

# Risk in International Politics

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It is a striking puzzle that problems posing the greatest potential for catastrophe are ones that government typically fails to adequately address. The recent financial crisis in the United States, which was brought about by the failure to address well-understood incentive problems in financial markets, is a stark case in point. Other examples abound in domestic public policy: preventing environmental degradation, coping with urban poverty, funding pensions and protecting public health from epidemics are domestic policy challenges that are widely recognized to be serious but inadequately addressed. At the international level, global climate change, financial instability, weapons proliferation, and the collapse of governance in weak states pose even more daunting challenges.

Each of these issues poses long-term policy problems. Long-term policy problems are distinguished from other public policy issues by at least two features: they involve collective provision of public goods, and they involve uncertain outcomes with risks that vary across individuals. If the solutions to these problems did not have the characteristics of public-goods, meaning that investments to ameliorate risks have general benefits, they could be resolved efficiently by markets. I will argue that it is the second feature, agent-specific risk, which leads to the systematic failure to address this category of problems through public policy. Democratic processes lead to under-provision of insurance.

The public finance literature generally comes to different conclusions, because it focuses on a different set of problems. Models that focus on the redistributive function of government spending generally find that spending under majority rule is inefficiently high.<sup>1</sup> Similarly, models that focus on conflicts of interest among groups of voters find that democratic governments create inefficiencies by over-investing in the provision of local public goods.<sup>2</sup> There is an argument in the public finance literature that links under-provision of public goods to tax competition, which can lead to a “race to the bottom,” or to incentives for elected officials to allocate spending to redistribution or private rents rather than to public goods.<sup>3</sup> These arguments, however, do not explain

1. Meltzer and Richard 1981.
2. Weingast, Shepsle, and Johnsen 1981.
3. Persson, Roland, and Tabellini 2000.

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why goods that provide insurance against risks should be more under-provided than other types of public goods.

I start with a simple social choice problem: a previously unknown risk emerges (environmental, security, financial, etc.) which can be mitigated by making an expensive policy reform. That is, the severity of a crisis can be reduced at some cost. For simplicity, the model assumes a single policy dimension. Policy change requires cooperation among elected officials (perhaps requiring a supermajority) representing constituents with a range of attitudes towards this particular risk. The critical assumption is that exposure to the risk is unequal. It will often be the case that a minority of the population is much more vulnerable than the majority and the more risks are skewed, the more inadequate will be the policy response. Without making strong assumptions about the distribution of risks, however, I find that democratic political systems choose suboptimally low levels of insurance.

I compare this level to that which would be chosen by the *market* in the absence of transaction costs and enforcement problems (i.e., we can write and enforce optimal contracts, so there is no under-provision of public goods), and to that which would be chosen under the *veil of ignorance*.<sup>4</sup> Democratic levels of investment to mitigate risk are too low by either of these standards, because constituents with lower risk exposure prefer low levels of investment and are better off under the status quo than under an insurance scheme that provides adequate protection for constituents with higher exposure.

The problem of underinsurance is worse at the international level, because the international level imposes greater supermajority requirements. A common public choice critique of international institutions holds that international organizations impose inefficiently large burdens on citizens because they strive to increase their power and resources by expanding their functions.<sup>5</sup> In contrast, I find that the under-provision of insurance under majority rule represents a rationale for delegating policy-making authority to specialists and, in particular, to international institutions. At both the domestic and the international levels, policy-making can be brought closer to the optimal level by delegating authority to specialists with risk-averse preferences.

### Political Economy of Long-Term Policy Problems

The environmental policy literature offers a different answer to our puzzle, which is that long-term policy problems are left unsolved because of uncertainty. For example, even if the cost of reducing carbon emissions can be estimated fairly accurately, the pay-off is uncertain because estimates of the costs of reducing emissions vary wildly and because the quantitative relationship between carbon emissions and climate change is unclear. It is possible that global

4. Rawls 1971.

5. Vaubel 1986; 1991; and Dreher and Vaubel 2004.

climate change will be less catastrophic than is now believed, or that future technologies will reduce the damage or make it possible to reverse the trend at lower cost than is currently feasible. If these scenarios seem unlikely, it may instead be the case that global climate change will respond very little to any feasible policy reform, so that the pay-off from an aggressive policy response turns out to be low. Rational agents, being risk averse, prefer not to invest in policies with uncertain outcomes, and therefore nothing is done. This argument is incoherent.

If the reasoning presented above were correct, it would apply to any rational, risk averse agent, such as a benevolent social planner, so for the moment we can abstract away from the problem of social choice. Risk-averse agents, by definition, prefer a lower pay-off that is enjoyed with certainty to a lottery with a higher average pay-off. Given the choice whether to make a risky investment, risk-averse agents demand a higher expected value in order to compensate for the uncertainty of the pay-off, and the greater the uncertainty, the higher the expected value has to be. If policy reform is conceived as an investment with an uncertain pay-off, this suggests that uncertainty could be an argument against reform.

Consider the counterfactual, however. The logic presented in the previous paragraph only follows if we assume that the agent has the option of a risk-free alternative where the policy is not implemented. This is not the case with long-term policy problems. The global climate will change, regardless of whether we change policy to affect it; and failing to act will not reduce the uncertainty of the outcome. Instead, an aggressive policy response is the only way to reduce uncertainty. Policy change is not an uncertain investment, it is an insurance premium.

Risk-averse agents pay insurance premiums because they prefer a lower pay-off to a higher one that is uncertain. The premium is a certain loss, so buying insurance lowers our expected disposable income. In the same way, imposing taxes on gasoline to reduce carbon emissions imposes well-understood costs on consumers. The effects of the tax on climate change are uncertain because we cannot precisely estimate the elasticity of demand for gasoline, the reaction of technological innovation to price change, or the effects of carbon emissions on global warming, but we know that raising the price of gasoline will lower both the mean and the variance of global climate change. In this sense, policy reform is insurance against the worst-case scenario. Thus, uncertainty cannot explain the lack of an adequate policy response. Risk-averse agents buy insurance in order to reduce risks that they are uncertain about, and the greater the uncertainty, the greater the incentive to buy insurance.

Another argument often made in the environmental policy literature is that long-term problems are unaddressed because they are not only uncertain, but unknowable; we simply cannot estimate an expected value or a distribution for global climate change, so it is outside the realm of expected utility calculations.<sup>6</sup> This is a semantic point. It is possible to accommodate uncertainty about

6. This is often referred to as a distinction between "risk" and "uncertainty." As used here, how-

uncertainty in a rational-choice perspective. Rational choice represents uncertainty with lotteries, which attach probabilities to all foreseeable outcomes. If the objection is that the probabilities are unknown, it is possible to make them uncertain, too, by assuming that there is a distribution over the possible distributions of a lottery. Rational agents, including environmental policy analysts, may be uncertain about the distribution of the risks of global climate change, but they are able to reach subjective judgments about whether the risks are dangerous enough to warrant a policy response, and that is all a rational choice approach has to assume. It may be impossible to make accurate estimates about these distributions, but this does not prevent agents from making guesses; it only makes it more likely that they will make mistakes. For the purpose of the present argument, it is important to note that if there is uncertainty about the distribution of risk, this will increase the variance of our estimates of likely outcomes, making them more uncertain, and therefore increase the incentive to insure against the bad ones.

From a political economy<sup>7</sup> perspective, the question of why long-term policy problems remain unaddressed can be answered in a number of ways that have very different normative and policy implications. I will briefly summarize some of the prominent mechanisms identified in the literature to explain the lack of attention to long-term policy problems, and then turn to one that I believe to be particularly important that has been neglected.

#### *Discounting*

Rational agents discount future costs and benefits relative to present ones. Investing in solutions to long-term problems has immediate costs and delayed benefits, so long-term problems will be addressed less effectively than short-term problems. If discounting accounts for failure to invest in solutions, however, then not solving problems is efficient. This seems not to fit our intuitions about some of the major unresolved public policy problems today, which appear to be inefficient. More broadly, it is an unsatisfactory answer because it explains outcomes in terms of preferences, and is therefore tautological. Furthermore, discounting cannot account for the failure to insure against risks that exist in the current period.

#### *Overlapping Generations<sup>8</sup>*

The current generation does not fully internalize the costs to future generations of the externalities of current choices that will affect them. Any social choice

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ever, uncertainty refers to probabilistic distributions of outcomes, and risk refers to concave utility functions over those outcomes such that  $x$  is preferred to a lottery with expected value  $x$ .

7. Political economy, as used here, means a methodological approach to explaining politics in terms of interactions among agents who choose their strategies optimally, given their preferences and constraints, and form rational expectations.

8. Tabellini 1991; and Persson and Tabellini 1992.

mechanism will therefore shift costs to future generations. This is a more satisfactory argument than discounting alone, because it provides a mechanism to explain shortsightedness. It also emphasizes the inefficient negative externalities that present generations impose upon future ones, which represent an important policy problem. However, it still fails to explain why the present generation fails to provide an adequate level of insurance against risks for itself. Since many public policies that ameliorate risk have lasting effects (such as vaccination programs, investments in education, and systems of levies), efficient self-insurance could even provide positive externalities to future generations.

### *Public Goods*

Public goods are generally underprovided, because individual agents do not internalize the positive externalities of providing them, and solutions to many long-term policy problems have this character. This is certainly a problem for private solutions to collective action problems, although even here repeated interaction can lead to efficient levels of cooperation. In the public sphere, however, where the existence of public goods is the rationale for the existence of public authority, it is hard to see how the existence of a public goods problem should prevent a coercive, government-managed solution. Indeed, the standard results in public economics argue that public goods are systematically overprovided in these contexts.<sup>9</sup> We need an explanation for systematic under-provision of public goods in spite of the existence of a state capable of collecting taxes in order to provide them. If they do not explain domestic policy failures, public goods certainly can explain the difficulty of achieving cooperation in an anarchic international system.<sup>10</sup> Even in this context, however, public goods arguments do not explain why risky policy problems pose special dilemmas.

### *Incomplete Information and Bargaining<sup>11</sup>*

There are alternative ways to solve problems that impose different costs on different actors. If there is uncertainty about the actors' preferences, agents may have incentives to delay resolution of problems in order to signal their resolve, and ultimately shift the costs of adjustment to others. Bargaining clearly plays a role in explaining policy failures of all sorts, but there is nothing special about long-term problems that involve risks that should make them more subject to bargaining problems than other issues.

9. Weingast, Shepsle, and Johnsen 1981.

10. Kindleberger 1973; Keohane 1984; Olson and Zeckhauser 1966; and Stone, Slantchev, and London 2008.

11. Alesina and Drazen 1991.

*Agent-Specific Uncertainty about Costs*

If agents are uncertain about how the costs of reform will be distributed, it is possible for reforms that would be welfare-improving and that would be supported by a majority *ex post* to be opposed by a majority *ex ante*.<sup>12</sup> This is close to the spirit of the problem at hand, because it involves individual-specific risks. However, in the Fernandez and Rodrik setting, the choice is between the status quo and a policy reform, which has a distribution of positive and negative effects on agents. Instead, the question that I want to answer is why insurance against risks is not provided when it is the status quo that is risky, rather than the reform.

Each of the five mechanisms outlined above is a plausible explanation for the failure to invest in solutions to long-term policy problems, and each plays an important role in the political economy literature. However, none of these mechanisms accounts for the particular problems created by individual-specific risk.

**Social Choice in the Presence of Risk**

A reason for under-investment in resolving long-term policy problems that have been generally neglected is the problem of social choice in the presence of heterogeneous risk preferences. By the definition of risk aversion, the benefits of insurance are non-linear: they are much more valuable to the people who need them most than to the median voter. If the median voter chooses the level of public investment (insurance) to buy against a particular long-term problem, she balances the marginal cost against her own marginal utility of insurance. Under fairly unrestrictive assumptions about the distribution of preferences, the median voter's benefit from insurance is lower than the average marginal utility of insurance in the population as a whole. Therefore, public insurance will be underprovided relative to the welfare-maximizing social optimum. Markets will provide the optimal amount of insurance if there are no missing markets and no transaction costs. This is clearly not the case, however. Problems of moral hazard, adverse selection and insolvency generally create missing markets for insurance. In addition, market provision may be infeasible because the benefit of insurance is public and beneficiaries cannot be excluded, as in the case of investments that are made to mitigate global climate change.

Under these circumstances, any democratic social choice mechanism will under-provide insurance. This point deserves some emphasis. In what follows, I use the apparatus of the median voter theorem, which suggests the metaphor of voters choosing public policy by referendum, or voting among candidates who are credibly committed to their respective policy platforms.<sup>13</sup> Policy is often made by elected officials, however, and they cannot always make credible

12. Fernandez and Rodrik 1991.

13. Hotelling 1929; Black 1948; and Downs 1957.

commitments. Nevertheless, the mechanism that leads to systematic under-provision of insurance is at work in any setting that involves voting or elections. If voters elect legislators and legislators vote on policy, the median voter at each level will benefit less from insurance than the average amount preferred by her colleagues. Similarly, national representatives voting on international agreements will generally choose policies that are weaker than those that would maximize their aggregate welfare. As we will see, these problems become worse rather than better as democratic institutions introduce safeguards to protect the interests of minorities.

This problem has been observed, for example, in the political economy of unemployment insurance.<sup>14</sup> In these models, voters choose a level of unemployment insurance, or a combination of insurance and labor-market distortions that lower the probability that workers are fired. Voters differ in their probability of being unemployed in future periods and insurance is financed by taxing the earnings of the employed. In these models, insiders (the employed) prefer lower levels of unemployment insurance than are optimal, and insiders represent a majority. If given the opportunity, they will choose to combine inefficient labor market distortions (which increase unemployment) and low levels of insurance, rather than choose the optimal policy of full insurance and no distortions. While this result is generally posed as a critique of the European Left for representing labor insiders to the detriment of outsiders, it can be generalized in a way that has rather different implications: democratic decision mechanisms generally under-provide insurance when risks are distributed unevenly.

Note that this explanation of under-provision does not rely on the dimension of time. In fact, it will be modeled below in a single-shot game, because that is the simplest setting to illustrate the logic of the argument. Thus, in this account, it need not be the case that the risks we fail to address affect only future generations, or that agents are particularly short-sighted. These considerations will exacerbate the problem, but the problem is inherent in democratic decision-making.

The under-provision becomes worse if the problem is newly discovered and a supermajority is required to enact legislation. Veto players and policy bottlenecks are associated with policy inertia and protection for minorities because they can prevent policy changes that would be preferred by the majority.<sup>15</sup> If a policy problem is an “old” risk and the policy status quo is a high level of investment, veto players will preserve a high level of spending even when circumstances change, as is the case with agricultural subsidies in advanced countries. When a problem has been newly discovered, however, the status quo bias results in greater under-provision of insurance. The status quo allocation of investment to ameliorate a problem that is newly discovered is zero, and the piv-

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14. E.g. Persson and Tabellini 1996, 2000: 140–143.

15. Tsebelis 2002.

total voter will not approve any policy more ambitious than one that makes him or her indifferent between reform and zero.

International cooperation generally involves supermajorities and numerous veto players—some of them powerful states, and others legislatures and interest groups within them—so novel risks that can only be ameliorated by multilateral action are generally inadequately addressed. In some cases, supermajority requirements for action by international institutions lead to such extreme policy deadlock that decentralized provision is preferable to coordinated action, even in the presence of positive externalities. This seems a plausible interpretation of the Kyoto Protocol.

### The Model

Voters choose the tax rate to maximize the following indirect utility function:

$$\text{Max}_{\tau} : (1-\tau)\gamma - p(e^{\alpha_i} - \tau\gamma n)^2, \tag{1}$$

where  $\tau$  is the tax rate, which is assumed to be linear,  $\gamma$  is income, which is distributed equally,  $n$  is the population,  $p$  is the probability of an event with the agent-specific cost  $e^{\alpha_i}$ , where  $\alpha_i \sim N(\mu, \sigma^2)$ , and the risk can be ameliorated at unit cost. The first-order condition characterizes the optimal tax rate:

$$\tau = \frac{e^{\alpha_i} - \frac{1}{2np}}{\gamma n} \tag{2}$$

The numerator represents the optimal level of spending to ameliorate the risk from the point of view of agent  $i$ , which is increasing in the cost of the event, the size of the population over which the cost of insurance can be spread, and the probability of the costly event. The tax rate is given by the optimal level of spending divided by GDP. The median voter theorem implies that the tax rate will be set according to (2), where the agent-specific cost,  $e^{\alpha_i}$ , is the risk exposure of the median voter.

### Welfare Implications

To analyze the welfare implications of this result we have to have a frame of reference, so we use as a benchmark the utilitarian optimum, which is the level of taxation that maximizes the summed utility of all agents in society. This is a reasonable perspective, for example, for a benevolent social planner, or for an agent choosing a public policy under the veil of ignorance, who knows the form of his or her utility function (1), but not his or her agent-specific risk profile,  $e^{\alpha_i}$ .<sup>16</sup> In this framework, the utilitarian social optimum involves choosing the

16. In contrast, Rawls (1971) posits that because agents under the veil of ignorance do not know their own attitudes towards risk, they choose the *difference principle* in order to maximize their

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tax rate according to (2), substituting the average level of risk exposure for the risk exposure of the representative agent. Because  $e^{\alpha_i}$  rises more rapidly as  $\alpha_i$  increases—that is, because agents are risk averse—the average risk exposure is higher than the median risk exposure for a broad class of risk distributions. In other words, risk aversion implies that the median voter prefers a level of insurance lower than the social optimum. In particular, under the assumption made above that  $\alpha_i$  is distributed normally,  $e^{\alpha_i}$  is distributed log-normal, so the mean is  $e^{\mu + \sigma^2/2}$ , which is strictly greater than the median, which is  $e^\mu$ .

In contrast, agents would achieve the social optimum in an efficient market for insurance (one with full information and no commitment problems). Each agent,  $i$ , purchases insurance such that the marginal cost equals the marginal benefit, and the insurance agent captures any externalities (e.g. prenatal care reduces the risk of low birth-weight babies, and building dykes reduces the risk of flooding within a neighborhood) so that the marginal social benefit equals the marginal social cost.<sup>17</sup> Again, the sum of the insurance purchased by all of the agents equals the total expected social benefit of insuring against the event, and the average level of insurance equals the average benefit. Where markets for insurance are missing or inefficient, however, or where insurance is technically infeasible, there exists a market failure that requires government intervention. In these cases, government action will systematically under-provide investments to ameliorate crises, because the median voter chooses a level of public provision that is lower than the social optimum.

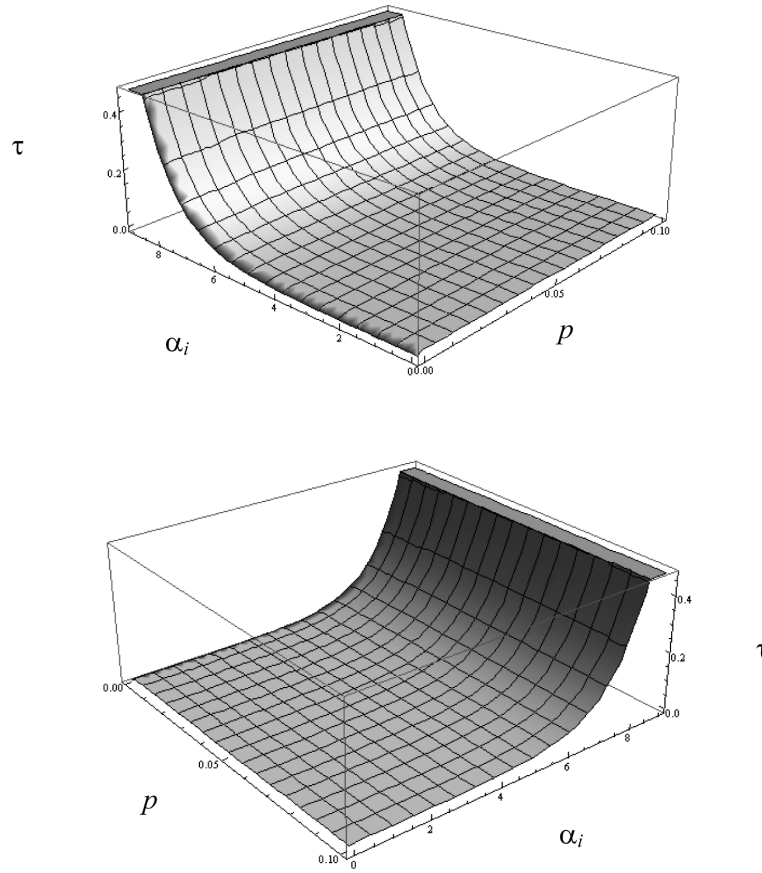
Figure 1 illustrates this result with a numerical example. The vertical axis represents the optimal tax rate from the point of view of a voter with risk exposure  $\alpha_i$ , conditional on the probability of a catastrophic event,  $p$ . The two figures present the same results rotated one-hundred eighty degrees. The rapidly increasing slope of the plane indicates that the preferred tax rate changes dramatically as risk exposure increases. Thus, a relatively small gap between the median and average risk exposure could lead to a substantial shortfall in insurance.

The model can be enriched to explore the implications of supermajority rules for dealing with emerging policy problems. Assume a status-quo allocation of resources and an exogenous increase in the salience of the issue (a shift in the distribution of  $\alpha$ ). In our median voter framework, the median voter will choose the new, higher level of  $\tau$  that equilibrates (2) given his or her risk profile. If we introduce the requirement that policies must be adopted by supermajority, however, the inefficiency becomes greater. The decisive voter under supermajority rule has less risk exposure than the median voter. Since the median voter wants to increase insurance to a higher level than any decisive voter who represents a smaller subset of the population with lower risk exposure,

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minimum payoff. The difference principle allows inequities to arise only if they are necessary in order to improve the welfare of the agent who is worst off. This strategy of maximizing the minimum pay-off, however, does not follow from Rawls' framework, and constitutes an auxiliary assumption.

17. Coase 1960.



**Figure 1**  
Tax Rate as a Function of Event Probability and Median Risk Exposure

Note: The tax rate is  $\tau$ , event probability  $p$ , risk exposure  $\alpha$ . Simulations assume  $n = 10,000$ ,  $\gamma = 1$ ,  $5.0 \times 10^{-7} < p < 0.1$ ,  $0 < \alpha_i < 9$ .

supermajority rule constrains public insurance against newly emerging policy problems to be less efficient than simple majority rule.

*International Cooperation on Long-Term Problems*

The model presented in the previous section provides a simple strategic account of why governments systematically under-invest in policies that contribute to the common good, when that common good consists of reducing risks that are unevenly distributed across the population. Thus, it is not irrationality, short-sightedness, or ignorance that explains the failure to address chronic public pol-

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icy problems, but rather democratic decision-making. These problems become exacerbated, however, at the international level. Developed-country consumers rationally choose to shift the risks of global climate change and financial instability to the exposed populations of developing countries, rather than engage in expensive adjustment strategies. Climate change and financial instability are long-term problems in the sense that no one can be certain whether or when he or she might be adversely affected by them, so the unequal distribution of risk creates a bias in favor of suboptimal policy responses.

International cooperation on long-term policy problems is particularly difficult when new problems appear on the political agenda. When a new issue arises on the international stage, the status quo policy is inactivity: zero investment to reduce this particular form of risk. Therefore, the maximum feasible policy change will be constrained by the preferences of the pivotal voter with the lowest exposure to the risk in question. The more restrictive are the requirements of supermajority voting, the lower is the level of policy response to new issues, and the greater is the inefficiency.

International policy innovation is more difficult than domestic coordination because international decision-making processes rarely operate by majority vote. In most international institutions, voting is by supermajority of some sort: veto players in the UN Security Council, qualified majority voting in the European Council, votes weighted by quota in the IMF, the supermajority requirements for ratification of the Kyoto Protocol, or the consensus model used in the WTO. When institutionalized forms of decision-making are absent, policy coordination requires ad hoc bargaining which may impose much higher *de facto* voting thresholds. If we assume that risks are unevenly distributed across states (and generally negatively correlated with vote shares and informal influence in international organizations, because risks and vote shares depend on wealth and power), these supermajority requirements reduce the possibilities of risk sharing beyond the level that would have been possible under majority rule.

This appears to be a persuasive explanation for the fact that international financial institutions that are intended to insure against the risks of global financial crises are left with resources that are inadequate for the task, leaving states to self-insure against such risks by accumulating significant reserves of foreign currency. Similarly, it is a plausible interpretation of the failure of the Kyoto Protocol to lead to substantial progress in limiting the emissions that promote global climate change, and the relative effectiveness of mini-lateral strategies pursued by the European Union.<sup>18</sup>

### International Financial Instability and the IMF

The International Monetary Fund was established at the end of World War II to provide the public good of international financial stability. The Fund takes the

18. Kahler 1993.

form of an international credit union, which allows countries to pool a portion of their international reserves and make them available to other members that are experiencing shortages of foreign exchange, runs on their currencies, or short-term balance of payments disequilibria. The benefits are public in the sense that the benefits of insurance against financial crises are non-rival, and because the externalities provided by financial stability in other countries are non-rival and non-excludable. If each country self-insures, it will balance the insurance benefits of holding foreign reserves and pursuing prudent macroeconomic policies against its other macroeconomic objectives, and will not factor in the benefits to third parties.

The support that the IMF provides, however, is more like a calculated risk than an insurance policy. The Fund provides only a portion of the financing necessary to fill a borrowing country's financing gap, or the difference between anticipated capital inflows and outflows. It counts on private capital flows, official donors, other multilateral lenders and policy corrections to make up the rest.<sup>19</sup> The probability of program success increases with the amount of official financing provided, and becomes more doubtful as the emphasis shifts to mobilizing private resources. As a result, the balance of risks between the IMF and its borrowers has shifted to the detriment of developing countries, because the IMF is smaller relative to the world economy than at any time since its creation. Had the Fund maintained its size relative to international trade in 1945, it would have had nine times more resources to lend than it had by the turn of the century; and had it kept pace with cross-border capital flows, it would have been larger still.<sup>20</sup> At the beginning of the 2008 financial crisis the IMF had approximately US\$ 290 billion available to lend to its members, a figure that was quickly dwarfed by the size of national bailout packages announced in the United States, Europe, China and Japan. As late as 1977 the Fund was able to borrow sufficient funds from its members by mobilizing its General Agreements to Borrow to rescue Italy and Britain, but thirty years later it is much too small to rescue any of the G-7 countries.

This is a consequence of a voting system with numerous veto points. A revision of IMF quotas requires an 85 percent majority vote of the membership under a system of weighted voting that gives the United States a blocking vote share of approximately 17 percent. US approval, in turn, requires passage of implementing legislation by both houses of Congress, and these votes have typically been hotly contested partisan contests. Thus, the pivotal voter on an IMF quota revision is usually a conservative Democrat in the US House of Representatives, whose constituents have little to fear from financial crises in developing countries. It is unsurprising if international insurance is underprovided. Furthermore, Congress has used its power to block IMF quota revisions to extract

19. Copelovitch 2009; Gould 2006; and Pop-Eleches 2009.

20. Fischer 1999.

numerous policy concessions from the Fund, some of which run counter to the Fund's legally defined purposes.<sup>21</sup>

Another way in which the burden of risks has shifted is the evolution of IMF conditionality. The degree to which disequilibria should be countered by policy changes rather than by infusions of liquidity has been controversial from the beginning of the Fund's operations. The net creditors of the IMF insist that insurance should be balanced with conditionality, so that countries make policy changes that contribute to financial stability in return for support during a crisis. The United States used its formal veto powers to bring the business of the Fund to a virtual standstill in 1950, until the rest of the membership acquiesced in the formalization of conditionality.<sup>22</sup>

The degree of this conditionality has gradually expanded: in the 1970s, only 26 percent of IMF loan disbursements involved substantial conditionality, but this figure increased to 66 percent by the end of the 1980s.<sup>23</sup> Meanwhile, the average number of binding conditions included in an IMF program climbed from 7 in the late 1970s to 12 in the 1980s.<sup>24</sup> In subsequent decades the number of conditions has further expanded, conditionality has become more detailed, and the policy areas being monitored have extended into more sensitive areas. While this is often blamed on bureaucratic mission creep,<sup>25</sup> it occurred with the active support and encouragement of the G7 countries that effectively control the IMF's operations and policies.

The balance of risks has shifted further because of the deregulation of international capital flows. The IMF was originally designed to be the guardian of the system of fixed exchange rates inaugurated at Bretton Woods, and its Articles of Agreement embodied the expectation that countries would maintain capital controls. The objective was to limit the volatility of international capital, which might otherwise destabilize the system of fixed exchange rates and hinder Keynesian demand management. A series of policy decisions by countries with the most advanced capital markets, however, created pressures for the gradual dismantling of these controls, and eventually abolishing capital controls became the official policy of the European Union and the OECD, and the unofficial policy of the IMF.<sup>26</sup>

The consequence is that the global financial system has shifted significant risks to the developing countries, which are most exposed to volatile capital flows, interest rates and terms of trade. The Korean financial crisis in 1997 is a case in point. The Korean crisis was caused by contagion from the financial disturbances that began in Thailand during the summer and rapidly spread throughout the region as foreign lenders refused to roll over their short-term

21. Woods 2006, 29–33.

22. Gould 2006.

23. Boughton 2001, 561.

24. Gould 2006, 60.

25. E.g. Vaubel 1991.

26. Helleiner 1994; Abdelal 2007; and Chwieroth 2009.

loans. Korean fundamentals were not out of line, and there was little question that the Korean economy would have sufficient foreign earnings to repay its debts, but there was an acute liquidity crisis. IMF Staff estimated that a loan of US\$ 55 billion was needed to cover short-term debt coming due in December and needs for central bank intervention, but leading members of the Executive Board refused to contemplate a loan of that size. Although the program was formally matched by US\$ 22 billion in bilateral assistance that took the form of a “second line of defense,” it was as well known to the markets as to the Korean government that this financing was not really going to be made available if it were needed.<sup>27</sup> In order to close the financing gap, therefore, the IMF was compelled to impose as conditions of its loan to Korea a more rigorous set of contractionary policies—interest rate increases coupled with fiscal cuts—than Staff believed was warranted, which had the effect of deepening the recession, causing widespread bank failures, and exacerbating the crisis of confidence.<sup>28</sup>

The Asian crisis and crises that soon followed in Russia, Brazil and Argentina undermined confidence in the effectiveness of insurance through the IMF. Korea demonstrated that even relatively well-run, prosperous, and rapidly growing economies were vulnerable to sudden reversals of fortune on international capital markets, and IMF resources were inadequate to stem the tide. As a result, numerous countries turned to self-insurance by undervaluing their exchange rates and accumulating huge quantities of foreign reserves—China accumulated \$2 trillion by 2008, or almost one-half of its gross domestic product (GDP). To critics who fear that IMF lending promotes moral hazard, this may not appear to be a bad thing, since any country that accumulates reserves is less likely to suffer a financial crisis. The cost to China of accumulating excess reserves and depressing the national currency, however, was to tie up enormous amounts of capital in unproductive uses, to depress consumption, and to transfer a substantial share of GDP to the United States in the form of seigniorage. Meanwhile, the same set of policies drove up the US current account deficit and helped to fuel the US asset bubble that burst in 2008, with systemically destabilizing results. Indeed, it was the destabilizing consequences of the “beggar thy neighbor” policies of competitive devaluation pursued in the 1930s that convinced policymakers in 1944 of the need to create an International Monetary Fund to foster cooperation.

### The Kyoto Protocol

The 1997 Kyoto Protocol on global climate change represents a more extreme example of under-provision of public goods than the International Monetary Fund, because it was an effort to create a new international regime. International financial instability was recognized as a fundamental problem of world

27. Blustein 2001; and Copelovitch 2009.

28. Feldstein 1998; and IEO 2003.

order by the end of the Second World War, and an international settlement that made no provision for stabilizing financial exchange was unthinkable. Although veto players constrained the growth of IMF resources, the status quo includes a powerful and remarkably autonomous organization with significant resources and prestige. On the other hand, global climate change emerged gradually as an issue for international cooperation, and until the early 1990s was characterized by the absence of any international regime.

The Kyoto Protocol was negotiated under circumstances of significant disagreement about subjective risk assessments. These disagreements reflected numerous institutional differences, including the different degrees to which political constituencies are represented under the American single-member district (SMD) and the European predominantly proportional representation (PR) systems, as well as some objective differences in risk exposure. While I have not extended the simple model presented above to account for these institutional features, the differences between Europe and the United States over climate change can be conveniently summarized as different levels of subjective risk exposure. Note that this argument does not require that the risks of global climate change were in fact greater for Europeans than for Americans; it simply requires that the risk assessment of the pivotal voter was higher in Europe than in the United States. The outcome of the 2000 and 2004 presidential elections in the United States suggests that this was the case. In addition, the system of geographical representation in the United States over-represents producer interests that oppose a vigorous policy response. The consequence was that the Europeans consistently staked out more ambitious targets for controlling CO<sub>2</sub> emissions than the United States was willing to entertain, and the best agreement that was achievable through international cooperation was less expansive than what the Europeans ultimately proved willing to provide on a mini-lateral basis that excluded the United States.

The process that led to the Kyoto Protocol began in 1992 at the United Nations Conference on Environment and Development in Rio de Janeiro, where 194 countries signed the UN Framework Convention on Climate Change.<sup>29</sup> Advanced industrial countries and twelve post-Communist countries pledged to stabilize their emissions at 1990 levels by the year 2000. This goal turned out to be unenforceable for the industrial countries and unconstraining for the post-Communist ones, whose industry rapidly declined in any event. Meanwhile, the parties began substantive negotiations to develop concrete thresholds and binding commitments for emissions reductions. Throughout this process, however, the difficulty of achieving legislative ratification of whatever agreements were reached hampered progress on converting ambitious objectives into meaningful agreements.

The resulting Kyoto Protocol of 1997 fell far short of the hopes of the participants, even as the evidence mounted that global climate change was acceler-

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29. Bodansky 2001.

ating. Developing countries such as China and India, which soon joined the ranks of the leading producers of greenhouse gases, refused to adopt any obligations. Even some members of the OECD, including Turkey, Korea and Mexico, escaped with no binding obligations. Meanwhile, the emissions targets became less ambitious: the original EU proposal foresaw 15 percent reductions of CO<sub>2</sub> below 1990 levels by 2010, and the Protocol as signed called upon developed-country signatories to make average reductions of only 5.2 percent. Individual countries adopted highly variable emissions targets, ranging from 8 percent decreases for the European Union as a whole to 10 percent increases for Iceland. Even the Kyoto benchmark was quickly eroded by US calls for credits for forestry and agriculture “carbon sinks.” By the time these procedures were finalized at the Marrakesh Conference in 2001, the effective quotas were estimated to represent an aggregate target of 101 percent of 1990 emissions.<sup>30</sup>

In spite of this gradual erosion of European ambitions in the climate change area, the extreme divergence in preferences between the United States and the European Union ultimately made a transatlantic agreement impossible. Veto players within the United States ground the process to a halt. In the lead up to Kyoto the US Senate had passed the Byrd-Hagel Resolution, rejecting any agreement that would “result in serious harm” to the US economy or would fail to restrict emissions by developing countries, conditions that no feasible treaty could meet.<sup>31</sup> President Clinton refused to send the treaty to the Senate because he did not believe it could be ratified, and soon after coming into office in 2001 the Bush administration announced the US withdrawal from the treaty, claiming that it was “fatally flawed in fundamental ways.”

The final outcome of the negotiations reflected the supermajority provisions of the treaty framework, which required a double majority of signatories to ratify before the treaty could come into effect, reflecting both the number of countries and their shares of global CO<sub>2</sub> emissions. Once the United States had withdrawn from the ratification process, therefore, Russia’s participation became arithmetically necessary to make the treaty binding on any of the participants. As a result, Russia was able to wield considerable influence, achieve a set of targets that were not constraining, and use its key role in the Kyoto process to extract concessions from the European Union on other issues. In the end, almost all of the countries that adopted meaningful targets in the Kyoto-Marrakesh process were either members of the European Union or candidate members over whom the EU had substantial political influence.

30. den Elzen and de Moor 2001.

31. The Byrd-Hagel Resolution stated, in part, “Resolved, That it is the sense of the Senate that the United States should not be a signatory to any protocol to, or other agreement regarding, the United Nations Framework Convention on Climate Change of 1992, at negotiations in Kyoto in December 1997, or thereafter, which would (A) mandate new commitments to limit or reduce greenhouse gas emissions for the Annex I Parties, unless the protocol or other agreement also mandates new specific scheduled commitments to limit or reduce greenhouse gas emissions for Developing Country Parties within the same compliance period, or (B) would result in serious harm to the economy of the United States . . .” (Byrd-Hagel 1997).

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Experts believed that the largely symbolic reductions achieved through the Kyoto process would do little or nothing to ameliorate the risks of global climate change; in many countries, they were not expected to require any policy adjustment at all. Even this assessment proved to be optimistic, however, as implementation of even the modest Kyoto Protocol targets has proved to be problematic. The best that could be said for the process was that it might prove to be a first step, which established the normative principle of controlling CO<sub>2</sub> emissions and created institutions for exchanging expertise and trading emissions rights. On 21 February 2007, the European Union announced a mini-lateral plan to supersede the Kyoto obligations, pledging the European Union to reduce aggregate emissions by 20 percent by 2020, with the further promise to reduce emissions by up to 30 percent if other countries joined the EU initiative. In 2009, the new Obama administration signaled that the United States did not intend to continue to be a veto player, and took its first unilateral steps to reduce greenhouse gases. Where multilateral cooperation had been blocked by heterogeneous risk assessments, mini-lateralism might yet succeed in providing some meaningful efforts to ameliorate risk. The striking conclusion from the case of climate change to date, however, is that international efforts to do something concrete to address the problem have been blocked or steadily eroded by the opposition of key veto players even as the scientific evidence of the severity of the environmental threat has mounted.

## Conclusions

Long-term policy problems are characterized by public externalities and agent-specific risk exposure. Democratic public policy systematically under-invests in efforts to ameliorate long-term problems because the median voter prefers a level of insurance that is below the social optimum. If the status quo policy is a low level of public investment, these problems are exacerbated when decisions are made by supermajority or consensus rather than by simple majority rule. Emerging long-term public policy problems are therefore most inadequately addressed when the necessary solutions involve international policy coordination, because international cooperation involves veto players and supermajorities rather than simple majority rule.

The Kyoto Protocol provides an illustration of the difficulty of achieving broad, multilateral cooperation when key players differ markedly in their risk assessments. In this case, the policy issue in question was not precisely new—the greenhouse effect had been discovered by Joseph Fourier in 1824, and global climate change had been linked to CO<sub>2</sub> levels by Svante Arrhenius in 1896<sup>32</sup>—but a scientific consensus only emerged around 1990, and the status quo policy was zero investment in limiting carbon emissions. New scientific discoveries in the 1990s and after revealed the contours of the underlying prob-

32. Arrhenius 1896.

lem to be much more threatening than the parties to the 1992 UN Framework Convention on Climate Change had originally believed. Nevertheless, veto actors found it possible to prevent substantial policy reform at the global level, and drove a gradual erosion in the objectives of the agreement. In such cases mini-lateral solutions that pool the efforts of states that share high risk assessments may be more effective than multilateral coordination, even when they must accept free riding by non-participants. In the case of climate change, the European Union provided the strongest policy response, and moved ahead with a small coalition when the largest carbon-emitting countries refused to participate.

The International Monetary Fund likewise provides an example of a form of international insurance that is underprovided, insurance against the risk of sudden reversals of capital flows. In this case the issue is not new, but the degree of exposure to risk has steadily climbed as international trade and capital flows have expanded. Again, veto players in the US Congress have prevented insurance from keeping pace with the growth of the global economy or with the expansion of international flows. In this case, the unequal distribution of risks is even more pronounced than in the case of global climate change, and in this case self-insurance is feasible for individual countries. As a result, countries turned to a private solution, depressing the value of their national currencies and accumulating foreign reserves. Until the 2008 financial crisis, this led to a sharp decline in borrowing from the IMF.

The technical features of climate change and international finance are quite different. Furthermore, the IMF is a well-established institution in which numerous players have important vested interests, and efforts to reform it can only be very incremental as a result. In contrast, the Kyoto Protocol was an attempt at institution building, and the status quo allocation of resources was zero. Its own supermajority design and the requirement of legislative ratification built numerous veto players into the bargain. As a result, the under-provision of the international policy response is much more striking in the case of global climate change than in international finance. In spite of these differences, the contrasts between the two cases for the present argument are less important than the similarities. In both cases, the under-provision of resources was due to supermajority voting rules, which prevented policy innovation in the face of exogenous changes to the policy environment.

The failure to adequately address long-term policy problems is rooted in democratic politics and the need for international cooperation. Ironically, one potential solution to democratic neglect of long-term problems may be the “democratic deficit” that has long been identified as a challenge for international institutions. Institutions that are effective, such as the European Union, gradually accumulate prerogatives that transfer ever increasing areas of public policy making from elected representatives to appointed international bureaucrats. Since bureaucrats tend to self-select into agencies that represent their preferences and agencies’ corporate cultures tend to reflect their technical missions,

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international organizations tend to be policy outliers that are strongly interested in solving the problems within their purview.<sup>33</sup>

One way in which this happens is through the increasing legalization of international institutions.<sup>34</sup> The delegation of rule-making authority to international courts and quasi-judicial agencies is often explained in terms of transaction costs, but it has real distributional consequences because it removes veto players from the bargaining process. International courts act strategically to protect their long-term influence, so they accommodate powerful interest groups. Nevertheless, international courts have steadily expanded their prerogatives and provided a powerful impulse to European integration.<sup>35</sup> In the process, they have short-circuited the avenues of influence for numerous interest groups that would otherwise have blocked the formulation of European policies. Transferring competency to the European Union may promote extreme policies, because European countries are represented in the policy process through Councils of Ministers, which consist of environment ministers when environmental issues are on the table, finance ministers when financial issues are under discussion, and so forth.

An implication of the democratic disadvantage at addressing long-term problems is that there is a functionalist rationale for delegating problems to unelected international bureaucrats who can be expected to choose policies that the median voter would regard as extreme. In fact, the democratic deficit may enhance welfare.

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33. This is a rationalist statement of the main insight of Barnett and Finnemore 2004, although Barnett and Finnemore are less sanguine about the consequences of delegating authority to unelected officials.

34. Abbott and Snidal 2000.

35. Garrett 1992.

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