



New Political Economy >

Volume 21, 2016 - [Issue 3](#)

Open access

26,661 | 117

Views

CrossRef citations to date

21

Altmetric

[Listen](#)

Articles

From performativity to political economy: index investing, ETFs and asset manager capitalism

Benjamin Braun

Pages 257-273 | Received 10 Jan 2014, Accepted 30 Jul 2015, Published online: 29 Oct 2015

Cite this article <https://doi.org/10.1080/13563467.2016.1094045>

Check for updates

Full Article

Figures & data

References

Citations

Metrics

Licensing

Reprints & Permissions

View PDF

Share

ABSTRACT

As a discipline, political economy has often been reluctant to engage with the details of market devices and practices. This weakens the microfoundations of its analysis of capitalist macro-dynamics and cedes unnecessarily large stretches of intellectual territory to economics. The performativity approach developed by Michel Callon offers a theoretical way out of this dual dilemma. It allows political economists to study 'the economy' directly by investigating the links between the diversity of market devices and the diversity of capitalism. The argument is illustrated by an analysis of the gradual, performative evolution of the investment intermediation market, where the traditional high-cost model of active asset management has been challenged by the emergence of a low-cost alternative in the form of index-tracking investment funds. Highlighting the distributive implications of this development, the current article shows

completion of the socio-technical agencement of the ‘passive investor’. In contrast to the recently resurgent notion that the two approaches are incompatible, this article insists that the micro-sociological study of market devices fosters the analytical capacity of political economy by opening up new perspectives on the macro-dynamics of contemporary capitalism. In the case at hand, it brings into sharp relief the contours of the emerging constellation of ‘asset manager capitalism’.

KEYWORDS:

Performativity

financialisation

investment chain

passive investing

exchange-traded funds (ETFs)

asset manager capitalism

patient capital

Introduction: let's study the economy!

After a brief period of doubt following the global financial crisis of 2008–9, economics seems to have consolidated its spot in the sun at the top of the ‘implicit pecking order among the social sciences’ (Fourcade et al. 2015: 89). ‘The Superiority of Economists’ documented by Fourcade, Ollion and Algan lends new urgency to the long-standing question of how political economy should position itself vis-à-vis economics.

Responding to Fourcade et al., some economists have offered a simple explanation for their discipline’s political influence – policy-makers prefer economists’ advice on economic issues ‘probably because ... drumroll ... economics is the discipline that studies the economy’ (Smith 2014; original emphasis).¹ Although polemical, statements such as this touch upon a sensitive point: precisely when ‘the economic’ attained hegemonic status in human affairs, ‘Parsons’ Pact’ made non-economist social scientists surrender the study of the economy to economics (Stark 2009: 7), suffering an intellectual land grab as a result. This article argues that the reason why political economy has since been less successful than economic sociology in reclaiming some of that lost territory lies in the former’s adherence to a narrow conception of the political.² According to this conception – as previous critics have pointed out – politics ‘takes place where the realm of economics stops’ (Murphy and Tooze 1991: 24) and thus remains limited to the ‘identifiable actions of states and policy-makers’ (De Goede 2003: 85).³ According to one proponent, this approach to political economy works on the

capitalism' (Gourevitch [1996](#): 241). Questioning this hierarchical conception of the relationship between the 'political' and the 'economic', this article advocates a more horizontal analytical framework – or flatter ontology – in which the 'micro-institutions of capitalism' feature not only as epiphenomena, but as sites of politics. In a world in which markets 'increasingly set the conditions under which social institutions can develop and function' (Beckert and Streeck [2008](#): 7), the tendency to analytically prioritise the actions of policy-makers over those of market participants is problematic. Markets and market devices matter for political economy, not only as participants in or objects of political struggles over (de-)regulation, but as sites of politics in their own right.

A series of recent contributions have called on political economists to engage more directly with market structures and dynamics, especially in the financial sector (Drezner and McNamara [2013](#), Hardie et al. [2013](#), Green and Hay [2014](#), Seabrooke and Wigan [2014](#), Thiemann [2014](#)). The current article argues that the performativity approach offers a promising framework for political economists to study the economy directly. The argument is empirically illustrated through a study of the part played by financial innovation, in the form of exchange-traded funds (ETFs), in the 'performance' of the 'passive investor'. Crucially, the analysis highlights the connection between these micro-level market practices and the ongoing transformation of the investment industry, and indeed of the dynamics of financialised capitalism more generally. In making this link, the article addresses the primary objection against the micro-sociological approach pioneered by Michel Callon and Bruno Latour and subsequently applied to finance by MacKenzie and others – the objection that obliviousness to the structural features of capitalism and secret collusion with economists render the performativity approach incompatible with the project of a critical political economy (Roberts [2012](#), Noys [2014](#), Koddenbrock [2015](#)). Drawing on arguments recently advanced in economic sociology (Beckert [2013b](#)) and economic geography (Christophers [2014](#)), this article conceptualises practices at the micro-level of markets and the political economy of capitalism as too inextricably linked for their analysis to be compartmentalised along disciplinary lines. The empirical challenge, then, is to show how market devices, market structures and forms of capitalism are interwoven – that is, to establish both micro-meso and meso-macro connections (Lagna [2015](#): 4). Regarding the micro-meso link, the following study of the causes and consequences of the rise of index investing follows recent attempts to combine the social studies of finance

'thinking about the co-evolving relationship between the socio-technical aspects of financial products and more institutional dimensions of market development' (Goldstein and Fligstein 2014: 10; cf. Seabrooke and Wigan 2014). Secondly, the article links meso and macro levels by exploring the consequences of the performative transformation of investment practices for the broader political economy of what it describes as 'asset manager capitalism'. In doing so, it complements important recent research on the pension fund industry (Naczyk 2013, McCarthy 2014) and reiterates the call for a stronger mutual engagement between comparative political economy and the financialisation literature (cf. Estevez-Abe 2001).

The argument is developed over three sections. In order to show why political economy has much to gain from a deeper engagement with the performativity approach, the first section offers a systematic reconstruction of Callon's work on performativity, placing particular emphasis on the processual nature of performativity and the questions of causality and agency. The second section outlines the materialist critique of the performativity approach, but rejects it on the grounds that practices at the micro-level of market devices are key to the understanding of the macro-dynamics of capitalism. The third section substantiates this argument using an empirical study of the performative transformation of the investment industry as a result of the rise of passive investing strategies. The conclusion discusses the theoretical lessons from the case study and, using the topical example of 'patient capital', indicates how a micro-funded understanding of the investment chain opens up new perspectives on the broader political economy of asset manager capitalism.

What it means to say that economics is performative

Challenging the then-dominant approach in economic sociology, Callon emphasised that instead of being embedded in society, the economy was embedded in economics, which 'performs, shapes and formats the economy, rather than observing how it functions' (Callon 1998b: 2). While Callon's work was widely influential, its impact was strongest in the 'social studies of finance', where the contributions of Knorr Cetina and Bruegger (2002) and MacKenzie and Millo (2003) sparked a highly productive research programme.⁴ Importantly, Callon's understanding of the role of economics differs from the prevailing conception of economic 'ideas' in constructivist political economy

([2005](#): 13), they focus not on economic ideas acting on the economy as external (causal) variables, but on the constitution of the economy as a performative effect of the theoretical and practical activities of economics:

In the program that I propose the idea that economics can have an influence on behaviours or worldviews is meaningless. I don't think that norms, values and conceptions of the world can be made autonomous in order to establish them as intermediary variables through which abstract economic theories could act upon real economic agents. My question concerns the production of agencies and the spaces in which they circulate and meet. ([Callon 2005](#): 13)

In other words, the hallmark of Callon's performative conception of the economic is the collapsing of the epistemological distinction between ideational and material structures. In political economy, this insight has been fruitfully applied to the performative constitution of both professional ([De Goede 2005](#), [Clarke 2012](#)) and everyday financial spaces, imaginaries and subject positions ([Aitken 2007](#), [Langley 2010](#)). Crucially, however, these pioneering contributions have mainly focused on the cultural and political performance of financial activities and identities, rather than on the devices and practices that create and sustain those markets on the – actual or virtual – trading floor. If 'contemporary political economy ... treats the economy as a black box' ([Streeck 2011](#): 138), the performativity literature has peeked under the lid while leaving the box mostly intact. The purpose of the following overview is to show that Callon's approach offers a framework for political economists to fully open the box and study the economy directly.⁶

Saving Callon from Austin: the genealogy of Callonian performativity

'Saving Austin from MacKenzie' is the title of a recent critique of the 'sociological performativists' by [Mäki \(2013\)](#). Contrary to Mäki's view, this section maintains that it really is MacKenzie and Callon who need saving from Austin. Indeed, MacKenzie was very clear about his theoretical allegiances when he revoked his earlier use of the term 'Austinian performativity' on the grounds that the term 'had the disadvantage of being read as invoking not sociology, which is what I wanted to invoke, but linguistic philosophy' ([MacKenzie 2006](#): 19). The same is true for Callon's own work on performativity, which built directly on his earlier contributions to science and technology studies (STS), most notably actor-network theory (ANT). Together with

generation of scientific knowledge, but vice versa – scientific practices were constitutive of social aggregates and actor-networks (Callon and Latour [1981](#), Callon [1986](#)). Crucially, these actor-networks consisted not only of people and knowledge, but also of objects – the controversial ‘material turn’ of ANT (Law [1992](#): 383). In light of this intellectual genealogy, Callon’s subsequent turn to performativity represented not so much a radical theoretical departure than an extension of his earlier work to a ‘science’ that had not previously been looked at by STS – the academic discipline of economics (Callon, cited Barry et al. [2002](#): 285).

If Callon’s intervention was informed by STS and ANT, the intellectual opponent was the ‘new economic sociology’ and its Durkheimian insistence that *homo oeconomicus* was ‘little but an artificial man of reason’, and that economic actors and markets were, like all actors and institutions, embedded in society (Durkheim [1974 \[1888\]](#), cited Smelser and Swedberg [1994](#): 11). While the project of criticising and enriching *homo oeconomicus* stands little chance of formulating a critique of the assumptions of economics ‘that has not been expressed somewhere or other by an economist’ (Bourdieu [2005](#): 15), the more serious problem is that it does not allow for the possibility of the ‘artificial man of reason’ not being a myth but an – in principle – realisable programme of economics.⁷ Callon, by contrast, provocatively suggests that ‘*homo oeconomicus* really does exist’, and that sociology needs to come to terms with ‘his simplicity and poverty’ (Callon [1998b](#): 50).

As a form of calculative agency that exists in the real world, *homo oeconomicus* cannot, of course, be conceptualised simply as a clever version of *homo sapiens*. Instead, economic agency takes the form of ‘socio-technical agencements’ – heterogeneous configurations of human and non-human elements that enable or facilitate calculative behaviour (Callon [2007](#): 320).⁸ ‘The economy’, then, is the sum of the socio-technical agencements ‘that qualify themselves as economic’ (Callon [2009](#): 20). From here, the empirical agenda of the performativity approach is straightforward – identify economic agencements, study the processes through which they are assembled and examine their effects (Çalışkan and Callon [2010](#): 10). In short, performativity scholars ‘recognize economics not as a (misguided) science of capitalism but as its technology, that is, as one of the active ingredients in the production and reproduction of the market order’ (Fourcade [2007](#): 1025).

Performativity as process: (dis-)entanglement, performance,

While sharing Polanyi's (1957: 68) interest in the constitution of the 'autonomy' of the economy as a sphere with 'laws of its own', Callon insisted on moving from the notion of (dis-)embeddedness to the concepts of entanglement and disentanglement in order to capture 'the dynamics involved in reconfiguring entities and networks of entities' (Callon, cited Barry et al. 2002: 292, 294). This emphasis on dynamics stands in contrast to a narrow understanding of performativity as a remoulding of economic reality in the image of economic theory, which implies a static comparison of two states of the world. If anything, Callon's emphasis on the processual nature of performativity has increased over the years, as his language shifted from (dis-)entanglement to 'performance', and, most recently, to 'economization'.

The metaphors of (dis-)entanglement and framing are meant to capture the activities that configure calculative agencies and spaces. Drawing on Erving Goffman, Callon (1998a: 249) defined a frame as a structure that 'establishes a boundary within which interactions ... take place more or less independently of their surrounding context'. To put it simply, this boundary is the result of the disentanglement of certain relations from others, and of the imposition of a frame to keep that separation in place. The subsequent introduction of the notion of 'performance', defined as 'the process whereby socio-technical arrangements are enacted' (Callon 2007: 330), was explicitly intended to clarify that the performativity programme was not about the economy being 'created entirely by economics', but about the 'interventions' that allow knowledge to become effective (2009: 19). This emphasis on intervention and practice became even more pronounced in a pair of articles on 'economization', which placed particular emphasis on the 'processes that constitute the behaviours, organizations, institutions and, more generally, the objects ... qualified ... as "economic"' (Çalışkan and Callon 2009: 370, 2010). From this perspective, 'marketizing' activities - activities geared towards the establishment of markets - are but one category of economisation, albeit it a central one.

Crucially, however, framing is never complete. 'Leaks' allow excluded relations to spill over into the frame, or included relations to flow out into the wilderness of non-calculability surrounding the frame. While economists tend to view such 'externalities' as exceptional cases of market failure, Callon sees them as the rule rather than the exception, using the term 'overflowing' to denote the permeability of the frame and the 'impossibility of total framing' (Callon 1998a: 18).⁹ It is this inevitable incompleteness of performative processes that leads to the phenomenon for which MacKenzie (2004)

to be performative in a strong sense if its application alters economic processes 'so that they better correspond to the model', counterperformativity describes a situation in which the use of an economic model undermines its empirical accuracy (MacKenzie 2006: 19).

Causal mechanisms and performative agency

In an article that has done much to popularise Callon's work in the management literature, Ferraro et al. (2005) use Robert K. Merton's notion of self-fulfilling prophecies as a synonym for performativity. This is problematic, as it short-circuits the question of the causal mechanisms at play. Defined as 'a false definition of the situation evoking a new behaviour which makes the originally false conception come true' (Merton 1948: 195, original emphasis), the standard example is that of a bank run – even though depositors may be wrong in thinking that an imminent insolvency of the bank puts their savings at risk, their combined cash withdrawals make their originally unfounded fears come true. In contrast to this solely belief-based mechanism, however, performative processes generally require the insertion of economic theories not only into human minds but also their material realisation in the technological infrastructure of markets (MacKenzie 2006: 19, Callon 2007: 323). The case discussed below illustrates this very clearly: Starting from the original academic case for index investing, it took decades before the socio-technical agencement of the 'passive investor' was finally assembled.

The compelling nature of MacKenzie's account of the Black-Scholes-Merton case has arguably contributed much to the (misleading) impression of performativity being about economic theories miraculously coming 'true'.¹⁰ In the article quoted above, Mäki rejects the notion of performativity in the economic sphere on the grounds that 'using an economic model goes well beyond just recognizing it uttered or written down ... Use involves taking further action' (Mäki 2013: 447–8). Yet this argument misses the target – the insight that '[t]he effectiveness of economics rests on what it does, not on what it says' (Mitchell 2007: 245) is not a critique, but an affirmation of the performativity approach. Much of the – at times severe – criticism by Mäki and other (heterodox) economists (Colander 2008; Hodgson, cited Hodgson and Ingham 2010) can be attributed to a narrow definition of both 'performativity' and 'economics'. Though the academic discipline of economics is important, it is ultimately only one of three 'key agents in economization processes' (Çalışkan and Callon 2010: 2):

(1) the theories of the economy; (2) the institutional and technical arrangements that enhance the capacities of human agents for action and cognition; (3) the things which are being valued whose materiality influences the modes of valuation that are possible.

In short, then, 'discussing performativity in the economy is more than discussing the performativity of economics' (Muniesa [2014](#): 28).

And yet, it remains true that Callon's reluctance to distinguish between 'those who arrange' and the 'things that have been arranged' (Callon [2007](#): 320) makes it 'hard to fill in the dance card with identifiable protagonists' (Mirowski and Nik-Khah [2007](#): 203). What should one make, for instance, of Mirowski and Nik-Khah's point that Callon's ([2007](#): 336) 'economists in the wild' often act as 'hired guns'? Re-evaluating an episode that has featured prominently in the performativity literature (Guala [2001](#)), Mirowski and Nik-Khah ([2007](#): 211) ask whether the Federal Communications Commission (FCC) auctions of spectrum licences in the USA were a case of performativity or of economists masking the pecuniary interests of their employers behind 'a fog of learned disputation and superfluous mathematics'. Inclined towards the latter interpretation, they argue that Guala's account neglects the powerful interests of the telecoms, who – partially by employing game theorists – managed to change the auction procedure to the point where it barely still resembled the original congressional mandate given to the FCC. Ultimately, however, Mirowski and Nik-Khah's persuasive argument does not invalidate the performativity approach. As illustrated by the protracted performative effects of economic arguments in favour of passive investing, an economic innovation is never self-performing – if it fails to 'muster enough institutional and political support' it may have no performative effects at all (Fourcade [2011](#): 1724–5).

Performativity and the interdisciplinary project of a critical and microfounded political economy

Renewed interest in the analytical potential of ANT-inspired approaches for political economy (Barry [2013](#), Best and Walters [2013](#)) has gone hand in hand with the renewal of an earlier, broadly Marxist line of argument, which criticises the micro-sociological focus on specific markets for losing sight of the systemic logic of capitalism (Roberts [2012](#), Noyes [2014](#), Kodenbrock [2015](#), cf. Miller [2002](#), Fine [2003](#)). While the method

without already holding strong preconceptions of what it is they are looking at, in doing so, these critics argue, they risk missing the wood for the trees. Actor-networks, according to this point of view, ‘are refractions of, and fold into, abstract and immanent capitalist processes’ (Roberts [2012](#): 36). In other words, the focus on the ‘concrete and contingent’ obscures the tendency of the real historical constellation of capitalism to impose its ‘necessary’ logic and contradictions on society. It is futile to study the configuration of socio-technical agencements as long as alternative configurations do not change the underlying model of capitalist accumulation.

One does not have to take at face value the rhetorical bonmots that capitalism ‘does not exist’ (Latour [1993](#): 173) except as ‘an invention of anti-capitalists’ (Callon, cited Barry et al. [2002](#): 297) in order to agree with the critics that ‘[c]apitalism as a historically specific social system of accumulation does not ... figure in Callon's narrative’ (Roberts [2012](#): 46). Yet it would be premature to jump to the conclusion that the micro-focus of ANT is fundamentally incompatible with the study of the macro-conflicts that are the domain of political economy. Indeed, Callon has argued that it was precisely the non-homogeneity of capitalism – well-established in the critical political economy literature (Nölke and Vliegenthart [2009](#), Bruff [2011](#), Jessop [2014](#)) – that underpins the critical potential of his approach:

If you accept the diversity of what is usually called capitalism, you are led to recognize that in some markets you have constant discussions or negotiations about ethical or political questions. The manner in which answers are found differs from one market to another one, from one country to another country and so on. So describing capitalism, even for the purposes of criticism, as something which is homogeneous is a way of maintaining this idea of the impossibility of social actors to act on the organization of economic activities because it implies that there is simply a choice between completely destroying the organization of economic activities or accepting them as a whole. (Callon, cited Barry et al. [2002](#): 297)

Admittedly, this argument has not, so far, caused performativity scholars to try and ‘align the notion of performativity with structural political economy’ (Christophers [2014](#): 17). Yet political economists should be keen to take on this task themselves, as their own understanding of the diversity of capitalism stands to benefit from a deeper engagement with the diversity of market devices and practices. Support for such a

emerging cross-disciplinary alliance of non-economist students of the economy. Thus, calling for a closer dialogue between political economy and economic sociology, Beckert (2013b: 325) has emphasised that in order to ‘comprehend the “expansive dynamism of capitalism”, one needs an understanding of the micro processes underlying macro outcomes’. And while the sociology and social psychology of actors’ decision-making processes under conditions of uncertainty constitute one pillar of this microfoundation (Beckert 2013a, Braun 2015, Chong and Tuckett 2015), the analysis of the performative constitution of the contexts in which such decision-making occurs – namely markets – constitutes a necessary second pillar. Economic geographer Jamie Peck, for instance, calls for the ‘still-disarticulated network of small-e economic heterodoxies’ to move on from the critique of economics to developing ‘positive intellectual programs’ that aim to contribute directly to the study of economies, suggesting that the notion of ‘heterogeneous markets’ may serve as an analytical focal point for the coordination of these efforts (Peck 2012: 114, 128). The idea that markets differ, geographically and in other ways, is at the heart of Christophers’ (2014: 12) recent call for a mutual engagement between political economy and what he calls “techno-cultural” approaches to the economy’.

To sum up the argument so far, a micro-sociological focus on socio-technical agencements is relevant because the diversity of certain (key) markets underpins, and interacts with, the diversity of capitalism, which has long been at the centre of political economy. Therefore, to the extent that they view some varieties as more desirable/acceptable than others, political economists will benefit from studying ‘the implications of contemporary market dynamics for the laws of motion of capital’ (Christophers 2014: 17). In order to make the most convincing case for a Callonian microfoundation of political economy, the remainder of this article focuses on the investment industry as the machinery powering this ‘motion of capital’.

Passive revolution: the cost of investing and the political economy of asset manager capitalism

The dynamics of capitalist economies are governed, above all, by the investment decisions of capitalists. Variation in the ‘motion’ of investment-financing capital should therefore be a key concern for political economists interested in these dynamics. This

industry are important sources of such variation, thus providing empirical support for the argument that the micro-analysis of markets and the study of the political economy of capitalism complement rather than contradict one another.

Traditionally, the business model of the investment industry is built on investors' willingness to pay for 'active' asset managers to 'beat the market' by selecting outperforming stocks and bonds.¹¹ Roughly since the turn of the century, however, the share of 'passive' investment mandates has been growing rapidly. While no investment strategy can ever be 100 per cent passive – any index represents an ultimately arbitrary subset of the market portfolio – passive investment mandates are defined here as those that aim to track, rather than to beat, the performance of a benchmark index. Passive (or index) investing has surprisingly only become a significant phenomenon quite recently. According to data from the Investment Company Institute ([2000: 14](#)), total index funds assets stood at only \$3 billion in 1990, compared to total mutual fund assets of almost \$1 trillion. Although growing rapidly over the ensuing decade, in 1999 \$383 billion in index fund assets still accounted for no more than 5.5 per cent of US mutual fund assets. It was only in the subsequent decade that passively managed capital reached a significant proportion of total assets. Towers Watson ([2014](#)) reports that the largest fund managers saw their passive assets grow at an average annual rate of almost 14 per cent between 2003 and 2013, compared to overall asset growth for the 500 largest fund managers of only six per cent. As of 2013, capital worth \$14 trillion is managed passively, accounting for almost one-fifth of global assets under management.¹² Recent high-profile cases that clearly illustrate this trend include two of the world's largest public sector pension funds, CalPERS (California) and PFZW (Netherlands), withdrawing their entire hedge fund allocations – \$4 billion and €4.2 billion, respectively – citing high fees as the primary reason ([Financial Times 2014, 2015a](#)).

In a preliminary attempt to come to analytical terms with this 'passive revolution', the next sub-section begins by highlighting the central position that professional asset management firms now occupy in the investment chain. Recalling that the theoretical and empirical case for passive investing was firmly established as early as the late 1960s, the section argues that the persistence of active – and therefore high-cost – asset management is puzzling. Building on existing accounts of the emergence of index funds in the 1970s, the second sub-section develops a new argument about the *normative constitution of the 'passive investor'*. Specifically, it argues that it was not

agement of the ‘passive investor’ that the transformation of the investment industry into a low cost, ‘universal owner’ system really gained purchase.¹³

Extracting (analytical) value from the investment chain: the central role of asset managers and the puzzling persistence of active investment strategies

Political economists are accustomed to approaching the capital market from a production-centred perspective, that is, as a market in which firms compete for capital to finance their activities.¹⁴ While suitable for the study of the relationships between varieties of capital markets and other economic institutions (Hall and Soskice [2001](#)), a birds-eye view of the interactions between firms and investors arguably obscures the ‘microfoundations of financialization’ (Watson [2009](#)) – especially that segment of the capital market in which intermediaries compete for and invest other people’s money. For the purpose of the present argument, the key distinction is between two types of intermediaries – institutional investors, such as insurers, mutual and pension funds, and professional asset managers, such as hedge funds, the wealth management arms of large international banks, and giant asset managers like BlackRock or PIMCO (IMF [2015](#): 94). This subdivision of the investment industry into two categories of intermediaries – although not always clear-cut in practice – is crucial for the present argument.

In the words of Mehrling ([2005](#): 59), the rise of institutional investors represented ‘[t]he most significant development in financial markets in the two decades after World War II’. Today, assets under management with institutional investors continue to grow not only as a result of the growing number and wealth of ‘high net-worth individuals’, but primarily because the global push for pension privatisation, increased life expectancy, and income growth in emerging economies fuel the growth of pension savings. In the member countries of the Organisation for Economic Co-operation and Development (OECD), pension funds held a total of \$24.7 trillion in assets in 2013, which accounted for 26.7 per cent of total assets held by institutional investors in these countries, and for a weighted average asset-to-gross domestic product ratio of 84.2 per cent in 2013 (OECD [2014](#): 7). Several authors have used the term ‘pension fund capitalism’ to highlight the significance of this development (Clark [2000](#), Toporowski [2000](#)). Taking seriously Clark’s ([2000](#): ix) question of ‘how institutional investors allocate assets, mobilize funds, and make investment decisions’, however, means recognising not only that workers ‘never had meaningful control over fund investments’ (McCarthy [2014](#):

investment chain. Instead of investing their clients' capital directly, they place large parts of it (the ratios vary between and within countries) with asset management firms. As of the end of 2013, global assets under management at the 500 largest asset managers stood at \$76.5 trillion, 41 per cent of which were concentrated in the 20 largest firms (Towers Watson [2014](#)). With asset managers now 'the dominant players in the investment chain' in the words of one leading voice (Kay [2012](#): 11), the Chief Economist of the Bank of England suggests that the world has entered 'the age of asset management' (Haldane [2014](#)). Because this additional layer of intermediation in the investment chain tends to be eclipsed by the term 'pension fund capitalism', for the purpose of the present argument 'asset manager capitalism' makes for a more fitting descriptor.¹⁵

The existence and business model of asset management is important due to what John Bogle, founder of Vanguard and life-long advocate of indexing, calls the 'the elemental arithmetic of investing': 'Gross return in the financial markets, minus the costs of the system, equals the net return actually delivered to investors' (Bogle [2008](#): 98). Even if the fees charged by pensions funds are low, the fees charged by active asset managers, which add to the 'costs of the system', are not.¹⁶ According to one frequently cited study for the period from 1980 to 2006, 'investors spend 0.67 per cent of the value of all NYSE, Amex, and NASDAQ stocks each year trying to beat the market', which by a 'conservative estimate' amounts to 10 per cent of annual returns on the market portfolio (French [2008](#): 1538). A perhaps more intuitive gauge of 'the costs of the system' are the 2013 bonus figures for Allianz-owned PIMCO, the world's largest bond investment house. According to a report by Bloomberg, then-CEO Bill Gross and then-CFO Mohamed El-Erian received \$290 million and \$230 million, respectively, with the total top-management bonus pool amounting to almost \$1.5 billion (Ritholtz [2014](#)). The sheer volume of the assets under management at firms such as PIMCO means that even small variations in the price these firms are able to command for their services have significant distributional consequences. Indeed, recent findings that there is a close correlation between rising income inequality and the growth of assets under management in the USA (Kaplan and Rauh [2010](#)) and the growth of stock market activity in France (Godechot [2012](#)) point towards asset management fees as a key factor behind the global rise in inequality. In light of these numbers, the growing share of passively managed capital is important from a distributional perspective because the management fees charged by index amount to

only a fraction of the costs of the services of (presumably) market-beating asset managers. Why, then did active management persist?

As indicated above, the business model of active asset managers is built on the belief that the best fund managers are able to deliver 'alpha' – an excess return over the relevant segment of the market – and that diligent research is able to identify such 'star managers' in advance (Holmes [2009](#)). This financial practice has been fundamentally at odds with the teachings of financial theory for almost half a century. There is no need here for a detailed recounting of the story of how Harry Markovitz, Jack Treynor and William Sharpe, among others, pioneered modern financial economics in the 1960s (Bernstein [2005](#), Mehrling [2005](#), MacKenzie [2006](#)). What matters is that the case against active investing on behalf of mutual fund shareholders goes all the way back to Treynor's and Sharpe's work on the capital asset pricing model (CAPM), which showed that the 'efficient' portfolio was the market portfolio, and therefore was the same for all investors. With regard to the empirical measurement of actual mutual fund performance, the key implication of the CAPM was that investors had to account for the market risk their fund's portfolio was exposed to. Applying such a framework to measure the performance of 115 mutual funds over the 1955–64 period, then-PhD student Michael Jensen found that once exposure to market risk was taken into account, there was no statistically significant evidence for even a single fund having outperformed a randomly selected portfolio (Jensen [1968](#): 415).

It was on the basis of increasingly solid theoretical and empirical arguments put forward by financial economics that Paul Samuelson, the preeminent economist of his day, published a ringing endorsement of indexing, suggesting 'that most portfolio decision makers should go out of business', and that the time had come for 'some large foundation [to] set up an in-house portfolio that tracks the S&P 500' (Samuelson [1974](#): 18). Indeed, as documented by Bernstein [\(2005\): 240–52](#) and spelled out by MacKenzie [\(2006\): 84–8](#), the financial innovation of index funds constituted a textbook case of performativity, whereby a socio-technical agencement helped translate a previously impracticable idea from economics into actual market practice. The introduction of the first (closed-end) index fund in 1971 was promoted by Wells Fargo. At the initiative of a manager well-versed in financial theory, the bank contracted the advice of virtually the entire cast of leading financial economists, including Michael Jensen, Myron Scholes, William Sharpe, Fischer Black and Eugene Fama.¹⁷ The initial \$6 million investment came from Samsonite, at the initiative of a son of the family that owned the firm and

Bogle (1997) has emphasised the importance of the contributions of economists such as Samuelson and Malkiel in paving the way for Vanguard's first open-end index fund in 1976.

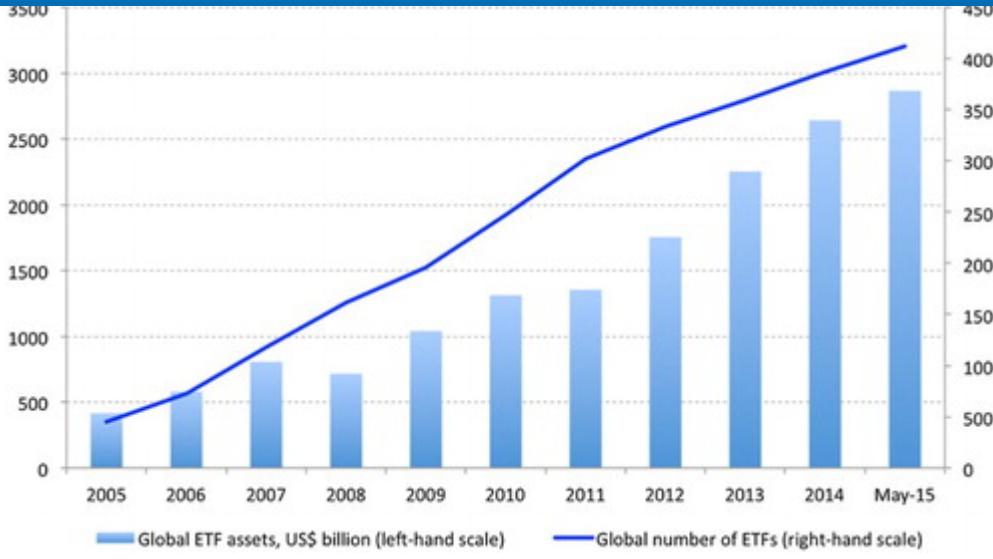
To the extent that these and other early index funds lived up to the promise of delivering the market return at very low costs to investors, the ability of active asset managers to defend their market share should be expected to decline as a result of market competition. And yet, as documented above, index funds remained a marginal phenomenon as late as the 1990s. It was not until the early 2000s that passive investing became a mass phenomenon. This points towards index mutual funds' younger, more complex and more tradable cousins – ETFs – as the game-changing market device. The next sub-section takes a closer look at this financial innovation, which does not feature in either Bernstein's or MacKenzie's accounts, and which has largely escaped the attention of political economists.

Completing the socio-technical agencement 'passive investor': ETFs

The first index ETF was introduced on the Toronto Stock Exchange in 1990. It was followed three years later by the launch of 'Spider', which tracked the Standard & Poor's 500 index and was traded on the American Stock Exchange. But it was only when 'Cubes', which tracked the Nasdaq-100, was introduced in 1999 that the ETF market really took off (Deville 2008: 68–70). As shown in Figure 1, both the number of ETFs and their assets under management have exploded over the past decade. Having more than tripled since 2008, global ETF assets are currently estimated to stand at close to \$2.9 trillion.

Figure 1. Global ETF assets (\$ billion) and number of ETFs.

Source: Own presentation based on data from www.etfgi.com.



Display full size

ETFs provided an innovative solution to the two central challenges of indexing, both of which stem from the problem of index replication – transaction costs and share creation/redemption. As a result of fluctuations in individual stocks and changes in index composition, index funds need to conduct transactions to keep the composition of their portfolio in line with the composition of the index. Due to market liquidity costs such as bid-asks spreads, buying and selling securities is costly. A trade-off therefore exists between minimising ‘tracking error’ and minimising transaction costs (Frino and Gallagher [2001](#): 45–6). The problem is exacerbated for open-end index mutual funds, which allow investors to buy or redeem shares (in the fund) on a daily basis. Both inflows and outflows are associated with trading costs – a net inflow of cash must be invested in the securities that constitute the index, while a net outflow that cannot be met with cash reserves requires the liquidation of existing security holdings (Kostovetsky [2003](#): 82). There is no intraday trading in mutual index funds, whose investors can purchase or redeem shares only at the end of each trading day and at the market value of the underlying basket of securities, or (per-share) net asset value (NAV).

ETFs are designed to solve both these problems. A standard ETF that physically replicates its index resembles a traditional index mutual fund in that it offers passive exposure to a benchmark index at low cost compared to actively managed funds. The distinctive feature of ETFs is their dual trading structure, which combines the continuous and exchange-based trading of existing shares with a system of ‘in-kind’ creation and redemption of shares (Deville and Oubenal [2012](#), Madhavan [2014](#)). The

participants (APs), which buy into the fund by paying not in cash but ‘in kind’, that is, by supplying the basket of securities that constitute the index (this requires large blocks of usually 50,000 shares, so-called ‘creation units’). Since these creation/redemption transactions only take place at the fund’s NAV (calculated at the end of the trading day), the price of the continuously traded shares typically deviates from the per-share NAV over the course of a day. The mechanism that prevents deviations beyond a narrow transaction cost bound is arbitrage: as the two prices diverge, APs can lock in a profit by selling high while simultaneously buying low. For instance, if shares in the secondary market trade below the NAV, APs can make a profit by acquiring the underlying basket of securities in the open market and by trading them for newly created shares in the fund. In the US context in particular, the tax efficiency of this structure constitutes yet another advantage for investors. This is due to the fact that whereas mutual funds are obliged to distribute to investors any capital gains made as a result of share redemptions, the in-kind redemption mechanism of ETFs avoids such taxable capital gains.

While this covers the basic structure of plain-vanilla ETFs, a series of further innovations and applications complicate the picture. Thus, while ‘physical’ ETFs lend out securities for extra income, ‘synthetic’ ETFs do not hold the index constituents at all but replicate index returns via total return swaps and other derivatives.¹⁸ There are now leveraged and inverse ETFs, which offer magnified or inverse exposure to the index. Moreover, their liquidity and low cost have made ETFs a popular hedging vehicle for hedge funds, the least ‘passive’ of all investors. These developments, in conjunction with ETFs’ role in the ‘flash crash’ of 6 May 2010, have alarmed financial regulators to the potential financial stability implications of the liquidity and counterparty risks that arise from the ETF trading structure in combination with their often significant size in relation to index market capitalisation (IMF [2011](#): 69–71, Ramaswamy [2011](#), Foucher and Gray [2014](#): 42–3). These are important issues that warrant further attention. Ultimately, however, this has no impact on this section’s key message – namely, that ETFs approximate the ideal of a ‘practical translation of [modern portfolio] theories into actual investment products’ (Deville and Oubenal [2012](#): 215). They provided the financial innovation whose absence had long held back the performative transformation of the investment industry. In short, ETFs completed the socio-technical agencement of the ‘passive investor’.

Conclusion

This article began by noting that those who defend the ‘superiority of economists’ on the grounds that only economists ‘study the economy’ may not, after all, have it all wrong. For while political economists agree that processes such as the liberalisation and disorganisation of capitalism have expanded the scope and reach of markets (Streeck [2011](#): 139), they have been slow to adjust the scope and reach of their own research agenda to that (not so) new reality. In a world in which the political dimension of markets is not exhausted by their participation in the struggle – still taking place mostly in the halls of governmental power – over how to regulate them, but are sites of politics in their own right, the narrow association of ‘politics’ with the ‘identifiable actions of states and policy-makers’ is problematic (De Goede [2003](#): 85). In theoretical terms, then, this article has argued that (1) the diversity of market devices and practices are key to the understanding of the diversity of (in this case: asset manager) capitalism; (2) the study of market practices therefore constitutes a cornerstone in the microfoundation of political economy; (3) the performativity approach as developed by Michel Callon offers a powerful analytical tool to take on this task.

Relating the insights from the analysis of the performative transformation of the investment industry back to these theoretical arguments, it should be noted that while the preceding empirical analysis is cursory, its silence regarding the ‘identifiable actions of states and policy-makers’ reflects a conscious analytical decision. For while a more comprehensive empirical study would need to account for policy changes – for example, the regulatory push, in some countries, for a fee-based remuneration model for financial advisers (*Financial Times* [2015b](#)) – the objective of this article was precisely to show that there is ‘politics’ not only in the regulation of the marketising practices of the investment industry, but in those practices themselves. The investment industry’s (initially) successful resistance against pressure from within the market to move towards a low cost, passive model of asset management illustrates Callon’s argument that markets are political arenas in which ‘the strongest – that is, the best equipped – agencies become stronger by performing the very world in which they can thrive’ (Callon [2007](#): 347). Equally importantly, however, the case also shows that financial innovation is not bound to always work in favour of ‘the strongest’. As ‘the temporary and fluctuating result of conflicts and the constantly changeable expression of power struggles’ (Callon [2007](#): 335), new socio-technical devices may have the

subsequently by making it simpler and cheaper, index funds and ETFs have reduced the cost of investing to the benefit of savers and at the expense – in relative terms – of asset managers.

This question of distribution within the investment chain is important, and there is an urgent need for further empirical research on the fee and incentive structures in the investment intermediation sector. Crucially, however, the micro-analysis of socio-technical investment devices is linked to the political economy of capitalism in a way that transcends the distribution issue and opens up the possibility of a more profound dialogue between comparative political economy and the financialisation literature. A case in point is the question of the provision of long-term financing for non-financial firms, which looms large on the agenda of economic policy-makers (Group of Thirty [2013](#)), in particular in the context of the European Commission's new flagship project, 'Capital Markets Union' (European Commission [2013, 2015](#)). Here, comparative political economists are used to associating 'patient capital' with 'coordinated market economies' and bank-based financial systems (Hall and Soskice [2001](#), Culpepper [2005](#)). As shown in this article, however, the 'patience' of institutional investors' financial capital may vary considerably with the mandates these investors assign their asset managers – even and especially in market-based financial systems. In other words, under asset manager capitalism, devices and practices in the investment intermediation market become increasingly important pieces of the long-term financing puzzle. With holdings increasingly resembling the market portfolio as a result of index investing, institutional investors and their asset managers, as 'universal owners', 'should have a natural and compelling economic interest in the performance of the economy as a whole', rather than with the performance of individual firms or stocks, thus increasing their time-horizon as investors (Hawley and Williams [2007](#): 416). Certainly, 'impatient capital', epitomised by high-frequency traders and activist hedge funds, continues to thrive. At the same time, however, an economy dominated by asset managers seeking low-cost exposure to the market portfolio may, in principle, open up the possibility for the internalisation of externalities, the formation of long-term orientations and the provision of 'patient capital'. This article has argued that staying on top of such changes in the macro-structure of capitalism requires a solid microfoundation for political economy – an approach well-versed in the micro-level devices and meso-level practices of, in this case, the investment intermediation market.

Acknowledgements

I wish to thank Matthew Watson, Chris Clarke, Tobias Pforr, Roberto Crucolini and the two anonymous referees for their comments and constructive criticisms.

Disclosure statement

No potential conflict of interest was reported by the author.

Notes on contributor

Benjamin Braun is Postdoctoral Fellow at the Max Planck Institute for the Study of Societies, Cologne. His research focuses on monetary trust, unconventional monetary policy, and the co-evolution of banking and central banking. Benjamin has recently published in the *British Journal of Politics and International Relations* and in *Economy and Society*.

ORCID

Benjamin Braun <http://orcid.org/0000-0002-5186-5923>

Notes

1. For two recent studies on economists' political influence, see Hirschman and Berman ([2014](#)) and Mandelkern ([2015](#)).
2. The use of the broad term 'political economy' throughout this article reflects a conscious wish to speak to the broader community of international, comparative, cultural and critical political economists.
3. Cohen ([2008](#): 16) has been more optimistic, describing International Political Economy as 'a marriage' of economics and political science that analyses 'the complex interrelationship of economic and political activity'. In contrast, this article insists that both 'American' and 'British School' scholars have limited their research to the political

engaging directly with the latter. This applies even to the Open Economy Politics (OEP) approach, despite its wholesale adoption of the theoretical and methodological framework of economics (Cohen [2008](#): 41–4).

4. The concept of performativity has gained popularity also in the (mostly business school-based) fields of marketing, management, organisation and consumer studies. For an overview, see Muniesa ([2014](#): ch. 2).

5. Note that this is true even of constructivist political economy, which generally treats economic ideas as intervening variables acting on the identities and interests of pre-existing agents within pre-existing spaces – the result being that ‘rather than asking questions about the social construction of economic relations and dynamics, it instead takes these off the table all together’ (Samman and Stanley [2014](#): 17).

6. Moreover, performativity opens up an analytical perspective that is not available to economics, the methodological framework of which has arguably prevented it from acknowledging, let alone studying, the performative dimension of key parameters of economic action in market economies, such as prices (Muniesa [2007](#)), value (Stark [2009](#)), interest rates (Boy [2014](#)) or the very ‘laws’ of supply and demand (Mitchell [2011](#): 174).

7. For a discussion of the agreements and disagreements between the performativity approach and the new economic sociology, see Çalışkan and Callon ([2009](#): 381–4).

8. The term is borrowed from Deleuze and Guattari with the intention of avoiding the unwelcome connotation, in terms such as ‘arrangement’ or ‘assemblage’, of a ‘divide between human agents (those who arrange or assemble) and things that have been arranged’ (Callon [2007](#): 320).

9. More recently, Callon used Judith Butler’s notion of ‘misfires’ to denote instances of overflowing (Callon [2010](#); cf. Butler [2010](#)).

10. For a concise discussion of the complex causal factors underlying the performance of the Black-Scholes-Merton model, see MacKenzie ([2007](#): 69–72). Importantly, these factors were highly case-specific so they do not provide a general toolkit readily transferable to other cases (cf. Svetlova [2012](#)).

11. While much of the active vs. passive debate has centred on the stock market, in

have seen rapid growth over recent years, with Vanguard's passive Total Bond Market Index overtaking PIMCO's active Total Return Fund as the largest bond fund in the world in mid-2015 (Financial Times [2015c](#)). As for ETFs, the share of fixed-income assets of total assets under management was 16 per cent in 2013, compared to 83 per cent in equity (IMF [2015](#): 125).

12. These numbers do not reflect the increasingly significant phenomenon of 'closet indexing', whereby asset managers, in order to minimise the downside risk for their 'relative performance', pursue passive index-tracking strategies even though 'those who appointed [them] were seeking - and paying for - active management' (Kay [2012](#): 41). The phenomenon has led to the development of an 'active share' measure (Cremers and Petajisto [2009](#)), which active managers increasingly publicise in order to distinguish themselves from closet indexers.

13. Note that whereas 'high finance' has been at the centre of much of the literature on financial innovation (Engelen et al. [2010](#); Nesvetailova [2015](#)), the present study focuses on innovation at the interface between the asset management industry and the 'low finance' world of households investing – directly or via pension funds – for retirement (cf. Seabrooke [2006](#), Langley [2008](#)).

14. Much of the discussion in this literature revolves around the shareholder value model of corporate governance, which has an important performative dimension. In particular, Jensen and Meckling's ([1976](#)) writings on the principal-agent model of corporate governance, a key driver and element of the shareholder value model, 'had a more rapid, and more thorough, effect on corporate managers than any other theory hatched in academia' (Dobbin and Jung [2010](#): 36).

15. Note that Minsky's 'money manager capitalism' resembles 'pension fund capitalism' in that Minsky describes the 'new layer of intermediation' that prompted him to coin the term as consisting of 'pension and mutual funds' (Minsky [1996](#): 363).

16. Seabrooke ([2006](#): 135) argues that 'mutual funds and pension funds are not rentier-based because they do not lead to the extraction of rents from LIGs [low-income groupings, BB] to prop up financial elites'. While strictly speaking this is true, it probably underestimates the indirect extraction of rents via the fee payments flowing from institutional investors to their asset managers, which do not show in the fee structures of the former.

17. When awarding him the Sveriges Riksbank Prize in Economic Sciences, the Nobel Committee (2013: 43) highlighted the importance of Fama's work in the establishment of the index fund industry.

18. US-based ETFs generally rely on physical replication due to regulatory constraints (IMF 2011: 68). Following regulatory concern and bad press, synthetic ETFs have seen their European market share decline over recent years. It had fallen to just below 30 per cent at the end of 2014 (Morningstar 2014: 11).

References

1. Abdelal, R., Blyth, M. and Parsons, C.A. (2010), 'Introduction: Constructing the International Economy', in R. Abdelal, M. Blyth and C.A. Parsons (eds), *Constructing the International Economy* (Ithaca: Cornell University Press), pp. 1-19.

[Google Scholar](#)

2. Aitken, R. (2007), *Performing Capital: Toward a Cultural Economy of Popular and Global Finance* (Basingstoke: Palgrave Macmillan).

[Google Scholar](#)

3. Barry, A. (2013), 'The Translation Zone: Between Actor-Network Theory and International Relations', *Millennium-Journal of International Studies*, 41 (3), pp. 413-29. doi: 10.1177/0305829813481007

[Web of Science](#) ® [Google Scholar](#)

4. Barry, A., Slater, D. and Callon, M. (2002), 'Technology, Politics and the Market: An Interview With Michel Callon', *Economy and Society*, 31 (2), pp. 285-306. doi: 10.1080/03085140220123171

[Web of Science](#) ® [Google Scholar](#)

5. Beckert, J. (2013a), 'Imagined Futures: Fictional Expectations in the Economy', *Theory*

6. Beckert, J. (2013b), 'Capitalism as a System of Expectations: Toward a Sociological Microfoundation of Political Economy', *Politics & Society*, 41 (3), pp. 323-50.

[Web of Science ®](#)

[Google Scholar](#)

7. Beckert, J. and Streeck, W. (2008), 'Economic Sociology and Political Economy: A Programmatic Perspective', MPIfG Working Paper 08/4.

[Google Scholar](#)

8. Bernstein, P.L. (2005), *Capital Ideas: The Improbable Origins of Modern Wall Street* (Hoboken, NJ: John Wiley & Sons).

[Google Scholar](#)

9. Best, J. and Walters, W. (2013), "Actor-Network Theory" and International Relationality: Lost (and Found) in Translation', *International Political Sociology*, 7 (3), pp. 332-34. doi: 10.1111/ips.12026_1

[Web of Science ®](#)

[Google Scholar](#)

10. Bogle, J.C. (1997), The First Index Mutual Fund: A History of Vanguard Index Trust and the Vanguard Index Strategy. Available from:

http://www.vanguard.com/bogle_site/lib/sp19970401.html [accessed 15 January 2015].

[Google Scholar](#)

11. Bogle, J.C. (2008), 'A Question So Important That it Should be Hard to Think About Anything Else', *The Journal of Portfolio Management*, 34 (2), pp. 95-102. doi: 10.3905/jpm.2008.701621

[Web of Science ®](#)

[Google Scholar](#)

12. Bourdieu, P. (2005), *The Social Structure of the Economy* (Cambridge: Polity Press).

[Google Scholar](#)

3. Boy, N. (2014), 'The Backstory of the Risk-Free Asset: How Government Debt Became Safe', in C. Goodhart, et al. (eds), *Central Banking at a Crossroads: Europe and Beyond* (London: Anthem Press), pp. 177–87.

[Google Scholar](#)

4. Braun, B. (2015), 'Governing the Future: The European Central Bank's Expectation Management During the Great Moderation', *Economy and Society*, 44 (3), pp. 367–91.

[PubMed](#) [Web of Science ®](#) [Google Scholar](#)

5. Bruff, I. (2011), 'What About the Elephant in the Room? Varieties of Capitalism, Varieties in Capitalism', *New Political Economy*, 16 (4), pp. 481–500. doi: 10.1080/13563467.2011.519022

[Web of Science ®](#) [Google Scholar](#)

6. Butler, J. (2010), 'Performative Agency', *Journal of Cultural Economy*, 3 (2), pp. 147–61. doi: 10.1080/17530350.2010.494117

[Google Scholar](#)

7. Çalışkan, K. and Callon, M. (2009), 'Economization, Part 1: Shifting Attention From the Economy Towards Processes of Economization', *Economy and Society*, 38 (3), pp. 369–98. doi: 10.1080/03085140903020580

[Web of Science ®](#) [Google Scholar](#)

8. Çalışkan, K. and Callon, M. (2010), 'Economization, Part 2: A Research Programme for the Study of Markets', *Economy and Society*, 39 (1), pp. 1–32. doi: 10.1080/03085140903424519

[Web of Science ®](#) [Google Scholar](#)

9. Callon, M. (1986), 'Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St Brieuc Bay', in J. Law (ed.), *Power, Action and Belief. A New Sociology of Knowledge* (London: Routledge & Kegan Paul), pp. 196–233.

20. Callon, M. (1998a), 'An Essay on Framing and Overflowing: Economic Externalities Revisited by Sociology', in M. Callon (ed.), *The Laws of the Market* (London: Routledge), pp. 245–69.

[Google Scholar](#)

21. Callon, M. (1998b), 'Introduction. The Embeddedness of Economic Markets in Economics', in M. Callon (ed.), *The Laws of the Market* (London: Routledge), pp. 1–57.

[Google Scholar](#)

22. Callon, M. (2005), 'Why Virtualism Paves the Way to Political Impotence: A Reply to Daniel Miller's Critique of the Laws of the Markets', *Economic Sociology: European Electronic Newsletter*, 6 (2), pp. 3–20.

[Google Scholar](#)

23. Callon, M. (2007), 'What Does It Mean to Say That Economics Is Performativity?', in D. MacKenzie, F. Muniesa and L. Siu (eds), *Do economists make markets? On the performativity of economics* (Princeton: Princeton University Press), pp. 311–57.

[Google Scholar](#)

24. Callon, M. (2009), 'Elaborating the Notion of Performativity', *AEGIS le Libellio*, 5 (1), pp. 18–29.

[Google Scholar](#)

25. Callon, M. (2010), 'Performativity, Misfires and Politics', *Journal of Cultural Economy*, 3 (2), pp. 163–69. doi: 10.1080/17530350.2010.494119

[Google Scholar](#)

26. Callon, M. and Latour, B. (1981), 'Unscrewing the Big Leviathan: How Actors Macro-Structure Reality and How Sociologists Help Them To Do So', in K. Knorr-Cetina and A.V. Cicourel (eds), *Advances in Social Theory and Methodology* (Boston: Routledge & Kegan Paul), pp. 277–303.

[Google Scholar](#)

27. Chong, K. and Tuckett, D. (2015), 'Constructing Conviction Through Action and Narrative: How Money Managers Manage Uncertainty and the Consequence for Financial Market Functioning', *Socio-Economic Review*, 13 (2), pp. 309–30. doi: 10.1093/ser/mwu020

| [Web of Science](#) ® | [Google Scholar](#)

28. Christophers, B. (2014), 'From Marx to Market and Back Again: Performing the Economy', *Geoforum*, 57, pp. 12–20. doi: 10.1016/j.geoforum.2014.08.007

| [Web of Science](#) ® | [Google Scholar](#)

29. Clark, G. (2000), *Pension Fund Capitalism* (Oxford: Oxford University Press).

| [Google Scholar](#)

30. Clarke, C. (2012), 'Financial Engineering, Not Economic Photography: Popular Discourses of Finance and the Layered Performances of the Sub-Prime Crisis', *Journal of Cultural Economy*, 5 (3), pp. 261–78. doi: 10.1080/17530350.2012.674964

| [Google Scholar](#)

31. Cohen, B.J. (2008), *International Political Economy: An Intellectual History* (Princeton: Princeton University Press).

| [Google Scholar](#)

32. Colander, D. (2008), 'Review Essay: Do Economists Make Markets? On the Performativity of Economics', *Journal of Economic Literature*, 46 (3), pp. 720–24.

| [Web of Science](#) ® | [Google Scholar](#)

33. Cremers, K.J.M. and Petajisto, A. (2009), 'How Active is Your Fund Manager? A New Measure That Predicts Performance', *Review of Financial Studies*, 22 (9), pp. 3329–65. doi: 10.1093/rfs/hhp057

| [Web of Science](#) ® | [Google Scholar](#)

34. Culpenner, P.D. (2005), 'Institutional Change in Contemporary Capitalism:

35. De Goede, M. (2003), 'Beyond Economism in International Political Economy', *Review of International Studies*, 29 (1), pp. 79–97. doi: 10.1017/S0260210503000056

36. De Goede, M. (2005), *Virtue, Fortune, and Faith: A Genealogy of Finance* (Minneapolis, MN: University of Minnesota Press).

37. Deville, L. (2008), 'Exchange Traded Funds: History, Trading, and Research', in C. Zopounidis, M. Doumpas and P. Pardalos (eds), *Handbook of Financial Engineering* (New York: Springer), pp. 67–98.

38. Deville, L. and Oubenal, M. (2012), 'Legitimizing an Ambiguous Financial Innovation: The case of Exchange-Traded Funds in France', in I. Huault and C. Richard (eds), *Finance: The Discreet Regulator. How Financial Activities Shape and Transform the World* (Basingstoke: Palgrave Macmillan), pp. 212–32.

39. Dobbin, F. and Jung, J. (2010), 'The Misapplication of Mr. Michael Jensen: How Agency Theory Brought Down the Economy and Why it Might Again', *Research in the Sociology of Organizations*, 30, pp. 29–64. doi: 10.1108/S0733-558X(2010)000030B006

40. Drezner, D.W. and McNamara, K.R. (2013), 'International Political Economy, Global Financial Orders and the 2008 Financial Crisis', *Perspectives on Politics*, 11 (1), pp. 155–66. doi: 10.1017/S1537592712003660

41. Durkheim, E. (1974 [1888]), 'Course in Social Science, Inaugural Lecture', *Sociological Inquiry*, 44 (3), pp. 193-204. doi: 10.1111/j.1475-682X.1974.tb00740.x

[Google Scholar](#)

42. Engelen, E. et al. (2010), 'Reconceptualizing Financial Innovation: Frame, Conjuncture and Bricolage', *Economy and Society*, 39 (1), pp. 33-63. doi: 10.1080/03085140903424568

[Web of Science](#) ® [Google Scholar](#)

43. Estevez-Abe, M. (2001), 'The Forgotten Link: The Financial Regulation of Japanese Pension Funds in Comparative Perspective', in B. Ebbinghaus and P. Manow (eds), *Comparing Welfare Capitalism: Social Policy and Political Economy in Europe, Japan and the USA* (London: Routledge), pp. 190-216.

[Google Scholar](#)

44. European Commission (2013), Green Paper: Long-Term Financing Agenda of the European Economy. Available from: <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52013DC0150&from=EN> [accessed 8 January 2015].

[Google Scholar](#)

45. European Commission (2015), Green Paper: Building a Capital Markets Union. Available from: http://ec.europa.eu/finance/consultations/2015/capital-markets-union/docs/green-paper_en.pdf [accessed 16 May 2015].

[Google Scholar](#)

46. Ferraro, F., Pfeffer, J. and Sutton, R.I. (2005), 'Economics Language and Assumptions: How Theories Can Become Self-Fulfilling', *The Academy of Management Review*, 30 (1), pp. 8-24. doi: 10.5465/AMR.2005.15281412

[Web of Science](#) ® [Google Scholar](#)

47. Financial Times (2014), 'Calpers Pulls Out of 'Costly' Hedge Funds', Financial Times, 16 September. Available from:
<http://www.ft.com/cms/s/0/eb1cf56-3d26-11e4-871d-00144feabdc0.html> [accessed 13 January 2015].

[Google Scholar](#)

48. Financial Times (2015a), 'Dutch Pension Scheme Pulls €4bn Hedge Funds Investment', Financial Times, 9 January. Available from:
<http://www.ft.com/cms/s/0/718b68f4-9818-11e4-a495-00144feabdc0.html> [accessed 13 January 2015].

[Google Scholar](#)

49. Financial Times (2015b), 'ETF Industry Booms in Record-Breaking Year', Financial Times, 11 January. Available from:
<http://www.ft.com/cms/s/0/9eae054c-95a4-11e4-b3a6-00144feabdc0.html> [accessed 26 January 2015].

[Google Scholar](#)

50. Financial Times (2015c), 'Passive Index Investing Triumphs in Bonds', Financial Times, 5 May. Available from:
<http://www.ft.com/cms/s/0/91120dc8-f33e-11e4-a979-00144feab7de.html#axzz3ZL5c272D> [accessed 7 May 2015].

[Google Scholar](#)

51. Fine, B. (2003), 'Callonistics: A Disentanglement', *Economy and Society*, 32 (3), pp. 478-84. doi: 10.1080/03085140303128

[Web of Science ®](#) [Google Scholar](#)

52. Foucher, I. and Gray, K. (2014), 'Exchange-Traded Funds – Evolution of Benefits, Vulnerabilities and Risks', *Bank of Canada Financial System Review*, December 2014, pp. 37-46.

[Google Scholar](#)

53. Fourcade, M. (2007), 'Theories of Markets and Theories of Society', *American Behavioral Scientist*, 50 (8), pp. 1015–34. doi: 10.1177/0002764207299351

Web of Science ® | Google Scholar

54. Fourcade, M. (2011), 'Cents and Sensibility: Economic Valuation and the Nature of "Nature"', *American Journal of Sociology*, 116 (6), pp. 1721–77. doi: 10.1086/659640

Web of Science ® | Google Scholar

55. Fourcade, M., Ollion, E. and Algan, Y. (2015), 'The Superiority of Economists', *Journal of Economic Perspectives*, 29 (1), pp. 89–114. doi: 10.1257/jep.29.1.89

Web of Science ® | Google Scholar

56. French, K.R. (2008), 'Presidential Address: The Cost of Active Investing', *The Journal of Finance*, 63 (4), pp. 1537–73. doi: 10.1111/j.1540-6261.2008.01368.x

Web of Science ® | Google Scholar

57. Frino, A. and Gallagher, D.R. (2001), 'Tracking S&P 500 Index Funds', *The Journal of Portfolio Management*, 28 (1), pp. 44–55. doi: 10.3905/jpm.2001.319822

Web of Science ® | Google Scholar

58. Godechot, O. (2012), 'Is Finance Responsible for the Rise in Wage Inequality in France?', *Socio-Economic Review*, 10 (3), pp. 447–70. doi: 10.1093/ser/mws003

Web of Science ® | Google Scholar

59. Goldstein, A. and Fligstein, N. (2014), 'The Transformation of Mortgage Finance and the Industrial Roots of the Mortgage Meltdown', Mimeo.

Google Scholar

60. Gourevitch, P. (1996), 'The Macropolitics of Microinstitutional Differences in the Analysis of Comparative Capitalism', in S. Berger and R.P. Dore (eds), *National Diversity and Global Capitalism* (Ithaca, NY: Cornell University Press), pp. 239–59.

51. Green, J. and Hay, C. (2014), 'Towards a New Political Economy of the Crisis: Getting What Went Wrong Right', *New Political Economy*, 20 (3), pp. 331–41.

[Web of Science](#) ® [Google Scholar](#)

52. Group of Thirty (2013), Long-Term Finance and Economic Growth. Available from: http://www.group30.org/images/PDF/Long-term_Finance_hi-res.pdf [accessed 08 January 2015].

[Google Scholar](#)

53. Guala, F. (2001), 'Building Economic Machines: The FCC Auctions', *Studies in History and Philosophy of Science*, 32 (3), pp. 453–77. doi: 10.1016/S0039-3681(01)00008-5

[Web of Science](#) ® [Google Scholar](#)

54. Haldane, A.G. (2014), 'The Age of Asset Management?' Speech at the London Business School, 4 April 2014. Available from: www.bankofengland.co.uk/publications/Documents/speeches/2014/speech723.pdf [accessed 7 February 2015].

[Google Scholar](#)

55. Hall, P.A. and Soskice, D. (2001), *Varieties of Capitalism. The Institutional Foundations of Comparative Advantage* (Oxford: Oxford University Press).

[Google Scholar](#)

56. Hardie, I., et al. (2013), 'Banks and the False Dichotomy in the Comparative Political Economy of Finance', *World Politics*, 65 (4), pp. 691–728. doi: 10.1017/S0043887113000221

[Web of Science](#) ® [Google Scholar](#)

57. Hawley, J. and Williams, A. (2007), 'Universal Owners: Challenges and Opportunities', *Corporate Governance: An International Review*, 15 (3), pp. 415–20. doi: 10.1111/j.1467-8683.2007.00574.x

[Web of Science](#) ® [Google Scholar](#)

68. Hirschman, D. and Berman, E.P. (2014), 'Do Economists Make Policies? On the Political Effects of Economics', *Socio-Economic Review*, 12 (4), pp. 779–811. doi: 10.1093/ser/mwu017

| [Web of Science](#) ® | [Google Scholar](#)

69. Hodgson, G.M. and Ingham, G. (2010), 'Review Symposium: Donald MacKenzie, an Engine Not a Camera: How Financial Models Shape Markets, 2006; Material Markets: How Economic Agents Are Constructed, 2009', *Socio-Economic Review*, 8 (2), pp. 399–410. doi: 10.1093/ser/mwp020

| [Web of Science](#) ® | [Google Scholar](#)

70. Holmes, C. (2009), 'Seeking Alpha or Creating Beta? Charting the Rise of Hedge Fund-Based Financial Ecosystems', *New Political Economy*, 14 (4), pp. 431–50. doi: 10.1080/13563460903287231

| [Web of Science](#) ® | [Google Scholar](#)

71. IMF (2011), Global Financial Stability Report (April 2011). Available from: <http://www.imf.org/external/pubs/ft/gfsr/2011/01/pdf/text.pdf> [accessed 15 January 2015].

[Google Scholar](#)

72. IMF (2015), Global Financial Stability Report (April 2015), Chapter 3: The Asset Management Industry and Financial Stability. Available from: <https://www.imf.org/External/Pubs/FT/GFSR/2015/01/index.htm> [accessed 9 April 2015].

[Google Scholar](#)

73. Investment Company Institute (2000), 'The 1990s: A Decade of Expansion and Change in the U.S. Mutual Fund Industry', *ICI Perspective*, Vol. 6, No. 3. Available from: <http://www.ici.org/pdf/per06-03.pdf> [accessed 21 January 2015].

[Google Scholar](#)

4. Jensen, M.C. (1968), 'The Performance of Mutual Funds in the Period 1945–1964', *The Journal of Finance*, 23 (2), pp. 389–416. doi: 10.1111/j.1540-6261.1968.tb00815.x

[Web of Science](#) ® [Google Scholar](#)

5. Jensen, M.C. and Meckling, W.H. (1976), 'Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure', *Journal of Financial Economics*, 3 (4), pp. 305–60. doi: 10.1016/0304-405X(76)90026-X

[Web of Science](#) ® [Google Scholar](#)

6. Jessop, B. (2014), 'Variegated Capitalism, Das Modell Deutschland, and the Eurozone Crisis', *Journal of Contemporary European Studies*, 22 (3), pp. 248–60. doi: 10.1080/14782804.2014.937410

[Google Scholar](#)

7. Kaplan, S.N. and Rauh, J. (2010), 'Wall Street and Main Street: What Contributes to the Rise in the Highest Incomes?', *Review of Financial Studies*, 23 (3), pp. 1004–50. doi: 10.1093/rfs/hhp006

[Web of Science](#) ® [Google Scholar](#)

8. Kay, J. (2012), The Kay Review of UK Equity Markets and Long-Term Decision Making. Available from:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/253454/bis-12-917-kay-review-of-equity-markets-final-report.pdf

[accessed 31 January 2015].

[Google Scholar](#)

9. Knorr Cetina, K. and Bruegger, U. (2002), 'Global Microstructures: The Virtual Societies of Financial Markets', *American Journal of Sociology*, 107 (4), pp. 905–50. doi: 10.1086/341045

[Web of Science](#) ® [Google Scholar](#)

10. Koddenbrock, K.J. (2015), 'Strategies of Critique in International Relations: From

[Web of Science](#) ® [Google Scholar](#)

31. Kostovetsky, L. (2003), 'Index Mutual Funds and Exchange-Traded Funds', *The Journal of Portfolio Management*, 29 (4), pp. 80–92. doi: 10.3905/jpm.2003.319897

[Web of Science](#) ® [Google Scholar](#)

32. Lagna, A. (2015), 'Derivatives and the Financialisation of the Italian State', *New Political Economy* Advance Online Publication, pp. 1–25.

[Web of Science](#) ® [Google Scholar](#)

33. Langley, P. (2008), *The Everyday Life of Global Finance: Saving and Borrowing in Anglo-America* (Oxford: Oxford University Press).

[Google Scholar](#)

34. Langley, P. (2010), 'The Performance of Liquidity in the Subprime Mortgage Crisis', *New Political Economy*, 15 (1), pp. 71–89. doi: 10.1080/13563460903553624

[Web of Science](#) ® [Google Scholar](#)

35. Latour, B. (1993), *The Pasteurization of France* (Cambridge, MA: Harvard University Press).

[Google Scholar](#)

36. Law, J. (1992), 'Notes on the Theory of the Actor-Network: Ordering, Strategy, and Heterogeneity', *Systemic Practice and Action Research*, 5 (4), pp. 379–93.

[Google Scholar](#)

37. MacKenzie, D. (2004), 'The Big, Bad Wolf and the Rational Market: Portfolio Insurance, the 1987 Crash and the Performativity of Economics', *Economy and Society*, 33 (3), pp. 303–34. doi: 10.1080/0308514042000225680

[Web of Science](#) ® [Google Scholar](#)

88. MacKenzie, D. (2006), *An Engine, Not a Camera: How Financial Models Shape Markets* (Cambridge, MA: MIT Press).

[Google Scholar](#)

89. MacKenzie, D. (2007), 'Is Economics Performative? Option Theory and the Construction of Derivatives Markets', in D. Mackenzie, F. Muniesa and L. Siu (eds), *Do economists make markets? On the performativity of economics* (Princeton, NJ: Princeton University Press), pp. 54-86.

[Google Scholar](#)

90. MacKenzie, D. (2009), *Material Markets. How Economic Agents Are Constructed* (Oxford: Oxford University Press).

[Google Scholar](#)

91. MacKenzie, D. and Millo, Y. (2003), 'Constructing a Market, Performing Theory: The Historical Sociology of a Financial Derivatives Exchange', *The American Journal of Sociology*, 109 (1), pp. 107-45. doi: 10.1086/374404

[Web of Science](#) ® [Google Scholar](#)

92. Madhavan, A. (2014), 'Exchange-Traded Funds: An Overview of Institutions, Trading, and Impacts', *Annual Review of Financial Economics*, 6 (1), pp. 311-41. doi: 10.1146/annurev-financial-110613-034316

[Google Scholar](#)

93. Mäki, U. (2013), 'Performativity: Saving Austin from MacKenzie', in V. Karakostas and D. Dieks (eds), *EPSA11 Perspectives and Foundational Problems in Philosophy of Science* (Cham: Springer), pp. 443-53.

[Google Scholar](#)

94. Mandelkern, R. (2015), 'What Made Economists So Politically Influential? Governance-Related Ideas and Institutional Entrepreneurship in the Economic Liberalization of Israel and Beyond', *New Political Economy*, 20 (6), pp. 924-41.

95. McCarthy, M.A. (2014), 'Turning Labor Into Capital: Pension Funds and the Corporate Control of Finance', *Politics & Society*, 42 (4), pp. 455–87. doi: 10.1177/0032329214547351

[Web of Science](#)  [Google Scholar](#)

96. Mehrling, P. (2005), *Fischer Black and the Revolutionary Idea of Finance* (Hoboken, NJ: John Wiley & Sons).

[Google Scholar](#)

97. Merton, R.K. (1948), 'The Self-Fulfilling Prophecy', *The Antioch Review*, 8 (2), pp. 193–210. doi: 10.2307/4609267

[Google Scholar](#)

98. Miller, D. (2002), 'Turning Callon the Right Way Up', *Economy and Society*, 31 (2), pp. 218–33. doi: 10.1080/03085140220123135

[Web of Science](#)  [Google Scholar](#)

99. Minsky, H.P. (1996), 'Uncertainty and the Institutional Structure of Capitalist Economies: Remarks Upon Receiving the Veblen-Commons Award', *Journal of Economic Issues*, 30 (2), pp. 357–68. doi: 10.1080/00213624.1996.11505800

[Web of Science](#)  [Google Scholar](#)

00. Mirowski, P. and Nik-Khah, E. (2007), 'Markets Made Flesh: Performativity, and a Problem in Science Studies, Augmented with Consideration of the FCC Auctions', in D. MacKenzie, F. Muniesa and L. Siu (eds), *Do Economists Make Markets? On the Performativity of Economics* (Princeton, NJ: Princeton University Press), pp. 190–224.

[Google Scholar](#)

01. Mitchell, T. (2007), 'The Properties of Markets', in D. MacKenzie, F. Muniesa and L. Siu (eds), *Do Economists Make Markets? On the Performativity of Economics* (Princeton, NJ: Princeton University Press), pp. 244–75.

[Google Scholar](#)

02. Mitchell, T. (2011), *Carbon democracy: Political power in the Age of Oil* (London: Verso Books).

[Google Scholar](#)

03. Morningstar (2014), *A Guided Tour of the European ETF Marketplace*. Available from: http://media.morningstar.com/eu/Events/ETFEU/ETFEU14/ETF_Industry_Report_4Nov.pdf [accessed 22 January 2015].

[Google Scholar](#)

04. Muniesa, F. (2007), 'Market Technologies and the Pragmatics of Prices', *Economy and Society*, 36 (3), pp. 377-95. doi: 10.1080/03085140701428340

[Web of Science](#) ® [Google Scholar](#)

05. Muniesa, F. (2014), *The Provoked Economy: Economic Reality and the Performative Turn* (Abingdon: Routledge).

[Google Scholar](#)

06. Murphy, C.N. and Tooze, R. (1991), 'Getting Beyond the "Common Sense" of the IPE Orthodoxy', in C.N. Murphy and R. Tooze (eds), *The New International Political Economy* (Boulder, CO: Lynne Rienner), pp. 11-31.

[Google Scholar](#)

07. Naczyk, M. (2013), 'Agents of Privatization? Business Groups and the Rise of Pension Funds in Continental Europe', *Socio-Economic Review*, 11 (3), pp. 441-69. doi: 10.1093/ser/mws012

[Web of Science](#) ® [Google Scholar](#)

08. Nesvetailova, A. (2015), 'A Crisis of the Overcrowded Future: Shadow Banking and the Political Economy of Financial Innovation', *New Political Economy*, 20 (3), pp. 431-53. doi: 10.1080/13563467.2014.951428

[Web of Science](#) ® [Google Scholar](#)

9. Nobel Committee (2013), 'Understanding Asset Prices', Scientific Background on the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel.

[Google Scholar](#)

10. Nölke, A. and Vliegenthart, A. (2009), 'Enlarging the Varieties of Capitalism: The Emergence of Dependent Market Economies in East Central Europe', *World Politics*, 61 (4), pp. 670–702. doi: 10.1017/S0043887109990098

[Web of Science](#) ® [Google Scholar](#)

11. Noys, B. (2014), 'The Discreet Charm of Bruno Latour', in J. Habjan and J. Whyte (eds), (Mis)readings of Marx in Continental Philosophy (Basingstoke: Palgrave Macmillan), pp. 195–210.

[Google Scholar](#)

12. OECD (2014), Pension Markets in Focus. Available from:

<http://www.oecd.org/daf/fin/private-pensions/Pension-Markets-in-Focus-2014.pdf> [accessed 13 January 2015].

[Google Scholar](#)

13. Peck, J. (2012), 'Economic Geography: Island Life', *Dialogues in Human Geography*, 2 (2), pp. 113–33. doi: 10.1177/2043820612443779

[Google Scholar](#)

14. Polanyi, K. (1957), 'Aristotle Discovers the Economy', in K. Polanyi, C.M. Arensberg and H.W. Pearson (eds), *Trade and Market in the Early Empires* (New York: The Free Press), pp. 64–96.

[Google Scholar](#)

15. Ramaswamy, S. (2011), 'Market structures and systemic risks of exchange-traded funds', *BIS Working Paper*. No. 343.

[Google Scholar](#)

16. Ritholtz, B. (2014), 'Guess How Much Money Bill Gross Made Last Year?', BloombergView, 14 November. Available from: <http://www.bloombergview.com/articles/2014-11-14/guess-how-much-money-bill-gross-made-last-year> [accessed 7 January 2015].

Google Scholar

17. Roberts, J.M. (2012), 'Poststructuralism Against Poststructuralism: Actor-Network Theory, Organizations and Economic Markets', *European Journal of Social Theory*, 15 (1), pp. 35–53. doi: 10.1177/1368431011423573

| [Web of Science](#) ® | [Google Scholar](#)

18. Samman, A. and Stanley, L. (2014), 'Constructivism and IPE: What's the Matter with the Idea that 'Ideas Matter'?', Mimeo.

Google Scholar

19. Samuelson, P.A. (1974), 'Challenge to Judgment', *The Journal of Portfolio Management*, 1 (1), pp. 17–19. doi: 10.3905/jpm.1974.408496

| [Google Scholar](#)

20. Seabrooke, L. (2006), *The Social Sources of Financial Power. Domestic Legitimacy and International Financial Orders* (Ithaca, NY: Cornell University Press).

| [Google Scholar](#)

21. Seabrooke, L. and Wigan, D. (2014), 'The Governance of Global Wealth Chains', Norwegian Institute of International Affairs Working Paper No. 839.

Google Scholar

22. Smelser, N.J. and Swedberg, R. (eds.) (1994), *The Handbook of Economic Sociology*, 1st ed. (Princeton, NJ: Princeton University Press).

Google Scholar

23. Smith, N. (2014), Why Economists Are Paid So Much. Available from: <http://www.bloombergview.com/articles/2014-12-02/why-economists-are-paid-so-much> [accessed 3 January 2015].

Google Scholar

24. Stark, D. (2009), The Sense of Dissonance: Accounts of Worth in Economic Life (Princeton, NJ: Princeton University Press).

Google Scholar

25. Streeck, W. (2011), 'Taking Capitalism Seriously: Towards an Institutional Approach to Contemporary Political Economy', *Socio-Economic Review*, 9 (1), pp. 137-67. doi: 10.1093/ser/mwq028

Web of Science ® Google Scholar

26. Svetlova, E. (2012), 'On the Performative Power of Financial Models', *Economy and Society*, 41 (3), pp. 418-34. doi: 10.1080/03085147.2011.616145

Web of Science ® Google Scholar

27. Thiemann, M. (2014), 'In the Shadow of Basel: How Competitive Politics Bred the Crisis', *Review of International Political Economy*, 21 (6), pp. 1203-39. doi: 10.1080/09692290.2013.860612

Web of Science ® Google Scholar

28. Toporowski, J. (2000), The End of Finance: Capital Market Inflation, Financial Derivatives and Pension Fund Capitalism (London: Routledge).

Google Scholar

29. Towers Watson (2014), The World's 500 Largest Asset Managers - Year End 2013. Available from: www.towerswatson.com/en/Insights/IC-Types/Survey-Research-Results/2014/11/The-worlds-500-largest-asset-managers-year-end-2013 [accessed 13 January 2015].

30. Watson, M. (2009), 'Investigating the Potentially Contradictory Microfoundations of Financialization', *Economy and Society*, 38 (2), pp. 255-77. doi: 10.1080/03085140902786728

| Web of Science ® | Google Scholar

Download PDF

Related research

People also read

Recommended articles

Cited by
117

Information for

Authors

R&D professionals

Editors

Librarians

Societies

Opportunities

Reprints and e-prints

Advertising solutions

Accelerated publication

Corporate access solutions

Open access

Overview

Open journals

Open Select

Dove Medical Press

F1000Research

Help and information

Help and contact

Newsroom

All journals

Books

Keep up to date

Register to receive personalised research and resources
by email

 Sign me up

Copyright © 2026 Informa UK Limited [Privacy policy](#) [Cookies](#) [Terms & conditions](#)

[Accessibility](#)

 Taylor and Francis Group

Registered in England & Wales No. 01072954
5 Howick Place | London | SW1P 1WG