

Crisis and fraud

Pascal Blanqué

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Caisse Nationale de Credit Agricole, Dept of Economics and Banking Research, 91 Boulevard Pasteur, 75710 Paris, France; tel: +33 143 23 5202; fax: +33 143 23 5202

Pascal Blanqué is Chief Economist with Credit Agricole SA in Paris. He previously served as an asset allocation strategist with Paribas Asset Management in London, and as Deputy Chief Economist at Paribas in Paris. Mr Blanqué holds degrees from Ecole Normale Supérieure and Institut d'Etudes Politiques, and earned a PhD in finance at the University of Paris-Dauphine. A member of numerous economic and banking organisations, he serves on the Economic and Monetary Affairs Committee of the European Banking Federation. He has published in trade and academic journals, and is an economic and financial *éditorialiste* with Le Figaro.

ABSTRACT

This paper discusses the relationship between fraud and financial crises. Fraud is envisioned historically as a violation of trust, and the classic triangle of smuggling, contraband and enforcement sheds light on developments in the financial sphere. Schematically, fraud emerges with economic prosperity, grows in a financial crisis when prices fall, and culminates in crash and panic when the scandal is revealed. Kindleberger points out that the propensity to defraud increases with the speculation that accompanies a boom. Fraud is recognised as a coincident indicator of prosperity.

The paper considers the implicit consensus view that fraud and the cycle are linked, with long cycles including alternating phases of liberalisation/globalisation and contraction. If fraud

is part of the cost of learning to deal with new fields and new frontiers in the appetite for risk, then fraud and crisis will inevitably find a fertile breeding ground in globalisation.

Topics discussed include the distortion of decision-making, the structure of incentives, information and regulatory implications.

INTRODUCTION

Theory — which determines the rules — can hardly be expected to start by looking at the exceptions. Unsurprisingly, neither fraud nor crisis figures high on the list of topics in the literature of economics, and even less has been written on the relationship between the two. Still, there is no lack of reminders of their largely intangible, hard-to-quantify and fundamentally elusive nature: crisis and fraud are concepts that are often forged by situations recognised as such only after the event, once the mischief has created a grey area that is eventually declared off limits. With the notable exception of Charles Kindleberger,¹ the theme has been largely avoided by mainstream economists.

AN ELUSIVE CONCEPT

Kindleberger's characterisation of financial crisis can be readily extended to encompass the relationship between financial crises and fraud: 'like pretty women [...], hard to define but recognizable when encountered'.² Crisis and fraud have a long-standing but paradoxical association.

The long history of fraud

Fraud is neither new nor easy to characterise. Ethical, legal, institutional and economic aspects are interrelated from the outset. Fraud usually implies deceit or bad faith, as opposed to good faith, integrity and honesty. In ancient Rome, fraud comprised the intent to circumvent the law, with a connotation of deceit: *legi fraudem facere*.³ Fraud was characterised in legal terms (breach of contract) and moral terms; commercial and financial crises were linked to transactions that violate law and ethics, and the detection of fraud was accordingly incumbent upon the State.

Throughout history, fraud has been intimately related to trade in goods — eg smuggling to avoid customs duties or concealment of the true origin of a product — and to profit: *Boni nullo emolumento impelluntur in fraudem*⁴ (there is no gain that can induce good men to act badly).

Fraud has always been at the heart of the creditor–debtor relationship (*in fraudem creditorum*, to defraud creditors), a legal adage that dates back to the Codex of Justinian (*alienatio in fraudem creditorum facta*); this provides the most commonly recognised tie-in with finance. Fraud also refers to the alteration of an object or product, through which the fraud is perpetrated — livestock yesterday, derivatives today. Frauds involving livestock included and probably still include ways to make livestock appear larger, heavier, healthier or younger, eg by filing down the rings on horns or by filing teeth. Cattle fraud, including selling watered meat, was also common, as was passing off horsemeat for beef. Along the same lines, in the American Express incident in the late 1960s, ‘tanks of salad oil’ were filled, except for the top, with water’.⁵ Stories abound of railways without rails during various booms in the 19th century.

The triangle of fraud has changed little over the years. Fraud has long been

associated with a practice (smuggling), a domain of economic activity (merchandise) and the violation of that domain, and a player empowered to fight against it (the fraud squad). Contemporary players in fraud include investors defrauded by financial professionals (brokers or bankers), the State defrauded by its citizens, and, often, firms defrauded by their employees or officers. Major contemporary financial frauds in the latter category were perpetrated by Nick Leeson (\$1.4bn), Victor Gomez (Chemical Bank, \$70m), Toshihide Iguchi (Daiwa Bank, \$1.1bn) and Roberto Calvi (Banco Ambrosiano). Financial flows, regulatory watchdogs and sophisticated information systems have simply updated the classical triangle of smuggling, merchandise and fraud squads.

A relative concept that is hard to quantify

Fraud is neither theft nor corruption. Fraud is an immoral transaction that violates an implicit or explicit contractual relationship of trust between groups of persons. Many writers, or their fictional characters (including Balzac’s Père Grandet), have described fraud artists as worse than highway robbers.⁶ Nor is fraud entirely the same as crime, though the distinction may appear tenuous. Criminal financial channels play a role in financial crises that involve funds under discretionary management in offshore banking or tax havens, or the laundering of money resulting from crime, corruption or bribery. Alternatively, the aim can be to avoid taxes on otherwise licit activities. The amounts are hard to evaluate, but are no longer negligible. Hedge funds can draw money from illicit activities to offshore centres. Money laundering currently comes to some US\$600bn a year, or 2 per cent of global gross domestic product (GDP). The relationship between these phenomena and financial crises has been identified; in particular, there is evidence of

a correlation between the level of corruption and vulnerability to crises.

Fraud often begins as a legitimate business activity operating within the law. Frontiers between legality and illegality, or between what is moral and immoral, can shift over time. What was not a fraud in the past can become one. The terrain and frontiers of fraud are malleable. For a long time, developed markets operated with practices and instruments that would be considered fraudulent today. The forms of fraud have multiplied as they diversified. Recent instances have seen ineffectual risk control (with a poorly identified derivatives position in the Barings case), dangers of embezzlement (Codales, Barings), underestimation of commitments (Metallgesellschaft), or poor understanding of sophisticated operations (Procter and Gamble).

Finally, as Kindleberger points out, there are ‘no firm statistics on which to base a judgment’.⁷ Fraud is an iceberg: only a fraction of practices are brought to the knowledge of the public, most often by the media. Fraud and statistics are simply not good bedfellows.

Fraud and trust

The relationship between economic efficiency and trust can be stretched at times, even to breaking point. Fraud springs up in the breach; indeed, fraud is a breach of trust. Currency and finance have long been tokens of trust in society, and have played a delicate, complicated role in social regulation. Trust guarantees a system’s stability, and a breach of trust is strictly speaking a crisis, which can be a financial crisis. Fraud is accordingly a violation of *fides*, or the good faith and trust enjoyed by someone who gives his word; the goddess Fides provided protection for contracts, pacts and promises. In ancient Rome, this is the trust that mortals placed in their gods, who guaranteed them protection in return —

with a guarantee that is invoked in the distress of a crisis.

Credence, or belief (*credere*, from the radical **kred*, faith, which literally means ‘to place faith, to entrust’) leads to the concept of a deposit given in trust, hence a pledge received from the gods. *Fides* is ultimately credit received from another person and from the gods, as the goddess Fides presides over all contracts, pacts and promises, including in financial matters. Her temple is where deposits are taken and debts are negotiated. Fides Publica provides her protection during the financial crises of the Republic, and people turned to her during periods of distress.⁸ According to Cicero, ‘nothing, in effect, guarantees more forcefully the permanence of the State than good faith, which cannot exist if each is not obliged to pay his debts’.⁹ During the monetary crises of the first century BC, Rome struck coins with the figure of Fides Publica. And the first public banks in Genoa and Venice also invoked Fides Publica in the mid-16th century.

Distortion of decision-making, the structure of incentives and information

The Greek *κρίσις* (crisis) denotes a decision, a struggle or trial, or the critical stage in an illness. Crisis occurs where there is a perversion of a decision (or decision-making process); fraud is also a heresy of the decision-making process. Fraud is a matter of not keeping one’s word. People are creditable because their word carries weight. This remains true even in our time. Traders would prefer to violate their rules or limits, rather than go back on their word. Fraud can arise from the consequences of decisions — often legal ones — under which a promise can be kept only by breaking the law.

Numerous contemporary frauds can be traced to decisions made by traders. At Barings, Nick Leeson added fraud to deceit in his desperate attempt to avoid going

back on his word. A fictional parallel is found in Balzac's tale 'Melmoth réconcilié', in which the bank teller Castanier sinks ever deeper into debt to satisfy his mistress' whims, until, reaching the point of no return, 'he prefers fraud to honest bankruptcy and dips into the bank's till'.¹⁰ The Lloyd's incident in the 1980s threatened to ruin the prestigious names, who had committed their personal fortunes to guarantee the insurance policies issued by the institution's partners. As early as 1969, with the first claims by victims of pneumoconiosis (resulting from inhalation of asbestos dust), Lloyd's knew that the situation was potentially perilous — and it actually became so in the late 1970s. Yet the information was concealed, and losses were hidden over time. Recruitment of new names (who assumed their share of liabilities) became a strategy to increase the capital base.

It may be in the employee's interest to defraud a firm if he or she is not caught and/or if the fine is lower than the gain. That, in any event, is suggested by work in the economics of crime following Gary Becker's pioneering studies in the late 1960s.¹¹ The cost to the criminal, and therefore the disincentive, is linked to the extent of enforcement. Fraud is accordingly connected to the economics of crime and enforcement (with the state delegating part of its power to banks and other financial institutions). This raises the issue of the structure of public incentives, often described in the form of a principal-agent model in which the state incites the banking and financial system to cooperate.

But there is more. The structure of private incentives creates internal corporate discipline, with management ensuring compliance. Incentives in each unit must be consistent with the institution's overall objectives. The structure, however, can collapse. Nick Leeson needed funds to finance losses and margin calls on the SIMEX for the transactions booked to

account 88888: since the funds came from other enterprises in the group, how could he get US\$1.7bn without being asked to justify it? More tellingly, the Barings incident showed that the apparent consistency between corporate profitability objectives at head office and cash incentives for traders could be illusory. Operators' attitudes can also be called into question; a current example in financial markets is the primacy of short-term gains and the compensation system for traders. Lastly, the structure of private incentives is not always suited to financial modernisation and globalisation, which may demand a review of existing regulations to make sure they do not distort private incentives. More generally, this movement paralleled the growing focus on ethical issues in the 1980s and the greater importance given to business ethics courses in business schools.

These approaches do not exhaust the subject. The behaviour of agents engaged in illegal activities depends not only on cost considerations but also on strategic choices intended to ensure smooth transactions. Under this reading, fraud depends not only on gains, but also on the perpetrator's ability to dominate the inherent risks of his or her illegal activity. The importance given to transaction costs in the work of economists, and particularly by Oliver E. Williamson in the mid-1970s, shows a methodological renewal in the area.

Lastly, at the heart of every transaction — and fraud is only a special case — there typically exists an informational asymmetry, with each party concealing something from the other. And the information itself is fleeting. Exact information on risk can be difficult to obtain in an environment where risk can be repackaged, wrapped and securitised. Further, information systems and financial control have not totally come to grips with the pace of financial innovation and the impact of the growing

use of derivatives on market dynamics. These are just some of the predominant aspects of the issue at present.

BOOM, FRAUD, CRASH

While frauds, and the connection between frauds and crises, are deeply rooted in the past, more recent times, and singularly the 20th century, have given a new twist to many aspects of the issue. The rise of market economies and changes in their modes of financing, including growing intermediation of the financial markets, have acted as an accelerator in the linkage between fraud and crises.

Economic cycle, public authority and fraud

Late in the 19th century, linkages were identified between the business cycle and the credit cycle, and therefore with the attitude of the monetary authorities. The dominant idea became that frauds occur when the attitude of the monetary authorities is too accommodating. The ultimate cause of financial crises (and fraud) was considered to be excess liquidity poured into the economy and markets. The authorities (and legislator) were held responsible for economic fluctuations, and they were then expected to adjust the laws as required to manage and rectify those fluctuations when a crisis occurred. Up to then, at the risk of oversimplifying, the interpretive framework was based to a large extent on stable legal standards and independent economic fluctuations. Fraud accordingly involved circumventing the standards. In a sense, these two models continue to coexist today, in the same way as, for instance, state-levy systems (emerging countries) and financial innovations (globalisation).

Are market and economic liberalisation more or less conducive to frauds (the contemporary form created and developed on the financial markets) than to controlling those frauds (with fraud under the earlier

system essentially a matter of dodging government rules, especially regarding taxation)? At the risk of oversimplifying again, the 'liberal' thesis holds that fraud exists because the economic field is neither open enough nor transparent enough, or because there are too many interventions (by governments, lenders of last resort). Others hold that market liberalisation has multiplied the grey areas, continuously distorting the reference frame for public information, forcing the authorities to play catch-up.

Is there something inevitable in the triptych formed by the receding horizon of state control, tyranny by the markets and frauds? Yes, one might be tempted to answer, because the phenomenon is especially evident in the environment of a financialised economy. On the other hand, ancient tyrants, dictators of all epochs and dishonest dealing before the advent of modern technology all suggest that this is a long-standing theme. The difference now is doubtless due to abundant technological resources, a growing financial base, a clear increase in technical stratagems, and greater media coverage. This has redefined the linkages between fraud and regulation. Recognition of a market imperfection legitimates government intervention, and economists are inclined to support regulation to curb misdeeds when negative externalities include market disruption.

The consensus basically forms around the simple, powerful idea that fraud and the cycle are linked. The term 'cycle' refers to the business cycle (including credit), the political and institutional cycle (particularly in countries where there is rent capture), the cycle of financial innovations (resulting in new products), and the cycle of reforms (eg the consequences of the Savings and Loans crisis in the USA in the late 1980s). In any event, there tends to be agreement that long cycles include alternating phases of liberalisation/globalisation, and phases of

contraction. Fraud remains present, changing more in its outer form than in its inner nature, driven by hubris that is part of human nature. As long as there are men, there will be animal spirits.

Sequences and schemes

Three sequences act as the fundamental matrices of the relations between crisis and fraud in the contemporary world. Fraud is born with economic prosperity, grows in a financial crisis when prices fall, and leads to crash and panic when the scandal is revealed. Fraud is a moment of the financial crisis. Kindleberger points out that the propensity to defraud increases with the speculation that accompanies a boom. Fraud is accordingly a coincident indicator of prosperity and increases as prosperity increases. Prosperity nourishes fraud in its bosom, as it were, and, from an economic point of view, it is determined by demand. The subsequent economic crisis provides an additional reason to defraud, in order to save oneself. And in the panic, as each person rushes to the exit, what is rational behaviour individually exacerbates the risk profile of the financial community. The *dénouement* cannot be far behind.

Practices may vary but the recipe is timeless. John Blunt of the South Sea Company, Bontoux of the Union Générale, and the directors of the Creditanstalt (which fell in 1931) ‘all tried to support their stock by buying it on the open market ... in order to sell more later’.¹² In the South Sea bubble at the start of the 18th century, the protagonists, with John Blunt in the lead, ‘sought to make profits on the stock issued to themselves against loans secured by the stock itself. Capital gains were converted into real estate. ‘In order to pay out profits, the South Sea Company needed both to raise more capital and to have the price of its stock moving continuously upward’.¹³ When capital inflows slowed, ‘Blunt dishonorably

borrowed the cash of the ... company for himself’.¹⁴ In the 1920s, Albert Wiggins of the Chase Bank and Charles E. Mitchell of the National Security Bank ‘marketed securities intensely, all the while knowing’ the problems ahead (‘that the foreign governments had stopped paying interest on their bonds’), and engaged in ‘self dealing at the expense of [their] banks’.¹⁵

The heart of the matter is always the same — an accumulation of promises to pay and their monetisation: ‘the basic principle of selling the same horse twice, or more, has not changed much’.¹⁶ What the practice is called has varied. Ponzi finance, named after the notorious speculator, has come to designate a financial activity in which the interest charge exceeds the enterprise’s cash flow and debt can be repaid only by issuing further debt. The temptation to act this way may increase as a function of the degree to which a player controls market prices. Such activities can be built on a diverse set of underlyings, including commodities and capital market operations. When loans are backed by commodities, a collapse in prices can set off a failure. One of the greatest Ponzi schemes was the one masterminded by Steven Hofenberg, who ran the Towers Financial Corporation of New York, and which cost investors some US\$450m between 1987 and 1993. The US Savings and Loans, affected by rising interest rates in the early 1980s, offered very high interest rates to attract deposits and extended loans in order to pay interest on those deposits. In a different area, during the Russian crisis, Ukraine’s central bank lent to a CSFB subsidiary in Cyprus, which then redeposited the funds with the central bank. Not only did this artificially swell currency reserves (because of double counting — though not everything returned to the central bank), but there was also unjust enrichment (resulting from the difference between the 6 per cent rate paid by CSFB on deposits

and the 40 per cent to 80 per cent rate paid on Ukraine Treasury bills).

What underlies this perversion is basically a confusion between money and savings, and misapprehension of the inflationary consequences of monetary expansion. Is fraud a product or a residue of inflation? The debate exists because inflation spurs risk-taking in order to increase or maintain income. Inversely, lax monetary policies in a period of near-zero inflation may be an open invitation to fraud (with the formation of credit bubbles). Indeed, history teaches that price stability and financial stability are rarely compatible. The century's major bubbles (in 1929, 1990 and, possibly, 2000) occurred in periods of near-zero inflation.

In each case, a false sense of security prompted the monetary authorities to maintain too lax monetary policies for too long. Every story of credit bubble, fraud and crisis begins with a period of bliss but ends unhappily because the authorities lost sight of the lagged effects of their policies.

Not all bubbles are connected to frauds, and not all frauds, not even the most publicised ones, lead to crises. The Barings failure in February, 1995 and Daiwa's billion dollar loss were shocks, but failed to bring the system down. Similarly, the Lloyd's affair had no linkage to a financial crisis.

Pressure can lead to an attempt to transfer losses to others, amplifying the crisis and leading to crisis. Kindleberger discusses two similar cases. In 1857, a cashier at the Ohio Life Insurance and Trust Company, a highly reputable institution, engaged nearly the entire assets of that company to sustain his stockmarket operations. The news sent dominos falling from Liverpool to Stockholm. In September, 1929, the Hatry empire — a pyramid of small investment trusts 'that Hatry was trying to parlay into a larger operation in steel' —

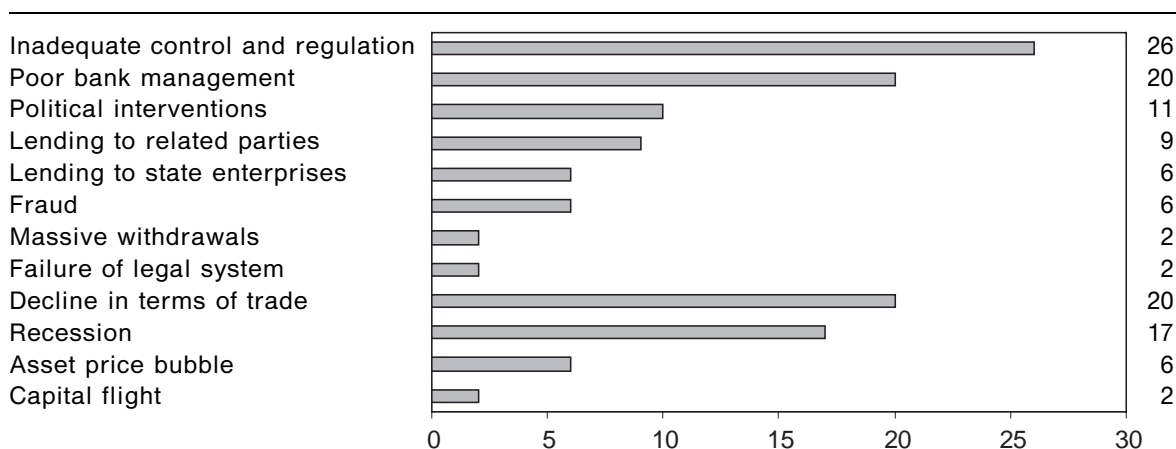
collapsed 'when he was caught using fraudulent collateral in an attempt to borrow ... to buy United Steel'. The operation failed and the ensuing liquidity crisis lit the powder keg on the stock market.¹⁷

But the scenario is never written in advance. Fraud may invite further fraud, bringing amateurs into the game; the dilettantes make matters worse.¹⁸ Revelation of fraud can trigger a crisis. At this stage, the media play an ambiguous role, throwing oil on the flames and/or participating in informing the public. Manipulation cannot be ruled out: the banker Lafitte was not the only financier to fund newspapers.

The terminal phase is one of sudden awareness and catharsis, with individuals sometimes committing suicide or fleeing, and authorities reviewing regulation. The phase of revelation, which allows progress towards the phase of awareness, is a key moment. Revealed fraud marks the end of euphoria and signals the transition from boom to bust. Charles Blunt, the brother of John, who was also involved in the South Sea bubble, cut his throat in September, 1720, Eugène Bontoux went into exile for five years.¹⁹ At the time of the South Sea bubble, one member of the House of Commons suggested the ancient 'Roman' punishment, that the transgressors should be 'sewn into sacks, each with a monkey and a snake, and drowned.'²⁰ While the history of fraud tends to repeat itself, punishment can take quite unexpected turns.

In such a model, there exist links between bank failure and fraudulent practices. In a survey of factors leading to bank insolvency, fraud ranked in a significant third position (see Figure 1). Fraud perverts the functioning of the economy, alters demand for money without regard to the economic fundamentals, increases interest-rate volatility, disrupts public finance and contributes to speculative bubbles, because the price and security of financial assets are distorted.

Figure 1 Explanations of bank insolvency (based on a sample of 29 institutions)²¹



Despite new forms of fraud or new places where it can crop up, there seem to have been no major changes in 250 years, despite regulatory and legislative efforts, and the emergence of new counter-powers, of which the press is only the visible tip. In particular, there is no fraud without risk-taking. The appetite for risk is at the heart of the functioning of the financial markets which provide a framework for risk by assigning it a price. That framework can be circumvented, giving rise to the grey area where fraud is situated.

Appetite for risk and the grey area of fraud

Fraud is linked to the ease with which funds can be raised. It accordingly results from the very functioning of the credit market, and from excess credit in particular. The credit market functions on the basis of public information, confidence and unwritten standards, ie what bankers consider to be acceptable at a given point in time. There is accordingly a grey area between legal uncertainty and fraud.

A shift in where the needle points on the scale of risk appetite or aversion will in turn move the needle between information, confidence and standards. The contemporary expansion in opportunities for

risk-taking and the growing recourse to market financing have given the phenomenon a new magnitude. As both the starting point and a paradigm model, the credit marketplace provides an arena for different degrees of appetite for risk. Global monetary and financial instability and/or disorder, and increased volatility, however, provide a fertile breeding ground for fraud. Fraud, in effect, involves a calculation of fraud (expected gain, losing sight of risk), and therefore a shift in the relationship between risk and return on investment. Derivatives markets result from this state of events. Monetary crises and bank crises are accordingly inseparable. Financial crises result from what are identified after the event as failures in risk control by market players.

Appetite for risk rises with increased demand for return on investment; this is true for fund managers and for heads of businesses alike. This can occur when monetary policies are too accommodating or when a regime of unrealistic expectations becomes dominant. Can nominal earnings growth of all listed companies lastingly exceed nominal GDP growth (of 5 per cent) with inflation running at 2.5 per cent, as Wall Street seemed to believe in the 1990s? Can shareholders expect

long-term double-digit returns and still believe that equities are the least risky investment? Strong incentives for fraud may arise from the quest for performance (for individual employees or the firm) and/or when financial markets' expectations are unrealistic in light of macroeconomic realities. This can lead to unreasonable management, with underestimation of the actual risk being run.

Fraud is part of the cost of learning to deal with a new field (possibly one opened by a financial innovation) and a new frontier in the appetite for risk. Globalisation opens new ground, which also has its learning costs, so fraud and crisis will inevitably find a fertile breeding ground in globalisation.

The learning cost is even higher when there is a poor grasp of the international dimension of operations by banks that are nominally subject to the supervision of national authority. The Russian crisis exposed gaps in national and international controls over offshore capital movements (with the Jersey-based Fimaco shell). Also during the Russian crisis, out of a US\$4.8bn tranche allocated by the International Monetary Fund (IMF) in July, 1998, US\$1bn was earmarked to the Russian finance ministry, and US\$3.8bn was to be sold on Moscow's interbank currency market to support the ruble. In fact, the US\$3.8 billion was reportedly transferred immediately to the overseas accounts of Russian commercial banks. The dollars sold never returned to Russia, and the commercial banks financed the purchases by selling their state short-term obligations (GKO's) (a move linked with the crisis). More generally, the concept of sovereign 'legal spaces' is sometimes unsupported by the facts, and a 'unified legal space' may fail to obtain. The same holds for the development of geographical black holes (corrupt sovereign states, or offshore operations) and technical black holes (where

only the formal regularity of operations is verified).

Classical French theatre demands the dramatic unities of action, place and time. After looking at 'legal spaces', what can be said about the time dimension? While legal standards (and informational standards) are fixed, appetite for risk shifts swiftly. From this standpoint, fraud is an *ex post* construct: after crises there is need for information, and in the process of revising attitudes toward risk, some things that were not previously fraud are subsequently characterised as such. That LTCM in early 1998 had commitments of US\$120bn and assets of US\$4.8bn does not constitute a fraud, but could be fraud if limits were imposed on leverage.

The stylised schema unfolds in the following way: development, financial markets, financial innovations, appetite for risk, grey areas, and then regulation of the grey area with the emergence of legal standards after the event. After the bubble pops, the ground of legal standards shifts. Fraud can be seen as a form of 'noise' that accompanies or follows periods of extreme shifts in the appetite for risk. Credit alone can keep up with the appetite for risk, until the inevitable adjustment comes.

Financial innovation is one of the contemporary channels conveying the distortion in the ground of risk. Financial innovations (eg hedge funds) bring forth rules or standards to control them. Financial innovations have accordingly led to diversification of banks' sources of capital, which might not always qualify as equity capital (eg foreign-currency denominated securities including conditional financial undertakings by subscribers). Financial innovations may sometimes be used to circumvent the constraints of the Cooke ratio, as in the case of some securitisation operations intended to reduce the denominator in capital adequacy ratios. Finally, counterparty risk on derivatives

(US\$1.2trillion, according to Bank for International Settlements estimates) is a source of complexity and sometimes leads to excessive risk taking. The need to hedge risks calls for new products but also leads to new forms of uncertainty (eg counterparty risk, systemic risk).

Fraud is as much a displacement in legal standards as the consequence of attempts to circumvent those standards. Inversely, in a grey area marked by a change in the linkage between information provided and trust, fraud is what happens to a codified area in which existing rules and standards have become obsolete. The crisis is especially a 'moral' moment, with a coming of awareness, when losses are revealed. Fraud therefore expresses a need for standards that is revealed after the event by a crisis. It also reveals market inefficiency because prices are distorted: a player with too much power can distort prices — which could qualify as fraud, potentially justifying taking measures against a monopoly.

In the end, the issue is how the lender of last resort responds to fraud and the eventuality of accommodating fraud in containing the crisis. This situation of moral hazard is extremely sensitive, because it suggests an arbitrage between crisis and fraud when things have gone too far, and raises a thorny ethical question. But that is another story — with a plot that thickens after the crisis.

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