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Monetary Power

Money can't buy love, but it improves
your bargaining position.
—*Christopher Marlowe (1564–1593)*

We have looked at currency and power separately. Now it is time to start bringing the two together. Analysis begins here at the broadest level, with the general concept of international monetary power. What are the sources of power in international monetary relations? Where does monetary power come from? How does it manifest itself? And what role does currency play in this specific context?

This chapter argues that in the context of monetary affairs, power is all about autonomy. The central issue confronting states, first and foremost, is the distribution of the burden of adjustment to external imbalance. The ultimate foundation of monetary power lies in a capacity to avoid the costs of payments adjustment—to maintain the state's policy space, as free as possible from foreign constraint. From these roots grow diverse instruments and opportunities for the exercise of influence abroad.

Ceteris paribus, the greater a state's capacity to avoid adjustment costs, relative to that of other countries, the greater is its monetary power. But the devil, of course, is in the details. What do we mean by adjustments costs? What are the sources of the capacity to avoid adjustment costs? What are its limits? And what is the specific role of a nation's currency as a source of power? The aim of this chapter is to address these critical questions.

In brief, I argue that adjustment costs can be said to come in two forms—a *continuing* cost of adjustment and a *transitional* cost of

adjustment. Corresponding to each of these costs, in turn, is a specific form of monetary power—respectively, a power to *delay* adjustment and a power to *deflect* adjustment. The sources of the power to deflect lie in the structural characteristics of national economies. The power to delay, by contrast, is derived more from financial variables, including especially central bank reserves and external borrowing capacity. Currency internationalization enters the picture as a significant enhancement of access to external credit. For the privileged few states whose national currencies play international roles, the power to delay is amplified.

Previous Discussions

As indicated in the introduction, the modern field of IPE has had remarkably little to say about the concept of power in monetary relations. There is no generally accepted theory of monetary power. All we have is a fractured and scattered literature that shares barely any consensus at all. As in the wider IR field's approach to power analysis, we find theoretical confusion and cacophony.

Broadly, comments on monetary power tend to fall into some four loose clusters. First are the many discussions that simply take the concept of monetary power for granted. The very familiarity of the notion seems to obviate any need for explication. Illustrative is an early article by the noted scholar Joanne Gowa on an important monetary negotiation that took place back in the 1970s.[1] The article is often cited for its pioneering incorporation of power considerations. At issue was a proposal to create a so-called substitution account at the International Monetary Fund to absorb excess reserve holdings of dollars at a time when prospects for the greenback were cloudy. The whole of Gowa's analysis rested on the assumption that US monetary power was in decline. Yet at no time did she offer a definition of the concept, let alone any analysis of its underlying characteristics or sources. Though regrettable, the omission was by no means exceptional. In the years since, many other discussions have gone the same route. The practice is common.

A second cluster takes monetary power more seriously but concentrates mainly on its limits. What might inhibit the exercise of monetary power or cause its erosion over time? Most often the subject is the United States, the post–World War II global hegemon, whose monetary dominance has long been expected, sooner or later, to fade. More than three

decades ago, Robert Keohane was already writing about what the world might look like *After Hegemony*.[2] Central attention has been placed on the role of America's persistently rising level of international indebtedness. From Helen Milner to Jonathan Kirshner,[3] scholars have systematically explored the implications of foreign debt for America's position in world politics. But all the emphasis is on how influence may be constrained rather than on where the capacity for leverage comes from.

Third are discussions that bypass questions about monetary power's roots to focus instead on the diverse pathways by which influence might be expected to operate. Though the language of conventional power analysis is rarely invoked formally, such contributions are in fact all about the several faces of power. Some scholars, such as Kirshner,[4] place greatest emphasis on the direct instrumental use of monetary capabilities—the first face of power. The focus is implicit in the title of Kirshner's pathbreaking book *Currency and Coercion*. It is also implicit in his choice of terms like enforcement or expulsion, which certainly seem to suggest self-conscious influence attempts. The bulk of *Currency and Coercion* is about what Kirshner calls the "practice" of monetary power: the deliberate use of leverage to achieve state objectives.

Others are more interested in what might be regarded as structural power—the second face. One example is Beth Simmons, in a pioneering analysis of international capital-market regulations.[5] Regulatory harmonization, she argued, is heavily influenced by the "financial power" (undefined) of the United States. Whatever it does, America "has the potential to change significantly the context for financial markets and hence it affects regulators in the rest of the world,"[6] who then must decide whether to emulate or resist US actions. The logic seems based de facto on a Stackelberg leadership model, with the United States cast as first mover unilaterally establishing a payoff structure for others. Other examples include Eric Helleiner,[7] who aims to demonstrate the relevance of Strange's conception of structural power in monetary relations; and Carla Norrlof,[8] who has repeatedly sought to highlight the unique "structural advantages" that the United States enjoys in monetary affairs. Closely related is Kirshner's notion of entrapment, which operates through a reordering of incentive structures.[9]

And yet others, inspired by constructivism, appeal to a logic of appropriateness—the third face of power. Best known here is Kathleen

McNamara, who in a seminal study highlighted the power of ideas in the historical decision to create a common currency in Europe.[10] The aim of European governments, she contended, was to lock in monetary stability and neoliberal policies. The inspiration was Germany, whose economic success set a standard for its regional partners to emulate—in effect, a demonstration of soft power.

Whatever the pathway chosen, however, the focus remains on the *effects* of power—whether or how behavior is influenced—rather than on its *causes*. One is reminded of what Dahl called the "lump" concept of power. Capabilities are simply assumed, a raw potential. The only question is how those capabilities manage to manifest themselves—whether, to recall Colin Hay's terms, by decision-making, agenda-setting, or preference-shaping.

Finally, there is a fourth cluster—a few brave souls who have actually tried to move beyond the limits or uses of power to systematically explore the concept's underlying meaning and roots. Perhaps most prominent here is Eric Helleiner, who is rightly critical of scholarship that is "more interested in how international monetary power is expressed and what it can accomplish than in its sources."[11] In a notable contribution, Helleiner (2006) emphasizes what he calls the "micro-level" sources of monetary power. These include a dominant state's ability to influence regulatory trends and crisis management in financial markets as well as a capacity to influence perceptions of identity and self-interest. "Attention to how a dominant state can shape these elements," he argues, "provides important insights into the nature of . . . monetary power."[12]

There is no denying the relevance of the factors Helleiner highlights. But there is also a problem. Can these elements really be regarded as *sources* of power? In reality, each is best understood as a manifestation of a state's *capabilities* in monetary affairs rather than as one of monetary power's ultimate roots. Ironically, it turns out that like most others, Helleiner too seems more interested in what power can accomplish than where it comes from. As we saw in the previous chapter, any analysis of power should distinguish clearly between the roots of power and its possible modes of expression. Influence over financial regulation or crisis management may be understood as expressions of the first or second faces of power; an ability to shape preferences is of course what we mean by the third face. As such, they all illustrate the instrumental use

of capabilities, not the foundational sources of power. That is the reason why, in this chapter, I emphasize the macro-level of analysis and the central importance of the distribution of adjustment costs. There is where the real roots of monetary power can be found.

Admittedly, my focus on adjustment costs is hardly novel. Other scholars courageous enough to explore the sources of monetary power have also placed the distribution of the burden of adjustment at the heart of their analysis. Inter alia, these have included David Andrews, Michael Webb, Randall Henning, Matthias Kaelberer, and, most recently, Mattias Vermeiren.[13] But most treatments over the years, including previous attempts of my own,[14] have tended to be regrettably ambiguous about what is actually meant by adjustment costs, leaving analysis incomplete. If we are to achieve full comprehension of the sources of monetary power, we need a systematic understanding of what, precisely, the notion of burden is supposed to mean in the context of payments adjustment. In a paper published in 2006,[15] I made a start toward a fuller exegesis of the notion of adjustment costs and the role they play in the genesis of monetary power. This chapter builds on the insights of that earlier paper.

The Burden of Adjustment

Thus we begin with the distribution of the burden of adjustment to external imbalance. Central to the analysis of monetary power, I argue, is a state's capacity to avoid adjustment costs, either by delaying the adjustment process or by deflecting the burden of adjustment to others.

The Balance of Payments

Adjustment is a natural part of the monetary relations among states. Over any given period, a country experiences both monetary inflows and outflows—on the one side, revenues from the sale of exports of goods (merchandise trade) and services ("invisibles") or from various forms of inward capital movement; on the other side, expenditures on imports of goods and services or various forms of outward capital movement. The summary of inflows and outflows is called the *balance of payments*—a record of all monetary transactions between the residents of a country and the rest of the world. Every nation, by definition, has a balance of payments.

The difficulty is that the balance of payments does not always balance. Revenues may either exceed or fall short of expenditures. The economy may run either a surplus or a deficit. That is what we mean by external imbalance (disequilibrium). The question then is: What can the country do about it? Basically, there are two choices: *financing* or *adjustment*. Either the imbalance must be paid for, or it must be eliminated.

Consider a deficit. Financing means finding the wherewithal with which to pay for the excess of foreign spending over revenues. No problem, the uninitiated might think. Most countries have their own currency, created and managed by a central bank. Why not simply print up more money to pay for the economy's external obligations? The answer should be obvious: most local money is unacceptable to foreigners. Few outsiders have much use for obscure currencies like the Eritrean nakfa or the Laotian kip. Deficits, if they are to be financed at all, must be paid for with currencies that, in turn, are likely to be accepted elsewhere. These are the international currencies—the national moneys that play international roles. To finance a deficit, an economy must come up with a sufficient amount of *international* money to pay its overseas bills.

Where does the international money come from? Basically, bills can be paid in one of two ways: by dissaving or by borrowing. *Dissaving* means running down accumulated foreign assets (claims)—for example, by liquidating investments abroad or by drawing on the currency reserves of the country's central bank. *Borrowing* means piling up foreign debts (liabilities) by arranging loans of some kind from one source or another. Either way, whether via dissaving or borrowing, the country's balance of international indebtedness—its net worth—worsens. And therein lies the rub, because the deterioration of net worth cannot go on forever. Sooner or later, external assets and borrowing limits will be exhausted—which means that sooner or later the deficit will have to be eliminated. Foreign revenues will have to be increased or foreign spending will have to be decreased. That is what is meant by adjustment.

In principle, adjustment can be achieved by using any of three classes of policy instrument. These are what may be called the three *D*'s—devaluation, deflation, and direct controls. *Devaluation* (or depreciation) means lowering the exchange rate of the national currency, reducing the price of exports and import-competing production relative to foreign goods and services and thus encouraging an improvement of the

trade balance. *Deflation* (also known as internal devaluation or austerity) means acting to reduce the overall level of spending in the economy, thus lowering imports. That may be achieved through either monetary policy (the central bank's control of money supply and interest rates) or fiscal policy (the government's own spending and revenues). Restraints on price increases may also improve the economy's cost competitiveness. And *direct controls* mean making use of available policy instruments to limit import volumes (tariffs and nontariff barriers) or outward flows of capital (capital controls and exchange restrictions).

For surplus economies, the options are the same but with opposite sign. External imbalances can be allowed to result in a buildup of international assets or can be used to pay off foreign debts, improving the nation's balance of international indebtedness; or the disequilibrium can be eliminated by way of exchange-rate revaluation (appreciation), domestic expansion, or easing of trade and capital controls. Revaluation will raise the relative price of home goods and services, reducing a trade surplus. Domestic expansion will stimulate purchases of imports and, through price inflation, may lower the economy's cost competitiveness. And easing direct controls will permit more spending on foreign output or investments.

In practice, however, adjustment choices are tricky, since none is without some cost to the economy at home. As will become clear, this is true whether an economy is in deficit or in surplus. When it comes to eliminating external disequilibrium, there is no free lunch. Adjustment may be costly in either economic or political terms. Each option involves a burden of some kind. Every state, therefore, has an incentive to avoid the costs of adjustment as much as it possibly can. Put differently, every nation has an incentive to maximize its international monetary power.

Autonomy and Influence

In this context, it is clear that the distinction between the two dimensions of power, autonomy and influence, is critical. Avoidance of adjustment costs need not involve any direct attempt to pressure or coerce others. Policy choices may be purposeful, but they do not necessarily involve an "influence attempt." The goal is simply to preserve policy space. Avoidance of adjustment costs is all about autonomy: a desire to maintain

as much operational independence as possible. The idea is to maximize "power to," not "power over."

Autonomy, of course, is prized by governments in every aspect of international relations. Its salience, however, is most evident in economic relations, which by definition create a condition of interdependence with other states that is both active and ongoing. Economic relations involve transactional linkages and networks, creating webs of mutual dependency. And in no area of economic relations is the salience of autonomy more evident than in the realm of monetary affairs, where states are inescapably tied through the balance of payments. The risk of unsustainable payments disequilibrium represents a constant threat to policy independence. Excessive imbalances automatically generate mutual pressures to adjust, to help move the balance of payments back toward equilibrium. But no government likes being forced to compromise key domestic policy goals for the sake of restoring external balance. All, if given a choice, would prefer to see others make the necessary sacrifices. In monetary affairs, therefore, the foundation of state power is *the capacity to avoid the burden of adjustment required by payments imbalance*.

The core importance of autonomy in this regard has not always been fully appreciated in the scholarly literature. Indeed, most discussions of monetary power prefer to stress the external dimension—the capacity to control the behavior of others in one way or another—rather than the internal dimension. But we cannot ignore the functionally derivative nature of the external dimension. Only if a state is actually able to avoid the burden of adjustment domestically is it apt to be in a position, in turn, to exert influence elsewhere. Hence if we are interested in getting to the very core of power in monetary affairs, we must go first to the internal dimension. Above all, what matters for the exercise of power abroad is practical freedom of policy action at home.

Not that we can ignore the external dimension entirely. Since monetary relations are inherently reciprocal, a potential for influence, in a real sense, is created automatically whenever policy independence is achieved. By definition, a capacity to avoid adjustment costs implies that if payments equilibrium is to be restored, others must adjust instead. At least part of the burden will be diverted elsewhere. Hence a measure of influence is necessarily generated as an inescapable corollary of the process. That too matters for analytical purposes. But it is also important to keep

in mind the distinction between the two *modes* of influence, active and passive. The influence that derives incidentally from a capacity to avoid adjustment costs is passive, not actively targeted; impacts tend to be diffuse rather than directed. A corollary of the adjustment process, such influence is exercised without premeditation and is best understood simply as the alter-ego of autonomy.

In a sense, passive influence in the adjustment process is relatively uncontroversial, broadly accepted as an unavoidable, if regrettable, consequence of interdependence—a veritable fact of life. Active influence attempts, by contrast, are apt to become far more politicized, since they are both elective and purposeful. The active mode seeks to *compel* others to bear the burden of adjustment, taking us well beyond the notion of influence as simply an incidental by-product of autonomy. The active mode, in effect, aims to translate passive influence into practical control through the instrumental use of capabilities. That is very big difference, indeed, and will figure prominently in following chapters.

The Two Hands of Monetary Power

The core message is clear. While payments disequilibria are necessarily shared—one nation's deficit is someone else's surplus—the costs of adjustment need not be shared at all. Governments thus have every incentive, ceteris paribus, to maximize their capacity to avoid adjustment costs—their autonomy—relative to others.

Toward that end, I find it useful to make use of a distinction that I first outlined in a much earlier attempt to explore the concept of adjustment costs.[16] Specifically, I distinguish between two distinctly different kinds of adjustment cost—one *continuing*, the other *transitional*. Corresponding to each of the two kinds of adjustment cost is a very different sort of monetary power. In the spirit of the anatomical bent of the faces-of-power literature, I choose to call these the two "hands" of power. The distinction between the two hands emphasizes that monetary power is fundamentally dual in nature. On the one side, states have the *power to delay*; on the other, they have the *power to deflect*. A two-fisted government prefers both.

The continuing cost of adjustment may be defined as the cost of the new payments equilibrium *prevailing after all change has occurred*. The

power to delay is the capacity to avoid the continuing cost of adjustment by *postponing* the process of adjustment.

The transitional cost of adjustment, by contrast, may be defined as *the cost of the change itself*. Where the process of adjustment cannot be put off, the power to deflect represents the capacity to avoid the transitional cost of adjustment by *diverting* as much as possible of that cost to others.

The Continuing Cost of Adjustment

To understand the power to delay, we must begin with the concept of adjustment. By definition, adjustment imposes on deficit countries a real economic loss that will persist indefinitely once the process is complete. This is the continuing cost of adjustment. Nothing suits the interests of deficit countries more than a capacity to postpone adjustment for as long as possible.

Payments Adjustment

The standard measure of *balance* in the balance of payments is the current account, which comprises all transactions relating to a country's current national income and expenditures—imports and exports of goods (merchandise trade) and services ("invisibles") plus unilateral transfers. Given the conventions of double-entry bookkeeping, any imbalance on current account is, in principle, exactly matched by a corresponding inflow or outflow of funds on capital account (the balance of all financial transactions, including official reserve transactions). A current surplus implies a net increase of international claims. A current deficit implies a net increase of liabilities.

Adjustment, correspondingly, is the process by which imbalances in the current account—surpluses or deficits—are reduced or eliminated. Import and/or export volumes "adjust" to restore payments equilibrium. Countries with deficits experiences a decline of imports relative to exports; countries with surpluses, the reverse.

Not all imbalances need to be eliminated, of course. Standard economic theory teaches that many current-account imbalances are simply the result of what may be regarded as a kind of rational intertemporal trade—deficit countries borrowing resources from the rest of the world

for productive investment at home; surplus countries investing savings abroad today to support greater consumption tomorrow. Such imbalances, in principle, are sustainable indefinitely and require no adjustment at all. In practice, however, many imbalances go well beyond what can be readily sustained, for all kinds of reasons—for example, because borrowed funds are not invested productively or owing to financial-market limitations. In such instances, which are all too frequent in the real world, adjustments of trade volumes are indeed required.

Adjustments of trade volumes, however, are impossible without a corresponding reallocation of productive resources, and in a market setting resource reallocations will not occur without the stimulus of a change of relative prices or income. The required price and income changes may be promoted directly by the government via the three *D*'s, or they may be allowed to emerge more spontaneously on their own through the pressure of market forces. Formally, adjustment may be defined as "a marginal reallocation of productive resources and exchanges of goods and services under the influence of changes in relative prices, incomes, and exchange rates."[17] This is the classical concept of "real" adjustment, the basic tool of open-economy macroeconomics.

Adjustment is necessarily a *mutual* process, reflecting the reciprocal nature of monetary relations. Just as one economy cannot be in deficit without others being in surplus, so resources cannot be reallocated in one without equivalent and offsetting reallocations elsewhere. Should a deficit country move resources into export production that were previously employed in producing for the home market, surplus countries will also find themselves obliged to shift resources about as they begin to receive additional imports. Likewise, should a deficit country increase output in import-competing industries, surplus countries will find themselves selling less and thus with additional resources for use in nontraded production or for export elsewhere. In either case, the reallocation of resources is *complementary*. The process of adjustment is *shared*.

Redistributing the Pie

However, while the *process* of adjustment is necessarily shared, the same need not be true of the *burden* of adjustment. In fact, once equilibrium is restored, the deficit country will unavoidably suffer a real economic loss,

which will persist indefinitely. This is the continuing cost of adjustment, which is *always* borne *wholly* by deficit countries.

To comprehend why, assume a simple two-country model of payments imbalance. For the deficit country, adjustment requires a reduction of imports relative to exports, which is possible only if its real national "absorption"—the sum total of spending by all domestic residents on goods and services—is reduced relative to that of the surplus country. At the new payments equilibrium, therefore, the deficit country must be worse off than the surplus country, in the sense that it will now receive a smaller proportion of the combined output of the two economies. That is what I mean by the continuing cost of adjustment. I label it a continuing cost because it is open-ended—the ongoing sacrifice imposed by the new equilibrium prevailing after all change has occurred.

In absolute terms, the magnitude of the continuing cost may vary considerably, depending on the particulars of the approach to adjustment. The required change in the current account can be accomplished via very different combination of changes in real national income and absorption in deficit countries—for example, a reduction of absorption relative to a more or less stable national income; an absolute loss of national income as well as absorption (via unemployment or an unfavorable movement of the terms of trade); an increase of national income, all of which, however, is absorbed abroad; or even an absolute increase of absorption as well as national income. Whatever the approach taken, however, the bottom line remains the same. At the new equilibrium, deficit countries will receive a smaller share of combined world output—a thinner slice of the pie. That is a sacrifice no matter how you cut it.

Deficit countries, therefore, have every incentive to put off the process of adjustment for as long as possible. Delay pays. So long as there is no change in the status quo, there will be no redistribution of the pie—hence no new burden. The scale of a state's power to delay is indicated by its capacity, in relative terms, to effectively postpone the payments adjustment process.

The Transitional Cost of Adjustment

But that is only one hand of monetary power. The continuing cost of adjustment involves an ongoing sacrifice imposed by the new equilibrium prevailing after all change has occurred; that is, after the adjustment

process is concluded. But the process itself also imposes a sacrifice—the cost that must be incurred to make the necessary change. Each adjustment implies transition, a once-and-for-all phenomenon, and each transition has its own cost, separate and quite distinct from the presumed burden of the new equilibrium obtaining after the transition is complete. That is what I call the transitional cost of adjustment—in effect, the price of getting from Here to There. Governments have every incentive to avoid that cost, too. No country wants to make more sacrifices than absolutely necessary.

The Adjustment Process

To illustrate the nature of the transitional cost of adjustment, consider a worker who, having lost a job and being unable to find a comparable one, finally accepts a lower-paying position. This process of adjustment imposes two costs on the unfortunate individual. The more obvious one is the real sacrifice implied by the new position—namely, the difference between the new wage and the previous wage. This is an open-ended phenomenon, a loss of income that will go on so long as the worker remains in the new position—the continuing cost of adjustment. But, in addition, the worker must have suffered some loss of income during the period of enforced idleness. There may have been some real cost incurred in searching for a new job, investing in new skills, or moving to a new location. This is a once-and-for-all phenomenon, a singular loss of income associated with the process of change itself. That is what I mean by the transitional cost of adjustment.

The question is: Who pays? In the illustration, the burden falls on the worker. But this need not be so. The government, for instance, might provide unemployment compensation, job training, or other forms of adjustment assistance, thus shifting at least some of the cost to taxpayers. Alternatively, part of the burden might be borne by the worker's former employer in the form of a generous severance package, or even by private charitable organizations dedicated to aiding the involuntarily unemployed. In fact, the distribution of the transitional cost of adjustment is, a priori, indeterminate. Unlike the continuing cost of adjustment, which is never shared, the transitional cost is, in effect, up for grabs.

Recall that the process of adjustment necessarily involves a realignment of relative prices, incomes, or exchange rates sufficient to generate

the required reallocation of resources at the margin. The greater the changes of prices, incomes, or exchange rates required, the greater is the transitional cost of adjustment. Most often, equilibrium is restored either by policies of domestic deflation or currency devaluation—what economists call *real depreciation*—in deficit countries, or by domestic expansion or currency revaluation—*real appreciation*—in surplus countries. Implications for the distribution of the burden of adjustment differ greatly depending on which route is taken. Both economic and political elements of cost are involved.

Fixed versus Flexible Exchange Rates

The circumstances under which the transition takes place matter. Consider first a world in which nominal exchange-rate changes are ostensibly ruled out—in today's terminology, a world of "hard" pegs. In that case, distributional implications are reasonably straightforward. With formal devaluations or revaluations largely ruled out, payments equilibrium will most likely require some combination of deflation in deficit economies and expansion in surplus economies. That is, adjustment will be accomplished through either a market-driven fall of prices and incomes in the deficit economies reinforced by restrictive monetary and fiscal policies or a market-driven rise of prices and incomes in the surplus economies reinforced by more expansionary monetary and fiscal policies. In the former case, it is plainly the deficit economies that bear the burden of adjustment. Economically, deflationary conditions will almost certainly result in higher unemployment, slower growth, and perhaps even recession before a new external equilibrium can be established. Politically, austerity is bound to erode a government's popularity with voters. Conversely, in the latter case, it is the surplus economies that pay the price. Accelerated inflation reduces purchasing power and can distort investment incentives. It also tends to be politically unpopular.

Alternatively, consider a world of exchange-rate flexibility, where nominal exchange-rate changes are possible—in today's terminology, a world of "soft" pegs or some manner of floating. In that case, distributional implications are more complex, since governments are no longer limited to domestic deflation or expansion alone. Policy makers can "pick their poison." External adjustment can be allowed to impact prices

and incomes in the domestic economy either directly, with the nominal exchange rate fixed; or indirectly, via the effect of exchange-rate movements; or by way of some combination of the two. In such a world, two separate aspects of the process are influential in determining the costs involved—one involving any movements of exchange rates that do occur; the other involving the degree of domestic price and income changes that ultimately are required, whether nominal exchange rates move or not.

First, suppose some exchange-rate movements do occur as part of the adjustment process. Who bears the onus of responsibility? A realignment of rates may be the result of deliberate policy decisions (formal devaluation/revaluation) or may be essentially market driven (depreciation/appreciation). Either way, governments may be held accountable for triggering or tolerating changes in a currency's nominal value.

Does this matter? In a hypothetical two-country world, where currency values are the inverse of one another, it should make no difference who is seen as responsible for the change. Exchange-rate movements would be symmetrical, a decline of one country's money necessarily equivalent to a rise of the other's. But in the real world of more than 150 state currencies, by contrast, the distinction can matter a great deal. The evolution of a given money's value in relation to any other single currency, its bilateral exchange rate, may be substantially different from the evolution of its value against the population of currencies in general—what is called the *effective* exchange rate. A change in one money's effective exchange rate, even if sizable, may have little impact on individual bilateral rates if spread broadly enough. Conversely, even a small change in an effective exchange rate may have a very large impact elsewhere if concentrated on just one or two bilateral rates. In short, exchange-rate movements may be anything but symmetrical. As a practical matter, therefore, some governments may be exposed to much more criticism than others, even if they are not the first mover.

Essentially, this is a political issue. Exchange-rate changes are difficult to ignore. An exchange rate is like the eye of a needle through which prices of all domestic goods and services are linked and compared with the prices of foreign output. Since this role makes the exchange rate a critical variable in determining the pattern of resource allocation as well as the level and distribution of income, governments have every reason to avoid the onus of responsibility insofar as possible. Nominal

exchange-rate changes can generate considerable backlash among voters, for symbolic as well as material reasons. Devaluation or depreciation is typically interpreted as a defeat for a government's policies, damaging its reputation and credibility. Conversely, revaluation or appreciation may be resented for its potentially painful impacts on balance sheets and the earning capacity of key sectors of the economy. As a practical matter, few governments wish to be blamed for a sizable change in the value of the national currency in either direction.

Second, consider the effect on the home economy, whether exchange rates move or not. Either way, as Stefanie Walter has recently reminded us, there are likely to be significant price and income changes that will impact adversely on the purchasing power or personal balance sheets of key domestic constituencies.[18] All adjustment strategies, she points out, "are usually painful."[19] Some voters will be hurt more by movements of the exchange rate; others, more by internal deflation. But all are apt to hold the government accountable. It is all too easy to blame policy makers for any domestic austerity or inflation that results from the process of restoring external equilibrium. In Walter's words: "Voters who are hurt by the government's policies are less likely to reelect the policymakers who have inflicted this pain on them."[20]

This matters because we know that domestic impacts, too—not just exchange-rate movements—may be anything but symmetrical between states. In practice, prices and incomes may change much more in some economies than in others, depending on circumstances. Adjustment in one country could generate relatively little macroeconomic change at home but considerable price and income pressures abroad, effectively diverting much of the pain of adjustment to outsiders; or, conversely, most of the impact could be bottled up domestically, with little discomfort elsewhere. As a practical matter, few governments wish to be blamed for a sizable impact on the domestic economy, either.

Summary

Overall, then, the distribution of the transitional cost of adjustment will depend on both aspects of the process: first, who bears the onus of responsibility for any exchange-rate changes that occur; and second—whether exchange rates change or not—who is forced to experience the

biggest direct impact on domestic prices and income. In monetary affairs, these are the price of getting from Here to There—also sacrifices, no matter how you cut it. No wonder that governments would want to avoid the transitional cost of adjustment too, deflecting as much as possible to others. The scale of a state's power to deflect is indicated by its capacity, in relative terms, to effectively divert the transitional cost of adjustment to others.

The Power to Deflect

What, then, are the sources of monetary power? What are its limits? States obviously differ greatly in their capacity to avoid the burden of adjustment. It is equally obvious that there are limits to the autonomy of even the most powerful states. How can all this be explained?

Given the dual nature of monetary power, it should not be surprising that separate factors might account for the strength of each of the two hands. Begin with the transitional cost of adjustment. Most critical for the power to deflect, I suggest, are fundamental structural variables that determine how much real sacrifice will be required once the process of adjustment gets under way. The easier it is for an economy to resist imposed changes of prices, incomes, or exchange rates, the greater will be its ability to deflect the pressures of adjustment onto others. Most critical for the power to delay, by contrast, are financial variables—above all, a country's international liquidity position, which encompasses both foreign reserves and access to external credit. The more liquidity there is at a country's disposal, relative to other states, the longer it can postpone adjustment of its balance of payments. It should also not be surprising that there might be distinctly different limits to each of the two hands of monetary power.

Structural Variables

The power to deflect derives from fundamental structural variables that distinguish one national economy from another. Two features in particular stand out. These are the degree of openness and the degree of adaptability of each individual economy.

Some observers might wish to add a third feature: whether an economy happens to be in surplus or deficit. But that would be a mistake.

Initial payments positions obviously are relevant to the distribution of the continuing cost of adjustment and therefore to the power to delay. But when it comes to the transitional cost of adjustment, the distribution of the burden—as indicated—is effectively up for grabs. At issue, to repeat, are two questions. First, who bears the onus of responsibility for any exchange-rate changes that may occur? Second, whether exchange rates change or not, who is forced to experience the greatest direct changes of domestic prices and income? These are the two critical aspects of the adjustment process that bear on the distribution of the transitional cost. Each may fall on either surplus or deficit countries.

In my earlier attempt to explore some of these issues, I suggested the notion of "adjustment vulnerability," defined as the proportion of the transitional cost of adjustment borne by each economy.[21] In essence, adjustment vulnerability might be understood as an inverse measure of what I here call the power to deflect. But I would not use the term adjustment vulnerability today because it unfortunately obscures a now more familiar distinction, first introduced by Keohane and Nye decades ago,[22] which helps us to understand why the two structural features of openness and adaptability, defined in relational terms, are of greatest salience in determining the power to deflect.

As indicated in the previous chapter, Keohane and Nye placed great emphasis on asymmetries of interdependence as a source of power. In doing so, they broke ground in distinguishing between two critical dimensions of such asymmetries: *sensitivity* and *vulnerability*. Sensitivity interdependence, as Keohane and Nye put it, involves the *susceptibility* of an economy to impacts from the outside—the degree to which conditions in one country are liable to be affected, positively or negatively, by events occurring elsewhere. Vulnerability, by contrast, involves the possible *reversibility* of impacts from the outside—the degree to which (in other words, the cost at which) a country is capable of overriding or accommodating to the effects of events occurring elsewhere. The distinction is relevant here because it highlights the fact that every adjustment process can be decomposed into two separate elements—stimulus and response. The stimulus is the initial impact of disequilibrium on an economy; response refers to the ease with which the initial impact can be reversed. The sensitivity-vulnerability dichotomy neatly captures these two elements for analytical purposes.

Openness and Adaptability

The power to deflect is a function of both elements of the adjustment process, stimulus *and* response. Openness matters for the power to deflect because it is the key determinant of an economy's sensitivity, relative to others, to payments disequilibrium (stimulus). Adaptability matters because it is the key determinant of an economy's relative vulnerability to disequilibrium (response).

Of these two structural variables, openness is clearly the easier to identify empirically. A standard measure of openness is the ratio of foreign trade to gross domestic product (GDP). The logic of its salience here is equally clear. The more open an economy, the greater is the range of sectors whose earnings and balance sheets will be directly impacted by adjustment, once the process begins. This will be true whether exchange rates remain pegged or are allowed to move. Either way, openness makes it difficult for an economy to avert at least some significant impact on prices and income at home.

Additionally, if exchange rates move, governments in open economies are likely to come in for more criticism than would policymakers in more closed economies. Openness, ceteris paribus, also broadens the range of domestic constituencies that will take an active interest in the value of the country's currency. In a relatively closed economy, even fairly substantial exchange-rate movements may leave the largest part of the population unaffected and therefore indifferent, effectively insulating government from criticism. In a more open economy, by contrast, where more interest groups will be directly affected, even small movements may lead to widespread opprobrium for policy makers, even if the government had nothing to do with starting the process in the first place. A high degree of openness makes it difficult to suppress widespread domestic repercussions when exchange rates change. The authorities will have a hard time trying to deflect blame for any inflation or austerity that may result.

Adaptability is more difficult to measure. Admittedly an amorphous concept, it encompasses a myriad of qualities at the microeconomic level, such as factor mobility, informational availabilities, and managerial resilience. Still, the logic of its salience, too, is clear. For any given degree of openness, the adaptability of an economy determines how readily diverse sectors can reverse a disequilibrium without large or prolonged price or

income changes. At issue is allocative flexibility. The more easily productive resources can be switched from one activity to another, overriding or accommodating to outside pressures, the less likely it is that domestic repercussions will involve serious pain; hence the less likely it is, as well, that the process of adjustment will generate widespread resentment or protest. Conversely, the greater are the rigidities characteristic of an economy's labor or product markets, the more serious will be resulting market dislocations and therefore the potential for political fallout. Adaptability may be difficult to define, yet we know it when we see it and we know that it is important.

Implications

Two implications follow. First, it seems clear that the distribution of the transitional cost of adjustment is likely to favor larger and more diversified economies. Large size, as measured by GDP, generally means a relatively lower degree of openness. Greater diversification in production means that the economy offers more opportunities for alternative employment when adaptations are required. Smaller and less developed economies, conversely, are likely to be the least favored in the adjustment process. Some four decades ago, in the midst of the massive dislocations generated by the first global oil shock, I wrote about what appeared to be a "cascading" of the burden of adjustment among oil-importing countries, with the poorest and least developed economies being forced to bear the greatest burden of all.[23] "Power economics," I then called it. Today, with the wisdom of hindsight, I would label it, more precisely, the power to deflect.

The second implication is that the distribution of the transitional cost of adjustment can be expected to be comparatively stable over time, rather than volatile. Structural variables like openness or adaptability tend to change relatively slowly, to the extent that they change at all. The power to deflect, accordingly, is also likely to change slowly, if at all.

From Passive to Active Mode

Finally, we return to the measure of influence that is inherent in the power to deflect. While the essence of the power to deflect is a capacity to avoid the transitional cost of adjustment (autonomy), the practical

effect, as noted, is to divert the burden elsewhere, compelling others to bear it instead—a form of influence. In and of itself the influence that is generated in this manner, which I have described as the alter-ego of autonomy, is passive and diffuse, essentially a product of market forces. But a more active mode is also possible, as many sources emphasize. The active mode, stressing the direct use of positive or negative sanctions in government-to-government relations, seeks to translate passive influence into practical control through the instrumental use of power. What is the connection between the two modes?

The connection, clearly, lies in the politics of interstate relations. The active mode is optional. It is also purposeful, seeking to enforce compliance by way of pressure or coercion. In other words, it is policy-contingent. This means that it is not enough simply for a state to enjoy the structural characteristics essential to the power to deflect. For deliberate use of the power to deflect, relative openness and adaptability are necessary conditions, but hardly sufficient.

This brings us back to the potential power problem. We can think of a number of larger and more diversified economies that seem capable of diverting the transitional cost of adjustment to others, including especially the advanced industrial countries. But not many of these are known to engage in direct arm-twisting to get their way on monetary issues. Beyond a *capacity* for influence, a government must also have the *motivation* to put its power to deflect to active use—an agreed policy agenda. Motivation will reflect a host of considerations peculiar to an individual country, involving foreign-policy strategy and domestic institutions as well as underlying constituency politics and political culture. Are the potential costs of an influence attempt too high? Does the government have the requisite political capacity? Are the available instruments up to the task? There is no certainty at all that the capabilities created by the power to deflect will be actively exploited.

The Power to Delay

The power to delay, by contrast, derives not from structural variables but, rather, more from financial variables that determine each economy's international liquidity position. At issue are both the size of the central bank's foreign reserves and the country's access to external credit. For a

privileged few nations, access to external credit is amplified by international use of the national currency.

International Liquidity

A country's international liquidity comprises all available sources of internationally acceptable money. Before the postwar revival of global capital markets, the term was generally assumed to be synonymous with central bank reserves. But once financial globalization began to take hold, understanding was expanded to include access to external credit as well, whether extended to the government or to the nation's private sector. Today, international liquidity is generally defined to encompass the full array of international means of payment owned by or available to a state's residents and public authorities.

The ultimate purpose of international liquidity is financing: to cover deficits in the balance of payments, via either a net reduction of external claims or a net increase of borrowing. The availability of financing to an economy, relative to others, can have a significant impact on the *timing* of adjustment and hence on the *distribution* of adjustment costs among deficit countries. More liquidity means more capacity to stave off any unwelcome reallocation of resources. Every deficit country has an obvious incentive to postpone the continuing cost of adjustment for as long as possible. The longer one deficit country can manage to put off adjustment, the greater will be the pressure on other deficit countries to bear the burden instead.

Of course, surplus countries too may have an incentive to delay the adjustment process—for example, if they believe that once the process begins, it is they who will be compelled to bear the bulk of the transitional cost of adjustment. Moreover, should that be their preference, surplus countries also have a greater ability to delay adjustment, since it is almost always easier to absorb surpluses than to finance deficits. The motivation of surplus countries, however, is unlikely to be as *intense* as that of deficit countries, which have *both* costs to worry about. Moreover, even surplus states must anticipate the possibility that, sooner or later, they will suffer deficits, too. Hence all states have a rational interest in acquiring and maintaining a healthy international liquidity position, on which the power to delay depends.

What, then, are the limits of this hand of monetary power? That requires a closer look at each of the two main components of international liquidity: owned reserves and borrowing capacity. The conditions affecting each are similar but not identical.

Owned Reserves

Superficially, it might seem that a government would want to hoard as many reserves as possible as a form of self-insurance. Insulation from payments pressures would be maximized by the largest possible stockpile of usable liquid assets. But that idea neglects the cost involved in acquiring reserves, which must be balanced against the benefit of greater autonomy. Insurance is not free.

Reserves can be accumulated either as a result of current-account surpluses or by borrowing. Both strategies mean a reduction of real national absorption, either directly as a result of reduced imports relative to exports; or indirectly, as a result of increased interest payments. Neither, therefore, is likely to be pursued without limit, since the cost of acquiring reserves could turn out to be greater than the loss of absorption that might be required by adjustment. Economic theory has long argued that rational policymakers can be expected to seek an *optimal* level of reserves rather than a maximum.

Optimality, however—like beauty—lies in the eye of the beholder. Different policy makers can make very different calculations, depending on their subjective evaluations of the costs and benefits involved. And these evaluations, in turn, will very much depend on politics, international as well as domestic. A government that feels beholden to constituencies who would be especially hurt by a reduction of deficits, such as large-scale importers, would be likely to discount the cost of hoarding additional reserves. By contrast, a government that feels it can count on foreign allies to bail it out in the event of a payments emergency would be less inclined to invest in new reserves. A priori, therefore, no generalization is possible about where the limits are likely to be found in this context. All we know for sure is that the appetite for owned reserves will be considerably short of infinite. Hence the power to delay by this means will be short of infinite, too.

Borrowing Capacity

In most respects, much the same can be said also about external borrowing. Here too it might appear that a government would want to make as much use as possible of borrowing capacity to finance deficits. The more liquidity that can be raised externally, whether by the government itself or by the private sector, the longer adjustment can be postponed. But that too neglects the costs involved. These costs include not just the direct debt-service payments that would be required by foreign loans. Even more critically, they include possible policy compromises that could become necessary if the country finds itself overextended to foreign creditors.

External credit can be raised from a variety of sources, of course. But whatever the source, the liquidity provided can turn out to be too much of a good thing should the level of borrowing appear to rise beyond the economy's capacity to service debt. For poorer and less developed countries, the main source of external credit is the public sector—governments of the more advanced industrial economies or multilateral agencies like the International Monetary Fund. Overextension to public-sector creditors usually means that the borrower ends up negotiating a stabilization program, either bilaterally with creditor governments, multilaterally through the mechanisms of the so-called Paris Club, or with the IMF, with all the attendant conditionality. For middle-income emerging markets or more advanced economies, the main source of external credit is the global capital market. Overextension to private creditors usually means, eventually, a loss of perceived creditworthiness, which can lead to a sudden halt in new lending or a sharp rise of borrowing costs just when credit might be most needed. Worse, excessive borrowing risks provoking panicky withdrawals and crisis, as capital importers around the world have sadly learned, from East Asia in 1997–1998 to some of the members of the euro zone in more recent years. Reputation in financial markets, as we know, is a fragile flower, difficult to cultivate but easy to uproot. Painful policy adjustments may be required to restore a country's access to private investment.

Whatever the source of credit, therefore, autonomy may eventually have to be sacrificed for the sake of restoring external balance—a direct loss of power. Hence with borrowing too, just as with owned reserves,

rational policy makers can be expected to seek an *optimum* rather than a maximum. And here too calculations of optimality will very much depend on politics.

But there is also a big difference. The calculations demanded here are inherently more complex than they are with owned reserves, since they necessarily involve tricky questions of probability and risk. With reserves, evaluations of prospective costs are relatively straightforward. Little risk is associated with hoarding reserves, and the real losses from deficit reduction or interest payments can be estimated with a reasonable degree of certainty. With external credit, by contrast, nothing is certain. Borrowing capacity is by definition subjective in nature, often fluctuating widely—and even wildly—in response to the fickleness of creditor governments or changing sentiment in the marketplace. Because of this uncertainty, generalizations about limits are even more difficult than they are with the reserve component of liquidity.

In effect, limits are not set by borrowers at all. Rather they are set by creditors, both public and private. It is they who gain the power that overextended debtors lose. The challenge for borrowers is hard enough when dealing with creditor governments, whose decisions may be ruled as much by politics as economics. Calculations are even more difficult when it comes to market actors, who are constantly judging what they perceive as the quality of policy performance in individual economies. Financial markets are like a perpetual opinion poll. If a country is currently able to avoid deficit reduction owing to ready access to credit, it is because the markets have given it their Good Housekeeping Seal of Approval. Conversely, if a country suddenly finds itself no longer able to put off adjustment owing to a cessation of lending, it is the markets that are enforcing a limit to its power to delay. The more states rely on borrowing capacity rather than owned reserves for their international liquidity, the greater is the role of creditors, public and private, in determining who ultimately will be forced to undergo real adjustment.

Again, two implications follow. First, it seems clear that the distribution of the continuing cost of adjustment among deficit countries will be heavily influenced, if not largely determined, by creditor perceptions of debt-service capacity, which tend to favor the relatively wealthy. Ceteris paribus, the power to delay should be greatest in the advanced industrial economies—the nations that enjoy the highest standing as international

borrowers. The power to delay will be least in poorer and less developed economies that have limited access, at best, to foreign finance. Second, it also seems clear that the distribution of the continuing cost among deficit countries, unlike the transitional cost of adjustment, is apt to be highly volatile. That is because of the persistent threat of rapid swings of sentiment about the "soundness" of policy in one economy or another. The perpetual opinion poll often changes its mind—and when it does, the ability to postpone adjustment through borrowing is changed as well. Taken together, these two observations suggest that while wealthier economies may be the most favored in this context, there is no fixed pattern involved. What creditors giveth by way of a power to delay, they may also taketh away.

The Special Role of International Currencies

Finally, we come to the special role of international currencies. For the privileged few countries whose national money is used for international purposes, borrowing capacity is effectively enhanced by the willingness of outsiders to accept and hold the currency as a store of value. These may be market actors or central banks. Expanded foreign holdings are the equivalent of a loan from abroad—an increase of claims on the country of issue. Outsiders in effect take the currency as a form of IOU. But unlike other kinds of credit, the loan is neither negotiated nor even perceived as a debt. It is viewed simply as providing an attractive asset that foreigners can use for a variety of cross-border purposes. The heartier the appetite of outsiders for a given currency, the greater is the issuing country's ability to finance imbalances with its own money—a right to run "deficits without tears," as the French economist Jacques Rueff famously described it.[24] As a result, the state's power to delay is amplified. A need for international liquidity in the conventional sense is obviated when national liquidity is all that is required.

Most notable in this respect, of course, is the United States, which has long benefited from an unparalleled capacity to postpone adjustment of its balance of payments. For well over a third of a century, stretching back to the 1970s, America's current account has been in persistent deficit—a record unlike that of any other nation. The last year the current balance was in surplus was in the recession year of 1991. The United

States clearly enjoys more power to delay than anyone else. First and foremost, that is due to the unique status of America's greenback as the world's preeminent international currency—indeed, the world's only truly *global* currency. Near-universal popularity translates directly into a sustained demand for the dollar or dollar-denominated claims, which in turn enables the United States to go on financing deficits year after year seemingly without constraint. We will have more to say about America's unique advantages in chapter 7.

Measurement?

That leaves one last question: Can monetary power be measured? For purposes of empirical analysis, it would obviously be helpful if precise numbers could be derived for each of the two hands of power. In principle, it might seem possible to quantify either hand by focusing on the underlying structural or financial variables that determine a state's capacity to avoid adjustment costs. In practice, however, accurate measurement has proved elusive, if not illusory.

Early discussions of monetary power eschewed measurement altogether, concentrating instead on the various roles that a monetarily powerful nation might be expected to play. The idea was to identify specific functions that could be considered as tangible manifestations of power. And what might those functions be? Most familiar is the work of Charles Kindleberger, who wrote a great deal about the roles of a monetary "hegemon." In his justly celebrated book, *The World in Depression*, Kindleberger suggested that a monetary leader would be expected to play three distinct roles: (1) maintain a relatively open market for distress goods; (2) providing contracyclical, or at least stable, long-term lending; and (3) acting as a lender of last resort at times of crisis.[25] Later he added two additional functions: (4) policing a relatively stable system of exchange rates and (5) ensuring some degree of coordination of macroeconomic policies.[26] All five of these roles clearly imply a measure of power. But they can hardly be easily estimated.

Implicitly, an indirect quantitative approach has been suggested by more recent work looking at prospects for competition at the peak of the Currency Pyramid, following creation of the euro and then the rise of China's yuan. Was either currency likely to challenge or perhaps even

surpass the dollar as top currency? Econometric exercises have proliferated, seeking to isolate key variables that might be expected to determine the market shares of major currencies over time. For Menzie Chinn and Jeffrey Frankel, focusing on the outlook for the euro, the main factors were thought to be economic size, inflation, exchange-rate variability, and the size of the home financial center.[27] Similarly, for Arvind Subramanian, focusing on the RMB, the main variables were said to be GDP, share of global trade transactions, and current account surplus.[28] Though not explicitly intended to measure monetary power as such, studies like these clearly offer a menu of candidates for a composite index comparable to the CINC or other similar constructs that have been developed to measure state power more broadly.

In the tradition of composites like the CINC, Carla Norrlof has calculated an indicator of "monetary capability" based on four key attributes: GDP, volume of trade (exports and imports), capital markets (including openness), and net defense expenditures.[29] Similarly, Leslie Armijo and colleagues have put together a Contemporary Capabilities Index (CCI) incorporating national shares of global output, population, two proxies for technology (telephone subscriptions and industrial value added), military spending, and foreign exchange reserves, with variations for four different estimates of national financial capabilities.[30] Efforts like these deserve respect for their ambition. But they also suffer from the same deficiencies as the CINC and its various counterparts, as noted back in chapter 2. Quantitative measures based on the elements-of-power approach to power can be misleading for two reasons—first, because the selection of components is inherently arbitrary; and second, because such indicators omit consideration of strategic or political context. They tell us little about how capabilities may or may not translate into influence. Numbers help, but in the end there is no substitute for careful analysis of the social characteristics of power.

Conclusion

To summarize, we may say that monetary power is best understand as being dual in nature, deployable with two hands—the power to delay, aimed at avoiding the continuing cost of adjustment; and the power to deflect, aimed at avoiding the transitional cost of adjustment. The power

to deflect has its source in fundamental structural variables—most importantly, the relative degree of openness and adaptability of the national economy—and is limited by the economy's underlying material attributes. The power to delay, by contrast, is largely a function of a country's international liquidity position relative to others, comprising both owned reserves and borrowing capacity, and is limited only by the government's appetite for reserves and by the willingness of foreign actors to lend. By providing an additional channel of access to external credit, currency internationalization amplifies a country's power to delay.

Accordingly, it should be no surprise that states vary considerably in their monetary power, implying a systematic element of hierarchy in monetary relations. In fact, monetary relations have always tended to be distinctly hierarchical, as suggested by the image of the Currency Pyramid. Ultimately, for all states, the issue is adjustment costs. Rank in the Currency Pyramid depends in large degree on the relative capacity to avoid the burden of payments adjustment, making others pay instead. The position of any given country in the Pyramid directly reflects its access to both hands of monetary power.

At the peak of the Pyramid are nations, like the United States, whose currencies are to a greater or lesser extent used for various international purposes. Only such countries may enjoy the special privilege of financing deficits with their own currencies. But that is only the beginning of the story, not the end. While currency internationalization clearly offers advantages for an issuing country, it is not without possible costs or risks as well. The relationship between currency and power is more complex than generally supposed, as we shall now see.