectures network (*see* Figure 3A), seven in the podcasts network (*see* Figure 3B) and nine in the reports network (*see* Figure 3C). The clusters are integrated and summarised in Table 4. A total of fifteen themes excluding overlaps were inferred from top words, associations and network structures.

Lectures

The theme of the largest cluster in the lectures (3A-1; mustard) was market data. 'Data' was the most central word in the network by eigenvector centrality, followed by 'auction', 'collect' and 'understand'. The most frequent word associations included 'auction data', 'auction house', 'primary data' and 'data analysis' (6th). This reflects that auction houses play a critical role in constructing art market data as auction results are disclosed in public and used as primary sources. The second-largest cluster's theme (3A-2; light purple) revolved around artists and institutional representation. The most central words were 'artist', 'exhibit', 'gallery, 'institution' (6th) and 'museum' (10th), whereas the top associations were 'artist career', 'gallery artist', 'exhibit[ion] place', 'solo show' and 'group show'. This cluster covered the cultural aspect of the art market, where artists are established and represented by institutions. 3A-3 (turquoise) represented auction sales and their practices. Even though the main concept ‘auction’ was classified in a different category (3A-1) due to its strong connection with ‘data’, the word was also highly co-occurrent with auction terminologies in this cluster such as ‘lot’ and ‘hammer price’. The top central words were ‘price’, ‘lot’, ‘trend’ and ‘sale’ and top associations were ‘average price’, ‘hammer price’, ‘lot sold’ and ‘high estimation’. The theme of the fourth cluster (3A-4; orange) was ‘art investment fund’. ‘Invest’ and ‘fund’ topped the most central words; ‘invest[ment] fund’, ‘invest[ment] model’, ‘fund structure’ and fund model’ were identified as the top word pairs. The fifth cluster’s theme (3A-5; light blue) was art as an asset class focused on art lending, which is one of the fastest-growing fields in the art finance industry. The most central words included ‘asset’, ‘interest’, ‘artwork’ and ‘base’, and the top associations were ‘asset class’, ‘secur[ed] lend[ing]’, ‘asset base’ and ‘secur[ed] loan’. 3A-6 (pink) encompassed art market research reports. Its top words included ‘finance’, ‘report’, ‘research’ and ‘industry’; the top associations were ‘financ[ial] report’, ‘financ[ial] crisis’ and ‘Deloitte report’. The network also included ‘TEFAF’ (26^{th}) and ‘Hiscox’ (32^{nd}), two major art market reports published annually. The topic of the 3A-7 (light green) was valuation. The most central words for this cluster were ’mean’, ‘return’ and ‘range’, and the top word associations included ‘range criteria’ and ‘expert panel’. The final cluster (3A-8; red) represented technology and the fractional ownership of art, namely blockchain or NFT (Non-Fungible Token). ‘Fraction’, ‘ownership’ and ‘share’ (7^{th}) were found to be the top words; ‘fraction[al] ownership’, ‘block chain’, ‘share[d] ownership’ and ‘block [chain] technology’ were identified as the top associations.

Podcasts

The theme of the most prominent cluster (3B-1; mustard) in the podcasts was artists and institutional representation, which is the same as 3A-2. The most central words were ‘artist’, ‘work’, ‘collect’, ’sell’, ’gallery’ (8^{th}) and ‘museum’ (9^{th}). The important associations were ‘artist work’, ‘female artist’, ‘sell[ing] work’ and ‘younger artist’. The top associations in 3A-2 were also highly ranked here, such as ‘gallery artist’ (11^{th}) and ‘artist career’ (14^{th}). The words in cluster 3B-2 (light purple) showed relatively low centrality despite its second-highest share in the network. This cluster centred on the company’s weekly podcast, showing ‘come’, ‘week’ and ‘[Art]Tactic’ as central words and ‘listen [to] podcast’, ‘thanks podcast’ and ‘ArtTactic podcast’ as top associations. The third cluster (3B-3; turquoise) represented auction sales and practices (similar to 3A-3). Its top words included ‘auction’, ‘sale’, ‘house’, ‘guarantee’ (6^{th}) and ‘estimate’ (9^{th}); top associations included ‘auction house’, ‘auction sale[s]’, ‘sale[s] day’ and ‘auction result’. The fourth cluster (3B-4; orange) represented art insurance, another fast-growing sector in the art market. The most central words were ‘artwork’, ‘insur[ance]’, ‘provide’ and ‘client’; the top associations were ‘insur[ance] policy’, ‘title insur[ance]’, ‘client base’ and ‘product service’. Cluster 3B-5 (light blue) centred on market data. It is the same but more general than the first theme in the lectures, although 3A-1 focused on primary data from the auction house. Its central words included ‘interest’, ‘data’, ‘need’, ‘understand’, ‘find’ (6^{th}), ‘tool’ (7^{th}) and ‘inform’ (8^{th}); the top associations included ‘interest data’, ‘find data’, ‘transpar[ent] data’ (6^{th}) and ‘need data’ (7^{th}). The sixth cluster’s theme (3B-6; pink), art investment fund, also overlapped with the fourth topic in the lectures (3A-4). The top words included ‘invest’, ‘finance’ and ‘risk’; the top associations included ‘invest[ment] fund’, ‘real estate’ and ‘asset class’. The final cluster (3B-7; light green) in the podcasts covered art market reports (similar to 3A-6). Whereas 3A-6 emphasised financial aspects of the market reports, art-related terms were found more frequently in 3B-7. The most central words were ‘now’, ‘report’ and ‘contemporary’, and the top associations were ‘postwar contemporary’, ‘now report’, ‘modern contemporary’ and ‘report download’.

Reports

The largest cluster (3C-1; mustard) in the reports network represented wealth management services. The theme is also shared with the eighth cluster (3C-8; light yellow), revolving around private banking and the family office. In 3C-1, prominent words included ‘manage’, ‘collect’, ‘wealth’, ‘service’ and ‘industry’; ‘wealth management’, ‘manage services’, ‘offer services’, ‘wealth services’ and ‘manage collect’ were the top associations. In 3C-8, ‘private’, ‘bank’ and ‘family’ were identified as the top words; ‘private bank’, ‘family office’, ‘private family’, ‘bank family’ and ‘bank office’ were the top word pairs. The second-largest cluster’s theme (3C-2; light purple) was auction sales and practices. The theme was one of the two themes that were present in all three networks, along with art investment fund. The most frequent words were ‘auction’, ‘work’, ‘sale’, ‘artwork’ and ‘price’; the top associations of words were ‘auction sale’, ‘auction house’, ‘contemporary modern’, ‘contemporary sale’ and ‘post-war contemporary’. The cluster 3C-3 (turquoise) represented legal issues and regulations around art and finance. The top words included ‘Europe’, ‘culture’, ‘regul[ation]’, ‘state’ (7^{th}) and ‘government’ (9^{th}); the top associations included ‘money laundr[y]’, ‘United States’, ‘Anti-money laundr[y]’ and ‘cultur[al] good’. The theme of the fourth cluster (3C-4; light blue) was tax. The most frequent words were ‘finance’, ‘Luxembourg’, ‘tax’ and ‘freeport’; the top associations were ‘financ[ial] crime’, ‘Luxembourg freeport’, ‘financ[ial] coordin[ation]’, ‘partner tax’ and ‘vat suspens[ion]’ (8^{th}). The fifth cluster (3C-5; light blue) revolved around emerging online platforms and their global presence. The top words included ‘increase’, ‘busi[ness]’, ‘global’, ‘growth’ (7^{th}) and ‘online’ (9^{th}), and the top associations included ‘online busi[ness]’, ‘recent year’, ‘busi[ness] model’ and ‘online platform’. The sixth cluster (3A-6; pink) represented art investment fund (similar to 3A-4 and 3B-6), and the central words were ‘invest’, ‘fund’, ‘asset’ and ‘active’. The top associations were ‘invest[ment] fund’, ‘asset class’, ‘invest[ment] product’, ‘invest[ment] asset’ and ‘invest[ment] trust’. The seventh cluster (3A-7; light green) centred on the opaqueness of the art market. The top words included ‘informa[tion]’, ‘data’, ‘transact[ion]’, ‘transpar[ency]’, ‘require’, ‘lack’ (6th) and ‘liquid[ity]’ (8th); the top associations included ‘due dillig[ence]’, ‘lack transparency’, ‘research information’, ‘free zone’ (6th), ‘lack liquid[ity]’ (7th), ‘data analysis’ (8th)’, ‘free port’ (9th) and ‘prove authent[icity]’ (10th). The final cluster’s topic (3C-9; red) was art lending (similar to 3A-5), and its top words were ‘lend’, ‘secure’, ‘loan’ and ‘collater[al]’. The top associations included ‘secur[ed] lend[ing]’, ‘lend collater[al]’ and ‘loan collater[al]’.

Table 4. Cluster Analysis

NETWORK	TOPIC	TOP WORDS	EIGEN-VECTOR	TOP ASSOCIATIONS		COUNT	CLUSTER COLOUR	SHARE
LECTURES (3A)	Market data	data	1	auction	data	96	Mustard (1)	12.02%
		start	0.8188	auction	hous	50		
		now	0.7260	start	data	38		
		auction	0.6587	primari	data	35		
		collect	0.5280	inform	data	32		
	Artists & Institutional representation	artist	0.6371	artist	career	27	Light Purple (2)	6.48%
		number	0.3554	galleri	artist	23		
		exhibit	0.3262	place	exhibit	21		
		galleri	0.2373	show	solo	19		
		individu	0.2248	show	group	18		
	Auction sales & Practices	price	0.5657	price	average	40	Turquoise (3)	6.14%
		lot	0.4434	price	hammer	32		
		trend	0.3399	lot	sold	21		
		sale	0.2880	price	adjust	18		
		todai	0.2188	high	estim	18		
	Art investment fund	invest	0.6313	invest	fund	111	Orange (4)	5.46%
		fund	0.4891	end	fund	18		
		new	0.2735	invest	model	18		
		gener	0.2641	fund	structure	16		
		sell	0.2568	fund	model	14		
	Art lending	asset	0.3237	asset	class	40	Light Blue (5)	4.01%
		interest	0.3177	secur	lend	39		

		typic	0.2634	social	media	38		
		artwork	0.2634	asset	base	14		
		base	0.1707	secur	loan	14		
	Art market report	work	0.6893	damien	hirst	58	Pink (6)	3.41%
		financ	0.3793	dealer	financ	26		
		report	0.2609	financ	report	24		
		research	0.2522	financ	crisi	17		
		industri	0.1928	report	deloitt	13		
	Valuation	basic	0.5180	mean	basic	17	Light Green (7)	3.24%
		need	0.4083	rang	criteria	12		
		mean	0.1610	expert	panel	10		
		return	0.1094	rang	fix	9		
		rang	0.0777	criteria	fix	9		
	Fractional ownership & Technology	ownership	0.2159	fraction	ownership	55	Red (8)	2.98%
		fraction	0.1635	block	chain	36		
		provid	0.1281	real	estat	12		
		realli	0.1137	share	ownership	11		
		link	0.0939	block	technolog	10		
PODCASTS (3B)	Artists & Institutional representation	artist	1	artist	work	55	Mustard (1)	9.21%
		work	0.9864	artist	femal	36		
		lot	0.7566	work	sell	34		
		collect	0.6054	artist	lot	28		
		sell	0.5875	younger	artist	27		
	Podcasts	come	0.2840	thanks	listen	52	Light Purple (2)	5.32%
		week	0.2383	thanks	come	46		
		share	0.2042	listen	podcast	44		
		tactic	0.1800	thanks	podcast	39		
		big	0.1523	tactic	podcast	36		
	Auction sales & Practices	auction	0.9727	auction	hous	98	Turquoise (3)	3.89%
		sale	0.6577	auction	sale	49		
		point	0.3813	point	dollar	26		
		dollar	0.3112	sale	dai	26		
		hous	0.3	auction	result	20		
	Art insurance	artwork	0.5262	insur	polici	36	Orange (4)	3.89%
		forecast	0.2112	titl	insur	28		
		insur	0.2032	block	chain	17		
		provid	0.1853	client	base	13		
		client	0.1843	product	service	11		
	Market data	interest	0.4421	interest	data	14	Light Blue	2.99%

		data	0.3768	interest	rate	12	(5)	
		import	0.2976	why	reason	12		
		need	0.2737	plai	role	12		
		understand	0.1399	find	data	9		
	Art investment fund	start	0.4298	invest	fund	29	Pink (6)	2.93%
		invest	0.2518	real	estat	12		
		guess	0.2378	launch	fund	11		
		financ	0.1745	guess	start	10		
		risk	0.1445	asset	class	10		
	Art market report	now	0.4536	postwar	contemporari	22	Light Green (7)	2.87%
		report	0.4071	condit	report	19		
		contemporari	0.3132	now	report	16		
		world	0.2297	contemporari	modern	15		
		recent	0.2249	report	download	14		
REPORTS (3C)	Wealth management	manag	1	wealth	manag	1717	Mustard (1)	10.94%
		collect	0.9789	manag	servic	326		
		wealth	0.9579	offer	servic	294		
		servic	0.7213	wealth	servic	288		
		industri	0.6905	manag	collect	270		
	Auction sales & Practices	auction	0.6386	auction	sale	373	Light Purple (2)	10.20%
		work	0.6186	auction	hous	304		
		sale	0.5437	contemporari	modern	255		
		artwork	0.4692	contemporari	sale	150		
		price	0.4516	postwar	contemporari	115		
	Legal issues	new	0.7993	monei	launder	162	Turquoise (3)	7.77%
		europ	0.4919	new	york	136		
		cultur	0.4521	state	unit	93		
		regul	0.4391	antimonei	launder	83		
		technolog	0.3484	cultur	good	57		
	Tax	financ	0.8488	financ	crime	52	Orange (4)	7.39%
		luxembourg	0.2779	luxemborug	freeport	49		
		tax	0.2718	respect	trademark	25		
		partner	0.1959	financ	coordin	24		
		freeport	0.1687	partner	tax	20		
	Online platforms	increas	0.7364	online	busi	114	Light Blue (5)	7.36%
		report	0.5995	recent	year	87		
		busi	0.5712	busi	model	72		
		year	0.5602	popul	uhnwi	68		
		global	0.5538	online	platform	58		

Art investment fund	invest	0.9225	invest	fund	397	Pink (6)	6.71%
	fund	0.7269	asset	class	227		
	asset	0.7002	invest	product	117		
	gener	0.4014	invest	asset	61		
	activ	0.3277	invest	trust	59		
Market opaqueness	inform	0.4130	due	dilig	138	Light Green (7)	4.64%
	data	0.3942	transpar	lack	95		
	transact	0.3775	owner	benefici	91		
	transpar	0.3708	research	inform	43		
	requir	0.3691	fraction	ownership	38		
Wealth management	privat	0.6291	privat	bank	480	Light Yellow (8)	3.50%
	bank	0.6076	famili	offic	196		
	intern	0.3511	privat	famili	135		
	famili	0.3311	bank	famili	132		
	museum	0.3212	bank	offic	87		
Art lending	lend	0.4968	lend	secur	200	Red (9)	2.53%
	secur	0.4085	loan	collater	49		
	law	0.3782	law	enforc	33		
	loan	0.2524	law	framework	29		
	collater	0.1999	regist	charg	27		

3.3. Coding Data

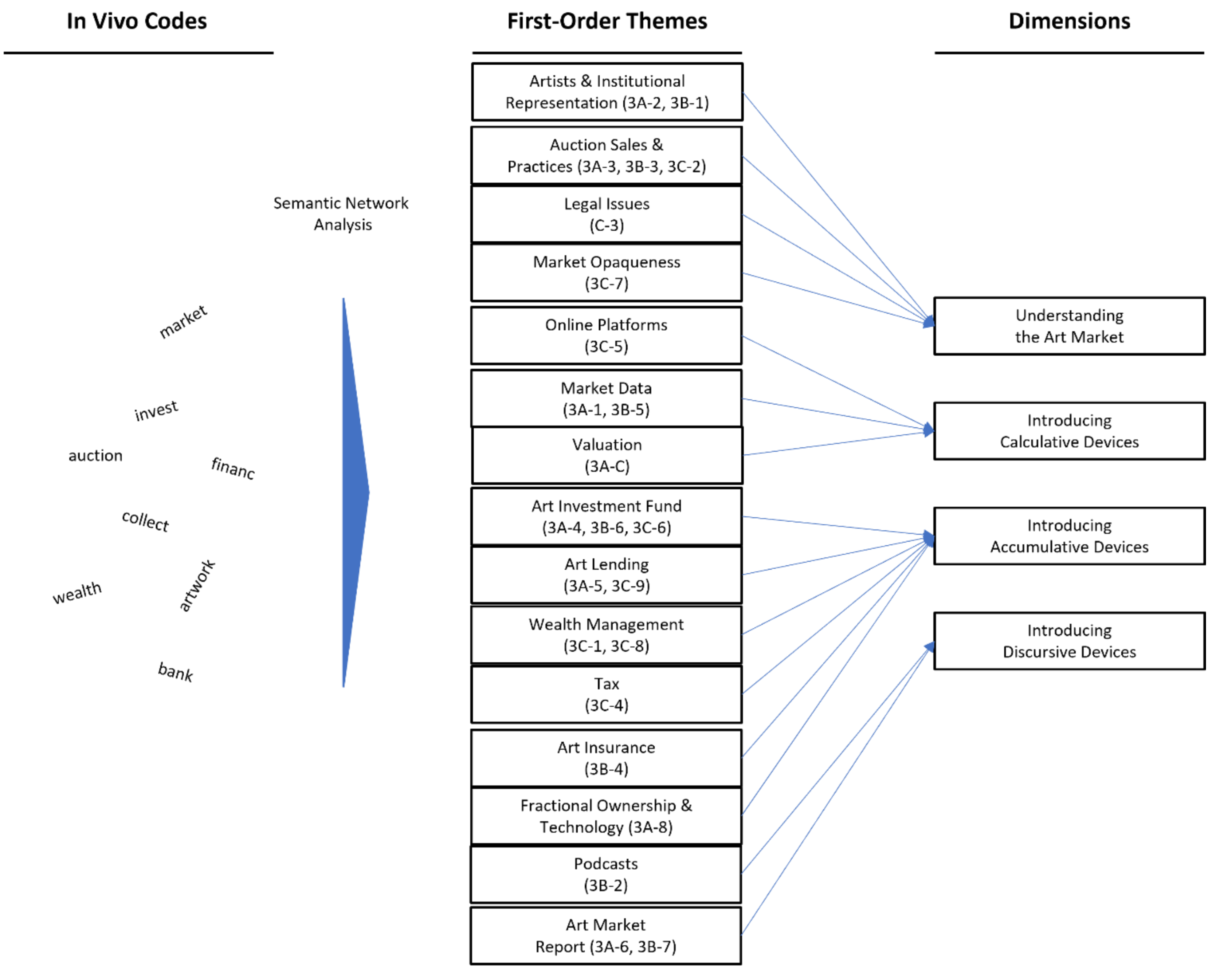
SMA identified the following fifteen themes in the three networks:

- Market data
- Artists and institutional representation
- Auction sales and practices
- Art investment fund
- Art lending
- Art market report
- Valuation
- Fractional ownership and technology
- ArtTactic podcast

- Art insurance
- Wealth management
- Legal issues
- Tax
- Online platforms
- Market opaqueness

The pivotal step of any coding-based research approach is the synthesis of first-order codes and academic theory to generate second-order codes (Gioia *et al.*, 2013). I aggregated the themes into four dimensions which offered an overarching synthesis of the data. First, the themes of artists and institutional representations, auction sales and practices, legal issues, and market opaqueness were categorised as ‘understanding the art market’, all being attempts to grasp the unique construction of the market. Second, market data, valuation, and online platforms were grouped as ‘introducing calculative devices’. The themes represented theoretical and practical tools which enact particular modes of valuation. The third dimension was ‘introducing accumulative devices’. It contained various vehicles that facilitate art investment and art financing, for example art investment fund, art lending, wealth management, tax, art insurance, and fractional ownership and technology. The final dimension was ‘introducing discursive devices’, including the podcasts and market reports, which were part of the materials collected for the analysis. The relations between the themes and dimensions are summarised in Figure 4.

Figure 4. Coding Data

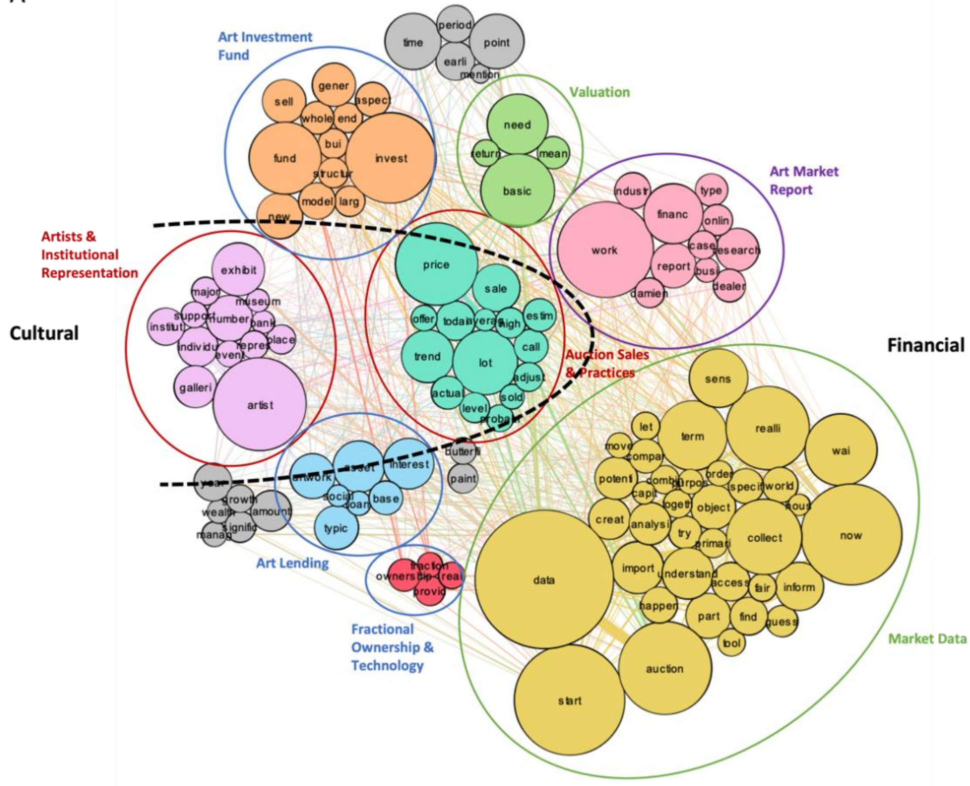


3.4. The Cognitive Map of ArtTactic

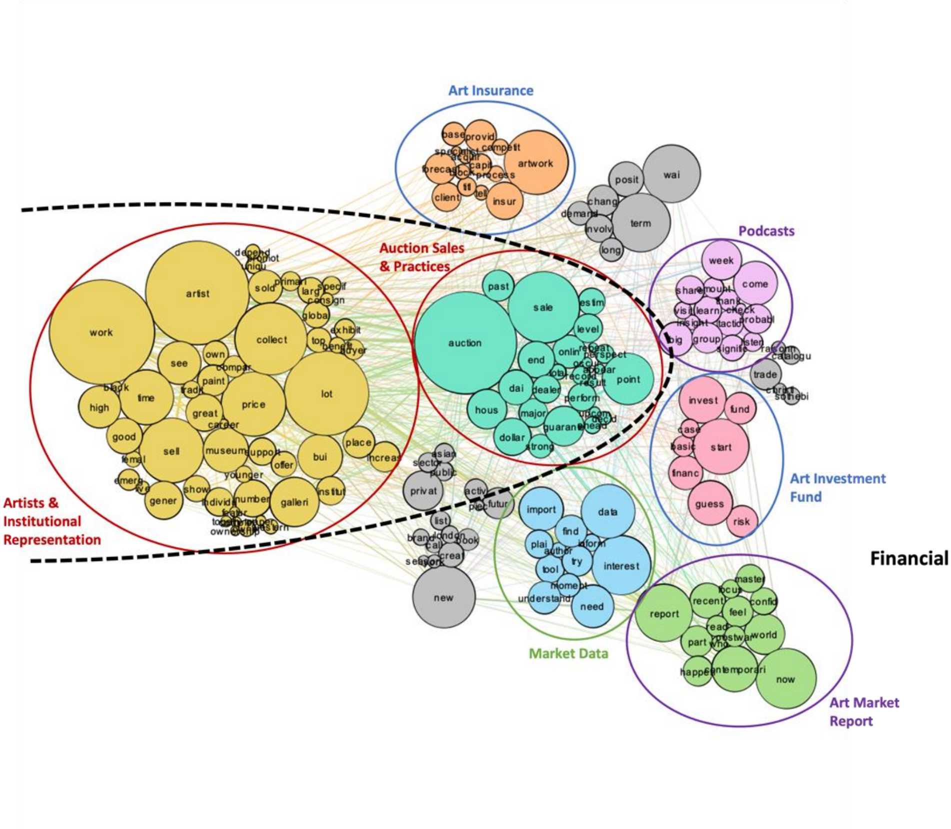
The analysis has so far generated a set of themes and dimensions from the data. I have already suggested that these might be richer and more complex than those produced by long-hand coding, and the process is certainly more efficient. I have not yet, however, fully made use of the method's capacity for visualisation. The final step delivers on the promise made earlier in this chapter that SMA can produce a visual representation of the cognitive map of the discourser – in this case ArtTactic's collective discourse. This can be done by reorganising the network visualisations into clusters of nodes according to the first-order themes, helpfully shown by the different colours in the visualisations. Figure 5 shows the cognitive maps extracted from the discourses of ArtTactic. The graph represents the topology of the art market perceived by the company, rearranged by themes from the semantic network.

Figure 5. Cognitive Maps Extracted from Lectures (A), Podcasts (B), and Reports (C)

A



B



Art Insurance
Podcasts
Auction Sales & Practices
Cultural
Artists & Institutional Representation
Art Investment Fund
Financial
Market Data
Art Market Report
artwork
insur
client
wai
posit
term
artist
work
collect
lot
price
sell
see
time
high
good
museum
galleri
gener
auction
sale
past
hous
dai
end
dollar
point
week
come
invest
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start
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risk
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new
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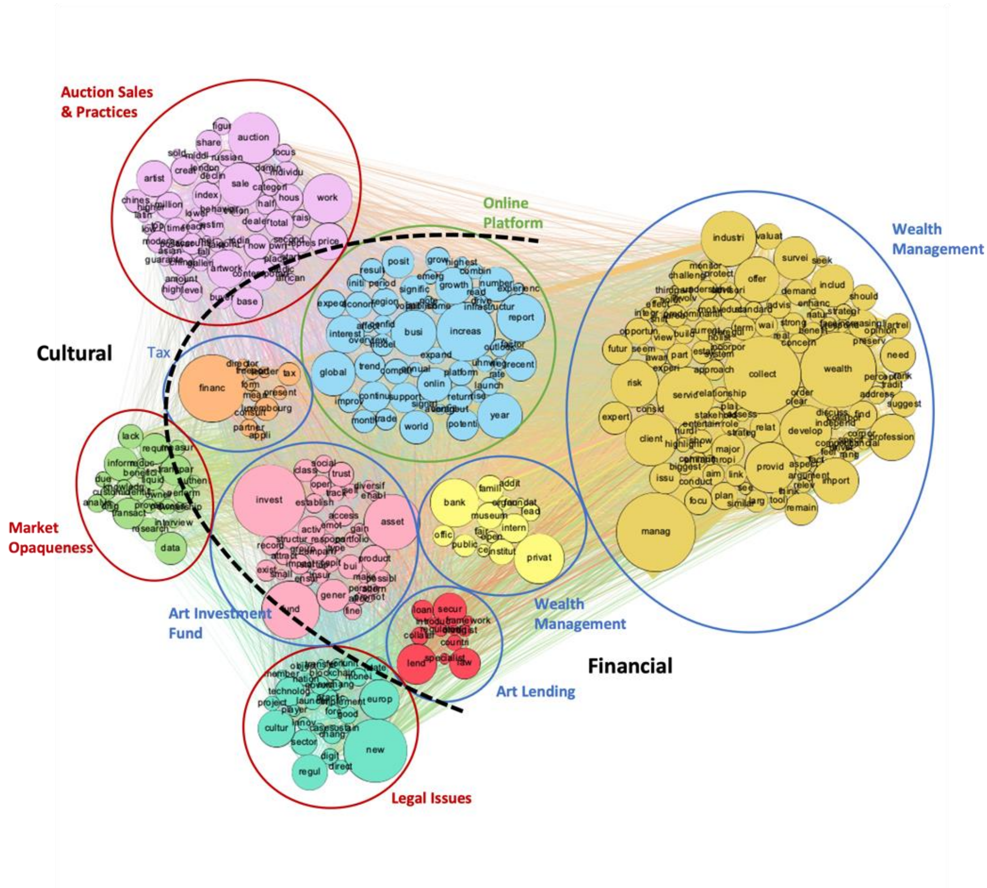
interest
need
report
now
contemporari
world

C



Auction Sales & Practices
Online Platform
Wealth Management
Cultural
Tax
Market Opaqueness
Art Investment Fund
Wealth Management
Art Lending
Financial
Legal Issues
auction
artist
sale
work
price
financ
tax
invest
asset
fund
busi
increas
global
report
year
world
bank
privat
lend
law
new
cultur
regul
industri
collect
wealth
manag
client
risk
provid
data

Note. Semantic network rearranged by circle pack layout. Sorted by modularity (1st attribute) and weighted degrees (2nd attribute).

In these graphs, each coloured cluster represents a single first-order theme, whereas second-order themes are categorised by the coloured circles grouping the clusters. The red circles represent the uniqueness of art market practices ('understanding the art market' in the coding dimension); the green circles are related to calculative devices ('introducing calculative devices'); the blue circles are about financial devices ('introducing financial devices'); and the purple are related to discursive devices ('introducing discursive devices'). In all three graphs, the red circles are located close to each other, implying close semantic associations between the clusters. These represent the sub-field of art-finance where the cultural logic plays a dominant role, distinguished from the outer field where the financial logic dominates.

The graphs intersect with the coded dimensions of Figure 4, offering a graphical representation of ArtTactic's performative activities. The themes under the dimension of 'understanding the art market' belong to the cultural area of the map (left of the dotted line), the field to be performed, which requires performative works to translate its norms and practices. It shows that the dimension of 'understanding the art market' derives from the incommensurability of culture and finance, which adds another layer of interpretation to the company's performation. On the other hand, the themes under the dimensions of 'introducing calculative devices', 'introducing financial devices' and 'introducing discursive devices' are located in the financial area (right of the dotted line); this represents the company's endeavours to enact new market devices, which are financial and financialise the art market.

4. Texts as a Performing Device

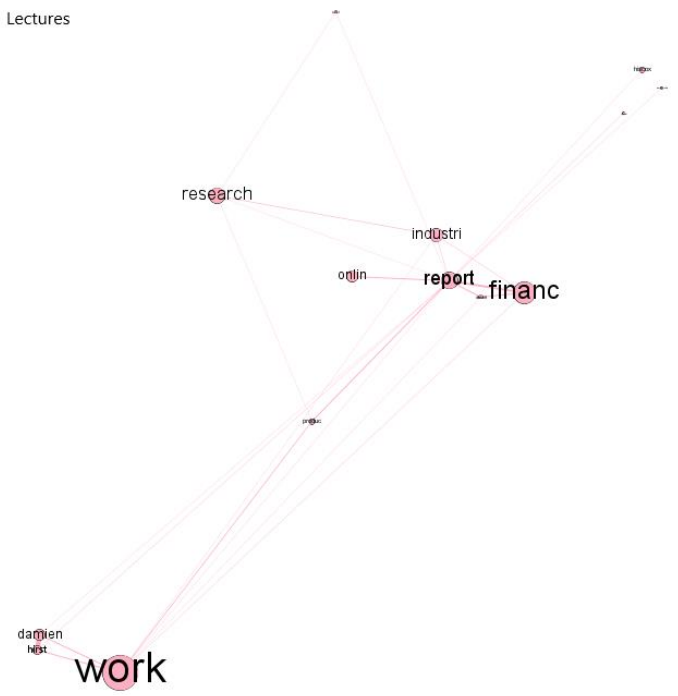
The final but not the least important point to note is the twofold role of ArtTactic's texts in this research, reflecting the nuanced nature of their involvement in the market. They serve as sources of information which reveal the company's cognitive map while simultaneously acting as market actors which perform the market. This aligns with Austin's (1975) classic account of the performative nature of language, which asserts that language not only conveys information or describes the world but also performs actions and creates effects in the world. Different forms of text, including the materials used for the data here, are the company's discursive devices which actively construct the market. They are not only textual artefacts which deliver a description of the world in performation but also performing devices which shape the market. SMA has identified the four dimensions that these discursive devices conduct; they not only translate the field ('Understanding the field of art') and construct calculative and accumulative networks ('Introducing calculative devices'; 'Introducing accumulative devices') but also construct and reinforce its discursive networks in a reflexive way ('Introducing discursive devices'). The fourth dimension of 'Introducing discursive devices' adds another layer to analysing ArtTactic's texts as it shows how texts as market actors amplify their performation. Before moving onto the empirical chapters, this section briefly examines this reflexive process of demonstrating discursive devices through which ArtTactic promotes and legitimises its own performative devices.

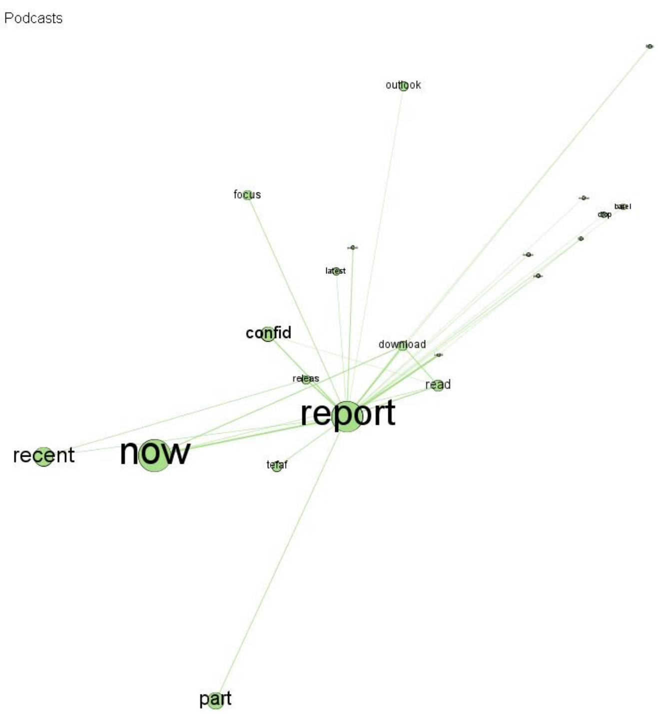
In this study, a broad definition of discursive devices is employed. Grounded on discursive phycology, Mueller and Whittle (2011: 189) referred to discursive devices as "the micro-linguistic tools that people use in interaction in order to construct a particular version of the world and their relationship to it". The current study shares the performative turn with this conceptualisation but defines the devices in a much less linguistic sense, not confining them to micro-linguistic tools (such as interpretative repertoires). Rather, it uses the term ‘discursive devices’ broadly as general media, material and discursive arrangements which store and deliver discourses, namely various forms of text which constitute the world. They might include not only traditional media such as papers and reports but also digital media which have emerged through the development of technology, such as podcasts, videos and websites, as used as data. The digitised texts of ArtTactic (lectures, podcasts and reports) are therefore discursive devices that perform the art market along with the calculative and accumulative devices introduced in these materials.

4.1. ArtTactic’s Discursive Devices

SMA identified two discursive devices under the dimension of ‘introducing discursive devices’: ‘art market reports’ elaborates various forms of typescript which provide art market analyses; ‘podcasts’ represent audio and video programmes which invite art finance professionals to talk about their businesses and trends in the market. ArtTactic presents calculative and accumulative devices which independently operate in the market whereas the discursive devices that the company introduces in its discursive devices are mainly its own devices. The reports include the company’s market confidence reports, auction reviews, Deloitte & ArtTactic finance reports, and Hiscox online art trade reports; the podcasts include the art world series, art investment series and ArtTactic market analysis series. Not identified as a prominent theme by SMA, the company’s discursive devices also incorporate its online lecture courses including art market data and analysis and the art and finance series. The discursive devices play a supportive role in constructing calculative, accumulative and discursive devices themselves, which ultimately constitute the agencement of art finance. They are material and discursive arrangements which convey meanings and connotations of financial ideas and thereby support and facilitate financialisation.

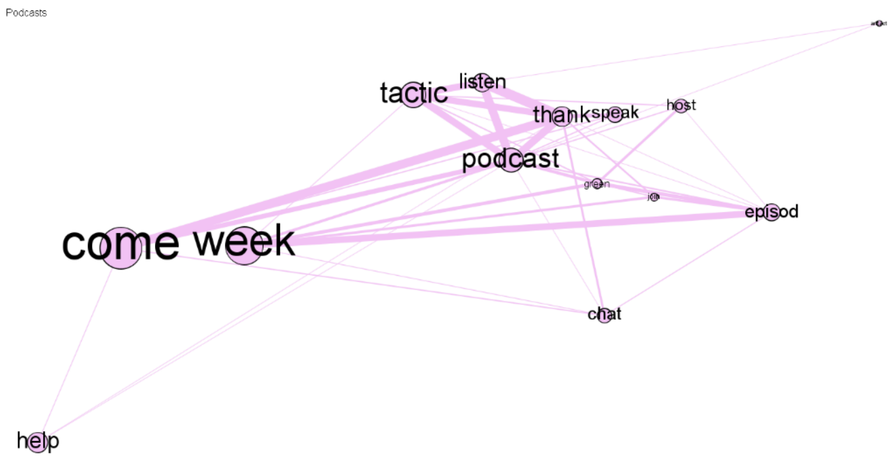
Figure 6. Semantic Networks of 'Reports'





SMA identified the theme ‘reports’ in the lecture network (3A-6) and the podcast network (3B-7). It was the sixth largest cluster (3.41%) of the lecture network in which the most connected node was ‘work’ (degree=65, eigenvector centrality=0.6893), followed by ‘finance’ (degree=39, eigenvector centrality=0.3794), ‘report’ (degree=27, eigenvector centrality=0.2609) and ‘research’ (degree=18, eigenvector centrality=0.2523). The top word pairs were ‘finance – report’ and ‘report – deloitte’, which generated the theme of art finance reports in combination with the central words. In the podcast network, the ‘reports’ cluster was the seventh largest cluster (2.87%). The network’s most connected node was ‘now’ (degree=31, eigenvector centrality=0.4537) followed by ‘report’ (degree=51, eigenvector centrality=0.4072); the top word pairs were ‘now – report’ and ‘report – download’. In both networks, the navigation started from the node ‘report’ – which was the third and the second most central node – since it better represents the overall theme of the semantic networks on qualitative interpretation. Figure 6 represents ego-networks (depth=1) around the central concept of ‘report’ in the two networks. The lecture network shows relatively clear topic clusters; around the centre, ‘finance’, ‘deloitte, ‘online’ and ‘research’ articulate the company’s art finance report produced in collaboration with Deloitte; on the top, ‘tefaf’, ‘hiscox’, ‘regular’ and ‘partnership’ show other major art market reports by Hiscox (also partnered with ArtTactic) and TEFAF; on the lower left, ‘damien’, ‘hirst’ and ‘work’ formulate the company’s example of the Damien Hirst report in the lecture. In the podcast network, many general concepts around the report such as ‘read’, ‘download’, ‘release’ and ‘publish’ are found near the centre; terms related to what art market reports present, such as ‘confidence’, ‘outlook’, ‘monitor’ and ‘TEFAF’, appear sporadically throughout the cluster.

Figure 7. Semantic Networks of 'Podcasts'



The theme of 'podcasts' was identified as the second largest cluster of the podcast network (3B-2), forming 5.32% of the overall network. Similar to some other clusters in the podcast network, the cluster shows a sporadic network which holds semantically heterogeneous themes. The most connected nodes are 'come' (degree=20, eigenvector centrality=0.2840), 'week' (degree=22, eigenvector centrality=0.2384), 'share' (degree=11, eigenvector centrality=0.2041) and 'tactic' (degree=22, eigenvector centrality=0.1800), whereas the node 'podcast' (degree=13, eigenvector centrality=0.0619) is only the eighteenth central node by eigenvector centrality. Despite its low centrality, 'podcast' was identified as the central theme of the network since the top nodes articulate the opening and closing lines of the podcast series by searching on NVivo: "thanks for listening to the ArtTactic podcast (…) this week's episode (…)"; "thanks so much for coming on the podcast". These are more clearly shown in the top word pairs: 'thanks – listen', 'thanks – come', 'listen – podcast', 'thanks – podcast' and 'tactic – podcast'. Figure 7 presents the ego-networks (depth=1) around the central concept 'podcast'; frequently used words in podcasts are intricately connected and gathered around the central concept, including 'come', 'week', 'chat', 'episode', 'host', 'listen', 'join' and 'tactic'.

Alongside the discursive devices identified by SMA (reports and podcasts), ArtTactic used online lectures as another discursive device to enact the financialisation of art. Despite being one of the main performative devices for the company used as data, ArtTactic does not seem to fully promote the lecture series through its discursive devices. Yet the lectures play a significant role in the adoption of market devices; qualitative readings show that the lecture series is more directly involved in the enactment of calculation and accumulation more than simply introducing devices. The company's art market analysis and art finance courses provide hands-on practices to utilise analytic tools, creating the habitus of calculation and accumulation. These processes will be more thoroughly discussed in the following chapters.

4.2. Introducing Discursive Devices

ArtTactic's three discursive devices (lectures, podcasts and reports) interact with and enhance each other, working in a reflexive way. The company's discursive devices demonstrate not only calculative and accumulative devices but also perpetuate their own existence, extending discursive networks of art finance. This process creates a synergy in its devices which amplifies the overall impact on the market and enables more effective performation. For example, in SMA, the sub-cluster of 'reports' was found in the podcast network, which suggests that art market reports – including the company's own reports – are introduced and promoted through the company's podcasts. Indeed, the *Behind the Report* series (Podcast) gives details about the company's market reports on artists, and the *ArtTactic* series invited Petterson as a guest to talk about its recent reports. This strategy is more evidently shown in its lecture. ArtTactic invites audiences to its podcasts and reports to subscribe:

> If you want to have a sort of kind of real sense of what's happening, you know, in a regular way and not just kind of once in a while, then some of [ArtTactic's] reports might be of interest to you. Also podcasts, this is a free service that you can that you

can tap into. (…) These are free and highly valuable resource(s).[2]

The interconnected discursive devices enhance each other, drawing more audiences to their texts. By weaving these discursive devices together, ArtTactic ensures a comprehensive and cohesive dissemination of information, ideas and practices of art finance across the market. The actors within the market are continually exposed to the various aspects of financialisation, developing a more sophisticated understanding of the processes and tools involved. In this way, the discursive devices construct and extend the networks of art finance beyond the reflexive scope and consequently contribute to the adoption of other market devices (calculative and accumulative) within the field.

5. Conclusion

This chapter has introduced ArtTactic as the site for the research and presented the methodology used for analysing its textual data. SMA is a cartographic exercise used to show how relationships are construed within texts and what kinds of market are thereby performed. The analysis of ArtTactic's ongoing performation of the art market developed a rich set of analytic codes. It concluded with the codes deployed in a cartography which shows not only their existence but also their interrelation and relative positioning. The sets of data were developed into a cognitive map which made visible how ArtTactic's texts perform the art market as a financial space. It does so by showing the topography of concepts used in the texts, making visible the relationships which are established. Section 4 briefly introduced how these texts as discursive devices are performed in a reflexive way through the use of SMA. The discursive devices extend and reinforce the discursive networks of art finance, enabling more effective performative works.

[2] ArtTactic Lectures: Art Market Data and Research – Lecture 7 Art Industry Research

So what does the SMA reveal about the process of performation? The cognitive map shows ArtTactic's understanding of the established game rules in the art market, which differentiate agents' behaviour and dispositions from those of the financial economy. The themes retrieved from the data show some incommensurable features which require translation (Latour, 2014), bridging the chasm between the realms of art and finance. The findings show that ArtTactic implicitly and explicitly understands and acts upon the dual structure of the art market; the company perceives the market as a relatively independent space where actors share norms, beliefs, uses and habitus with the field of art. ArtTactic translates the art market's institutional structures by examining and introducing them. On the other hand, the company actively seeks to promote socio-material and discursive devices to perform the market, reconfiguring the mode of valuation and accumulation in the process. The devices which enable alternative ways of valuing and owning art lead to shifts in its valuation and accumulation. The company's texts conduct "institutional work" (Beunza & Ferraro, 2019) which facilitates this socio-material performation. The successful adoption of devices requires a continuous persuasion and negotiation within the field, ensuring that the introduced transitions align with the existing norms and practices while pushing the boundaries of art finance. The following chapters thoroughly navigate the company's performative works grounded on these themes and dimensions, as well as the company's cognitive map.

IV. Understanding the Field of Art

> For instance, on the planet Earth, man had always assumed that he was more intelligent than dolphins because he had achieved so much – the wheel, New York, wars and so on – whilst all the dolphins had ever done was muck about in the water having a good time. But conversely, the dolphins had always believed that they were far more intelligent than man – for precisely the same reasons.
>
> – Douglas Adams, *The Hitchhiker's Guide to the Galaxy*

1. Introduction

We have seen in the previous chapters that financialisation is an intricate process which transforms the arrangement of market devices configuring modes of valuation and accumulation, but what makes this performation possible, and how do we disassemble and reassemble the socio-technical agencement of markets? Beunza and Ferraro (2019) argued that performative works require careful consideration of daily practices and organisational norms in the field. Performing finance in the art market involves institutional changes along with material transformation, leading to a rearrangement of the positions and dispositions of actors (Gulledge *et al.*, 2015). Actors in a field compete for different forms of capital concerning the rules of the field (Bourdieu, 1996); to perform the field, it is essential to 'unbracket' and 'translate' the *sens pratique* of the field (Callon *et al.*, 2007). The art market is a unique social space where distinctive game rules are applied, and the discipline of finance often collides with these rules. It is neither a purely economic nor a cultural domain, but is shaped by various social factors, such as the distribution of wealth and power, tastes and institutional establishment. It is a complex system that involves various actors and forces, and operates according to a set of rules and conventions distinct from the external field. Performing financialisation in the art market thus requires an understanding of these internal game rules and dynamics, especially around valuation and accumulation. Becker (2008) contended that art is not constituted by its intrinsic qualities but by the cultural and social contexts in which it is produced and circulated. Performing financialisation in the art market necessitates a thorough comprehension of these institutional arrangements which need to be reconfigured.

In this chapter, I shed light on how ArtTactic navigates the shared game rules in the art market and provides its own understanding of its structures and practices. The art world is a multifaceted ecosystem which continuously generates and redefines valuation and accumulation. At the core of this intricate network are diverse actors with different norms and values contributing to the creation, valorisation and circulation of art. These actors not only encompass humans and material devices but also *quasi*-actants such as the rules of the game. The company introduces strange game rules in the art market (Coslor, 2011) upon which market actors cooperate and struggle for different forms of value. The micro-politics (Gond *et al.*, 2016) and the structural dynamics captured by the company serve as a basis for performative works, as the existing arrangements persistently resist and negotiate with the performing devices. Through the exploration of ArtTactic's portrayal of the art market, I shall offer a comprehensive understanding of the art world's complexities and the strategies employed by the company to navigate its complex dynamics.

This chapter first examines how ActTactic draws the topography of the art market as presented in its cognitive maps (see Figure 5 in Chapter 3); the dual structure of art and finance envisaged in the company's mental model is elaborated in more detail through its lectures, podcasts and reports. ArtTactic identifies key players in the market and describes how values are created within the art ecosystem, suggesting two different models of valorisation. Second, it explores the strange game rules in the market (Coslor, 2011) observed by the company, following the themes retrieved from the SMA described in detail in Chapter 3. Four themes under the dimension of 'understanding the art market' are explored: 'artist and institutional representation', 'auction sales and practices', 'market opaqueness' and 'legal issues'. The company shows how the value of art is intricately entangled with the unique practices in the art world and introduces devices to reconcile them with the logic of finance.

2. Understanding Art Market Structures and Values

ArtTactic's understanding of art market structures is well-outlined in its cognitive maps. Figure 5 in Chapter 3 (*see* 90-91) presents the incommensurability between art and finance captured by the company. The themes of 'artist and institutional representation', 'auction sales and practices', 'market opaqueness' and 'legal issues' formulate a distinctive area in the diagram, representing the unique structure and practices of the art market. The understanding of the 'cultural' is shared and enacted through the company's discursive outputs; ArtTactic refers to this process as 'education', which is "something crucial to (…) build a more sustainable art industry [and] businesses".[3] Its emphasis on education highlights the necessity of knowledge dissemination to ensure that stakeholders in the art industry and the financial sector accept the convergence of the two seemingly disparate fields. The lectures, podcasts and reports introduce the changing art market in the context of financialisation and the market devices involved in this process. They show how the company understands the existing structures and value systems, conducting performative works (Beunza & Ferraro, 2019) to transform the market. Through these discursive practices, the company not only presents the intricacies of the art market but also participates in shaping its future.

[3] ArtTactic Lectures: Understanding the New Dynamics of the Art Market – Lecture 1; Introduction by Anders Petterson

2.1. The Art Ecosystem

Identifying Key Players

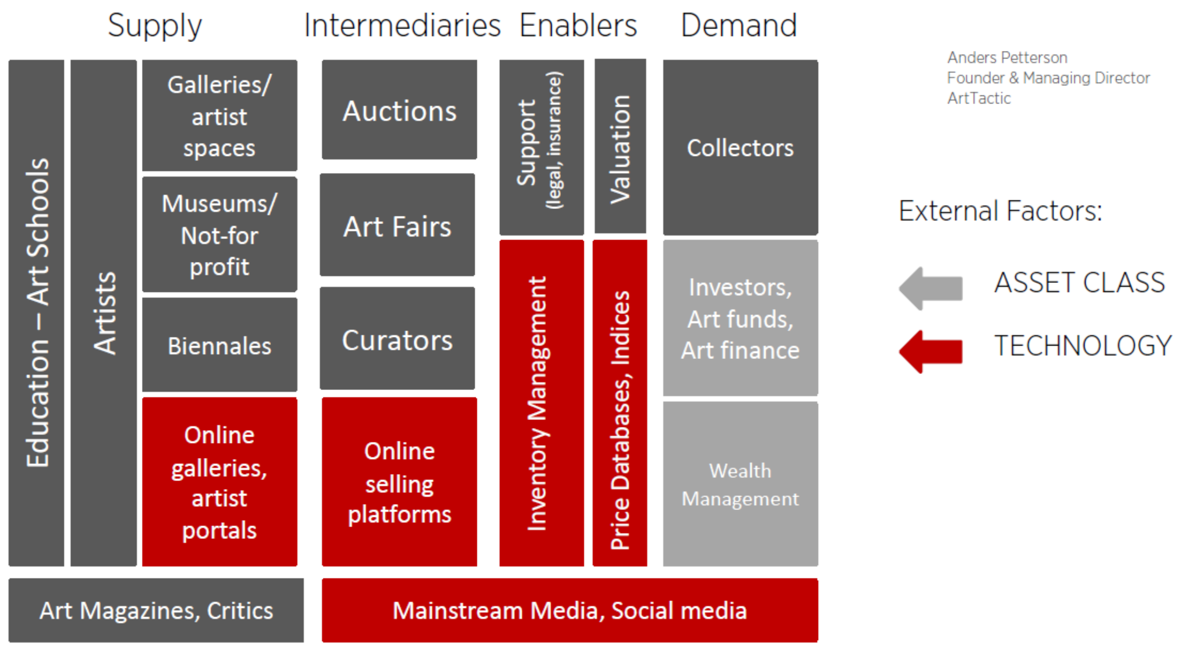
ArtTactic describes the art market as "an ecosystem consisting of various individuals (and) institutions that play certain roles within this system or marketplace".[4] In the lectures, the company identifies key players in four categories by their roles: suppliers, intermediaries, enablers and demanders.[5] Under this categorisation, suppliers include art schools, artists, galleries, museums, biennales and art magazines and critics; intermediaries include auction houses, art fairs and curators; enablers include legal and insurance support and valuation; and the term demanders refers to conventional collectors. These are the traditional players who occupy established positions in the field; they "often have [a direct] relationship to artists (…) or access to physical objects",[6] holding focal points in the networks and thereby acting as 'tastemakers' or 'valorisers' in the market.

The lectures introduce some new players who have come to the fore in the past two decades with the development of both technology and finance. Online galleries and artist portals have been introduced as new suppliers, and online selling platforms and social media have become important intermediaries. The emergence of finance has brought more immediate changes to the demand side. New buyers dealing with art as an asset class – investors, art funds, art finance and wealth management companies – have come onto the stage. Enablers which support such transactions – inventory management companies, price databases and art indices – have also appeared. These new players have been transforming the art market, competing and collaborating with the traditional players. The company adds, "what we actually have today, which is different from 10, 15 years ago, is that we have a

[4] ArtTactic Lectures: Understanding the New Dynamics of the Art Market – Lecture 6 The Art Eco-System
[5] ArtTactic Lectures: Handout – Understanding the New Dynamics of the Art Market
[6] ArtTactic Lectures: Understanding the New Dynamics of the Art Market – Lecture 6 The Art Eco-System

different ecosystem where the interaction between the traditional and the new world (…) finding ways [of] working together".[7] Figure 1 summarises how ArtTactic itself draws the art ecosystem with the emergence of new players.

Figure 1. The Art Ecosystem



Source: ArtTactic Lectures: Handout – Understanding the New Dynamics of the Art Market

A couple of points are worth noting about the key players in the ecosystem. Trading artworks occurs in two different marketplaces: the primary market and the secondary market. The primary market refers to where artwork is sold for the first time. In most cases, primary sales are exclusively conducted by commercial galleries except for some special occasions, such as charity auctions or occasional events. Art dealers usually represent artists with the sale proceeds shared on a 50:50 basis, operating publicly or privately. Public galleries have exhibition spaces and participate in art fairs around the globe, whereas private dealers rely on their personal networks to operate their businesses. The secondary market is where all

[7] ArtTactic Lectures: Understanding the New Dynamics of the Art Market – Lecture 6 The Art Eco-System

subsequent resales of artwork occur, either at auction houses or commercial galleries. Auction houses earn 20-35 per cent commission from the buyer, called the buyer's premium. They also earn approximately 10 per cent from the consignor, the seller's commission. Their role is to match buyers and sellers and offer a range of services, including authentication, marketing and auction sales. Secondary sales at commercial galleries can be conducted by the original gallery or a different gallery (Robertson & Chong, 2008). A big difference between auction sales and gallery sales is that auction results are fully disclosed to the public. Considering that gallery sales account for more than half of the total transactions, the art market remains considerably opaque.

Robertson and Chong (2008: 12) identified three levels of consumers of art on the demand side. Level 1 refers to spectators, with the public art museums being a key example; level 2 refers to various types of collector, including museums, business corporations and private individuals; level 3 refers to investors and speculators, such as private individuals and art funds. Amongst these, museums are regarded as "the final repository for works with validated reputations" (8), authorising values by creating important contexts for art. They are referred to as the public sector or non-profit organisations since they are not involved in market transactions for economic profit. An interesting point is how ArtTactic's categorisation of the key players overlaps and diverges with this three-level model. In the sense that it distinguishes traditional collectors from financially motivated investors, it shares commonality with the model. However, the company defines the demanders of art more narrowly as those who own art (collectors and investors), whereas Robertson and Chong's definition includes spectators (level 1) and institutional collectors such as museums (level 2). This shows that the company's view on art is inclined more to the subject of ownership than to cultural appreciation. This perspective aligns with the financialisation of art, wherein artworks are treated as assets which can generate financial returns; framing things into assets is a crucial step of financialisation.

Art Worlds: Cooperative Networks of Cultural Production

The notion of the ‘art ecosystem’ is one of the key understandings for ArtTactic and is repeatedly emphasised through the lectures. The different stakeholders comprise an ecosystem in which art is created, traded and exhibited, and through which the value of art is constructed. The lecture states, “(understanding) the interaction within [the ecosystem] will help us understand how, first of all, the dynamics of the industry works, but also how value is created”.[8] The art market is not only a place where people are simply buying and selling art but a cooperative system that creates and distributes values. It is a complex and intertwined network, so it is much more difficult to “disrupt the art market” than other industries. It explains:

> There’s a sort of a fallacy and a misconception that the art world, in a sense, is full of intermediaries, [and] every single one of them [is] taking part of the profit in the chain where the artwork is moving between the creator and the buyer. And I’ve seen over the years a number of start-ups and new companies trying to, in a way, disrupt that and say, “Listen, we want to challenge the fact that there’s no need for all these expensive middlemen”, “we can provide something which enables the artist to deal directly with the buyer or the end consumer”. The problem with that is (…) the notion of the value of art. What is the value of art, and how is it created? And particularly (…) the new categories such as contemporary art, the notion of value is heavily linked to perception, and the perception is often created by many of these intermediaries.[9]

The statements show that the company considers the art ecosystem as a collaborative network of various players who contribute to creating value, a perspective which closely resembles the constructionist view of the art world. The value does not come by itself but requires a

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[8] *ibid.*
[9] *ibid.*

context. This perspective is one of the foundations of the company which underpins its performative strategies.

In *Art Worlds* (2008), Becker provided a comprehensive sociological analysis of the constitution of the value of art. He pointed out that art is not the product of an individual artist but of the collaboration of people involved in a social space called the ‘art world’. The value of art is ascribed to the shared meanings in the network; without a common understanding of this value system, art cannot have any social resonance. Becker’s concept of the art world includes the distribution system that delivers art to the audience as well as the actors directly involved in cultural production. From this perspective, artists are those who “work in the centre of a network of cooperating people”, and the value of art is constituted by the “involvement with and dependence on cooperative links” (Becker, 2008: 25-26, 29). Here, the art market becomes a collaborative network which plays an active role which constitutes and constrains values, rather than a supply chain which merely connects suppliers and demanders.

ArtTactic’s performative strategies are built upon this perception that art is a cooperative practice among the members of the art world. The lecture states that the value of art is not solely “embedded” in the “material object itself”, but that the art world collectively “deciphers and interprets the perception of value”.[10] The key players identified by the company are actors who collectively constitute values, more than simply mediate transactions. Therefore, “those that have seen successes in this world are probably technology or service providers who are enabling the existing art world to do the job in a more efficient way” rather

[10] *ibid*.

than “disrupting the market by replacing, [or removing] intermediaries”.[11] The seemingly inefficient practices are often crucial for establishing values in the field and thus cannot be substituted by economic disruptions. These statements imply two important lessons for performing finance in the art market. First, the performation of finance must be structurally path-dependent on the value system of the art market (Godechot, 2016); second, for the performateur, it cannot be done without grasping and integrating the existing structures with the performing valuation. ArtTactic acknowledges that the art market is not merely a transactional platform, but rather a complex and interdependent network of relationships where value is created and circulated. The performation of finance requires understanding and integrating existing structures into their valuation practices. In the subsequent lectures, ArtTactic elaborates on how values are created in the contemporary art market, asking why these institutions are there and what roles they play within the network. By so doing, the company identifies institutional chasms which must be resolved for financialisation, regarding the values which this cooperative system produces.

2.2. Understanding Values in the Art Market

ArtTactic highlights the dual nature of art valuation. The lecture series explains that the value of art arises from two different sources: “the object and artist value” and “the market value”.[12] The object and artist value is embedded in object-specific characteristics such as material, size and medium, conditions surrounding the artwork such as rarity, provenance and authenticity, and the establishment of the art history such as art-historical importance and perceived importance. According to the lecture, it is the value intrinsic to the artwork regardless of market-side valuation. On the other hand, the market value refers to the value

[11] *ibid*.
[12] ArtTactic Lectures: Understanding the New Dynamics of the Art Market – Lectures 7 & 8 Understanding the Value of Art

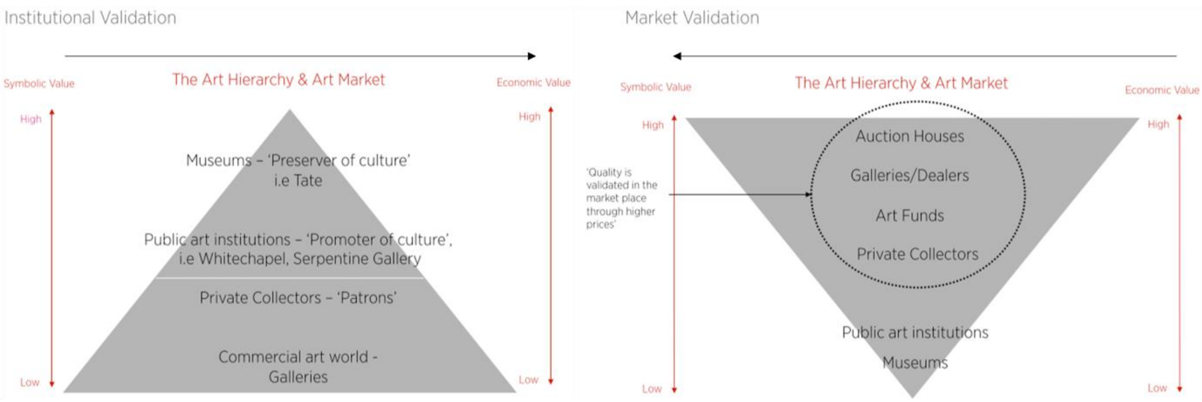
determined by external factors (such as global wealth, perception of art as an investment, social and emotional motivations, non-transparency and taste creation) which “cannot be explained by looking at the object and its history”. The company calls the former the ‘artistic’, ‘cultural’ and ‘symbolic’ value, and calls the latter the ‘social’ and ‘economic’ value. Given the argument that the value of art is collectively created by members of the art world, the company’s reference to intrinsic value might seem – to be precise – inconsistent. However, it also suggests that ArtTactic reckons the art world to be an autonomous field where value is created by its internal logic, drawing the line between the artistic field and the outer social space of valuation. Within the network of collaboration, there is a space driven by artistic traditions, relatively independent from the arrangement of socio-economic valuation.

In fact, ArtTactic’s ambivalent stance on intrinsic artistic value must be understood in the context of how the discipline of ‘art for art’s sake’ performs the art world. The company sees the art world as being separate from social dynamics, and the artistic valuation is concluded before the socio-economic valuation. Even though the concept of intrinsic value cannot exist from the beginning, the company’s performative works are based on this distinction. It acts upon the distinction between artistic and economic values whilst the former is independently determined by cultural logics. In this sense, the old creed of art for art’s sake does not exist but, at the same time, does exist in the real world. It continues to influence actors in the field cherishing the belief even though it has been critiqued by many cultural sociologists. It is not the autonomy of art or an individual artist but the (relative) autonomy of the artistic field that performs art world actors. The concept of artistic autonomy persistently resists and at the same time is embraced by actors in the field including the company itself. The path-dependency on the existing cultural norms around the value system is repeatedly found in the company’s performative activities.

Institutional Valorisation vs Economic Valorisation

Figure 2 summarises how ArtTactic comprehends the structure of the valorisation system and the power relations among the key players who create values. Vatin (2013) stated that valorisation refers to the process of assigning or constructing value to objects, actions or social relations; ArtTactic uses the term "validation" to explain this process. The diagram is a visual artefact in which the company's mental models are embedded, showing its understanding of the player's positions. The lecture begins: "(…) art is not an asset class that produces or yields any direct return, (…) the interesting question here is why it increase(s) in value".[13] The company seeks to answer this question by introducing two different models of valorisation, "institutional valorisation" and "market-side valorisation". If the institutional valorisation "impact(s) on the perception of the cultural value of the art object" in a more commercial setting, "the price often has a direct impact on the perception of value".[14]

Figure 2. The Art Hierarchy & Art Market



Source: ArtTactic Lectures: Handout – Understanding the New Dynamics of the Art Market

The pyramids show the hierarchy of players in the art world, demonstrating who possesses power in these spaces. In the institutional model, museums sit at the top of the

[13] ArtTactic Lectures: Understanding the New Dynamics of the Art Market – Lecture 8 Understanding the Value of Art Part 2

[14] *ibid.*

hierarchy, which the company called "the arbiters of taste, the preservation of culture", followed by public art institutions, such as non-commercial galleries and foundations.[15] They act as the highest-ranked members in the cultural field, who have "an enormous impact on the perception of the cultural value".[16] ArtTactic explains that for an artist to be included in the collection of a major museum or a curated exhibition "will have a direct impact on the perception of this artist's reputation".[17] The direction of influence in market-side valorisation goes the opposite way. Whereas the economic value is defined by the cultural importance and the symbolic value of the art in institutional settings, it is the pricing mechanism that drives the perception of the value. In this setting, "the value is created much more from an economic point of view, where the price becomes the strongest signal for quality".[18] Therefore, marketplaces, including auction houses and commercial galleries, occupy the top positions in the hierarchy, followed by the demand side, such as art funds and private collectors.

Whether intended or not, ArtTactic's model of the art market closely resembles the Bourdieusean model of dual structures between art and economy (1983, 1996) introduced in the previous chapters. The art market is the space where the two different game rules compete and overlap, and values are created within these dynamics. The important point here is that the cultural and economic valorisation models are reversed in their hierarchies and mechanisms. The lecture states that "the public sector, (…) as far removed as possible from the actual marketplace, are those who have the most powerful influence on the perception, the cultural perception, the cultural value of the artist".[19] Likewise, market institutions such as auction houses, which have the least power of cultural valorisation, provide the most

[15] *ibid*.
[16] *ibid.*
[17] *ibid.*
[18] *ibid.*
[19] *ibid*.

“important economic context” in valorisation.[20] The cultural value is created within the reversed field of economic valorisation since museums and public institutions are “playing an incredibly important role in defining taste”. The analysis of ArtTactic shows that they capture the “antagonistic coexistence” of the cultural and economic valorisation (Bourdieu, 1996: 142). The art market is the place wherein the institutional valorisation and the market valorisation intersect, and in Bourdieu’s term, the “symbolic exchange” (Bourdieu, 1977: 167) between capitals takes place. The hierarchy helps us to understand who holds power in creating and translating values between the two poles; it represents the position within the field defined by the distribution of competing species of capital. The company seeks to navigate the complex landscape of the art market by understanding the power relations and valorisation mechanisms at play; it is developed into a more complete map of the art world under financialisation. In the following section, I examine how ArtTactic maps the changing art ecosystem, drawing on its understanding of power relations represented by Bourdieu’s capital map.

On the Relic of ‘Art for Art’s Sake’

ArtTactic analyses the evolving dynamics between the institutional and market models in the art world. The company argues that the institutional model has historically played a critical role in Western markets, whereas the market model has been applicable to emerging markets. This is mainly due to the lack of public art infrastructure in the emerging markets, resulting in the significant influence of the commercial sector in defining taste. On the other hand, the strong institutional sector in the Western markets has enabled the tradition of art for art’s sake to perform in the art world. In this setting, the value of art is primarily determined by cultural logic; a rise in cultural value creates demands in the marketplace and consequently increases

[20] *ibid*

the economic value of a work. Bourdieu (1983: 75) explained this system of exchange as follows: “symbolic capital is to be understood as economic or political capital that is disavowed, misrecognised and thereby recognised, hence legitimate, a credit which, under certain conditions, and always, in the long run, guarantees economic profit”.

According to ArtTactic, whilst the ascendancy of the cultural sector over the market remained strong during the twentieth century, there have been significant transitions in these dynamics in recent years. Institutional valorisation has increasingly been replaced by market-side valorisation, and the economic value acts as a primary driver for quality.

> What we've seen in recent years is how the auction price, in a sense, has lifted the market to an entirely different level and obviously having a direct impact on our perception. (…) It's not only the emerging market that [uses] the economic value as a signifier for quality. This is equally now happening across the world. And it's really the power of the auction houses and the power of the auction market that has created this strong sense of economic value, being the primary driver for how we perceive the importance of art.[21]

The company claims that the rise of the market reconfigures the exchange rate between values and reconstructs the power relations of players. It is a wavering of art for art’s sake in that the relative autonomous mechanism of valuation is increasingly affected by forces outside the field. The important point to note here is that the statement is not only descriptive but also performative. The account of new dynamics captured by the company naturalises the domain of finance (De Goede, 2001) as it urges the audience to act upon its proposed reality. By suggesting the reality to be enacted, the company conducts performative works to the audience and consequently creates the phenomenon which it describes. In this new landscape, the balance between cultural and economic values is to be redefined and the power dynamics

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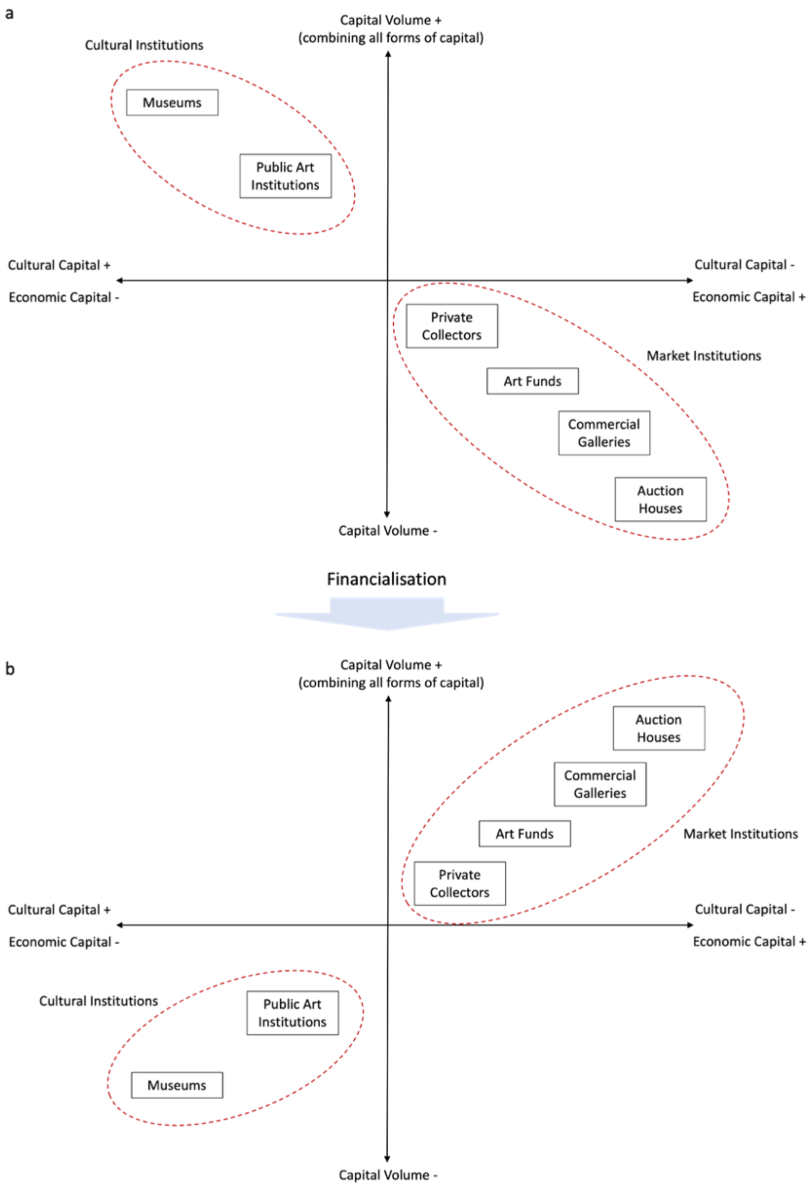
[21] *ibid*.

among the various players in the art world are to be reshaped.

Figure 3 portrays how ArtTactic interprets the position and disposition of individual players under the institutional and market valorisation model. Developed from Bourdieu's (2013: 128) capital map of social space, the map plots the players' inclination between the two capitals (disposition) and the amount of capital they possess (position) in the field of art. The trade-off between cultural and economic capital – also highlighted in the hierarchy model shown as Figure 2 – locates agents at different points on the x-axis, whereas the combined volume of capitals is plotted on the y-axis. Bourdieu's map is especially useful in that it visualises the complex relation of capitals, powers, and symbolic exchanges. Figure 3-a represents the capital map of the art world under the institutional valorisation model. In the field of art driven by 'art for art's sake', cultural institutions possess a larger volume of capital than market institutions as the cultural capital is more heavily weighted. The value of art is mainly created by cultural institutions, such as museums and non-profit galleries. In contrast, Figure 3-b shows the dominance of market actors under the market valorisation model. The ranks of the players are reversed in this space as the economic capital mainly determines their positions. In the space of market valorisation, auction houses have the most critical impact on the perception of value due to their public nature, which distinguishes them from commercial galleries.

Figure 3. The Capital Map under Institutional vs Market *Valorisation* Model[22]



Note: The graphs were drawn by the author to visualise the lecture 'Understanding the New Dynamics of the Art Market'.

ArtTactic argues that the reality lies between these two models and that the market gradually transforms from the institutional model to the market valorisation model. They are the reference points to examine how closely the reality fits or deviates from them: they are

[22] ArtTactic Lectures: Understanding the New Dynamics of the Art Market

the company's frameworks for investigating the field of art. So what do these analytic tools tell us about the company's performative strategies? As suggested in its mental models (Johnson-Laird, 1983) captured by SMA (*see* Chapter 3), the company regards the art market as a space where the incommensurability between art and finance exists. ArtTactic accepts the distinction between cultural (symbolic) and economic capital and their reversed relations; its performative strategies paradoxically stand on the relic of art for art's sake while performing against it. The long-standing notion remains a cornerstone of its analytical approach, and the company's performative strategies rely on and challenge the concept. The existing norms and structures are reincarnated into the company's performative models, which is inevitable to a certain extent, and at the same time, essential for performation. The company introduces various art world practices which stem from the antagonistic coexistence of art and finance. In the following section, I investigate how ArtTactic captures and interprets the 'strange game rules' in the art market.

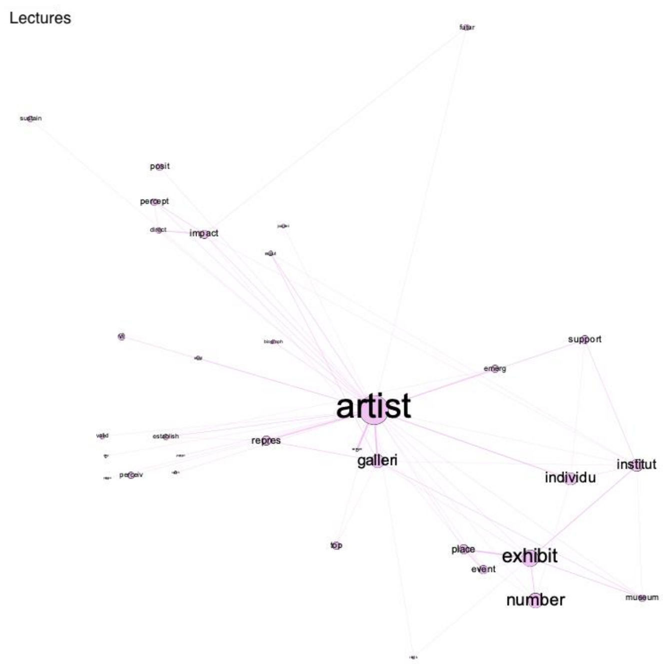
3. Strange Game Rules in the Market

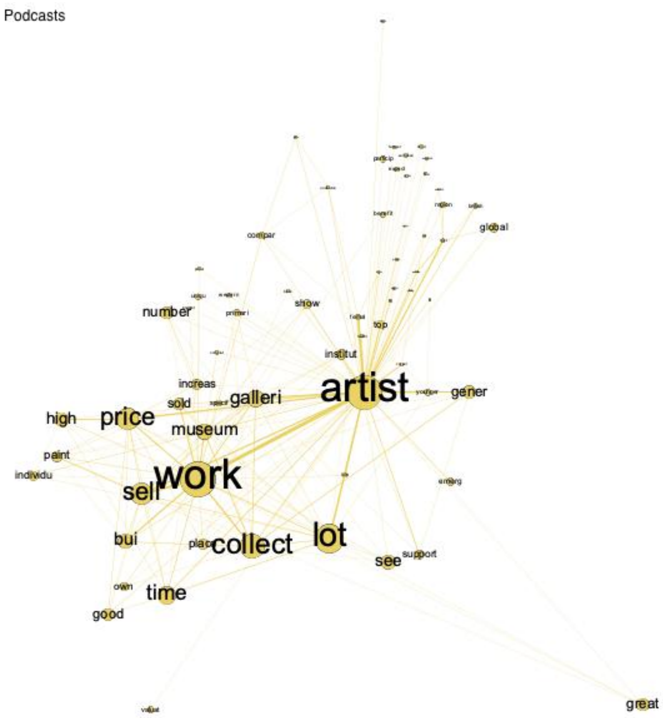
ArtTactic examines how values are created and circulate in the art market by looking into the unique practices of the art world. The valorisation models are embodied in the strange game rules of exchange; the company introduces them through various discursive devices (lectures, podcasts and market reports) and shows how to utilise information derived from such practices. By disassembling and reassembling these practices, the company seeks to economise structural dissonances of the art world. From the data, SMA identified four different themes under the dimension of 'understanding the art market'. First, 'artist and institutional representation' describes how artists are represented in the institutional setting, where their careers develop within the interplay of symbolic and economic value. Exhibitions and collections are at the centre of analysis since they play a key role in cultural consecration.

Second, ‘auction sales and practices’ represent the role of auction houses in the secondary market, signalling price information to the market yet strongly bound to cultural norms and practices. Auction practices are especially important in that the auction data acts as a window onto the market, particularly for financiers. The final themes are ‘market opaqueness’ and ‘legal issues’. The strange practices lead to structural differences distinct from the financial market which make transactions opaque and costly; for financial performateurs, including the company itself, the art market is where the great inefficiencies prevail. It sheds light on issues around authorship, authentication and cultural law in the place known as ‘the largest unregulated market’. The lack of regulation enables investors to employ varied investment strategies and at the same time increases financial risks. ArtTactic identifies the agencement of cultural practices and seeks to provide alternative ways to surmount these hurdles.

3.1. Artist and Institutional Representation

Figure 4. Semantic Networks of ‘Artist and Institutional Representation’





SMA identified the theme of 'artist and institutional representation' in the lectures network (3A-2) and the podcasts network (3B-1). In both networks, the most connected node was 'artist', as the central concept of the theme. Figure 4 represents the ego networks around the word 'artist' (depth=1), revealing semantic concepts formulated within the networks. Commencing from the central node, more concrete subjects are identified by navigating nodes and edges. In the lectures network, core concepts such as 'gallery', 'represent', 'establish' and 'validate' are found in the lower-left corner, showing the role of galleries in the establishment and representation of artists; in the top left, concepts such as 'reputation', 'biography', 'impact' and 'perception' articulate artists' careers and how they are perceived in the market; in the bottom right, 'exhibit', 'institution', 'museum', 'place' and 'event' represent socio-material settings that enable valorisation practices. Likewise, the podcasts network reveals semantic concepts closely related to artists' careers and gallery representation. On the bottom right side, the network connects 'career', 'emerge', 'mid', 'establish' and 'generation', formulating the stages of an artist's career development; the upper right side shows concepts closely related to artists' backgrounds, such as 'female', 'male', 'black and 'British'; on the left-hand side, the network represents a relatively wide range of concepts around institutional representation, including 'gallery', 'museum', 'institution', 'show', 'work and 'collect'. This section examines how ArtTactic understands various institutional practices which endorse and establish artists and how it uses them as a tool to calculate values.

The Artist Career

On the basis of art for art's sake, ArtTactic suggests that the value of art is largely created by the valorisation of institutions surrounding the artist. The intrinsic value of art is embedded in its cultural and symbolic contexts; navigating an artist's career is therefore essential for understanding how an artist and his/her works are positioned within the art world. Here, the value of an artwork is entangled with the trajectory of the artist as it cannot be detached from its institutional contexts. As Becker (2008) contended, the construction of art is a collective process involving various actors, institutions and socio-material networks in the art world. The company discusses the development of an artist's career from a biographical point of view, highlighting the different phases during his/her professional life. These stages and events form and impact the perception of the artist, generating stories and narratives, and consequently creating values in the market. It reveals the consensus about works' perceived importance and provides a reference point for valuation. By examining the intertwined relationship between the artist's career trajectory and the value of his/her work, ArtTactic builds a valuation tool to frame this contextual information.

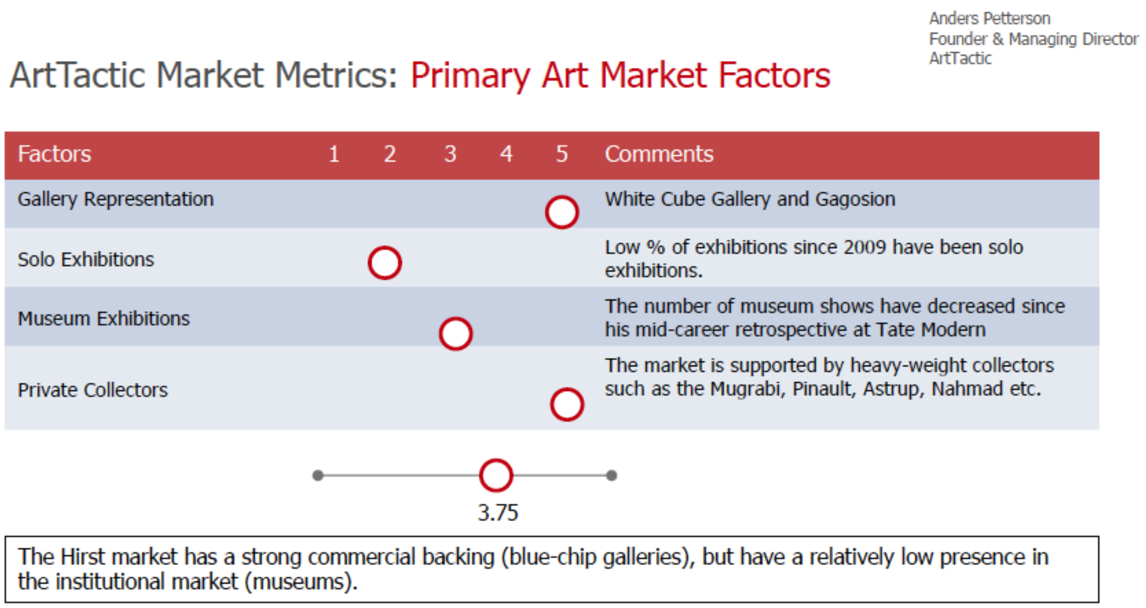
In its lectures, the company traces the development of an artist's career (Plante *et al.*, 2021) elaborating the different phases which an artist goes through:

> [An artist's career] basically starts from the art school where both the cultural value and economic value are low. And then it's travelling through what we call the formation stage, […] typically exhibitions, gallery representation, critical reviews and so forth. And then, the artist is moving into the expansion phase, where we start to see international interest, both from collectors and institutions. And typically, at the end of this phase, […] these artists will find [themselves] in the auction […] and somehow will then be elevated into a different context. Often, if that auction market is sustainable and is sustained, the artist will move into the consolidation phase, where we see strong and consistent auction market activities. And this is typically followed up with a significant number of exhibitions, both commercial and museum exhibitions.[23]

The lecture summarises how the artist's career is endorsed and valorised by various art world practices. The critical point is that the development of an artist's career always entails institutional support, such as exhibitions, gallery representation and auction sales. An exhibition at MoMA or Tate Modern significantly boosts an artist's value, in both cultural and economic terms. The events held by art world players are milestones for an artist's career, providing pivotal intelligence about the artist. This brings us back to the question regarding the structure of the art ecosystem and the issues of who holds power and how players in the field interact with each other. ArtTactic states that tracing an artist's career trajectory is fundamentally about understanding the art ecosystem, constantly linking information back to the institutions.[24]

[23] ArtTactic Lectures: Understanding the New Dynamics of the Art Market – Lecture 6 The Art Eco-System
[24] ArtTactic Lectures: Primary Art Market Data Analysis – Lecture 2 Artist Ecosystem: Mapping Key Market Players

Figure 5. ArtTactic Market Metrics – the Primary Market



Source: ArtTactic Artist Report – Damien Hirst (2017)

ArtTactic employs the artist career as a valuation tool with respect to the unique structure and diversity of the art ecosystem. According to the lecture, information about the artist career is especially crucial in the primary market as it lacks access to data regarding market transactions. The company strives to fill that gap with contextual information which is derived from diverse institutional practices which establish values. Figure 5 exemplifies ArtTactic's primary market valuation metrics for Damien Hirst, retrieved from the Artist Report 2017. The scorecard is a calculative device which quantifies the contextual information of the art world, measuring and categorising incommensurable entanglements into the space of calculation. It shows how the company determines the artist's value by looking at major events and trends about the artist. ArtTactic considers four factors regarding institutional representation: which galleries are involved in the market-making and sales process for their artists (gallery representation); how centrally the artist is represented in exhibitions (solo exhibitions); what types of institutions hold exhibitions and how prestigious they are (museum exhibitions); and what is the profile of the collectors who underpin the market for the artist (private collectors). They are about where, how and by whom the artist is endorsed in the art world – all of which impact cultural values which ultimately translate into economic values.[25]

Within the network of artistic practices, big-named institutions and individuals provide strong valorisation for the artist career, constructing the landscapes of meanings which they collectively inhabit. An interesting point picked up by the company is that galleries also provide semi-institutional valorisation for the artist career despite their commercial nature. They discover and establish artists, and these activities always entail cultural resonances. Pardo-Guerra (2013: 198) commented that galleries are not merely "supermarkets of art" but function as "weavers of the biographies of artefacts and artists" which control symbolic content. In the scorecard, the four factors for institutional support structures are evaluated on a five-point scale and aggregated into a single score. This quantitative approach allows for a more standardised evaluation of an artist's career. It is a calculative device that turns qualitative information about the artist's career into quantitative rankings, which is another important subject that will be further discussed in the following chapter.

Entangled Biography

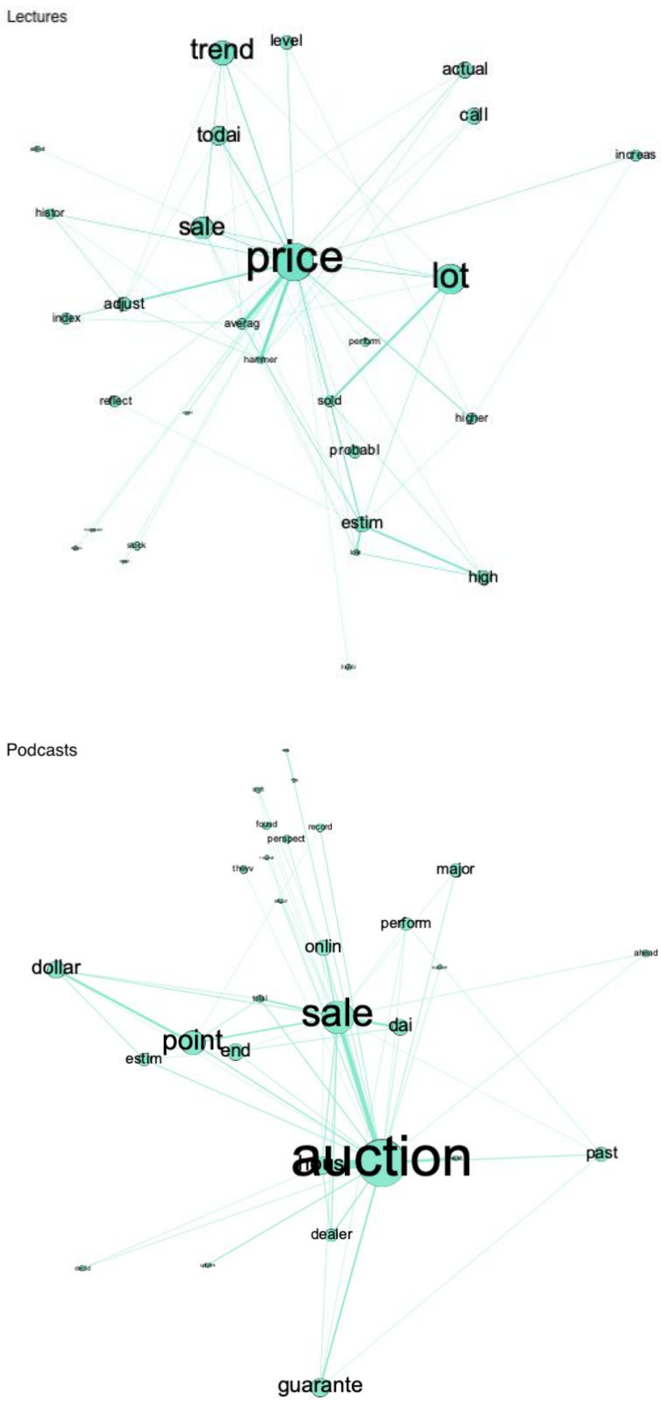
The discussion above shows that an artist's career is one of the key elements which construct values with the support of institutional valorisation. It demonstrates that the artist's biography and the value of his/her artworks are conjunctly bound together; as an artist establishes a successful career in the art world, the value of his/her artwork increases *ex post facto*. In this

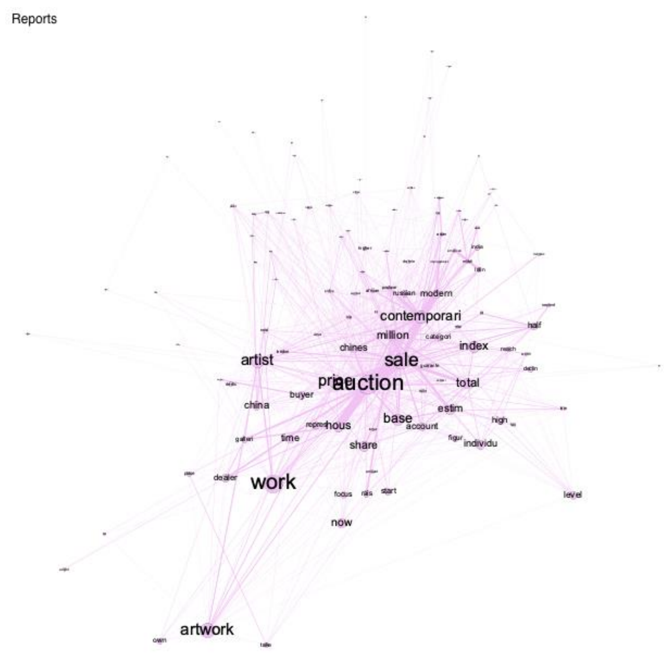
[25] ArtTactic Lectures: Primary Art Market Data Analysis – Lecture 3 Primary Art Market Data

regard, the value of art is deeply embedded in what ArtTactic calls “the art ecosystem”. This is a striking difference from other commodity markets, where commodities are “alienated” once transactions are concluded. Thomas (2009: 39) described commodities as “objects, persons, or elements of persons which are placed in a context in which they have exchange value and can be alienated”, and “the alienation of a thing is its dissociation from producers, former users, or prior context”. To construct a market transaction in the conventional market, it is necessary to “cut the ties between the thing and the other objects or human beings one by one” – “it must be decontextualised, dissociated and detached” (Callon, 1998: 19). By contrast, art market transactions are not fully detached from contextual information as they are intricately entangled within the network of valorisation. The pre-economic life of an artwork (such as who previously owned the piece and stories around the work) and the ongoing career of the artist him/herself (for example, where the artist has been represented, where the artist has exhibited and by whom his/her work has been collected) persistently affect the value of art, producing incessant “overflowing” (Callon, 1998) in the market. Once identified and acknowledged, overflowing has to be measured and internalised; this adds more complexities to ArtTactic’s performative strategies. The company’s measuring tools are understood as its attempts to frame the peculiar game rules in the field. The financialisation of art serves to disentangle this socio-cultural agencement of values and frame art market practices as economic calculations.

3.2. Auction Sales and Practices

Figure 6. Semantic Networks of ‘Auction Sales and Practices’





The second theme in the dimension of 'understanding the field of art' is 'auction sales and practices'. The theme was identified by SMA in all three networks. The topic cluster accounts for the third largest in the lecture (3A-3) and podcast (3B-3) networks and the second largest in the report (3C-2) network. Figure 6 represents the ego-networks (depth=1) around the most central words of the networks, 'price' and 'auction". The lecture network shows diverse issues around auction sales and practices, whereas the node 'auction' belongs to 'market data' due to its close connection with 'data'. In the bottom right of the network. SMA identified some auction practice terminologies, including 'lot', 'sold', 'high', 'low', 'average', 'estimate and 'hammer'; in the left of centre, concepts such as 'sale', 'history', 'adjust', 'reflect', 'index and 'Artnet' articulate how auction sales act as barometers of price information. The podcast network is centred around 'auction' with its strongest connection with 'house'. It shows a semantically sporadic network, reflecting the inconsistent structure of podcasts. The most prominent semantic cluster is about auction sales record, located on the upper side, encompassing 'sale', 'perform', 'record', 'track', 'repeat' and 'major'. The report network shows the most complex semantic structure. In the lower left corner, '(auction) house', ''artist', '(art)work', 'gallery', 'dealer' and 'buyer' represent actors and stakeholders around auction sales; in the upper right, 'contemporary', 'modern', 'post-war', 'Russian', 'Chinese', 'American', 'Latin' and so on show auction categories classified by genre and region; on the right side, concepts regarding auction data are identified, including 'sale', 'index', 'Mei-Moses', 'database', 'estimate', 'decline' and 'total'. These concepts belong to a separate topic cluster 'market data' in lectures (3A-1) and podcasts (3B-5), whereas the semantic network belongs to 'auction sales and practices' as a sub-cluster. This again confirms the close relationship between auction sales and market data, linking the art market and financial calculation. Following the topics identified by SMA, in this section I examine how ArtTactic understands auction practices centred on price data, and frames further entanglements created from such activities.

Auction Practices

ArtTactic suggests that auction practices are construed as another significant factor in determining values. Auction sales are constituent practices which create the market price of cultural goods within the network of various actors, encompassing auction houses, dealers, collectors, museums, investors and ancillaries. In the art market, auction houses are predominantly involved in secondary sales in a more commercial setting, whereas galleries often shy away from overtly commercial activities due to their semi-institutional nature. Although detailed practices can vary from sale to sale, auction procedures in general briefly take the following steps. First, the seller consigns the artwork to the auction with a description of the item (dimensions, provenance and relevant documents). Initial appraisals are commonly conducted online, followed by in-person examinations. The specialists in the auction house examine the artwork and provide an estimate of what it could fetch in a sale; this comprises a low estimate and a high estimate, typically in the format of £1,000,000 -

£1,400,000. In agreement with the consignor, the auction house sets a reserve price, the minimum acceptable price for the seller. If the reserve is not reached, the item is withdrawn and bought-in from the auction. Evening sales are the venues for high-estimate works across the categories, and usually include Old Masters, Impressionist, and Modern and Contemporary Art. The sale is conducted by an auctioneer on the block; bidders raise their paddles or bid by phone until the winner stands alone. The winning bid for the lot is called the hammer price, and sometimes auction houses or third parties issue guarantees to consignors in case the artwork remains unsold. Auction practices turn cultural objects of art into economic entities; ArtTactic attempts to grasp the implication of these practices to valuate artworks.

Pardo-Guerra (2011) stated that auction practices transform the entangled objects of the art world into the disentangled commodities of the auction floor. He focused on mundane things in the auction house, such as valuation practices, catalogues and auction terminology. The agencement of the auction house untangles the social contexts and turns the work into a commodity which can be traded in the market. Valuators "project symbolic and cultural value onto a metric space of prices, making artworks and similar objects commensurable" (212); the auction catalogue displays the artwork, "detaching" the object from its natural context, "arranging", and "ordering" it into a single space of calculation; the artwork becomes a "lot" in the auction sale, "alienated and mobilised in the secondary art market" (213-215). These are the activities that translate the language of the art world into that of the market, decontextualising the entangled history of the artwork. However, as Pardo-Guerra correctly pointed out, the biography of the artwork is not fully disentangled in the auction circuit. Artworks are still bound by constituents of provenance, such as their creators, previous owners and other cultural referents, as much as in gallery practices. Moreover, the auction practices constitute symbolic values in the art world, creating new entanglements with the artwork. Pardo-Guerra (2011: 214) referred to these as “virtual entanglements” to distinguish them from the more persistent, legally binding ties which Thomas and Callon envisaged. The entanglements link commodities and social imaginaries which contain cultures, symbols and narratives beyond materials. The biographies of artworks still matter in the auction house; they persist and continuously create overflows of the art world.

The Meaning of Auction Practices

ArtTactic mainly utilises the auction price to analyse the market. Smith (1989) referred to an auction price as a social pedigree which enables the artwork to be collectively accepted in the market; it constructs proxies for the elusive atmosphere of the art world. Auction practices decontextualise the artwork from its previous contexts – still entangled with social imaginaries – whilst the price carries considerable information within the newly formed contexts. ArtTactic utilises auction data to examine artist values, reframing overflows into the space of calculation. The trends captured in the auction sale are measured and quantified by the company’s valuation tool, which translates the meaning of auction practices.

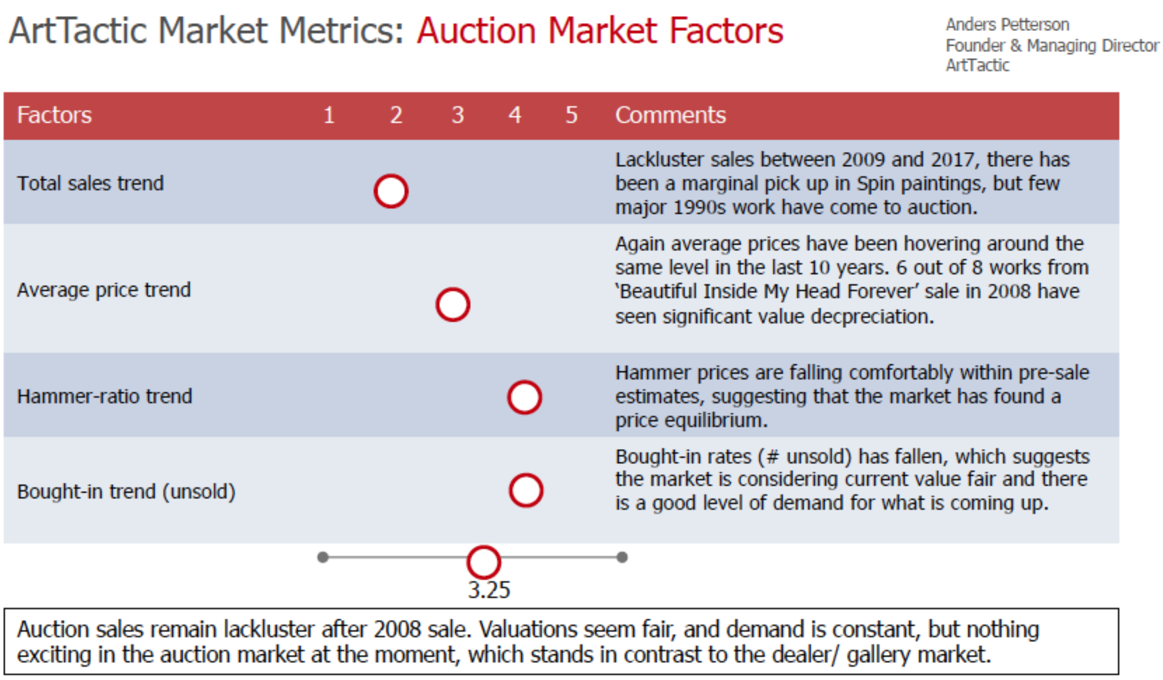
The following transcript from the ArtTactic podcast exemplifies how the company utilises auction results as benchmarks for valuation. In analysing the American artist Rashid Johnson, the company employed various analytic tools which alienate artworks from social contexts and turn them into market data commensurable with commodities or other disentangled objects, enabling quantification of artist value:

> Part of the confidence in Johnson's market is also due to his auction performance. At auction he saw record sales in 2019 with sales of 3.32 million dollars, increasing significantly from 1.25 million in 2018. And when his work comes to auction, it tends to perform very well. 75 per cent of Johnson's artwork sold at auction came in

> at mid-estimates or above in 2019, with the majority of prices equal to or above the high estimate. Overall, Johnson's market has shown an impressive sell-through rate of 86 per cent since 2008, with 20 lots sold out of 143 slots offered at auction. Sales performance was particularly impressive in 2019, with a sell-through rate of 100 per cent. Everything that went up for auction in 2019 sold, quite an impressive feat.[26]

ArtTactic utilises various measures from auction results to evaluate artist value; how much an artist's works have been sold in the market (total sales); the average price of sold items (average price); hammer price compared to initial estimates (hammer-ratio); and the proportion of sold/unsold items in the auction (bought-in). These numbers provide an analytic idea about the state of the market, again aggregated into a single score, representing trends of the artist value (*see* Figure 7). A more detailed analysis of this calculative device will be presented in the next chapter.

Figure 7. ArtTactic Market Metrics – Auction Market



Source: ArtTactic Artist Report – Damien Hirst (2017)

[26] ArtTactic Podcast: Behind The Report – Artist Market Report: Rashid Johnson (22 June 2020)

Auction practices decontextualise artworks from social entanglements and simultaneously constitute leakage points to the art world. The company states that auction practices "tell us a more nuanced story about the trends in the market" which "allow[s] us to look at both price and sales history and (…) also later on (…) to carry out comparable pricing".[27] If an artwork goes to auction and takes a price, the symbolic sign will be added to the evaluation of the artist in cultural contexts. For example, as the company says, "the auction data (…) gives us a fairly good idea" that "the art ecosystem (…) has decided that these artists [are] of sufficient quality to deserve having a secondary market".[28] The auction price constructs a "comparable transaction that allows us to set an estimate", contributing to establishing status hierarchies amongst artists and collectors. This is something that Velthuis (2003: 181) observed in gallery practices: "price setting is not just an economic but also a signifying act: despite their impersonal, business-like connotations, actors in markets manage to express a range of cognitive and cultural meanings through prices". Another important point to emphasise is that the disentanglement of auction practices always remains overflows. The biographies of artists and artworks (such as artist career and previous ownership[s]) are still entangled in transactions, and these entanglements are represented in the form of the auction catalogue (Herrero, 2010). This visual artefact bridges the epistemic values created by the art world and the pricing mechanism of the auction practices. In this regard, the auction house is not only a place of disentanglement but also a place of entanglement. In disentangling artworks from previous contexts, transactions confirm the established entanglements and construct symbolic values creating further entanglements.

[27] ArtTactic Lectures: Auction Market Data Analysis – Lecture 1 Auction Data Tools and Sources
[28] ArtTactic Lectures: Art Market Data and Research – Lecture 2 Auction Sales Data

3.3. Market Opaqueness and Legal Issues

Figure 8. Semantic Networks of ‘Legal Issues’

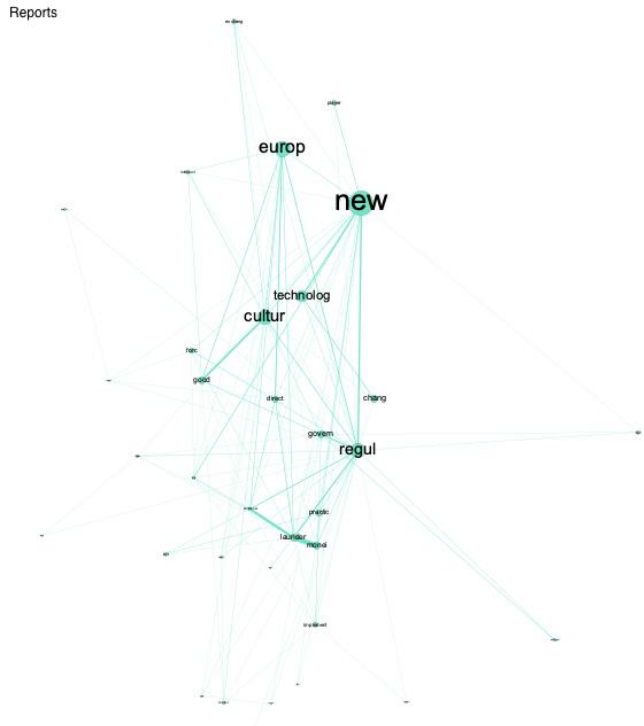
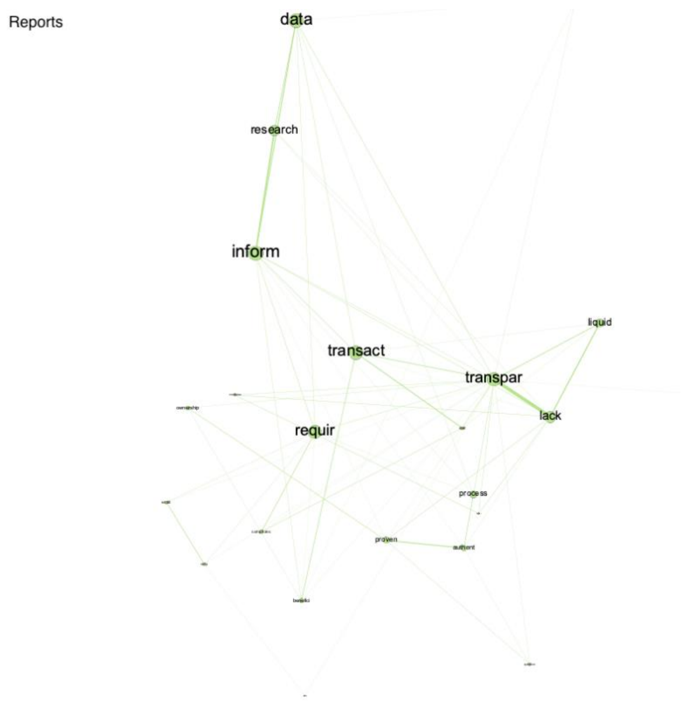


Figure 9. Semantic Networks of ‘Market Opaqueness’



SMA identified sub-clusters of ‘Legal Issues’ (3C-3) and ‘Market Opaqueness’ (3C-7) in the reports network. Although the modularity analysis distinguished the two clusters separately, the semantic map and the qualitative interpretation show that the themes are semantically closely related; the two themes are combined and addressed together in this section. The most connected node in the network ‘legal issues’ was ‘new’, followed by ‘Europe’ and ‘culture’. In the ‘market opaqueness’ network, it was ‘data’ followed by ‘information’. These concepts had the highest number of degrees, occupying important positions in the networks, yet represented too little or general semantic information. Therefore ‘regulate’ and ‘transparency’ were chosen as the central nodes to start navigating networks, which were the fourth and the third most connected nodes in the networks, respectively. Figure 8 represents the ego network around the node ‘regulate’ (depth=1), whereas Figure 9 represents the ego network of ‘transparency’ (depth=1).

The ‘legal Issues’ network shows three salient topics regarding regulation. On the upper side of the cluster, concepts including ‘new’, ‘Europe’, ‘introduction’, ‘cultural’ and ‘good’ articulate the European regulation on cultural goods; on the lower left, ‘money’, ‘anti-money’, ‘laundry’, ‘stricter’ and ‘impose’ represent legal issues regarding money laundering and tax evasion; in the lower right corner, there are concepts related to regulative measures, such as ‘government’, ‘self-regulate’, ‘gradual’ and ‘implement’. The ‘market opaqueness’ network also shows three major topics around transparency. On the lower left, ‘authenticity’, ‘provenance’, ‘ownership’ and ‘compliance’ represent the risk of authenticity, which is often considered a great threat to the reputation of the art market; on the right, ‘lack’, ‘trustworthy’ and ‘due diligence’ (omitted from the graph as it is not directly connected to the node ‘transparency’) formulate the lack of transparency in the art market; on the upper side, ‘transaction’, ‘information’, ‘data’ and ‘research’ show issues about the use of market data for transparency, categorised as a separate theme (3A-1 and 3B-5) in the lectures and podcasts networks. In this section, I explain how ArtTactic understands the transparency and legal issues of the art market and its attempts to resolve them. By framing them as market inefficiencies, the company encourages a more financialised marketplace which resembles the textbook economy.

The Opaque Market

The authenticity of authorship has always been one of the key issues in the art market. Theoretically, all legitimate lines of provenance should lead back to the original artist and resolve any related legal issues, such as ownership, copyright and the right to alter the object (Robertson & Chong, 2008). However, before a biography of the artwork is perfectly textualised into a *catalogue raisonné*, the virtual entanglements remain imaginary, being fragile and volatile. The attribution of artwork is always imperfect as the framing of social imaginaries creates a huge overflow and a substantial part of the entanglement remains fictitious. The opaqueness derived from the nature of the object is somewhat inevitable, yet "the absence of clear authentication processes makes the acquisition of genuine art extremely difficult".[29] The company refers to the lack of transparency as one of the biggest threats to the art world, one which must be mitigated and eliminated.

ArtTactic introduces industry voices to elaborate on the opaqueness of the art market. This aligns with and speaks for the company's viewpoints, which is not only descriptive but potentially performative. According to its survey in 2019, authenticity, provenance, forgery and attribution topped the greatest concerns for art market participants.[30] The report pointed out that the opaqueness makes it difficult for collectors and investors to fully grasp the authenticity, provenance and value of artworks. The lack of transparency in the art market is

[29] Deloitte & ArtTactic – Art and Finance Report 2016: 127
[30] Deloitte & ArtTactic – Art and Finance Report 2019: 206

not limited to object-specific risks but also affects general pricing and transactions. Provenances do not include price data derived from auction practices which further creates socio-economic entanglements, resulting in another layer of opaqueness in pricing and transactions. Throughout the reports, ArtTactic demonstrates that the undisclosed pricing makes the art market subject to price manipulation and other anti-competitive behaviour such as insider trading, undisclosed interest and the manipulation of auction guarantees; moreover, the lack of transparency in transactions brings about unlawful activities such as money laundering and tax evasion.[31] These are some of the significant obstacles which hinder economic calculation in the art market; as calculation requires the framing and categorisation of artworks beforehand, the construction of transparent market data which enables these activities is an essential step for financialisation. Since the analysis on price data and calculative devices will be thoroughly covered in the next chapter, the following section is focused on legal issues and regulations around market transparency.

Government Regulation

In 2016, *ArtTactic Art and Finance Report* launched a new section on risk management and regulation in response to the issues arising from the opaqueness of the art market. The successive reports introduced debates on "the best way forward in terms of regulating certain practices and aspects of the art market, and regarding the extent to which the art market should move toward greater self-regulation or pursue a path of government intervention".[32] The company shed light on the European government introducing a number of regulative measures in the art market. In 2019, a new regulation controlling the trade and introduction of cultural goods was passed by the European Parliament to fight the illicit trade of cultural goods; in 2020, the fifth anti-money laundering regulation broadened its scope to include the

[31] Deloitte & ArtTactic – Art and Finance Report 2016, 2017
[32] Deloitte & ArtTactic – Art and Finance Report 2017: 238

art trade carried on by galleries and auction houses. The reports argued that there was an increasing demand to create a mandatory register and force greater transparency in relation to ownership and provenance. A growing number of art financiers showed a favourable response to the government regulation; according to the ArtTactic survey, 36 per cent of wealth managers answered that self-regulation would be the best way to regulate the market in 2016, whereas 54 per cent of those surveyed stated that the art market required more government regulation in 2019.[33] The reports advocated government regulation over self-regulation, introducing the opinions of art financiers to support the legislation.

This suggests two important implications. First, although the lack of transparency has been traditionally considered as an opportunity to profit for art market players, financiers are increasingly inclined to eliminate the opaqueness of the art market. By framing art market practices into those of finance, they attempt to construct the market to invest in the long term. Second, more importantly, it shows that the enactment of financial markets requires institutional setup. Apart from the myth that economic activities under neo-liberalism are outside the domain of governance, a *laissez-faire* financial economy is constructed by the intervention of governance. To perform finance in the art market, the social imaginaries must be framed and decontextualised into legal relations; it is the process of market-making that enables financial calculation. ArtTactic involved itself in this performation by introducing "expert opinions" in its reports, which shows that the construction of agencement requires discursive practices to understand and politicise matters of the field.

4. The Performativity of ArtTactic's Texts

The critical point to note here is the performative nature of ArtTactic's presentation of its

[33] Deloitte & ArtTactic – Art and Finance Report 2019: 210

understanding of the art market. The company's texts not only describe but also perform the market, giving an account of its realities and subtleties (Callon, 2007; MacKenzie *et al.*, 2007; Roscoe & Loza, 2019). As MacKenzie (2008: 11) nicely put it, they are "not a camera, but an engine". The discursive device functions more effectively through its externalising mechanism. In describing the art market, ArtTactic separates itself from what it describes and externalises it as independent facts residing out there. Accounts are crafted to present a specific reality as the objective truth, concealing the performative nature of discursive devices. The discursive devices present their findings as if they are just discovering the world, and by so doing they justify the ideas which they are enacting (Potter, 1996). This mechanism is well-exemplified in the company's reports on government regulation. Throughout the reports, ArtTactic utilises a variety of surveys to demonstrate demands for legislation; the specific realities are strengthened by scientific methods, portrayed as external features. The reports provide descriptions of the art market in the form of hard numbers and graphs, changing agents' attitudes and behaviours towards them, and consequently creating the phenomenon which they describe. The texts of ArtTactic's discursive devices frame the market as one with a collective demand for a more financialised market, and suggests that this "real" (Law, 2009: 4) must be fulfilled with legislation. The company's discursive devices make the discourser appear unbiased, neutral, credible and disinterested; the mechanism of discourses being carried out – externalised descriptions of the world – reinforces the perspectives and beliefs of the performateur.

So how do ArtTactic's texts describe the art market? The company presents its own understandings of the market through its lecture series. As discussed throughout this chapter, it describes the art market as an ecosystem which collectively constitutes values where the dual structures of art and economy exist. On the one hand, there is the 'institutional model' which valorises the value of art from cultural accounts; on the other, there is the 'market model' in which the value of art is predominantly determined by its price. This dual structure of the art market is the basis for the company's performation. The company illustrates how the value system has gradually transformed from the institutional model to the market model with the increasing influence of finance. Between the two pillars, the field has been increasingly bent towards the gravity of the market (MacKenzie, 2018) and the economic value takes over the cultural value as a signifier of quality. The company asserts, "now the auction market [creates] this strong sense of economic value, being the primary driver for how we perceive the importance of art".[34]

As has been emphasised, the critical point is that these statements are not only descriptive but also performative (Roscoe & Loza, 2019). The transition of the valorisation model envisaged by the company urges market participants to act accordingly, readjusting the exchange rate between the cultural and economic capitals. Moreover, the seemingly neutral description of the market reconfigures daily practices and organisational norms in the art market. ArtTactic's discursive devices translate (Latour, 2014) the distinctive transaction and valuation practices of the art market and turn them into a language compatible with those of finance. The strange game rules of the art market (Coslor, 2011) are understood and interpreted by economic norms, framed as structural inefficiencies to be dealt with: "(…) the lack of transparency in the art market as one of the key challenges in the art market. Most of the problems (…) boil down to the fact that the art market continues to operate opaquely".[35] Elaborating art market practices is therefore a process of performative works (Beunza & Ferraro, 2019) to reconcile the distinction between art and finance and lubricate the

[34] ArtTactic Lectures: Understanding the New Dynamics of the Art Market – Lecture 8 Understanding the Value of Art Part 2
[35] Deloitte & ArtTactic – Art and Finance Report 2017: 27

performation of finance. The company's texts perform the market not only by describing the assembling arrangement but also by disassembling socio-materials to be reassembled into the new arrangement.

5. Conclusion

The discussion above can be summarised in the following manner: enacting a mode of calculation and accumulation in a different field requires a thorough comprehension of the arrangement which needs to be reconfigured. ArtTactic approaches the art world as a complex ecosystem which consists of various actors, including artists, galleries, auction houses and collectors. These actors collectively contribute to the creation and circulation of values by engaging in diverse practices of valorisation. Drawing on the tradition of art for art's sake, the company's performative strategies are based on its understanding of the art market having a dual structure between art and economy. This suggests two valorising models which work in opposite ways: the institutional model where the value of art is largely determined by cultural valorisation and the market model where the valorisation comes from market transactions. ArtTactic asserts that the financialisation of art gradually transforms the value system from the institutional model to the market valorisation model. In this evolving space, actors position themselves strategically according to the capital and disposition which they possess, navigating and negotiating with the intricacies of market practices to achieve their objectives.

ArtTactic tackles how values are created and circulated in the art world by looking into these unique practices. One important aspect is the artist's biography created by institutional representation, which plays a crucial role in shaping values. Unlike conventional objects, the value of artworks is influenced by their entanglements within the art world. Whilst conventional objects break ties with other objects or human beings to become commodities, the social imaginaries of artworks remain as virtual entanglements. These entanglements are created not only by institutional representation but also by commercial practices. Neither gallery nor auction practices fully decontextualise cultural entanglements, partly framing them into material artefacts (for example, the auction catalogue or a *catalogue raisonné*), and creating yet another layer of entanglements. These overflows sometimes go beyond legal boundaries, resulting in great opaqueness in the art market. In response to these challenges, ArtTactic attempts to introduce government regulations and performative actions which help to frame the art market within a financial context.

The important point is that the company's presentation of its understanding is not only descriptive but also performative. ArtTactic's portrayal of the art market, including its dual structures and strange practices, plays a performative role in constructing the market itself. The company's texts, by presenting its understanding of the art market as objective truth, influence the attitudes and behaviours of market participants, thereby creating the reality that they describe. The transition of valorisation models driven by the increasing influence of finance urges actors within the art market to adapt and realign their practices with this new framework. ArtTactic's texts function as a powerful force which disassembles and reassembles the socio-materials of the art market, ultimately facilitating the financialisation process and transforming the field at large.

V. Introducing Calculative Devices

> [According to] a certain Chinese encyclopedia, “animals are divided into: (a) belonging to the Emperor, (b) embalmed, (c) tamed, (d) suckling pigs, (e) sirens, (f) fabulous, (g) stray dogs, (h) included in the present classification, (i) frenzied, (j) innumerable, (k) drawn with a very fine camelhair brush, (l) et cetera, (m) having just broken the water pitcher, (n) that from a long way off look like flies”.
>
> – Borges, *The Analytical Language of John Wilkins*

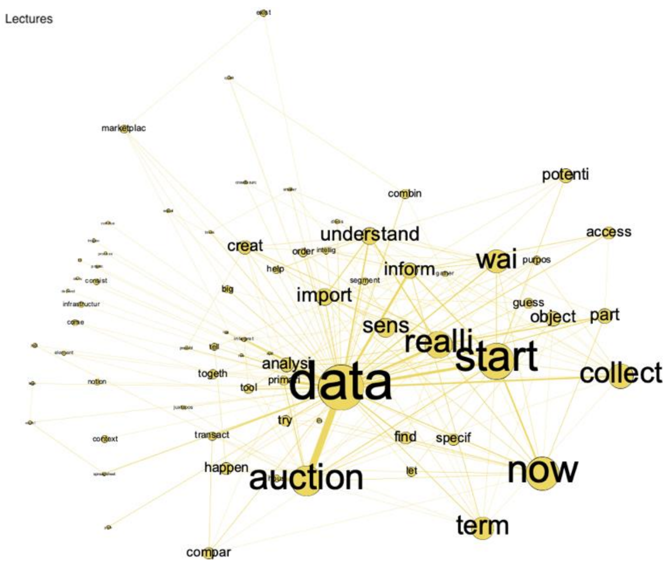
1. Introduction

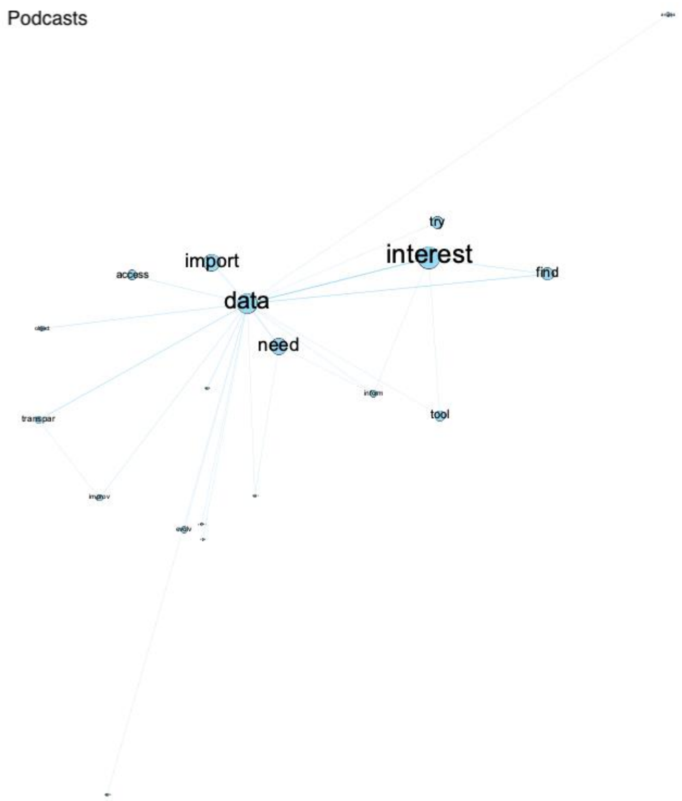
The discussion in the previous chapters has shown how ArtTactic draws competing valuation dynamics within the art world; according to it, financialisation gradually transforms the valuing system from the institutional model to the market-side model where the price increasingly plays a significant role in valorising art. This transition entails the adoption of new valuing devices which hold together networks of materials, languages and cognition. A specific mode of valuation is achieved through valuing devices, which classify and render things valuable. Before embarking on a discussion of this, I shall first clarify the use of the term ‘valuation’. As discussed earlier, the notion of valuation presumes the diversity of markets, which requires “qualculative” (Cochoy, 2008: 15) evaluation. In defining valuation, I adopt the pragmatic concept of the word encompassing judgement and calculation (Stark, 2011), whereas for the economic-oriented valuation (which is still not purely economic and calculative), I use Callon’s popular term ‘calculation’ to distinguish it from the non (less)-economic valuation. Recognising that the valuation process cannot be reduced to purely economic calculations, it emphasises the nature of calculation as an economising practice. Financial calculation thus refers to a specific mode of valuation mostly derived from economics (Callon & Muniesa, 2005a). Calculative agencies are embedded in socio-material devices (Callon *et al.*, 2007); they convert pre-economic judgement – namely the appreciation of art – to the mode of economic calculation, quantifying the value of artworks of incommensurable qualities. These processes are black-boxed in calculative devices, and using such devices enacts economic calculation in the market. ArtTactic introduces various market devices which enable economic calculations, as provided by auction houses, price databases, online platforms, surveys and experiments.

This chapter shows how ArtTactic seeks to create and extend the agencement of economic calculation by introducing such calculative devices, following the topics identified in the SMA described in the previous chapters. It investigates practical and theoretical endeavours to construct price data which make the art market quantifiable. Various calculative devices and economic theories embedded within these tools are examined to navigate their underlying mechanisms and implications. This leads to the analysis of how the company enacts a mode of valuation through the creation of calculative habitus. The SMA identified three themes under the broader dimension of 'introducing calculative devices'. First, 'market data' elaborates the use of auction data and analytic tools to increase market transparency. The company introduces how to analyse and interpret data gleaned from auction houses and market data services, concerning what can be drawn from the raw data. During workshops, participants are guided through hands-on exercises to collect, structure and analyse price data in the market, fostering a deeper understanding of the calculative process. Second, 'online platforms' addresses the digitisation of the art world. The company introduces information platforms which have stemmed from the emergence of art finance as well as the development of new infrastructures surrounding art price data. These are enabling technologies that facilitate the financialisation of art by which the relevance of art finance is further strengthened. Third, 'valuation' explores how ArtTactic evaluates artworks by combining various types of data, with consideration of the unique structures and value systems which characterise the art world. The company presents criteria models which cover quantitative and qualitative data, constituting calculative devices which contribute to the process of valuation. The themes highlight the company's comprehensive approaches to demonstrating calculative devices, enabling market participants to engage with the art market in a more financialised way.

2. Art Market Data

Figure 1. Semantic Networks of 'Market Data'





The SMA identified the theme of ‘market data’ in the lecture network (3A-1) and the podcast network (3B-5). In the lecture network, the sub-network accounted for 12.02% of the total share, which made it the largest theme-cluster within the network. The most connected node was ‘data’ (degree=132, eigenvector centrality = 1.0) showing that it is the most central concept in the entire lecture network, aside from ‘art’ and ‘market’ which were both removed due to their over-connectedness. In the podcast network, ‘market data’ made up the fifth largest (2.99%) of the eight salient clusters. The most connected word in the network was ‘interest’ (degree=34, eigenvector centrality=0.4422) followed by ‘data’ (degree=32, eigenvector centrality=0.3768) and ‘need’ (degree=20, eigenvector centrality=0.2738) (*see* Table 4 in Chapter 3). Despite the fact that the concept of ‘interest’ showed the highest degree and centrality in the network, based on the semantic interpretation, I identified the most central concept as ‘data’ and the theme of the network as ‘market data’. This is because the high centrality of ‘interest’ largely resulted from its homonymy; the strongest edge connected the concept with ‘data’ (14) generating the meaning of ‘interest in data’, and the second strongest edge was connected to ‘rate’ (12) which creates a different semantic concept of ‘interest rate’. The two different meanings of ‘interest’ were counted together by the SMA, making the word the most prominent node in the network, which must be adjusted by qualitative examination.

Figure 1 represents the ego networks around the word ‘data’ (depth=1). In the lecture network, significant concepts such as ‘auction’, ‘transact’, ‘compare’, ‘tool’ and ‘analysis’ are shown in the lower-left corner, articulating how auction transactions constitute market data and its analytic tools; on the upper side, ‘important’, ‘create’, ‘understand’ and ‘information’ represent the importance of creating and understanding market information; the lower right corner shows a conceptually sporadic network with some salient nodes including ‘start’, ‘now’, ‘collect’ and ‘term’. In the podcast network, core concepts such as ‘transparent’, ‘improve’, ‘evolve’ and ‘access’ are found on the left, related to the transparency of and access to market data; on the right, concepts such as ‘interest’, ‘need’, ‘information’ and ‘tool’ formulate the growing interest in and need for information and tools for analysis. Drawing on the themes and topics identified by SMA, this section first touches upon the development of auction price data and the concept of art as an asset class. Then it examines how ArtTactic gives a demonstration of constructing an art price database with the example of the Damien Hirst market through its hands-on workshop.

2.1. Development of Art Market Data

The price of art is considered one of the primary concerns for art market participants since it is often read backwards as an indicator of quality. The price constructs a proxy for the elusive value of art, configuring art to be accepted collectively in the market. The evaluation of art requires considerable knowledge of artistic theories and art history whereas the price serves as an easily comprehensible and comparable benchmark for value (Coslor, 2011). From a financial perspective, it is a tangible representation of the value, particularly given the inherent subjectivity of artistic appreciation. For this reason, there have been continuous efforts, most ardently by art finance practitioners, to establish transparent price data in the market. By offering a clear and standardised reference point, transparent price data enables more financially informed decisions while also promoting financial calculations. Despite their limitations in only reflecting secondary market transactions, the price data function as important “valorimeters” in the market (Çalışkan & Callon, 2010: 17) which help to assess the monetary worth of artworks. In this regard, the establishment of price data is the initial step for the financial calculation of art; through the use of categorisation, graphs and indices, it enables art market participants to calculate art on the same lines as different investments.

A Brief History

The beginning of the systemic collection of price data goes back to the 1900s, with some notable examples being *Art Prices Current* (1907/1908), *Auction Sale Prices* (1901) and the *Bénézit* (1911) dictionary of artists (Coslor, 2011: 49-50). These early price guides offered basic information about an artwork (artist, title, date, medium) and its hammer price, similar to the auction catalogues published today. A major breakthrough in art market data was made in the 1960s spurred by the booming market in the post-war period. *The Times* newspaper and Sotheby’s developed indices to track the financial performances of art sorted by artists and schools, comparing them with the US and UK stock prices over fifteen years (*see* Figure 2). The results are represented in the form of simple line charts, a commonly used decision tool for financiers and lay investors. Another significant quantification effort in practice was the indices used for the British Rail Pension Fund. As the fund began incorporating artworks in its investment portfolio in 1974, there emerged an increasing need to track the performance of investments compared with the market. Actuarial statistician Jeremy Eckstein was tasked with creating the index, employing 'basket of goods' or representative sample methodology (Robertson & Chong, 2008). It was the first time that indices were used to monitor the value of the actual art investment collection over time. The fund achieved 11.3 % per annum by the time it liquidated the last artwork in December 2000, which is approximately 4.0% per annum in real terms after adjusting for inflation.

Figure 2. Times-Sotheby Index[36]

THE TIMES *Saturday* REVIEW

Because of the interest in the art market and its massive turnover in money terms 'The Times' and Sotheby's have joined forces to chart an index of prices between the years 1951 and 1967. The aim is to measure the overall trend in prices. This article examines the remarkable rise in value of the work of six impressionist painters: Boudin, Fantin–Latour, Monet, Pissarro, Renoir and Sisley.

Impressionist pictures & and the Stock Market

The major difficulty in comparing price levels from year to year lies in the simple fact that every painting is unique. In one year a superb example of the artist's best period may be sold; the next year only a couple of mediocre pictures may reach the sale rooms. It is clearly not possible to compare these prices directly and it has been necessary to find some way round this problem. The method adopted in this study was to scale the actual price paid for each picture either up or down to an equivalent price for an average example of the artist's work.

This involved grading every picture that had been sold; a masterpiece got a very high mark, a poor picture a low one. This was handled by Sotheby's expert in impressionist pictures; the pictures were given the same grade if they were likely to fetch roughly the same price at auction today. The factor relating the price of a picture in each grade to the average was established on the basis of 1967 prices.

The index for each artist is based on the movement of these equivalent "average" prices from year to year. The six indices established in this way have been combined into an overall index giving the movement of each artist's prices more or less importance according to the number of his paintings sold during the year.

The index is based on pictures sold by Sotheby's, Christie's, and Parke-Bernet, and when possible the Paris sale rooms since 1950.

The figures for the 1950s are generally less reliable than those for the 1960s as the volume of trade was much smaller. In order to obtain a more consistent picture, three year centred moving averages have been used from 1951 to 1961. The average 1950-52 has been taken as the base year for the index.

Renoir's 'Jeune fille au chapeau Garni de fleurs De champs' sold in 1952 for £23,000 A similar portrait made £107,000 in 1966

by Geraldine Keen

Renoir *Up 405% since 1950-52*

Fantin-Latour *Up 780% since 1950-52*

Monet *Up 1,300% since 1950-52*

Sisley *Up 1,150% since 1950-52*

Boudin *Up 835% since 1950-52*

Pissarro *Up 845% since 1950-52*

Source: The first Times-Sotheby index published in 1967. Retrieved from The Times archive.

The advent of computation technologies has allowed art financiers to deal with a large number of data sets and construct more advanced art market data and analytic tools. In academia, Mei and Moses (2002) introduced an annual art index with sub-indices for four different genres (American, Old Master, Impressionist and Modem painting), covering 4,896

[36] Keen, Geraldine, "*Renoir's 'Jeune fille au chapeau Garni de fleurs De chapms' sold in 1952 for £23,000 A similar portrait made £107,000 in 1966"*, The Times Saturday Review, 25th November 1967

price pairs from 1875 to 2000. The prominent characteristic of these indices was that they utilised repeated sale regression, which is more accurate but requires abundant resale information. The indices were later acquired by Sotheby's in 2016 and are currently in operation leveraging more than 80,000 repeat auction sales. Coupled with academic endeavours to construct art market data, price data subscription services such as Artprice, Artnet and Art Market Research have emerged in the market. These services provide detailed and processed information about transactions on a more frequent basis, whereas price books prior to the 1980s were published quarterly or sometimes even annually. These services have made price information widely accessible to art market participants and have also enabled financial calculation with a much larger volume of refined data. The evolution of art market data and analytic tools has led to greater transparency and accessibility, inviting more financially motivated investors to the art market.

Examining Art as an Asset Class

The development of art market data has accompanied the debate on the validity of art as an asset class. As the financial performances of artworks have become increasingly trackable using auction data, financial communities have sought to examine market trends and investment performances. Since the early studies conducted by Rheims (1961) and Reitlinger (1961) utilising the price trajectories of artworks, there has been an increase in research investigating the financial performance of art. This research includes the works of Baumol (1986), Goetzmann (1993) and Renneboog and Spaenjers (2013). Despite the fact that art as an asset class has been increasingly tested by mainstream finance and economists, opinions on art investment remain conflicting. Baumol (1986: 10) wrote that "the prices of (…) art objects may be strictly unnatural in the classical sense" and thus it is impossible to "beat the game financially" (14) beyond opportunity costs. Goetzmann (1993) also suggested that "there is little evidence that art is an attractive investment for a risk-averse investor". More recently, Renneboog and Spaenjers (2013) confirmed that the performance of art is similar to that of corporate bonds but with significantly higher risk and volatility. The current study suggests that investing in art may not be as promising as what art finance practitioners often present. Nonetheless, these examples underscore the constant efforts made by the financial sector to test art as an investment. These efforts have led to the development of advanced analytic tools to assess financial performance, ultimately contributing to the adoption and legitimisation of art investment. The establishment of price data and the dissemination of analytic tools are prerequisites for effective art investment. A more detailed analysis of art investment vehicles – accumulative devices – and performance measures is presented in the next chapter.

2.2. Constructing Art Market Data

The transparency of art market data has become a more pressing issue in the past two decades in line with the advanced technology of price provision. ArtTactic contends that technology has revolutionised the art world by bringing about more transparency and credibility in the market: "email, the video transmission of auctions, and increasing access to public prices outside of paid databases have already had a massive impact in creating visibility, transparency, and trust in the art market".[37] The company describes the transformation as a major innovation; as Preda (2006) showed in the case of the stock ticker, the technology of price provision transforms the trading structure of the market. ArtTactic bolsters its favourable stance on the price provision technology by suggesting – and performing through – its surveys. According to the Art and Finance Report 2019, 75 per cent of collectors and 76 per cent of art professionals answered that they believed that technology would improve the

[37] Deloitte & ArtTactic – Art and Finance Report 2019: 67

transparency and credibility of the art market.[38] The company argues that technologies "gradually push the boundaries [of art market database services] and (…) make both the audience and the consumer want more information".[39] Having knowledge of prices and access to transaction information changes how art is valued in the market, and as a result, it serves as a starting point for valuation among market participants.

The increasing need for an art market database is closely linked to the financialisation of art. Investment necessitates continuous performance measurement as it requires a reference point for calculation, making an object comparable with other objects and commensurable with other economic or economised assets. As Coslor (2011: 206) stated, it "makes the area (…) understandable in the context of other potential investments". Investing in art therefore cannot be achieved without historical and ongoing price data of objects; price data serves not only as a historical record of completed transactions but a calculative tool which enables financial activities. The company states:

> [We] think art is increasingly now moving into the domain of the finance world. (...) We're seeing a kind of a whole array of financial products now being built around and based on the value of art objects. And [we] think in this regard, we need to get better at assessing the data. We need better tools and methodologies for understanding, assessing and pricing the risk to ensure the efficient allocation of capital. So, [we] think at the moment, what's going to be one of the primary drivers for this increased need for data is (…) financialisation of the art market or the art object.[40]

As the company points out, the establishment of market data and the financialisation of art come together and elevate each other; price data accelerate art becoming accepted as an investment asset, while the rising interest in art investment loops back to a greater demand

[38] Deloitte & ArtTactic – Art and Finance Report 2019: 173-175
[39] ArtTactic Podcast: Anders Petterson and Zohar Elhanani – ArtTactic and MutualArt (15 June 2018)
[40] *ibid*.

for art market data. Price data not only draw in new market participants with a financial focus but also influence traditional players to adapt their strategies accordingly by making them equipped with calculative agencies.

Categorising Auction Data

ArtTactic offers lectures on utilising market data retrieved from auction sales, highlighting the various advantages of this information. The company primarily outlines three benefits of auction data. First, auction data enable us to look at both price and sales history, and ultimately to carry out valuations through comparable pricing. Financial figures calculated from auction data (price index, return, volatility, correlation) enable detailed analysis of price and sales trends, as well as peer analysis which compares financial performance with other artists and financial assets. Second, secondary information extracted from auction results provides more nuanced stories about transactions. The hammer price reflects what the buyer is willing to pay and the estimate reflects what the seller is prepared to sell for; the comparison between presale estimates and hammer prices represents the confidence in the market, whether there is a pent-up or lack of potential demand for a particular artist. The bought-in ratio also tells complex stories about liquidity, market expectation and changes in taste, which all require a further examination of contextual information. The secondary auction data reveal hidden information about transactions and flag up potential events that may take place later on. Third, auction data can be split into and analysed by specific segments, which can be re-structured to show a more nuanced picture of the artist market. Gulledge, Roscoe and Townley (2015) suggested that classification and categorisation are important mechanisms for rendering goods calculable in economisation. Classifications order and construct artworks and put them into a space of calculation; through these processes, they can be compared and positioned by different criteria. Figure 3 represents how ArtTactic creates auction sales data with a series of information tags, including title, hammer price, estimates, size, medium and geography. By categorising the series of information, it is possible to drill down into transaction data to see finer details and analyse specific types of artwork and trends in the market.

Figure 3. Auction Data for Damien Hirst (2000–2002)[41]

Title	Date	Price (US)	Low	High	Average	AEI	Height (cm)	Width (cm)	Area	Medium	Series	Year	Auction	Geography
In Love-Out Of Love	13/11/2000	$680,000	$400,000	$600,000	$500,000	1.36	121.0	244.0	29,524	painting	Butterfly	1998	Phillips	New York
Dead Ends died out, Examined	13/11/2000	$460,000	$300,000	$400,000	$350,000	1.31	253.0	152.0	12	sculpture	cigarette butts in wooden box	1993	Phillips	New York
Untitled (Butterfly Painting)	21/11/2000	$284,600	$284,600	$355,000	$319,800	0.89	61.0	61.0	3,721	painting	Butterfly	1996	Phillips	London
Amphotericin B	17/05/2000	$300,000	$250,000	$350,000	$300,000	1.00	305.0	335.0	102,175	painting	Spot	1993	Sotheby's	New York
Beautiful Pucker Porcupine Pink Pri	14/11/2000	$125,000	$150,000	$200,000	$175,000	0.71	183.0	203.0	26,289	painting	Spin	1996	Sotheby's	New York
Beautiful, vaginal, spiral, escalating,	16/11/2000	$120,000	$120,000	$180,000	$150,000	0.80	203.0	203.0	32,349	painting	Spin	1995	Christie's	New York
Lustral Sertraline	16/05/2000	$150,000	$150,000	$200,000	$175,000	0.86	152.0	173.0	26,296	painting	Spot	1992	Christie's	New York
Alprazolam	13/11/2000	$65,000	$40,000	$60,000	$50,000	1.30	44.0	71.0	3,124	painting	Spot	1995	Phillips	New York
Untitled (AAAAA)	18/05/2000	$140,000	$100,000	$150,000	$125,000	1.12	101.0	76.0	23	sculpture	Medicine cabinet	1992	Phillips	New York
Abras Toxin	18/05/2001	Bought-In	$150,000	$200,000	$175,000	-	115.0	80.0	9,200	painting	Spot	1991	Christie's	New York
Acrolein	27/06/2001	Bought-In	$197,400	$253,800	$225,600	-	193.0	112.0	21,616	painting	Spot	1992	Christie's	London
Morphine Sulfate	12/11/2001	Bought-In	$200,000	$250,000	$225,000	-	145.0	233.0	33,785	painting	Spot	1993	Phillips	New York
Naked	15/05/2001	Bought-In	$600,000	$800,000	$700,000	-	252.0	195.0	49,140	sculpture	Steel surgical instruments, cow's b	1994	Sotheby's	New York
Anaesthetics, and the way they affe	27/06/2001	Bought-In	$253,000	$351,000	$302,000	-	45.0	45.0	2,025	sculpture	Formaldehyde in glass tank	1991	Sotheby's	London
Untitled, Birthday Card	08/02/2001	Bought-In	$216,000	$288,000	$252,000	-	213.0	213.0	35,615	painting	Spin	2000	Christie's	London
Uncaring lovers	14/05/2001	$277,500	$250,000	$350,000	$300,000	0.93	102.0	137.0	13,974	sculpture	Glass, steel, internal cow organs	1991	Phillips	New York
Beautiful, let's go to la-la Land	12/11/2001	$230,000	$250,000	$350,000	$300,000	0.77	305.0	305.0	73,025	painting	Spin	1997	Phillips	New York

Excel Workshop

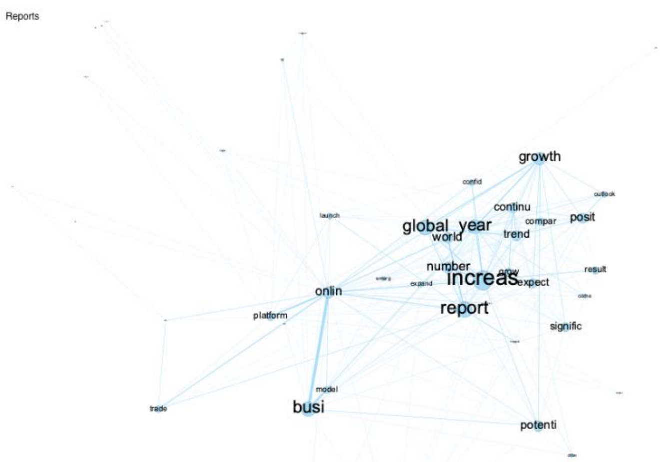
As a part of the lecture series, ArtTactic provides Excel workshop sessions. The workshop is designed to teach participants how to organise raw auction data into a structured database using Damien Hirst's market from 2004 to 2012 as an example. During the one-hour, hands-on session, the workshop introduces how auction data are collected, established and structured into an Excel table. The goal of the workshop is to help participants to develop the ability to create their own databases and generate insights from the structured data. Rather than providing complete toolkits for analysis, the purpose of the workshop focuses on providing the skillsets for people to build their own tables. By exercising these "inscriptive practices" (Latour, 2014: 161), participants can learn and internalise the basis of how economic calculation operates in the art world. The workshop introduces the logic and the mechanism of calculative devices; participants not only familiarise themselves with the devices but also construct a mode of valuation by exercising categorisation.

[41] ArtTactic Lectures: Handout – Artist Market Analysis

Another key aspect is that the workshop suggests what information needs to be considered for categorisation – it reflects how ArtTactic perceives the value system which operates in the art world. Using raw data collected from auction houses, the lecture gives an example of how to construct a database by categorising various features encompassing price and contextual information. The information tags consist of sales information, such as the title of the work, the date of sale, hammer price, estimate range and hammer to the mid-estimate ratio (AEI: ArtTactic Equilibrium Indicator); information about the material characteristics of the artwork, such as its medium, height and width – which are used for calculating value per square centimetre; and contextual information, such as the period that the work represents, the location and the auction house where the sale took place. This is the information that must be categorised, compared and finally turned into a valuation of the art. The enactment of valuation is not only about how to calculate the market but also about what is to be calculated in the market. The workshop shows how to construct the price data of the art market, which constitutes the initial step of valuation. The logic and criteria taught in the workshop enable the participants to grasp and apply the methods for valuation.

3. Online Platforms

Figure 4. Semantic Network of 'Online Platforms'



SMA identified the theme of ‘online platforms’ as the fifth largest cluster (7.36%) in the report (3C-5) network. The network requires a reasonable degree of qualitative interpretation as the most central nodes by eigenvector centrality (‘increase’, ‘report’, ‘business’, ‘year’, ‘global’ and ‘growth’) do not generate significant semantic concepts by themselves. Although the concepts imply the increase and expansion of particular businesses (or a sector), it is hard to specify what they are before widening the scope of analysis. I approached the network from the strongest word pairs. The top word pairs were ‘online – business’, ‘recent – year’, ‘business – model’, ‘popular – uhnwi’ (ultra-high net worth individuals) and ‘online – platform’ (*see* Table 4 in Chapter 3). Combined with the central concepts, they articulate the central theme of the network as the growth of online platforms in recent years. Figure 4 represents the ego-networks (depth=1) around the concept ‘online’, the eighth central node in the network. On the left-hand side, the network represents concepts around online art platforms, such as ‘platform’, ‘business’, ‘model’ and ‘trade’; on the right-hand side, the network encompasses relatively closely related concepts, including ‘increase’, ‘emerge’, ‘expand’, ‘growth’, ‘continue’, ‘trend’, ‘outlook’ and ‘expect’, which formulate the growth of online platforms and their outlook. Focusing on the concepts identified by SMA, this section sheds light on the emergence of online platforms, focusing on art price data and analytics providers. *Artprice* is one of the online platforms in practice introduced in the ArtTactic report. By looking into the calculative tools provided in the market, it investigates how economic theories are embedded in the construction of market devices.

3.1. Art Price and Analytics Providers

Since the late 1990s, a host of art market data providers have arisen owing to the development of technologies and market institutions. They have developed analytical tools to offer intelligence about the financial performances of art, utilising both quantitative and qualitative information. The ArtTactic Report 2017 introduced a list of active art data and analytics providers in the market, such as AMA/Art Analytics, Artfacts.net, artnet, Artprice, ArtTactic, Mutualart and Pi-eX.[42] According to the report, these services offer a diverse range of provisions, including art price databases, art price indices, primary art market analysis, risk analysis, artwork valuations, artist reports and art market and sector reports. Visible price data play a crucial role in the construction of financial markets as they generate material and cognitive structures centred around prices. Muniesa (2007) highlighted the importance of closing prices in the stock market as they serve as widely circulated reference points which shape calculations. Once a price becomes publicly available, it acts as a driving force which shapes and influences market activities. By analogy, the price provision services have a constitutive effect on the structure and function of art finance markets, demonstrating their vital importance in financialisation. The devices pave the way for a more data-driven and financially minded approach to art investment, fostering a mode of calculation in the art market.

Analytic Tools: the Case of Artprice

Artprice, as featured in the ArtTactic report, exemplifies a comprehensive online art price data and analytics platform. Figures 5 and 6 respectively show the auction result for Kandinsky's work *Tensions calmées* (1937) and the artist analytics on Artprice. The company provides a free demo for Wassily Kandinsky to non-subscribers so that a wider audience can experience and learn about its calculative tools. The platform provides biographical data, auction results, details of upcoming auctions, advanced analytics, market insights (such as related articles), and a list of marketplaces showcasing artworks partnered with the company. The most significant features of Artprice's data are its auction results data and advanced

[42] Deloitte & ArtTactic – Art and Finance Report 2017: 212-216

analytics. The auction results provide comprehensive information about individual artworks, including their materiality (image, size, medium, signature), price (hammer price, estimate, indicative values) and contextual information (provenance, exhibitions and shows), reflecting the value system which stretches beyond materials (Figure 5). The indicator of the artwork represents the estimate of potential values, calculated from the hammer price of comparables at a specific date. The time series graph helps art market participants to make financial decisions about trading artworks by rendering complex data through a device which simplifies the understanding of financial performances. Artprice provides market analytics for 782,000 artists with auction records, ranging from Renaissance masters to emerging artists.

Figure 5. Artprice Auction Results[43]

[43] https://www.artprice.com/artist/15079/wassily-kandinsky/painting/24233694/tensions-calmees?p=1 [last visited on 13th January 2023]

Figure 6. Artprice Analytics Tools[44]

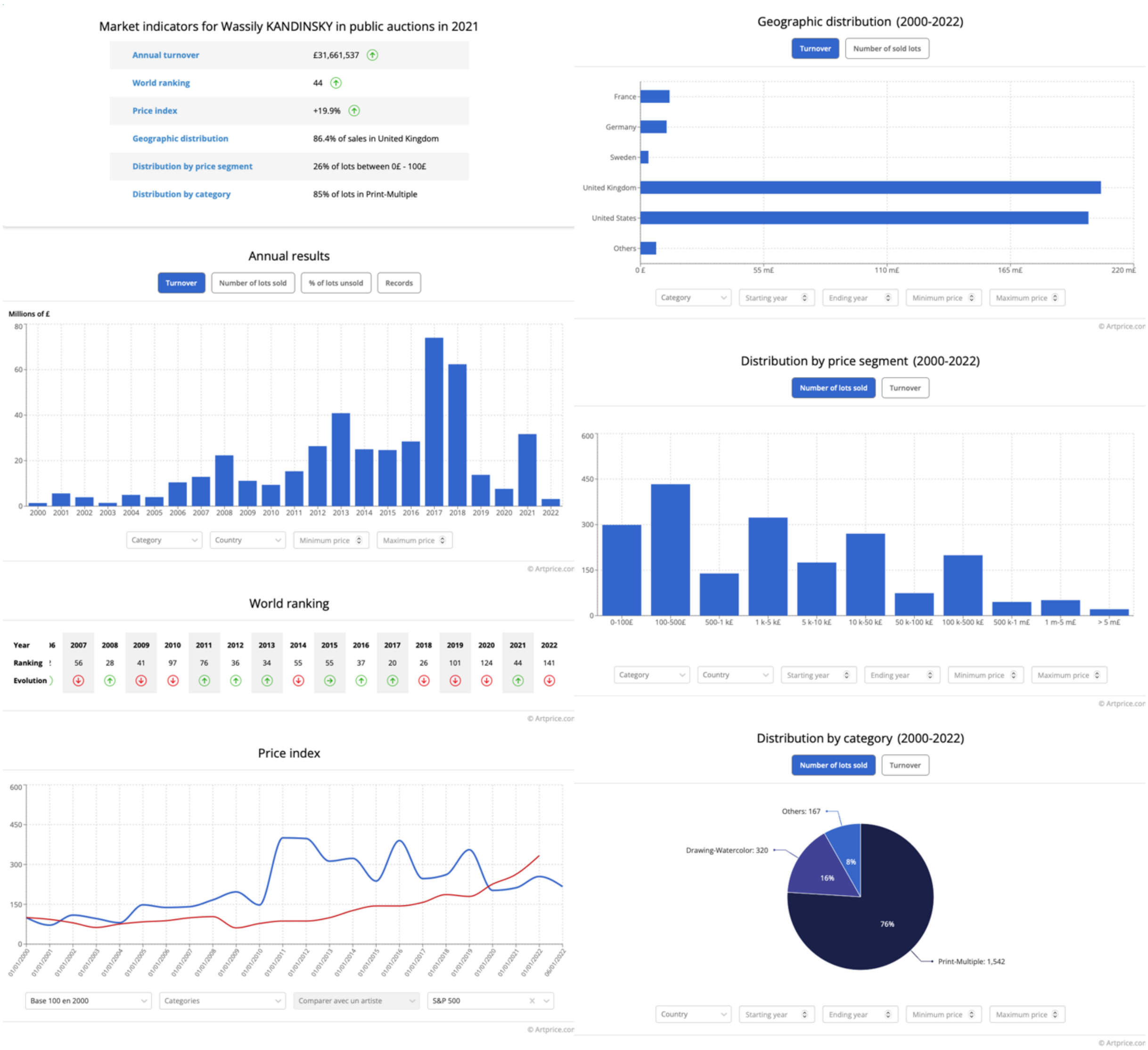


Figure 6 presents advanced analytics for Wassily Kandinsky, processing the artist's public auction results from 2000 to 2022. Annual results include data on turnover, number of lots sold, percentage of lots unsold, and the highest and average records at auction sales sorted by medium and country. The auction results are calculated into a price index with the base year set to 100 which can be compared with stock indices (S&P 500, SAC 40 and DAX). The company also enables comparison between artists by calculating the top 500 artist rankings, which are updated annually based on each artist's performances at auction sales.

44 https://www.artprice.com/artist/15079/wassily-kandinsky/index [last visited on 13th January 2023]

The analytic tools further provide transaction information (number of lots sold and turnover) concerning geographic distribution, price segment and category by medium. These details are visualised into charts which users can modify and configure to suit their preferences.

Other Analytic Tools

ArtTactic asserts that “the relevance of [the] art finance industry is strengthened by the development of the online art market”.[45] Online platforms “improve transparency, valuation, and risk monitoring in the art industry” and “are likely to facilitate further growth in related activities”. In addition to the calculative devices dealing with price data, the company introduces some of the emerging online platforms which support valuation practices. One of the most significant characteristics of these platforms is that they “qualculate” (Cochoy, 2008: 15) and systemise quality-based judgements which derive from different kinds of evaluation. The advent of digitisation and the ability to process data introduce more qualculative data to the market. Examples of such platforms include *ArtReview's Power 100*, which offers an annual ranking of the most influential people in the art world,[46] *The ArtTactic Art Market Confidence Survey*, which tracks changes in sentiment and confidence in the artist market by consulting key experts and stakeholders[47] and *Wondeur*, which provides analysis and comparison of contemporary artists based on non-transactional metrics using artificial intelligence.[48] These are the devices that singularise attributes associated with an artist or an artwork (such as artist career and history of artwork) and thus enable calculation from a variety of data. The importance of calculative competence as the foundation for financialisation cannot be overstated.

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[45] Deloitte & ArtTactic – Art and Finance Report 2014: 100
[46] ArtTactic Podcast: Mark Rappolt – ArtReview (17 December 2019)
[47] Deloitte & ArtTactic – Art and Finance Report 2013: 67-68
[48] Deloitte & ArtTactic – Art and Finance Report 2019: 184

Drawing Graphs

Another interesting point to note is the heavy use of graphs in art market data and indices. As can be seen from Artprice's examples, art market data providers utilise various types of graph (such as line graph, bar graph, histogram and pie chart) to illustrate the price trajectory and its analysis. Latour and Woolgar (1979: 45-52) argued that graphs act as important "inscription devices" which enable discursive practices enrolling allies to its own form of science. They render invisible phenomena into easily comprehensible icons, and by so doing, stabilise the ephemeral flux of phenomena into immutable artefacts. They are visual artefacts which enable comparisons between different ideas, transported as "immutable mobiles" which construct a wider network of favoured viewpoints (Smith *et al.*, 2000: 75). The graphical representation of art market data translates the language of the art world into that of the financial world. The complex entanglements of valuation – the narrative of artists' careers, gallery representation, auction practices – are transformed into compact and transportable images shared within financial communities; they give credentials and persuasiveness to the data qualifying it as objective, scientific knowledge. In this process, the extended network of art-finance is confirmed and strengthened. Graphs are not only an inscription device but also a means to elevate sporadic data into the realm of the so called 'hardest' social science, economics. Latour's graphism thesis is repeatedly found in the design of a variety of calculative devices. As Latour (2000: 75) argued, the "enrolment of allies" involves establishing scientific knowledge, and "the use of graphs is what distinguishes science from nonscience".

3.2. The Embeddedness of Economic Theories

The art price database and analytic tools are market devices which enable a mode of valuation. Constructivist market studies propose that calculative agencies are situated within and distributed across market devices, and these devices constitute market actors as economic entities (Çalışkan & Callon, 2009). Since market devices construct an economy corresponding to the world they conceive, interrogating what these devices are made of is crucial for understanding the construction of the economy. Callon (1998) asserted that a large number of socio-material arrangements in the economy are deeply rooted in neoclassical economics. Economics as a discipline is embedded in the design and management of market devices which in turn shape real-world economies by enacting knowledge and behaviour in everyday practices. As Mackenzie and Millo (2003) have shown in the case study of option pricing theory, economic theories play a performative role in constructing markets, as market arrangements adapt in ways that actualise their assumptions. In other words, economics performs the economy. In this section, I shall illustrate how economic theories and premises are embedded in the art market analytic tools and how they perform the market. The concept of an efficient market in finance (Fama, 1970, 1991) and the construction of indices (Singer, 1978) will be examined.

Efficient Market

Art financiers claim that the development of art price services brings about greater market efficiencies. Market data services continuously circulate updated information about prices, supply and demand, and features of traded goods, resulting in more transparent and confident valuations in the marketplace. Zohar from Mutual Art stated that "The data and the tools (…) will allow a broader confidence on top of the human advisory (…) and make [the market] much more efficient and liquid".[49] An efficient market in financial communities is defined as the market "where there are large numbers of rational, profit-maximisers actively competing, with each trying to predict future market values of individual securities, and where important

[49] ArtTactic Podcast: Anders Petterson and Zohar Elhanani – ArtTactic and MutualArt (15 June 2018)

current information is almost freely available to all participants" (Fama, 1995: 56). The efficient market hypothesis (EMH), which is a cornerstone of neoclassical financial theory, considers that markets are inherently efficient even though they can vary in degree. Fama (1970) suggested three forms of market efficiency: the 'weak form', in which the market reflects the information contained in historical prices; the 'semi-strong form', in which the market reflects publicly available information; and the 'strong form', in which the market fully reflects all information, including private information.

Fama's concept of the efficient market not only contests empirical realities but realises its assumptions in constructing market devices. Art price data establishes the historical trajectory of market prices, provides timely information about public transaction events (such as up-to-date auction results), and expands the scope of public information by providing previously private information. The three forms of efficiency are enacted in market devices to fulfil the assumptions, and consequently perform the market in the direction of stronger efficiency. The EMH and the economic models building on it are embedded in the design and management of art price data, transforming the market to be more transparent and efficient, thereby resulting in a stronger application of the EMH. The performativity of EMH lies in its ability to construct socio-material infrastructures and resources while providing cognitive agencies for financial calculation, which Boeckler and Berndt (2013: 426) referred to as the "performing information-efficient market". As market devices enact the three forms of efficiency proposed by EMH, they help the art market to gradually move towards greater efficiency. This process is characterised by increased transparency, more accurate pricing and reduced information asymmetry between market participants, which art financiers strive to achieve through their performative practices.

Constructing Indices

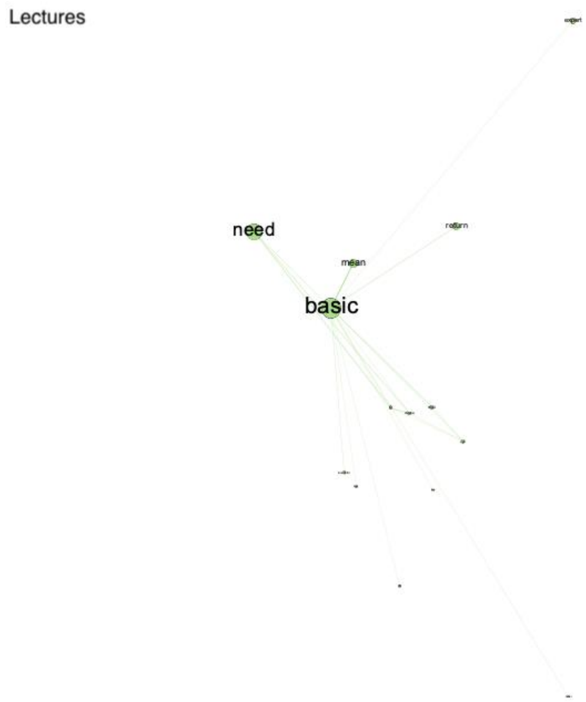
The embeddedness of economic theories is also found in the construction of indices. Assessing the financial performance of artworks has been one of the biggest hurdles for art investment. It derives from the unique characteristics of art as an asset class. Works of art are heterogeneous products with an extremely slow turnover rate; on average, it takes more than thirty years for an individual artwork to be re-transacted in the market (Kräussl, 2012). Economists have introduced methods to overcome these problems of heterogeneity and infrequent trading. They have adopted economic index tools such as repeat-sales indices and hedonic price indices, which are extensively used in the real estate market where similar problems of heterogeneity and infrequent trading are present (McAndrew, 2010). The indices make artworks homogenous and continuously traded products so that they can be calculated and compared with other financial assets.

The repeat-sales method measures changes in the prices of selected artworks over time. It resolves the issue of heterogeneity by using a set of samples held constant during the period so there is no need to consider the characteristics of assets within the model. The difference between market values is a function solely determined by the time difference; it is assumed that the qualities and characteristics of the selected samples remain unchanged. The model is easy and intuitive but it also has some disadvantages. It disregards a large number of single sales and does not account for changes in characteristics, such as physical conditions or the perception of relative quality. In contrast, the hedonic method considers single sales rather than repeat transactions. It implies that the value of art can be regarded as a composite of a number of different attributes or characteristics and seeks to homogenise artworks by removing such characteristics. It subtracts the implicit price of different characteristics from samples, both physical and non-physical, and only leaves the pure time trend free from quality. The method enables a larger and unbiased volume of sample selection, but it is subject to researchers' discretion in identifying attributes and characteristics. The issue of 'selection' will be more thoroughly covered in the next chapter. Since its early application in the 1970s (Singer, 1978), hedonic regression has been increasingly used in the academic literature (Baumol, 1986; Goetzmann, 1993; Renneboog & Spaenjers, 2013) as well as major commercial databases including Artprice and Artnet.

Economic theories also play a constitutive role in constructing art market indices. The art market significantly deviates from the textbook ideal of the perfect market in which a large number of buyers and sellers continuously trade homogeneous products (Mankiw, 2020). The heterogeneity of products, infrequent trading, high transaction and search costs, and strong entanglements within the art world are some of the substantial deviations from the assumption of classical economics. Art market economists have striven to eliminate these features from modelling indices. For example, the changing characteristics of artworks derived from artistic contexts or entanglements within the art world (such as changes in physical surroundings or scholarly assessment) are subtracted in both the repeat sales and the hedonic models. The important point is that these models seek to resolve the problem of heterogeneity by creating indices grounded in the perfect market's assumption of homogenous products. The repeat-sales model controls for quality by selecting the same sample whereas the hedonic model homogenises artworks and constructs a quality-characteristic-free index. This flattens complex realities into the economic ideal of a perfect market, which performs the pricing and valuation of artworks. As Coslor (2011: 141) argued, visual prices work as "anchors" and "guideposts" for valuation; "once the numbers are out in the world and visible, they become reference points, and people will expect future prices to conform to these numbers". In this regard, art indices are not only a tool that reflects prices in the market but something that actively creates prices based on economic models. They play a performative role in constructing prices and thus realise assumptions and models of classical economics.

4. The Valuation of Art

Figure 7. Semantic Network of ‘Valuation’



The theme ‘valuation’ was identified as the seventh largest sub-cluster in the lecture network (3A-7). Despite the potential importance of this topic recognised by qualitative readings, a relatively small cluster was found only in the lecture network. This could be because valuation is a comprehensive theme encompassing various topics which are distributed in other theme clusters. The most central node by degree and eigenvector centrality in the cluster was ‘basic’, followed by ‘need’, ‘mean’, ‘return’ and ‘range’. This adds more complexity to interpreting the network as the top two words have meanings which are too vague to generate concept networks. After consideration of the quantitative and qualitative interpretations, I decided to navigate the network from word pairs instead of focusing on central words. I searched the word ‘basic’ on NVivo and found only one match in the lecture texts, excluding stemmed words; instead, the word ‘basically’ appeared 217 times and was used as a kind of filler word by the lecturer. It can therefore be concluded that the word ‘basic-’ is not semantically significant in the text studied. This is something which cannot be found solely by SMA, reflecting the spoken nature of the lecture text. The second most central word, ‘need’, showed reasonably high centrality but also contains meanings that are too abstract to be used as a starting point for navigating semantic networks. On the other hand, although the following concepts of ‘mean’, ‘return’ and ‘range’ hold semantically concrete meanings, they are weakly connected to other nodes having only three degrees respectively.

I started from some word pairs created around these three words, including ‘mean – risk’, ‘return – expect’, ‘range – fix’, ‘range – criteria’ and range – sumif’, and other salient word pairs identified in the network, such as ‘expert – panel’, ‘need – criteria’ and ‘copy – cell’ (*see* Table 4 in Chapter 3). These concepts pertain to the criteria for evaluating artworks and market elements, as well as specific technical terminology from the Excel workshop. They give rise to topics about the functioning of valuation practices and the process of converting diverse factors into financial values. Focusing on these subjects, in this section I primarily examine the company’s valuation tools and procedures covered in the lecture series. This is followed by the introduction of ArtTactic forecaster, an education platform designed for valuation practices. Although it did not emerge as a significant network in the SMA, it remains intriguing from a qualitative standpoint.

4.1. Practicing Valuation

In *Level 3 – Fair Value Analysis*, the lecture series moves from presenting artist market analysis to individual object analysis. The former issues were introduced in ‘artist and institutional representation’ (in the primary market analysis) and ‘auction sales and practices’ (in the auction market analysis) in the previous chapter, but the lecture series now introduces how to analyse object-specific factors (artwork analysis). These factors compose the contextual information that requires qualitative examination, with ArtTactic providing quantifying metrics to measure these features in valuation. Having completed the contextual analysis of the artist market and the artwork, the lecture introduces the process of market valuation. It demonstrates how to calculate the market value of an artwork from auction price data, using indices and comparables. The analytics are consequently combined into fair value analysis, which represents the company's substantive valuation model. By following these procedures which use calculative devices step by step, the audience can learn and internalise the rationales behind the valuation model as ArtTactic is contributing to the performation of a financialised art market.

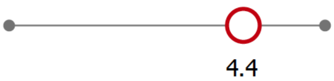
Artwork Analysis

Figure 8 presents the company's artwork valuation metrics retrieved from the *Artist Report 2017*. It examines one of Damien Hirst's butterfly paintings, *Full of Love* (1997/1998). The valuation metrics investigate five object-specific characteristics which affect the value of art: series, period, colour, size and provenance. They are the information attached to the artwork and at the same time entangled with the surroundings of the art world (see also Chapter 3). The five-scale metric breaks down and categorises these socio-material entanglements and quantifying contextual, tacit interpretations into a calculable score system. In the example of *Full of Love*, ArtTactic marks up the characteristics of the artwork with the assistance of expert panels: the butterfly colour paintings are considered to be Hirst's second most important series of works after his formaldehyde series (series); the late 1990s is deemed the most significant period for the artist (period); his bright, red paintings tend to show strong financial performances in the market (colour); his smaller paintings are relatively less popular amongst collectors (size); the painting was previously part of the *Pharmacy* collection (provenance). The five factors are evaluated on a five-point scale and aggregated into a single score. In this process, the material-contextual features of the artwork are detached from their original contexts and become commensurable with one another. Within this designated calculative space, the assessments of value are inscribed as stabilised, comparable and objective numbers. The scorecard serves as another calculative device which categorises and evaluates characteristics of artworks, enrolling them in the space of calculation, which is the initial step of financialisation (Gulledge *et al.*, 2015).

Figure 8. ArtTactic Market Metrics – Artwork[50]

ArtTactic Market Metrics: Artwork Factors

Art Work Factors	1	2	3	4	5	Comments
Series					○	75% of experts said Butterfly colour paintings were the most important
Period					○	61% of experts said that works produced between 1995-1999 were most important
Colour					○	A much larger red Butterfly colour painting 'Love you' (2007) – sold for $3 million in February 2008 - twice its high estimate of $1-1.5 million. Two out of three larger red paintings have exceeded its high estimate
Size			○			Bigger works by Damien Hirst tend to be more attractive, this painting is on the small side.
Provenance				○		This painting was part of the *Pharmacy collection*, which was sold at Sotheby's in October 2004. This was one of the most successful single-collection auction sales ever in terms of exceeding its expectations.



Market Valuation

According to the lecture, market value is defined as "the price at which the artwork is exchanged between parties in the market".[51] Since the market value is largely determined by past prices of similar items, publicly available auction data play a key role in evaluating values. The lecture demonstrates an exercise to evaluate an artwork's market value employing auction price data. It continues with the example of *Full of Love* based on the

[50] ArtTactic Artist Report – Damien Hirst (2017)
[51] ArtTactic Lectures: Fair Value Analysis – Lecture 1 Market Value vs Fair Value

classification presented in the artwork analysis. The work is a red sporadic butterfly painting created between 1994 and 1999 with the dimensions of 91.5 x 152.5 cm. The lecture shows the procedures for evaluating the work at the year of 2012, eight years after it was sold for $577,500.

The first step in the valuation involves examining the auction trends of the artist's similar works. It creates two simple indices from 2004 to 2012 using different sets of artwork: one from the sporadic butterfly colour paintings and the other from a wider range of Hirst's paintings. The indices flatten the market inflation and help us understand price changes caused by external factors. By using indices, auction results from different years are adjusted to today's values and they can be compared in the same line. In the lecture, the company creates its own simple indices for instructional purposes, but in practice, more sophisticated market indices are usually employed. The second step is to identify 'comparables'. It takes a subset of butterfly colour paintings which closely resemble the object in terms of period, size, subject matter and other factors. Four works which had sales records between 2004 and 2012 were selected: *A Lovely Day*, *Hello Love*, *I Miss You* and *I Fucking Love You*. The identification of comparables is an important economising process as it subjects diverse quality-based judgements to categorisation. The final step is to estimate the work's market value. The prices of comparables are adjusted to the current values in order to evaluate the artwork (*see* Figure 9). The table displays the hammer prices of comparables, which are adjusted by the price indices of the year (all and sporadic butterfly). The statistical figures, such as mean, median, low and high, are calculated from the adjusted hammer prices; these are the reference points for market valuation, which are visualised in the form of a band graph presented below.

Figure 9. Market Valuation[52]

Average price index for all data (spot, spin, butterfly)

Average price index for butterfly sporadic only

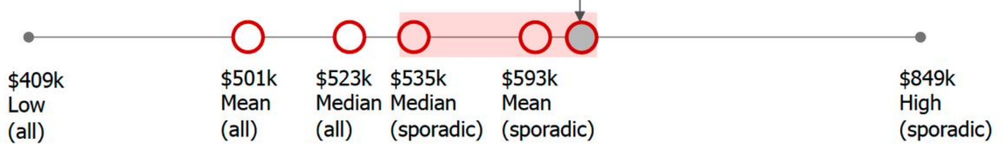
Adjusted hammer prices (using market adjustments all data)

Adjusted hammer prices (using market adjustments butterfly sporadic)

Sale Year	Title	Sale Date	Hammer Price	Market Inflation (all)	Market Inflation (sporadic)	Adj. Hammer (all)	Adj.Hammer (sporadic)
2004	Full of love	18/10/2004	$577,500	100	100	612,150	612,150
2004	A lovely day	18/10/2004	$505,000	100	100	535,300	535,300
2007	Hello love	12/10/2007	$1,426,740	289	178	523,303	849,632
2009	I miss you	16/10/2009	$456,400	113	104	428,127	465,177
2011	I fucking love y	11/05/2011	525,000	136	111	409,191	501,351
2012 (Today)				106	106		
					Mean (average)	501,614	592,722
					Median	523,303	535,300
					Low	409,191	465,177
					High	612,150	849,632

'Full of love' sold for $577k in 2004 which is the equivalent of **$612k** in 2012 if we use the price index (both **all** and **sporadic:** +6% increase)

Anders Petterson
Founder & Managing Director
ArtTactic



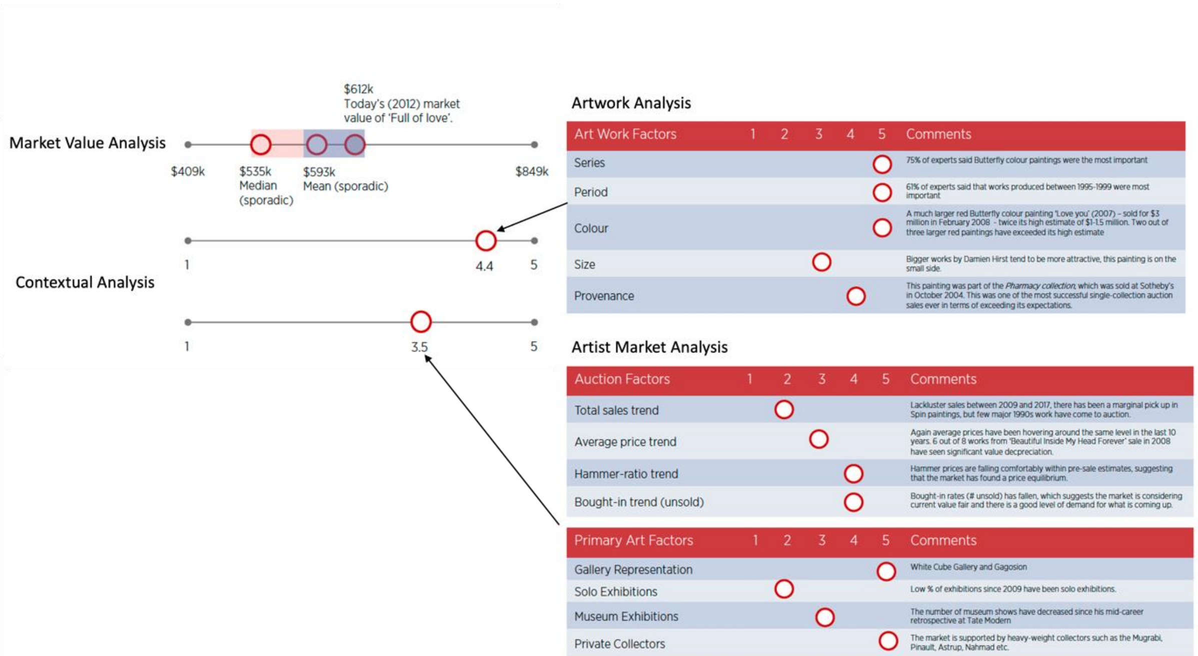
Fair Value Analysis

ArtTactic defines fair value as "the exchange value of an artwork between knowledgeable parties (or market insiders)".[53] It is distinguished from market value as it is a "rational and unbiased estimate" of the potential market price, whereas market value is often distorted amid the lack of transparency and asymmetric information. This is an intriguing definition as the company assumes that the actual worth of an asset deviates from the value determined by market forces. Economists who advocate for market efficiency argue that information is distributed so quickly amongst market participants that there is no time to spot discrepancies between an asset's "fair (intrinsic) value" and its market value (Leins, 2022: 351). ArtTactic's definition however implies that pricing in the art market is fundamentally inefficient, and that the true value can be sought by informed valuation. In the final part of the lecture series, the company introduces fair value analysis, bringing together all of the analytic tools presented

[52] ArtTactic Lectures: Handout – Fair Value Analysis
[53] ArtTactic Lectures: Fair Value Analysis – Lecture 1 Market Value vs Fair Value.

through the lecture series. The company's analytic model consists of market value analysis and contextual analysis. Market value analysis utilises quantitative tools to calculate estimated market value (*see* Figure 9) whereas contextual analysis employs evaluation metrics to assess qualitative information. Contextual analysis is further divided into artwork analysis (*see* Figure 8) and artist market analysis (*see* Figures 4 and 5 in Chapter 2). Figure 10 provides a summary of how these valuation tools are integrated into fair value analysis, combining market-side valuation using auction price data and contextual valuation using institutional information. Taking into account the relatively strong institutional contexts, the company estimates the fair value of the artwork to be between $600,000 and $620,000.

Figure 10. Fair Value Analysis[54]



ArtTactic's valuation model embodies its understanding of the art world's value system. As discussed in the previous chapter, the company reckons that cultural and economic validations are the two pillars that uphold the value of art. By opening the black

[54] ArtTactic Lectures: Handout – Fair Value Analysis (edited by the author)

box (Callon, 1987) of valuation tools, the company's dual strategies are revealed: negotiating with the structure of the art world while performing financialisation. It states that "we have to build up a framework, a process, a transparent way of actually looking at data and to agree on the factors that will impact value".[55] While examining data pertains to the market value analysis, selecting factors relates to the contextual analysis. The company's calculative devices enact a mode of valuation by suggesting how calculation arises from quantitative and qualitative information. The fair value proposed by the company becomes visible in its reports (and other media) and can establish a new guidepost for valuation. As the price in the market is anchored around this reference point, the valuation model self-fulfils its mechanism by constructing the market price. This is a similar process to that demonstrated by McKenzie and Millo (2003) in their study of how options prices were shaped by the new pricing theory.

4.2. Creating Habitus

The use of calculative devices not only requires an understanding of the mechanisms but also practical mastery. The calculation must be acquired and fully embodied, in Bourdieu's term, the "habitus" of calculation needs to be established. According to Bourdieu, habitus is "a system of dispositions acquired through a relationship to a certain field" (Bourdieu, 1990a: 90), incorporating the particular logic of the field and developing an unconscious "feel for the game". For individuals to become adept at using these devices, they must internalise the process of calculation, developing the habitus of calculation. ArtTactic provides a space for developing calculative habitus, where participants can familiarise themselves with calculative devices and internalise the rules of the game in the field. Through the exercise of calculative practices, participants gradually become equipped with the relevant tools and knowledge, making the use of these devices second nature. As Gulledge et al. (2015: 9) stated, "a

[55] ArtTactic Lectures: Fair Value Analysis – Lecture 6 Fair Value Analysis

practical sense of things is gained through experience and likened to being a fish in water". Through continuous exposure and practice, participants effectively hone their calculative habitus.

ArtForcaster

ArtTactic runs an education platform called ArtForecaster where players can participate in weekly forecasting competitions based on lots coming up in international auctions. The company first launched the service in 2013 as an "educational gamification of learning"[56] and it has gradually evolved into a platform where art world professionals participate to access market intelligence. The platform provides quizzes linked to live international auction events, with participants anticipating the hammer price of lots. Quizzes are marked after the auction results are published and aggregated into competitions over the course of a week or several weeks. Figure 11 shows the page of a live quiz for Sotheby's ArtCrush 2022 New York auction held on 6 August 2022. Participants are required to indicate the price bracket of the lot, using publicly available information about the artwork (such as an auction catalogue) and sometimes other analytic tools provided by the company. As the game proceeds, ArtTactic introduces additional tools and resources, such as comparable transactions and the company's market reports on the artist. Once the predictions are submitted, players can view the distribution of other participants' answers, categorised by all users, expert users, and users they have 'followed'. Players earn credits by participating in quizzes and get extra credits if their answer is right. The performances are tracked by the scoring system, which assigns players to one of fourteen skill levels; each of these skill levels provides specific rewards ranging from free research reports to monetary compensation for forecasting skills. The score incorporates a smoothing adjustment to remove temporary spikes in performance. Each

[56] ArtTactic Podcast: Anders Petterson – Art Forecaster (9 May 2017)

season, the rankings are posted on the board divided into the expert league and the rookie league, and players can follow up to six others to compare their gameplay and progress against their own.

Figure 11. ArtTactic Forecaster[57]

ArtForecaster exemplifies the gamification of art-finance education. The game is a means to enhance the skills and mindsets of calculation, through which participants engage in a specific form of self-transformation. According to Kapp (2012: 10), gamification refers to "using game-based mechanics, aesthetics and game thinking to engage people, motivate action, promote learning and solve problems". It is increasingly adopted in different contexts and for a variety of purposes, including business, organisational management, in-service training and education (Caponetto *et al.*, 2014). In the financialisation literature, Fridman (2016) showed how a board game contributes to constructing the *homo oeconomicus*, someone who seeks financial self-help through financial literacy; Van de Heide and Zelinsky (2021) examined the emerging discourse of finance gamification which neutralises uncertainty and rationalises financial behaviours. Gamification creates the habitus reflective

[57] https://artforecaster.com/quizzes/painting_sothebys_NY_060822 [last visited on 3rd August 2022]

of the rules of the game (or mode of calculation) by "enhancing the processes enacted and the experience of those involved" (Caponetto *et al.*, 2014: 50). ArtForecaster provides the information to be considered, as well as the tools that can be used for valuation; players familiarise themselves with the calculative devices and logics by playing the game and they acquire the habitus of valuation from such experiences.

An important mechanism of ArtForecaster is its repetition and continuity. Since its launch in 2013, the platform has been running competitions weekly. This also applies to the company's other devices; the podcast series has been updated every week since 2009 and the art market reports are also released on a regular basis (monthly or yearly). The routinised repetition of hands-on practices significantly contributes to the construction of habitus as it reinforces patterns of practice and thought which become automatic and habitual. By repeatedly encountering the norms and values of finance, actors develop the *sens pratique* of the field; its dispositions become ingrained in their habits, routines and ways of thinking and are internalised as part of their habitus. This includes familiarising themselves with financial jargon, interpreting market data and understanding the nuances of valuation and accumulation. Over time, these acquired skills and knowledge become an integral part of their daily routines and thought processes, developed into more solid market devices of financialisation.

The platform is also designed to work in synergy with the lecture series. In fact, the information and tools provided in the forecaster game are quite limited compared with the detailed valuation methods introduced in the lectures. ArtTactic encourages players to learn skills from the lecture series, to practise on the platform over time and to become intimately familiar with the devices. The company actively attempts to link the platform with lectures; it provides free online courses on valuation as game rewards and consistently makes mention of the platform in the lecture series. The game motivates players by challenge (taking quizzes), achievement (skill levels and rewards) and competition (rankings and following) (Mauroner, 2019), through which it gradually fortifies the habitus of calculation. The platform induces constant participation in the game; it sends reminders about upcoming quizzes and those about to end; the score is negatively affected if the player is inactive. As Gulledge *et al.* (2015: 20) quotes Bourdieu, the acquisition of habitus requires a “practical mastery”, such that it becomes a “second nature” of the agent. The company’s gamification tools facilitate this transformation with repetitive practices of calculation. ArtForecaster not only supports the development of a valuation habitus but also fosters a community of like-minded individuals who share a common interest in art and finance. This community aspect amplifies the learning experience and further reinforces the habitus by facilitating the exchange of strategies among players. By engaging with others, players can observe different approaches to valuation, discern the merits of various methods and learn from each other’s successes and failures.

5. Conclusion

The complexity of valuation practices suggests that the valuation of art is not an absolute, pre-existing law that can be discovered and universally applied. Numerous valuations exist, each reflecting different contexts and entanglements of the marketplace. Markets serve as the arenas where these diverse valuations compete and negotiate (Godechot, 2016), ultimately shaping the economic structure and determining the perceived value of assets. Market studies emphasises that a mode of valuation is enacted through an array of socio-material arrangements, referred to as ‘calculative devices’ (Callon *et al.*, 2007). ArtTactic introduces these devices which have emerged in the art market, such as data provision services, analytic tools and valuation matrices. Each of these devices contributes to the formation and enactment of financial valuation, which in turn influences how art is valued. It categorises contextual information and translates it into the language shared with finance. It is important to note that these calculative devices are heavily rooted in financial theories, which serve as the foundation for valuation (Callon, 2007). They render the market transparent, divisible, quantifiable and without frictions, mirroring the textbook ideal of an efficient market. By introducing these devices and promoting their use, the company effectively helps financial valuation to perform the market. It shapes how artworks are categorised, classified and finally valued, enacting a mode of valuation in the market.

The effective use of calculative devices necessitates various performative works (Beunza & Ferraro, 2019), including introducing these tools to the audience, educating them on the underlying rationales and theories, and fostering the development of a calculative habitus (Gulledge *et al.*, 2015). This process involves the dissemination of knowledge through educational platforms as well as hands-on workshops utilising devices. ArtTactic's practices tie the audience with the calculative devices which they introduce; as individuals become more proficient in using these devices, they develop a habitus, or a set of dispositions which enable financial valuations. Supported and enacted by its respective market devices, a dominant valuation has the power to perform the market. The prevailing valuation shapes market practices, influences decision-making processes and determines the perceived value of assets within the market. In this regard, the financialisation of art is a socio-political process around the adoption of calculative devices. The enactment of valuation not only requires the design and management of market devices but also the performative works to demonstrate and solidify them. ArtTactic plays a crucial in this process, facilitating the adoption of calculative devices, equipping market participants with the calculative agencies and ultimately enacting the mode of financial valuation within the art market.

VI. Introducing Accumulative Devices

> Procrustes had a peculiar sense of hospitality: he abducted travelers, provided them with a generous dinner, then invited them to spend the night in a rather special bed. He wanted the bed to fit the traveler to perfection. Those who were too tall had their legs chopped off with a sharp hatchet; those who were too short were stretched. (…) In the purest of poetic justice, Procrustes was hoisted by his own petard. One of the travelers happened to be the fearless Theseus, who slayed the Minotaur later in his heroic career. After the customary dinner, Theseus made Procrustes lie in his own bed.
>
> – Nassim Taleb, *The Bed of Procrustes*

1. Introduction

Since Callon and Muniesa (2005a) argued that markets are collective devices which enable calculation, the notion of a calculative device has been at the centre of market studies. The discussion of economisation (or financialisation) has developed around calculative agencies and their enactment but the politics of market devices and accompanying structural transitions have been largely unexplored. It has been only recently that an increasing number of studies have discussed the politics of socio-material devices (Beunza & Ferraro, 2019; Fernandes *et al.*, 2019; MacKenzie, 2018; Roscoe & Mason, 2020). Those studies focused on struggles and negotiations around the construction of markets and shed light on its political implications. Reflecting the problematisation of these works, in this chapter I investigate the financialisation of art, further employing some key concepts from political economy: the regime of accumulation (Van der Zwan, 2014) and its component devices. This growing body of research also emphasises the importance of understanding the socio-political context in which market devices are situated. Market devices are not neutral tools; they embody and reproduce power relations and ideologies which can shape market outcomes. Financialisation brings about various accumulative devices and creates the agencement of financial accumulation in the market. As discussed in the literature review, the structural transitions captured by political economy can be successfully converged with the economisation thesis in examining financialisation. Krippner (2005: 173) defined financialisation as “the pattern of accumulation in which profits are made increasingly through financial channels rather than through trade and commodity production”. It is not only about changing modes of calculation but also the transition to accumulative systems achieved by such calculations.

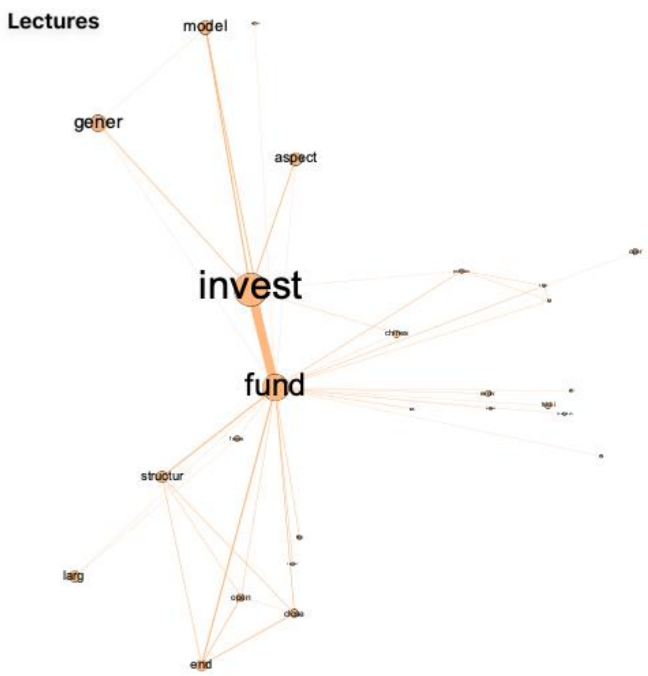
To reconcile macro-level analyses of political economy with the micro-level politics of market studies, I would suggest the concept of accumulative devices as an extended arrangement of calculative devices. They are material and discursive arrangements which enable financial accumulation and are clustered with various calculative devices that configure calculation. The different calculative power and modalities lead to a different regime of accumulation as a mode of accumulation is built upon – but not limited to – calculative agencies. The agencement of accumulation functions within the circulation of M-(C)-M’. The accumulative devices support the “flexible accumulation” (Harvey, 1989: 141) in which financial circulation stretches within two axes; they expand the scope of accumulation to new areas of applications (horizontal expansion) and accelerate circulations within existing activities (vertical expansion). The financialisation of art introduces new investment vehicles dealing with artworks, which were not traditionally considered as an investment asset, and facilitates market devices which increase the liquidity of art to accelerate the cycle. Stockhammer’s (2004: 720) definition of financialisation as the “increased activity of non-financial businesses on financial markets” represents the horizontal aspect of financialisation and the definition of Froud et al. (2000: 104) as “a kind of speed-up in management work” represents the vertical aspect.

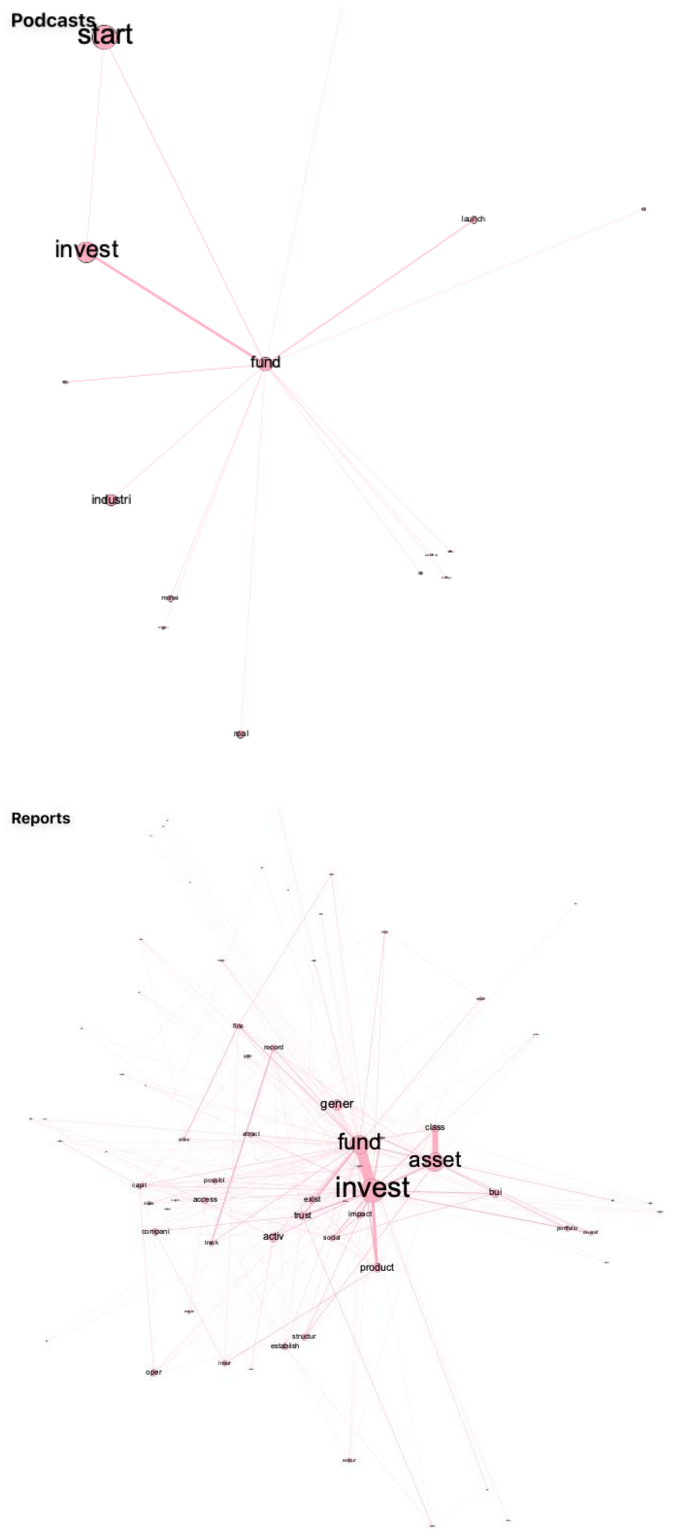
In both definitions, what is distinctive in the financial economy is that the dominant form that the circulation affords is not a commodity but an asset. In this setting, things are not concerned by how they satisfy human needs but how they generate more money for capital accumulation. Since the ultimate end is money, which is indifferent in itself, utility is determined solely by its amount, and this creates an endless cycle of self-expansion. The process is abridged into the cycle of M-(C)-M' in Marx's classical account (1890), where commodities are traded as a means to accumulate more money. This is distinct from the early capitalistic form of C-M-C (commodities transformed into money which is then transformed back into commodities), in which the final product is exchanged for its use value. Birch and Muniesa (2020: 3) referred to this transition as "assetisation", emphasising the asset base aspect of financialisation. Here, an asset is "a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity" (Burton & Jermakowicz, 2015: 39); the accumulation of capital is driven by forward-looking, investment-oriented calculative agencies.

In this chapter, I examine how ArtTactic introduces accumulative devices to construct the agencement of art investment by following the topics identified by SMA. Six main themes were identified under the second-order dimension of 'introducing accumulative devices': 'art investment fund', 'wealth management', 'art lending', 'fractional ownership and technology', "tax' and 'art insurance'. First, 'art investment fund' and 'wealth management' refer to investment vehicles which enable and foster art as an investment. The accumulative devices perform the market to establish a new regime of accumulation, exerting horizontal forces of financialisation. The company demonstrates these devices and performs the market by introducing theoretical bases, financial characteristics and finally socio-cultural justifications for art investment. Second, 'art lending' and 'fractional ownership and technology' represent financial instruments designed to increase the liquidity of art as an asset class. They are market devices of vertical expansion which facilitate flexible accumulation, a system in which money and commodities are flexibly exchanged. Third, 'tax' and 'art insurance' shed light on issues around the structural advantages and challenges of art investment. Although there are some tax advantages to investing in art due to relatively lenient legislation in many countries, the holding risks stemming from the materiality of art are considered to be a major drawback for art investment. Along with efforts to bring regulations to the market (*see* Chapter 5), ArtTactic introduces market devices to take advantage of or overcome these issues, which contribute to financial accumulation in the art market. Throughout the performation, ArtTactic encounters overflows and misfires (Callon, 1998): the company displays an ambivalence to the pure financialisation of art, drawing on the socio-cultural justification for art investment.

2. Making Art an Investment Asset

Figure 1. Semantic Networks of 'Art Investment Fund'

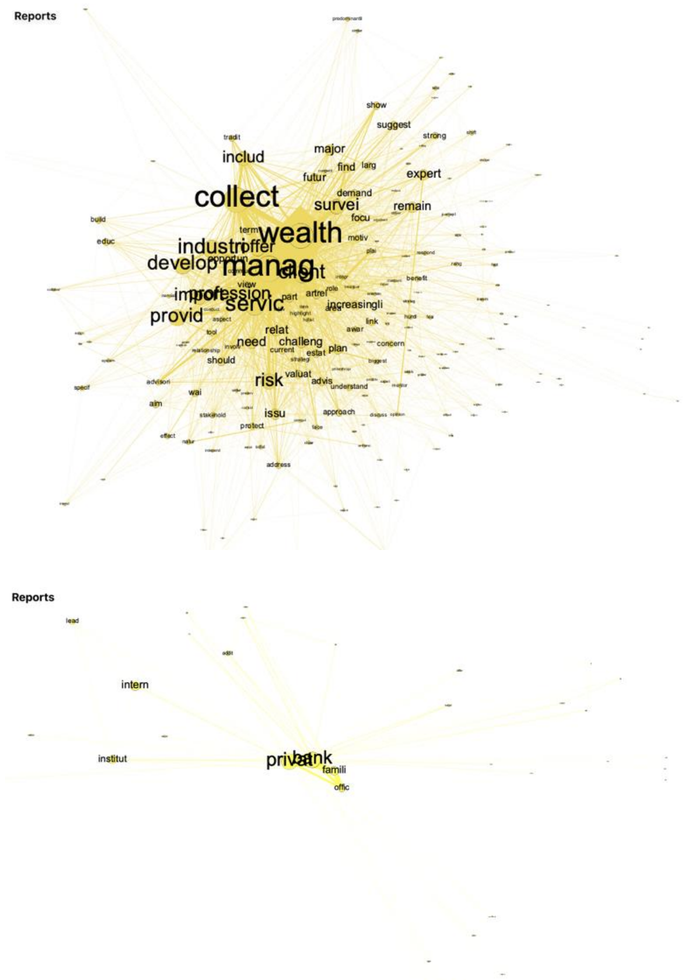




The SMA identified the theme of ‘art investment fund’ in all three networks (3A-4, 3B-6 and 3C-6). It constituted the fourth largest cluster in the lecture network (5.46%), the sixth in the podcast network (2.93%) and the sixth in the report network (6.71%). The node ‘invest’ was the most connected node in the lecture (degree=73, eigenvector centrality=0.6313) and report networks (degree=406, eigenvector centrality=0.9225), whereas it was the second most connected node (degree=22, eigenvector centrality=0.2518) after ‘start’ (degree=30, eigenvector centrality=0.4298) in the podcast network. Since the most central node ‘start’ contains meanings which are too vague to begin exploring semantic networks, the navigation of the podcast network also started from ‘invest’. In all three networks, ‘invest’ created the strongest word-pair with ‘fund’, generating the extended concept of ‘invest(ment) fund’.

Figure 1 represents the ego-networks (depth=1) around the central concept ‘invest(ment) fund’ in the three networks. In the lecture network, concepts around structures of art investment fund are represented in the lower left corner, such as ‘structur(e)’, ‘open’, ‘close’ and ‘end’; on the top, ‘gener(al)’, ‘model’ and ‘aspect’ represent general features about art investment funds; on the right-hand side, ‘british’, ‘rail’, ‘pension’ and ‘oper(ation)’ articulate the case of the British Rail Pension Fund (BRPF), which is historically one of the most successful examples of an art investment fund. The sub-networks of the podcast show relatively simple structures. Centred on ‘investment fund’, the network shows concepts related to rationales for art investment on the left side, such as ‘hedge’ and ‘money’ being further connected to ‘opportunity’, ‘risk’, ‘mean’ and ‘margin’; on the lower-right, ‘artemundi’, ‘plan’, ‘strategy’ and ‘efficient’ represent another case of the art investment fund Artemundi; on the top, concepts such as ‘start’, ‘launch’ and ‘surge’ imply the emergence of art investment funds. The report network provides a more comprehensive picture. On the right, the network includes concepts such as ‘asset’, ‘class’, ‘portfolio’, ‘diversify’, ‘buy’ and ‘hedge’, elaborating rationales for art investment; on the lower left, ‘product’, ‘structure’, ‘establish’, ‘operate’ and ‘ensure’ represent structures and operations of art investment funds; on the top left, ‘artemundi’and ‘falcon’ show active examples of art investment funds; the top right network shows other luxury goods for investment, including ‘wine’, ‘jewellery’, ‘classic’, ‘car’ and ‘stamp’.

Figure 2. Semantic Networks of ‘Wealth Management’



SMA identified the theme of ‘wealth management’ in the report network (3C-1, 3C-8). Two distinctive sub-networks which represented ‘wealth management’ were found in the report network (*see* Figure 2). These networks revolved around two different word-pairs (‘wealth management’ and ‘private bank’) closely located in the graph, which suggests that they are conceptually close to each other. The first sub-network ‘wealth management’ (3C-1) was the largest theme cluster in the report network, accounting for 10.94% of the total share. The most connected node was ‘manage’ (degree=498, eigenvector centrality=1.0), followed by ‘collect’ (degree=470, eigenvector centrality=0.9789) and ‘wealth’ (degree=461, eigenvector centrality=0.9579). The node ‘manage’ created the strongest word pair with ‘wealth’, generating the central concept of the sub-cluster ‘wealth management’. The second ‘wealth management’ cluster (3C-8) was the eighth largest (3.50%) of the report network, within which the most central nodes were ‘private’ (degree=213, eigenvector centrality=0.6292) and ‘bank’ (degree=223, eigenvector centrality=0.6076). These two top nodes made the strongest word pair ‘private bank’, which is the main agent of wealth management in the art market.

Figure 2 shows ego-networks centred on ‘wealth’ and ‘bank’ as they formulated the most semantically meaningful networks. On the left-hand side of the first cluster, concepts such as ‘industry’, ‘offer’, ‘service’, ‘profession’, ‘provide’, ‘develop’, ‘advisory’ and ‘educate’ show how the industry provides wealth management services in relation to art investment, including art advice and customer education; on the upper right, ‘client’, ‘survey’, ‘expert’, ‘demand’, ‘motive’, ‘collect’ and ‘include’ show the perception of market participants regarding art investment; on the lower-right, the cluster encompassing ‘risk’, ‘challenge’, ‘issue’, ‘aware’, ‘concern’, ‘hurdle’ and ‘understand’ represents the risks and challenges of including art in wealth management. The second cluster of wealth management shows a simple, yet sporadic network. Major players including ‘citi’, ‘deutsch’, ‘jp’, ‘morgan’ and ‘weifang’ are identified around the central concept ‘private bank’; some additional concepts related to private bank, such as ‘family’, ‘office’ and ‘institution’ also appeared.

As the SMA suggested, ArtTactic puts a substantial effort into introducing investment vehicles which make art an investment asset. The company provides a separate three-hour lecture which introduces the evolution of art as an asset class and the current art finance industry; the podcasts invited twelve different companies (art funds and art lending businesses) to make presentations about their investment products; the reports have had 'art investment' and 'wealth management' sections in all six issues. Roscoe (2014: 194) described how investors are constructed in interaction with investment services in the market as they make use of market devices and pick up market knowledge, it is "a heterodox conception of market function that binds investors to investment service providers through entanglements of (sometimes secret) knowledge, discourse, specialised tools and personal, even emotional, relationships". ArtTactic's discursive devices – the lectures, podcasts and reports – provide market knowledge that ties investors with accumulative devices and has them engage in the regime of accumulation. In this section, I investigate two horizontal accumulative devices which utilise art as an investment and show how ArtTactic helps the enactment of these devices. It first examines how the company demonstrates economic justifications for these devices focusing on art funds and then trace the development of comprehensive art wealth management and the company's concomitant performative strategies to validate these devices.

2.1. Demonstrating Accumulative Devices: Art Funds

Art as a repository of value is not a new concept. The origin of collecting art can be traced back through human history: the ancient civilisations of Egypt and Greece accumulated art as a symbol of wealth and status; during the Italian Renaissance, patrons such as the Medici collected antique works as well as contemporary art of the time; in the nineteenth century, wealthy industrialists replaced aristocrats as the leading art collectors. Throughout history, art and collectibles have always been an important part of wealth, considered as a perennial store of value. However, the "attempted transition" of art from something that can be bought and held to a tradable asset has been made along with the growing sophistication of the public-equity markets since the 1980s (Gerlis, 2014). Financiers have sought to develop alternative trading instruments out of the existing mechanism, rendering things into assets to be traded with the logic of finance. Horowitz (2014: 153) referred to this as the “grafting of modern finance theory onto the art market”, showing a distinct difference from the traditional concept of art as a repository of value.

Art funds are one of the vehicles which gained popularity in the early 2000s with a stream of these ideas. They are a radical form of art investment as they solely focus on the financial performance of art; in most cases, investors do not have physical access to the artwork, giving up the pleasure of appreciation; art is in the same category as stocks, bonds and other equities. Art funds have been modelled on private equity businesses which raise outside investment to create a diversified portfolio, giving a specific time span and compensation structures based on a targeted rate of return (Gerlis, 2014). ArtTactic presents the rationale of art investment funds as well as their structures and operations. The lectures, podcasts and reports convey the fund’s theoretical basis and financial performance, the results of surveys of art investment, and the historical and on-going practices of art funds. They not only introduce the products but also provide justification for these devices. The assessment includes some drawbacks and limitations of art funds, and it leads to an analysis of recent trends which attempt to overcome these fundamental issues in art investment.

Theoretical Basis

To demonstrate the validity of art funds as accumulative devices, ArtTactic first seeks to provide financial justification for art investment. In the lecture series *Art and Finance – Trends and Developments,* the company suggests two main reasons for investing in art; art “serves as a portfolio diversification tool”, and its “low correlation with other assets” can “hedge the risk” in economic downturns.[58] They are in fact from the same school of thought

[58] ArtTactic Lectures: Art and Finance – Lecture 1 Art as an Asset Class

based on financial theories: Modern Portfolio Theory (MPT) and its derivative Capital Asset Pricing Model (CAPM). Developed by Markowitz (1952), MPT postulates that an optimal portfolio can be constructed if the financial characteristics of assets are identified, suggesting that there is an optimal diversified portfolio which is preferable to all non-diversified portfolios. His findings have been developed into the CAPM (Sharpe, 1964), a widely accepted pricing tool in the contemporary financial field. What matters in these theories is correlation between assets, since the efficiency of a portfolio can be increased regardless of the returns and volatilities of individual assets. Whereas prior to Markowitz it was generally believed that aggressive investors would purchase more volatile assets than conservative investors, portfolio theory advocates a more nuanced process of asset diversification in which investment risk is spread across assets with different correlations to the market basket (Horowitz, 2014).

ArtTactic utilises these theories to present the usefulness of art as a diversification tool; the theories are embedded in the design and management of art investment devices. Based on these theoretical models, the company introduces the financial characteristics of art and how they potentially contribute to the accumulation of capital. A key point to emphasise is the performativity of these theories — that is, the way they not only describe but also perform economic realities (Callon, 1998). As discussed in the previous chapter, the financial theories within these market devices do not merely provide analytical frameworks, they also enact their assumptions, thereby influencing the practices of market actors and the trajectory of the real-world economy. The devices, embedded in financial theories, equip market actors with calculative and accumulative agencies corresponding to the theories, shaping their economic behaviours and perceptions. The more market actors evaluate art based on these financial devices, the more its price aligns with their models (MacKenzie & Millo, 2003);

including art in their portfolio consequently contributes to the accumulation of capital. The financial models realise themselves through market devices and construct the agencement of art finance creating a performative cycle whereby theories perform the market, which then further reinforces the theories.

Figure 3. Correlation with Equity[59]

Full period: Januar 1976 – March 2009

Exhibit 4

Correlation Indices

Art100 with:	World Equity	US Equity	UK Equity
Full period	0.1383	0.1041	0.0800
20 year	0.1305	0.1123	0.1040
10 year	0.2275	0.2102	0.2028
5 year	0.2128	0.2239	0.1602
2 year	0.4574	0.4647	0.4580
1 year	0.4703	0.4709	0.4362

Contemporary Art 100 with:	World Equity	US Equity	UK Equity
Full period	-	-	-
20 year	0.0780	0.0410	0.0358
10 year	0.0737	0.0906	0.0804
5 year	0.1966	0.2498	0.1403
2 year	0.5422	0.5275	0.5504
1 year	0.5248	0.5277	0.4948

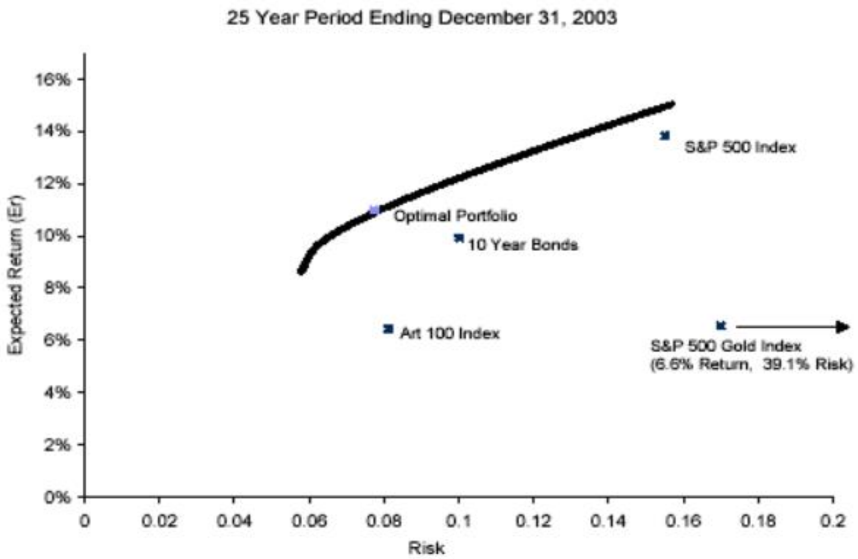
** Full period is from January 1976 until end of March 2009, 20 year data from March 1989, 10 year data from March 1999, 5 year data from March 2004, 2 year data from March 2007, and 1 year data is from March 2008.

ArtTactic justifies the inclusion of art in the overall portfolio using Markowitz's portfolio optimisation model. The company presents the correlation between art and other equities (*see* Figure 3), citing Pownall's research.[60] As mentioned above, the correlation of an asset (or a portfolio) with other assets (or portfolios) plays a key role in MPT. Correlation ranging from -1 to +1 refers to the statistical relationship between two different asset classes; a positive number means that the two assets move in the same direction and a negative number means the opposite. MPT suggests that the total risk of a portfolio can be significantly reduced if the returns of different assets are not perfectly positively correlated

[59] ArtTactic Lectures: Handout – Art and Finance
[60] Rachel Pownall is an art finance academic at Maastricht University. Petterson mentions her name during the lecture but does not give the exact source of the data.

(CORR=1). If the price of an asset moves, either up or down, the other asset moves to the correlated extent, and it offsets or reduces the fluctuation of the overall portfolio. The lecture shows the historical correlation between art and equities: in the mid to long term, the returns show a low correlation to equities close to zero, even though “the art market cycle often coincides with other cycles in the financial market”. This means that including art in portfolios provides a great opportunity for hedging systemic risk, and thus theoretically improves the efficiency of portfolios in the long run.[61]

Figure 4. The Efficient Frontier[62]



	AACR	Risk	Allocations
S&P 500 Index	13.8%	15.5%	100% Equity
US 10 Year Bonds	9.9%	10.0%	100% Bonds
Art 100 Index	6.5%	8.1%	100% Art
Optimal Portfolio	11.0%	7.7%	35% Equity, 45% Bonds, 20% Art
S&P 500 Gold Index	6.6%	39.1%	100% Gold

The company further represents a theoretical basis for art investment using Fernwood’s analysis. Fernwood Investment, which launched in 2003, was one of the most high-profile art investment funds. It ultimately failed to gain traction and closed after three

[61] ArtTactic Lectures: Art and Finance – Lecture 1 Art as an Asset Class
[62] ArtTactic Lectures: Handout – Art & Finance

years of operation, but it established a case which utilised art as a pure investment in earnest. Figure 4 shows the risk and expected returns of possible portfolios including the S&P 500 index, the US 10-year bonds, the art 100 index and the S&P gold index. The diagram, which makes use of Markowitz's efficient frontier, suggests that art can contribute to creating a better bundle of assets thanks to its unique covariance with other assets. According to this model, even if an individual asset has inferior financial performances to others, an efficient portfolio can still be created by combining these assets properly. The lecture introduces Fernwood's calculation that the optimal portfolio is comprised of 35 per cent equities, 45 per cent bonds and 20 per cent art. This portfolio generates the highest expected return for its risk, having the second highest expected return (11.0 per cent) only after S&P 500 (13.8 per cent) with the lowest covariance (7.7 per cent). ArtTactic comments that it is "an awful lot of percentage into art" considering the fragmented nature of the art market, where "an institutional investor putting money into this could rapidly skew both market prices and values". However, the company confirms the idea of art as a portfolio diversification tool: "there are diversification opportunities in art versus other assets" and "there are appetites among people to exactly buy art for that reason".[63]

The operation of accumulative devices involves numerous calculative practices. MPT and CAPM require calculation of average returns, variance and covariance for individual assets, and the optimal allocation to create an investment basket must be calculated by the model. The calculation entails classification and categorisation – which were discussed in the previous chapter – as financial performances of assets are split into and analysed by specific segments for diversification. The portfolio induces capital to flow and accumulate through designated channels; accumulation takes place through a series of calculations that turn art

[63] ArtTactic Lectures: Art and Finance – Lecture 1 Art as an Asset Class

into a financial asset, once again detaching it from the entanglement of art markets. These processes are black boxed in accumulative devices such as art funds and wealth management services. They draw art into the circulation of M-M', where the middlemen (C) are abstracted from original contexts and used as a means for capital accumulation. In this sense, they are not only financial products to be consumed instantly but extended calculative devices which enact a mode of calculation and accumulation. By incorporating these devices, the art market can be further integrated into the financial economy, extending the scope of financial accumulation.

Art Funds: Structures and Historical & On-going Cases

ArtTactic introduces art funds as a canonical example of accumulative device. According to the lecture, art funds gained "a significant amount of traction in the early 2000s (…) alongside the boom in the art market (…) between 2003 and 2008".[64] Fernwood Arts Investments, the Fine Art Fund, the China Fund, Artvest, Aurora Fine Art Investments and ABN-AMRO's fund of funds are some of the art funds inaugurated in this period. These funds were launched by established investment bankers and art world professionals – mostly from auction houses – in the belief that art can be a viable investment asset through strategic trading. The Art Fund Association – a trade association established in 2009, comprised of professionals, investors and services providers of art funds – defined art funds as "privately offered investment funds dedicated to the generation of returns through the acquisition and disposition of works of art".[65] They are managed by a mix of professionals from the art world and financial industries, typically based on a '2/20 scheme', deducting a two per cent management fee and twenty per cent commission on the profit. The structure of art funds is

[64] ArtTactic Lectures: Art and Finance – Lecture 1 Art as an Asset Class
[65] The Art Fund Association webpage; http://www.artfundassociation.com/_what_are_art_funds/basic_af.html [last visited on 12th May 2022]

divided into two categories: open-ended and close-ended. Open-ended funds allow the entry and exit of investors during the life of the fund, close-ended funds require investors to be locked in for the duration. According to ArtTactic, most funds today have a closed structure and tend to show better performances as they are exposed to the "risk of redemption" in difficult times. The management of art funds is usually not disclosed to the public due to the lack of legislation worldwide. Consequently, many art funds are based in tax havens such as the Cayman Islands, Luxembourg and Gibraltar in order to take full advantages of low regulation there.

The company shows historical and on-going examples of art funds to demonstrate the validity of the vehicle. It presents some of the most significant cases in the history of art funds. It starts with the BRPF, a "landmark case" which set the standard for art investment funds.[66] Up until today, the fund is frequently used as an exemplary precedent of how art can act as a tool for diversification as well as an investment asset. The BRPF invested in more than 2,400 art works ranging from old masters to contemporary arts and generated an 11.3 per cent annual return between 1974 and 1996; this was approximately 4 per cent per annum in real terms, which is quite an impressive record. The lecture draws some lessons from the case of BRPF; the success of art funds derives from long-term commitment, a well-diversified portfolio and efficient management. Following the BRPF, the lecture jumps three decades to introduce a series of art funds which were launched in the early 2000s. This was the time when the art fund came back to the stage after a long struggle of post-BRPF funds in the 1980s and 1990s. Despite the earlier cases, these funds are referred to as the "early generation", distinguished by the heightened theoretical basis and the structured resolutions.[67] More detailed information about the structures and performances of these funds is found in

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[66] ArtTactic Lectures: Art and Finance – Lecture 1 Art as an Asset Class
[67] *ibid.*

their reports and podcasts. Figure 5 shows two examples of active art funds at the time of the report's release. According to the report, both funds achieved more than 30 per cent of total returns in the first two to three years of operation, far exceeding the inflation rate during the period. Other examples introduced in podcasts show even better financial performances; Artemundi Global Fund generated a 17 per cent net annualised return over five years;[68] Art Vantage claimed that its realised portfolio in the first four years achieved an annualised return of 25 per cent before management fees and performance fees.[69]

Figure 5. Examples of Art Investment Funds – Structure and Performance[70]

Table 4: Two examples of art investment funds—structure and performance

	Fine Art Invest Fund (PMG Fonds Management AG)	Tiroche Deleon Collection (Art Vantage PCC Limited)
Launch year	2010	2012
Term	Open-ended (quarterly redemptions)	10 years
Investment objective	Contemporary photography (1970 onwards)	Contemporary art from developing markets
Total return	32.69% (since 4Q 2011)	30.92%* (since Jan 2011)
Minimum subscription	€75,000	US$500,000
AUM	US$17.8 million (June 2014)	US$20 million (July 2014)
Website	www.fineartinvestfund.com	www.tirochedeleon.com
Domicile of fund	Malta	Gibraltar

*30.92% is The Total return figure as of June 30 2014. This is counted from inception date of the collection which is Jan 2011. The private collection was converted to a fund on 1 March 2012 (and that is the inception date of the fund structure - which is 10 years).

Behind the Numbers

The annual returns provided by the funds themselves suggest that art funds can be a viable accumulative device in practice. They all achieved more than 10 per cent profits per annum, beating the inflation rate and other equity markets for the period. Such acts of calculation are the foundation of accumulation, where the market devices are built. Like any other

[68] ArtTactic Podcast: Javier Lumbreras – Artemundi (13 January 2017)
[69] ArtTactic Podcast: Serge Tiroche – Art Vantage (14 March 2017)
[70] Deloitte & ArtTactic – Art and Finance Report 2014: 96 - 97

calculations, however, the numbers shown by the company do not fully represent the actuality. ArtTactic itself admits that the auction data-based valuation approach is “far from a precise method”.[71] The calculated returns during the operation are subject to selection issues, concentrating on the realised transactions while overlooking those that have not been sold. This is due to the heterogeneity of the assets which comprise the fund; the returns can be considerably decreased at the final stage of liquidation since the remaining, potentially less valuable works will be liquidated in the end. The survivorship bias is also applied to calculating the return of art in general. The price data used for calculation is confined to auction sales and thus overestimates the expected return. Having auction records means a strong enough demand to be traded, whereas those that are not transacted in the market – which might account for the majority of artworks – are extremely difficult to evaluate. The selection issue is a major criticism of art investment as it not only deteriorates the suggested financial performances but also undermines the theoretical basis of art as a portfolio diversification tool.

Another significant issue is the structural inefficiencies of the market. The empirical reality of the art market is far from the perfect market that financial theories conceive, in which rational actors can construct mean-variance efficient portfolio without structural frictions (Coslor, 2011). The socio-material settings of the art world conflict with the theories embedded in performing devices; they hinder accumulative devices from effectively functioning in the market. Mackenzie and Spears (2012) showed how the adoption of a financial model is both facilitated and impeded by material practices, preferences and beliefs shared by actors in the field. ArtTactic points out some of the biggest inefficiencies from the financial perspective, such as illiquidity, high transaction cost and market opaqueness.

[71] Deloitte & ArtTactic – Art and Finance Report 2011: 37

Liquidity is defined as how quickly the market facilitates the purchase or sale of an asset without causing drastic changes in market price. Art cannot be sold immediately at auction houses nor galleries; from consignments to auction sales, there is a typically three-to-six-month time lapse; it is even more difficult to find a buyer through gallery sales in a timely manner. The high transaction cost is another factor that significantly deteriorates the financial performance of art. Auction houses charge a premium to the buyer and a commission to the seller which, taken together, amount to 20 to 30 per cent of the hammer price. This is a great deal for transaction costs, considering that the conventional stock market has an almost zero trading fee and the real estate market rate is between 5 and 6 per cent. The market opaqueness refers to the lack of transparency in price data as well as the information asymmetry between sellers and buyers. Information in the art world is largely monopolised by insiders, which can lead to uninformed investment decisions. To overcome these problems, art funds have adjusted themselves to the art market's structural peculiarities. For example, the Fine Art Invest Fund focused on photography with multiple editions for easier valuation and more liquidity; Tiroche Deleon focused on developing markets to take advantage of the market opaqueness (*see* Figure 5).

Despite these efforts, the art fund industry in general has been waning since the 2010s. The ArtTactic Report 2017 stated that "the global art investment fund market is struggling to gain momentum after five years of decline". It commented that the "lack of industry transparency is a major hurdle for the art investment fund market" and the industry "is unlikely to evolve until transparency, credibility, and trust are restored".[72] The company diagnosed that the art market is where "structural inefficiencies prevail". They must be economised for the accumulative devices to perform, disentangled from the contexts of the

[72] Deloitte & ArtTactic – Art and Finance Report 2017: 182

art world and enrolled in transparent economic relations. ArtTactic acknowledges the structural constraints for accumulative devices while performing the mode of accumulation. The dilemma is repeatedly found in the company's performative strategies; it provides theoretical justification for the devices to perform but at the same time understands the fundamental challenges to implementing such devices.

The ambivalent stance is clarified in its lecture: "if we look at art as an investment purely from a financial point of view, it arguably isn't outweighing the risks that we have to take".[73] This is a rather striking statement since the company as a performateur of art investment acknowledges the gap between the reality and theoretical models; in a way, giving up the pure financial justification for the devices. It continues:

> We talked about the very sort of financially oriented models early on, which I think are relatively limited at the moment. And I think the future is not really about [pure] art investment. (…) If you are only interested in the financial returns, there are probably hundreds of other investments that would give you a better risk return profile than art.[74]

This statement shows that the company's theoretical models are not just a tool to describe the substantive reality on which they act, but a component of the agencement which they perform in the market. Art funds struggle to convince the market of the validity of the devices in themselves, and the agencement of art investment requires accompanying works for its performation. In the next section, I examine the emergence of new accumulative devices and how the company provides non-financial justification for these devices. This shift in focus illustrates the company's need to adapt to the changing art investment field and the importance of performative works to ensure the acceptance and success of the devices in the

[73] ArtTactic Lectures: Art and Finance – Lecture 1 Art as an Asset Class
[74] ArtTactic Lectures: Art and Finance – Lecture 2 Art Investment Models

market.

2.2. More than an Investment Asset: Wealth Management

For a device to transform a new territory of markets, a favourable agencement of socio-materials needs to be constructed (Fernandes *et al.*, 2019). The normative structures and activities of the art market resist accumulative devices; the discursive, material machines of accumulation themselves struggle to demonstrate the validity of art investment. The performation of finance requires alternative ways to demonstrate its devices, which entails modification of devices as well as some "institutional glue" (Beunza & Ferraro, 2019) for their assembly. This is especially crucial for the devices which facilitate horizontal expansion as they expand the scope of application to new areas where institutional persistency exists, whereas the devices of vertical expansion accelerate accumulation within the logic of finance. This section first discusses how art financiers have altered their accumulative devices' gearing with the structural inefficiencies, transforming from art investment funds to more comprehensive wealth management services. Then it examines how ArtTactic supports this transition by providing non-financial justification for art investment. This includes surveys of the demands for art-related wealth management in the market and socio-cultural accounts for art investment, such as nurturing the culture and democratisation of art.

From Art Funds to Wealth Management

ArtTactic estimated the size of the art investment fund market as $834 million in the first half of 2017, down from $2.13 billion at the peak in 2012.[75] This was mainly due to the collapse of the Chinese market in the previous years, but the US and European markets also saw a considerable decline. The company identified a significant change in the art investment field:

[75] Deloitte and ArtTactic – Art and Finance Report 2017

“now, if we look at the funds that are still in existence, the Fine Art Fund, or [other] longstanding funds have evolved into (…) more than just an art fund, a fully-fledged art wealth management, financial services group”.[76] After a series of unsuccessful endeavours, the art investment industry began to provide more holistic services to its customers. These included not only active investment but also ancillary services such as collection management (for example, valuation and insurance), art collateral (for example, art lending) and the transfer of wealth using art and collectibles (for example inheritance tax). Private banks and family offices have increasingly collaborated with art advisors to provide these services. According to the Art and Finance Report, as of 2019, 83 per cent of wealth managers offered art advisory services – up from 79 per cent in 2016 and 67 per cent in 2014 – and 47 per cent of those were delivered as in-house solutions.[77]

An important point to note here is that, unlike art funds where investors delegate acquisition and disposition to a third party, these devices allow investors to directly acquire artworks. This brings back the emotional and social benefits of owning art; ArtTactic’s lecture ardently advocates these aspects:

> In combination with the financial aspects of art, which obviously make sense, these assets (arts) are incredibly attractive. It's something you can enjoy. You can have it on your wall. You can enjoy it every single day. It provides you maybe social access, invitations to art fairs, auction house openings, previews and so forth.[78]

This statement again shows the dilemma which the industry faces in the enactment of accumulative devices; “taking the passion out of passion investing” (Gerlis, 2014: 135) consequently leads to pitching the investment with not-so-great investment profiles, so the

[76] ArtTactic Lectures: Art and Finance – Lecture 2 Art Investment Models
[77] Deloitte and ArtTactic – Art and Finance Report 2019
[78] ArtTactic Lectures: Art and Finance – Lecture 1 Art as an Asset Class

passion – the socio-cultural motivation to buy art – must be brought back to justify the horizontal expansion. Investing in art is not solely a financial practice but a socio-cultural act which involves non-financial benefits. In this regard, the transition from art funds to wealth management is to implement devices better compatible with the incommensurable field of art; they provide more room for institutional works to be done and translate values in the name of passion investment. The lecture states: "most people that I think are successful in this field (art investment) are doing this because they also share the passion and the emotional aspect of enjoyment of art".[79] The performation of accumulative devices is not only about financial presentation but also about socio-cultural persuasion.

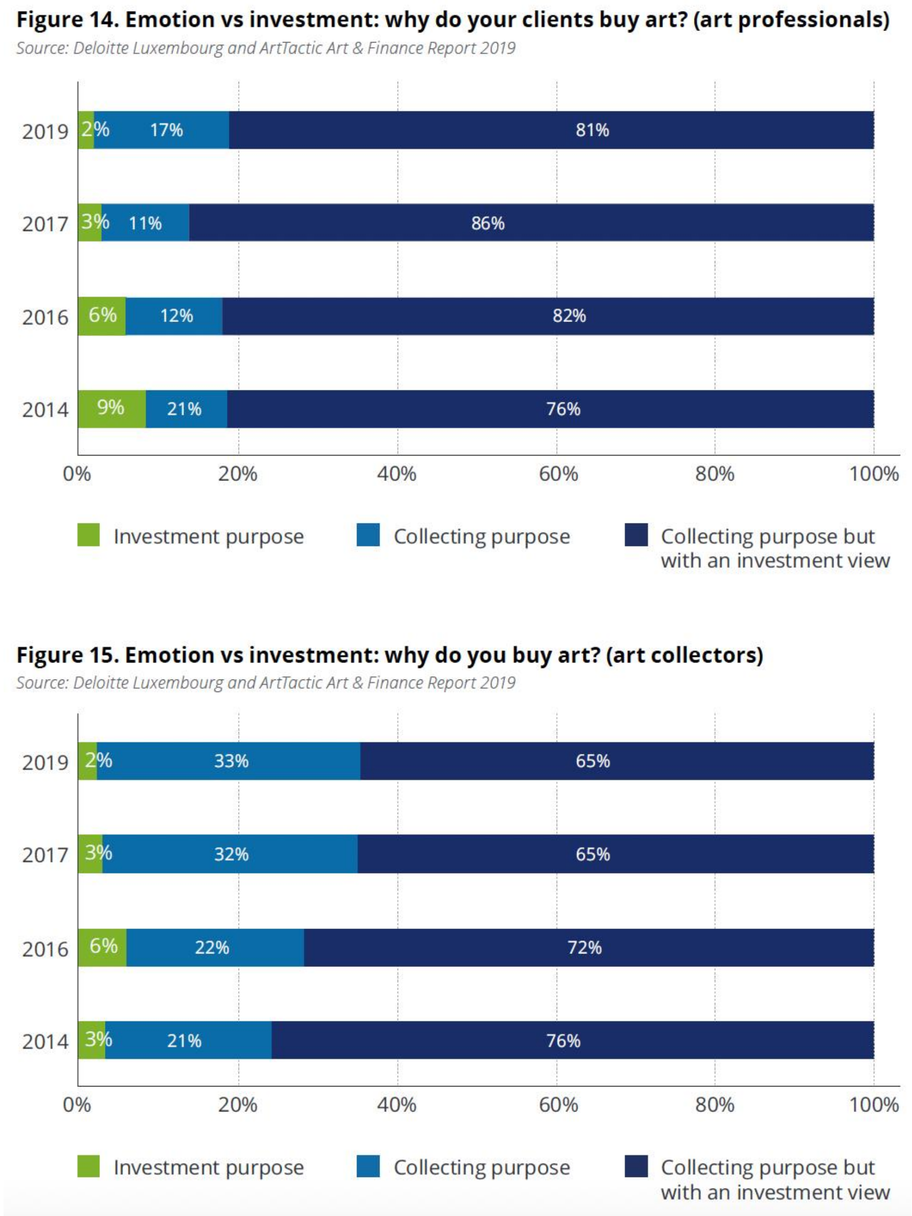
Surveys on Demand

Law (2009) suggested that methods in social science are not only descriptive tools but also performative practices which create realities. Conducting a Foucauldian archaeology of a survey research, a Eurobarometer investigation of European citizens' attitudes toward farm animal welfare, he argued that practices implicitly enact the reality which fits their viewpoints and assumptions. They make space for a "politics of the reals" (Law, 2009: 4), where some realities are strengthened and others weakened, realising the knowledge supported by the performateur. In this context, ArtTactic's surveys of the financial aspects of art ownership show more than how art finance is perceived by art market participants; the findings serve to support the validity of wealth management devices and enact the mode of accumulation. Figure 6 shows the company's research into why collectors buy art, surveying 105 art collectors and 138 art professionals (gallerists, auctioneers, art advisors, art lawyers, art insurers and art logistics specialists). Faced with the question 'why do your clients/you buy art?', 2 per cent of art professionals and collectors answered, 'investment purpose'; 17

[79] ArtTactic Lectures: Art and Finance – Lecture 1 Art as an Asset Class

per cent of art professionals and 33 per cent of collectors answered, 'collecting purpose'; 81 per cent of art professionals and 65 per cent of collectors answered, 'collecting purpose but with an investment view'. The survey showed that there was a strong and steady demand for buying art as an investment, either purely for financial motives or in conjunction with traditional collecting purposes.

Figure 6. ArtTactic's Survey – Reasons for Buying Art[80]



[80] Deloitte & ArtTactic – Art and Finance Report 2019

It is important to note here that the survey serves as a tool of performative work, reflecting ArtTactic's intent to create the world it describes. The conclusion of the survey is more or less self-serving: the report states that there are "stronger financial motivations as buying art becomes more normal" and "more collectors want art-related services to be included as part of wealth management".[81] The design and implementation of the survey clearly mirrored ArtTactic's role as an enabler and performateur of art investment. First, the three response options given in the survey were largely tendentious, potentially leading respondents to choose the answer which aligned with the company's desired outcome. Participants were set to choose between 'investment purpose', 'collecting purpose' and 'both investment and collecting purpose'; in this setting, it is hard not to be inclined to the latter as it does not completely exclude either option. The company cleverly stated the option as 'collecting purpose but with an investment view', prioritising the collecting purpose. This made it easier for art-minded participants to choose the option without compromising the creed of art for art's sake, which persistently performs the art world (*see* Chapter 4). The option also goes along with the idea of art wealth management, which they claimed to provide both financial and emotional benefits. The majority answered that they bought art for both emotional and financial reasons; the report concluded that "the art trade is increasingly catering to a financially motivated audience". Second, the company surveyed art professionals as to why their clients buy art, in addition to asking collectors why they purchase art. The proportion of answering 'both collecting and investment purpose' was much higher amongst art professionals (81 per cent) than collectors (65 per cent); art professionals are stakeholders in the art finance industry who are directly or indirectly involved in the financialisation of art, whereas collectors often shy away from money talk since it conflicts with the game rule of the art world. This exemplifies how seemingly

[81] Deloitte & ArtTactic – Art and Finance Report 2019: 78

innocent survey findings serve as a means to realise its hidden political agendas; Deloitte and ArtTactic are not only observers who describe the phenomena but active performateurs of art finance.

Rhetoric of Supporting Art and Culture

The non-financial justification for accumulative devices is also found as the rhetoric of supporting art and culture. ArtTactic promotes the socio-cultural benefits which art investment vehicles provide to investors, such as giving access to the art market and educating themselves about art and the art world. Such features encourage investors to become earnest collectors, a kind of status that possesses more socio-cultural capital within the art world. This reframes the act of investing in art from a purely financial transaction to an act of personal growth and cultural contribution:

> Another aspect which is worth noting is that [art investment vehicles] could also be seen as an educational vehicle. (…) Many investors (…) might start a journey into the art market (…) through the relationship that they have with the [investment vehicle] and the experts working for it, it could also be a start of a journey as a collector.[82]

According to the lecture, the benefits that derive from art investment are not limited to nurturing investors but also support artists and the ecosystem. Art investment vehicles financially and culturally support them by injecting capital into the industry; in this sense, investors are patrons of culture who contribute to nurturing artists. This pitches emotional rewards which investors can earn from this investment: "as an investor [he/she] partakes in a story and how it evolves around [a] certain artist. (…) This is where we are starting to move (…) towards the kind of the emotional aspect, where an artist incubator [acts] almost like an

[82] ArtTactic Lectures: Art and Finance – Lecture 2 Art Investment Models

angel or patron model".[83] The company extends the socio-cultural contribution of art investment to the democratisation of art. It is argued that, unlike traditional art collection which often entails multi-million-pound transactions, art investment vehicles require a relatively modest amount of investment. This is especially the case with art funds and fractional ownerships, where someone can take a small part of assets under management. The company contends that this breaks down barriers traditionally associated with the art world, broadening the base of potential investors. This topic will be discussed in more detail in the following section.

2.3. The Role of ArtTactic's Discursive Devices

At this point, it is worth reiterating the role of ArtTactic's discursive devices in its performative works. The discussion has shown how the company introduces and promotes financial devices and connects them with market participants, negotiating with the arrangement of the art market. As detailed in this chapter and the preceding ones, the role of discursive devices in the adoption of market devices is crucial. The way these devices perform the market can be summarised into three courses: grounding, corroborating and situating. First, the company's discursive devices perform the market by grounding market devices. They present how the devices function by showing their rationales and theoretical bases. In the lectures and reports, ArtTactic seeks to provide financial justifications for art investment vehicles along with the financial characteristics of art as an asset class. They provide a coherent and systematic way of understanding the market, giving credibility and authority to the devices. Second, the discursive devices of ArtTactic demonstrate market devices by corroboration. The lectures present historical attempts to construct art market data and investment vehicles utilising art. The cases include successful examples as well as

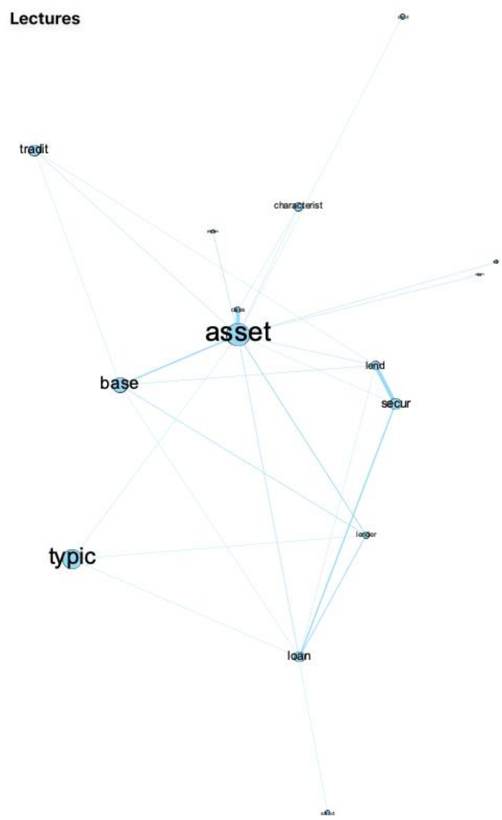
[83] *ibid.*

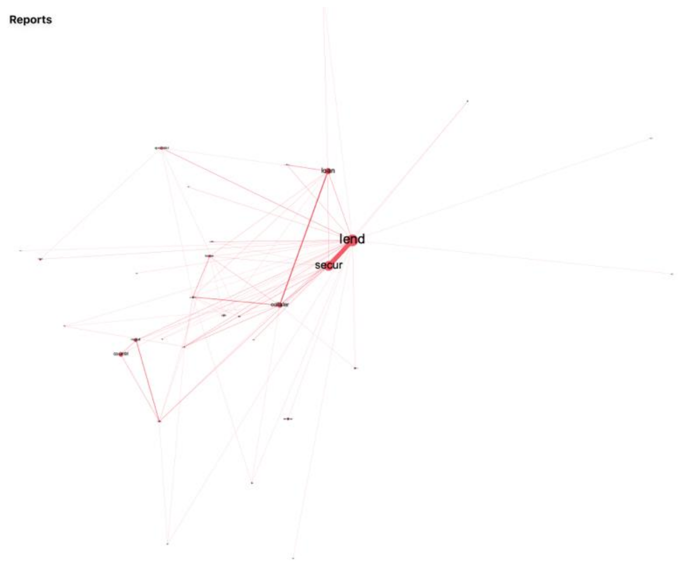
unsuccessful ones: the former provide validity and legitimacy (Roscoe & Mason, 2020) through historical narratives of art investment, whereas the company draws lessons from the latter to reconfigure new investment vehicles. On the other hand, the podcasts and reports introduce active cases operating in the market, promoting their products and services for wider adoption. These practices not only show the effectiveness of these devices but also connect them with audiences and enrol them in the agencement of art investment. Third, the discursive devices offer a socio-cultural justification, situating market devices within a broader context. ArtTactic holds an ambivalent position toward the pure financialisation of art: demonstrating art investment, as opposed to solely considering art as an asset class. The lectures ardently advocate the cultural and social benefits of owning art through the performing devices, translating values (Godechot, 2016) in the name of investment based on passion. By situating the devices in different contexts, they provide institutional glue (Beunza & Ferraro, 2019) for financial devices to perform the market, where the cultural and economic values intricately intersect.

ArtTactic's demonstration of market devices underscores the inherently political nature of the financialisation process. Discursive devices such as lectures, podcasts and reports engage in struggles and negotiations around the introduction of market devices; they contribute to the enactment of financialisation by legitimising market devices and aligning them with the interests of the field to be performed. The micro-politics of market devices draw a "material political economy" (MacKenzie, 2017: 174) in which material and discursive devices compete for dominant positions. Utilising various mechanisms of demonstration, discursive devices assert the performateur's position and promote market devices which correspond with their interests. From the ontology of market studies, ArtTactic's discursive devices share constitutive elements with other market devices. The calculative and accumulative agencies are textualised into a more rigid form of market device; discursive devices support the process of black-boxing (Callon, 1987) wherein complex systems are simplified and made more accessible. Through the politics of texts and discourses, discursive devices construct and consolidate the socio-material arrangements of art finance. The financialisation of art requires the transition of market devices and it always goes beyond a purely material process.

3. Increasing Liquidity of Art

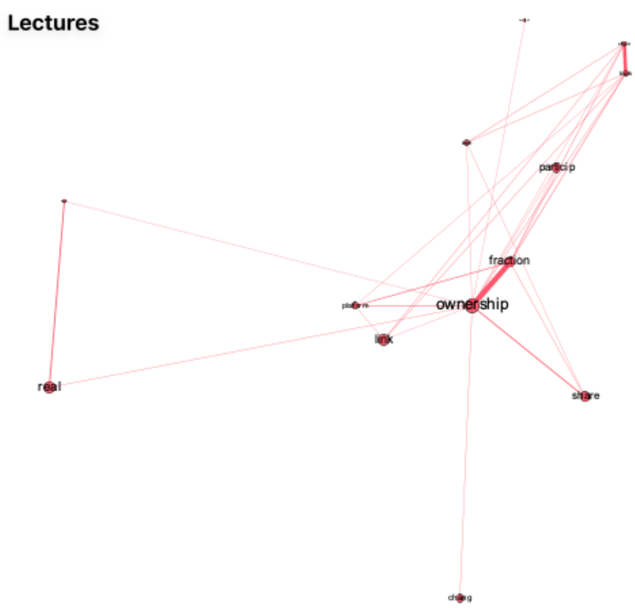
Figure 7. Semantic Networks of 'Art Lending'





SMA identified the theme of ‘art lending’ in the lecture network (3A-5) and the report network (3C-9). In the lecture network, the sub-network of ‘art lending’ was the fifth largest cluster (4.01%), in which the most connected nodes were ‘asset’ (degree=31, eigenvector centrality=0.3238), ’interest’ (degree=25, eigenvector centrality=0.3178), ‘typical’ (degree=17, eigenvector centrality=0.2635), ‘artwork’ (degree=26, eigenvector centrality=0.2634), ‘base’ (degree=13, eigenvector centrality=0.1708) and ‘loan’ (d=20, eigenvector centrality=0.1470). The theme of the network was more clearly revealed in word pairs. The top word pairs included ‘asset – class’, ‘secure – lend’, ‘asset – base’ and ‘secure – loan’. Together with the central concepts, they articulate the main theme of the network as asset-based lending utilising art as a security. The ‘art lending’ network is also found in the report network, forming the ninth largest cluster. According to the SMA, the most central words were ‘lend’ (degree=160, eigenvector centrality=0.4969), ‘secure’ (degree=115, eigenvector centrality =0.4085), ‘law’ (degree=152, eigenvector centrality=0.3783), ‘loan’ (degree=73, eigenvector centrality=0.2525) and ‘collateral’ (degree=53, eigenvector centrality=01999); the top word pairs included ‘lend – secure’, ‘loan – collateral’ and ‘law – enforce’. Figure 7 shows the ego networks (depth=1) of ’art lending’, centred respectively on ‘asset’ and ‘lend’. In the lecture network, concepts such as ‘asset’, ‘class’, ‘traditional’, ‘physical’ and ‘characteristic’ are found on the upper side, articulating the characteristics of art as a traditional asset with physicality; on the lower side, ‘base’, ‘lend’, ‘secure’, ‘collateral’, ‘loan’, ‘interest’, ‘mortgage’ and ‘boutique’ represent some key concepts related to art-secured lending. In the report network, a very similar set of words, such as ‘lend’, ‘secure’, ‘collateral’, ‘borrow’, ‘boutique’, ‘art-back’, ‘asset-base’ and ‘non-recourse’ are identified around the centre; on the lower left, ‘law’, ‘enforce’, ‘register’, ‘code’, ‘UCC’ and ‘validity’ formulate some legal issues and regulations around art lending.

Figure 8. Semantic Networks of ‘Fractional Ownership & Technology’



The theme of ‘fractional ownership and technology’ was identified as the eighth largest (2.98%) cluster in the lecture network (3A-8). The most central node was ‘ownership’ (degree=26, eigenvector centrality=0.2160) followed by ‘fraction’ (degree=17, eigenvector centrality=0.1636) and the most frequent word pairs were ‘fraction – ownership’, ‘block – chain’, ‘real – estate’, ‘share – ownership’ and ‘block – technology’. The top words and word pairs lucidly present the main theme of the network, namely block chain and tokenisation.

The ego network (depth=1) around the node ‘ownership’ also shows a clear structure; around the centre, the network represents key concepts of fractional ownership, such as ‘ownership’, ‘fraction’, ‘own’ and ‘share; on the upper right, the network encompasses new technologies of fractional ownership, including ‘technology’, ‘block’ and ‘chain’.

Art lending and the fractional ownership of art are socio-material devices which facilitate financial accumulation. They are accumulative devices of vertical expansion, which make the circulation of M-(C)-M’ more flexible and convenient. Whereas the horizontal force of financialisation draws art into the category of investment asset, the vertical force enables art as an asset to circulate and accumulate more effectively within the cycle. Birch and Muniesa (2020: 2) argued that assets are not the “consequence of some inherent or embodied quality” but are “made” to become assets. According to the Oxford English Dictionary, an asset is “an owned item of property, regarded as having value and available to meet debts, commitments, or legacies”; financialisation (or more specifically assetisation) is the process of qualifying these characteristics – which art is traditionally considered to lack – constructing an economic entity with extended capacity for accumulation. In this section, I shall examine two vertical accumulative devices which accelerate the circulation of M-(C)-M’ by increasing the liquidity of art: art lending and the fractional ownership of art. They are designed to lubricate the flow of capital and facilitate accumulation, making art resemble financial assets of the efficient market. ArtTactic allocates an independent section in its reports and lectures to introduce these devices. These track how it presents the rationale, structure and development of these devices, and provides financial and socio-cultural justification to support the performation.

3.1. Art-Secured Lending

Art-secured lending is a financial service which allows collectors to use their art collections as collateral for loans. This service enables collectors to release the value of their artworks without selling them, providing liquidity in their asset management. Art-secured lending services first appeared in the late 1980s, seeking to offer loans against artworks to those who required additional liquidity in the roaring market. In parallel with other art investment vehicles, however, it has been only recently that art lending has become more widespread after a series of experiments in the 1990s. Driven by the advanced convergence between art and finance, private banks (such as Citi Private Bank, JP Morgan and Morgan Stanley), boutique lenders (such as the Fine Art Group, Borro and Artemus) and auction houses (such as Sotheby's and Christie's) are increasingly securitising loans against art in a more systematic way, trying to shed the name of high-end pawnbrokers. The new generation of art lending services is different in that they are asset-based lending focusing solely on loans against a single artwork or a collection of artworks (non-recourse lending), whereas traditional lending would accept art as a part of a collateral pool (recourse lending). They are mostly provided by boutique lenders, such as hedge funds and family offices, and increasingly by auction houses to help consigners who need fast money.

Art lending has unique structures different from other loan businesses. Due to the short-term nature and the high risk of non-recourse lending, the interest rate on these loans is much higher and the loan to value (LTV) is lower than those of the recourse lending. To give an extreme example, Borro provides loans from \$2,500 to \$5,000,000 within one or two business days, with interest rates of 3-8% per month and an LTV ratio of 50-70% on its own valuation.[84] The art lending programmes have evolved to provide instant liquidity regardless

[84] https://borro.com: [last visited 23 Dec 2022]

of a myriad of detailed loan structures and business models. The clients of art lending services can be broken down into two categories: galleries and individuals. Whereas most loans to galleries are made by traditional banks as recourse business loans, loans to individuals are offered by asset-lenders (private banks, boutiques and auction houses) to resolve liquidity issues around investment and life events. The classic motivations for liquidity are widely referred to as the infamous three Ds in the art world: death, divorce and debt.

Releasing Capital from Art

ArtTactic's lecture repeatedly points out that art is a financially inefficient asset: "many collectors have multi-million-dollar artworks hanging on the wall, which basically means that it's dead capital. It doesn't do anything; if anything, it will probably incur insurance costs, [or] other types of maintenance costs".[85] As has already been explained, art does not generate any cash flows while in possession and furthermore cannot be sold immediately by just pushing a button. Many of these problems come down to liquidity, an asset's ability to be converted into hard cash. According to ArtTactic, art lending is a market device to increase the liquidity of art, freeing up the dead capital to be used for various purposes. These could be immediate expenses of life events, investment on assets where potentially higher returns can be expected, or the acquisition of further artworks to create or expand a collection. Gotham (2009: 359) stated that capital is "abstract, nomadic, and placeless"; it seeks to eradicate peculiarities of assets and commodities and turn them into indifferent and flexible money, eliminating the barriers to the circulation of M-(C)-M'. The more developed the capital is, the more it strives to annihilate time and spatial fixities in switching between money and commodities (Marx, 1890). Commodities become assets to generate the flow of money, or something which can

[85] ArtTactic Lectures: Art and Finance – Lecture 3 Art Secured Lending

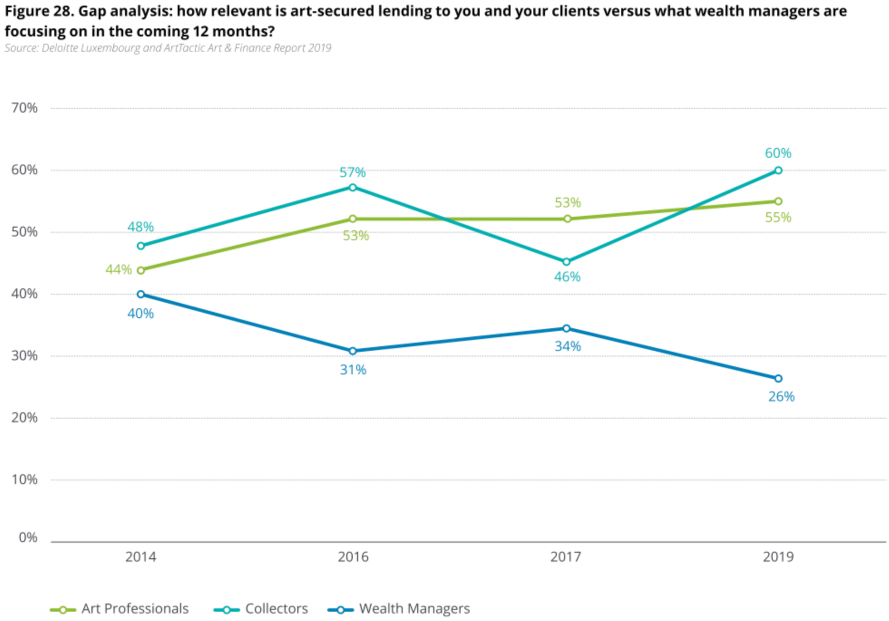
be transformed into money in the short term. The advanced liquidity facilitates financial accumulation as it makes a cycle short and efficient, and consequently leverages the amount of capital involved in the circulation. It is the vertical force of financialisation enabled by accumulative devices, decreasing the turnover time of capital transition and increasing the velocity of circulation of M-(C)-M'.

Creating the Market

Like any other performing market devices, the enactment of art lending device requires socio-cultural justification beyond material transitions. ArtTactic conducts performative works to demonstrate art as a collateral to both the supply and the demand sides to create the market. When the company attempts to create supplies by convincing the industry of the growth potential of the market, it induces demands by introducing the financial and socio-cultural benefits of art lending. Figure 9 shows ArtTactic's 2019 survey of the relevance of art-secured lending. The survey suggested that there is an excessive demand in art lending service: "despite the growing demand for art-secured lending amongst collectors, (…) only a few wealth managers [see] this as a strategic focus area over the coming 12 months". The company estimated that the outstanding loan against art reaches $21 billion – $24 billion, "[seemingly] a large amount of leverage", yet which "only accounts for just over an estimated 1 percent of art and collectible private wealth today".[86] According to the report, art lending is relatively "untapped territory" with healthy potential demand for European private banks, whereas it is one of the fast-growing areas of art finance in the US due to its legislation (for example, UCC[87]).

[86] Deloitte & ArtTactic – Art and Finance Report 2019: 109 - 110
[87] The Uniform Commercial Code (UCC) allows borrowers to keep possession of their artwork while the loan is outstanding. This is because lenders can register their security interest in the art on a public register, thereby informing that the artwork is subject to a charge or lien.

Figure 9. ArtTactic's Survey – Art-secured Lending[88]



On the demand side, ArtTactic promotes art lending as an effective accumulative device with some emotional benefits of retaining possession of art. Selling artworks involves huge ancillary costs, including transaction costs, capital gains tax and estate tax. McAndrew (2010: 130) calculated that the total cost of selling an artwork could amount as much as 76 per cent of the price in the US, whereas borrowing against art usually provides 50 per cent of the price with a 1 per cent closing fee. It not only brings financial liquidity and agility but also generates economic profit which directly contributes to accumulation. The lecture also emphasises the emotional aspects associated with art lending. It is a way of cashing in on artworks without having to sell them; collectors do not need to give up emotional attachments to their artworks; they are provided with acquisition opportunities for additional artworks to expand their collection. The company adds that the expanded collection not only amplifies the collector's emotional gratification but also has the potential to increase its overall value.

[88] Deloitte & ArtTactic – Art and Finance Report 2019

3.2. Fractional Ownership and Technology

The fractional ownership of art has emerged in the last decade as an alternative way of investing in art. The model has gained popularity especially since around 2018, along with the development of block chain technologies. The notion of fractional ownership refers to the method where the ownership of an asset is shared by a number of unrelated parties. It fosters more transactions by lowering the price of trading unit, and thus increases the liquidity of the underlying asset. Investors do not need to spend hundreds of thousands of pounds to own a piece of art; it could be as little as twenty pounds to be invested into art. It significantly increases the velocity of capital pivoting around the asset, enabling agile and flexible accumulation. The agencement of fractional ownership is made from various socio-material components, from physical devices regarding the acquisition and storage of art to discursive devices to accord with legislation (for example, the Securities and Exchange Commission). The platform purchases artworks, securitises them and sells shares of the artworks to investors. It liquidates the artworks after three to ten years of the holding period; investors can wait until liquidation to receive pro rata proceeds or trade the shares in the secondary market in the meantime. The industry is increasingly moving toward the block chain-based fractional ownership model, in which tokens are used as both an investment contract and a medium of exchange, arguably enabling faster and more transparent transactions. ArtTactic's lecture introduces some active platforms which provide fractional ownership of art; Otis and Masterworks are non-block chain platforms which provide the fractional ownership of arts and collectibles; Maecenas, Artbloc and Artsquare are block chain-based platforms which tokenise the ownership of art.

The Assumptions of a Perfect Market

The securitisation of art is built on the perfect market assumptions of classic economics. In theoretical models where conditions of perfect competition are satisfied, the market achieves the state of Pareto optimum – an allocatively and productively efficient equilibrium. According to Stigler (1957: 7), perfect competition requires "(1) indefinitely large numbers of participants on both sides of the market, (2) complete absence of limitations upon individual self-seeking behaviour, and (3) complete divisibility of the commodities traded". The design and management of financial markets have developed to satisfy these conditions to achieve greater efficiency; the fractional ownership of art is in line with these attempts to construct a closer-to-perfect market. First, fractional ownership draws more market participants by lowering the hurdle to art investment; second, the platform, especially the block chain-based model, reduces transaction costs and information asymmetry; third, the idea of fractional ownership itself is to obtain a better divisibility of trading assets. The efficient market structure increases the velocity and the flux of capital circulation as it not only facilitates transactions but also attracts more participants to the market. The enhanced liquidity provides financial justification for the channel of accumulation, drawing more participants to use the device, which consequently loops back to the construction of more efficient market. Like many other financialising devices, the fractional investment models are embedded in economic theories and the enactment of these devices creates a performative cycle. It is therefore necessary to analyse the way in which these devices are enacted to create an efficient market for accumulation.

Democratisation of art

According to the ArtTactic lectures, however, fractional ownership models have yet to convince the art finance market; only 19 per cent of collectors and art professionals answered that they were interested in fractional investment; only 10 per cent of wealth managers answered that the models were relevant to their clients. The device requires performative works to be more broadly accepted in the market, which includes not only financial justification for efficiency but also socio-cultural accounts of justification. The primary justifying logic is the democratisation of art. ArtTactic's lectures emphasise that fractional ownership meaningfully contributes to the democratisation of art investment:

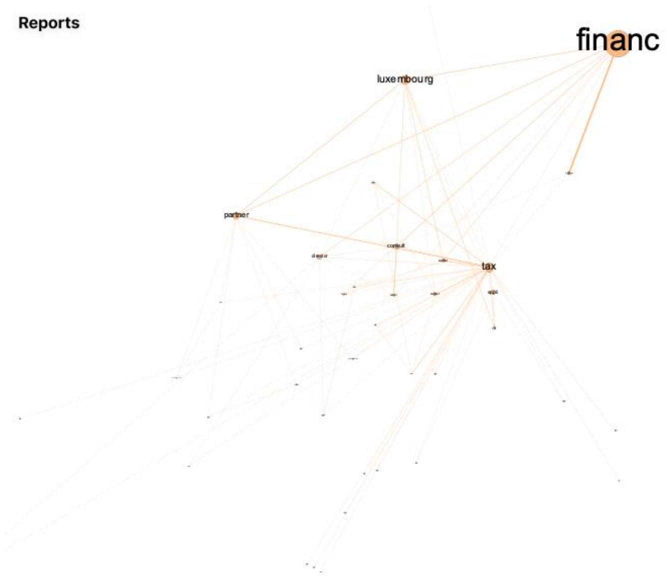
> Although art funds are one way of democratising art investment, (…) I think democratisation is what the next generation of investment models are really focusing on (…). We're not we're not talking about hundreds of thousands of pounds. We're talking about as little as twenty-five pounds that could be invested into art.[89]

Fractional ownership provides investment opportunities to those who were previously unable to invest in art and it leads to the financial inclusion of society. Traditional art investment has been "very exclusive", "hard to access" and "targeting accredited investors", [90] according to the lectures, but the fractional investment enables everyone to invest in art. The rhetoric of democratisation is not limited to investment but also cultural enrichment: "everyone can own a piece of culture (…) as little as 10 dollars would entitle you to own a piece of a cultural object". [91] According to the company, owning shares of an artwork provides "other utilities associated with it",[92] such as educational opportunities to learn about the artwork or participate in social events to share the same passion. Discourses such as these encourage the adoption of socio-material devices from a different angle, lubricating the performation of accumulative devices in the art market, where the power of cultural logic functions.

[89] ArtTactic Lectures: Art and Finance – Lecture 2 Art Investment Models
[90] *ibid.*
[91] *ibid.*
[92] *ibid.*

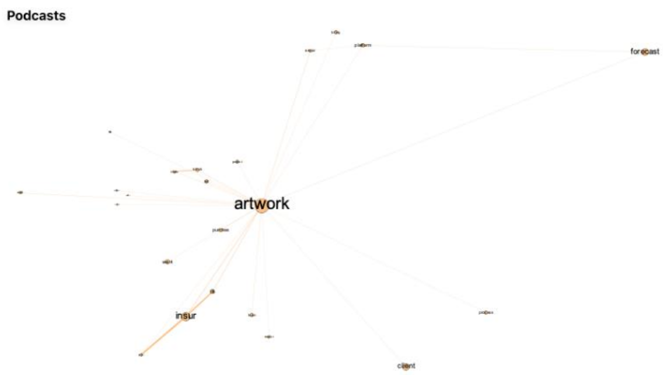
4. Ancillary Devices for Accumulation

Figure 9. Semantic Networks of 'Tax'



The theme of 'tax' was identified as the fourth largest cluster (7.39%) in the report network (3C-4). The cluster shows a large and complex network encompassing a wide and sporadic range of concepts. This is largely due to the node 'finance' (degree=358, eigenvector centrality=0.8488) being included in the cluster, the fifth central concept in the entire report network with strong gravity. The most central nodes by degree and eigenvector centrality in the cluster were 'finance' (degree=358, eigenvector centrality=0.8488), 'luxembourg' (degree=107, eigenvector centrality=0.2780), 'tax' (degree=112, eigenvector centrality=0.2718), 'partner' (degree=111, eigenvector centrality=1960) and 'freeport' (degree=47, eigenvector centrality=0.1687); the top word pairs included 'finance – crime', 'Luxembourg – freeport' and 'partner – tax'. Even though the general concept of 'finance' shows the highest degree and centrality in the cluster, I excluded the word when determining the network's central theme based on the qualitative semantic interpretation. The node is not only too general but is also connected to too many nodes, resulting in difficulties in interpretation. The key concepts and word pairs articulate tax issues around art investment and ancillary devices which help accumulation. Figure 9 represents the ego-network around the concept ‘tax’ (depth=1); on the left-hand side, the network encompasses concepts around tax advisory service, such as ‘consult’, ‘partner’, ‘director’ and ‘senior’; on the lower part, ‘evade’, ‘exempt’, ‘regime’, ‘avoid’, ‘burden’ and ‘vat’ formulate the topic of tax evasion and tax avoidance; on the upper part, ‘finance’, ‘crime’, ‘Luxembourg’, ‘freeport’ and ‘authority’ represent tax havens and financial crimes utilising art.

Figure 10. Semantic Networks of ‘Art Insurance’



The SMA identified the theme of ‘art insurance’ as the fourth largest cluster (3.89%) in the podcast network (3B-4). The cluster shows a very loose network centred around the node ‘artwork’ (degree=50, eigenvector centrality=0.5262) and some regional centres such as ‘forecast’ (degree=19, eigenvector centrality=0.2112) and ‘insure’ (degree=21, eigenvector centrality=0.2033). The top word-pairs included ‘insure – policy’, ‘title – insure’ and ‘block – chain’. The network loosely includes a number of different concepts such as ‘forecast’, ‘block chain’ and ‘loan’, but I restricted the main theme to art insurance. Figure 10 shows the ego-network around artwork (depth=1); the semantic interpretation focused on the lower left centre, where ‘insure’, ‘title’, ‘broker’, ‘policy’, ‘specialist’ and ‘service’ articulate topics related to art insurance services.

Art tax and art insurance are ancillary devices which help financial accumulation through arts and collectibles. Collectors and investors encounter diverse tax issues around the collection of art, the valuation of a collection and the transfer of art from one person to another. The important point is that taxation policies vary considerably across the world, and this presents opportunities for tax reduction. Art tax services provide planning and assistance for reducing tax burdens, although there is often a fine line between tax avoidance and evasion. In particular, freeports are increasingly used as sites for art storage with the intention of money laundering and tax evasion. Another important aspect of art investment is the physical nature of the asset. Unlike intangible assets such as stocks and bonds, art always entails inherent risks deriving from its physicality, such as breakage, damage or theft. To mitigate these risks, art insurance has emerged as a specialised service since the 1960s. Many traditional carriers currently provide these services, including AXA Art Insurance, AIG Private Client Group, the Chubb Group of Insurance and the Travelers Company (McAndrew, 2010).

4.1. Art Tax

From an economic perspective, the imposition of tax reduces both producer and consumer surplus and for a society it brings about economic inefficiency known as deadweight loss (Mankiw, 2020). In the context of the art market, art tax devices are used to minimise this loss in economic surplus and contribute to a more efficient accumulation of capital within the market. These devices provide specialised tax planning and strategies to collectors and investors, tailored to the specific tax regulations of their region. The Art and Finance Report 2019 contained a few interviews with art tax professionals to show how these devices help clients in practice. For example, Seiz and Mulic at Deloitte Germany addressed tax-related questions, such as ‘how can works of art be passed on to family members in Germany at a favourable rate of gift tax?’, ‘how can a donor benefit from art donations under the German

Income Tax Act?' and 'what is the most tax-efficient way to sell art in Germany?'.[93] These professionals offer customised advice to art collectors and investors based on region-specific taxation rules, enabling them to make well-informed decisions and potentially reduce their tax liabilities. Another example was an article about free zones by Herrmann and Schmitz. The Luxembourg-based art storage operators demonstrated how art storages in freeports could be potentially used to avoid taxation; as artworks are stored in freeport warehouses on a permanent basis, so the import VAT and customs duties are permanently suspended. This creates the "greatest art collection no one can see" in free zones, with artworks being traded as pure financial assets. The article also examined how the fifth money laundering directive would affect the free zones and provide compliance solutions to market participants.[94] Although these devices are not directly involved in the buying and selling of art, they facilitate capital accumulation by making art a more financially attractive asset.

4.2. Art Insurance

Art insurance provides a financial safety net for collectors and investors, dealing with the various risks and uncertainties associated with investing in, purchasing and owning art. The unique characteristics of art as an asset class as well as the opaque nature of the art market make it essential to have insurance coverage. Insurance is a financial device that utilises the future uncertainty. It is a unique financial instrument as clients have to pay premiums to protect against vulnerabilities in the future, whereas most financial devices leverage monetary potential for speculation. However, in the sense that it calculates risks of uncertain events and turns them into foreseeable in-and-outs of cashflow, it could be seen an accumulative device which deteriorates numerical returns. As discussed above, insurance plays an important role in art investment. It not only covers losses which derive from the

[93] Deloitte & ArtTactic – Art and Finance Report 2019: 102 - 103
[94] Deloitte & ArtTactic – Art and Finance Report 2019: 249 - 251

physicality of the asset but also risks associated with investments and purchases. ArtTactic invites art insurance companies to its podcasts, presenting what products they provide and how their businesses work. Huntington T. Block talked about its insurance policy, coverage and valuation[95]; ARIS Title Insurance made a presentation of art title insurance, which insures against financial loss from defects in title to property[96]. By transforming unpredictable events into manageable financial outcomes, art insurance crystallises future and speculative values; it facilitates capital accumulation and promotes art as a legitimate investment.

5. Conclusion

The discussion in this chapter has explored the accumulative mechanism and its accompanying devices in the art market. Krippner (2005) defined financialisation as a shift in the accumulation system where profits are increasingly made through financial channels with the advanced circulation of M-(C)-M'. The concept of accumulative devices bridges the gap between debates on the regime of accumulation and accounts of market devices, converging movements of interest-bearing capital (Christophers & Fine, 2020) with the financialisation of daily life (Haiven, 2014). ArtTactic demonstrates accumulative devices which play a crucial role in the financialisation of art which have emerged in recent years. These devices encompass a range of instruments which enable and facilitate financial accumulation, such as art funds, wealth management, art-secured lending, fractional ownership and art tax and insurance. The mode of accumulation stretches within two axes; the horizontal force expands the scope of accumulation to new areas of applications and the vertical forces accelerate circulations within existing activities. Art funds and art wealth management are devices of vertical expansion which financialise previously non-financial realms, incorporating new

[95] ArtTactic Podcast: Anne Rappa – Huntington T. Block (16 September 2019)
[96] ArtTactic Podcast: Mary Buschman – ARIS Title Insurance (9 January 2018)

sectors, assets and market participants, whereas art secured lending and fractional ownership are devices of horizontal expansion which improve the efficiency and speed of financial circulation. Both devices are established on the idea of economic efficiency and perform the market by enacting calculative and accumulative agencies.

The implementation of the accumulative devices is, however, never a straight-forward process. The normative structures of the art market based on art for art's sake or the hostile world view (Coslor, 2010) resist the devices (*see* Chapter 4), re-configuring the company's performative strategies. ArtTactic conducts performative works (Beunza & Ferraro, 2019) to effectively demonstrate accumulative devices by introducing their theoretical basis, historical and ongoing cases, and providing socio-cultural justification for investing in art. As pure financial justification for art investment fails to persuade the market, the company promotes the emotional, cultural and social benefits of owning art. This goes along with the industry's transition from art funds to comprehensive art wealth management, as well as devices of vertical expansion which work on the emotional attachment to an extent. By engaging in these performative works, ArtTactic acknowledges and negotiates with the distinctive structure of the art market while simultaneously working to establish the legitimacy of accumulative devices. Through the process, the company enacts a mode of accumulation in the art market, in which the circulation of capital increasingly follows M-(C)-M'.

VII. Discussion

> We are made of contracted water, earth, light, and air…
>
> – Gilles Deleuze, *Difference and Repetition*

1. Introduction

Building on the premise that financialisation embodies the enactment of a mode of calculation and accumulation, the case of ArtTactic illustrates the nuanced and complex process of performing financialisation. As discussed in the previous chapters, financialisation should not be construed as an abstract force that single-handedly structures the economy; instead, it entails the construction and proliferation of financial circulations within the mundaneness of our daily lives (Haiven, 2014). The case study presents how the agencement of finance is constituted through the everyday politics of market devices (MacKenzie, 2017). In the context of the art market, ArtTactic performs financialisation by demonstrating and promoting financial devices, wherein calculative and accumulative agencies are embedded (Callon *et al.*, 2007). In reviewing the company's performative activities, this chapter reiterates and further explores the implications of financialisation within market studies. It is divided into three sections. First, it revisits ArtTactic's performative practices embedded within its textual artefacts, drawing on SMA methodology as a cartographic tool. SMA maps out the four dimensions of ArtTactic's performative works, which collectively construct the agencement of art finance, demonstrating that financialisation is a multi-faceted process with various interacting dimensions. Second, it discusses how to understand the process of financialisation. It encompasses the transformation of material, discursive, and institutional arrangements that enable a specific mode of calculation and accumulation. I suggest that Bourdieu's (Bourdieu, 1986, 1996; Wacquant, 1989) concepts of different fields, capitals, and habitus can contribute to configuring these arrangements, thus (re)assembling normative and institutional networks that support the performing agencement. Finally, the chapter concludes with some managerial implications that can be inferred from the analysis. These offer strategic insights for market participants and other stakeholders, enabling them to navigate better the ongoing process of financialisation.

2. Mapping Performative Works of ArtTactic

ArtTactic plays a significant role in performing financialisation within the art market. Through its discursive practices, the company presents its understanding of the market, thereby portraying and shaping the evolving landscape of art finance. ArtTactic operates not merely as an observer providing market information, but also as an influential actor with a catalytic force that propels market transformation. The company conducts what Beunza and Ferraro (2019: 535) call performative works, which they define as “the necessary institutional work to enable translation and the subsequent adoption of the device”. This research has employed SMA to extract and explore various themes and dimensions that underlie ArtTactic’s performative works. The methodology allows us to navigate the conceptual networks within the company’s texts, revealing how it transforms the socio-material and institutional arrangements of the market. In this section, I first discuss the usefulness and significance of SMA in examining ArtTactic’s discursive devices and its role in drawing the company’s cognitive map. I then explore ArtTactic’s performative works embedded in its texts, based on the four dimensions extracted by SMA: understanding the art market, introducing calculative devices, introducing accumulative devices, and introducing discursive devices.

2.1. Semantic Network Analysis

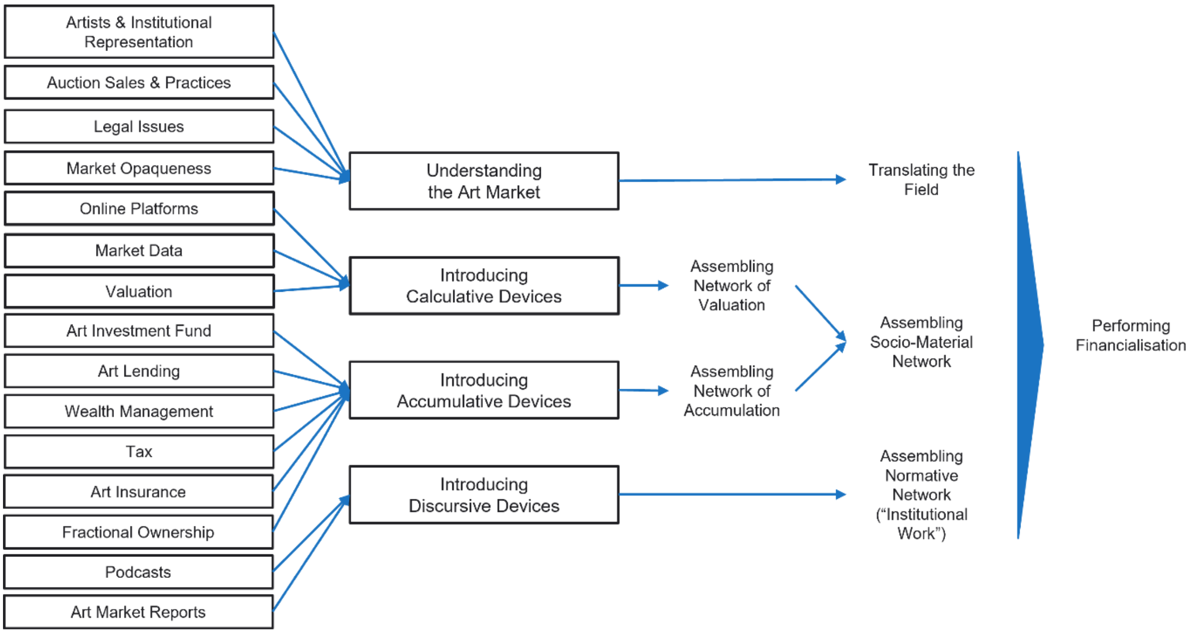
The analysis of research data (lectures, podcasts, and reports) has shown the dual nature of

ArtTactic's texts. They are performing devices that construct markets and, simultaneously, observable artefacts that present "markets in the making" (Callon, 2021: 11). From the ontology of market studies influenced by actor-network theory (Latour, 1996), the textual artefacts constitute discursive devices, while, at the same time, they are part of calculative and accumulative devices. The textual networks of discursive devices overlap and compound with other networks in a myriad of ways, creating complex entanglements with the market as a collective device. Examining these texts is therefore to trace the company's performation, showing how it understands, conceives of, and finally constructs the market. The analysis of data reveals the collective mental models (Carley & Palmquist, 1992) embedded in ArtTactic's texts; SMA is a cartographic exercise to map rhizomic networks of concepts. The cognitive map identified in chapter 3 (*see* Figure 6) shows how ArtTactic and art financiers translate and lever the arrangements of the art market. It visualises the interplay of various market actants in the process of financialisation, presenting the formation of the art market.

As discussed, the usefulness of SMA extends beyond its quantitative rigour in data analysis; it brings additional qualitative values that enhance the depth of data interpretation. SMA provides depth, complexity, and a better understanding of interconnectedness between concepts, transcending traditional coding methods that rely solely on human interpretation. It is a pivotal tool in the cartography of texts, capable of producing visual representations of discourses, demonstrating key concepts and their connections to each other. It brings forth the unseen intricacies, laying bare the complexities of market arrangements and dynamics, and provides new perspectives and dimensions. SMA helps to discern epistemological models from texts and illuminates how they impact the performation of market arrangements. The method's consistency with ANT provides empirical and theoretical potentials to continuously navigate complex market entanglements; it equips researchers to examine texts embedded within socio-material networks, subsequently mapping the networks and translation. This aligns with the constructivist approach of market studies, drawing on the intricate role of the text as an actant, network, mobile, generative, and agential entity throughout (Roscoe, 2022). In essence, SMA provides a unique capability to investigate the "black box" of textual representation, providing a level of scrutiny and complexity that standard textual analysis cannot achieve. In the following section, I will comprehensively discuss the performative works of ArtTactic as revealed through SMA.

2.2. Performative Works of ArtTactic

Figure 1. Performative Works of ArtTactic



How does ArtTactic perform the art market? How does it reconfigure and organise art market practices? Figure 1 encapsulates the performative works of ArtTactic captured by SMA, extended from the coded dimensions shown in chapter 3 (as seen in figure 4). The comprehensive assessment illustrates fifteen themes extracted from the company's texts, which are then aggregated into four performative dimensions: understanding the art market, introducing calculative devices, introducing accumulative devices, and introducing discursive devices. Each dimension plays a crucial role in shaping the market, constructing the agencement of art finance that resembles financial markets. The first dimension, understanding the art market, entails disassembling and analysing the unique practices specific to the field. This understanding enables ArtTactic effectively to introduce calculative and accumulative devices – the second and third dimensions –, assembling socio-material networks of market devices. The final dimension, introducing discursive devices, is a reflexive practice that reinforces and supports performation. Here, ArtTactic's discursive devices assemble normative networks by demonstrating their application and value within the art market. By reviewing the dimensions of the company's performative works, this section shows that the financialisation of art is a multi-faceted process that necessitates the effective introduction and implementation of different market devices.

As identified in SMA, ArtTactic's performative works are divided into four categories. First, providing understandings of the art market reorganises the art market by translating (Latour, 2014) its norms, values, and structures. The company navigates unique practices that differentiate the market from other markets (e.g. artists and institutional representation, auction sales and practices) while framing (Muniesa *et al.*, 2007) them as economic inefficiencies (e.g. market opaqueness, legal issues) by financial norms. The company depicts the incommensurability between art and finance and attempts to bridge the chasm by providing its own understandings and interpretations. They are a ground for ArtTactic's financialising strategies as well as performative statements by themselves. The transition of the dominant valorisation model proposed by the company exemplifies the performative nature of its statements (Austin, 1975); they prompt market actors to modify their behaviours accordingly, and thereby, perform the reality that they describe. The company's understanding of the art market can be more thoroughly explained by sociological accounts of the art world. ArtTactic portrays the art market as an ecosystem that collectively creates values (Becker, 2008), highlighting what Bourdieu (1996: 142) called the "antagonistic coexistence" between art and economy. To disrupt this dual structure of the art market, the performation must be built upon a thorough understanding of the existing values; they always misfire and are reincarnated into new flesh (MacKenzie, 2019a). Based on this recognition, ArtTactic investigates unique practices in the art market, which add socio-cultural entanglements that create values. The initial step of financialisation is to frame these practices and position them in the realm of economic circulation; ArtTactic aims to introduce new ways of engaging with the art market, ultimately transforming it into a more financialised system of calculation and accumulation.

Second, the company assembles the network of valuation by introducing calculative devices, such as online platforms, market data, and valuation matrices. Valuing art is a complex process of economisation (Çalışkan & Callon, 2009, 2010), which is shaped by socio-material arrangements called calculative devices (Muniesa *et al.*, 2007). ArtTactic introduces various calculative devices that categorise, classify, and evaluate art, fostering a mode of valuation that increasingly resembles that of finance. While price provision services and other analytic tools contribute to transparency and timeliness in the market, the company's evaluation matrices quantify contextual information to be commensurate with the financial field. These devices are deeply grounded in the textbook ideal of an efficient market; they transform the art market into a transparent, divisible, quantifiable, and frictionless entity. It is crucial to note that the effective implementation of calculative devices requires performative works (Beunza & Ferraro, 2019). This includes introducing tools, educating audiences, and nurturing a calculative habitus (Gulledge *et al.*, 2015) through didactic practices. ArtTactic's lectures and educational platforms help individuals understand and gain proficiency with these devices; they tie the calculative devices with market agents and thereby enact a specific mode of calculation. The company strives to transform calculative acts into embodied habitus, which reinforces and fortifies calculative agencies. By intertwining these devices with market agents, ArtTactic enables a mode of valuation that aligns with the financial field, transforming the way art is valued and ultimately reinforcing the financialisation of the art market.

Third, ArtTactic assembles the network of accumulation by introducing various market devices, such as art investment fund, art wealth management, art lending, fractional ownership, and art tax and insurance. This research introduces the notion of "accumulative devices" to elaborate these devices, which represent an extended arrangement of calculative devices that enables financial accumulation. The company strives to enact a mode of accumulation that follows the circulation of M-(C)-M' (Marx, 1890), or flexible accumulation (Harvey, 1987), where money and commodities (or assets) are exchanged flexibly. The accumulation operates and expands along two axes; while horizontal expansion broadens the scope of accumulation to new areas (e.g. art funds and wealth management), vertical expansion accelerates financial circulation within existing activities (e.g. art lending and fractional ownership). Both types of devices perform the market to construct the regime of accumulation (Krippner, 2005), grounded on the idea of economic efficiency that reproduces itself. The implementation of accumulative devices, however, encounters overflows and misfires (Callon, 1998). The 'not-so-great' investment profile of art as an asset class as well as the "hostile worlds" view (Velthuis & Coslor, 2012) in the art world instil in ArtTactic an ambivalence toward the pure financialisation of art. In its performative works (Beunza & Ferraro, 2019), the company acknowledges the unique institutional arrangements of the art market and demonstrates accumulative devices within its normative structures. It introduces their theoretical basis, historical and ongoing cases, and offers socio-cultural justification for investing in art. As the existing normative structures make it challenging to fully convince the market purely through financial justifications, ArtTactic emphasises the emotional, cultural, and social benefits of owning art. These include investors nurturing themselves as collectors, supporting artists and the art ecosystem, and finally the democratisation of art. These approaches help the company implement financial devices and norms in the market, not disrupting but working within its distinctive cultural frameworks.

Finally, ArtTactic reassembles the normative networks of the field by introducing discursive devices, such as lectures, podcasts, and art market reports. Although the reflexive process of demonstrating these discursive devices is briefly introduced in chapter 3, the roles and specific mechanisms are examined in detail across multiple chapters (refer to section 4 in chapter 4 and 2.3 in chapter 6). This can be attributed to the complex role that texts play as market actors involved in the construction of socio-material arrangements; the performativity of the company's discursive devices is intimately associated with all performative dimensions. The discursive devices conduct performative works (Beunza & Ferraro, 2019) that enable the adoption of calculative and accumulative devices. One of these mechanisms involves the description of the market, providing narratives of the financialisation of art. It portrays the shift from the institutional to the market model, highlighting the growing significance of finance in the market. The description not only reflects the market dynamics but also acts as a performative force, prompting market participants to adjust their actions in line with the presented narrative. The company's discursive devices also demonstrate the relevance and applicability of art finance devices. They ground the devices in financial theories, corroborate the effectiveness with historical and on-going cases, and situate them in socio-cultural contexts for justification. By so doing, the devices provide legitimacy for financial devices as well as practices associated with them. Another function of the discursive devices is the cultivation of financial habitus. The devices offer practical education and experience of financial norms and values, helping market actors develop the *sens pratique* of art finance. These processes are reinforced by the reflexive interplay among ArtTactic's discursive devices, contributing to the expansion of normative networks of art finance in the field of art. As exemplified in the performation of discursive devices, the four performative dimensions are not independent processes but are intricately intertwined and they interact with each other; this entanglement constitutes the felicitous condition of financialisation.

3. Understanding Financialisation

The study has demonstrated that financialisation is a comprehensive process that entails various performative works: translating the field, assembling networks of calculation and accumulation, and conducting performative works via discursive devices. These create the felicitous conditions for the financialisation of art, which ArtTactic strives to achieve through its performation. So, what do these findings tell us about financialisation? The research has shown that the political economy's concept of financialisation (Mader *et al.*, 2020) can be successfully integrated with market studies' socio-material devices (Callon *et al.*, 2007), bridging the macro and micro levels of analysis on the process of financialisation. The felicitous condition of market devices leads to the financialisation of daily practices, through which the regime of accumulation is constructed and reinforced. Financialisation is a pervasive mechanism that interacts with our daily lives including art market practices. This section discusses how to comprehend and theorise financialisation in the context of market studies. Drawing on the empirical case study of ArtTactic, I suggest that financialisation is the enactment of a specific mode of valuation and accumulation achieved through the politics of market devices. The concept of accumulative devices is proposed to reconcile the account of accumulation and market studies. Finally, I would argue that the “material political economy” (MacKenzie, 2017: 174) can be further enhanced by employing Bourdieu's conceptual tools, such as field, capital, and habitus.

3.1. Enacting a Mode of Valuation and Accumulation

The empirical study shows that financialisation is the permeation of financial principles and practices throughout various facets of life, leading to the emergence of market actors whose practices are increasingly governed by the logic of finance. Individuals embrace and internalise a specific mode of valuation and accumulation, transforming the market to resemble the financial economy. Valuation and accumulation are the two pillars of this transformation; Muniesa et al. (2007: 3) posit that an economy is “the establishment of valuation networks”, while Krippner (2005: 173) views financialisation as the shift in “a pattern of accumulation”. I propose that these two perfectly valid perspectives can and should be reconciled. The process of financialisation represents the struggles and negotiations around the regime of accumulation, and, on a micro level, the mode of valuation enacted in the market. These two aspects are interconnected and mutually reinforcing, continuously escalating each other to construct the financial economy. Individuals are shaped through interaction with the capital’s imagination, where speculative value becomes indicative of value (Davis, 2018). It reconfigures indebtedness, ownership, and valuation around the accumulation of capital, ultimately constituting the regime of accumulation.

Markets are essentially spaces where diverse modes of valuation compete for dominance (Godechot, 2016). This competitive space is guided by the underlying politics of market devices, as identified by MacKenzie (2017). Financialisation plays a pivotal role in this contest by constructing a socio-material arrangement that facilitates a specific mode of valuation (or calculation). This refers to the implementation of financial logics and methodologies in the evaluation of various market entities. The example of ArtTactic illustrates how this process unfolds in the art market. The company introduces various calculative devices to execute financial valuation, thereby transforming the art market into a space of financial calculation. These devices order and put artworks into a space of calculation by categorising and classifying them (e.g. art market data), construct measures that position them within different financial assets (e.g. art price indices and analytic tools), and quantify contextual information of the art world into valuation matrices (e.g. scorecards). These devices reconfigure the socio-cultural entanglements of art world practices into financial calculations. Aspects like the artistic appreciation of an artwork, its pro-economic life, and the on-going career of an artist are thereby transposed into commensurable measures that can be weighted in financial terms. The important point is that the design and operation of these calculative devices are heavily embedded in financial theories (Callon, 1998; MacKenzie *et al.*, 2007). This underpins the performativity of finance, as it seeks to realise the world it conceives through its calculative devices. Financialisation not only translates art into a language of finance but also shapes the contours of the art market and the wider economic landscape.

The other critical aspect of financialisation is accumulation. While market studies have traditionally focused on the construction of calculative agencies (Callon & Muniesa, 2005b) in constituting markets, political economy literature suggests that financialisation is fundamentally a political process around the regime of accumulation (Mader *et al.*, 2020; Van der Zwan, 2014). The empirical study of ArtTactic demonstrates how financialisation revolves around accumulation practices through the deployment of various instruments, herein referred to as “accumulative devices”. These devices take numerous forms, including art investment funds, art wealth management, art lending, and fractional ownership of art. The devices enable both horizontal and vertical expansions of the financial economy. Horizontally, they help expand the scope of accumulation into new areas; vertically, they increase the efficiency of financial flows within existing activities. The dual expansions transform the early capitalistic cycle of C-M-C (commodities-money-commodities) to the advanced cycle of M-(C)-M’ (money-commodities-extended money), facilitating a more flexible exchange between money and commodities. In financialised economies, the accumulation of capital increasingly takes place within this cycle, where money begets money through endless circulation (Marx, 1890). The following section reiterates the concept of “accumulative devices” that significantly contribute to the discussion of accumulation.

3.2. The Concept of Accumulative Devices

The market studies’ concept of socio-material devices provides a comprehensive understanding of the construction of accumulative agencies. Accumulative devices are coordinating tools that organise a network of economic actions, thereby facilitating a particular mode of accumulation. It should be noted that the significance of accumulation in financialisation does not diminish that of calculation in market studies. Calculation is always a precondition of accumulation; accumulative devices must be understood as extended arrangements of calculative devices. For instance, art investment vehicles postulate the existence of calculative tools for their measurement and assessment. While the calculative devices frame, categorise, and quantify pre-economic entanglements into economic entities (Callon, 1998), the accumulative devices draw these disentangled, commensurable intermediaries into the circulation of M-(C)-M’. The flexible accumulation (Harvey, 1987) allows capital to flow seamlessly, fostering a temporal and spatial cycle of capital accumulation. As illustrated in the ArtTactic case, the accumulation continuously reproduces itself, expanding both horizontally and vertically. Accumulative devices enable this dual expansion of capitalistic circulations in the market and construct the corresponding arrangement of accumulation.

The study highlights various types of accumulative devices, which include art investment funds, wealth management, art lending, fractional ownership and technology, along with other ancillary devices. I have grouped these into two categories: those that contribute to horizontal expansion and those that contribute to vertical expansion. Art funds and wealth management devices belong to the first category. They introduce investment practice and logics into a new territory, the art market. ArtTactic suggests that art funds provide sound returns, and arguably allow investors to offset more traditional investment portfolios. An important evolution observed in this study is the transition from art funds to art wealth management. This shift marks a move from a solely investment-focused approach to a more comprehensive service that includes diverse art-related services, suggesting that the construction of accumulative devices is not purely financial. Art lending and factional ownership are vertical devices that increase liquidity, allowing faster flow of capital and arguably returns. They free up capital and spread the network of art ownership, providing a more diversified set of owners. The initial capital required to own or invest in art is lessened, making the process of investment easier and lessening the burden, thus intensifying the circulation of capital. Most importantly, the ability to move capital is explored and explained through these devices. Traditional ownership models are altered through fractional ownership, which is reliant on technology, or is developed through lending against art. The vertical and horizontal devices identified enhance both the quantity and mobility of capital within the financial ecosystem; they play a pivotal role in shaping the financialised art world.

3.3. The Politics of Market Devices and Bourdieu

The above discussion has shown that different market devices give rise to different modes of calculation and accumulation. Markets are arenas where various devices compete for dominance and negotiate their influence. The prevailing devices perform the market to constitute their calculative and accumulative agencies, altering the structure of the market in the process. As Bourdieu (1997) contends, the market is not a homogeneous space but a space warped by the gravity of dominant actors. The enactment of market devices is therefore an inherently political process that involves what Mackenzie (2017: 174) refers to as a "material political economy". Actors in the market engage in power plays to establish their devices and arrangements, reconfiguring the modality of calculation and accumulation favourable to their interests. From this perspective, financialisation is not just a macro, structural transformation in the global economy, but also is the micro-politics of socio-material devices in everyday practices. This process entails struggles and negotiations amongst heterogeneous actors, encompassing market devices and various quasi-actants such as norms and values. ArtTactic employs performative strategies to facilitate the construction of financial agencement in the art market, by fostering the introduction and promotion of various market devices. It aims to establish the dominance of art finance over other forms of valuation and accumulation, thus shaping the art market in accordance with the financial economy.

Another significant point from the empirical work is that the adoption of market devices necessitates performative works (Beunza & Ferraro, 2019). The normative networks of norms, values, and cultures sometimes resist the implementation of these devices; they require the translation between the world to be performed and the world that is performing. Bourdieu's thinking tools are extremely useful to capture and interpret different game rules by different fields. His field theories (Bourdieu, 1983, 1986, 1996) suggest that each field has its own relative autonomy independent from other fields with actors following the specific logic circulated in the field. It creates a normative structure that resists and negotiates with the performation of market devices, which must be thoroughly understood and translated. The case of ArtTactic illustrates the persistence of the artistic tradition of “art for art's sake”, emphasising the need to examine and consider the dual structure of the art market in the performation of finance. To perform the market, the existing game rules of the field need to be disassembled and reframed within the context of the new devices. The concept of different fields and capitals contributes not only to capturing the existing market arrangements but also to assessing the newly created world to be performed. Despite the ANT’s initial refusal of the cultural (Entwistle & Slater, 2014), the socio-cultural, institutional structures persist and are often reincarnated into a new flesh (MacKenzie, 2018). ArtTactic’s case exemplifies the path dependency of the existing norms and values of the field; its performative strategies are paradoxically rooted in the distinction between art and money, or ‘art for art’s sake’, while performing against it. They are not just ontological fictions that must be flattened to materials, but observable social facts that perform realities (Gulledge *et al.*, 2015; Palo *et al.*, 2018). Bourdieu’s theories shed light on the persistent entanglement as is before disassembled materials and discourses, which is often understood and performed as the cultural. Taking Bourdieu into market studies could open up new areas for future research in conjunction with institutional theories, as evidenced by the emerging examples of literature (Mountford & Geiger, 2021; Roscoe & Mason, 2020).

Bourdieu’s other important concept of habitus (Wacquant, 1989) also offers valuable insights into the implementation of financialising devices. It shapes how market actors perceive, respond to, and engage with devices. Financialisation entails the reconfiguration of specific habitus (Gulledge *et al.*, 2015) acquired within a certain field, forming and being formed by the interaction with the newly introduced market devices. The adoption of these devices involves more than just understanding of their mechanisms; it demands a practical mastery. Individuals must internalise and embody the use of market devices, so that the calculative and accumulative acts become deeply ingrained and reflexive, becoming an intuitive part of their actions. ArtTactic strives to cultivate the habitus of finance through the dissemination of knowledge and the repetition of practical exercises. Market actors familiarise themselves with financial jargon, learn to interpret market data, and comprehend the procedures involved in calculation and accumulation. Over time, these acquired competencies become integral to their daily practices and cognitive operations, maturing into more robust market devices that facilitate financialisation. The habitus of finance performs the market as much as it is formed by its socio-material arrangements.

4. Managerial Implications

The analysis of ArtTactic's performative works provide several managerial implications for market actors looking to transform the market. These insights guide actors in effectively navigating and reshaping the market while pacifying resistances. First, it is essential for market actors to develop a comprehensive understanding of the unique characteristics, norms, and practices of the market. The in-depth understanding helps the enactment of new market devices, respecting the material and normative structures that underpin the market. It ensures performatives strategies align with the existing arrangements of socio-material actants. Second, market actors should be strategic in choosing and implementing market devices. Performation always entails misfires and overflows; successful implementation of market devices requires adaptation and reframing, considering the unique structural contexts of the market. Third, continuous performative works and institutional support are necessary for the successful implementation of market devices. The adoption of devices is a socio-cultural and political process that involves struggles and negotiations around values. The performateur needs to create an environment conducive to newly introduced market devices, establishing favourable normative networks through discursive practices. Fourth, the transformation of market actors' habitus is also crucial for the performation of market devices. The use of market devices requires practical mastery; the mode of calculation and accumulation must be fully embodied by market actors to perform the market. This can be accomplished by strategically disseminating knowledge through various educational platforms and practical experiences, enabling market actors to become more adept at comprehending and employing market devices.

Even though finance has become a dominant force that increasingly drives the contemporary economy, performing financialisation can be a difficult act, especially within a field governed by different game rules. Firstly, performative actions encounter overflows and misfires regarding the existing arrangements of the market, often creating friction with the mechanisms put in place for performation. It is necessary to understand that financialisation is the enactment of a mode of calculation and accumulation within and against these existing arrangements. The devices need to navigate through, adapt to, or transform existing market arrangements. Second, the dynamics of calculation and accumulation – which are two key elements of financialisation – are not fixed but continuously evolving. The calculative and accumulative devices must be reassessed and refined to align with the changing arrangement of markets. This means that financialisation is not a one-time event but an ongoing process that requires constant engagement and adjustment. Third, the political aspects of financialisation must not be overlooked. Financialisation requires the implementation of specific market devices that foster the advanced circulation of M-(C)-M'; not only is the implementation of these devices political, but also the devices themselves inherently possess political dimensions. This underscores the importance of considering broader impacts in the process of enacting financialisation. In conclusion, performing financialisation is a holistic process that encompasses material, political, and socio-cultural dimensions, which requires a comprehensive understanding of its mechanisms.

VIII. Conclusion

The billionaire investor presented in the opening of the dissertation may not be the most prevalent figure in the art market. However, persistent efforts to financialise the market have been ongoing, leading to its gradual transformation in that direction. As ArtTactic states, we may be only witnessing the “take-off” of more extensive transitions, akin to those experienced in many other industries. The subjectivity of *homo oeconomicus* is constructed through interaction with financial devices, which are increasingly ingrained in the everyday practices of the art market. This research has investigated ArtTatic’s endeavours to implement such devices in the art market, constituting the agencement of art finance that encompasses materials, discourses, and institutions, among others.

This dissertation opened with a review of the key literature in theorising financialisation (Chapter 2), following the introduction. Drawing on the political economy’s concept of financialisation and market studies’ socio-material devices, the review aimed to understand the central concept of the project – financialisation – and its contexts within the art market. The next chapter (Chapter 3) introduced the methodology developed for the research, highlighting the methodological and theoretical advantages of SMA with a detailed explanation of its implementation. The analysis provided the outline for the empirical research. The empirical chapters (Chapter 4, 5, and 6) investigated ArtTactic’s performative practices based on SMA’s dimensions. Chapter 4 examined ArtTactic’s navigation and interpretation of the art market. It highlighted the company’s understanding of its dual structure and suggested transition, illustrating a performative aspect to its representation of the market. Chapter 5 explored the company’s attempts to construct networks of financial valuation. It outlined its efforts to make the market calculable, demonstrating an array of calculative devices through its performative works. Chapter 6 focused on the construction of accumulative networks. The chapter introduced the concept of “accumulative devices” that enable horizontal and vertical expansions of accumulation. The demonstration of both calculative and accumulative devices entails financial and socio-cultural justifications. Finally, in Chapter 7, I discussed the implications of this research and possible theoretical directions for further studies.

The first research question – how the logic of finance infiltrates the art market – has been explored through the examination of ArtTactic’s case. The empirical study has shown that the financialisation of art is an on-going project, perpetually encountering challenges and undergoing reconfiguration. The art market is in transformation, and ArtTactic serves to facilitate this process through its performative activities. The second question – what are the market devices involved in this process – has also been examined through the case. ArtTactic showed how various calculative and accumulative devices integrating art and finance are implemented to perform the art market. The company’s performative works include translating the field, assembling networks of calculation and accumulation, and conducting performative works through its discursive practices. These efforts represent ArtTactic’s endeavours to establish the felicitous conditions for financialisation, thereby enacting a mode of valuation and accumulation. This answers the third question – what are the performative works required to navigate the unique institutional arrangements of the art market. The process of financialisation constitutes a “material political economy” (MacKenzie, 2017: 174) around calculative and accumulative devices to construct the agencement of art finance.

An interesting observation from the case study was ArtTactic’s ambivalence towards the pure financialisation of art. Considering the company’s expressed dedication to financialisation, it was surprising to discover a certain hesitancy. Ironically, this demonstrates the reason why the company has sustained its position as a leading player in the field, whereas others with more aggressive approaches have failed to perform in the market. The company's performative strategies are grounded in its strong understanding of the art market, namely the collective ecosystem of valorisation (Becker, 2008) and the incommensurability between art and money (Bourdieu, 1983). This enables ArtTactic to perform successfully within the existing institutional structure, while simultaneously performing against it.

Theoretically, the research provided two primary contributions. First, it delivered an understanding of the growing concept of financialisation within the tradition of market studies. I have shown that the concept of financialisation in the political economy (Mader *et al.*, 2020; Van der Zwan, 2014) can be successfully converged with market studies' socio-material devices (Callon *et al.*, 2007). Drawing on recent literature on the politics of market devices (MacKenzie, 2017; MacKenzie, 2018; Roscoe & Mason, 2020), I proposed financialisation as the process of a material political economy, focusing on the enactment of a mode of valuation and accumulation. Second, the research revealed the pivotal role of performative works (Beunza & Ferraro, 2019) in the organisation of markets, specifically within the context of financialisation. The implementation of market devices is consistently contested by the existing normative networks; it necessitates translation between the world performing and the world being performed. I suggested that Bourdieu's field theories are invaluable in understanding and translating these institutional arrangements. This could open up new areas for future research in conjunction with institutional theories, as evidenced by the emerging examples in market studies (Mountford & Geiger, 2021; Roscoe & Mason, 2020).

Like any other research endeavour, this study is not without limitations. First, it concentrates primarily on a single organisation, ArtTactic, even though its resources encompass various market actors. While this provides an in-depth understanding of ArtTactic's performation, it largely overlooks other actors' interactions with these performative activities. The exploration of market participants' engagement and negotiation with newly introduced market devices could be a promising direction for future research. Second, the data used in this study have mainly sourced from ArtTactic's publicly available materials and activities. This might not provide a comprehensive picture of their strategies, especially those that can be gained from ethnographic methods such as in-depth interviews or participant observation. Both limitations have mainly arisen from the difficulties associated with data collection during the Covid-19 pandemic. As the pandemic is over, at least in the current period, opportunities for further research into these aspects might be more than accessible.

As outlined in the research design, my interest in the financialisation of art has grown with my academic endeavours. The initial question that I posed as a business student was whether art is a good investment. Conversely, as an art enthusiast, I pondered if art as an investment maintains artistic and aesthetic integrity. Unfortunately, this research did not answer both questions. Instead, it has shown that the financialisation of art is a socio-material process performed by devices and theories. The art market is an arena for competing valuations and accumulations, oscillating between two influential performative theses: art for art's sake, and *homo oeconomicus*. This poses a new question, spurred by Mackenzie's (2008: 273) provocation, which might be even more difficult to answer: what kind of an art market would we like to see performed?

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