POLITICS IN THE NEW HARD TIMES

10

WORLDS IN COLLISION

Uncertainty and Risk in Hard Times

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In a decade marred by manias, panics, and crashes (Kindleberger 1978), our analytical worlds are in collision. Economists for the most part hold firmly to the view that the world of finance is a world of calculable risk. Other social scientists disagree and insist that we live not only in a world of risk but also in a world of uncertainty. A world of risk assumes that agents act on material incentives and respond to regulatory institutions, conventions, and norms. A world of uncertainty assumes that actors can, in addition, be motivated by social or constitutive institutions, conventions, and norms. Most scholars of international political economy (IPE) and financial economics base their analyses on the dubious assumption that we live only in a world of risk. In this chapter, we develop a contrarian argument that underlines the centrality of uncertainty. Without concepts that capture the element of uncertainty, our analysis of economic life will remain partial, even stunted.

We support our view of the importance of uncertainty with illustrative evidence drawn from financial markets and central banking. Specifically, the

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financial crisis of 2008 shifts the burden of proof to rationalists who believe that we are living only in a world of risk. The definition of "actor interest" contains variable social elements that our analytical lenses must identify rather than blend out systematically. "Nobody knows anything but everyone knows someone" is a bon mot that captures nicely the social element in economic life.[1] As was true of the International Geophysical Year half a century earlier, in a social science replay of the Velikovsky affair, the financial crisis of 2008 is providing us with enough evidence to make it worthwhile to integrate uncertainty systematically into our analysis of international and comparative political economy.[2]

Our argument is rooted in a distinction drawn ninety years ago by Frank Knight (1921) and John Maynard Keynes (1921). Knight and Keynes delineated choice settings marked by risk, in which decision makers can access reliable probability distributions based on past observations, from choices made in the presence of uncertainty, in which probabilities are unknown.[3] It is very compelling to view actors adhering to consistent and rational decision rules in a world of risk. But that assumption is implausible when actors are unable to form well-grounded probabilistic assessments of future developments (Keynes 1937; Lawson 1985, 915–16).

This distinction between two worlds is especially helpful as the biblical fat seven years end and we enter, once again, into hard times (Gourevitch 1986, the afterword, this volume). Although we lack historical distance and intellectual consensus, the baseline model of the 2008 crisis is consistent with the world of risk. It weaves together a handful of causal factors including foreign and domestic investors who made available massive pools of savings at ultra-low interest rates that stoked demand for high-yielding assets; bankers and financial engineers who supplied investment vehicles carved out of pools of mortgages (many of which were low quality); credit raters who, locked in intense competition over market share, overlooked evident flaws in the securitization process to give their

1. We are indebted to Peter Cowhey for this pithy formulation.

2. In 1950, Immanuel Velikovsky published *Worlds in Collision*, in which he argued that many global natural disasters were related to near-collisions between Earth and other celestial bodies. Influential American astronomers were so outraged by the book that they tried to prevent its publication (see Goldsmith 1977).

3. Theoretically, there is a third world between pure risk and pure uncertainty, in which we form subjective probabilities (we believe, based on past observations, that an outcome is more or less likely than the alternatives), but the choice setting is sufficiently uncertain that the probabilities cannot be quantified, even with a wide confidence interval. We stick to the two-worlds imagery in this chapter, but note that the possibility of a third world was briefly explored by Keynes in his 1921 *Treatise on Probability* (but did not play a role in Keynes's theorizing in the *General Theory* and its extensions). See also Dequech 2000. In private communication, David Spiro (June 22, 2011) has pointed out to us that the distinction between uncertainty and risk leaves out the possibility that "we are living the null hypothesis of arbitrary and capricious randomness" in markets and institutions. If true, "the 2008 crisis can be explained by hindsight, but it does not deserve a characterization of rationality, whether in terms of risk or uncertainty."

seal of approval to the marketing by banks of a dizzying variety of financial instruments; the banks that ratcheted up their leverage ratios in order to maximize short-term profits, with the implicit guarantee that if market conditions soured they would be bailed out by the government; and government regulators who stood by idly or looked the other way as the crisis was building because they were convinced of the power of risk management models.

Conventional explanations share in the two core assumptions of a rationalist-materialist style of analysis. First, the interests of agents are derived primarily from income effects generated by the interaction of policy choices and the position that agents hold in the international division of labor. Second, once agents know what they want, they make, on average, consistent choices that are in line with the axioms of subjective expected utility theory. Peter Gourevitch's historically informed single- (1986) and co-authored (2005) work reflects these two assumptions and thus has provided a signal contribution to the scholarship informed by the open economy politics (OEP) approach to the study of IPE. At the same time, Gourevitch's work has differed sharply from OEP approaches by highlighting the importance of domestic politics.[4]

The subprime meltdown and the global credit crunch provide evidence that contradicts the approaches that eliminated uncertainty and reduced the world of finance to one of risk. Political and economic agents, we argue, make many of their most important decisions under conditions of uncertainty, or in ambiguous situations that mix risk and uncertainty. When actors lack reliable estimates of probabilities, they rely on social conventions such as risk management models while making their investment decisions. We discuss the world of risk in the first part of this chapter. In the second part, we inquire into the world of uncertainty, analyzing, among others, the decision making in the U.S. Federal Reserve. Our analysis is suggestive, not conclusive. The evidence we adduce is, however, substantial enough to throw into doubt the basic assumptions on which scholars working in the tradition of OEP have interpreted the financial crisis and approached most issues in IPE. In a world of risk *and* uncertainty, we argue, social conventions, constitutive institutions, norms, and practices must be part of our analytical toolkit.

4. To state that Gourevitch highlighted the importance of domestic politics is not to argue that there has been no evolution in Gourevitch's thinking on this central issue. His analysis was quite ecumenical in his first book as ideas, institutions, and other factors also were considered, although normally playing second fiddle to the material interests induced by position in the international economy. Although his views became largely, though not totally, rationalist in his co-authored book with Shinn, Gourevitch has been given a highly selective reading by adherents of the rationalist OEP approach who are either neglecting uncertainty altogether or argue it out of existence, insisting that we live only in a world of risk.

The First World: Risk in Hard Times

Peter Gourevitch's (1986) landmark study and its partial modification through a better specification of institutions in his co-authored work with James Shinn (2005) focus attention on the domestic determinants of political economy. In contrast to OEP, for Gourevitch international constraints and opportunities are always underdetermining in accounting for policy choices that could have gone another way. Shaped by material interests, domestic politics supplies the mechanisms that determine policy choice.

Materialism and Ideas in Gourevitch's Analysis

Gourevitch (1986) analyzes three economic crises in five countries. Across the three crises, the causal weight of factors changes. "Raw and naked" social actors in the first crisis of 1873–96 give way to polymorphous political coalitions in the second crisis of 1929–49, and a complex politics in the third crisis of the 1970s and 1980s (Gourevitch 1986, 23–28, 32, 228; Blyth 2009). Across all three crisis periods, position in the international economy remains the driving structural factor that largely shapes coalitional politics. This insight is central to OEP scholarship.

Gourevitch's work has been validated by what he dubs as a widespread, almost universal move in the social sciences to the micro level. His most recent book on corporate governance (Gourevitch and Shinn 2005) also pushes toward the micro level. As before, the causal priority that Gourevitch accords to various factors is grounded in the assumption that actors make probabilistic guesses in the pursuit of their interests. Since Gourevitch is not a strict materialist, in his view it matters greatly who promotes and who opposes specific ideas and policies. Over the last five decades, Gourevitch (afterword, this volume) argues, this concern has become deeply problematic as scholars have become more aware that actors can understand their situation in numerous ways.

There exists, then, a gap in Gourevitch's reasoning, between the ready acknowledgment of the profound problems involved in the process of preference formation and the alacrity to move on to the analysis of strategic action among players with well-defined interests. That gap is bridged by invoking the standard assumption, shared by all scholars working in the OEP tradition, that individual or collective actors have a rational, risk-calculating way of establishing and advancing their interests. This assumption helps explain the one-sided reading of OEP scholars who invoke the roots of their work in Gourevitch's coalitional analysis. Institutions do not anchor actors in some fundamental way as they are seeking firm footing in an uncertain world. Instead institutions and interests are

malleable and can be used for very different political purposes. "The impact of rules and institutions depends on who tries to use them" (Gourevitch 1986, 229). In this mode of analysis, constitutive institutions, norms, and processes are neglected and the identity of actors and their ability to calculate risks is unproblematic.[5] In the OEP approach, institutions shape risk-calculating actors' strategies and regulate which societal groups have access to the levers of power.

Gourevitch and Shinn (2005) start their book with the analytical premise that *Politics in Hard Times* observes empirically only in its third and final case. Institutions and regulatory norms rather than the position actors hold in the international division of labor are vitally important in shaping risky decisions. This point of departure leads to an important shift away from a materialist argument that sees interests determined largely by the position actors hold in the international division of labor and by the dynamic of their political conflicts. This move grounds their analysis firmly on a simplifying assumption that is fully consistent with a rationalist OEP approach; that is, a view in which governance and government are solely responsive to economic incentives that are unproblematic in a world of calculable risks, illuminated by incomplete contracting, transaction costs, and principal-agent relations. The structure of incentives can be explained adequately only by studying how preferences are aggregated politically and mediated by institutions (Gourevitch and Shinn 2005, 27).

Gourevitch and Shinn (2005, 41) insist that we are living in a world of coalitional politics and norms in which subjective probability estimates are taken for granted and choices are shaped by regulatory norms, processes, and institutions. The world of uncertainty in which actors look to constitutive norms, processes, and institutions to inform their definition of "self"-interest and their strategies is not in their purview. The self-imposed one-sidedness of their analysis is the subject of a few trenchant pages (2005, 87–91) that discuss and dismiss the social embeddedness of the economy. Unlike economic sociologists, Gourevitch and Shinn argue that economic incentives motivate strategic decisions. Social conventions, roles, and scripts that typically shape the practices of actors moving in an uncertain world are irrelevant. Put differently, Gourevitch and Shinn regard as unproblematic and leave unanalyzed the common knowledge within which

5. In rationalist-materialist accounts (Frieden and Rogowski 1996), interests are determined by the structure of the economy; in the case of Gourevitch (1986), this means a country's position in the international economy. In rationalist-ideational accounts (as in the chapter by Peter Hall in this volume; at times Gourevitch 1986; and occasionally even Gourevitch and Shinn 2005), politics and institutions create interests that are frequently in flux. In these accounts, institutions typically are defined in terms of their regulatory norms and processes, without regard to their constitutive aspects. Thus the analysis tends to underrate or neglect the importance of social factors that can help stabilize interests and make the pursuit of rational strategies possible, especially in times of uncertainty.

strategizing, signaling, bargaining, and choosing occur. On this central point, their analysis is a close cousin of OEP.

Rationalist, Risk-Based Analysis and Open Economy Politics

Invoking Gourevitch's work and drawing on deductive economic models, OEP supplies a clear answer about the origins of agents' interests. As Gourevitch (1986, 58) writes "the behavior of economic actors is affected by preferences and these in turn are affected by situation [in the domestic and international economy]." David Lake calls the assumption that interests can be read off the agents' situation in the international division of labor the "hard core" of this research tradition (2009a, 231).

To the extent that there is an "American school" of IPE (Cohen 2007, 2008a, b; Phillips and Weaver 2010), it has at its center OEP as outlined by David Lake (2006, 2009a, b).[6] In Lake's presentation, OEP formalizes the approach that motivates Gourevitch's work. Actors are price takers with clearly ordered preferences. Interests are deduced from the actor's position in the international economy, or what Gourevitch (1986) calls the "production profile." Interests are aggregated by institutions that in turn structure the bargaining that occurs. Policies and outcomes are ranked according to how they affect the actor's expected future income stream. The main advantage of OEP, as Lake correctly emphasizes, is its deductive argument about preferences. OEP scholars start with sets of actors who "can be reasonably assumed to share (nearly) identical interests . . . Deducing interests from economic theory was the essential innovation of OEP" (Lake 2009a, 226–27, 230–31; 2009b, 50). OEP derives parsimonious theories of politics from sparse economic theory. The flow is from micro to macro in an orderly and linear progression. To simplify analysis, work in the OEP tradition adopts a partial equilibrium analysis by focusing at most on one or two steps in this causal chain and treating the others in reduced form, an analytic simplification that holds constant many elements that otherwise would make analysis intractable. In principle, however, all partial analyses can be assembled into one integrated whole.

In this theoretical formulation, agents' material (not social) interests are stipulated to exist (not inquired into). Informed by rational expectations, OEP

6. Lake (2006) summarizes the OEP approach, engages the TRIPS survey (Lake 2009a), and responds to Cohen (Lake 2006, 2009a, 2009b) by defending the OEP approach; he also offers (Lake 2009b) an extended summary of his previous writings and develops three "inside the Church" criticisms of the approach. Lake regards the 2009b version of his writings as the "most authoritative" and also the "most critical" one of the OEP approach. Hence we rely on it in our more far-reaching critique. David Lake, personal communication, March 29, 2010. For critical discussions that differ from our concerns see Hainmueller and Hiscox 2006; Mansfield and Mutz 2009; Oatley 2011; Blyth 2012.

moves exclusively in the world of risk.[7] Institutions provide the rules and procedures that normally reflect the strength of different social groups. As is true of Gourevitch and Shinn (2005), OEP holds a truncated view of what institutions and conventions are and do, focusing largely on their regulative characteristics and denying for the most part their social and constitutive features. OEP thus overlooks the possibility that institutions can shape both actor identities and interests and their capacities for acting on them. It is thus difficult to accept the ambitious claim that such a narrow perspective will help us understand fully how institutions "serve to define what political power means in a particular society . . . and how different political assets are valued" (Lake 2009a, 227).

Questions of meaning and value in institutions and of individual and collective action under conditions of uncertainty become more accessible with an analysis that includes also the social and constitutive aspects of politics. OEP's always rationalist and often materialist conception of actor interest and its persistent neglect of social and constitutive politics are treated, at least to date, as hard-core assumptions. Modifying them would mean vitiating the entire paradigm (Lake 2009a, 231–32). OEP thus insists, erroneously, that we live only in a world of calculable risks.

The Second World: Uncertainty and Risk and the Crisis of 2008

To support our view, we offer in this section illustrative evidence drawn from financial markets, policymaking by the U.S. Federal Reserve, and discursive politics.

Uncertainty in Finance

Most economists assume that finance lies squarely in the world of risk. Financial markets, however, are realms of uncertainty. In very short time periods, asset prices can wildly veer away from their historical benchmarks. During the October 1987 stock market crash, in just over an hour of trading the Dow Jones index

7. Rational expectations, in its strongest form, means that agents have full knowledge of the true structure of the economy and are not prone to any *systematic* biases in information processing and terminal decision making. The assumption imposes "equality between agents' subjective probabilities and the probabilities emerging from the economic model containing those agents" (Hansen and Sargent 2010, 4). In a paper addressing the effects of uncertainty, Lake and Frieden (1989, 6–7) concede that uncertainty increases in crises and then proceed to argue that risk and uncertainty "are similar enough to be conflated for our purposes." They follow a long line of economists who treat the difference between risk and uncertainty as semantic rather than substantive (Nelson and Katzenstein 2011).

fell by 300 points, "three times as much . . . as it had in any other full trading day in history" (Bookstaber 2007, 87). Data indicate that volatility in the U.S. stock market is on the rise: eleven of the twenty largest daily drops since 1980 have occurred in the past three years (Story and Bowley 2011).

Extreme price swings in equity and foreign exchange markets defy the laws of normality. In August 2007, David Viniar, Goldman Sachs' chief financial officer, declared that his risk management team was "seeing things that were 25-standard deviation moves, several days in a row" (quoted in Chinn and Frieden 2011, 91). On September 6, 2011, the Swiss Franc fell by 8 percent against the Euro—a move that exceeded previous moves by more than twenty standard deviations (sigmas).[8] If returns were Gaussian, we would observe an event that is five sigmas away from the mean about once every 14,000 years; by contrast, "the waiting period associated with a 20-sigma event is a number, in years, that considerably exceeds recent estimates of the number of particles in the known universe" (Dowd and Hutchinson 2010, 89).

How do traders and fund managers view financial markets? In 2007, the psychologist David Tuckett conducted a series of interviews with top financiers. His subjects described "trying to decide what they thought were the various uncertain futures that might unfold for the future price of various financial assets . . . the information they had was always *both* too much to be examined exhaustively and never enough to give any certainty about choices" (Tuckett 2011, xvi, 51). Over decades of investing, thinking and writing about financial markets, one of the world's most successful financiers, George Soros (1987, 1998, 2008, 2009), has grappled with the behavioral consequences of the uncertainty he experienced firsthand. For Soros, market participants seek to impose some order on a complex reality and an unknowable future. The mental constructs that inform their expectations do not simply mirror underlying economic fundamentals; rather, the partial and distorted views that market participants impose on the world shape markets. And these views evolve in a social environment in which "rumors, norms, and other features of social life are part of their understanding of finance" (Sinclair 2009, 451). In "reflexive feedback loops," these views drive markets which then subsequently shape beliefs and thus can generate far-from-equilibrium situations.

As a stand-in for many others, Nobel laureate Robert Solow (1999, 31) takes Soros to task for a multiplicity of sins and calls his work "embarrassingly banal." Reading Soros's work and Solow's review is like watching the two proverbial ships of theoretical and practical knowledge of financial economics passing at night. Solow's incisive review glosses over a central point in Soros's argument.

8. http://blogs.reuters.com/felix-salmon/2011/09/06/charts-of-the-day-swiss-franc-edition/.

Unlike the rationalist economic models that Solow references, Soros assumes knowledge in and about financial markets to run up against fundamental uncertainty, "unknowable unknowns" (Dequech 2000). Reality exists independently from individual understandings and expectations of the kind that economists try to model. Why? Because of the power of collective beliefs. As Justin Fox (2009) has shown in great detail, the creation of the common knowledge assumption about the world of risk is a complex historical and deeply social process involving scholars and policymakers; that process eventually took on a life of its own, governing policy for a while, before being assaulted recently by the harsh facts the world of uncertainty revealed in the financial crisis and its aftermath.

Economic models of manias, panics, herd behavior, bandwagons, fads, bank runs, and other phenomena are analytical specifications of that collective process. They are based on the assumption of the aggregation of individual perceptions, volitions, and behavior. Put differently, they all move in the world of subjectivity rather than intersubjectivity, of the additivity rather than the superadditivity of parts. That assumption undervalues the power of collective beliefs. In the words of George Akerlof and Rachel Kranton (2010, 6), in economics tastes vary with social context. "Identity and norms bring something new to the representation of tastes . . . The incorporation of identity and norms then yields a theory of decision making where social context matters." Bias cannot be reduced to individually held beliefs and is inconsistent with the assumption of an asocial, individual rationality (Cassidy 2009). Market prices are never independent of the views of market participants, and sometimes they express prevailing bias rather than correct valuation. This social character of financial markets gives them the power to shape underlying economic fundamentals (Soros 2009, 59, 71). And it is these social qualities that can drive financial markets far off their equilibrium path (Calandro 2004, 45–49).

This view is dramatically at odds with the twin ideas of rational expectations and efficient markets. In that view, today's prices incorporate all available information, and any errors made by agents forecasting future market conditions are random and uncorrelated. For Emanuel Derman (2011, 140, 156), this is simply wrong-headed since "financial modeling is *not* the physics of markets . . . the Efficient Market Model stubbornly assumes that all uncertainties about the future are quantifiable. That's why it is a model of a possible world rather than a theory about the one we live in." Inhabiting the real world, and informed by his practical knowledge, Soros argues that reflexivity introduces an inescapable element of uncertainty into financial markets. And that uncertainty affects both the views of market participants and the real world. Instead of basing their actions on an unknowable "true" model of the economy, market participants substitute a variety of social conventions such as guesswork, instinct, emotion, experience,

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and rituals. Rather than assuming, as does rational expectation theory, that all market participants ultimately come to share in accurate, common knowledge of how the world works, Soros (2009, 8, 11) argues that this is simply impossible. James Shinn's (2011a) analysis of the reference models of the traders in the global macro hedge fund world supports this view. All of them focus on the same, small number of major events and trends, and all of them are ready to throw their models overboard should markets behave differently. In sum, in a world of uncertainty and ambiguity, social conventions play a large role.

The catastrophic failure of forecasting models employed by banks and credit rating agencies makes more sense when, following Soros, we view finance through the lens of uncertainty. On average, the projections of banks underestimated the actual default rates for collateralized debt obligations of mortgage-backed securities by 20,155 percent.[9] Why did banks, hedge funds, credit rating agencies, and regulators all come to rely on quantitative risk models that were deeply flawed? In the presence of uncertainty, financial market actors make use of rules of thumb, embedded in social relations, to guide their decisions. In their practical application, risk management models proved to be social conventions offering the illusion that uncertainty could be made into manageable risks (Latsis, de Larquier, and Bessis 2010).[10] Therefore, they do not provide strong evidence of an emerging science of financial economics that can be imported readily into the field of international political economy. Risk models are a conventional source of confidence that enables investors, financiers, bankers, and government officials to take decisions and act, as they must.[11] As Keynes (1937, 214) wrote long ago, "knowing that our own individual judgment is worthless, we endeavor to fall back on the judgment of the rest of the world which is perhaps better informed . . . [this] leads to what we may strictly term a conventional judgment."

Uncertainty at Work: Policymaking in the Federal Open Market Committee

In its regular functioning, members of the Federal Reserve hold to a world view that combines risk with uncertainty. Situating central banks exclusively in the world of risk misses a key fact: decision making in the Federal Reserve often

9. We averaged the percent difference between estimated and realized default rates across ten ratings classes (BBB–AAA) for collateralized debt obligations (CDOs) issued in 2005–7; the data were supplied by Donald MacKenzie and reported in the *Economist* ("The Gods Strike Back: A Special Report on Risk," *Economist*, February 13, 2010, 6).

10. Bernhard and Leblang (2008, 7, 60), for example, build from the assumptions that "market actors engage in economic activity in efficient markets" and "that economic actors have rational expectations." Armed with those assumptions, the authors build models of investor behavior rooted in portfolio theory.

11. For further elaboration of this point, see Nelson and Katzenstein 2011.

takes place in the presence of uncertainty. We find evidence of the role of uncertainty in deliberation at the Federal Reserve in three places. The "Summary of Economic Projections" that is appended at irregular intervals to the "Minutes of the Federal Open Market Committee [FOMC]" contains a section on "Uncertainty and Risk" that has appeared twelve times between 2008 and 2010 in contrast to only one time between 2005 and 2007.

One of the tasks of FOMC members involves forecasting near-term macroeconomic conditions. Policymakers, working with data and reports supplied by the staff of Federal Reserve, submit forecasts of output growth, inflation, and unemployment prior to the semi-annual publication of the Fed's Monetary Policy Reports to Congress. We treat the degree of forecast error as an indirect measure of uncertainty facing the FOMC. We draw on David Romer's (2010) dataset, which records every forecast provided by members between 1992 and 1999, to track individual members' forecasting errors (calculated by subtracting the forecast from realized values for the four indicators) as well as the average forecasting error in each year.[12]

Figure 10-1 reveals two important patterns. First, monetary policymakers' forecasts about important macroeconomic variables vary widely. Second, accurate forecasts are extremely rare. According to Alan Greenspan, policymakers and forecasters are doing "exceptionally well" if they can get projections right 70 percent of the time (2010, 209). FOMC members fall well below this benchmark: out of 360 separate forecasts for each of the four variables, we observe 25 perfect forecasts of inflation, 21 for unemployment, 8 for real GDP, and not a single correct forecast of the growth of nominal GDP. Less than 4 percent of all forecasts issued between 1992 and 1999 were correct.[13]

The best source of evidence on decision making in the Fed comes from transcripts of the FOMC meetings. Because the FOMC releases transcripts with a five-year lag, we rely mainly on meetings from the period just prior to the invasion of Iraq in 2003 when the war and its uncertain effects on markets was all-pervasive. It is likely that we would see more evidence of the impact of uncertainty on FOMC deliberations if we had access to transcripts from meetings

12. The FOMC released the information on member forecasts with a ten-year lag. See also Bailey and Schonhardt-Bailey 2005.

13. A skeptic might argue that FOMC forecasts deviate from reality for good reason: voting members are being strategic. Forecasts are intended to influence the Fed's policy stance. If that is true, then we would expect to see evidence that members from depressed regions (who would likely prefer a more accommodative policy) would forecast very low inflation and GDP growth and overstate unemployment. Specifically, one might expect those regional bank presidents with unemployment rates higher than the national rate may become increasingly dovish and those with rates below the national rate may become increasingly hawkish. But there exists no evidence that regional conditions influence the degree of forecasting error (McCracken 2010). It seems more plausible to assume that the poor track record of the FOMC forecasts is due to uncertainty.

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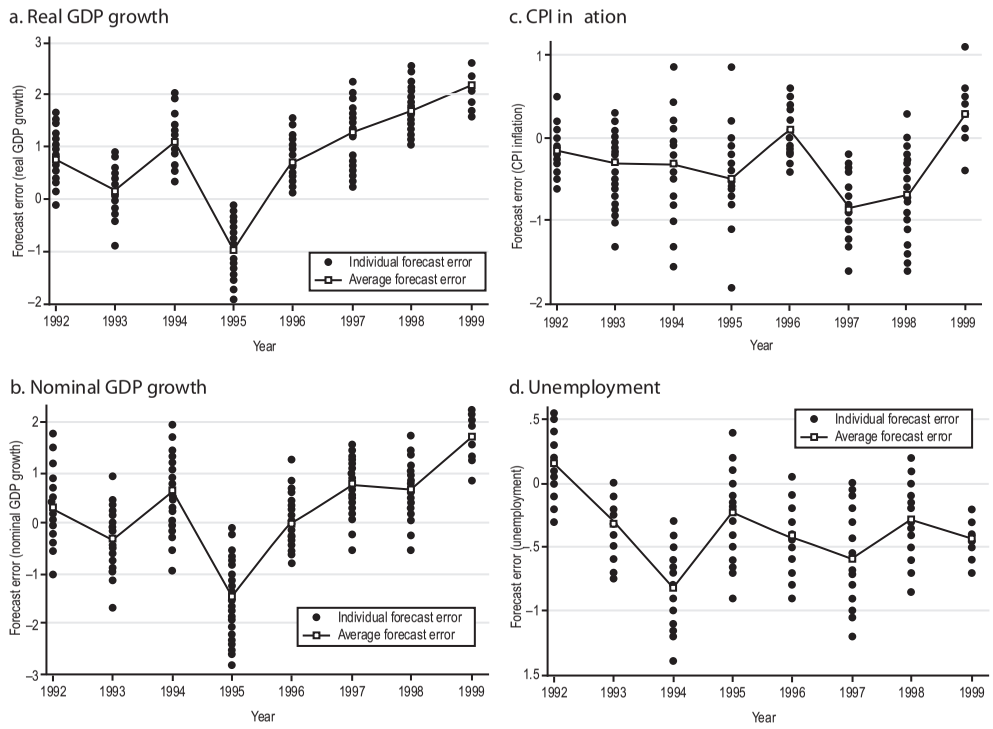

FIGURE 10-1. The accuracy of economic forecasts of the members of the Federal Open Market Committee (1992–99). Note: CPI is Consumer Price Inflation.

Source: Romer 2009.

during the height of the crisis in September 2008. Nonetheless, the discussion from the years before the crisis reveals that policymakers framed their choices in Knightian terms. A number of policymakers noted that the institution was operating in the fog of uncertainty.

We are presenting brief excerpts of the minutes verbatim with the single aim to convey more accurately than a synopsis could the reasoning process of central bankers who must deal with the issue of uncertainty and risk.

On January 28, 2003, for example, Alan Greenspan reflected on the relation between uncertainty and economic models:

> **Chairman Greenspan:** In other words, we start with a degree of uncertainty that is very high; it is much higher than it is for those who take the data and put them into a model and do projections. Most modelers are dealing with a controlled environment in which the number of variables is well short of a thousand. In the real world there are a million, and we don't know which ones are important. So it really matters. Lots of technical things that we do would seem to be wrong in a sort of optimum sense. Yet we do those things because we don't trust the models to be capturing what is going on in the real world. (Federal Open Market Committee [FOMC] 2003, 37–38)

Greenspan's comments prompted a debate about the prudence of the Fed's accommodative stance (specifically, deviating from the so-called Taylor Rule). The debate prompted Anthony M. Santomero, head of the Federal Reserve of Philadelphia, to reflect on why the Fed cannot rely on fixed decision rules:

> **Mr. Santomero:** I think in fact our policy behavior was more symptomatic of an environment of uncertainty than we give ourselves credit for. In my view, our actual behavior looks more like a rational response to the uncertain world in the dimensions I just laid out. So rather than try to chase the optimal rule, I suppose my reaction is that we're probably doing a better job than the optimal rule suggests. (FOMC 2003, 48)

Later the discussion turned to monetary policymaking in the face of saber-rattling by the Bush administration. Cathy Minehan of the Federal Reserve of Boston, William McDonough of New York, and Chairman Greenspan ruminated on how geopolitical conditions made policy choices little more than guesswork.

> **Ms. Minehan:** It seems to me that if all the uncertainties center on a discrete geopolitical event—a go/no-go decision such as we go to war or we don't go to war—that has one implication for how to look

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at the second half of the year. As in the Greenbook, one could look at various scenarios that make some big assumptions about the shortness of a war or whatever. If the uncertainties hedge around underlying fundamentals—growing out of the view that this is a very different kind of recession than that around which our models and people's memories are built because this "recovery" compared with previous ones is so slow—then that says something different about the role of uncertainty. (FOMC 2003, 65)

Vice Chairman McDonough: May I slide a comment in here? In talking with people in the New York, London, and Paris financial centers, it's very, very hard to determine to what extent they are saying that the uncertainty is geopolitical when it's really a cover story for uncertainty about economic issues. (66)

Ms. Minehan: Clearly, uncertainty is a major factor in the economic outlook. What will cause that uncertainty to subside, however, is difficult to determine. Will the go/no-go decision about war make businesses more confident about the future? Or will the economy's current soft patch have to show real signs of firming to achieve that end? Or, as Dave Stockton suggested yesterday, are these two sources of uncertainty so intertwined that it's hard to tell one from the other? (118–19)

Vice Chairman McDonough: We do have an enormous amount of uncertainty. So the question is, What does the prudent central banker do in an atmosphere of enormous uncertainty? It seems to me that one should think very hard, do nothing, and stay extremely alert. (127)

Chairman Greenspan: All this raises the interesting issue as to what will happen if and presumably when the geopolitical risks are removed. Will we be looking at a bounceback as this particular risk is removed, or will we be shocked to find that the sluggishness is still there? I don't know any way to judge analytically the relative probability of those two potential outcomes. We can guess. We may say that history suggests such and such, but we really can't assess with confidence the probability of the two events. The bottom line to all of this is that the military uncertainty is so overwhelming with respect to the question of potential monetary policy actions that the less we do, even in how we phrase our post-meeting statement, the better off we are. The problem, as the Vice Chair of the Board said, is that we do not know what will happen, and like him I think that it's important for us to hedge our judgment at this stage. (146)

Even though there are other threads of the FOMC discussion that we could have cited (Nelson and Katzenstein 2011), illustrative quotes from transcripts do not permit us to make strong claims about how central bankers react in times of financial crisis. And it is true that Alan Greenspan's (2010) reflections on his time in office say virtually nothing about the importance of uncertainty while he was in office. This omission we take to be an indication of the ways in which the conventional wisdom of economics can shape the memory of key decision makers. Together with other evidence and arguments presented in this chapter, the tenor of the discussion among the Federal Reserve's Board members in 2003 is, however, strong enough, we believe, to shift the burden of proof to scholars who argue that we live only in a world of risk.

Discursive Politics

Attention to language offers additional evidence to support the view that we need to pay attention to both risk and uncertainty. Central banks talk to politics and markets. How they talk to politics depends on the degree of their independence, which can raise vexing questions of democracy (Johnson 1998, 195–217). "Talking to markets" is about conveying meaning as much as conveying information, as "the Oracle of the Fed," Chairman Greenspan, understood only too well. Douglas Holmes (2010, 1–4, and 2009; see also Hellwig 2009, 161–62) has developed a compelling argument that shows how stabilization of expectations in a world shot through with both risk and uncertainty is a matter of discourse. Central bankers have embraced transparency so that markets now do a substantial amount of the Federal Reserve's work (Krippner 2007, 505).

Communicative action has revolutionized central banking practices during the last two decades. Rather than presiding over secret and esoteric institutions dealing with arcane subjects such as inflation targeting (the focus of Holmes's extensive field research), central banks have become very transparent and open. In their effort to control the evolution of prices, they seek to influence both collective sensibilities about and in the future. Relying on the interpretive and scholarly writings of Ben Bernanke and, especially, of Alan Blinder, public statements and interviews, Holmes (2010) shows that central banks manage individual expectations and social biases through official statements, interviews, press conferences, and other ways of "talking to markets." This "talk" is a self-conscious and concerted effort to make all market participants assimilate central bank policy intentions. "Econometric allegories," as Alan Blinder and Ricardo Reis (2005, 5) call them, draw on the intellectual resources, policy judgments, political experiences, and economic preferences of central bankers. Prices become anchored in the expectations and assumptions of market participants who take these allegories

seriously and adjust their practices, and thereby become active participants in the banks' preferred policies. The economic narratives of central banks thus have become an important determinant for market developments. Central banks reduce uncertainty through discursive practices that rely on strategic rhetorical action with essentially pedagogical aims. Central bank statements, Holmes (2010, 4, 7–9, 13) argues, "are not merely expressing an interpretative account or commentary: they are making the economy itself as a communicative field and as an empirical fact" (4). Central bank narratives activate the reflexive capacities of actors, all in the interest of creating a predictable future in a world fraught with risk and uncertainty.

Economic models thus do not only analyze financial markets. They alter them. In the words of Donald MacKenzie (2006, 25), they are not only cameras, passively recording developments in markets, but engines which actively transform the very same markets. Representation and action are part of the same story. The issue is not only about being right or wrong in our knowledge about the world but also about being able or unable to transform that world (MacKenzie, Muniesa and Siu 2007, 2).

The effect of economic theory on markets can be more or less visible (MacKenzie 2006, 16–19). The "Chicago Boys" were economists at the Universidad Católica de Chile who had been trained at the University of Chicago between the mid-1950s and the mid-1960s. After General Pinochet's military coup of 1973, this group of economists not only analyzed the Chilean economy but sought to reform it along free-market and monetarist lines. Other interventions by economists though less visible, can also be very consequential. Economic theory, as Miyazaki (2007) argues, not only stands outside of markets as an external object but often is intrinsic to market processes. In the form of self-validating feedback loops, the practical use of economic theory thus can make market processes more like their depiction in theory. For example, index funds have altered fundamentally the operation of financial markets. Anomalies discovered in the course of testing the efficient-market hypothesis have encouraged investment practices that often led to the reduction or elimination of these anomalies. And options were priced more accurately as predicted by the Black-Scholes-Merton model before than after the crash of 1987. In brief, finance theory has been incorporated into markets—technically, linguistically, and as a legitimating device (MacKenzie 2006, 29–30, 32–33, 255–59; MacKenzie, Muniesa, and Siu 2007, 4–5). In the words of Alan Blinder (2000, 16, 18; quoted in MacKenzie 2006, 25), "Economists . . . have bent reality (at least somewhat) to fit their models." And financial market actors bent models to fit reality. A trader involved in developing Salomon's option pricing model described how the Gaussian assumption was built into the model: "Sometimes we'd assume normal just to make it even more simple" (MacKenzie 2006, 215).

Blinder's qualification—"at least somewhat"—agrees with Michel Callon and Fabian Muniesa's (2005, 1229–31) view of markets as "calculative collective devices." The characteristics of financial goods and services are often extremely uncertain and the number of actors involved in financial markets is often very large and highly dispersed. Callon (1998, 6) thus asks, "How can agents calculate when no stable information or shared prediction on the future exist?" Markets are such effective institutions because they make possible complicated calculations that yield practical solutions that could not be reached by theoretical reflection only (Callon 1998, 23–32).

Callon and Muniesa's (2005) analysis sidesteps the one-sided views of neoclassical economics and anthropology. Economists take an abstract and formal view of markets, which, they assume, are governed by impersonal laws and populated by agents who are inherently calculative. Anthropologists prefer to dissolve the calculative competence of actors in rich ethnographies that view quantitative practices as rationalizations for choices that are based on other logics. Neither view is very satisfying. The first overlooks the diversity of economic practices and forms of calculations that can be observed in markets; the second denies that economic forms of behavior have any specificity whatever. The first thinks in terms of pure calculation; the second marginalizes all calculative practices. Both seem inappropriate for an analysis of the ambiguity that marks financial markets with their characteristic mixture of risk and uncertainty. Calculative behavior includes but goes beyond mathematical or numerical calculations. It is a hybrid of calculation, judgment, and imagination. Avoiding positivist and constructivist preconceptions, economists can view the laws of the market as neither discoveries that reveal hidden truths, nor as constructions that illuminate an opaque reality. Economic laws account instead for "regularities progressively enforced by the joint movement of the economy and economics." Such regularities connect the obduracy of the real world with the contingency of the artifact of reason (Callon 1998, 46).

A financial crisis is therefore not only an event "out there in reality" but also a set of interpretive and rhetorical acts "in here," which can have different effects over time. The degree of congruence between "out there" and "in here" is a central stabilizing or destabilizing element of the financial order. Economists are part of a social performance by which their ideas are assimilated by experts and policymakers who, against their better knowledge, pretend that they are true. Economic ideas are thus put into the service of making rather than merely representing reality.[14] Furthermore, these ideas are built into the operation of both the financial system and the system of government regulation (Riles 2011; Hjertaker

14. Douglas Holmes, personal communication, December 13, 2010.

2011). Jens Beckert (2010, 2, 7, 9, 25, 30) offers an explanation that is congruent with this work. Going beyond the collective identities, calculative tools, judgment devices, and cultural frames invoked by economic sociologists, he focuses on the central role of fictions for decisions made under conditions of uncertainty. A fictional or imagined future is not disclosed as such and regarded as separate from the real world. Instead it is perceived by relevant communities as a natural though contestable representation of the future that emerges in the process of social interaction. When calculation-based expectations under conditions of uncertainty are beyond reach, fictional rather than rational expectations are the foundation for noncapricious action. This view is shared by one of the leading "quants" in the world of finance, Emanuel Derman (2004, 266–69), who views his models as "imaginary" inquiries. "In physics you're playing against God . . . When you've checkmated Him, He'll concede. In finance, you're playing against God's creatures, agents who value assets based on their ephemeral opinions. They don't know when they've lost, so they keep trying . . . The right way to engage with a model is, like a fiction reader or a really great pretender, to temporarily suspend disbelief, and then to push it as far as possible." It is not only the world of models that has fictitious elements. In the real social world we all inhabit, "the imagined future can affect the present, and thereby the actual future too" (Derman 2011, 142).

Discursive politics shows that stability and instability in finance are not the outcome of autonomous market dynamics as much as they are deeply intertwined with those dynamics. For this reason, economic sociologists emphasize the relevance of social institutions and conventions in their analyses of markets (Dobbin 2004). We observe the centrality of social conventions in legal fictions sustaining neoliberal ideas as recently as the last few decades (Riles 2011), and as long ago as in the common commercial law for merchants that developed in Europe over several centuries prior to the emergence of domestic commercial regulations in nascent states (Swedberg 2004). Rationalist explanations of risk are not only challenged but also complemented by the call heard from many different quarters: it is time to put the social back into the science with which we analyze financial markets.

Conclusion

Living in the worlds of both uncertainty and risk, traders and central banks point the way for scholarship. They rely on often large, methodologically sophisticated research departments that have access to a rich trough of quantitative and qualitative data. Yet central banks in particular also engage in communica-

tive action that helps create the economy as an empirical phenomenon. As their reasoning process illustrates, inquiring into conditions of uncertainty does not require a new theory of interest but attention to the meanings of words. Aware of living in two worlds, central banks are able, imperfectly, to describe, to explain, and to predict stability and change. There are good reasons for students of political economy to adopt a similarly ecumenical approach to the analysis of financial markets and economic life. Yet judging by current standards of political economy scholarship, there is scant evidence that good reason is prevailing.[15]

Both rationalist and social approaches are useful for an analysis of a world that mixes uncertainty with risk. That mixture is readily acknowledged by the insurance industry when it deals with financial markets (Munich Re Group 2009, 2010, 2011) and underground transportation systems and occupational diseases (Munich Re Group 2004a, b). It is a prominent feature in the analysis of climate change (Geneva Association 2009; Lohmann 2010), science and technology policy (Wong 2011), and environmental law (Farber 2011). And it is readily apparent in financial markets where, according to James Shinn (2011a), four subtle trends are nudging an uncertain world just a little over toward a world of risk: the growth in hedge fund resources, an expansion and acceleration of news cycles, the diffusion of policy elites, and the consolidation of legal and intellectual regimes in the international economy. Rather than favoring an academic division of labor that typically rests on little more than shaky or spurious claims of the stipulated superiority of one or the other version of social science, we are, it seems, much better off when we subscribe to a dialogical model of scientific inquiry (Sil and Katzenstein 2010). It is unwise, even foolish, to force on paradigmatic grounds a choice between risk and uncertainty without any knowledge of the specific situation at hand. Although distinguished economist and policymaker Charles Schultze's trenchant observation—"when you dig deep down, economists are scared to death of being sociologists" (quoted in Beckert 2002, 42)—may create some resistance to importing sociological approaches built on uncertainty to the field of international political economy, we contend that pragmatic reasoning should trump paradigmatic purity in our analysis of a world that often is ambiguous in mixing risk with uncertainty.

The end of the Cold War and the collapse of the Soviet Union did to the analysis of security studies what the sinking of the *Titanic* did to the field of naval engineering. As a result, existing approaches were not replaced but refurbished and complemented by new ones that pointed to different questions and lines of

15. Benjamin Cohen, one of the doyens in the field, observes that mainstream IPE scholars by and large failed to even anticipate the crisis—a "myopia" that he blames on the "distinct loss of ambition, reflecting the gradual 'hardening' of methodologies" (2009, 442). The counterpoint to Cohen is the more optimistic view of Helleiner (2010a).

arguments, thus helping reinvigorate a field of scholarship mired in arcane debates as the world changed dramatically. In underlining the importance of uncertainty and reintroducing social styles of analysis into the field of international political economy, the financial crisis of 2008 might have a similarly salutary effect.