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# Financial Crisis, Inequality, and Capitalist Diversity

*A Critique of the Capital as Power Model of the Stock Market*

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## Abstract

The relationship between inequality and financial instability has become a thriving topic of research in heterodox political economy. This article offers the first critical engagement with one specific framework within this wider literature: the Capital as Power (CasP) model of the stock market developed by Shimshon Bichler and Jonathan Nitzan. Specifically, we extend the CasP model to other advanced capitalist countries, including Germany, France, the United Kingdom, and Japan. Our findings affirm the core prediction of the CasP model, showing that unequal power relations reliably predict future stock market performance. Yet when it comes to the CasP model's explanation of why power relations predict stock market returns, our findings are more ambiguous. We find little empirical support for the claims that capitalist power is dialectically intertwined with systemic fear, and that systemic fear and capitalized power are mediated through strategic sabotage. The main lesson of our analysis is that any model of the stock market must be attentive to the geographical unevenness and continued national diversity in capitalist development.

**Keywords:** financial crisis; inequality; stock market; capital as power; comparative capitalisms

**Word count:** 8,014

*“It commands breathtaking views, wild deer, a new boundary fence and a forest that provides enough firewood to keep any self-respecting billionaire warm during a nuclear winter. Lake Havea Station, a 4,605 hectare property in Central Otago, is one of a growing number of self-sufficient estates on the market in New Zealand. They are typically pushed to offshore buyers and, according to some commentators, are the latest craze for a global super-rich hedging against the collapse of the capitalist system... News this week that Peter Thiel, co-founder of PayPal, was among 92 applicants secretly granted New Zealand citizenship outside normal procedures is focusing attention on the influx of wealthy migrants to the South Pacific nation. This follows an article in the New Yorker that pinpointed New Zealand as a favoured destination for rich “survivalists” preparing for apocalypse.”*

(Smyth 2017, p.3)

## **1. Introduction: Inequality and Financial Crisis**

Does wealth and income inequality breed financial instability? This long-standing question has been debated with renewed urgency since the global financial meltdown of 2007-08. The crisis unfolded against the backdrop of three decades of rising inequality across the advanced capitalist world, a context that has compelled researchers to explore possible linkages between the two phenomena (Bordo and Meissner 2012; Morelli and Atkinson 2015).

Within heterodox political economy, an emerging consensus suggests that rising inequality was indeed a pivotal cause of the crisis, at least in the United States (van Treeck 2014, p. 422). The general contours of the argument run roughly as follows (Goda et al. 2017; Hager 2017, pp. 573-574; Lysandrou 2011; Montgomerie 2009, pp. 10-14; Schwartz 2016, pp. 28-35; Stockhammer 2015). Over the past few decades, wage stagnation has plagued the bottom and middle of the distribution. In an effort to maintain consumption, a key component of aggregate demand, working and middle-class households took on increasing debt burdens. Meanwhile, income growth soared at the top and the rich experienced a rising propensity to speculate, as their investable funds exceeded safe investment outlets. The yin of suspect credit at the bottom met the yang of appetite for risky assets at the top. All this transpired within a globalized financial system. Capital inflows from the rest of the world, especially China, put downward pressure on US interest rates and helped fuel the debt binge. Eventually, debt levels began to far outstrip debt-servicing capacity, and a wave of defaults in the subprime mortgage market set off a panic that brought the global financial system to the brink of collapse.

In addition to this now-familiar consensus view, there is another heterodox framework offering a very different approach to the relationship between inequality and financial crisis. Focusing on the stock market, Shimshon Bichler and Jonathan Nizan (2016) (BN) argue that financial booms and busts are driven by an unequal power process. At the heart of their model, derived from the theory of capital as power (CasP), is a prediction that forward annual stock market returns will be inversely correlated with the power of investors over the underlying population. In other words, as the power of capitalists increases, we should expect to see declining stock market returns in the future. Applied statistically to the United States, the CasP model of the stock market yields remarkably robust results. A ‘power index,’ calculated by dividing the S&P 500 share price by the average wage rate from the late nineteenth century to the present, is tightly correlated with total returns for the S&P 500 twelve years later. What is more, the power index is limited to certain historical bounds, around two-standard deviations above its mean, and is mean-reverting.

The CasP model and its attendant findings are, in our opinion, nothing short of remarkable. Here we have two radical critics of capitalism that claim to have uncovered a holy grail that has for

centuries eluded most investors: a reliable model to predict the stock market over vast swathes of US history. And yet what is more remarkable than the model itself is the fact that it has been almost completely ignored. We think that this neglect is misplaced. These are ideas worthy of serious engagement, because of their elegance and ambition, and because of their explicit claims to be predictive, and implicit claims to (potential) universality. In short, the CasP model deserves more recognition than it has hitherto received, especially amongst heterodox researchers for whom the linkage between inequality and financial stability has become a topic of keen interest.

With this in mind, the primary purpose of this article is to advance the first theoretical and empirical engagement with the CasP model of the stock market. Our purpose is relatively straightforward: we extend the model to other geographical contexts, applying it to other advanced capitalist countries, including Germany, France, the United Kingdom, and Japan. These countries have divergent histories, cultures, and institutional configurations. According to the typologies of the 'varieties of capitalism' (VoC) approach, the UK represents a 'liberal market economy' (LME) (Hall and Soskice 2001). In the realm of corporate finance, LMEs tend to be reliant on the stock market, and are characterized by conflictual labour relations with low levels of employee protection, low levels of unionization, and high inequality. The jargon of comparative methodology categorizes the UK as a 'most similar' case in relation to the US. In contrast, Germany and Japan are 'coordinated market economies' (CMEs). Rather than stock markets, CMEs tend to rely on banks and other forms of 'patient' capital in corporate finance and have cooperative labour relations with high levels of employee protection, high levels of unionization, and low inequality. Germany and Japan thus constitute 'most different' cases in relation to the US. As an ambiguous 'state' or 'Mediterranean' variety of capitalism, France is an intermediate case, displaying similarities to the CMEs in corporate finance, but coming closer to the LMEs in labour relations.

Our research provides stunning empirical confirmation for the core prediction of the CasP model. Across all four cases, we find that the power index is tightly and inversely correlated with forward annual stock market returns over long time periods. Though they do not demonstrate the same statistical regularity as found in the US, the power index for all four countries oscillates within certain historical bounds, and rarely scales more than two standard deviations above the mean. Despite their varied histories, and despite the radically different position of the stock market within each national variety of capitalism, our research suggests that unequal power relations play a determinant role in the evolution of stock markets in other advanced capitalist societies.

But the investigation does not end there. In developing their model, BN are not content to simply posit a correlation between power and the stock market. They aim to explain why this correlation exists in the first place. According to BN, the inverse relationship between unequal power relations and stock market performance stems from the inherently conflictual process of capital accumulation. As more power is accumulated, capitalists anticipate more resistance from the underlying population, and in turn, expect to have greater difficulty accumulating further. Growing power, and the expectations of resistance that it provokes, make capitalists anxious that their dominant position is under threat, and when an upper-bound limit of power is reached, they become fearful and backward-looking. Yet when the power of capitalists is relatively diminished, investors can foresee large advances in their power, and thus become optimistic and forward-looking. Capitalist power is thus dialectically intertwined with 'systemic fear.' BN find that the power index is highly correlated with a 'systemic fear index,' measured by the correlation between the earnings-per-share ratio (EPS) and share prices; a weak correlation signals a confident orientation towards the future, and a strong correlation signals a fearful orientation in which strident expectations of the future give way to a fixation on the present and recent past. In recent years the power index (along with systemic fear) has been pushing against its asymptote, the upper-

limit of two standard deviations above the mean, signalling the likelihood of a bear market in the US in the near future. Little wonder, then, that super-rich Americans like Peter Thiel are preparing for the financial end-times on the undulating hills of Otago, New Zealand.

According to the CasP model, capitalist power and systemic fear are both driven by what Thorstein Veblen (1923, p. 285) calls ‘strategic sabotage,’ the impulse of business to undermine the security and wellbeing of the underlying population for pecuniary gain. BN find in the employment level a suggestive but by no means exhaustive measure of the underlying population’s security and wellbeing, and as a corollary they see in the growth rate in employment an inverse proxy for strategic sabotage. The higher the growth rate in employment, the less severe is strategic sabotage (and vice-versa). Their research shows that the 5-year lagged growth rate of employment in the US is strongly and inversely correlated with the power and systemic fear indices from the Second World War onward. Strategic sabotage, in other words, is a strong predictor of the growth in capitalized power, and the increasingly backward-looking, angst-ridden perspective of investors that comes with this growth in power. This culminates in a ‘CasP policy cycle’ that has operated since the post-World War Two (WWII) era, as the five-year lagged growth rate of employment has become a leading predictor of interest rates.

Limited data hampers our abilities to explore the explanatory aspects of the CasP model in other countries. Yet even the limited data at our disposal present problems for their argument in four different respects. First, our research calls into question the systemic nature of capitalist fear. If fear is *systemic* then it should be *global*. That is to say, the tight correlation between EPS and share prices that BN find in the US in recent years should also be evident in major stock markets the world over. But this expectation is simply not borne out by the data. We develop a systemic fear index for the MSCI World, a global benchmark representing large and mid-cap equities across 23 developed markets. The S&P 500 systemic fear index has moved sideways at an unprecedented high from 2008 onwards, while the fear of investors in the MSCI World has plummeted over the same period. Aside from holders of S&P 500 shares, it appears, at least by BN’s measure, that capitalists the world over have been rapidly gaining confidence since the global financial crisis. Second, we examine the relationship between the power index and the systemic fear index for Germany and Japan, the only two countries in our sample for which extensive historical data on EPS and share prices are available. We find that power and fear are strongly correlated in the German case, but not in the Japanese case. Third, we look at the relationship between the power index and the growth rate in employment, BN’s inverse proxy for strategic sabotage. For France and Japan, we find no relationship whatsoever between the two measures, while for Germany and the UK we find a fairly tight positive correlation between them, which is the obverse of what the CasP model predicts. Fourth and finally, we scrutinize BN’s CasP policy cycle and the argument that the five-year lagged growth rate of employment predicts interest rates. Across our four cases, only Japan can be said to have a policy cycle that conforms to the CasP model.

Overall, then, our findings affirm the core prediction of the CasP model, showing that unequal power relations reliably predict stock market performance across a diverse set of advanced capitalist countries. Yet when it comes to the explanation of why power relations predict the stock market, the model falters. Although the explanation is airtight for the US, it does not consistently work for any of our cases, whether most similar, most different, or intermediate. Space constraints do not allow us to try to formulate an alternative model, but we briefly explore two other possible explanations for the tight inverse relationship between the power index and forward annual stock market returns. One possibility would aim to salvage the model, recognizing the US as a unique case that stands at the apex of the hierarchy of global finance. Another possibility would be to reject the model, and to try to square the evidence with behavioural theories of finance. Whatever the course of future research, the main lesson of our analysis is that any model of the stock market

must be attentive to the global unevenness and continued national diversity in capitalist development.

The remainder of the paper is organized as follows. In the next section we offer a brief summary of the theory of capital as power, the CasP model of the stock market, as well as BN's findings for the US. In the third section we examine the relationship between power relations and forward annual stock market returns for our four cases. In the fourth and fifth sections, we scrutinize the explanatory aspects of the CasP model, focusing on systemic fear, strategic sabotage, and the CasP policy cycle. In the sixth and concluding section we offer some tentative thoughts on how to advance research on the power underpinnings of the stock market.

## 2. The Capital as Power Model of the Stock Market

Before outlining the contours of BN's model of the stock market, we first discuss the broader theory of capital as power from which it emerged. CasP offers a radical alternative to both liberal and Marxist theories of political economy (Nitzan and Bichler 2009). Originally pioneered by BN, CasP has inspired a new generation of researchers, who have empirically extended it to various geographical contexts (Brennan 2013; Park 2016) and explored its relevance to topics such as energy (Di Muzio 2012; Fix 2014), food (Baines 2014), investment banking (Hager 2012), public debt (Di Muzio 2007; Hager 2014), art (Malik and Phillips 2012), advertising (Cochrane 2017), education (Kivisto 2016) and Hollywood cinema (McMahon 2018).

As its name suggests, the theory of CasP re-defines capital itself. Existing theories, both neoclassical and Marxist, conceptualize capital as an economic entity, one that is bifurcated into two distinct spheres, one anchored in finance, the other in production and consumption (Bichler and Nitzan 2012; Nitzan and Bichler 2009). Each sphere is denominated in its own universal unit: against the 'nominal' quantity of price, there is the 'real' quantity of utils for neoclassical economics, and socially necessary abstract labour time for Marxism. Ultimately the nominal sphere acts as a symbolic mirror of the underlying reality of the economy, but the reflection is imperfect. Politics and power enter into the realm of capital only to distort, as in the neoclassical view, or reinforce, as in the Marxist view, the economic process of accumulation. At the heart of these dualistic theories is a 'meta-dogma' that BN (2016, p. 118) call the 'mismatch thesis.' The purpose of the mismatch thesis is to explain how and under what conditions the financial sphere deviates from the economic fundamentals of the real economy.

In critiquing existing theories of capital, CasP takes aim at the quantitative units on the 'real' side of the duality. Despite over a century of debate, no one has actually been able to quantify utility or abstract labour independent of prices, and this renders the fundamental units of both theories empirically inoperable. As an alternative, CasP puts forth a provocative definition of capital *as finance and only finance* (Nitzan and Bichler 2009). Simply put, there is one quantitative reality that matters universally to capitalists, and that is the monetary value of their assets. Thus, to understand the quantitative architecture of capitalism, we need to understand the price system, which is governed by the logic of capitalization: the discounting of expected future earnings into present value. Capitalization is not only the main ritual of capitalists, but also the symbolic crystallization of their differential power. As an analytical starting power, CasP claims that the higher the relative capitalization of an owner or a group of owners, the greater their power to shape society in their own image.

Recently, BN have extended this critique and alternative theory to develop a CasP model of the stock market. Informed by the dualities of the mismatch thesis, existing models place the stock

market firmly in the financial sphere; it acts as a giant mirror reflecting what will happen in the real sphere of the economy. Specifically, the mismatch thesis posits that the ‘real capital stock’ (machines, raw materials, and knowledge) ‘will produce, in the future, real income services that the capitalists will in turn sell for nominal future profit. And the expectations of this future profit are capitalized by their owners, here and now, into present nominal market value’ (Bichler and Nitzan 2016, p. 124). In order for the financial mirror to reflect the underlying reality, capitalist expectations about the future must be accurate. But the future is characterized by fundamental uncertainty, and stock market valuation is thus dependent on hype and fallible estimations of risk. An unknowable future brings with it ‘uncertainty, irrationality, and distortions,’ which cause the stock market to swing above and below its real anchor (Bichler and Nitzan 2016, p. 127). But these potentially erratic oscillations are nevertheless bounded: the mismatch thesis predicts that, over the long-haul, stock market booms and busts will be self-correcting, or mean-reverting.

According to BN, what drives the stock market is not a mismatch between the financial and the real, but a distinct power process. Their CasP model of the stock market is anchored in a simple class framework: on one side stand the capitalists, the owners of the vast majority of corporate stocks, and on the other, the ‘underlying population,’ whose changing conditions are approximated by the wage rate. A ‘power index,’ expressed as a ratio of the stock price index of the S&P 500 relative to average wages, represents the ‘capitalized conflict’ between the two groups (Bichler and Nitzan 2016, p. 133).<sup>1</sup> Given the forward-looking logic of capitalization, a rising power index reflects not only the increasing power of equity owners relative to the underlying population in the here and now, but also their future expectations regarding their relative power.

The CasP model predicts that forward annual stock market returns will be inversely correlated with the power of investors over the underlying population. As the power index increases, we should expect to see declining stock market returns in the future. And in the case of the US, this is exactly what BN find. Panel A in the top left-hand corner of Figure 1 plots the relationship between the power index and the annual returns on the S&P 500 projected twelve years ahead. As we see, there is a tight, inverse correlation between the two series, one that is stronger from 1929 onwards. The power index also appears mean-reverting. Historically, the upper-bound limit, or asymptote, of power, is two standard deviations above the mean. When the power index reached its asymptote in the early 1900s and late 1990s, a significant downturn in the stock market followed. The past few years mark the third time in the past 150 years that this asymptote has been reached, signalling the increased likelihood of a bear market in the coming years.

[INSERT FIGURE 1 HERE]

Why do power relations predict future stock market returns? To answer this question, the CasP model makes reference to the collective psychology of investors. Growing capitalized power raises expectations of increased resistance from the underlying population, and when the asymptote of power is reached, capitalists become fearful that their dominant position is under threat. In response, they abandon their forward-looking orientation, and cling to the comforting anchor of current earnings to value stocks. When the power of capitalists is relatively diminished, there is more room to augment that power in the future, and they become optimistic and forward-looking.

BN thus argue that capitalist power is dialectically intertwined with what they call ‘systemic fear,’ which is measured by the correlation between the earnings-per-share ratio (EPS) and share prices. A weak correlation between EPS and share prices suggests that capitalists are confidently oriented toward the future, while a strong correlation signals their fearful orientation towards the past. Panel B in the top right-hand corner of Figure 1 plots the power index alongside the systemic fear index

for the US from 1881 to 2017. As we see, the Pearson correlation between the power index and the systemic fear index is very tight at +0.83 for the entire period.

Finally, we arrive at the third step of the CasP model, which claims that both capitalist power and systemic fear are driven by strategic sabotage. BN use the annual growth rate in employment as a proxy for the security and wellbeing of the underlying population. The stalling of employment growth means more strategic sabotage, which boosts capitalist power in the future. Yet inflicting more sabotage on the underlying population also bolsters resistance and makes capitalists more fearful. Strategic sabotage is therefore a strong predictor of the growth in capitalized power, and the increasingly backward-looking, angst-ridden perspective of investors that comes with this growth in power. Panel C in the bottom left-hand corner of Figure 1 shows the relationship between the 5-year lagged growth rate of employment in the US and the power index.

What immediately stands out in Panel C of the figure is the sudden reversal that takes place starting in 1939. Until then, employment growth, the obverse of strategic sabotage, was tightly and strongly correlated with the power index, but the relationship turns negative thereafter. BN argue that this reversal is due to the rise of Keynesianism, and specifically, of countercyclical monetary policy. Before 1939, systemic fear and the power index were in a decades-long process of decline, but from very high levels. Since systemic fear was high, stock prices were tied to current earnings, which are tightly correlated with employment growth. There was no counter-cyclical monetary policy to counteract the sharp, long-lasting downturn. But after 1939, capitalists began to expect that governments would use countercyclical monetary policy; higher employment growth (lower sabotage) would bring about tighter money, higher interest rates, and lower capitalization (and hence lower capitalized power). Panel D in bottom right-hand corner of Figure 1 shows that, since the early 1960s, employment growth has become an effective predictor of what will happen to US interest rates five years down the road.

The analysis culminates in what BN identify as a CasP policy cycle. In their estimation, monetary policy has become high-jacked for the capitalized ends of the powerful. Strategic sabotage serves to keep capitalists in the ‘driver’s seat,’ even if it simultaneously leads to lower current profits and makes capitalists more fearful. This is because lower employment growth in the here and now leads to lower interest rates in the near future, which boost capitalized power by fueling stock market booms. The CasP policy cycle is contrasted with Kalecki’s (1943, p. 330) ‘political business cycle,’ which suggests that capitalists face a trade-off in their economic interest in profit-boosting full employment and their political interest in some level of unemployment to discipline workers.

These are the basic features of the CasP model. The ideas that underpin the model are complex and challenging, and we have no doubt that our summary leaves out many of its subtleties and nuances. But we hope to have at least managed to capture the essentials. BN have managed to craft something that is both elegant and robust and has potentially far-reaching implications. After all, the stock market is a central institution of capitalist societies, and a model that is able to reliably predict its movements is significant, not only to those who want to make money from it, but also to policy-makers that want to tame it, and even those who want to contest or replace it. In the remainder of this paper we critically engage with the model by applying it to other advanced capitalist countries.

### **3. Do Power Relations Predict Stock Market Returns?**

Our exploration of the CasP model begins with its core prediction or first step, which posits an inverse relationship between unequal power relations and stock market performance. Figure 2



plots the power index and forward annual stock market returns in Germany, France, the UK, and Japan. What we see is a consistently tight, inverse correlation between the two series in each country: -0.74 for Germany (1949-2017), -0.65 for France (1949-2017), -0.85 for the UK (1923-2017), and -0.20 for Japan (1921-2017). Japan may look like an outlier with a much weaker correlation. But if we exclude the tumultuous years of WWII and begin in 1949, as with Germany and France, then the Pearson correlation of the Japanese power index and forward annual returns increases to -0.80.

[INSERT FIGURE 2 HERE]

For sake of comparison with the US, dotted lines indicating the mean level of capitalized power, as well as various standard deviations from this mean, are included in the figure. The German power index does appear to be mean-reverting, but the amplitude of these shifts in capitalized power are less uniform than those found by BN in the US. It is difficult to surmise a definitive asymptote in the power of German capitalists. The power index climbs rapidly in the 1950s with postwar reconstruction, surpassing the level of three standard deviations above the historic mean in the early 1960s. From the mid-1960s and 1970s the power index falls, but then rises from the early 1980s to the present. In 2017, the most recent year for which data are available, the German power index is nudging up against two standard deviations above its mean. The absence of a clear statistical pattern in Germany makes it difficult to declare that the asymptote of power has been reached, but the current situation does suggest a decline in stock market returns in the coming years.

The French pattern is remarkably similar to the German one. As we see in Figure 2, postwar reconstruction in the 1950s revived capitalized power, with the French power index surpassing two standard deviations above the mean in the early 1960s. The power index then falls sharply from the mid-1960s until the early-1980s. After François Mitterrand's failed experiment with radical Keynesianism in 1981 and the French government's subsequent adoption of more restrained fiscal and monetary policy (Anderson 2017, pp. 7-8), the power index revived, but only modestly. At its most recent peak at the turn of the twenty-first century the price of French shares relative to French labour were nowhere near the levels attained in the 1960s. The fact that the power index is at the mean level in 2017 suggests there is considerable scope for the further expansion of capitalized power in France.

As in the US, the UK power index shows an asymptote of power of around two standard deviations above the mean since 1923. The power index shows a gradual decline from the 1920s to the late-1960s before collapsing in the early 1970s. With the dawn of Thatcherism, the relative power of capitalists swiftly recovers, and continues its steep ascent through the reign of New Labour. A fairly significant decline in capitalized power then ensues during the dot com and global financial crises but the power index has since recovered to average levels. Much like in France, a power index at the mean level in 2017 signals that the relative power of capitalists in the UK has considerable room to grow.

The oscillations of the Japanese power index stand apart from the other cases. We see historic highs in the power index of around two standard deviations above the mean in the 1920s and 1930s, followed by a dramatic collapse during WWII. Capitalized power then recovers with postwar reconstruction in the 1950s. But since then the power of capitalists in Japan has consistently been below average levels. During the boom of the 1980s, capitalized power begins to climb, but does not even reach the average. With the power index in 2017 still well below average levels, it may be tempting to forecast growth in capitalized power. But after at least two

'lost decades' for investors in Japan, such pronouncements might seem overzealous (Anon. 2009; Hausman and Wieland 2015).

To summarize, all four cases provide compelling empirical confirmation for the first step of the CasP model. The most similar case, the UK, is the strongest, but only marginally. In a variety of contexts, and through very different historical periods, the power index stands as an accurate predictor of future stock market returns.<sup>2</sup> But why exactly do we see this tight inverse correlation between unequal power relations and stock market performance? What is the theoretical explanation for the robust statistical relationship between the two indicators? To address these questions, we now turn to the explanatory aspects of the CasP model, starting with the second step, which posits that capitalized power is dialectically intertwined with capitalists' fear about the future of their system.

#### 4. Is Fear Systemic?

BN's (2016, pp. 142-143) explanation for the relationship between the power index and forward annual stock market returns relies on getting inside the heads of capitalists. They argue that the capitalist mindset is comprised of two movements, one extroverted and one introverted. The power index represents the capitalized power of owners over the underlying population and can therefore be regarded as a quantitative measure of the rulers' 'confidence in the obedience of the ruled' (Ibid.: 142). Thus, on the outside, a rising power index reflects the growing confidence of capitalists in the subordination of the underlying population. The stock prices that make up the numerator of the power index are determined by capitalists themselves and bidding up stock prices means that capitalists expect those prices (and therefore their own relative power) to increase in the future.

Yet as their outer confidence in obedience grows, capitalists begin to tremble on the inside. BN (2016, p. 142) invoke Hobbes' *Leviathan* to explicate the double movement of extroverted confidence and introverted fear. The 'insecurity, uncertainty, and mutual suspicion' that humans feel in relation to their relatively equal societal counterparts compels them to accumulate differential power without end. Yet growing power brings fear that the accumulated power could be lost. This unending cycle of fear and power underpins the historical evolution of the stock market. When their power is low, capitalists sense a greater scope for expanding their power in the future, and their worldview becomes inwardly confident. But as capitalists start to accumulate more power, they anticipate more resistance. As power brushes up against its historical asymptote, capitalists find it difficult to augment their power further. When this happens, the capitalists become fearful of the future, and orient themselves toward the present.

Based on these ideas, we arrive at the second step of the CasP model, which states that the power index should be positively correlated with systemic fear. How should a concept as elusive as fear be measured? BN construct a systemic fear index by measuring the correlation between the earnings-per-share ratio (EPS) and share prices. EPS is a measure of current earnings. When capitalist confidence is high and their orientation forward-looking, share prices should be uncorrelated with EPS. When capitalists are plagued by systemic fear and abandon their forward-looking orientation, share prices should correlate positively with EPS. As we saw in Panel B of Figure 1, BN find a very tight correlation of +0.83 between the power index and the systemic fear index for the US.

Before we turn to the four cases, it is worth reflecting for a moment on what is 'systemic' about systemic fear. Here we identify what may be regarded as an ambiguity, if not a contradiction in

BN's analysis. On the one hand, they are careful to acknowledge that the principles of their CasP model are derived from an empirical analysis of the US experience, and that the finding should therefore be treated as 'explorative and tentative rather than exhaustive and definitive' (Bichler and Nitzan 2016, p. 119). But on the other hand, if capitalist fear is systemic, then it should be global given the integrated nature of the world's financial system. That is to say, the strong correlation between EPS and stock prices that BN find in the US over recent years should also be evident in the major stock markets the world over. In our own research, however, we find little evidence of systemic fear as a global affliction.

Figure 3 compares the systemic fear index of the S&P 500 in the US to that of the MSCI World, a global benchmark representing large and mid-cap equities across 23 developed markets. One problem in evaluating step two of the CasP model is that data on EPS are not as extensive in other parts of the world as they are for the US. While the systemic fear index for the US can be calculated from the nineteenth century, the MSCI data only stretch back to 1970. As we can see from the available data, the correlation coefficient for the two series is fairly strong at +0.58. But what is most noteworthy is the divergence between the two series since the global financial crisis. The S&P 500 systemic fear index has largely moved sideways at a historically unprecedented high from around 2008 onwards, while the MSCI World systemic fear index has declined significantly over roughly the same period. In fact, the system fear index for the MSCI World in 2017 had fallen to a level not seen since the mid-1980s. If we take the systemic fear index as an accurate measure of investor sentiment, it appears that aside from holders of S&P 500 shares, capitalists the world over are feeling decidedly cheerful.

[INSERT FIGURE 3 HERE]

What about the cross-national relationship between power and fear? Has systemic fear in our other cases been rising or falling in recent years? Most importantly, is capitalized power, as step two of the CasP model predicts, dialectically intertwined with systemic fear? Once again, the lack of historical data militates against definitive answers to these questions across our four cases. But even with limited data, we are still able to piece together a reasonable picture of the evolution of systemic fear in other countries. The evidence is mixed.

Figure 4 plots the power index and the systemic fear index for each of the four cases. There are two main things worth highlighting. First, we see that in all four cases systemic fear, at least on this particular measure, has fallen since the crisis. In the UK and France the correlation between EPS and share prices has edged toward zero. Second, the power index and the systemic fear index are tightly correlated in some cases but not in others. Given the short time periods covered by the systemic fear indices in France and the UK, it only makes sense to calculate the correlation for Germany and Japan. As we see, the German systemic fear index is tightly and positively correlated with its power index, but in Japan the correlation is much weaker.

[INSERT FIGURE 4 HERE]

That systemic fear has been falling in other parts of the world does not seem to accord with what has been happening on the ground. In recent years, the German systemic fear index has been falling through a period of heightened political instability, and through a sovereign debt crisis that has threatened to tear apart the Economic and Monetary Union (Blyth 2016). Perhaps the most compelling case against the systemic fear index is the fact that it has been sharply falling for the UK even in the context of the vote for Brexit in the referendum of June 2016. Other quantitative indicators of business confidence, such as the Hargreaves Lansdown Investor Confidence Index,

as well as qualitative surveys of business leader sentiment, all point to growing a climate of fear in the wake of the Brexit referendum (Gordon and Parker 2017; Hunter 2016).

Our findings make us question the extent to which the simple correlation between share prices and EPS actually captures something as complex as the investor psyche. This is now the second attempt BN have made to analyse systemic fear. Their first attempt was criticized by Andrew Kliman (2011), who pointed out that S&P 500 stock prices and EPS were highly correlated during the so-called ‘golden age’ of capitalism from the late 1950s to early 1970s. In response, BN (2016: 137) modified their systemic fear index, replacing rates of change in stock prices and EPS with levels, and shortening the temporal window from three years to twelve months. Yet our own analysis indicates that this modified version of the systemic fear index does not hold up to empirical scrutiny globally or cross-nationally. It may be time to move beyond systemic fear as a conceptual basis for modelling the stock market.

## **5. Strategic Sabotage and Economic Policy: Are Capitalists Always in the Driver’s Seat?**

We now proceed to the third and final step of the CasP model, which introduces Veblen’s concept of strategic sabotage as a driver of both capitalist power and systemic fear. Step two, which posits a dialectical relationship between power and fear, was shown in the previous section to have less than definitive empirical support outside the US. But what if we simply abandon systemic fear, and focus on the relationship between the power index and strategic sabotage? For this component of the CasP model to be valid, we should expect three things. First, as strategic sabotage increases, the power of capitalists relative to workers will increase. With a five-year lag, the growth rate of employment, an inverse proxy for strategic sabotage, will serve as a predictor of the power index. Second, this positive relationship between sabotage and power will only apply with the emergence of the Keynesian welfare-warfare state and the use of discretionary counter-cyclical monetary policy from the mid-twentieth century onward. Third, with the rise of Keynesianism there will also be evidence of a CasP policy cycle, with the growth rate of employment serving as a predictor of interest rates.

Figure 5 plots the relationship between the power index and the annual growth rate of employment for our four cases. Note that data on employment levels for these countries are not available for the pre-Keynesian period. As such, we should expect to see a tight negative correlation between the growth rate of employment and the power index to exist throughout. But in no case do we actually see this relationship. In France and Japan, the power index is not meaningfully correlated with strategic sabotage, and in the UK and Germany, the correlation is fairly strong and positive, the obverse of what the CasP model predicts.

[INSERT FIGURE 5 HERE]

Is there a CasP policy cycle in other countries? In Figure 6 we compare the 5-year lagged growth rate of employment to the yield on 10-year government bonds for our four cases. Once again the evidence is mixed. Contrary to predictions of the CasP model, we see a fairly tight inverse relationship between employment and interest rates in France and the UK. In Germany, we see a mildly positive correlation between the two series. Only in Japan, where both interest rates and the growth rate of employment have been gradually falling since the mid-1960s, do we find evidence of a CasP policy cycle. Yet with these findings we remain skeptical about the idea of a CasP policy cycle in Japan. Bear in mind that BN’s proxy for strategic sabotage is the annual growth rate of employment, which tracks the percentage change in the total number of persons employed. Rather than a result of the concerted effort of Japanese capitalists to limit the wellbeing of the

underlying population for pecuniary gain, we think that this gradual long-term decline in the growth rate of employment is more likely a reflection of profound demographic changes associated with an ageing society and a declining number of people of working age (OECD 2016).

[INSERT FIGURE 6 HERE]

Our research into the third step exposes additional problems with the CasP model. According to Figure 4, either the growth rate of employment is a poor proxy for strategic sabotage, or relations between capitalist and workers in other advanced capitalist countries are less antagonistic than in the US. Our findings in Figure 5 suggest that, at least outside of the US and Japan, capitalists may not always be in the driver's seat. For Germany, France, and the UK the long-term decline in interest rates since the mid-1980s has had little to do with the power of capitalists to inflict damage on the underlying population. What is clear is that simply skipping the second step and instead focusing on the relationship between power and sabotage does little to enhance the portability of the CasP model.

## 6. Conclusion

The purpose of this article has been to assess the applicability of BN's CasP model of the stock market to social formations beyond the US. We have done this by empirically retracing the three main steps of the model for Germany, France, the UK, and Japan. Our findings strongly affirm the first step of the CasP model, as the power index was found to be tightly and inversely correlated with forward annual returns for all four cases across long periods of time. But when it comes to the model's subsequent steps, our findings are much less supportive. The data we have gathered for step two are admittedly more limited, but the research nevertheless indicates that capitalist fear is not a systemic condition as understood by BN, as the correlation between share prices and EPS have been falling in other major stock markets. What is more, only in Germany do we find evidence of a robust relationship between the power index and systemic fear. Without the mediating influence of systemic fear, the model loses its ability to explain the tight and inverse relationship between power relations and stock market performance. Finally, our investigation of the third step of the model yields ambiguous results. In none of our cases is the power index related to the annual rate of growth of employment, the inverse proxy for Veblen's strategic sabotage. Only in one case, Japan, do we find evidence of a CasP policy cycle, but there are compelling reasons to think that the long-term decline in Japanese interest rates and employment growth stems not from capitalist sabotage, but from demographic change.

Table 1 summarizes our findings. Beyond affirming the first step of the CasP model, what we see is the absence of any discernable pattern emerging from this comparative empirical exercise. For the UK, the most similar case to the US, and for France, the intermediate case, we find no support for the subsequent steps of the model. Somewhat counterintuitively, it is the most different cases, Germany and Japan, that provide limited support for disparate elements of the model. In none of our cases does the model apply consistently across all of the steps. This makes the task of explaining cross-national variation exceedingly difficult. Even the development of conditional explanations is impeded when the model fails to apply consistently to at least one case, or when one of the subsequent steps in the model fails to apply consistently across all the cases.

[INSERT TABLE 1 HERE]

How do we then proceed when a model fails to apply cross-nationally? The expedient response would be simply to reject the model outright and dismiss the robust correlation between the power

index and forward annual stock market returns as a statistical fluke. Such a response might be warranted if the first step of the model only applied to one country. But we think that the presence of this tight inverse relationship between the power index and forward annual returns over long periods of time and in so many different geographical contexts should not be written off as a mere coincidence. Space constraints prevent us from developing a complete framework here, so we end our discussion with a brief outline of two possible alternative explanations.

One approach would aim at salvaging the CasP model. Such an endeavor may involve treating the US as a unique case, one situated at the apex of the hierarchy of global finance (Jorda et al. 2018; Oatley et al. 2013). Acknowledging the unique position of the US might explain why there is no synchronicity between the power index and strategic sabotage, and between interest rates and strategic sabotage, in other advanced capitalist countries. A hypothesis emanating from this line of inquiry is that macroeconomic policy in other countries is not just set by domestic power relations or domestic policymakers, but is shaped by global conditions, and especially spillover effects from power relations and policy decisions of the system's most dominant player, the US.

Yet this salvage attempt also risks sacrificing the elegance of the original CasP model for greater complexity. To echo the pessimistic tone of Joseph Schumpeter (1942: 12), additional facts “can no doubt also be brought into the fold by means of auxiliary hypotheses but the necessity of inserting such hypotheses is usually the beginning of the end of a theory.” Taking cues from Schumpeter's pessimism, another approach would reject the CasP model outright. Along these lines, the robust correlation of power relations with stock market performance would not be dismissed as a statistical fluke but would be subject to an entirely different explanation. The index of share prices relative to the wage rate would not be regarded as a measure of unequal power relations, but simply a valuation anchor akin to the price-earnings ratio (Shiller 2000). When stocks are ‘cheap’ relative to wages investors enjoy favourable returns in subsequent years, and when stocks are ‘expensive’ relative to wages investors experience poor future returns (*ibid.*, p. 12). Such an approach would place the analysis on the terrain of behavioural finance, linking financial booms and busts to the collective psychology of investors. In contrast to the CasP model, however, the explanation of cycles of confidence and fear would not be restricted to shifts in the unequal power relations between capitalists and the underlying population.

The main lesson from our analysis here is that the evolution of the stock market in other advanced capitalist countries cannot simply be read off from the US experience. If the theory of capital as power and its model of the stock market are going to progress, they will require greater attentiveness to the global unevenness and continued national diversity in capitalist development.

## **Acknowledgements**

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## **Notes**

<sup>1</sup>Since our purpose is to apply the CasP model to other countries, we do not scrutinize the validity of its various measures. It is, however, worth pointing out at least two limitations to the ‘power index’ as an indicator of class conflict. First, the rise of institutional investors, especially pension and mutual funds, means that workers of the ‘underlying population’ now have more of a stake in

the stock market, at least compared to the nineteenth century (McCarthy 2014). Second, globalization prompts us to reflect on what BN mean when they argue that the power index constitutes the ‘capitalized power of owners imposed on the underlying population’ (2016: 132). Their power index metric suggests that they are referring solely to the US population, as only US wage-rate data are included, but the globalization of corporate activity that begins in the 1960s and that accelerates in the 1980s, renders such a US-centric metric inadequate to the task of gaging capitalized equity power. To make matters more complicated, not only have the operations and production networks of US-headquartered firms included in the S&P 500 become increasingly global in scope, but a growing proportion of investors in these firms are presumably from outside the US. As the increased mobility of capital flows has allowed investors to disembody themselves from nationally-bounded distributional struggles and for ownership of capital to be increasingly fungible and vendible. The growth in the vendibility and fungibility of capital is a recurring theme in BN’s work. However, the power index that they construct is unable to reckon with the implications of this growth.

<sup>2</sup> We also examined Australia, Canada, Italy, Spain and Sweden. In every case, we found a similarly tight and inverse relationship between the power index and forward annual stock market returns.

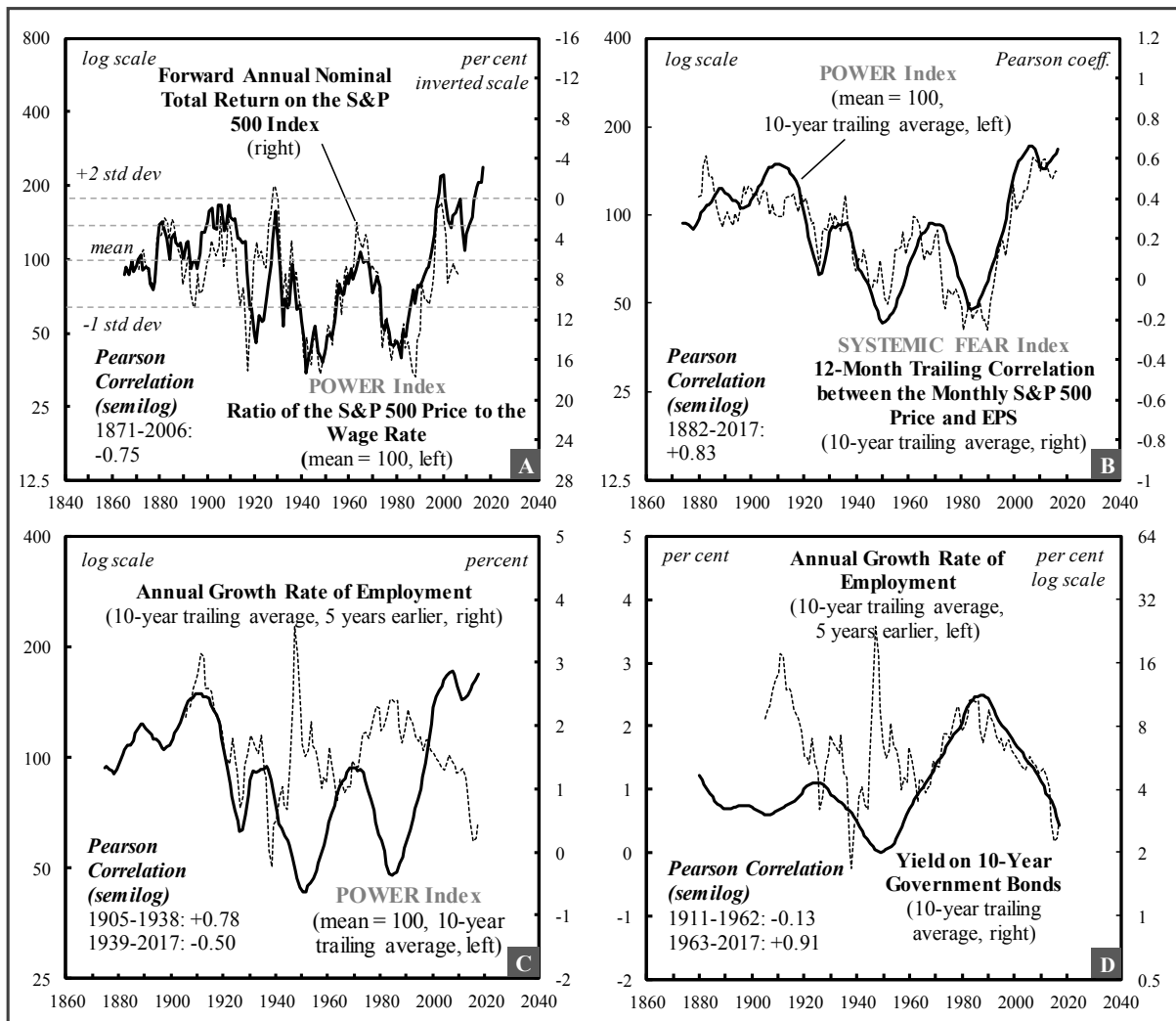
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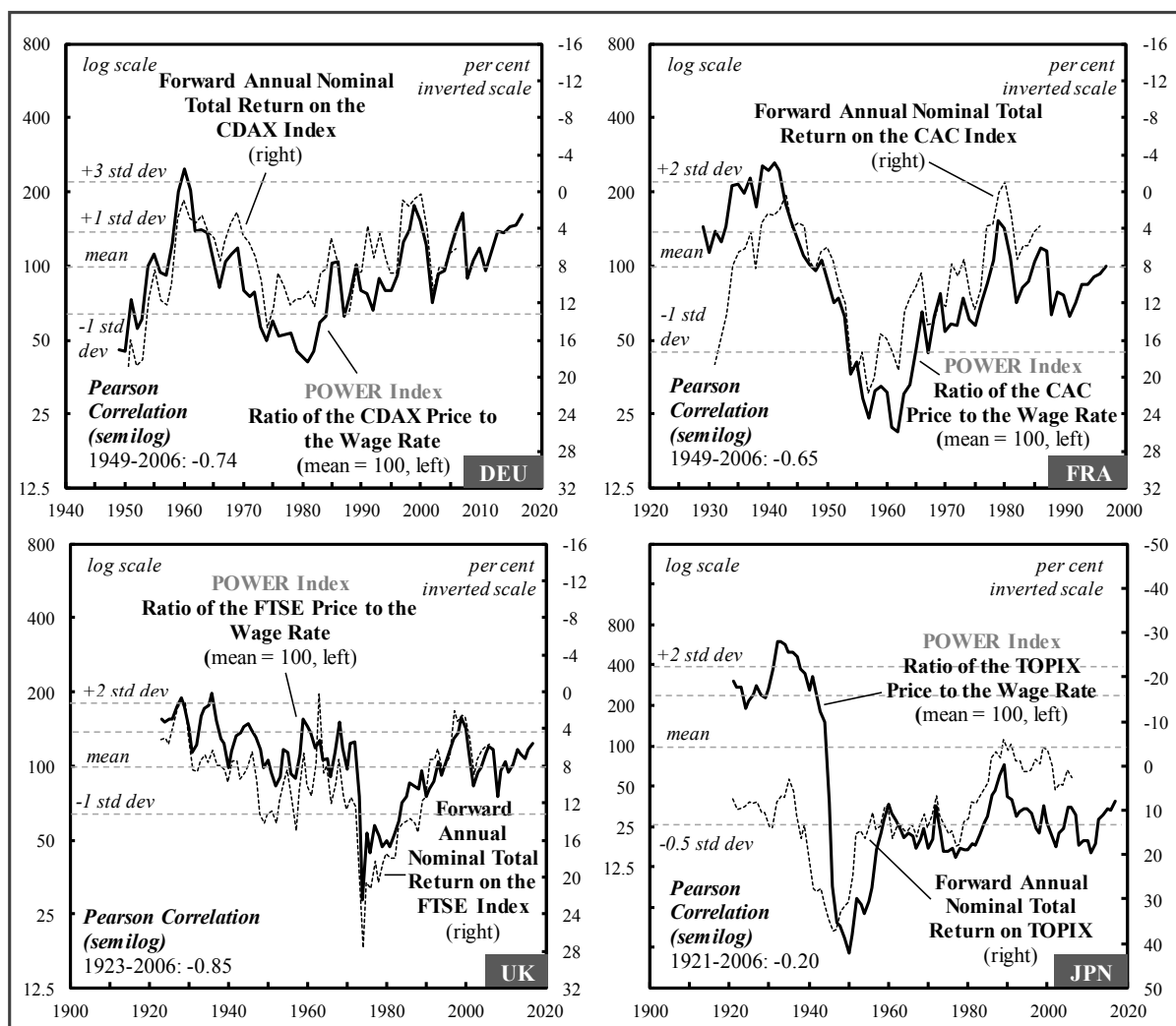
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**Figure 1: Power, Systemic Fear and Macroeconomic Shifts in the US**

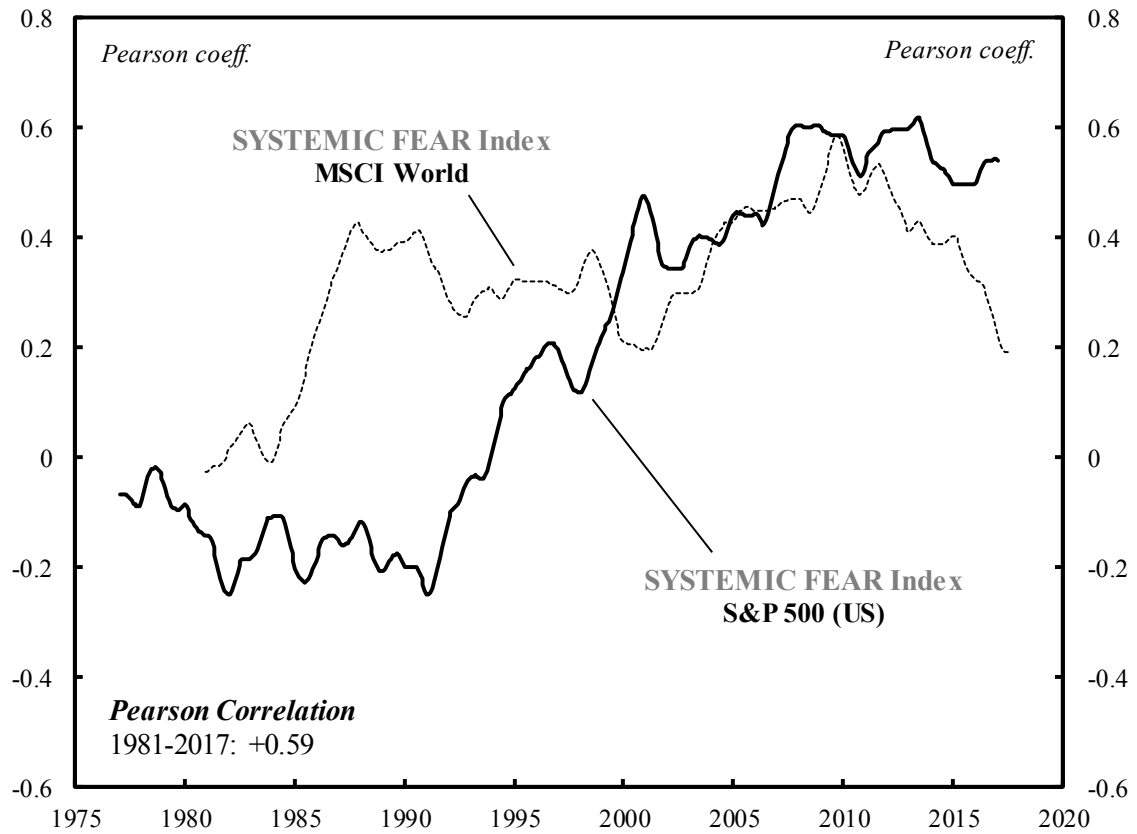
Note: Forward annual returns are computed by calculating the ratio between the total return index 12 years ahead and its current value, and taking the twelfth root of that ratio, subtracting 1 and multiplying by 100. The wage rate splices data for manufacturing production workers until 1946 with data for nonfarm business sector workers from 1947 onward. The systemic fear index is computed by calculating the 12-month trailing correlation between price and earnings per share of the S&P 500 index and calculating the ten-year trailing average of the resulting values.

Source: Bichler and Nitzan (2016). S&P 500 index data from Global Financial Data until 1900 and Global Insight thereafter; wage rate data from Historical Statistics of the United States until 1946 and Bureau of Labour Statistics thereafter; earnings per share data from Shiller (2018); employment data from Historical Statistics of the United States until 1947 and from Global Insight thereafter; interest rate data from Global Financial Data until 1953 and from Global Insight thereafter.



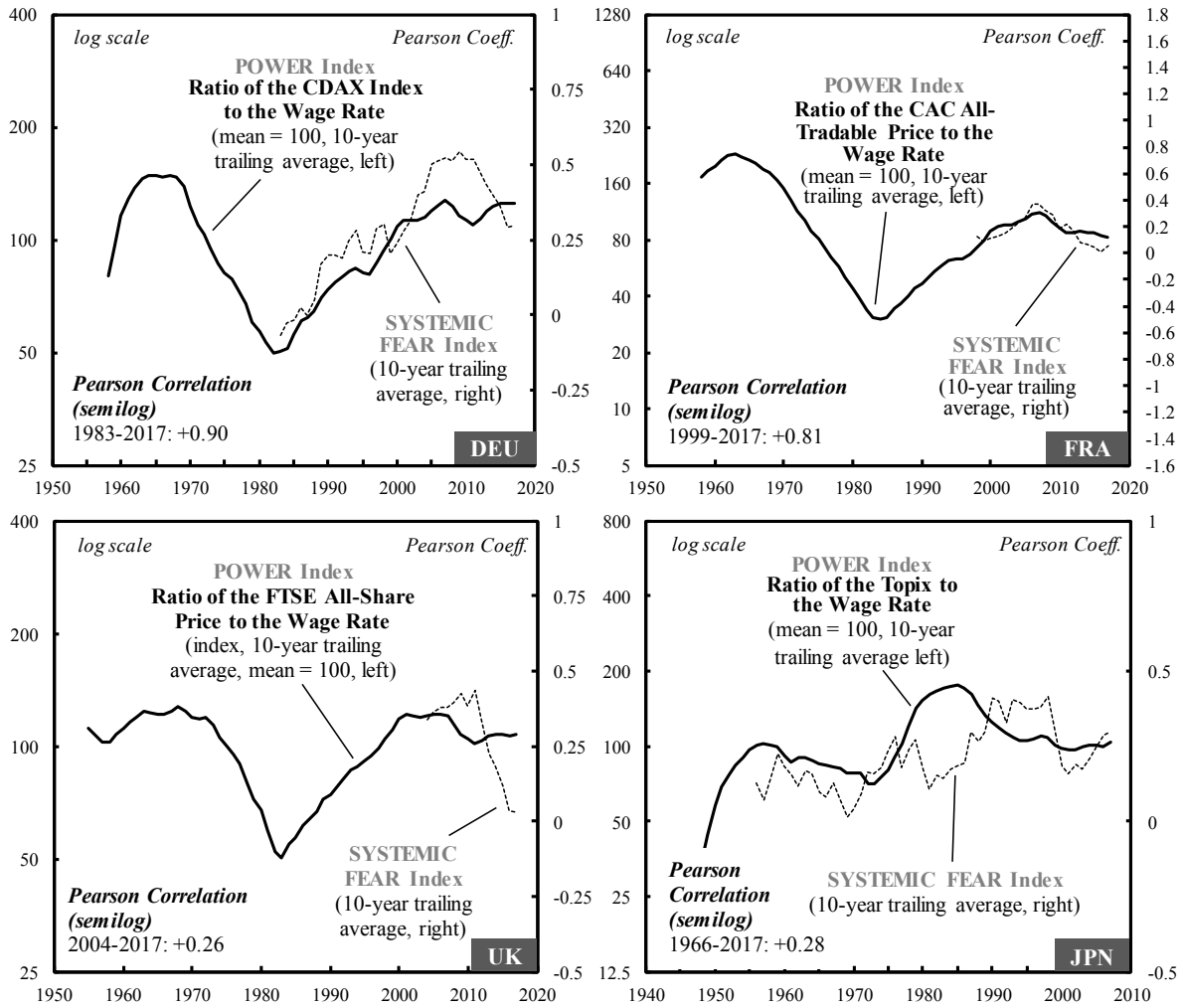
**Figure 2: The Power Index and Forward Returns in France, Germany, Japan and the UK**

Source: Share price data for all countries from Global Financial Data. Wage data for France from Global Insight; wage rate data for UK from Clark (2018); wage rate data for Germany from Stolper and Roskamp (1979: 394) until 1959, and Global Insight thereafter; wage rate data for Japan from Statistics Japan (2018) until 1948, and Global Insight thereafter.



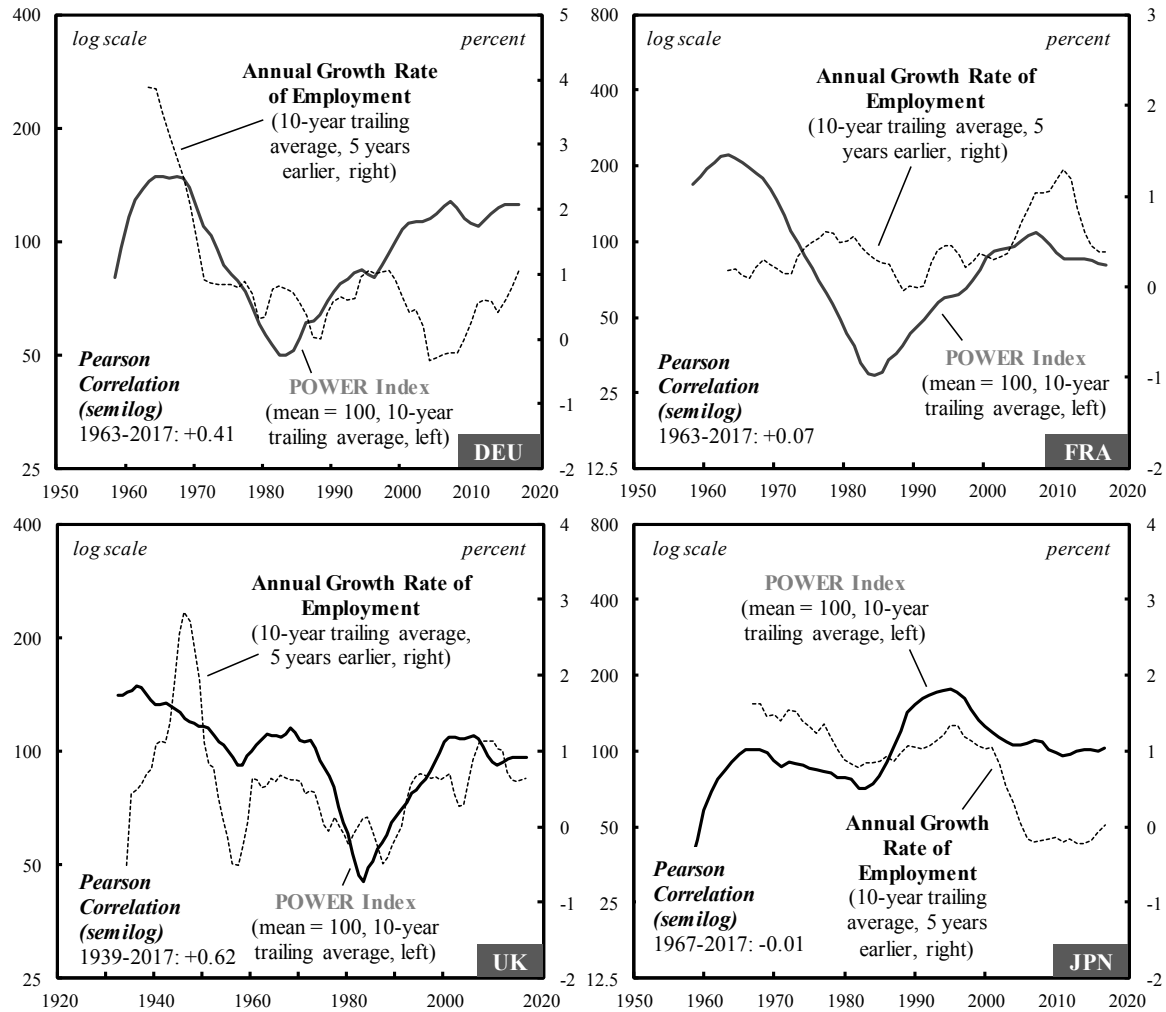
**Figure 3: Systemic Fear in the US and the Wider World**

Source: Share price and earnings per share data for S&P 500 from Shiller (2018); share price and earnings per share data for MSCI World from Datastream.



**Figure 4: The Power Index and Systemic Fear in France, Germany, Japan and the UK**

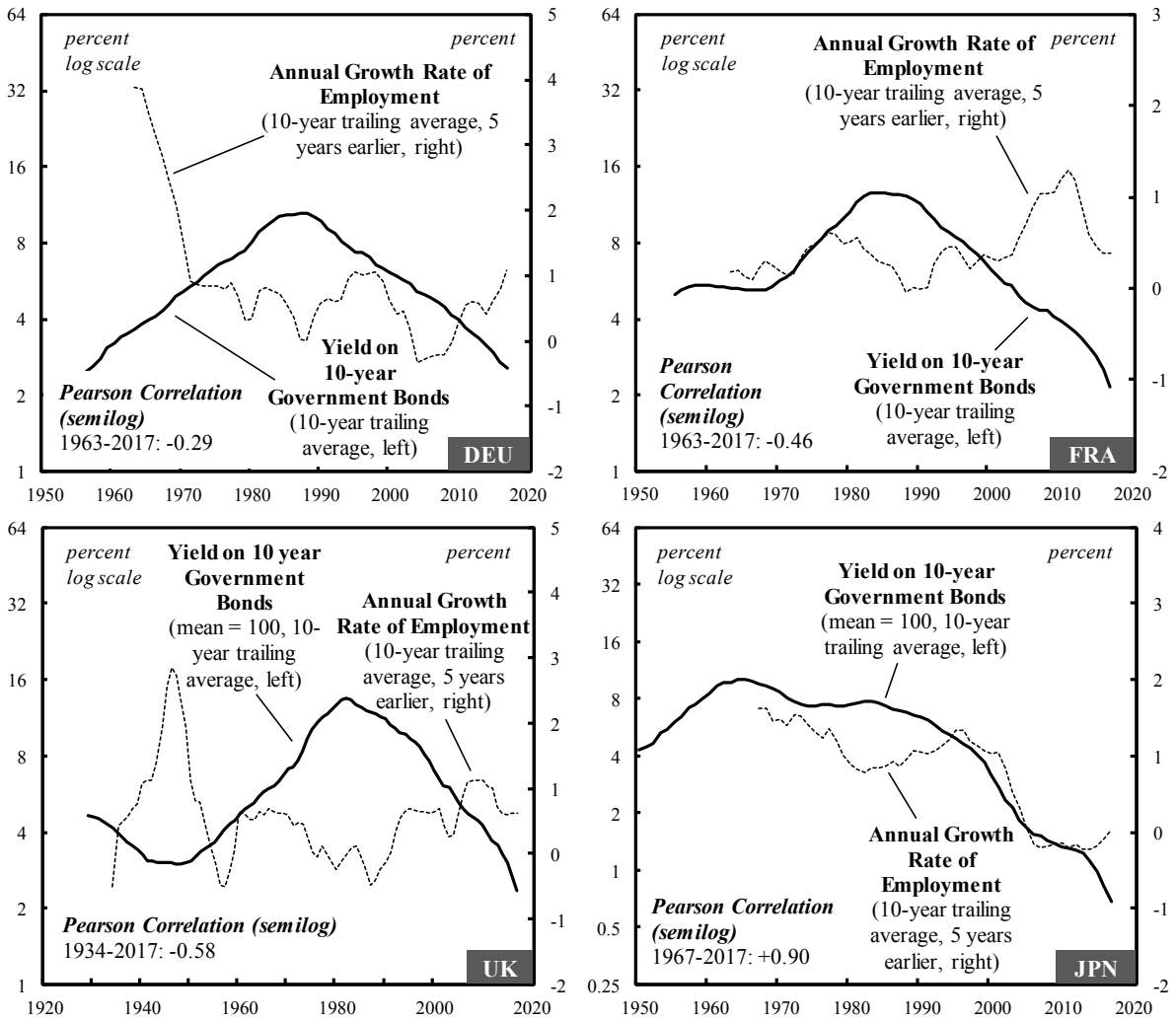
Source: Share price and earnings per share data for France, Germany and the UK from Datastream; share price and earnings per share data for Japan from Global Financial Data. For data for power indices see source notes for Figure 2.



**Figure 5: The Power Index and Employment Growth in France, Germany, Japan and the UK**

Note: Employment level data for Germany in 1991 omitted from the dataset due to the outsized effect of reunification.

Source: Employment data for Germany from Stolper and Roskamp (1979: 379) until 1959, and Global Insight thereafter; employment data for UK from Global Financial Data until 1970, and Global Insight thereafter; employment data for France and Japan from Global Insight. For data for power indices see source notes for Figure 2.



**Figure 6: Employment Growth and the Rate of Interest in France, Germany, Japan and the UK**

Source: Bond yield data for all countries from Global Financial Data. For data for annual growth rate of employment see sources notes for Figure 5.

**Table 1: A Summary of Findings**

	Case Type	Step 1: Power Index & Forward Returns	Step 2: Power Index & Systemic Fear Index	Step 3a: Power Index & Strategic Sabotage	Step 3b: CasP Policy Cycle
Germany	most different	✓	✓	x	x
France	intermediate	✓	-	x	x
UK	most similar	✓	-	x	x
Japan	most different	✓*	x	x	✓

\* From 1949 onwards.