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EDITOR – MARTHA POON



Editorial

I was enjoying the distracting hoopla over bestselling author Michael Lewis's latest book *Flash Boys*, until the unthinkable happened. This stirring tale about an equities trader with a moral compass was outsold by Thomas Piketty's hefty tome, *Capital in the Twenty First Century*, which tracks the growing ratio of capital to income.

I must admit that for my long haul flight out of London for spring vacation, I snapped up the lighter of these two options.

In case you missed it, Lewis has made a provocative claim about how algorithms are used to zip in and out of non-public stock exchanges called dark pools. He argues that when high frequency traders deploy algorithms to exploit latencies, the rest of us get stuck with an unfair market. ('Latency' is a polite way of saying that high frequency trading (HFT) firms can intercept order information before it is received by the exchanges.)

But Lewis isn't interested in HFT because he thinks markets are rigged, nor is this the main intrigue he offers readers. He's written the book because he's emotionally compelled by the heroism of his main character, an affable Canadian trader who single-handedly figures out how HFT firms make a tidy profit by moving markets against large institutional investors, the guardians of public savings. Here's this perfectly comfortable middle class guy, Lewis explains, who's forced to step up for the greater good after he confronts a terrible discovery about the system.

Capital is perhaps moving for similar reasons. A group of content researchers in France decide to map out the international economic history of inequality. Their results leap out of the graphs. If we believe the dynamic that appears in the stark black lines, then the increase in the return on wealth is consistently outpacing the growth of income. Their leader cautions that unless this tendency is checked by an internationally coordinated political effort to narrow the widening gap, the future, writ large, will look something like Downton Abbey.

The data Piketty and company have dared to collect for a period of more than a hundred years, are a stunning example of how to execute a research project with panache. Academics eager to ace the UK's newly introduced impact exercise should cringe, as *Capital* blows through our local assessment criteria.

It's not too late to start ploughing through *Capital's* 700 plus pages. The book offers social scientists plenty of opportunities to fine tune its main thesis. Piketty's objective is to sensitize us to our prospective state of inequality, yet his social imagination remains rooted in the disparities of the long 19th century. It is Lewis, on the other hand, blinded by the mythical sparkle of individual entrepreneurship, who uncovers how categorically new mechanisms, like market automation, are creating unnervingly obscure forms of financial advantage.

Why is the rate of return on capital outpacing income? The answer, I think, lies not in the sweeping nature of capital, but in the gritty details of distinctly contemporary financial innovations. It is finally time for researchers of the financial system to lay the tired theme of crisis to rest. Thanks to Lewis and Piketty, we now know that hardening financial inequality is hardly a state of exception.

INEQUALITY

This issue opens with an overview of the spring floods that devastated parts of the UK earlier this year. We feature a comparative report from **Kristian Krieger** and **David Demeritt** of how the US, Germany and the UK cope with insuring flood affected property.

The two pieces that follow introduce readers to the intricacies of the shadow banking sector. The first, by political economist **Anastasia Nesvetailova**, makes a strong case that financial innovation is being severely under researched; the second, by sociologist **Matthias Thiemann** gives a concrete example of why regulators should better understand the process of financial innovation.

We then present four additional stories of innovation in finance, each told from a distinct perspective. One is an account by **Élie Ayache** recalling his experience trading the first options in the 1980s at the Matif in Paris. In another, sociologist **Taylor Spears** presents an exposition of Basel III's capital requirement calculation that draws on oral histories he's recorded with bankers. Next, a discussion of how revenue management technology is used to set retail prices by accounting scholar **Vassily Pigounides**, who has worked behind the scenes in the tourism industry. Finally, a proposal by practising corporate lawyers **Sophie Vermeille** and **Frank-Adrien Papon** who want to see France modernize its bankruptcy laws.

And in other topics, in case you've been tempted to pick up a pack of cigarettes in Australia, **Marielle Smith** explains why the camels are missing.

In a final note, the CARR has seen a change in its directorate. **Mike Power** reminds us of the achievements of the first 15 years of the centre, after new associate director **Andrea Mennicken** reports on her work with a special focus group in Berlin.

A warm welcome to our new director, Martin Lodge.

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CARRRESEARCH

WHO PAYS WHEN HOMES FLOOD?

Kristian Krieger and David Demeritt discuss market solutions to flooding in response to this year's record breaking rainfall in the UK.

David Cameron's government has struggled to get a grip on the flooding caused by record rain which damaged almost 6,000 homes across England and left the Somerset Levels under water for months. The Prime Minister was heckled during a Boxing Day walkabout with flood victims in Kent when he donned his wellies to play commander-in-chief for the cameras. As ministers squabbled over who was to blame, the Army was dispatched to fill sandbags, and the Prime Minister repeatedly pledged, "money is no object".

The UK government has promised to provide all affected households and businesses with £5,000 "repair and renew" grants. It also suspended council taxes for affected properties, delayed business tax collections, and leaned on a number of government-owned banks bought up during the bailout to provide a £750 million package of interest-free loans.

Critics dismissed these measures as a pre-election give away to Tory voters. Having largely sat on its hand as Hull and other Labour strongholds on the east coast were flooded in early December 2013 in the worst storm surge since the deadly flood of 1953, the government is accused of acting only after the proverbial effluent hit the affluent in the Tory shires.

Focusing on the partisan politics of the government's aid programme overlooks how radically the Government response to the flooding departs from long established arrangements for funding flood damages. For more than 50 years, successive governments in Britain have insisted that "there would be no government help or compensation for households hit by flooding ... We are leaving it to the operation of the free market" (*Sunday Times*, 1 May 2003). This was the line taken by the Blair and Brown governments just, as a generation before, ministers of the day told the House of Commons: "the taxpayer is entitled to expect the individual to insure his own property and not to rely on private contributions or Government

compensation in the event of loss or damage" (House of Commons, 13 October 1969).

By contrast, the current Coalition Government has not only pledged to provide direct government aid to the victims of this year's floods, it is also intervening in the private insurance market with legislation to subsidize the costs of flood insurance for those in high risk zones.

The problem: Increasing flood losses

Floods have become more frequent and more damaging in Europe over the last 50 years. In 2000, England experienced the first flood that broke the threshold of £1 billion losses and the costs of the 2007 floods were put at £3.2 billion. Though estimates for this past winter's flooding are still coming in, damages are likely to top the £1 billion mark. Whether caused by climate change or simply being exposed, what is clear is that for individual households flooding is devastating. There is a need to establish a collective mechanism for financing flood damage.

Flood insurance or government aid, which works better?

Collectivizing the cost of flood disasters through government aid often carries macroeconomic costs, such as deferred public investment or tax increases, and creates a moral hazard. If individuals know they are likely to get help from government, why would they seek to avoid and mitigate risk? The European Commission's recent green paper advocates market-based insurance as a solution to the challenge of paying for flood damages while also incentivizing risk reduction. Private insurance is supposed to generate a virtuous circle of financial protection – funded by collected premiums – and overall loss reduction because high priced flood cover encourages property owners to undertake risk mitigation measures, like flood proofing their homes or moving valuables to higher ground in response to a flood warning.

There are difficulties with this model of private insurance. Flood losses tend to be concentrated

in time and space, taxing the ability of insurers to spread losses and remain solvent. Nevertheless, the reinsurer Swiss Re remains confident that "floods are insurable" (Swiss Re 2002), if they are priced properly. But with insurance priced on the basis of risk, many of those in greatest need of protection may be unable to afford, or even obtain insurance.

There are other demand-side challenges as well. The public tends to underestimate the risk of flooding, and so demand for flood insurance is often low and restricted to those most likely to be flooded. Because of 'adverse selection', insurers find it hard to spread risk across the pool of those buying flood insurance, driving prices up and demand down, so that when flooding does strike many of those affected are unprotected.

Public protests about the affordability of insurance and the devastating costs of flood disasters can lead governments to intervene in insurance markets in ways that undermine their prudential logic of risk reduction through risk-based pricing. We look at three country cases in which risk-based approaches to flood damage financing have been tried, but for political reasons have failed to take off.

Three cases, England, Germany and the US

England

Privately purchased insurance has long served as the collective mechanism for funding individual flood losses. England's flood insurance market used to depend on an informal Gentleman's Agreement. Insurance companies promised to provide affordable flood cover regardless of risk if government would reduce the risk through flood defence spending and turn a blind eye to a cartel arrangement among insurers to make flood cover a standard part of household insurance rather than being sold as a separate product.

Faced with rising losses in the 1990s and 2000s, insurers pressured government to replace the Gentlemen's Agreement with the "Statement of Principles", which allowed insurers to discriminate more sharply on the basis of risk. They raised prices for high risk properties, increased excess limits and refused to provide cover to the most flood prone areas, prompting howls of protest from affected homeowners.

In response, England's insurance industry and the current government agreed to set up FloodRe, a non-profit scheme that enables properties in high risk areas to obtain flood cover at subsidized rates. A privately-run organisation, it is funded through a levy on FloodRe's member insurance companies amounting to £180 million per year. This scheme fails to provide incentives to reduce the overall loss potential from high risk properties. Moreover, FloodRe is formally set up to last for 25 years with a view to being replaced by a purely risk-based flood insurance after its expiry. But it is not clear that an exit from the scheme will be politically feasible, especially since the number of high risk homes needing subsidy is likely to rise with climate change. FloodRe serves a political function. It takes care of the negative publicity that comes with increases in premium rates in high risk areas and later demands for government aid when affected households are left to their own devices.

Germany

Financing flood damage has been a purely private matter since the early 1990s when the liberalization of insurance markets under EU law opened up regional monopolies for insuring natural perils. Until the late 1990s, insurers were reluctant to promote flood cover (part of a general natural perils product) because they did not have adequate tools to assess flood risk. After the Odra 1997 floods, the industry collectively developed a flood map and was able to promote flood cover more actively. Still, in spite of increased efforts by insurers, the share of households covered in Germany remains low at less than one in three. One important reason is that the government provided generous disaster aid to private households after three major flood events in the past 15 years (1997, 2002, 2013), which reduced the incentives for households to purchase separate flood cover on the open market.

Government intervention was motivated by political gains. Most notably, in 2002, then Chancellor Gerhard Schroeder promised that "no-one should be worse off than before the floods" and stormed to victory in the autumn elections having trailed in the polls for most of the year. In 2013, Chancellor Angela Merkel repeated the "successful" example of 2002,

THE UK'S RESPONSE TO THE FLOODING DEPARTS FROM LONG ESTABLISHED ARRANGEMENTS FOR FUNDING FLOOD DAMAGES.

which paved the way to her winning a third term as Chancellor, amidst the best showing for her party in more than 20 years.

United States

Financing flood damage in higher risk areas is managed through the federally funded National Flood Insurance Programme (NFIP). Under the NFIP, residents of designated "special flood hazard areas" can purchase subsidized insurance from the government if their communities agree to adopt tighter building codes and land use regulations to reduce flood risk. A further incentive is that any communities identified as being at risk but not enrolled in the NFIP are denied access to Federal ad hoc disaster aid in the event of a major flood.

In spite of its formal risk control requirements, the NFIP has accumulated a significant debt vis-à-vis the US Treasury. Part of the problem has been losses from hurricanes like Katrina (more than 40 per cent of the \$38 billion in claims paid by the NFIP since its creation in 1968 has gone to hurricane prone states of Louisiana, Texas, and Florida). But the deficit is also blamed on low premium charges and the NFIP's failure to encourage individuals (on subsidised rates) and communities (required only to introduce but not to enforce strict land use controls) to reduce flood risks.

In 2012, the government adopted the Biggerts-Waters Flood Insurance Reform Act to gradually bring premiums into line with actual risk, reduce subsidies for insurance premiums on second homes, and remove so-called severe repetitive loss properties. After the swift backlash from communities facing steep rises in their insurance premiums, a bi-partisan coalition of Congressional representatives succeeded

in rolling back the reforms. In March 2013, President Obama signed a bill capping rate increases at a lower level and providing refunds to homeowners who had already incurred higher premiums as a result of the 2012 reforms.

Outlook

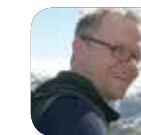
Decision-makers face difficult choices. Current arrangements for financing flood damage costs are already under strain, and with flood losses rising and the global climate changing, there are questions about their future viability. In this context, the prudential logic of insurance requires premium rises to price in the increased risk and incentivize risk reduction. While this may be economically rational, it has proven politically difficult, because there are electoral rewards for political interventions that undermine private insurance. In short, good politics is bad economics while good economics is bad politics.

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THE EVOLUTION OF NOWHERE BANKING

Anastasia Nesvetailova explains why we need more research on financial innovation.

"It takes me about two hours to assemble a team of finance geeks and lawyers to devise a product or a transaction that will bypass any new rule or regulation coming our way," the senior French banker said over dinner. We were in Southern Europe at a conference on financial intermediation, in the midst of the financial crisis in the autumn of 2008.

The comment felt like a confession. Although this banker was visibly concerned about the state of the financial system, his job is to organize a team that will relentlessly move around any new rules or restrictions designed to tame risk.

Regulators and policymakers are in a battle against the blunt logic of financial managers who increase the complexity of the financial system each time they respond to new regulation. I call this process "financial evolution", to draw a heuristic connection to living organisms and the old assumption of the natural order of things. In finance, it seems futile to question or criticize innovation, defined as a sign of progress and a good thing. Progress, in turn, implies a form of linear evolution.

"Shadow banking" is the most compelling illustration of how the process of financial evolution actually happens. This term coined by Paul McCulley, then managing director at PIMCO, is both a stroke of genius and an unfortunate choice of words. Unfortunate, because it implies this activity is "shady"; it wrongly ascribes pejorative connotations to an essential part of the financial sector. Genius, because the confusion over which entities should count as "shadow banks" has matured into an important debate among industry experts, regulators, academics and civil society.

Shadow banking started out as a benign force of financial innovation and competition. It has been broadly defined as a complex network of credit intermediation that occurs outside the boundaries of traditional, regulated banks. A more precise definition suggests it is a system of market-based funding, or "money market funding of capital market lending" (Mehrling et al. 2013).

The Financial Stability Board (FSB) puts the global size of the shadow banking system at \$71 trillion. This accounts for roughly half of total banking assets globally and a third of the world's financial system. Anglo-Saxon countries predominate, with US and UK accounting for 46 per cent and 13 per cent of the global shadow banking system respectively. Japan and the Netherlands follow closely with 8 per cent each.

The system's international reach is deep. Shadow banking reportedly provides 40 per cent of credit in the emerging markets. And analysts at all levels tend to admit that current figures on non-bank activities tend to be underestimated.

Shadow banking became a political problem between 2007 and 2009, and continues to pose some major political dilemmas. On the one hand, the system helps banks meet liquidity needs, conduct securitization and lending functions, and it accommodates a variety of economic interests, from investment banks and pension funds to high-net worth individuals and sovereign wealth funds. On the other hand, shadow banking raises at least three problems related to financial stability.

Firstly, when banks rely on long, complex and opaque structures of credit creation, they are able to enlarge their de facto size which adds to the problem of "too big to fail."

Secondly, by netting several entities into opaque chains of credit intermediation, the shadow banking system amplifies the scope for regulatory arbitrage. Each fund, special purpose vehicle, trust, broker or holding company may be safe, legal and compliant with regulatory requirements, but what spring out of this group of entities all together – the net effect – helps official institutions minimize costs, transparency and taxes.

Thirdly, shadow banking thrives on complexity. It obscures the sources and real dimensions of systemic risk in the financial system and exacerbates the problem of non-transparency. For the first time in modern economic history, regulators, senior managers and academics have been able to resort to this concept of "complexity" to excuse and even justify their ignorance about the developments in the financial system, as well as in their own institutions (Datz 2013).

Researchers at the US Treasury, the International Monetary Fund, the Bank of England, the FSB and the Bank of International Settlements have been pioneering the first generation of scholarship to expose the shadow banking system. The most notable effort is the ground-breaking study by Zoltan Pozsar and his colleagues at New York Fed who have produced some astonishingly refined regulatory maps (Pozsar et al. 2010). The maps show that what the public and many academics believe is the banking system, is in fact only a fragment of a much larger universe of financial and legal entities, transactions and products that, while previously unseen, play a crucial role in real economic sectors, like trade and services.

what is perhaps more important, for the process of credit creation as well. We prefer the term "nowhere" because it captures an ideal that drives shadow banking forward.

We do not need to wait for academic theory or quantitative data to prove that "nowhere" is not a paranormal or misguided development of the economy, when even the most critically minded regulators like Andy Haldane are calling for the return of securitization to boost investment and credit flow. This political pressure is the most poignant evidence we have that "nowhere" is here to stay. Nowhere banking has become the very infrastructure of financial innovation, without which finance can no longer function.

The next bout of financial instability will likely begin at the nexus of the official and the nowhere banking systems. Optimists say regulators are better informed, better equipped and better staffed to deal with this inevitable event than they were in say, 2000 or 2006. Yes, they are. But pessimists would do well to remind us that in a perpetually evolving financial system, it only takes a team of finance geeks and lawyers a couple of hours to devise a product bypassing any new rule or restriction.

Nowhere banking has become the very infrastructure of financial innovation, without which finance can no longer function.

This kind of detailed empirical work poses an important challenge to the usefulness of economic modelling for managing real-life systems. Academic research has been forced to confront its shocking lack of knowledge about the course of financial innovation. This is because "innovation" has always been seen as a natural, organic and progressive element of capitalist development that is driven by the demand of economic agents for new techniques and products. Viewed as a universal engine of economic growth, financial innovation has never merited specialized attention in academic research.

Despite intensive scrutiny, shadow banking will continue to belie the global economy. As accountant and economist Richard Murphy (2009:2) explains it is "a space that has no specific location. This space is created by tax haven legislation which assumes that the entities registered in such places are 'elsewhere' for operational purposes."

He continues: "To locate these transactions in a place is not only impossible in many cases, it is also futile: they are not intended to be and cannot be located in that way. They float over and around the locations which are used to facilitate their existence as if in an unregulated ether."

Ronen Palan and I have argued that the notion of "elsewhere" is firmly linked to the idea of 'nowhere' for the conduct of financial transactions, and

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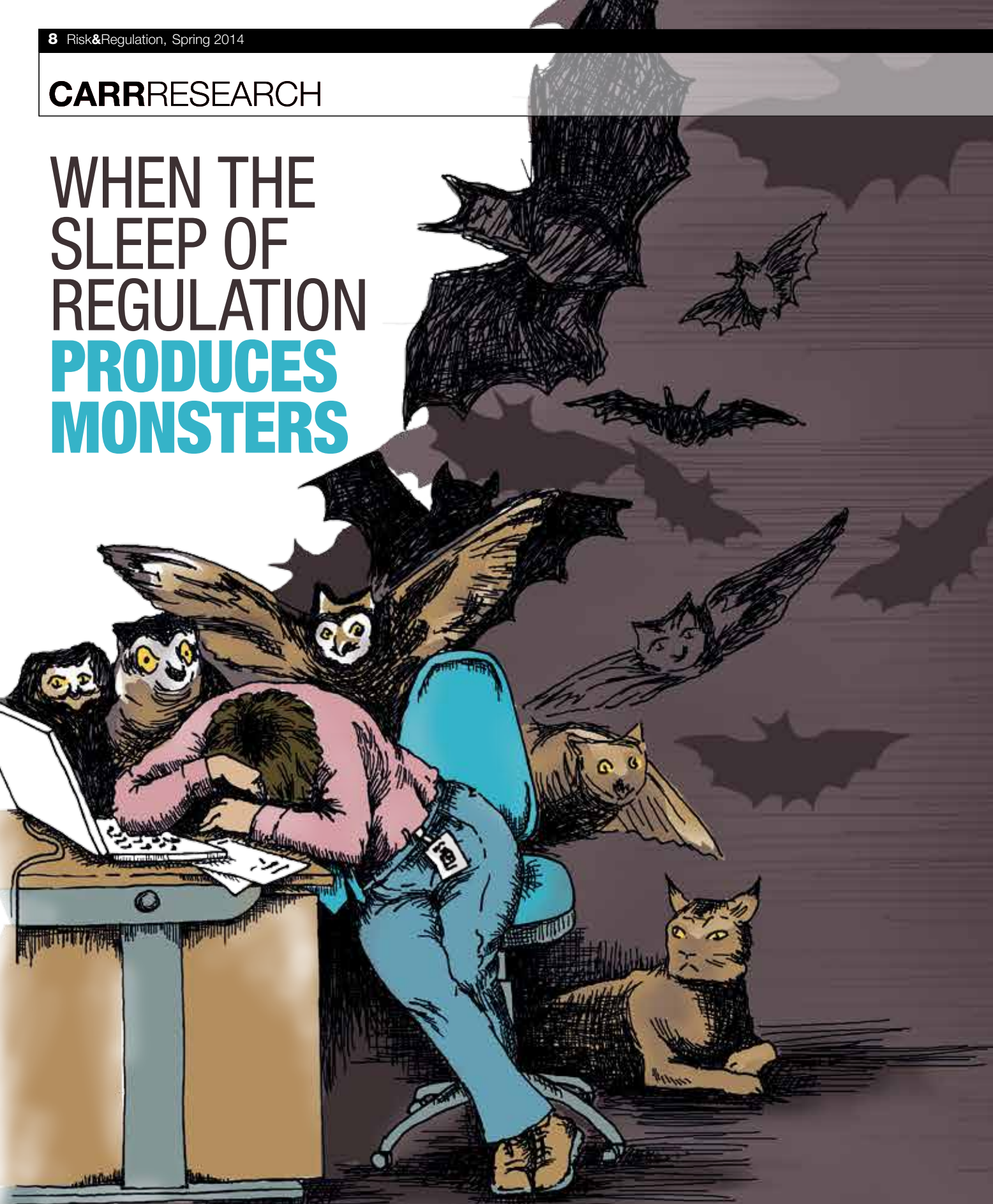
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CARRRESEARCH

WHEN THE SLEEP OF REGULATION PRODUCES MONSTERS



Matthias Thiemann explains how shadow banking benefits from the structural separation of global and national financial regulators.

In the summer of 2007, structured products migrated into the banking system ripping huge holes in the balance sheets of major financial institutions. These products were swiftly renamed toxic assets for their sudden devastating effects on ostensibly healthy institutions.

Structured products are created through the process of securitization which is supposed to transfer risk out of the banking sector. It turns

out that securitization was actually concentrating risky assets in side-pockets called special purpose entities (SPEs) which lie just outside the boundaries of banking conglomerates. Indeed, if the banks seemed to be in good shape, it was because these SPEs were hiding the troubles. During the run-up to the financial crisis, bank managers were sequestering structured products off-balance sheet so they would not have to account for them in risk provisioning. The creative use of SPEs is a form of regulatory arbitrage. It exploits the fact that regulation can never anticipate all the possible ways of designing legal constructs to circumvent prudential regulation, the safety requirements for banking.

The banking sector is arguably subject to the heaviest oversight in the world. Nonetheless, that summer, the sharp influx of structured products from the shadow banking sector surprised even regulators. Retrospectively, we do find warning signs that risk was building up in SPEs. In 1999, the first working paper of the Basel Committee on Banking Supervision noted the degree of regulatory arbitrage surrounding the Basel Accord of 1988 (Jackson et al. 1999).

The bank-based shadow banking system is a response to a specific tool of regulatory control called core capital requirements, invented in the late 1970s. Regulators had wanted to force banks to reduce their leverage and their capacity to earn money from people's savings. Under core capital requirements banks must own a certain percentage of the money they invest, thereby reducing the maximum amount of borrowed money they can use for their businesses (Admati and Hellwig 2013).

It is no coincidence that structured investment vehicles were developed in 1988, in the very same year the Basel Accord instituted core capital requirements as a central pillar of global banking regulation (Ehrlich et al 2009). By placing assets outside the balance sheet of banks and into structured investment vehicles, banks were able to evade core capital requirements for these assets. Instead, they could use almost 100 per cent of the money they had borrowed thereby increasing their leverage.

To understand the phenomenon of bank-based shadow banking, it is important that we recognize the degree to which regulations like core capital requirements structure the products banks end up offering investors. Regulatory costs are so important in product design that the failure to achieve a certain regulatory status can kill a potential offering. That's why there's an entire industry of smart, well paid engineers inside the big international law firms, auditing firms and banks that exists for the sole purpose of working out regulatory arbitrage opportunities. Not only are these professionals well resourced, often much more so than regulators, they also generate the revenue to pay for the service they provide whenever they come up with successful strategies for evading regulatory costs.

Regulatory arbitrage poses the acute question of how to control risk-taking in the banking sector when the industry for avoiding regulatory control is self-feeding – it pays for itself. This suggests that the 'sleep of reason may produce

Under Basel III, banks stand to gain more by avoiding now heavier requirements.

monsters'. In other words, increased regulation is not necessarily the answer to wresting control of the shadow banking sector. The clear incentive to avoid regulation also suggests that it is not enough to blame the ideology of self-regulation (the consistent demand to not regulate on the grounds that market participants can protect themselves), for letting shadow banking go unchecked.

My research investigates the institutional fractures which permitted the shadow banking sector to flourish before the crisis. One important structural fault line – the need for countries to compete through regulation – helps explain why there was a lack of attention to the bank-based shadow banking system before the crisis. In setting international standards for bank safety regulation, including the core capital requirements, the Basel Accord opened up a "global" market for banking services across all countries that are deemed to be in compliance with those standards.

The basis of competition between banks from different countries, however, is heavily structured by differences in regulatory costs. This means that when the Basel Accords set a global minimum, national regulators resist imposing heavier regulations to protect the competitiveness of their banks. What is more, for the sake of maintaining their competitive position, national regulators have been inclined to turn a blind eye to activities designed to circumvent the global accord in this newly created market place.

A second, more subtle reason that shadow banking was overlooked is the cognitive capture of the regulators by the regulated. Regulators observe risk in this sector through the same tools as bankers. The institutional foundation of this cognitive capture is that banking regulators do not sufficiently monitor the acts of creative compliance in which bankers engage. In order to enforce regulation, regulators often depend on measurements and social constructions provided by the banks themselves.

Regulatory arbitrage consists in constructing a legal format that is identical in economic substance to another transaction, but avoids regulatory costs. These legal formats are often constructed so they will not appear in the data given to banking regulators. So for example, since Basel I, banking regulators have imposed their core capital charges on the basis of the consolidated accounts of banking conglomerates. But since regulators do not monitor the debates between auditors and the banks over which entities should or should not be consolidated as part of the banking conglomerate, by the time they get the data to begin their work, most of the SPEs had already disappeared from the balance sheets. This is successful regulatory arbitrage.

The two conditions I've discussed – protecting global competition and cognitive capture – were somewhat indistinguishable at the ground level. When confronted with an otherwise uncertain future, the one thing national regulators knew was that

domestic banks would face negative consequences if they re-imposed regulatory costs on innovative and untested structures. The tension between global and national regulation only bolstered regulators' well known weariness to enacting precautionary measures that would apply only locally to limit the expansion of financial innovation.

The institutional fractures I have documented here continue to exist. The current system diminishes national regulators' incentives to act before a global response has been formulated, even though they will bear the damages of the collective delay. There is a deep structural bias for regulators to be lenient, despite their keen awareness that we must curtail regulatory arbitrage. What is worse, by raising core capital requirements, Basel III has made the rewards for regulatory arbitrage even more attractive since banks now stand to gain more by avoiding the requirements.

The institutional lessons I've drawn out are an attempt to move beyond stale ideological arguments about the place of regulation in finance. Asking whether we should or should not regulate financial innovation is the wrong question. What matters is to understand the effect of particular regulatory choices within the reality of institutional configurations. Regulators working in a global system need to find quicker ways to react. They also need to find ways of making unilateral regulatory action less economically punitive to the country that deems it necessary to enact them.

Finally, the agents who engage in regulatory arbitrage need to be included in a system of information exchange so that regulators can detect attempts to circumvent regulation. On this point, it is discouraging that regulators merely use rather than participate in negotiating the financial statements of the banks they regulate.

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WRITING OPTIONS ON FUTURES

Élie Ayache remembers the first options contracts traded through the Matif in Paris in the 1980s.

If we take the Black-Scholes-Merton (BSM) model for pricing options seriously, the market for options should not exist. All traders know this, yet they keep trading anyway.

An option is a contract that gives its holder the right but not the obligation to buy or sell an asset at a certain price, up to a certain date we call a maturity. In the 1980s, the BSM model became the paradigmatic theory for valuing options because it was the first to establish a one-to-one relation between the price of the asset and the price that should in theory be charged for the option.

Despite the clear valuation prescription written into BSM, however, every day around the world, vast numbers of options trade at prices that vary independently of the underlying asset. This means that by using BSM as a tool for trading options in options markets, traders end up stepping outside the formal conditions defined by the model. This is a perplexing situation for a mathematician, scientist or anyone who believes that formal theory should always have the last word.

I became an options trader on the Matif's first options desk after studying maths and physics at École Polytechnique, a school of engineering known in France by its nickname "X". The person who hired me was Maroun Eddé, who is now the CEO of Murex, one of the biggest financial software companies. Eddé graduated from X just a year ahead of me and was among the first people in Paris to understand BSM. To apply the model we used a *tableur*, a spreadsheet in a program called Symphony, which he programmed himself when he started the desk in 1986.

Our team specialized in trading on options on the futures of the 10-year French government bond. This might sound complicated at first, but with a little patience I hope that even non-traders can understand why this was our first application of BSM and why it worked.

Like an option, a futures contract is a kind of derivative, but the simplest form. With futures, two parties agree to exchange an underlying asset, like wheat or pork belly, at a certain maturity for a certain price. The futures contract is an obligation. To trade the futures today, is to negotiate and agree to a future delivery price in advance.

In the story I'm telling you, the first trades at the Matif, the 10-year government bond took the place traditionally occupied by industrial and agricultural commodities; government debt replaced the wheat and pork as the physical goods upon which futures contracts were written.

Before the delivery date arrives on a futures contract it can be bought and sold. In other words, the contractual obligation to receive the underlying can change hands any number of times without the physical asset or government debt moving an inch. This means that futures have their own, constantly moving price.

Now, because there is no physical aspect to the futures contract as a tradable object, when it trades, price itself becomes the commodity. Anyone who buys or sells the future with the intention of unwinding their position before the physical delivery date is only pursuing the movement of price. They buy because they think the price of the future will go up or they sell because they think it will go down. There is no intention to keep the obligation to receive wheat, pork or bonds.

The options on futures my team and I created in the 1980s, recognized that the volatility of price could be transformed into a commodity, because volatility is precisely what options markets help make tradable. Engaging in this kind of a market is a play on the market's own movement. The market starts to reflect itself, in what may rightly be called speculation. This definition of speculation is intrinsic to the logic of free markets, where nothing is supposed to tell the market where to go except the market itself.

alter that proportion as the maturity of the option approaches and the underlying price varies. The trader's objective is to replicate the exact payoff of the option and suffer no losses.

For this process of dynamic hedging to work, the underlying of the option must be very liquid. This is why we used futures contracts as an underlying for our first options at the Matif.

Futures are remarkably liquid because they are a kind of abstractions, they are not extracted from the physical world the way that metal is mined from the ground, or wheat is grown from the earth. Futures contracts trade in limitless stock because sellers can write them without owning the physical underlying, provided they unwind their trade before the delivery date. Similarly, buyers can

write them without the intention ultimately of owning the physical underlying.

Since we were interested in the variability of the price as a commodity, not the physical nature of the commodity itself, a futures contract could serve as an ideal underlying for our first options.

If you follow this story, you will understand why there is no limit on the variety of derivatives that can be created, and how traders are continuously writing and finding new ways of writing them.

When we wrote these options on futures for the first time at the Matif, we were introducing a layer of complexity to the financial edifice. We took a futures contract that was trading independently of its own underlying as our liquid underlying in a second round of derivation.

In theory, you can use BSM to value the option as long as you know the volatility of any liquid underlying. According to the formula, the option value it will project is a deterministic function of the underlying price. Now, if we assuming the price of the underlying changes stochastically, the BSM theory says the option value will follow that price deterministically, and will have no variability of its own. Yet options are meant to trade in their own market. And when they trade, their prices will vary independently of the price of the underlying. So there are two moving prices in the world, not two deterministically connected prices as the BSM model foretold.

The irony is that although BSM does not allow for a market for options, by allowing options to be priced, it has been a major booster in the growth of options markets. You can write a compound option on top of a liquid option which you treat as an underlying. And this compound option can in turn be valued by arguments similar to BSM and end up trading independently in its own market following the same step outside the model.

Options upon futures, derivations upon derivatives. This is the source of the market's complexity, which is potentially infinite.



Élie Ayache is the author of *The Blank Swan* (2010). He is also the co-founder and CEO of ITO33.

If you follow this story, you will understand why there is no limit on the variety of derivatives that can be created.

FIGHTING OVER FINANCIAL MODELS

Taylor Spears examines some of Basel III's moving parts.

Bankers have long used mathematical models to assess the value of financial instruments. But models are also used by financial regulators to monitor the actions of financial institutions, or even to compel institutions to act in particular ways. This is why, in the world of international regulation, regulators and banks are fighting over the details of financial equations.

Consider a bank's RWA – or risk-weighted assets – an estimate that adjusts the value of a bank's holdings according to their risk. The models that produce these weightings are enormously important because they determine how much capital a bank is required to hold against its liabilities. Capital is a cushion that protects the institution from insolvency in the event that its assets unexpectedly lose value. Roughly speaking, it is the money left over after all liabilities are subtracted from an institution's assets.

Capital requirements can vary across countries, but most national regulators choose to follow the components of the Basel Accords, a set of international standards. Basel requires that banks maintain a certain ratio between their capital and their RWA number. Under Basel III, the minimum capital ratio is set at 10.5 per cent:

$$\frac{\text{Capital}}{\text{RWA}} \geq 10.5\%$$

In this formula, the measurement of a bank's RWA is extremely important. All else being equal, if RWA shrinks in the denominator the bank will be required to hold less capital to maintain its ratio at 10.5 per cent. Likewise, a bigger RWA number forces the bank to allocate more capital, which can be costly and reduce its potential profitability.

Despite its mechanistic simplicity, this little equation packs in a tremendous amount of mathematical complexity. Drill a little deeper, and you'll find out that to get to RWA, the bank must find and summate several outputs produced by distinct models, each of which draws upon labyrinthine flows of data created in different parts of the bank. Consider for example the CVA (credit valuation adjustment) capital charge, one of the components that feeds into the greater RWA calculation.

CVA is a complicated character in and of its own right that attempts to capture the risks a bank faces

when the creditworthiness of its trading partners changes. For instance, if a bank has entered into a series of long-term derivatives contracts with a corporation, and the market's perception of the creditworthiness of that corporation deteriorates, then the CVA charge determines how much additional capital the bank must set aside to protect itself from changes in the value of its assets that arise from this increased risk of insolvency.

Until Basel III, the CVA capital charge was not an element of the accord. The Committee justified its decision to include CVA because nearly two-thirds of all credit-related losses during the financial crisis were caused by changes in the credit risk of trading partners, and not by partners' failure to pay the owed amounts. *Asia Risk*, a popular trade publication among derivatives traders and quants,

reports that many bankers believe the Committee's motivation was overtly political. They say it was designed to push "over-the-counter" derivatives trading onto centralised clearing houses so that counterparty risk would be reduced.

Ever since the CVA charge was proposed in 2009, banks have been sparring with regulators. They have been vigorously lobbying local authorities through the traditional channels to request special exemptions from the calculation. In July 2013, the European Banking Authority responded to these demands, permitting European banks to avoid CVA when they trade with pension funds, non-financial corporations, and government entities. US banks are in a different boat. At the time of writing, US regulators are still refusing to grant any exemptions to the standard Basel CVA charge, much to the chagrin of major derivatives dealers.

Exemptions are one obvious moment of political wrangling in the world of financial regulation. There are, however, more fundamental issues at stake than deciding where and when CVA should be applied. A lesser noticed but arguably more divisive dispute is that banks and regulators cannot agree on how to mathematically define the CVA capital charge when it is employed for regulatory purposes.

Regulators often prefer using standardised formulas, because without an explicit statement of how capital should be calculated, there is little guarantee that measurements will be consistent across institutions. But according to many bankers, CVA can never be reduced to a single formula. The banks argue that CVA can only be accurately calculated using the internal risk management systems they've developed, which are built to suit each institution's particular style of risk management. Bankers further oppose standardized formulas because they tend to produce higher capital numbers. More conservative calculations may serve the public interest, but for banks, heavier capital requirements weaken profitability.

Financial and political stakes meet smack in the details of how CVA gets calculated. Consider an asset that involves a series of payments between the bank and a corporation over several years. A CVA represents a reduction to the bank's recorded value of this asset to capture an increased possibility that the other side may go bankrupt and never make its previously agreed upon payments. In simple terms, if we are members of an entity that is owed, say, £2 million by the corporation at a future date, but we come to expect it will go

bankrupt, then to do proper risk management we ought to reduce our valuation of that £2 million payment on our books to accommodate the chance we may never receive it.

The big question is by how much? By what amount should the valuation be adjusted? To decide, we'll need at least two pieces of information: the likelihood (probability) that the corporation will default on its payment, and our financial exposure if and when this happens. Ideally, we would model the probability that our trading partner will default, and in the case of more complex assets like derivatives we would also model how interest rates and market prices of assets underlying it might move up to the expiry date of the derivative in question. What is more, this exercise would ideally be done at the level of the portfolio, which means we would model all of our trades with a particular counterparty, simultaneously.

Banks spent millions building up incredibly sophisticated measurement systems in the late 1990s and early 2000s that use powerful computers to calculate CVA by simulating all of the possible future values of all the derivatives the bank has with a particular client.

All of this computational complexity has a surprising start. A former trader explained that at his bank, the system was initially designed to make the interactions between traders and risk managers "less emotional". He recalled that before CVA was introduced, credit officers imposed limits on the amount of risk traders were allowed to take. CVA eliminated this contentious process by transforming credit risk from a restriction set by a manager, into a price charged to the trader. The money collected by levying the charge was then used to "hedge" the additional risk the trader was taking by reinvesting it in instruments like credit derivatives.

If emotional management was the initial motivation, by 2006 banks gained an altogether different incentive to invest in the calculation of CVA. Thanks to the major accounting standards boards who would require banks to report their CVA to investors, it would no longer be just a measurement for managing day-to-day trading risk, but would gain a financial reporting function. Organizations with more comprehensive CVA calculating infrastructures benefited from the new accounting rule. The institutions better able to net CVA across assets reported a smaller number, which could boost reported earnings.

If the banks had their way, the Basel committee would allow them to use their internal models to calculate CVA capital charge for regulatory purposes. But when the committee first proposed adopting CVA for capital determination, it ignored the indigenous CVA calculation systems that had sprung up across the banks. Instead, the Committee put forward a standardized formula known as the "bond equivalent" approach, which drew widespread criticism from banks and the derivatives industry trade group ISDA. Banks claimed this alien formula for calculating regulatory CVA was not only unnecessarily conservative, but actually discouraged them for reducing their CVA exposure by hedging their counterparty credit risks using credit derivatives.

At present, Basel III's CVA formula is a compromise between banks and regulators that co-exists beside the institution's internal CVA calculation. When the Basel Committee released a new proposal in December 2010, it maintained a formula-based approach albeit with re-developments to make the regulatory calculation less onerous and to more accurately capture the effect of credit risk hedging. However, the newer formula does not take into account changes in CVA that arise from changes in interest rates and asset prices.

From a mathematical perspective, the banks stand on firm ground. To fully capture the factors that affect CVA for the purposes of accounting and risk management, internally developed models are the best option. And these are the only models that can ensure internal consistency when banks calculate CVA for accounting and for regulatory reporting. However, bespoke models limit the power of the Basel committee or other regulators to measure banks' risks and determine whether they are complying with the law. On the other hand, even if Basel endorsed more sophisticated, exogenous approaches, these models would almost certainly be implemented in different ways across banks, which would produce unwanted calculative variation in how banks' report RWAs.

The point of this story is that mathematical equations are not a means of avoiding political confrontation. The formulas for international capital requirements are just one example of how natural variation in calculations becomes the fodder for high stake battles between the state and private corporations. It is perhaps time we stop judging models merely according to their technical merits, and start thinking of them as forums of negotiation.

If the banks had their way, the Basel committee would allow them to use their internal models to calculate CVA capital charge for regulatory purposes.



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THE UK'S SKY HIGH HOLIDAY PRICES

Vassily Pigounides exposes the social consequences of a pricing technology called revenue management.

Will there be a backlash to the price volatility introduced by RM? Economist Daniel Kahneman and his colleagues have shown that customers believe they are entitled to a reasonable price; they also believe that firms are entitled to a reasonable profit. A public revolt, then, will largely depend upon whether consumers and politicians find RM prices "unfair".

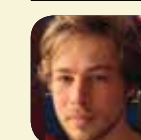
Education Secretary Michael Grove thinks it is. "It's quite unfair that holiday companies are attempting to essentially fleece parents by trying to ramp up prices at particular times of the year," he openly declared on television. And yet, just after he said this, he placed responsibility for change squarely on the shoulders of the educational system. "One of the things we've done to make it easier is allow schools to vary the school holiday so that some schools can choose to close early or open late, to ensure parents have an opportunity to take holiday at an offpeak time to benefit from cheaper prices," he explained.

Westminster, as a whole, has concluded the prices are fair. Price caps were rejected and not a single MP backed price regulation.

Producers and revenue managers invest considerable time and money to deal with perceptions. A reference handbook on RM by Kalyan Talluri and Garrett van Ryzin identifies several strategies managers can employ to help consumers accept RM pricing. For example, they suggest that companies should underscore the rationale of the discount instead of just quoting consumers a price. If a discount is not available on a particular date, companies can offer another date on which the discount is available.

This second strategy has been particularly effective in settling Britain's school holiday affair. It convinced parents and politicians that rigid school policy, not corporate pricing, is the underling source of ticket inflation.

The government has left people to fend for themselves. The good news is, consumers aren't passive. By observing teams of revenue managers in large companies, I have learned that consistently strategic consumers can erode an industry's profit margins by slipping outside the classical classification schemes inside RM systems. In the end, sharp differences in price created to increase profitability can undermine companies' control over the market. All it takes is a population willing to break old conventions.



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WHAT ARE THE SOCIAL CONSEQUENCES OF THE WAY SERVICE PROVIDERS SET PRICES?

Is it really a surprise that prices for flights and hotel accommodation become more expensive during school holidays? Not if we believe in the age old law of supply and demand. But when parents start pulling kids out of school because vacation packages are cheaper during term time, skyrocketing holiday prices becomes a national political problem.

Term-time holidaying is a common practice in the UK according to a recent poll conducted by ComRes for ITV News. Among parents with children under the age of 18, 35 per cent say they have already removed children from school, while another 51 per cent say they would do so if they could snag a cheaper holiday.

In February, the issue was brought to the attention of legislators who were asked to curb the damaging effects of price induced absenteeism on the education of British schoolchildren. One solution imposes fines: parents may continue to take their kids out of school if they pay the £60 forfeit, per child. Another asks schools to simply break with tradition: by giving head teachers more autonomy to set their own term dates, holiday periods could be staggered, which is already the case in other European countries.

The UK's holiday debate raises an interesting question that rarely gets discussed: what are the social consequences of the way service providers set prices?

Pricing is a far more complicated process than the average consumer might think. In the tourism industry, the core of price formation is a technical system called "revenue management" (RM), also known as "yield management" in the airline industry. RM is especially useful in service industries which have what economists call 'capacity constraints' – not everyone will receive service if all buyers show up at the same spot.

The objective of RM is to enhance a company's profit by recalibrating prices and categories of consumers. To use the technology, managers create different segments in the market, say business and leisure, which are then allocated a certain number of seats at different prices, at different times.

RM works wonders. In 1986, the year after American Airlines implemented its system, the company reported a revenue increase of 14.5 per cent and its profits were up 47.8 per cent. When the hotel chain Marriott adopted RM by the mid 1990s, it earned an additional \$150 to \$200 million in annual revenue.

RM might not be transparent to consumers, but travellers around the world are familiar with its peculiar

effect on prices. Under this system, ticket prices depend on the date of purchase; in general, the earlier the reservation is made, the lower the fare. That's how passengers seated in the same row, on the same flight can end up paying radically different amounts for essentially the same service. By adjusting and readjusting prices, the technology incentivizes buyers to commit their hard earned cash as soon as they can, while penalizing latecomers.

Consumers are developing strategies to deal with the logic of RM. As people overcome the initial feeling of incomprehension or unfairness about the way prices vary unpredictably, they are rapidly adapting their behaviour to root out the best possible offer. Tools like online price comparison engines help people make smarter calculations. There are, of course, limits to how much people can anticipate. Even the savvy consumers cannot foresee the unexpected and will pay more for travel to attend to personal emergencies.

RM also has a big hand in why holidays are becoming a luxury that fewer can afford. In peak seasons, the highest priced ticket can cost as much as ten times that of the lowest on some flights. The consumer is never left entirely without choice. To fill spaces, firms offset exaggerated prices by flooding the market with discounts and special offers. You can definitely find a more affordable option if you're willing to travel late on 31 December just when all the New Year's parties are kicking off.

Such sleights of hand are not anecdotal. If applied to suburban transport RM could have a major impact on city lifestyle. The technology would have the Greater London Authority charge regular riders more during peak periods, and steeper fares than occasional travellers. Such a measure would clearly go against the interests of people living in the suburbs who expect to have an affordable commute to the city centre.

RM has already worked its magic on privatized national rail service in the UK where the most expensive journeys are the most convenient for weekly commuters. The cost-conscious are left with little choice but to leave Sunday at sunrise and return Saturday afternoon, since the seats on Monday morning and Friday evening come at such a heavy premium.

Managers who use RM are somewhat cynical about its effects. "Revenue management consists in offering affordable service when customers do not need it, and making it prohibitive when it is essential," shrugged one revenue manager of a large hotel company.

TURNING AROUND FRENCH BANKRUPTCIES

Sophie Vermeille and Frank-Adrien Papon discuss the proposed changes to French bankruptcy law.

There is no end in sight to the economic conditions that triggered an explosion of bankruptcies across Western Europe after 2008. Credit remains constrained as large banking institutions continue to deleverage and adapt to the new regulatory landscape. Meanwhile, the growth of global bond markets has increased the complexity of large bankruptcy cases.

In France, many observers anticipate a substantial increase in the numbers of corporate bankruptcies. What may be less obvious, however, is that corporate bankruptcy poses a special problem in this country because it lacks a dynamic turnaround industry. Only a handful of distressed funds can raise new money as well as the management expertise to put failing French businesses back on track. This means that France suffers from a serious competitive disadvantage because it is ill equipped with private actors who might give failing businesses a second chance.

Having examined this problem in depth, our think tank Droit & Croissance (Rules for Growth) has concluded that France's weakness in corporate turnaround is a direct result of an antiquated bankruptcy law. We advocate a complete overhaul of the French bankruptcy proceedings in alignment with global best practices and the latest academic research. The literature in the field of law and economics has clearly shown that effective bankruptcy laws have an important impact on the swift reallocation of resources and the smooth maintenance of overall economic growth.

The French government appears to have grasped the urgency of the situation. It is finally tackling the much needed reform of French bankruptcy law, which is the most important hurdle to overcome to achieve a dynamic market of private financing for distressed firms in France. France's neighbours including Spain, the Netherlands, the United Kingdom or Germany, have, like the United

States, already incorporated changes to their bankruptcy laws to address the increasing weight of corporate debt in a globalized economy. All of these countries have implemented legislation that addresses the well documented conflicts of interests between shareholders and creditors in bankruptcy proceedings which economists have named agency costs. French law, however, remains blind to this source of inefficiency.

Despite a series of major amendments since 1985, the current structure of French bankruptcy laws is frozen in a 19th century vision of credit relationships which valorizes personal responsibility and honour. This kind of legal infrastructure is not suited to a risk and innovation based economy. While the focus of French bankruptcy law has indeed shifted from assigning blame to saving jobs, it is still not focused on saving the enterprise as a whole because it is too heavily biased in favour of the shareholder.

A stubborn remnant of 19th century thinking, the shareholder is still viewed as the principal and ultimate stakeholder of a company who is rarely, if ever, displaced by bankruptcy proceedings. The preponderance of family-owned small businesses in France, where management is often the sole or controlling shareholder, exacerbates this point of view. The common French perception is that a shareholder comes before customers, employees,

creditors, suppliers, local communities, government and society at large, who are the true joint stakeholders of a modern corporation.

This shareholder bias is a major source of the law's inability to adapt to the complexity of a modern corporation's diverse source of financing. It is also the source of a lesser known and often overlooked legal problem which effectively places all debt collateral virtually out of reach of the lenders, thus making any form of debt financing virtually impossible for small or distressed companies.

How does France deal with distressed firms in the absence of private sector intervention? One need only scan the headlines to find the French government up to its neck in desperate cases. The Treasury is frequently called in and given free rein to deepen insolvency by extending public credit and asked to arrange mergers born in politics with public or private companies owing favours to the government. Working outside of any legal framework, and under intense media and political pressure to save jobs, Treasury officials routinely twist arms to reach compromises behind closed doors.

Unfortunately, this time honored tradition of interventionism has left the Treasury with several billion euros of bad debt, prompting the government to take on the root cause of the problem.

The Treasury is well aware of the dire state of the turnaround industry in France. This is why the government's draft has designated a public investment bank – the *Banque Publique d'Investissement* – to invest public money into distressed companies. But if this plan were to be implemented under the current state of French bankruptcy law it would simply lead – yet again – to a massive transfer of wealth from the public purse to that of a few private shareholders who really should have been evicted a long time ago from the companies they themselves have quite often, run into the ground.

The government has recently released a draft proposal, which, for the very first time, considers the eviction of a controlling shareholder who cannot offer a viable recovery plan for a distressed company. This is an important first step towards repairing the damaging imbalance between shareholders and the other stakeholders of French corporations, in particular, its creditors.

The proposal is encouraging, but it is not enough. An efficient bankruptcy procedure must also contemplate the eviction of some creditors and effectively force them to take on a portion of the losses as soon as it becomes clear that the burden of the company's debt has exceeded what it can repay in the future.

A modern bankruptcy procedure is geared towards forcing the shareholders and creditors to sit at the table and accept their loss at an early enough stage, in accordance with the terms of their existing agreements, in order to spare the company the accelerated destruction of value that inevitably occurs when suffering financial distress. Unfortunately, for French companies, French law is not focused on this objective and no compromise can be forced upon shareholders or creditors until it is already too late.

One illustration of this tardiness is the focus of current French law on an elusive and legally unsettled milestone of cash insolvency known as *cessation de paiements* (withdrawal of payment), which triggers bankruptcy proceedings. For most companies by the time this threshold has been met it is far too late to force shareholders out and sit bankers down to negotiate.

The government's draft also contains provisions curtailing some fundamental rights of creditors. For example, under the proposed rules, creditors would be banned from obtaining legal advice at the expense of their debtor. This provision, which deprives creditors the opportunity to defend their position against shareholders, goes against the current trend

and best practices worldwide, and will certainly have a negative impact on the attractiveness of French businesses to global investors.

In response to the government's proposal, Droit & Croissance has suggested an overhaul of the French bankruptcy law articulated around two distinct processes, one for large corporations and another for small and medium enterprises.

Large corporations should be governed by a slow, complex procedure that should be geared towards transferring the control of the company to a specific class of creditors known as residual creditors. These are creditors who have some stake in the company's future because their debt can and will be partially repaid from whatever assets are left in the company.

Economic analysis teaches us how to distinguish residual creditors from so-called "junior" creditors whose debt enjoys no seniority or is not secured by any assets. When a company is bankrupt and its assets do not cover its liabilities, junior creditors are in the same positions as shareholders; they have, in effect, lost everything. With nothing to lose creditors in this position are prepared to entertain any option including the riskiest ventures or plans to dismantle the company and destroy its aggregate value. Their interests are no longer aligned with the long term survival of the company as a whole and that of its many stakeholders.

Junior creditors should be removed from any decision regarding its future. The residual creditors, on the other hand, have an interest in finding a reasonable recovery plan, giving the company time to recover or an outside buyer that will allow the company to bounce back. They should be given sole control over the future of the company. Recognizing this central conflict of interest between creditors is absolutely essential in order to strip and reallocate the power to decide the future of a bankrupt company.

Knowing where to draw the line between various types of creditors can be a complex exercise. To determine who will be left with something and who will not, requires a very careful estimate not only of the company's residual value, but also of the complex structure of its debt. In most jurisdictions, where the law grants some form of automatic stay on creditors claims, this careful distinction has become the focus of modern bankruptcy law. There is no reason why the same cannot be true in France.

In the case of small companies, these should be spared the complexity of sifting through the contractual rights of creditors. To avoid large, crippling transaction costs, SMEs should benefit from a simplified and expedited procedure in which the control of small bankrupt companies should be swiftly transferred to those creditors who have

How does France deal with distressed firms in the absence of private sector intervention? One need only scan the headlines to find the French government up to its neck in desperate cases.

secured their debt with the company's assets. This type of procedure exists in many countries and it is the fastest and most efficient way to allow viable small companies to recover and non-viable ones to be quickly liquidated.

Much remains to be done in France to build a coherent legal framework that will encourage the swift reallocation of power in bankrupt companies. In our view, evicting shareholders and creditors who have failed the company will bring France into the 21st century. At Droit & Croissance we believe this is the only proven and effective way to bring new talent and financial resources to those struggling French companies that deserve a chance to be turned around.

The authors are lawyers in France and the United States. The views expressed here do not reflect those of their clients or employers.



Sophie Vermeille is Founder and President of Droit & Croissance, a non-partisan, independent think tank dedicated to Law and Economics research in France.



Frank-Adrien Papon is a member of Droit & Croissance's Executive Board.

A full length version of this article is available in French at www.droitetcroissance.fr.

CARRREPORTING

PUTTING TOBACCO IN PLAIN PACKAGES

Marielle Smith draws out the lessons from Australia's policy approach to reduce smoking.

Since the US Surgeon-General first warned against the devastating health impacts of tobacco back in 1964, governments across the world have been scrambling to find ways to reduce its use and consequences.

In Australia, plain packaging has become central to achieving this objective. Implemented in October 2012, the Tobacco Plain Packaging Act 2011 and the Tobacco Plain Packaging Regulations 2011 prohibit the use of logos, brands and promotional text on tobacco products and their associated packages. They also restrict the colour, size, format and materials used in cigarette packaging. Where cigarettes were once sold in colourful, glossy cartons they now can only be presented in a drab dark brown box plastered with graphic health warnings. Even the iconic camel has vanished from Camel Cigarettes.

Plain packaging is just the latest amongst a series of significant measures to curb tobacco usage, including graphic health warnings, consumption taxes and restrictions on smoking in public places. Collectively, these measures have had considerable impact. However, encouraging existing smokers to stop smoking remains a fraught journey as some 29% of Australian smokers tried and failed to quit smoking in 2010. For policy makers, preventing new people from taking up the habit, particularly young adults, is essential to any regulatory effort to reduce tobacco harm. The plain packaging policy seeks to influence not just smokers, but potential smokers as well.

Despite failed attempts to implement similar plain packaging policies in Canada and the United Kingdom, Australia was the first country to successfully turn such ideas into law. With no precedent, there was an insufficient scientific evidence base from which the Government could effectively draw to support this policy decision. The tobacco industry and its allies cried 'nil evidence'. They launched a widespread and aggressive media, lobbying and legal campaign that culminated in an

unsuccessful High Court challenge to overturn the legislation. Tobacco companies continue to this day to pour resources into attempts to discredit the success of the plain packaging policy.

Yet by early measures, the policy has worked. Whilst the impact of plain packaging on potential smokers is difficult to measure, research conducted by the Cancer Council in Australia has shown that plain packaging has had a significant effect on existing smokers' attitudes and behaviours. Smokers of plain packaged cigarettes reportedly perceive the product to be lower in quality and less satisfying. After the policy's implementation, there was also a substantial spike in calls to quit smoking telephone services.

This case raises interesting questions about Evidence Based Policy Methods (EBPM), which have become a favoured tool of public policy in recent decades. In Australia, EBPM were pushed in 2007 by former Prime Minister Kevin Rudd, and have since been enthusiastically supported by senior bureaucrats and administrators across government.

In the complex world that is public policy making, EBPM provide a promise of something stable: a scientific approach to decision making capable of neutralizing the many pitfalls that arise from uncertainty. Under EBPM, policy should not be implemented unless there is scientific knowledge to support claims to better policy making. One pillar of EMPB is the randomised controlled trial, in which survey participants are assigned to two groups at random and exposed to different policy options.

The very concept sounds too perfect to be credible. How could anyone argue that more evidence in public policy making could be a bad thing? There are numerous policy measures that have been implemented using an EBPM frame that have been successful. So too are there many instances of policy failure that could be sourced back to a lack of evidence in the decision making process. But what are we to make, then, of effective public

policy measures like plain packaging that do not adhere to EBPM methods? Do such instances challenge the value of EBPM, or do they teach us something new? Had an EBPM frame been applied to plain packaging, it is unlikely the policy would have been implemented. Nevertheless, it has been an effective public policy, delivering on its stated objective to reduce tobacco use.

And of course, the Australian Government did not introduce their policy blindly. Rather, they had an array of evidence that stemmed beyond academia and science to support their decision – political consensus and local knowledge even though this kind of knowledge was not considered relevant by EBPM standards.

In innovative measures like plain packaging, not only is EBPM not useful to the decision making process, it is nonsensical. There will never be scientific evidence strong or compelling enough to meet the requirements of EBPM if there is no test case on which to pre-establish a measure of success. The easy appeal of EBPM can distract from other indicators of policy success or failure. The lesson from Australia is that policy makers should not let this happen.



Marielle Smith holds an MSc in Public Policy and Administration with Distinction from the LSE. She currently works as an adviser to the Honourable Julia Gillard, 27th and former Prime Minister of Australia.



In Australia, the iconic camel has vanished from Camel Cigarettes.

CARRRESEARCH

FOCUS GROUP: THE WORLD OF SOCIAL NUMBERS

Andrea Mennicken reports on a research initiative hosted by the Institute for Advanced Study in Berlin.

In the academic year 2013-14, a focus group of nine fellows from various disciplines is studying the power of numbers in economic and social life. They have convened at the Wissenschaftskolleg zu Berlin (Institute for Advanced Study Berlin) under the leadership of Wendy Espeland, a sociologist from Northwestern University in the US.

Numbers produced through practices of quantification play a central role in regulation. Whether in the private or the public sector, regulatory activities are increasingly structured around calculations. Cost-benefit analyses, estimates of social and financial returns, measurements of performance and risk – all of these provide information in the form of a numerical representation.

Quantification is often associated with objectivity, precision, and rationality. It is also associated with accountability and efficiency. But why do we think numbers have these qualities? What kinds of expertise and resources are needed in order to make credible numbers? What powers do we attribute to numbers and how do they interact with other kinds of authority? And in what ways have numbers changed how we engage in politics?

In order to examine these questions, the focus group brings together international scholars from different fields such as accounting, anthropology, history, history of science, sociology and statistics, to study the production and uses of numbers in different institutional contexts.

The unique value of this group lies in the variety of topics it covers. For example, Tong Lam from the University of Toronto analyses the roles of numerical practices in transforming Shenzhen from a fishing village into a "Special Economic Zone". Instead of considering China's high-speed growth as a reversal of the socialist revolution, Lam highlights the continuity between the socialist and post-socialist periods, tracing numerical practices in China from the first national census in the 1900s to assessments in recent years of something called *suzhi*, which translates roughly as "human quality".

Alongside this case, Wendy Espeland is investigating how quantification and commensuration have contributed to the creation of new kinds of people. She is examining Alfred Kinsey's measures of homosexual behaviour and the roles that numbers played in the formation of the gay rights movement in the US.

The research in the group also spans a range of historical periods. Theodore Porter at UCLA is investigating asylum statistics and studies of human heredity in asylums since 1789, while John Carson from the University of Michigan looks at the rise of the category of "unsoundness of mind" in Anglo-American Common Law in the late 18th and early 19th centuries.

In contrast, Emmanuel Didier a CNRS researcher in Paris, examines the roles of benchmarking and crime statistics from contemporary French police. My principal research is also on a contemporary site. In England and Wales, I am examining the "decency agenda" that emerged in the UK's prison service from 1999 onwards.

In the prison service, numerically expressed key performance indicators or prison ratings, are not only used to increase administrative efficiency and reduce costs. Numbers "moralize" prison management by including measures of decency, dignity and rehabilitation alongside measures of security and cost in assessments of prison performance.

Costs, inmates, assaults, escapes, and instances of re-offending are no longer the only things that get counted. Attempts have also been undertaken to quantify prisoners' experience through "quantitative measures of qualitative dimensions of prison life".

To calculate these new numbers, calculative expertise must compete and cooperate. To produce statistics about the likelihood a person will re-offend or estimates of an offender's dangerousness, private sector accounting practices for budgeting and costing are combined with criminological and actuarial measurements.

The academic literature has shown how actuarial risk assessment breaks the individual up into a set of measurable risk factors. Calculation has replaced individually oriented treatments and rehabilitation with a technocratic and calculated system of governing inmates. But this shift has not yet been matched by appropriate ways of "delivering" penitentiary services. Prisons, for the most part, still operate at the level of individuals.

There is still much that remains unknown about how private sector accounting instruments will intersect with more traditional treatment oriented approaches to penology. In Berlin, my research project is but one among many others, that explores the rise and spread of numbers in remediating the relationship between economy and morality.



Andrea Mennicken is Associate Professor in Accounting at LSE and Deputy Director of CARR.

Cost-benefit analyses, estimates of social and financial returns, measurements of performance and risk – all of these provide information in the form of a numerical representation.

CARR: THE FIRST 15 YEARS

In April 2014 I stood down as Director of CARR and handed the reins to Martin Lodge and Andrea Mennicken, the new Director and Deputy Director respectively. CARR began to take shape in 1999, became an ESRC Centre in 2000 and I was the first co-Director with Bridget Hutter until 2005. In 2005 Bridget became the Director and I was one of several research theme leaders. I became Director once again in 2010 after the second wave of ESRC funding had run its course. I should add that in every respect ESRC have been wonderful supporters of CARR, both during its time as a dedicated centre and more recently in the case of a number of specific grants.

CARR emerged from the teaching alliances developed on an interdisciplinary MSc in Regulation, which continues to thrive. To a mix of law, political science and sociology I was able to blend the voice of accounting and of management more generally. There was plenty of sub-politics in the making of CARR, and no doubt some jealousies at the scale of ESRC and other funding. (To be honest we probably had too much funding too soon.) CARR inevitably cut across departmental and disciplinary silos – that was its purpose – which made for a very rough ride in those early days. The backing of the LSE Director at the time – Anthony Giddens – was an essential part of our momentum.

It is hard to believe that "risk & regulation", along with the more specific label of "risk regulation" were not very well established terms in the early 2000s and I would like to think that CARR, and its flagship magazine *Risk & Regulation* played no small role in institutionalizing them, thereby allowing colleagues in socio-legal studies, accounting and political science to find a way to speak to each other. Today the two R's have become a terms of art in consulting circles and there is now a *European Journal of Risk and Regulation*.

The big achievements of CARR have been threefold. First, we managed to execute a non-sector specific approach to risk and regulation issues – a comparativist agenda with no a priori restriction in the fields in which we might be interested, from food to finance, from airlines to environment. While there were some tensions with other specialist groups, CARR was uniquely placed to enable the flow of insights and analyses across fields, a process greatly aided by regular discussions during the famous "CARR coffee" every Tuesday. More specifically, CARR has made key contributions to

the understanding of risk-based regulation, national differences in utilities regulation, and the rise of risk management. Less modestly perhaps, CARR has helped to institutionalise a new field of enquiry.

Second, we have helped to seed a new generation. Several former CARR staff are now professors and many are in full-time positions at good universities. Better still, all these CARR alumni are doing great work and we continue to see a flow of impressive books and papers. Third, CARR was having impact long before impact was fashionable in UK higher education and long before we learned how to track and record it. We engaged extensively with regulators of different persuasions and with risk managers in a wide range of organizations in a variety of countries. Our advice was sought on many occasions and there have been some significantly visible influences, such as Bridget Hutter's work with the Food Standards Agency.

I have learned that the leadership of a research centre requires a certain amount of myth creation. We all know that researchers are increasingly individualistic, understandable given career pressures, and perhaps not naturally given to team working or a collective approach. So at CARR, we were often involved in the construction of accounts of performance for external consumption which were somewhat disconnected from the underlying activity. This is not a shocking thing to say – it's the modern condition of all organisations. But the interesting thing is that the myths were important, and slowly generated internal perceptions and helped build the identity of CARR. This identity is not a simple one – why should it be – but is rather rich in texture and built up over 15 years. Myths bring about realities!

The final point to make about leadership is knowing when to step away and hand over to a new generation with new energy and ideas. I do this with no regrets knowing that Martin and Andrea are the best possible stewards of the complex set of intellectual and practice-facing sensibilities which characterize CARR. I wish them both the very best of luck.

Mike Power



Mike Power

CARRNEWS

CARR News

Julien Etienne has joined the Food Standards Agency as a secondee, where he will contribute to evidence on enforcement and risk. At the Structure of Government conference in Jerusalem (5-7 January), he presented his paper *The politics of non-compliance detection*, forthcoming in the *Journal of Public Administration and Theory*. At a conference organised by the LSE's Hellenic Observatory and the Open Society Foundation at LSE ('Greek Politics in Crisis: Challenges to the Open Society'), he spoke about state-society relationships in Greece before and after the crisis (29 November).

Martin Lodge became director of CARR as of the beginning of this term. In Michaelmas term, he presented a paper entitled 'Advocacy Coalitions, Cattle Tb and Badgers' (with K. Matus) at the Department of Public Policy of the CEU in Budapest (21 October). To kick off 2014, he was in Jerusalem at Hebrew University to present his paper 'Legislative Oversight Over Independent Agencies' (with C. Koop) at SOG conference (6 January); and in Melbourne to give a presentation entitled 'Public Service Bargains: is anyone sticking to the deal?' in the ANZSOG/Victoria Public Service Commission series (23 January). He appeared in Tokyo at the UK-Japan Risk Communication Symposium to discuss 'Health and Safety Regulation' (10 February). At the School of Government, Victoria University of Wellington, he presented his paper 'Science and Public Policy' (with K. Matus) (7 March).

Peter Miller was awarded an Honorary Doctorate at Copenhagen Business School for his analysis of the interrelationship between accounting, organising and economising, in both the private and the public sectors (21 March).

Publications

Calculating Failure: The making of a calculative infrastructure for forgiving and forecasting failure

Lisa Kurunmäki and Peter Miller, *Business History*, 55(7) 1100-1118, 2013

Accounting, Organising and Economising: Connecting accounting research and organisation theory

Peter Miller and Mike Power, *The Academy of Management Annals*, 7(1), 555-603, 2013

Martha Poon presented her published paper about the history of US subprime mortgages at CITYPERC, City University London (10 June).

Mike Power spent the month of April as Visiting Professor at the University of Sydney where he presented the RJ Chambers Lecture (3 April). In Michaelmas term, he gave the plenary address at the Business Continuity Management World Conference on 'Risk management at the crossroads' in London (6 November); the keynote address at the Swedish Evaluation Society Annual Conference, 'The politics of practice of impact evaluation', in Stockholm (15 November); and a Global Finance Initiative public lecture on 'Searching for risk culture' at Cornell University in Ithaca, NY (25 November). He also organised the Accounting, Organisations and Society conference on 'Financial Accounting and Auditing as Social and Organisational Practice' hosted at LSE (16-17 December). This March, he gave a presentation entitled 'The social life of accounting estimates' at the Numbers from the Bottom Up workshop in Berlin (6-7 March), as well as the keynote address at the Journal of Management Studies annual conference (25 March).

Logics of action and models of capitalism: explaining bottom-up non-liberal change

Julien Etienne and Gerhard Schnyder, *Swiss Political Science Review*, Online ISSN: 1662-6370, March 2014

Accountability and expertise in public sector risk management: A case study

Tommaso Palermo, *Financial Accountability & Management*, (forthcoming) 2014

CARR Seminars 2014

Professor Pete Fussey, University of Essex
Date: 24 June 2014

From Ecology to Inertia? The practice, performance and polysemy of "resilience"

Professor Moshe Maor, Jerusalem University
Date: 29 May 2014

Risk and Policy Underreaction

Dr Zsuzsanna Vargha, University of Leicester School of Management
Date: 25 February 2014

Infrastructures of control: Sales Incentives and the Accidental Architecture of measures in Banking

Dr Hiroaki Matsuura, Oxford University
Date: 21 January 2014

Economic Effects of Emergency Risk Communication: Evidence from the Fukushima Daiichi Nuclear Disaster


CARR Directorate

Professor Martin Lodge

Director of CARR; Reader in Political Science and Public Policy, Government Department
Comparative regulation and public administration; Government and politics of the EU and of Germany.

Dr Andrea Mennicken

Deputy Director of CARR, Associate Professor of Accounting, Department of Accounting
International standardisation; Global accounting and audit regulation; Economic transition and transformation (post-Soviet Russia); Social studies of accounting; Professions.

CARR Research Staff

Dr Julien Etienne

British Academy Postdoctoral Fellow
Regulatory compliance, administrative errors and major accident hazard regulation.

CARR LSE Fellows

Dr Martha Poon

LSE Fellow in Risk and Regulation
History of consumer credit ratings, Social studies of finance, Science and technology studies, Anthropology of contemporary financial markets

Dr Madalina Busuioac

LSE Fellow in Risk and Regulation
Multi-level (risk) regulation and governance, EU crisis management, Public accountability and EU agencification

CARR Senior Research Associates

Professor Bridget Hutter

Professor of Risk Regulation, Sociology Department
Sociology of regulation and risk management; Regulation of economic life; Corporate responses to state and non-state forms of regulation

Professor Peter Miller

Professor of Management Accounting, Accounting Department
Accounting and advanced manufacturing systems; Investment appraisal and capital budgeting; Accounting and the public sector; Social and institutional aspects of accounting

Professor Michael Power

Professor of Accounting, Accounting Department
Role of internal and external auditing; Risk reporting and communication; Financial accounting and auditing regulation.

CARR Research Associates

Professor Michael Barzelay – Professor of Public Management, LSE

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Dr Daniel Beunza – Assistant Professor of Management, Management Department, LSE

Professor Gwyn Bevan – Professor of Management Science, LSE

Professor Julia Black – Professor of Law, LSE

Dr Adam Burgess – Reader in Social Risk Research, School of Social Policy, Sociology and Social Research, University of Kent

Dr Yasmine Chahed – Lecturer in Accounting, Accounting Department, LSE

Professor Damian Chalmers – Professor of European Union Law, LSE

Dr David Demortain – Research Fellow, IFRIS, University of Paris-Est

Dr Anneliese Dodds – Senior Lecturer in Public Policy, Sociology and Public Policy Group, Aston University

Dr John Downer – Lecturer in Risk and Regulation, Research Collaborator, University of Bristol

Dr Terence Gourvish – Director, Business History Unit, LSE

Professor Michael Huber – Bielefeld University, Sociology of Regulation, Faculty of Sociology

Dr Will Jennings – Senior Lecturer in Politics and International Relations, University of Southampton

Dr Silvia Jordan – Assistant Professor in Accounting, Department of Accounting, Auditing and Taxation, Innsbruck University

Professor Roger King – Visiting Professor at the School of Management, University of Bath

Dr Mathias Koenig-Archibugi – Associate Professor in Global Politics, Government Department, LSE

Dr Christel Koop – Lecturer in Political Economy, Department of Political Economy, King's College London

Dr Liisa Kurunmäki – Associate Professor in Accounting, Accounting Department, LSE

Dr Javier Lezaun – University Lecturer in Science and Technology Governance, James Martin Institute, Saïd Business School, University of Oxford

Professor Sally Lloyd-Bostock – Visiting Professor, Sociology Department, LSE

Professor Donald MacKenzie – Professor of Sociology, University of Edinburgh

Dr Carl Macrae – Senior Research Fellow in Improvement Science, Centre for Patient Safety and Service Quality, Imperial College London

Dr Kira Matus – Lecturer in Public Policy and Management, Government Department, LSE

Dr Linsey McGoey – Lecturer in Sociology, University of Essex

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Professor Anette Mikes – Assistant Professor of Business Administration, Harvard Business School

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School of Management, University of Leicester

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Professor Nick Pidgeon – Professor of Environmental Psychology, Cardiff University

Professor Tony Prosser – Professor of Public Law, University of Bristol

Dr Henry Rothstein – Senior Lecturer in Risk Management, Department of Geography and King's Centre for Risk Management, King's College London

Dr Rita Samiolo – Lecturer in Accounting, Accounting Department, LSE

Professor Nick Sitter – Professor of Public Policy, Central European University

Dr Kim Soin – Associate Professor of Accounting and Management, University of Exeter Business School

Dr Lindsay Stirton – Senior Lecturer in Medical Law and Ethics, School of Law, University of Sheffield

Professor Brendon Swedlow – Associate Professor of Political Science, Northern Illinois University

Professor Peter Taylor-Gooby – Professor of Social Policy, University of Kent, Canterbury

Dr Zsuzsanna Vargha – Lecturer in Accounting and Organization in the School of Management at the University of Leicester

Frank Vibert – Senior Visiting Fellow, LSE Government Department and Founder Director, European Policy Forum

Professor Kai Wegrich – Professor of Public Administration and Public Policy, Hertie School of Governance, Berlin

CARR Visiting Fellows

Dr Elena Bechberger – Senior Policy Advisor, Monitor

Charles Borden – Partner, Allen & Overy, Washington D.C.

Dr Sebastian Eyre – Head of Energy Regulation, EDF Energy

Jeremy Lonsdale – Director General, National Audit Office

CARR Administration

Yvonne Guthrie – Centre Manager

Situ Diwan – Seminars

Lynsey Dickson – Web, Publications and Discussion Papers

Elizabeth Venning – Reception



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