BY GLENN YAGO AND SUSANNE TRIMBATH

Firms offering new technologies, old industries seeking new life and whole countries emerging from underdevelopment or socialist planning all require access to capital. Indeed, perhaps now more than ever, creating more efficient ways of channeling savings to investment is central to progress.

AP/WIDE WORLD PHOTOS

Trading stocks in Mumbai.

Happily, the high-yield markets, on which marginal-credit risks depend, have grown deeper and more sophisticated. Junk in name only, a bewildering variety of private equity deals, asset-backed securities and other derivative securities are now part of the diversified portfolios of institutions and individuals.

But the path to capital market innovation is still littered with potholes. With the U.S. economy hovering between recession and growth since the end of the long bull market,

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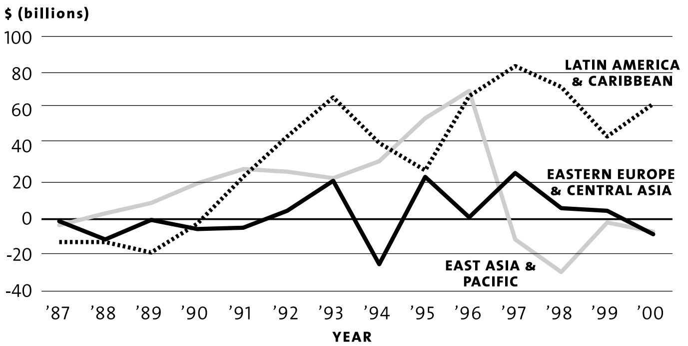
investors in virtually every class of assets have grown wary. By the same token, the prospects of the global economy seem increasingly uncertain. Thus, extending the logic of financial innovation to new markets and assets is a significant challenge. Here we summarize what we have learned from recent experience about the new financial technologies and how they might best be applied to current challenges.

The new financial technology has many parents. The hands-on application of the insights of Michael Milken and his colleagues and competitors made a big difference. So, too, has the diffusion of critical research by Merton Miller, Harry Markowitz, Harry Sharpe, Michael Jensen and many others. The question now is how the lessons from this immensely productive body of work can be applied where they are needed most.

NET CAPITAL FLOWS TO EMERGING MARKET COUNTRIES



SOURCE: IMF, International Financial Statistics

WHAT HAVE WE LEARNED?

The emergence of high-yield markets and the explosion of financial innovations to support them were critical to the corporate finance revolution that heralded the longest period of continuous economic growth in the 20th century. Maintaining the pace of financial innovation may well be key to continuing growth in the face of structural changes in markets, global financial instability and fresh concerns about the efficiency of corporate governance.

In the last three decades, control of capital in America shifted decisively from very large, private lenders toward more competitive, decentralized public capital markets. This democratization of capital meant that entrepreneurs need no longer depend on an elite class of gatekeepers. A market-based system with thousands of institutional buyers has eclipsed banks in the financial services industry. This broadening and deepening of the market has been extraordinary, though not without growing pains in the form of defaults, flawed capital structures and unanticipated vulnerability to external shocks.

The switch from bank-based to market-based finance has proved profound. For not only has the change widened access to capital, it has forced the major players to confront failures in financial disclosure and corporate governance.

Emerging economies must be transformed by ongoing innovation in financial technology the way communications have been transformed by digital technology. Indeed, the implementation of new financial technology has become a necessary condition for escaping dependence on foreign aid, government debt and remittances from expatriate workers.

YIELD GAPS AND THE ROLE OF THE HIGH-YIELD MARKET

After nearly two decades of rich returns in domestic equity markets, we seem to be entering an environment in which yields will need to be more closely linked to the rate of growth of economies than to corporate profits. Accordingly, a gap between the expected return on equities and the return needed to meet long-term liabilities in pension funds is emerging.

Pension funds must earn an average annual return of 8.8 percent to meet their current obligations. While a combination of domestic equity and fixed income easily provided this return in the recent past, asset managers must now look to other investments. Changing portfolio managers' mindsets isn't easy. As Mark Yusko, chief investment officer at the University of North Carolina, writes, "institutions sometimes accept serious risks in more widely held asset classes, such as small cap equities or emerging markets, while overlooking strategies that exhibit sound returns and lower risk."

So, where is the beef? Here, we review areas of potential growth in emerging overseas markets, emerging domestic markets, environmental finance and the securitization of intellectual capital.

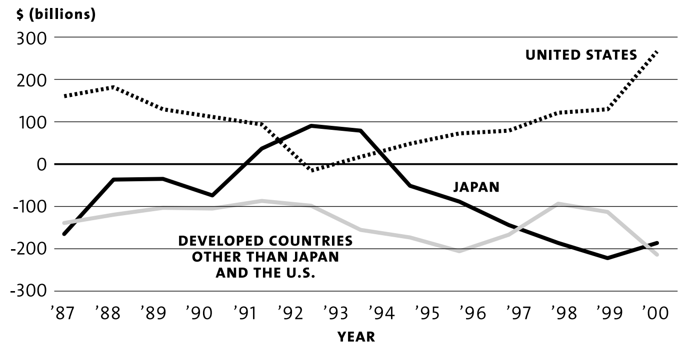
MISSING MARKETS

At present, capital flowing into emerging markets is volatile and relatively short term. In most, inflows have yet to be restored to levels before the Asian currency crisis. And in some, flows remain negative.

One consequence is that small- and medium-size enterprises have largely been denied access to the vast pool of savings of developed countries. This situation persists because the much-needed reforms to market regulation and to the governance of firms in emerging economies have yet to take place. Entrenched managers and elites in developing countries have in most cases been able to block reforms that would decentralize political and economic power by creating efficient capital markets.

Expanding economic participation in both home and business ownership is key to the expansion of output in developing economies.

WHERE THE FLIGHT CAPITAL WENT



SOURCE: World Bank, *World Development Indicators*

Middle-class oriented development, financed through the democratization of capital, not only will create a constituency for reform, but also will be the best guarantor of geopolitical stability. And despite the difficulties of the past years, the time is ripe for change; countries with a combined population of some 1.5 billion have already achieved levels of GDP comparable to those at which the U.S. and other countries first enacted middle-class oriented policies.

CAPITAL FLOWS

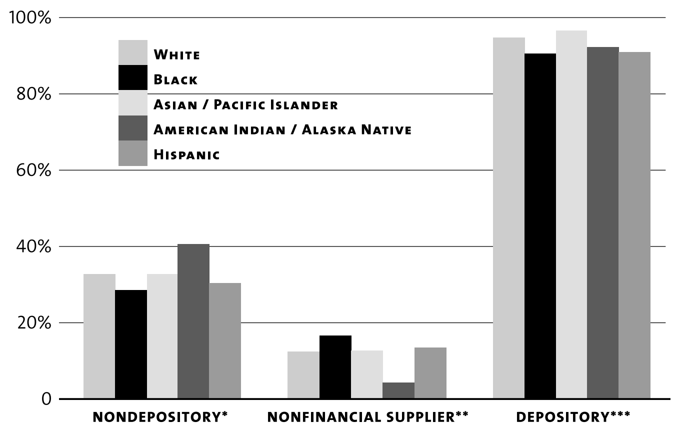
The Asian crisis of 1997, the collapse of the ruble, the subsequent shocks to Brazil and Ecuador, and, most recently, the collapse of Argentina's dollarization policy, have collectively curtailed appetites for investing in emerging market countries (EMCs). Indeed, each of the three large regions of EMCs –

Eastern Europe, Asia and Latin America – has seen a collapse in capital flows since 1997.

THE IMPORTANCE OF FINANCIAL INFRASTRUCTURE

Growth in jobs, income and wealth are all closely tied to the status of both financial institutions and markets. Having a well developed financial system, as measured by the ratio of credit volume to GDP, has also been found to be negatively related to economic volatility. Capital markets and access to them are key for mobilizing savings, minimizing investment risk over time and across industries, monitoring managerial behavior and processing information for efficient asset pricing.

SMALL BUSINESS'S SOURCES OF FINANCIAL SERVICES, BY ETHNIC GROUP



*finance company, brokerage, leasing company, other
**family and individuals, other businesses, government
***commercial bank and thrift
SOURCE: Survey of Small Business Finance, Federal Reserve Bulletin (2001)

A deep and liquid financial system that facilitates broad economic participation favors the rise of a middle class and tends to reduce income inequality. For example, the development of commodities futures markets would allow farmers in poorer countries to protect themselves against the idiosyncratic risks of farming, just as their American and European peers are able to do.

Domestic financial intermediaries and markets in developing countries are often small and weak. And a small, weak market is equivalent to the absence of a market. Small markets have not only higher unit operating costs, but are also more risky. Less liquidity leads to excessive volatility as prices fluctuate in the absence of market makers. Inefficient markets combined with insufficient and poor quality regulation, ineffective supervision and weak enforcement invite chaos, including the potential for bank and market runs.

Building local and regional markets requires widespread participation by issuers, investors and intermediaries. It also requires building the necessary market infrastructure of reporting, information flows and rules for corporate governance. These emerging and transition markets are important not only because their absence undermines economic and political stability in an increasingly interdependent world, but because they have most of the world's population and should account for most of the world's growth over the next few decades. Capital flows within and between those markets and the developed world have become increasingly important – not only to fund growth but also to generate high returns to pension funds in a rapidly aging developed world.

The emergence of primary and secondary high-yield securities markets would help provide a benchmark for pricing credit risk, bank loans and public securities for domestic and foreign investors alike. The development of these markets would allow the transfer of risk through securitization. Repackaging loans and selling them as bonds would reduce emerging market banks' exposure to liquidity risk and mitigate maturity mismatches for financing institutions in these countries as well. Funding costs for entrepreneurs and consumers would fall.

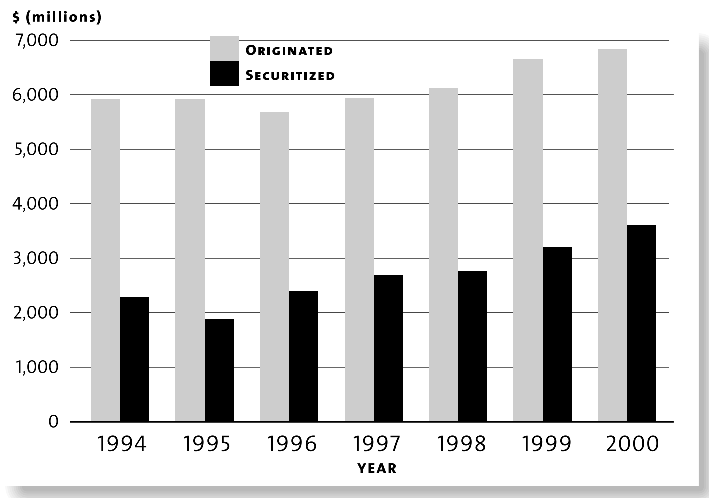
EMERGING DOMESTIC MARKETS

The United States faces its own challenges in sustaining and broadening economic prosperity at home. Given the rapid rate of minority population growth, the success of the economy is increasingly tied to the success of minority entrepreneurs. The size distribution of minority-owned businesses reflects the distribution of all U.S. firms and overwhelmingly represents small businesses. Accordingly, the capacity of the business system to regenerate turns, in part, on the capacity of minority entrepreneurs to climb the success ladder. Research on failure rates indicates that, controlling for education, capital access and management experience, businesses survive and prosper irrespective of the ethnic origin of the firms' entrepreneurs. Thus, what amounts to extending civil rights into the economic sphere is sound policy in terms of economic efficiency.

Perhaps as important as the growth in the number of emerging domestic market (EDM) firms and their sales volume is their broader distribution across industries. Not long ago, minority ownership was largely concentrated in personal services firms. Today, however, the distribution of minority-owned businesses roughly mirrors the distribution of all U.S. businesses. Significant concentrations exist in construction, wholesale trade, transportation, communications and utilities, with an increasing focus on export opportunities. Within the service sector, minorities show particular strength in the high-growth/high-skill health and business services, and engineering and management categories. In finance, insurance and real estate, we find increasing numbers of securities and commodities brokers, and both depository and nondepository institutions.

However, the vast majority of smaller EDM firms do not have access to the financing technologies that have fueled mainstream growth. In 1999, firms focusing on traditionally undercapitalized minority entrepreneurs managed only 2 percent of private equity funds. The disparity between capital demand from EDM firms and capital availability is a

SECURITIZATION OF GUARANTEED PORTION OF SBA LOANS



SOURCE: Small Business Administration serious constraint on expansion.

New research suggests that use of debt and equity as means of financing small businesses is positively correlated. That is, they are complements, not substitutes, in the context of small-firm creation; a strong balance sheet increases access to institutional sources of credit.

In recent years, institutional investors have become increasingly interested in emerging domestic markets. Some are using traditional fund managers to develop investment prospects, while others work through banks and still others invest through minority-focused funds. As in emerging markets overseas, effective investing requires a combination of general investment expertise and strong ties to local market partners.

Between 1990 and 2000, the capital invested in EDM funds rose from $550 million to $3.4 billion. As significant, the number of investment funds rose – from five sources of capital in 1990 (with the federal government providing 70 percent of invested funds) to nine in 2000 (with only 19 percent of the money coming from the government).

STRUCTURED FINANCE FOR EDM

One example of a risk management structure that applies the logic of structured finance vehicles to the emerging domestic marketplace is the state capital access program (CAP) – the type of small-business lending programs now running in 22 states and two cities. CAPs offer a mechanism for lending to small businesses that would otherwise be shut out of the market. Any federal- or state-chartered bank, savings association or credit union is eligible to participate in a CAP.

To create a link between private capital markets and the CAP program, California passed legislation in 1999 permitting the securitization and sale of CAP loans as asset-backed bonds. The U.S. Congress passed legislation in 2001 authorizing $200 million to be appropriated for a national CAP reserve.

EDM firms have already been able to float high-yield securities in the entertainment (particularly radio), communications and retail sectors. Innovative structured finance technologies make effective portfolio diversification possible, minimizing risk while still capturing market returns. Indeed, there has already been some progress in the securitization of Small Business Administration loans.

ENVIRONMENTAL FINANCE

To buttress a sustainable environment, we need to apply financial technologies that help to value environmental resources and to internalize externalities. Options, futures, hedging strategies and a variety of hybrid instruments that evolved in more traditional financial markets can be adapted to the purpose. Indeed, the creation of instruments that finance environmental investment and maximize the shareholder value of environmentally based enterprises is long overdue.

The rise of these markets also creates opportunities for emerging market countries, whose natural resource base gives them a comparative advantage in what might be called “environment-intensive” output. We would argue that monetizing environmental assets could substantially increase income and wealth generation in poorer countries.

Over the past 10 years, progress has been made in extending the benefits of new financial technologies to the solution of large-scale, persistent environmental problems. Applying the principles of corporate finance and economics to environmental issues shows how the alignment of the interests of consumers, producers and society can result in improved environmental outcomes. And in many cases, the creation of liquid markets in pollution rights has demonstrated that the cost of reducing emissions is far lower than engineering studies predicted. Market mechanisms allow polluters to meet their emission reduction commitments themselves – or to pay others to do the job where it is cheaper.

The adaptation of financial technologies to environmental problems is promising on a variety of fronts. Among the prospects:

Factors that promote environmental sustainability affect the sustainability of corporations as well.

- The expansion of markets in emissions permits to cover more pollution categories.
- The development of ecosystem services markets, which would monetize the value of biodiversity, ecotourism, etc.
- The development of market-based indicators to track environmental quality.

On first look, the use of markets to fix environmental problems seems unrelated to the traditional issues of financing economic growth. In truth, the factors that promote environmental sustainability affect the sustainability of corporations as well. Environmental and corporate performances are positively correlated.

INTELLECTUAL CAPITAL SECURITIZATION

Old models of capitalism were built around the control of tangible capital. A relatively small number of capitalists marshaled a society's physical assets and labor force to make things. Mass production by hierarchical firms using homogeneous labor and capital inputs was the order of the day. In modern models, economies run largely on ideas and the ability to finance them. Scale economies have given way to scope economies in the technological evolution of processes and products. Organizational pyramids have been flattened.

Capital spending that used to be concentrated in long-lived tangible assets now sustains rapid product cycles in knowledge-based industries. But by most analyses, investment in R&D, as well as in basic science, is well below the level needed to maximize growth. Government spending for science has not kept up with historical rates of increase and consolidation in some industries (e.g., pharmaceuticals) has compromised research and development budgets. Consequently, we may not be renewing assets in science and technology at a rate required to generate anything close to optimal economic growth.

In the late 1990s, businesses began to appreciate that intellectual property and technology-in-progress represented important assets. Early stage corporate, small business and university technologies have attracted unprecedented attention, valuations and investments.

Yet while the potential inventory of intellectual property and knowledge capital has continued to grow, supplies of capital (public and private) contracted after the stock market meltdown of 2000. Financial technology can help to close the gap – for example, by pooling and diversifying risk in projects to commercialize inventions. Securitizing intellectual property assets for purposes of trading them on into liquid, secondary markets may well prove critical.