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**Benjamin J. Cohen: The Future of Money**

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# One

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## The Changing Geography of Money

THE GEOGRAPHY of money is changing. Once upon a time it was not inaccurate to think of monetary spaces in simple territorial terms. Many currencies existed, but for the most part each circulated separately within the political frontiers of a single nation-state. Each government was in charge of its own sanctioned money. Today, however, the world's monetary landscape is being rapidly transformed under the impact of accelerating competition among currencies across national borders. Money is becoming increasingly *deterritorialized*, no longer the instrument of an exclusive national sovereignty.

What will the geography of money look like tomorrow? The prospect, according to many popular predictions, is for a radical shrinkage in the number of currencies in circulation, greatly simplifying the management of money around the world. I call this the Contraction Contention. But the Contraction Contention, I contend, is utterly wrong. The central argument of this book is that the population of the world's monies is more likely to expand, not contract, both in number and diversity. The future of money will be one of persistently growing complexity, posing increasingly difficult challenges for state authorities.

### Revival of Currency Competition

The geography of money refers to the spatial organization of currency relations—the functional domains within which each currency serves the three traditional functions of money: medium of exchange, unit of account, and store of value. As a medium of exchange, money is synonymous with the circulating means of payment. In this role, its key attribute is its general acceptability to satisfy contractual obligations. As a unit of account, money provides a common denominator, or *numéraire*, for the valuation of diverse goods, services, and assets. Here, its key attribute is its ability to convey pricing information both reliably and expeditiously. As a store of value, money offers a convenient means for holding wealth. In this role, its key attribute is its ability to store purchasing power, bridging the interval, however transitory, between receipts from sales and payments for purchases. The overall configuration of currency domains comprises global monetary geography.

The invention of money was one of the most important steps in the evolution of human civilization—“comparable,” as one source has suggested, “with the domestication of animals, the cultivation of the land, and the harnessing of power” (Morgan 1965, 11). Gertrude Stein said that “the thing that differentiates animals and man is money.”<sup>1</sup> Before money there was only barter, the archetypical economic transaction, which required an inverse double coincidence of wants for exchange to occur. Each of two parties had to desire what the other was prepared to offer—a manifestly inefficient system of trade, since much time had to be devoted to the necessary processes of searching and bargaining. With the introduction of money, the single transaction of barter split into two separate parts, sale and purchase, reducing transactions costs—the expenses associated with searching, bargaining, uncertainty, and the enforcement of contracts. Instead of goods or services for immediate delivery, a seller can accept money, hold it until needed for a purchase, and in the meantime use it to judge value in the marketplace. As a consequence, exchange is facilitated, promoting specialization in production and an increasingly efficient division of labor. Money, in effect, multilateralizes barter.

The magnitude of the cost saving afforded by monetary exchange, in lieu of primitive bilateral barter, is directly related to the size of a given money’s transactional network: the number of actors with sufficient confidence in the instrument’s future value and reusability to accept its present validity for both payment and accounting purposes. The larger the size of a money’s transactional network, the greater will be the economies of scale to be derived from its use—what theorists call money’s “network externalities” (Dowd and Greenaway 1993). Transactional networks define the functional domains of individual currencies, encompassing the range of their effective use.

It is conventional to identify currency domains with the nation-state, the basic unit of world politics. Just as in political geography we have long been conditioned to see the world’s surface in terms of fixed and mutually exclusive entities called states, so we are conditioned to think of monetary geography in terms of the separate sovereign jurisdictions in which currencies originate. With few exceptions, each state is assumed to have its own unique money. Inside the nation’s frontiers, that currency alone is expected to circulate freely. Money, in short, is thought to be effectively *territorial*—One Nation/One Money—with monetary governance exercised monopolistically by each national government. Nothing could be simpler.

But neither could anything be more misleading. In fact the notion of exclusive national currencies is of very recent historical origin, dating, in actual practice, back no further than the nineteenth century. Monetary geography in earlier eras was far more complex, involving varying degrees

of competition among currencies; and even in the last two centuries, the principle of One Nation/One Money was as frequently compromised as respected. Today currency competition is reviving, causing the functional domains of individual monies to diverge more and more sharply from the legal jurisdictions of issuing governments. As in the more distant past, currency is once again becoming deterritorialized and monetary geography is once again growing more complex, with implications for monetary governance that are only beginning to be understood.

### *The Distant Past*

Modern money began with the practice of sovereign coinage, whose origins go back to the very dawn of civilization. In the Western world, coins first appeared in the Greek city-states of Asia Minor (in Western Turkey) during the eighth and seventh centuries B.C.E. and were to be found everywhere in the eastern Mediterranean by 500 B.C.E. In the Far East, the oldest known coins originated even earlier, during the Chou dynasty that commenced in 1022 B.C.E. Previously all kinds of commodities, from salt and rice to cattle and tobacco, had been used in one place or another for standard monetary purposes (Weatherford 1997, ch. 1). But once invented, coins quickly came to dominate all other available instruments.

Before the nineteenth century, however, the sovereign right of coinage was hardly ever interpreted in exclusively territorial terms. Few rulers expected—or even, in principle, claimed—a monopoly for their coins within their own frontiers. Quite the contrary, in fact. The accepted norm was that coins could circulate everywhere, regardless of borders. Foreign coins could be used interchangeably with local money, and restrictions were only rarely imposed on what could be offered or accepted in market transactions. Choice was virtually unlimited. Currencies were effectively deterritorialized, and cross-border competition was the rule, not the exception. The system was heterogeneous and multiform, a veritable mosaic of money.

Not every currency circulated everywhere, of course. Most coins were of the small, fractional variety—“petty” coins generated for use in strictly local transactions. Minted of base metals like copper or bronze alloy, with a metallic content of little intrinsic value, these tokens were not often accepted and so were rarely found outside the limited area where they were issued. Widespread circulation was mainly restricted to bigger “full-bodied” coins of silver or gold (“specie”)—monies whose usefulness as a medium of exchange or store of value could be more readily assured.

Among these full-bodied monies competition for the allegiance of users was keen, for two reasons. On the one hand there was the possibility of

debasement: depreciation of the intrinsic value of coinage, accidental or otherwise, through erosion of weight or fineness. On the other hand, there was also a possibility of a shift in the commodity price of gold or silver, which would alter the relative attractiveness of coins minted from either metal. From these contingencies arose the famous proposition known as Gresham's Law—"Bad money drives out good"—named after a sixteenth-century English businessman who, among other accomplishments, was a financial adviser to Queen Elizabeth I. Gresham's Law predicted that where the intrinsic values of individual monies, as determined by market forces, diverge from their nominal values, the money of higher intrinsic value will be withdrawn from circulation and hoarded in anticipation of a rise of price. No one wanted to give up a coin that was likely to be worth more in the future.

Over time, however, as everyone sought the same "good" money, market favorites tended to develop, creating a hierarchy among full-bodied currencies—a kind of Gresham's-Law-in-reverse. "Good" money would drive out "bad" coins whose intrinsic value could not be maintained. Typically just one coin would eventually emerge as the dominant international money, the winner in a demand-driven process of natural selection. This Darwinian favorite would be used widely beyond the formal jurisdiction of the entity that issued it. Other monies would then offer the ultimate flattery—imitation—patterning themselves on the principal features of the dominant coin. Examples of dominant international coins down through the ages included the silver drachma of ancient Athens, the Byzantine gold solidus (later known, under Italian influence, as the bezant), the florin of Florence, the ducat of Venice, the Spanish-Mexican silver peso (later called the Mexican silver dollar), and the Dutch guilder.

Still, whatever money happened to dominate at any particular time, and however faithful its imitation by others, many other coins remained in circulation with diverse features and uncertain rates of exchange. In principle, this motley mosaic should have caused confusion—not to say chaos—in commercial and financial markets. How could one judge the meaning of prices with so many currencies in circulation? In practice, however, many difficulties, though by no means all, were resolved by the more or less spontaneous emergence of so-called imaginary or ghost monies—abstract units of account that could be used to compare the values of real currencies in actual use. Most popular in Europe were diverse variations on the silver pound unit, such as the livre (French), lire (Italian), peso (Spanish), and pfund (German) as well as of course the British pound sterling. In effect, a distinction was created between two of the functions of money: the medium of exchange and the unit of account. Any number of coins could pass from hand to hand in daily transactions. Ghost monies simplified transactions in a world of competing currencies.

### *The Era of Territorial Money*

Truly fundamental changes in the geography of money did not occur until well into the nineteenth century, as national governments, eager to consolidate their emerging powers, started to assert greater control over the creation and management of money. For the first time in history, the goal of an exclusive national currency—One Nation/One Money—came to seem both legitimate and attainable. Once begun, the transformation of currency space took hold quickly and spread rapidly. Even before the century's end it was clear that a new age, the era of territorial money, had arrived.<sup>2</sup>

Monopoly over monetary powers was a natural corollary of broader trends in global politics at the time. The nineteenth century was a period of rising nationalism and a general centralization of political authority within state borders, greatly inspired by the Peace of Westphalia of 1648. Westphalia has long been recognized as a major watershed event in world politics, for the first time establishing the principle of absolute sovereignty based on exclusive territoriality. The treaty's ostensible purpose was to end the Thirty Years War. Its provisions addressed a number of contentious issues, including various dynastic claims, divisions of territory, religious practice, and the constitution of the Holy Roman Empire. But the Peace is most remembered for its assertion of the norm of sovereignty for each state within its own geographical frontiers, in effect formally establishing territoriality as the sole basis for Europe's—and, by extension, the world's—political map. Henceforth power was to be embodied in the independent, autonomous state, and global politics was to be conceived in terms of the now familiar state system.

Over the course of the nineteenth century the norm of sovereignty achieved a new level of tangible expression as governments undertook systematically to suppress all threats to their rule, whether from powers abroad or rivals at home. Their goal was to build up the nation, as far as possible, as a unified economic and political community led by a strong central authority. Monopolization of control over money was simply a logical part of the process. The territorial state came to be generally accepted as the basic unit of monetary authority as well—what in *The Geography of Money* I called the Westphalian Model of monetary geography.

Creating new territorial currencies was not easy. In fact, an enormous and sustained governmental effort was required to overcome market forces and centuries of monetary tradition. Control was implemented in two principal ways—first, by promoting the development of a robust national money; and second, by limiting the role of rival foreign currencies.

On the one hand, governments sought to consolidate and unify the domestic monetary order. Standardization was promoted, not only in coin-

age, but also in the new paper banknotes that were then just coming onto the scene. In addition, all forms of internal money were now fixed in relation to one another and tied to a uniform metallic standard, eliminating the need for ghost monies. The national unit of account now corresponded directly to tangible money in circulation. And ultimate authority over the supply of money was firmly lodged in a government-sponsored central bank, newly created or empowered to sustain both currency convertibility and the well being of the banking system.

On the other hand, increasingly prohibitive restrictions were imposed on the free circulation of foreign currencies. Most prominent were new legal-tender laws and public-receivability provisions. Legal tender is any money that a creditor is obligated to accept in payment of a debt. Public receivability refers to what currency may be used for remittance of taxes or to satisfy other contractual obligations to the state. As the nineteenth century progressed, coins that previously had been permitted, or even specifically authorized, to serve as legal tender had that privilege gradually withdrawn. At the same time, public receivability was gradually confined to domestic money alone. Also, and with increasing frequency, governments curtailed or suspended their commitment to accept foreign coins freely for conversion at the national mint. And ultimately, in most countries, the circulation of foreign currency was banned altogether, at least formally.

The experience of the United States was typical. Until the middle of the nineteenth century, the Mexican silver dollar and several other foreign currencies (including the gold coins of Britain, France, Portugal, and Brazil) not only circulated widely in the United States, but were even explicitly protected by federal legislation dating back to 1793. During the 1850s, however, when new U.S. silver and copper coins were introduced to ease a growing currency shortage, the opportunity was seized to eliminate all foreign elements from the money supply. In 1857 rates were fixed at which, for a limited time, the Treasury would accept foreign money for reminting into U.S. coinage. After 1861 the dollar became the country's sole legal tender, although it was to be another half-century before paper money would be standardized with the creation of the Federal Reserve System, America's own central bank.

In Britain the process started even earlier, with coinage reforms enacted after the Napoleonic Wars and later with the Bank Charter Act of 1844, which finally consolidated the central position of the Bank of England in the national financial system. Fully fledged territorial currencies also began to emerge elsewhere in Europe, as well as in Japan, during the second half of the century; and later, in the 1900s, in the British Empire and throughout Latin America. By the middle of the twentieth century, the exclusive monetary authority of national governments had become universally recognized and enshrined in international law. When the great

wave of decolonization got under way after World War II, ultimately bringing scores of new states onto the global stage, few even questioned the assumption that each nation might legitimately aspire to create its own central bank and territorial money.

### *Back to the Future*

In historical terms the Westphalian Model of monetary geography enjoyed a remarkably short life. From its beginnings in the nineteenth century, it reached its apogee during the Great Depression of the 1930s and the years following World War II, when newly invented limitations on cross-border transactions—exchange restrictions and capital controls—were widely employed to reinforce the exclusive role of each state's money within its own territory. Never before had governments come so close to absolute monopoly in the governance of monetary affairs. But the privilege was not to last as, in more recent years and under the pressure of market forces, competition among currencies has gradually re-emerged and intensified.

Even during its heyday, the Westphalian Model was never absolute. The broad norm of state sovereignty, as Stephen Krasner (1999) has accurately observed, has always been subject to compromise, depending on circumstances—"widely recognized but also frequently violated," as he writes (8). "Talk and action do not coincide." Currency was as much a matter of "organized hypocrisy," to borrow Krasner's phrase, as any other element of global politics. Though the norm of One Nation/One Money prevailed in principle, reflecting the logic of the territorial state, it was not necessarily expected to prevail everywhere in actual practice. Not all governments had the economic or political capacity to exercise the full powers of monetary monopoly; nor were all currencies successfully insulated from competition by more attractive foreign rivals. For many states, there seemed little choice but to accept some degree of compromise of policy authority. Two broad options were possible, either *subordination* or *sharing* of monetary sovereignty—what, in *The Geography of Money*, I called the Two S's.

Subordination, embodying a vertical hierarchy among states, most frequently took the form of a bilateral exchange-rate peg, whereby the price of the home currency was tied more or less firmly to that of a dominant foreign money, typically labeled the anchor currency or reserve currency. Exchange stability was promoted, but at the cost of a higher degree of sensitivity to the foreign money's market power or to the policy preferences of its issuing government. A stronger version of an exchange-rate peg is a currency board, which encompasses not only a fixed-price relationship but

also unrestricted convertibility into the anchor currency and full foreign-currency backing for new issues of domestic money. In extremis, subordination meant simply adopting a foreign money in lieu of one's own—a total abnegation of authority in a process that, in contemporary parlance, has come to be known generically as full or formal dollarization.<sup>3</sup>

Sharing, by contrast, embodied a horizontal alliance among states—a *pooling* rather than a *surrender* of sovereignty. A monetary alliance could be achieved by freezing mutual exchange rates or by replacing existing monies with a joint currency. Common terms for such pooling arrangements include exchange-rate union, currency union, and monetary union. Both subordination and sharing were understood to loosen the tight bond between political nationalism and money. But both were regarded essentially as exceptions to the general rule of monetary territoriality.

More recently, however, exceptions have multiplied as national currency systems have become increasingly interpenetrated. The stage was set, starting soon after World War II, by an increased volume of trade, which, in combination with technological and institutional innovation in financial practice, greatly facilitated cross-border monetary flows, gradually expanding the range of choice among monies. Over time, currency competition has intensified under the pressure of market demand. In many countries, market agents are no longer restricted to using the national money alone, despite governmental efforts to preserve the exclusivity of their currencies. Now selected foreign monies may also be adopted for a variety of uses, competing directly with the state's own monetary issue for the favor of transactors and investors.

As deterritorialization spreads, encompassing more and more states, the world's monetary landscape is being fundamentally transformed. Today, as in the more distant past, currency choice is becoming less restricted, and cross-border competition is once again becoming the rule. Indeed, taking a long view, these developments can be seen as a sort of closing of a circle following what was, in historical terms, a relatively brief interlude of national monetary monopolies. Monetary geography is rapidly harking back to the deterritorialized model that prevailed prior to the Westphalian era—"back to the future," as one source (Craig 1996) has quipped, alluding to the popular film of the same name.<sup>4</sup> Another new age has arrived.

### Accentuating Currency Hierarchy

Currencies, if attractive enough, may be employed outside their country of origin for either of two purposes: for transactions either between nations or within foreign states. The former is conventionally referred to as

*international* currency use or currency *internationalization*; the latter is described as *currency substitution* and can be referred to as *foreign-domestic* use. Currency internationalization alters monetary geography by accentuating the hierarchical relationship among currencies, expanding the domains of a few popular monies well beyond the jurisdictions of the countries that issue them. Currency substitution is significant because it represents a direct invasion of traditional territorial domains, diminishing the use of many less popular currencies. Both are a product of the same sort of Gresham's-Law-in-reverse that gave rise to dominant international monies in the past—a Darwinian process of natural selection, driven above all by the force of market demand.

Today it is monies such as the U.S. dollar, Europe's euro, and the Japanese yen that have come to prevail over others for various commercial or financial purposes. The dollar and yen have long been popular for cross-border use. The euro, which was first introduced in 1999 in electronic form (a "virtual" currency) with notes and coins following in 2002, inherited its role from the deutsche mark, Germany's old DM. The euro has replaced the currencies of twelve of the 15 members of the European Union (EU)—all but Britain, Denmark, and Sweden, the notoriously reluctant trio that have opted, at least for now, to retain their traditional national monies.

### *Motivations*

Neither currency internationalization nor currency substitution is an irrational form of behavior. On the contrary, each may be regarded as a quite natural response to prevailing market structures and incentives.

Analytically, the motivations for each type can be easily appreciated. Internationalization derives from the economies of scale, or reduced transactions costs, to be gained from concentrating cross-border activities in just one or at most a few currencies with broad transactional networks. To do business in each country in a separate money is analogous to barter and clearly inefficient. Just as monetary exchange, rather than barter, reduces the expenses associated with searching and bargaining within a single national economy, so costs of transactions between states are narrowed by making use of one or just a few currencies rather than many. The greater the volume of transactions that can be done via a single "vehicle" currency, the smaller are the costs of gathering information and converting from one money to another.<sup>5</sup>

In fact, currency internationalization improves the usefulness of money in each of its principal functions. A vehicle role enhances a currency's value both as a commercial medium of exchange and as a unit of account

for invoicing; and these effects in turn also broaden its appeal as a store of value, by facilitating accumulation of wealth in assets of more universal purchasing power. At a minimum, it will pay market agents to hold some level of working balances in a popular international currency. Depending on cross-border variations of interest rates and exchange-rate expectations, it will pay them to use it for longer-term investment purposes, too. Moreover, once a money comes to be widely used by private actors, it is more likely to be employed by governments, as well—as a reserve currency, intervention medium, and peg for exchange rates. Public actors also can benefit from the economies of scale offered by a broad transactional network.

The motivation for currency substitution, typically, is a high or accelerating inflation rate, which erodes a local money's purchasing power both at home and, through exchange depreciation, for transactions abroad. Residents of a high-inflation economy, accordingly, have an incentive to turn to some more stable foreign currency as a preferred store of value—an inflation “hedge” for their savings—and perhaps even as a unit of account and medium of exchange. Foreign money, in effect, becomes the public's financial refuge, a convenient defense against the destructive power of rising prices. As one source (Calvo and Vegh 1993, 34) has suggested: “Like a crippling disease that leaves no part of the organism untouched, high inflation severely hinders the ability of a currency to perform its basic functions. . . . [But] unlike an organism that is unique and cannot be replaced, substitutes for a sick currency are easy to come by. . . . Not surprisingly, then, the public turns to a foreign money in its quest for a healthy currency.”

Who would not choose inoculation against a crippling disease if a cure is so easy to find?

### *Choices*

What determines which currencies will prevail in the Darwinian struggle? The principal qualities required for competitive success are familiar to specialists and hardly controversial. Demand is shaped by three essential attributes.

First, at least during the initial stages of a currency's cross-border use, is widespread confidence in a money's future value, backed by political stability in the country of origin. Essentially, this means a proven track record of relatively low inflation and inflation variability. High and fluctuating inflation rates increase the cost of acquiring information and performing price calculations. No currency is apt to be willingly adopted for

cross-border purposes if its purchasing power cannot be forecast with some degree of assurance.

Second are the qualities of “exchange convenience” and “capital certainty”—a high degree of transactional liquidity and reasonable predictability of asset value. The key to both is a set of well developed financial markets, sufficiently open to ensure full access by nonresidents. Markets must not be encumbered by high transactions costs or formal or informal barriers to entry. They must also be broad, with a large assortment of instruments available for temporary or longer-term forms of investment. And they must be deep and resilient, with fully operating secondary markets for most if not all financial claims.

Finally, and most important of all, a money must promise a broad transactional network, since nothing enhances a currency’s acceptability more than the prospect of acceptability by others. Historically, this factor has usually meant an economy that is large in absolute size and well integrated into world markets. A large economy creates a naturally ample constituency for a currency; economies of scale are further enhanced if the issuing country is also a major player in world trade. No money has ever risen to a position of international pre-eminence that was not initially backed by a leading national economy. The greater the volume of transactions conducted in or with a country, the greater are the potential network externalities to be derived from use of its money.

None of these attributes is a constant, however, as history amply demonstrates. Quite the contrary, in fact. Every one of a currency’s attractions is subject to erosion with time, particularly if an issuing government imprudently abuses the privilege of its monetary monopoly. Hence market preferences, which determine the outcome of the competitive process, are also likely to change substantially from one period to the next. Shakespeare’s words are as apt for money as they are for monarchs: “Uneasy lies the head that wears the crown.” No currency has ever enjoyed a permanent dominance for either international or foreign-domestic use.

### *Orders of Magnitude*

Though cross-border use is known to be accelerating rapidly, its full dimensions cannot be measured precisely in the absence of comprehensive statistics on global currency circulation. Partial indicators, however, may be gleaned from a variety of sources to underscore the impressive orders of magnitude involved.

The clearest signal of the rapid growth of currency internationalization is sent by the global foreign-exchange market where, according to the Bank for International Settlements (2002), average daily turnover acceler-

ated greatly over the course of the 1990s, from \$590 billion in 1989 (the first year for which such data are available) to nearly \$1.5 trillion in 1998—a rate of increase in excess of 25 percent per annum—before declining to \$1.2 trillion in 2001. Even allowing for the fact that much of this activity is accounted for by interdealer trading, the pace of expansion was impressive. The drop after 1998 was accounted for by several special factors, including notably the introduction of the euro in 1999, which eliminated trading among its constituent currencies (Galati 2001). In terms of currency composition, the U.S. dollar is the most favored vehicle for currency exchange worldwide, appearing on one side or the other of some 90 percent of all transactions in 2001 (unchanged from its share in 1989). The euro entered on one side of 38 percent of all transactions—higher than the share of its popular predecessor, the deutsche mark, which had appeared in 30 percent of transactions in 1998, but lower than that of all the euro's constituent currencies taken together in 1998 (53 percent). The yen's share in 2001 was just under 23 percent, up slightly from three years earlier.<sup>6</sup>

America's greenback is also the most favored vehicle for the invoicing of international trade, where it has been estimated to account for nearly half of all world exports (Hartmann 1998)—more than double the U.S. share of world exports. The DM's share of invoicing in its last years, prior to its replacement by the euro, was 15 percent, roughly equivalent to Germany's proportion of world exports; preliminary evidence from the European Central Bank (2001, 18) suggests that this share was maintained by the euro after its introduction in 1999. The yen's share has hovered at about 5 percent, significantly less than Japan's proportion of world exports.

A parallel story is evident in international markets for financial claims, including bank deposits and loans as well as bonds and stocks, all of which have grown at double-digit rates for years. Using data from a variety of sources, Thygesen et al. (1995) calculated what they call "global financial wealth": the world's total portfolio of private international investments. From just over \$1 trillion in 1981, aggregate cross-border holdings quadrupled to more than \$4.5 trillion by 1993—an expansion far faster than that of world output or trade in goods and services. Again the dollar dominated, accounting for nearly three-fifths of foreign-currency deposits and close to two-fifths of international bonds. The DM accounted for 14 percent of deposits and 10 percent of bonds; the yen, 4 percent of deposits and 14 percent of bonds. More recently, the International Monetary Fund (IMF 1999c) put the total of international portfolio investments (including equities, long- and short-term debt securities, and financial derivatives) at just over \$6 trillion in 1997.

The clearest signal of the rapid growth of currency substitution is sent by the swift increase in physical circulation of the most popular currencies outside their country of origin, for purposes both legitimate and criminal. Most impressive is the widespread use of the dollar, mostly in the form of \$100 bills. Authoritative studies by the Federal Reserve and Treasury put the value of all Federal Reserve notes in circulation abroad at between 50 and 70 percent of the total outstanding stock—equivalent in 2000 to roughly \$275 billion to \$375 billion in all.<sup>7</sup> Estimates also suggest that as much as three-quarters of the annual increase of U.S. notes now goes directly abroad, up from less than one-half in the 1980s and under one-third in the 1970s. By the end of the 1990s, as much as 90 percent of all \$100 notes issued by the Federal Reserve were going directly abroad to satisfy foreign demand (Lambert and Stanton 2001). Appetite for the greenback appears to be not only strong but growing.

Along similar lines, Germany's central bank, the Bundesbank (1995), estimated deutsche mark circulation outside Germany at end-1994, mainly in East-Central Europe and the Balkans, at about 30 to 40 percent of total stock, equivalent to some DM 65–90 billion (\$45–65 billion).<sup>8</sup> The deutsche mark's successor, the euro, took over the DM's role in foreign-domestic use after euro notes entered circulation in 2002 and in time is confidently expected even to cut into the dollar's market share. Similarly, on the other side of the world, Bank of Japan officials have been privately reported to believe that of the total supply of yen bank notes, amounting to some \$370 billion in 1993, as much as 10 percent was located in neighboring countries.<sup>9</sup> In addition, smaller amounts of several other currencies are also known to be in foreign circulation, including the Swiss franc in East-Central Europe,<sup>10</sup> the South African rand in southern Africa, and the Australian dollar in the Pacific. Combining diverse estimates suggests a minimum foreign circulation of the top currencies at the end of the 1990s of at least \$350–400 billion (Rogoff 1998: 279)—by no means an inconsiderable sum and, judging from available evidence, apparently continuing to rise rapidly. According to another source (Krueger and Ha 1996), as much as one-quarter to one-third of the world's paper money was, by the mid-1990s, already located outside its country of issue.

Deterritorialization is by no means universal, of course—at least, not yet. But it is remarkably widespread. Krueger and Ha (1996) estimate that foreign currency notes in the mid-1990s accounted for 20 percent or more of the local money stock in as many as three dozen nations inhabited by at least one-third of the world's population. Most currency substitution is concentrated in Latin America and the Caribbean, the Middle East, parts of Southeast Asia, and republics of the former Soviet Union, where the dollar is favored; or in East-Central Europe and the Balkans,

Germany's historical hinterland, where the DM traditionally predominated before the arrival of the euro. By a different measure, focusing on foreign-currency deposits rather than paper money, the IMF (Baliño et al. 1999) identifies some eighteen nations where by the mid-1990s a foreign currency accounted for at least 30 percent of broad money supply.<sup>11</sup> The most extreme cases, with ratios above 50 percent, included Azerbaijan, Bolivia, Cambodia, Croatia, Nicaragua, Peru, and Uruguay. Another thirty-nine economies had ratios approaching 30 percent, indicating "moderate" penetration. These trends have of course persisted into the new millennium.<sup>12</sup>

### *The Currency Pyramid*

How can we best visualize money's emerging geography? The key characteristic of the new age, as in the more distant past, is the prevalence of cross-border competition, which naturally gives rise to a hierarchy among currencies. The use and influence of a few popular monies, such as the dollar or euro, now reach far beyond the legal jurisdictions of their issuing authorities, spanning large parts of the globe, while the effective domains of many other currencies are being sharply shrunk, sometimes dramatically. As a result the population of the monetary universe is becoming ever more stratified, assuming an appearance like nothing so much as a vast pyramid: narrow at the top, where the strongest currencies dominate; and increasingly broad below, reflecting varying degrees of competitive inferiority. I call this the Currency Pyramid.

Though difficult to operationalize for analytical purposes, the image of the Currency Pyramid is nonetheless useful to convey the rich diversity of money's competitive relationships while at the same time not exaggerating the degree of refinement that we can bring to the exercise. The labels for each stratum, though slightly tongue-in-cheek, are meant to accentuate the steeply vertical imagery appropriate to an accurate mapping of today's monetary geography.

The seven categories are as follows:

#### TOP CURRENCY

This rarified rank is reserved only for the most esteemed of international currencies—those whose use dominates for most if not all types of cross-border purposes and whose popularity is more or less universal, not limited to any particular geographic region.<sup>13</sup> During the era of territorial money, just two currencies could truly be said to have qualified for this exalted status: Brit-

ain's pound sterling before World War I and the U.S. dollar after World War II. In principle more than one Top Currency might be in favor simultaneously, as were both the pound and dollar during the interwar period, when sterling first went into what proved to be a long irreversible decline (Cohen 1971). Today, however, the greenback alone occupies the highest stratum of the Currency Pyramid. "The Yankee dollar is king of the world," exclaims one journalist (Hampson 2001), "the world's bedrock currency."

#### PATRICIAN CURRENCY

Just below the top rank we find currencies whose use for various cross-border purposes, while substantial, is something less than dominant and/or whose popularity, while widespread, is something less than universal. Obviously included in this category today would be the euro, as natural successor to the DM; most observers would still also include the yen, despite some recent loss of popularity. Both are patricians among the world's currencies. Neither, however, can claim a domain as extensive as that of the dollar. Each remains secondary to the greenback for most cross-border functions, and each has an attraction that is largely limited to a single region or subset of cross-border transactions.

#### ELITE CURRENCY

In this category belong currencies of sufficient attractiveness to qualify for some degree of international use but of insufficient weight to carry much direct influence beyond their own national frontiers. Here we find the more peripheral of the international currencies, a list that today would include *inter alia* Britain's pound (no longer a Top Currency or even Patrician Currency), the Swiss franc, and the Australian dollar.

#### PLEBIAN CURRENCY

One step further down from the elite category are Plebian Currencies—more modest monies of very limited international use. Here we find the currencies of the smaller industrial states, such as Norway or Sweden, along with some middle-income emerging-market economies (e.g., Israel, South Korea, and Taiwan) and the wealthier oil-exporters (e.g., Kuwait, Saudi Arabia, and the United Arab Emirates). Internally, Plebian Currencies retain a more or less exclusive claim to all the traditional functions of money, but externally they carry little weight (like the plebs, or common folk, of ancient Rome). They tend to attract little cross-border use except perhaps for a certain amount of trade invoicing.

#### PERMEATED CURRENCY

Included in this category are monies whose competitiveness is effectively compromised even at home, through currency substitution. Although nominal monetary sovereignty continues to reside with the issuing government, foreign currency supersedes the domestic alternative as a store of value, accentuating the local money's degree of inferiority. Permeated Currencies confront what amounts to a competitive invasion from abroad. Judging from available evidence, it appears that the range of Permeated Currencies today is in fact quite broad, encompassing perhaps a majority of the economies of the developing world, particularly in Latin America, the former Soviet bloc, and Southeast Asia.

#### QUASI-CURRENCY

One step further down are currencies that are superseded not only as a store of value but, to a significant extent, as a unit of account and medium of exchange, as well. Quasi-Currencies are monies that retain nominal sovereignty but are largely rejected in practice for most purposes. Their domain is more juridical than empirical. Available evidence suggests that some approximation of this intensified degree of inferiority has indeed been reached in a number of fragile economies around the globe, including the likes of Azerbaijan, Bolivia, Cambodia, Laos, and Peru.

#### PSEUDO-CURRENCY

Finally, we come to the bottom rank of the pyramid, where currencies exist in name only—Pseudo-Currencies. The most obvious examples of Pseudo-Currencies are token monies like the Panamanian balboa, found in countries where a stronger foreign currency such as the dollar is the preferred legal tender.

### **Implications for Monetary Governance**

The labels in this illustrative sketch of the Currency Pyramid may be fanciful, even whimsical, but the geography they describe is not. Money is serious business, directly affecting authority relationships both within and among states. The campaign to establish exclusive territorial currencies that began in the nineteenth century gave governments enormous powers within their own borders, privileging the public sector in relation to societal actors. Ever since, policymakers have relied on the advantages derived from formal monetary monopoly to promote their conception of national

interest. Now, however, all that is changing. As currency deterritorialization accelerates, power is being radically redistributed, fundamentally transforming the role of the state in monetary governance.

### *Benefits of Territorial Money*

It is easy to see why the Westphalian Model of monetary geography came to be favored by governments. Five main benefits are derived from a strictly territorial currency: first, a potential reduction of domestic transactions costs to promote economic growth; second, a powerful instrument to manage the macroeconomic performance of the economy; third, a possible source of revenue to underwrite public expenditures; fourth, a potent political symbol to promote a sense of national identity; and finally, a practical means to insulate the nation from foreign influence or constraint. All five can be expected to be valued highly by policymakers.

A reduction of domestic transactions costs is perhaps the most fundamental benefit of a territorial currency and is shared by the public sector and societal actors alike. Just as the early invention of money meant greater exchange efficiency as compared with barter, the later creation of a single money for each country was bound to reduce local transactions costs even further as compared with the confusion of the pre-Westphalian world's competing coins and ghost monies. Historically, currency territorialization facilitated the emergence of an integrated and coherent national market, an essential ingredient in the project of state construction (Helleiner 2003a). One exclusive money maximizes the potential for network externalities within the nation's frontiers.

All the other benefits of a territorial currency contribute directly to the effective power of government. One such gain derives from money's potential impact on "real" economic performance—aggregate output and employment—as well as prices. So long as governments can maintain control of monetary supply within their own territory, they have the capacity, in principle at least, to influence and perhaps even manage the overall pace of market activity. This is what is generally referred to as *monetary policy*, which may be used to promote the broad prosperity and strength of the state as well as the government's own narrowly drawn fiscal requirements. Two policy instruments become available. First is the stock of money itself, which can be manipulated to increase or decrease levels of expenditure by residents. The second is the exchange rate—the price of home currency in terms of foreign currency—which can be adjusted to increase or decrease spending in the national economy through induced shifts between home and foreign goods. Neither instrument is infallible,

of course; nor is either likely to attain a sustained impact on economic activity over the proverbial long term. Most economists agree that over a truly long time-horizon, monetary policy controls little other than the price level. But as John Maynard Keynes famously said, in the long run we are all dead. Most economists also concede that over the shorter time-horizons that are of most interest to public officials, monetary and exchange-rate policies can manifest substantial influence as tools for macroeconomic management.

Admittedly, the power that derives from an autonomous monetary policy may be, and often has been, abused, generating persistent price instability or even hyperinflation. In such circumstances, many might see a government's control of the money supply and exchange rate as more disadvantageous than advantageous, preferring instead to tie the hands of policymakers in one way or another. But only rarely does that sentiment tend to be shared by policymakers themselves, who may normally be expected to put a high premium on preserving a degree of flexibility to promote their conception of the national interest. Most governments, it is safe to assume, at most times will regard a capacity for independent macroeconomic management as a privilege not to be surrendered lightly.

A second well-known benefit for government is *seigniorage*—the capacity a monetary monopoly gives governments to augment public spending at will. Technically defined as the excess of the nominal value of a currency over its cost of production, seigniorage can be understood as an alternative source of revenue for the state, beyond what can be raised via taxation or by borrowing from financial markets. Public spending financed by money creation in effect appropriates real resources at the expense of the private sector, whose purchasing power is correspondingly reduced by the ensuing increase of inflation—a privilege for government if there ever was one. Because of the inflationary implications involved, the process is also known popularly as the “inflation tax,” underscoring how this, too, is a power that can be, and often has been, abused. Yet despite the economic disadvantages associated with inflation, the privilege of seigniorage makes sense from a political perspective as a kind of insurance policy against risk—a “revenue of last resort,” as one source has called it (Goodhart 1995, 452). Seigniorage is in fact the single most flexible instrument of taxation available to policymakers to mobilize resources in the event of a sudden crisis or threat to national security. This, too, is a capacity that most governments at most times would be disinclined to surrender lightly.

A third benefit for government is the vital *symbolic role* that a territorial currency can play for rulers wary of internal division or dissent. Centralization of political authority is facilitated insofar as citizens all feel themselves bound together as members of a single social unit—all part of the

same “imagined community” (Anderson 1991). Cultural anthropologists stress that states are made not just through force but through loyalty, a voluntary commitment to a joint identity. The critical distinction between “us” and “them” can be heightened by all manner of tangible symbols: flags, anthems, postage stamps, public architecture, even national sports teams. And among the most potent of these tokens is money, as Eric Helleiner (1998b, 2003a) has insightfully emphasized. A state-sanctioned currency, Helleiner argues, can serve to enhance a sense of national identity in at least four ways—providing a vehicle for nationalist imagery that helps build a sense of collective tradition and memory; acting as a common medium of social communication; fostering a sense of trust in the state and nation; and contributing to a sense of popular sovereignty. Because it is issued by the government or its central bank, a national money acts as a daily reminder to citizens of their connection to the state and oneness with it. Likewise, by virtue of its universal use on a daily basis, the currency underscores the fact that everyone is part of the same social entity—a role not unlike that of a single national language, which many governments also actively promote for nationalistic reasons. A common money helps to homogenize diverse and often antagonistic social groups.

Finally, an important benefit is derived in a negative sense—from the enhanced ability a territorial money gives government to *avoid dependence* on some other provenance for this critical economic resource. Currency territoriality draws a clear economic boundary between the state and the rest of the world, promoting political authority. The nearer government is able to come to achieving an absolute monetary monopoly, the better equipped it will be to insulate itself from outside influence or constraint in formulating and implementing policy. The point is simple: If you want political independence, don’t rely on someone else’s money.

### *Winners and Losers*

Thus we should not be surprised that states cling so resolutely to the idea of monetary sovereignty. What matters, though, is not formal principle but actual practice—and that depends not just on the supply of money but also on demand, over which governments today have decreasingly firm control. States exercise direct jurisdiction only over the stock of national currency and its exchange rate. With increasing deterritorialization, not even the most authoritarian government can assure that its money will always be preferred to currencies originating elsewhere.

Deterritorialization thus is bound to alter the distribution of power in monetary affairs, both between governments and between the public and private sectors. Clearly, critical shifts occur in the balance of influence

among states. Less obviously, but no less importantly, decisive changes ensue in the reciprocal interaction between governments and markets—changes that can have a profound impact on effective political authority in every state, whatever the competitiveness of its currency. All four of a monetary monopoly's benefits for government are affected, though in ways that may not always be easily predicted.

#### MACROECONOMIC MANAGEMENT

Impacts on a government's capacity for macroeconomic management, for instance, will vary considerably, depending on the competitiveness of individual monies as well as the interaction of official policies with market preferences. The main impact is felt in the mechanism for balance-of-payments financing.

Economists have long contrasted the relative ease of adjustment to interregional imbalances *within* countries with the frequently greater difficulties associated with payments adjustments *between* countries. One major difference is the greater scope for equilibrating capital flows within an individual country in the event of transitory disturbances, owing to the existence of a stock of "generalized" short-term financial claims that can be readily traded between surplus and deficit regions. The development of these generalized claims, in turn, has traditionally been attributed to the existence of a single national currency, which of course removes all exchange risk.

Such reasoning is obviously based on the conventional assumption of an exclusive national money. The same logic applies, however, even if that assumption is relaxed in recognition of the accelerating pace of cross-border currency use. The broader the functional domain of a given money, the greater will be the effective range for equilibrating capital flows, taking the form of purchases and sales of generalized claims denominated in that single currency. Other things being equal, therefore, these flows should ease the constraint of the balance of payments on national policy, reducing the costs of adjustment for countries with the most competitive monies. Their macroeconomic policy flexibility should be enhanced. Countries with weaker currencies, by contrast, will find themselves less able to rely on equilibrating capital flows in the adjustment process. With confidence in their money lacking, the constraint exercised by the balance of payments will be reinforced, not eased, and their room for maneuver will be correspondingly reduced.

Consequences for neither class of country, however, are entirely unambiguous. For top-ranked states, domestic monetary policy could conceivably be aimed at a misleading target, since a large but indeterminate part of the money stock is in circulation abroad. Policy might also be destabilized periodically by unanticipated variations of foreign demand for the domestic currency or by a crisis threatening a weaker client currency. The gain of policy flexibility is by no

means costless. Likewise, for lower-ranked countries, implications vary depending on how governments choose to respond to the reduction of their room for maneuver. Little economic control is gained, and much financial stability may be lost, if efforts to preserve an independent monetary policy are not regarded as credible by market actors. On the other hand, a much healthier economic performance might be attained, with lower costs of adjustment, if governments in effect submit their nominal sovereignty, at least in part, to the strict discipline of the marketplace. At a minimum, such states are obliged to take due account of market sentiment in framing macroeconomic policy.

#### SEIGNIORAGE

Much the same can also be said about a government's seigniorage privilege. Here, too, state power will be affected in all countries, and here, too, much will depend on how official policies interact with market preferences. For less competitive currencies, a government's capacity to appropriate resources via money creation is plainly compromised insofar as a convenient substitute for domestic currency becomes readily available from abroad. In effect, the base for levying an inflation tax is shrunk. As a consequence, state power to cope with unexpected contingencies is undoubtedly constrained.

But is state power correspondingly augmented for countries with more competitive monies? At first glance there seems no doubt. The broader a currency's functional domain, the easier it should be for its issuing government to exploit the fiscal benefits of seigniorage. Not only is the domestic monetary monopoly protected, but now foreigners, too, can be turned into a source of revenue to the extent that they are willing to hold the money or use it outside the country of origin. Expanded cross-border circulation generates the equivalent of a subsidized or interest-free loan from abroad—an implicit transfer that represents a real-resource gain for the economy as a whole. Economists refer to this as *international* seigniorage, in order to distinguish it clearly from the more traditional domestic variety. International seigniorage can be quite considerable in practice, as the historical experiences of both the pound sterling and dollar have amply demonstrated. But international seigniorage can be exploited only so long as a currency retains its competitive superiority in the marketplace—an advantage that can never be permanently guaranteed. In practice, therefore, the issuing state's seigniorage capacity may in time actually be decreased rather than increased.

The problem can be simply stated. As overseas circulation grows, foreigners may legitimately worry more about the possibility of future devaluation or even restrictions on the usability of their holdings. Hence, over time, the issuing government will have to pay increasing attention to competition from other international currencies and to curb its appetite for the inflation tax accordingly. At

a minimum, interest rates may have to be raised significantly to maintain the money's attractiveness. Ultimately, national policies will almost certainly be inhibited by the need to discourage sudden or substantial conversions into more popular rivals.

In short, the power derived from the seigniorage privilege may be constrained for all countries, whatever the competitiveness of their currencies. In a world of accelerating cross-border use, no government can afford to ignore the preferences of market actors when reckoning how to finance its expenditures.

#### POLITICAL SYMBOLISM

Impacts on the role of money as a political symbol will also vary. If a territorial currency acts to cultivate a sense of national identity, deterritorialization might logically be expected to have more or less the reverse effect, loosening ties of loyalty to the state. In fact, however, consequences are rather more complex. In some cases, identification with the imagined community may actually be reinforced rather than reduced by an erosion of monetary insularity. Governments may gain as well as lose, depending not only on the outcome of the Darwinian struggle among currencies, but also on how official policies interact with the preferences of market actors.

Deterritorialization clearly does dilute the symbolic value of money for governments with relatively uncompetitive currencies: monies whose home space is successfully invaded by more popular rivals from abroad. The more a foreign currency comes to be used domestically in lieu of national money as a result of excessive inflation or perceived devaluation risk, the less citizens feel inherently connected to the state or part of the same social entity. The critical distinction between "us" and "them" is gradually eroded. Worse, an instrument that was intended to symbolize the power and nobility of the nation becomes instead a daily reminder of inadequacy and impotence—not sound currency but "funny money," an object of derision and disrespect. Governments that issue such monies are not apt to command much respect, either.

Looking to the most competitive currencies, by contrast, deterritorialization appears more likely to enhance than dilute a money's symbolic value. A position of prominence in the hierarchy of currencies plainly promotes the issuing state's overall reputation in world affairs. Broad international circulation tends to become an important source of status and prestige—a highly visible sign of elevated rank in the community of nations. What people would not take pride when greater esteem is accorded one of its most tangible symbols?

Matters get more complicated, however, when governments attempt to intervene to modify or control market preferences. A weak currency, for instance, might also become a source of strength if a government is determined to do

something—or, at least, to give the appearance of doing something—about a competitive challenge from abroad. In effect, currency policy may be transformed into an exercise in political symbolism. A market-driven invasion of foreign money can be treated as the equivalent of an overt act of military aggression. Defense of the national currency may thus be promoted as the equivalent of a glorious stand on behalf of the imagined community—the ultimate expression of *amor patriae*.

Conversely, a strong currency might also become a source of weakness, particularly if a government attempts to preserve an international role for a money whose popularity has begun to fade. No currency, as I have said, has ever enjoyed a permanent dominance in cross-border use. Once gained, though, the prestige of great-currency status—whether Top, Patrician, or Elite—might quite understandably be difficult to surrender, even apart from any material benefits that may accrue. But just as a determined defense against an invading currency at home can inspire renewed confidence in a government, fruitless efforts to revive a national money's fortunes abroad may well have the reverse effect, encouraging skepticism and even ridicule. A prime example was provided by the British government's protracted, but ultimately futile, fight after World War II to prevent dissolution of the once far-reaching sterling area (Cohen 1971). The response of the British public was best summarized in the biting satirical words of television celebrity David Frost: "It's a shame to see what has happened to sterling. Once, a note issued by the Bank of England proudly read: 'I promise to pay the bearer on demand the sum of one pound.' Now it simply reads: WATCH THIS SPACE."<sup>14</sup> Efforts to manipulate market demand to preserve great-currency status are not always fated to succeed.

#### MONETARY INSULATION

The story is also much the same when we come to the fourth benefit of a monetary monopoly: insulation from external influence. In this respect, too, states with the most popular monies would appear to gain disproportionately, insofar as expansion of a currency's functional domain offers a potential means for coercing others. Political power should be enhanced at the expense of lower-ranked countries that become correspondingly more dependent on a foreign money. But in this connection also results are highly sensitive to the interplay of official policies and market preferences.

That hierarchy among currencies might influence the distribution of power between states is clear. The very notion of hierarchy is political in nature, suggesting varying degrees of reciprocal influence—differential impacts on the ability of governments to achieve goals at home or abroad. Internationally, the issuer of a widely circulated currency is in a position to exercise influence over others through its control of access to financial resources, directly or indirectly.

Jonathan Kirshner (1995) lists as many as four ways in which currency dependency may be coercively exploited by a top-ranked state: (1) enforcement—manipulation of standing rules or threat of sanctions; (2) expulsion—suspension or termination of privileges; (3) extraction—use of a relationship to appropriate real resources; and (4) entrapment—transformation of a dependent state's interests. Domestically, the country should be better insulated from outside influence in formulating and implementing policy.

Here, too, however, leverage can be exploited only so long as the currency in question retains its competitive superiority in the marketplace. Once rival monies begin to emerge, the issuing country will find that its ability to manipulate the dependency of others may in fact be compromised. Prospective outcomes will very much depend on the reactions of market agents, who may either reinforce or nullify the impact of overtly coercive measures. The exercise of power, therefore, will increasingly demand a systematic cultivation of market sentiment. Equilibrating capital flows may continue to provide an extra degree of policy flexibility to deal with transitory shocks. Over time, however, state behavior will be increasingly constrained by the need to discourage sudden or substantial conversions into other currencies. Ultimately effective political power, on balance, may well be decreased rather than increased.

#### SUMMARY

In brief some individual governments, particularly those with the most widely accepted monies, clearly benefit from deterritorialization, at least for a time. Moreover, as their gains come at the expense of states with less competitive currencies, the inter-state balance of power manifestly shifts in their favor. But not even the most top-ranked countries are immune from market pressures. Over time, all the advantages of broad acceptability are subject to erosion by the force of demand-driven competition. In comparative terms, therefore, it seems evident that some of the biggest winners are not governments at all, however popular their currencies may be, but rather a select set of private societal actors—specifically, those in the marketplace with the capacity and opportunity to choose among alternative monies. In the relationship between state and society, it is plainly the latter that is more favored by deterritorialization. Governments everywhere are privileged less than they once were, elements of the private sector more than in the past.

In purely material terms, societal actors attain a significant measure of efficiency gains: an improvement in the usefulness of money for all its principal functions. Cross-border substitutability also provides an effective refuge against abuse of the seigniorage privilege or misguided macroeconomic management. Politically, the private sector achieves a degree of leverage over public policy that is unprecedented in modern times. The power of the state is clearly diminished.

*The State as Oligopolist*

That does not mean, however, that where once governments exercised monetary sovereignty, the private sector now categorically rules—not so long as states remain the principal *source* of the currencies that today compete so vigorously across national frontiers. The Darwinian struggle may be intense, but it is a struggle that, for now at least, is limited on the supply side almost exclusively to monies officially sanctioned by the state. Governments thus continue to play a role, albeit a lessened one, in the management of monetary affairs. The power of the state may be diminished, but it has not yet been extinguished.

With deterritorialization, governments have been deprived of the monopoly control they once claimed over demand. This is as true for countries at the top of the Currency Pyramid as it is for those at the bottom. Because many transactors and investors now have the happy option of currency choice, fewer states are in a position to *enforce* an exclusive role for their own money within established political frontiers. So far, however, governments still dominate the supply side of the market, retaining jurisdiction over the creation of the principal monies presently in use. Hence they are in a position still to *influence* demand insofar as they can successfully compete, inside and across borders, for the allegiance of market agents. Power is retained to the extent that user preferences can be swayed.

In essence, therefore, the role of states today has become not unlike that of competing enterprises in an oligopolistic industry—the state as oligopolist—and no one has ever accused oligopolists of a lack of practical authority. In a world of increasingly interpenetrated currency systems, all governments find themselves driven to join the competitive fray, to preserve or promote market share for their product. Like oligopolistic enterprises, governments assert influence by doing what they can, consciously or unconsciously, to shape and manage demand.

Commercial rivalry between states is nothing new, of course. Governments have always contended with one another for markets and resources as part of the great game of world politics. What is different about currency competition is that the state participates directly, as the still dominant actor on one side of the marketplace—the supply side. It is the government's own creation, its own sanctioned money, that must be promoted.

The analogy with oligopoly is not perfect, of course. Money, as a generally accepted unit of account and medium of exchange, has public-good characteristics that are not typically shared by the products of private enterprise. Moreover states, as the embodiment of legitimized coercion, have policy options at their disposal not generally available to commercial oli-

gopolists. Nonetheless, the analogy is apt because of the direct relevance of oligopoly's two key structural features: interdependence and uncertainty. Both are inherent features of the traditional state system, as well.

As in an oligopolistic industry, states are sufficiently few in number so that the behavior of any one has an appreciable impact on at least some of its competitors; in turn, the actions and reactions of other actors cannot be predicted with assurance. The result is a mutuality of decision making that compels all states, like rival enterprises, to be noticeably preoccupied with considerations of long-term strategy. In this sense, producers of currency are really no different from producers of cars or computers. Moreover, like producers of cars or computers, governments are forced to implement their strategies via efforts to manage the demand side of the market—in effect, to “sell” their product. Their targets are the users of money, at home or abroad. Their aim is to sustain or enhance a currency's domain, almost as if monies were like goods to be sold under registered trademarks. Monetary governance, at its most basic, has become a political contest for market loyalty.

### **The Contraction Contention**

The question is: How will the contest turn out? The outlook cannot be predicted with certainty, of course. Forecasting the future of money is like looking into a misty landscape, where only the broadest topographical features may be perceived, dimly, on the horizon. Yet even through the mist it is possible to see the outlines of the new geography that is developing.

As in any market, outcomes ultimately will be determined by the interactions of demand and supply. On the demand side, efficiency considerations suggest a preference for as small a population of monies as possible, leading many informed observers to predict a radical shrinkage in the number of currencies in circulation. That is the Contraction Contention. On the supply side, however, considerations suggest very much the reverse, casting such predictions into doubt. In fact, the prospect is for more rather than less complexity in money's spatial organization. This development will further challenge state authority in the governance of monetary affairs.

### *The Demand Side*

While it is clear that governments have good reason to prefer the old Westphalian Model, defining currency spaces in strictly territorial terms, it is also evident that if efficiency alone mattered, the number of separate

monies would be far less than policymakers favor. At present there are more than 150 state-sanctioned currencies in circulation around the world,<sup>15</sup> from the U.S. dollar and other popular monies at the top of the Currency Pyramid to the many small Quasi-Currencies and Pseudo-Currencies at the bottom—what one source scornfully dismisses as mere “junk currencies” (Harris 2001, 35). All these diverse monies are caught up in an intense Darwinian struggle for survival. Can anyone believe that such a crowded population represents a truly efficient equilibrium?

At issue is the size of what economists call the “optimum currency area” (OCA)—the most efficient scale of a currency space. By definition, the larger the size of an OCA for individual currencies, the smaller will be the equilibrium population of monies for the world as a whole. The OCA issue has been debated extensively in the specialist literature since a pioneering article by Nobel laureate Robert Mundell more than four decades ago (Mundell 1961). As the theory of OCAs has developed, analysts have come to focus on the material gains and losses, as seen from a single country’s point of view, from participation in a common currency area or its equivalent.<sup>16</sup> Against the advantages of a more useful money, governments are assumed to compare the disadvantages of the corresponding surrender of monetary autonomy: the potential costs of having to adjust to domestic or external disturbances without the option of changing either the money supply or the exchange rate. Because of the considerable complexity of the calculus involved, little consensus has ever been reached on just how big an OCA might be. But few economists doubt that it would be significantly bigger than the cramped domains characteristic of many national currencies today. That would imply a much less crowded monetary population than exists at present.

Certainly the profusion of monies we have now—including large numbers of small currencies with very limited circulation—would not be the preference of the many market actors who have an interest in transactions or investments across national borders or who simply seek a safe store of value for their savings. As another economist (von Furstenberg 2000b, 112) remarks, “small really is not beautiful in matters of money.” In fact, if the outcome were left solely to cost-conscious market actors, the force of demand would undoubtedly shrink the total number of currencies dramatically, in order to lower the expense of transactions and maximize the material benefits of money. Fewer monies, as the late Rudi Dornbusch (2001a) put it, would mean better monies. The reason is simple: the overwhelming power of economies of scale in monetary use. The only question is: How low might that number go?

Transactions costs, as indicated, are inversely related to the number of market agents willing to accept a given money in payment. The appeal of each currency, therefore, can be assumed to be a direct function of the

size and economic importance of its transactional network. The larger the size and importance of a money's transactional network, the greater will be the economies of scale to be derived from its use—its network externalities. Hence, the greater will be the incentive to reduce rather than increase the total number of currencies in use.

Indeed, if scale economies were the *only* consideration of concern to users, the equilibrium number of currencies would eventually shrink to just one, a single universal money—the ultimate manifestation of Gresham's-Law-in-reverse. This view is widely shared among economists. Mundell himself, the pioneer of OCA theory, today quips that the optimum number of currencies is like the optimum number of gods—“an odd number, preferably less than three.”<sup>17</sup> Representative are the words of German economist Roland Vaubel (1977, 437, 440), an ardent exponent of free currency competition: “Ultimately, currency competition destroys itself because the use of money is subject to very sizable economies of scale. The money-industry must be viewed as a (permanently) declining-cost industry. i.e., as a “natural monopoly” . . . The only lasting result will be . . . the survival of the fittest currency.”

As a practical matter, the natural-monopoly argument goes too far, since scale economies, though undeniably important, are *not* the only consideration of concern to market agents. Also salient, at a minimum, are considerations of stability and credibility, as modern network theory teaches, suggesting that the optimum number of monies in reality is likely to be something greater than one. In network theory, not one but two distinct structures are recognized in the organization of spatial relations: the “infrastructure,” which is the functional basis of a network; and the “infostructure,” which provides needed management and control services. Economies of scale, by reducing transactions costs, obviously do promote a consolidation of networks at the level of infrastructure, as the natural-monopoly argument suggests. At the infostructure level, by contrast, the optimal configuration tends to be more decentralized and competitive, to maximize producer responsibility. Some finite number of rival networks will counter the negative effects of absolute monopoly, which frequently leads to weakened control by users and incentives for exploitation by producers. In matters of money, this means that market agents must weigh the risk of possible inflationary abuse of monopoly privilege on the supply side against the advantages of a large transactional network on the demand side. Rational calculus thus suggests a preference for a degree of diversification rather than complete centralization—a smallish population of currencies rather than one universal money.

A multiplicity of monies is also promoted by the persistent inertias that are an inherent characteristic of monetary behavior. Two sources of iner-

tia can be identified. First is the pre-existence of already well established transactional networks. The same network externalities that are responsible for the scale economies emphasized in the natural-monopoly argument are also responsible for a well-documented stickiness in user preferences—what specialists call “hysteresis” or “ratchet effects.” In effect, prior use confers a certain natural advantage of incumbency. Switching from one currency to another is costly, involving an expensive process of financial adaptation, as numerous authors have emphasized.<sup>18</sup> Considerable effort must be invested in creating and learning to use new instruments and institutions, with much riding on what other market agents may be expected to do at the same time. Hence as attractive as a given money may seem, adoption will not prove cost-effective unless others appear likely to make extensive use of it, too. In the words of economists Kevin Dowd and David Greenaway (1993, 1180): “Changing currencies is costly—we must learn to reckon in the new currency, we must change the units in which we quote prices, we might have to change our records, and so on. . . . [This] explains why agents are often reluctant to switch currencies, even when the currency they are using appears to be manifestly inferior to some other.”

Inertia is promoted as well by the exceptionally high level of uncertainty that is inherent in any choice among alternative monies. Uncertainty encourages a tendency toward what psychologists call “mimesis”: the rational impulse of risk-averse actors, in conditions of contingency, to minimize anxiety by imitative behavior based on past experience. Once a currency gains a degree of acceptance, its use is apt to be perpetuated—even after the appearance of powerful new competitors—simply by regular repetition of previous practice. In effect, a conservative bias is inherent in the dynamics of the marketplace. As one source has argued, “imitation leads to the emergence of a convention [wherein] emphasis is placed on a certain ‘conformism’ or even hermeticism in financial circles” (Orléan 1989, 81–83).

Finally, there is the simple matter of the laws of probability. The greater the number of possible monies to choose from, the lower the chance that diverse market actors all will settle uniquely on the same asset. As Dowd (2001, 472) writes: “It would be fortuitous if agents happened to converge on one single money. . . . If agents have a choice of  $n$  assets, we get possible equilibria in which any of the  $n$  assets, or any combination of the  $n$  assets, circulate as money. . . . The outcome depends on agents’ expectations, and yet there is no obvious way in which expectations can be coordinated.”

In practice, therefore, spontaneous emergence of a single universal money, driven by the force of demand, would be highly unlikely despite

the power of economies of scale in use. As much was acknowledged even by the influential Austrian economist Friedrich Hayek—like Mundell, also a Nobel laureate—who until his death was the best known advocate of unrestricted currency competition. Beginning with a noted public lecture in 1975, published shortly thereafter under the title *Choice in Currency* (1976), and continuing through three editions of his widely read *Denationalisation of Money* (1990),<sup>19</sup> Hayek decried the inflationary consequences of the monopoly privilege enjoyed by central banks. The solution to the problem of inflation, he argued, was not just to afford users maximum choice among currencies, effectively deterritorializing money. More importantly, it was to cede the right of production to the private sector—to “denationalize” it. Commercial banks should be the main suppliers of money, competing for the favor of transactors and investors. Inflation would be forestalled because rival issuers would have a strong inducement to limit quantity in order to promote market confidence in their product.<sup>20</sup> Yet by no means, he conceded, would this mean eventually a single universal money. Quite the contrary, in fact. “I believe,” he wrote (1990, 126), “that, once the system had fully established itself and competition had eliminated a number of unsuccessful ventures, there would remain in the free world several extensively used and very similar currencies.” Even earlier, economist Benjamin Klein (1974) had predicted that with unrestricted currency competition, the most likely outcome would be “multiple monies” linked by a common unit of account—not unlike the role played by so-called ghost monies prior to the emergence of territorial currency. And even Vaubel, in his later writings (1984, 1990), cast doubt on whether the supply of money is truly a natural monopoly.

No one number of currencies can be identified, a priori, as a precise optimum. In markets for money, as in other organized asset markets, preferences are highly sensitive to the strategic interdependencies of decision making by money’s many users. Much more likely is the possibility of multiple equilibria—an inference consistent with other recent approaches to the analysis of international money.<sup>21</sup> As Barry Eichengreen has written (1996, 19): “As is so often the case when expectations are introduced, multiple equilibria are possible.”

Still, the implication is unmistakable. Whatever the precise number of currencies that might be left in circulation, it would not be great—if users had their way, certainly nowhere near as great as the crowded population we observe today. Scale economies may not be the whole story, but their influence would certainly be strong enough to eliminate many less attractive monies at the bottom of the Currency Pyramid. As in any Darwinian struggle, ultimately only the strong would survive the pressure of accelerating demand-driven competition.

Given this logic, therefore, it should not be surprising that many informed observers today predict that the number of currencies in the world will soon contract. The Contraction Contention is widely shared, especially among economists, and is rapidly gaining in popularity.<sup>22</sup> Typical is the prediction of Michel Camdessus (2000, 35), former managing director of the IMF, who suggests that “in the long run, we are moving toward a world of fewer currencies.” Dornbusch (2001a, 9), before his untimely death, was even blunter. “Convergence on regional monies,” he asserted, “is a no-brainer.” Even Krugman, who is otherwise inclined to dismiss the idea as “an intellectual fad, not a deep insight” (1999b, 3), accepts that today’s crowded population of monies could very well shrink dramatically. “I say let a hundred currencies bloom,” he writes. “Well, maybe twenty or thirty.”

### *The Supply Side*

The Contraction Contention, however, is seriously misleading. Whatever the power of scale economies for monetary use, they shape preferences on just one side of market—the demand side. In practice, the future of money will be influenced by considerations on the supply side, as well, interacting with demand; and on the supply side, preferences can be expected to run very much the other way, toward the preservation and even proliferation of monies in circulation around the globe. Many more than a hundred currencies may well bloom.

To begin, the Contraction Contention reckons without the power of the state, which as indicated remains considerable even in an increasingly deterritorialized monetary geography. Opposing the logic of market demand is the well-entrenched principle of national sovereignty. However much market actors may prefer a shrinkage of the population of currencies, not all governments are apt to concede the benefits of a money of their own without a struggle. The various choices available to governments will be examined in detail in chapters 2 through 6. Analysis suggests that far fewer national currencies are apt to disappear than is commonly predicted.

Additionally, the Contraction Contention discounts the role of the private sector as an alternative source of money. Though governments presently dominate the supply side of the market, that may not always be the case. Chapter 7 explores prospects for new issues of nonstate monies in the future that might complement or replace existing state-sanctioned currencies. For a variety of reasons, the number of privately issued monies in the world can actually be expected to multiply dramatically in years to come.

In short, the power of scale economies notwithstanding, monetary geography appears set to become more, not less, complex—more than ever like the heterogeneous, multiform mosaic that existed prior to the era of territorial money. The future of money will by no means be simple. What this will mean for monetary governance in years to come will be considered in chapter 8.