

Reevaluating Emerging Market Risks: The Case For Project Finance

BY ALLISON F. KINGSLEY

Foreign investors are struggling to find effective ways to mitigate risks in emerging markets. Prior to the 2008-2009 global crisis, emerging market risks had largely progressed from the contagion paradigm of the 1980s and 1990s, and instead were viewed as idiosyncratic risks that could be mitigated and hedged. Now, conventional wisdom suggests that all emerging market investments are correlated and that risk is inherently systemic. Neither view is sufficient to explain how investors should approach investing in emerging markets. As an academic and investment professional, I integrate the competing paradigms and advocate one relatively crisis-resistant and development-positive investment: project finance.

Is Private Capital Pushed Or Pulled Into Emerging Markets?

Investment Model

The traditional view of foreign investment was that foreign investors had a limited toolbox with which to mitigate risk and thus pursued investments based primarily on host country fundamentals. This Investment Model, or “pull” view of foreign investment, concluded that foreign investors pursue investments in countries with strong credibility and a solid market opportunity.¹ Empirical evidence generally confirms that more private capital is pulled into countries

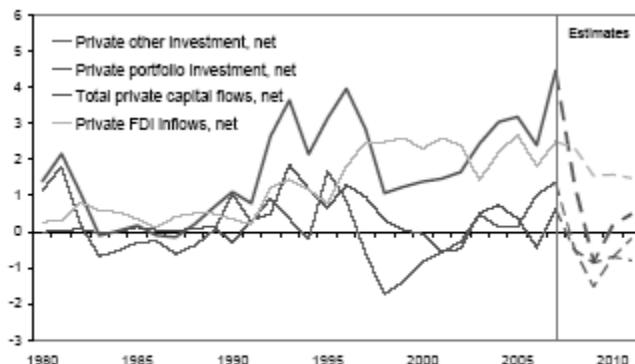
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A PDF version of this article, including color versions of the charts presented, is available at the YJIA website: www.yale.edu/yjia.

with better macro-fundamentals. The aggregate data trends demonstrate that private capital flows (Chart 1) and GDP per capita (Chart 2) generally increased over the last twenty years as emerging markets' current account surpluses grew (Chart 3), sovereign credit quality improved (Chart 4), and inflation volatility diminished (Chart 5).

Chart 1. Emerging Market Net Private Capital Flows

Percent of GDP



Source: IMF, World Economic Outlook database.

Chart 2. Emerging Market GDP Growth

Percent year-on-year

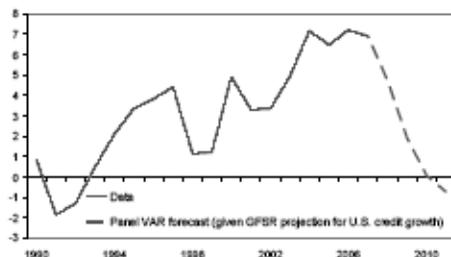
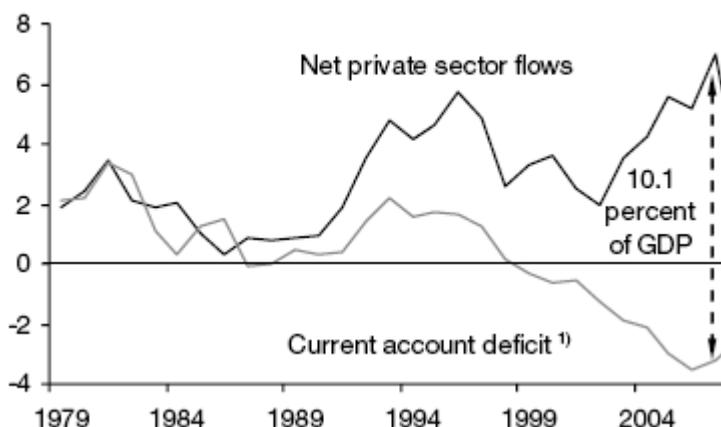


Chart 3. Net External Financing of Emerging Economies

as percent of emerging market GDP



Source: IIF, "Capital Flows to Emerging Economies" (Jan 27 2009)

Chart 4. Emerging Market Sovereign Credit Quality
Net Credit Ratings Changes



Chart 5. Market Volatility of Inflation Across Emerging Market Countries
In Percent



Yet a more refined approach is required to understand the micro-fundamentals of foreign investment. In “Dealing Away Risk in Foreign Infrastructure Investment,”² I found that foreign investors are actually quite skilled at creating hazard-mitigating mechanisms within deals to make a seemingly problematic investment environment more appealing.³ Indeed, governments can promote foreign investment by enhancing market opportunity with “profit safeguards” such as subsidies, guarantees, and monopolies and by strengthening country credibility with “commitment institutions” such as specific types of enforcement mechanisms or the involvement of multilateral institutions or development banks.

While such behavior does not always improve deal performance (the addition of too many profit safeguards makes deals vulnerable to ex post intervention), creating deal-specific institutions refines the approach taken by traditional Investment Model theorists. As a practitioner of foreign investment, I know firsthand the ways in which even sizable risks can be successfully mitigated through thoughtful transaction structuring.

Liquidity Model

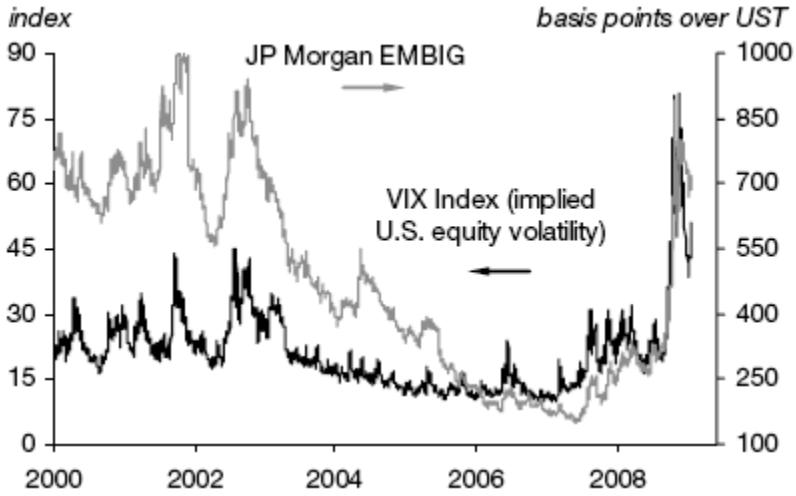
A competing view of foreign investment arose in the wake of emerging market crises in East Asia (1997), Russia (1998), and Argentina (2001). The Liquidity Model, or “push” view of foreign investment, held that foreign investors make investment decisions based less on the fundamentals of the host country and more on liquidity positions in developed markets. Under this model, foreign investment dollars pushed indiscriminately into emerging markets will quickly be withdrawn should credit cycles change. A classic example is East Asia, in which \$93 billion of private capital inflows to South Korea, Indonesia, Thailand, Malaysia, and the Philippines became outflows of \$105 billion (or 11% of combined GDP) the very next year, as investor confidence crashed and global liquidity dried up.⁴ Since developing countries tend to manage their capital structures poorly, it follows that liquidity and price shocks can reverberate and cause devastating financial crises.⁵ Witness Argentina’s sovereign default in 2001, in part a result of poor debt management and problematic fiscal policy.

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Much empirical evidence—including today’s crisis—supports the Liquidity Model’s view that financial trends in developed countries and global markets drive foreign investment. There is indeed strong correlation between the size of capital flows into emerging markets and the supply of global liquidity. For instance, the volatility in emerging market bond prices (EMBIG) and that of U.S. equities (VIX - a market-standard measure of general global volatility) behave similarly, implying that the same underlying variable causes both (Chart 6). Viewed alongside measurements of global liquidity and net private capital flows to emerging markets over roughly the

same period (Chart 7), it seems logical that global liquidity may be the missing causal variable, for as liquidity increases, emerging market bonds prices decrease. When one examines the correlation between emerging market debt volatility and advanced countries’ bank liquidity (Chart 8), the positive correlation becomes even clearer.

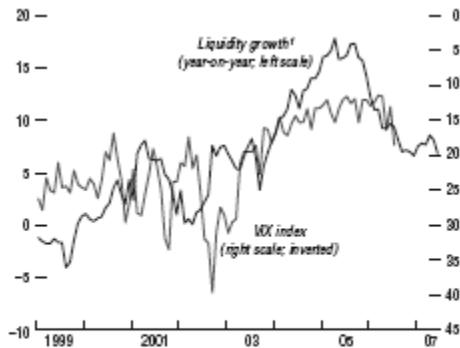
Chart 6. U.S. Equity Volatility and EM Bond Spreads



Source: IIF, "Capital Flows to Emerging Economies" (Jan 27 2009)

Chart 7. Liquidity Measure and Market Volatility

In percent



Sources: Bloomberg L.P. and IMF staff estimates.
 *Includes the U.S. monetary base and foreign official holdings at the Federal Reserve Bank of New York, leading 12 months.

Source: IMF "Assessing Global Financial Risks", Figure 1.5, p. 4 (September 2006).

Chart 8. Distress Dependence Between Emerging Market Sovereigns and Advanced Country Banks

Average conditional probabilities for the region



But understanding aggregate capital flows does little to explain the composition of those flows or how investments will perform under stress. Foreign investment is not homogenous, rather different instruments bear different risks. Investments can be debt or equity, on the most basic level, but each category encompasses several types. In addition to straight sovereign debt there is also corporate, project and asset-backed debt of single-names or pools. Such debt can be structured as secured or unsecured, short to long term, and public or private—and each can be customized with different covenants, pricing mechanisms, and risk-adjusted returns. Likewise, equity can be bought as public stocks, a direct investment, or any number of other structures. While conventional wisdom suggests that debt tends to be more problematic to host countries than equity,⁶ investment professionals are trained to ask critical questions to discern risk, such as “What kind of debt or equity? Under what terms? At what price?” Still, not all investments or investors behave the same. And in a crisis situation like the present, that matters.

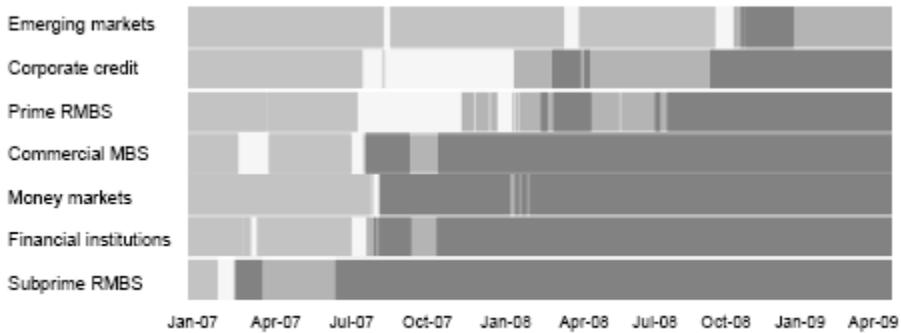
What Does Today’s Crisis Tell Us About Foreign Investment?

Prior to the 2008-2009 global recession, risk technology had advanced far enough to largely mitigate or hedge idiosyncratic risks in emerging markets. Most investors felt that sufficiently diversified portfolios allayed much of the contagion risk amongst assets, industries, and countries. Indeed, many were even talking about the decoupling of emerging markets from advanced markets due to the improving fundamentals of most emerging markets—after the 2001 collapse of Argentina’s capital structure and convertibility board, numerous countries cleaned fiscal and monetary house.

The implication was that the Liquidity Model had become outdated and the refined Investment Model, with its bottom-up approach, was the better predic-

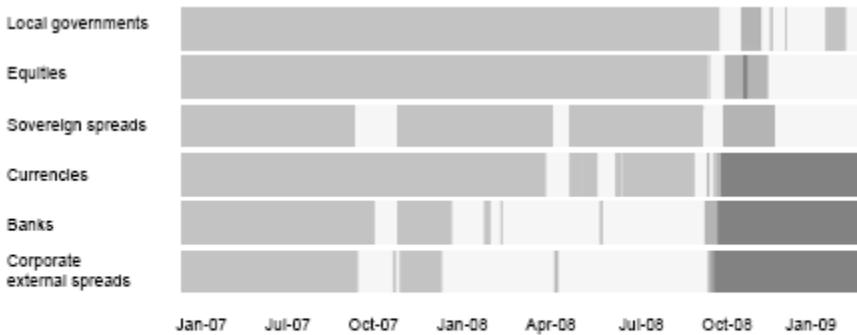
tor of foreign investment performance. For nearly all of 2008, this story held true across asset classes in emerging markets (Figures 1 and 2).

Figure 1. Heat Map: Development in Systemic Asset Classes



Source: IMF staff estimates.
 Note: The heat map measures both the level and 1-month volatility of the spreads, prices, and total returns of each asset class relative to the average during 2004-06 (i.e., wider spreads, lower prices and total returns, and higher volatility). The deviation is expressed in terms of standard deviations. Green signifies a standard deviation under 1, yellow 1-4 standard deviations, orange 4-7, and red greater than 7. MBS = mortgage-backed security; RMBS = residential mortgage-backed security.

Figure 2. Heat Map: Development in Emerging Market Systemic Asset Classes



Source: IMF staff estimates.
 Note: The heat map measures both the level and 1-month volatility of the spreads, prices, and total returns of each asset class relative to the average during 2004-06 (i.e., wider spreads, lower prices and total returns, and higher volatility). The deviation is expressed in terms of standard deviations. Green signifies a standard deviation under 1, yellow 1-4 standard deviations, orange 4-7, and red greater than 7.

But the Liquidity Model—the view that risks are systemic and top-down—now appears to be at the heart of the 2008-2009 global crisis. It is the story of why changing credit cycles in the United States and Europe transformed the flow of funds to Latin America, Asia, and Emerging Europe. It is the reason why emerging market stocks have fallen by half and estimates of private capital flows to emerging markets have decreased by two-thirds.⁷ It is the logic behind a global recession in which few countries, if any, are immune. Investors were stunned to see seemingly diversified and well-structured investments correlate precisely. The global crisis of 2008-2009 brought back fears of contagion paradigms and systemic risks.

So have push models of foreign investment trumped pull models? No. Confirming the Liquidity Model does not discredit the Investment Model. What has been lost in viewing the world solely through the prism of systemic risk is the reality that neither a systemic nor idiosyncratic model alone can explain patterns of foreign investment or emerging market behavior. What type of investment, under what conditions, and in which jurisdiction matters immensely in determining investment outcomes. So, too, should the level of global liquidity and the state of commodities markets factor into investors' risk analysis. And there is a specific asset class that can balance these multiple risk factors: project finance.

Why Is Project Finance An Ideal Asset Class?

Project finance assets can offset the tension between systemic and idiosyncratic risks in emerging markets. Admittedly, I am a biased advocate of project finance, having spent my career focused on this asset class. Yet the credit fundamentals of project finance are objectively strong and proven, with risk-adjusted returns that are attractive on both a relative and absolute basis.

Basic Risk Structure

First, project finance is focused on the infrastructure and energy sectors, which are the building blocks of development and are essential to emerging markets. Power plants produce electricity to fuel industry; oil and gas projects generate hard currency; water treatment and desalination plants produce drinkable water; ports and roads transport imports and exports; and airports support commerce and tourism. During recessions, when governments are focused on stimulating growth and employment by investing in infrastructure, such projects are

POLITICAL RISKS ARE SIGNIFICANTLY LESS PRONOUNCED IN PROJECT FINANCE STRUCTURES.

increasingly valuable. Second, contracts are heavily negotiated in order to efficiently and effectively allocate risk to the parties best able to control the outcome and bear that risk. Any reputedly financed project undergoes extensive due-diligence and exhaustive contracting.

Take the example of an Egyptian power project financing. Sponsored by an investment grade multinational power company, the gas-fired plant produces power to generate 10% of Egypt's domestic electricity demand. To mitigate construction risk, the project negotiated a solid construction contract with an experienced contractor, received a completion guarantee from the sponsor, utilized proven technology, and established stringent completion tests. To mitigate supply and offtake risks, gas supply and prices are fixed under a 20-year contract with a state-owned gas company

and 100% of the power production is sold at competitive prices to the national utility under a 20-year purchase agreement (guaranteed by the Egyptian Central Bank). All fuel supply and cost risks are passed through to the national utility, which makes sense since the government effectively stands on both sides of power production (supply and offtake). All currency and inflation risks are also passed through to the government, who is in the best position to take that risk. In exchange for assuming credit risk, the lenders negotiated security over the assets, covenants for minimum leverage and minimum debt service coverage, and requirements for monitoring.

Third, the parties to a project are selected based on strong experience and aligned incentives. Like in the above deal, equity sponsors are strategic, liquid companies in the industry, construction contractors are experienced in building like projects, and lenders tend to have ongoing financial relationships with borrowers. Banks and multilateral institutions like the IFC have exposure to multiple lending facilities and, in most cases, have worked for years with the underlying parties. Counterparty risks are, to the greatest extent possible, selected out.

Fourth, projects are structured such that cash flows remain stable throughout the duration of the project. This provides more predictability of performance over time and, more importantly, better recovery in the case of default. In the Egyptian power plant example, the project's cash flows from the sale of power are contracted for 20 years at a set price and quantity and operating costs are similarly fixed with only a marginal percentage variable. This yields highly predictable cash flows available for the payment of debt service and, in some cases, a minimum equity return. Furthermore, parties put care into explicating enforcement mechanisms, contemplating downside scenarios, and creating liquidity cushions in the event that costs or stresses exceed initial estimates.

Fifth, political risks are significantly less pronounced in project finance structures, by virtue of the above, and have historically not been a factor in debt defaults. Domestic constituents tend to find essential infrastructure and energy projects more politically palatable, particularly when transparently executed with reliable counterparties under reasonable commercial terms. Typical political risks like exchange rate changes, currency convertability and transferability, and inflation volatility can be fully mitigated through the negotiated contract terms (i.e., inflation indexing, offshore dollar-denominated accounts, preferred creditor status, and political risk insurance). Outright or creeping expropriation is mitigated, as much as possible, by aligning incentives of the government and investors. Other mitigants include waiving the sovereign's immunity, predetermining compensation mechanisms, and holding funds and security offshore. In sum, investors think through default and recovery scenarios.

A timely example of negotiated political risk mitigation is the Baku-Tblisi-Ceyhan (BTC) oil pipeline project. The BTC pipeline transverses three states – Azerbaijan, Georgia, and Turkey – that are known for their volatile and dangerous politics, and it relies upon oil from Kazakhstan. Because oil pipelines are notoriously easy to disrupt (witness Nigeria and Iraq) or to hold hostage (witness the Chad-Cameroon pipeline), and the BTC pipeline is five times the length of Iraq’s northern export system, the political stability of these areas directly affects the project. Moreover, any of the three states involved in the pipeline might change the tax rate or pursue other forms of creeping or outright expropriation. In addition, Russia is more than displeased that the BTC pipeline was built, in part, to cut it out of the oil transportation game in the Caspian.

To mitigate these significant political risks, the BTC pipeline was built underground and skirts potentially troublesome areas prone to disruption – Nagorno-Karabakh in Azerbaijan, South Ossetia, Abkhazia, and Samtskhe-Javakheti in Georgia, and the Kurdish areas of Turkey. (The pipeline escaped harm in the 2008 Georgian-Russian conflict.) From an incentive perspective, the host governments have significant state-owned entities involved and have incredible revenues at stake to keep the project running: Turkey estimates \$300m annually from transit fees alone while Azerbaijan’s GDP has increased 20-30% annually as a result of the project. Under individual and group agreements ratified by their respective parliaments, the host governments have also agreed to provide for security, economic stabilization, and compensation in the event of expropriation or midstream political events - all of which are enforceable under international law. Any upstream interruptions due to political events will be recouped by a readjusted tariff (paid by the investment grade oil offtakers). Most project accounts are held in dollars offshore and benefit from insurance proceeds in addition to project revenues, thus mitigating diversion and currency risk. Moreover, the involvement of the World Bank, EBRD, IFC, and ECA encourages compliance and, from a geopolitical perspective, the BTC pipeline is of tremendous strategic importance to the United States and Europe since it circumvents Iran and Russia and is the only non-Russian controlled export pipeline to Europe. While the BTC project may yet run into political risks, contracts and incentives were structured to help mitigate those risks.

Sixth, from a risk-adjusted return basis, project finance compares favorably to other longer term assets. Expected equity returns are typically 30% or above, in some cases with a guaranteed annual minimum return of 10% to 20%. Debt returns depend on the structure and risk rating of the specific debt instrument. For instance, low investment grade (BBB) secured loans or bonds price have historically priced between 100 bps and 150 bps over LIBOR and typically run 10-15 years, whereas non-investment grade (BB) secured loans have historically priced closer to 300 bps with maturities of 7-10 years. The current market dislocation has widened such spreads significantly.

Default and Recovery Statistics

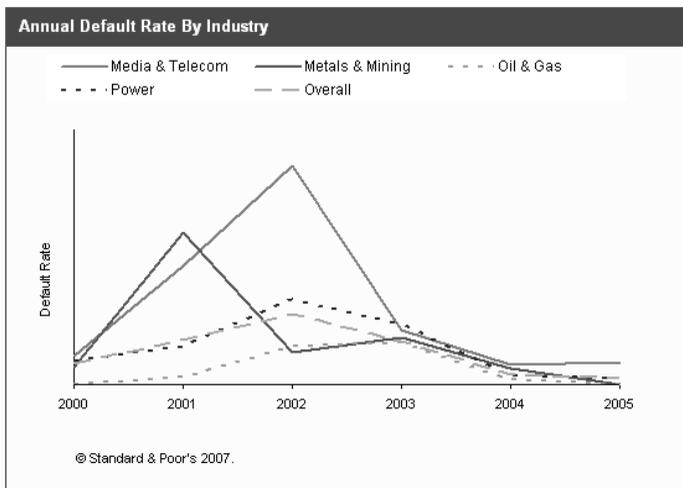
With such thoughtful structuring *ex ante*, and a recognition that changes will emerge *ex post*, project finance successfully mitigates principal risk—the risk that an investor will lose its principal investment.⁸ Residual term risk—or the risk that the investment tenor will be extended to recoup losses in a default scenario—remains, but this is a risk that many long-term project finance investors are willing to take given the abundant risk-mitigating structures that project finance offers, including alignment of incentives and dedicated cash flows. Being the debt owner of a project, and receiving funds higher in the cash waterfall, only improves default and recovery statistics.

More importantly, in the present volatile times, project finance debt has proven resilient under stress. Standard & Poor's (S&P) was charged by a consortium of approximately thirty banks to collect project finance loan information and report annual aggregate project finance default rate and recovery statistics. The consortium collected project credit performance data dating back to the early 1990s on 4,029 projects (about 75% of worldwide syndicated project finance loan transactions).⁹

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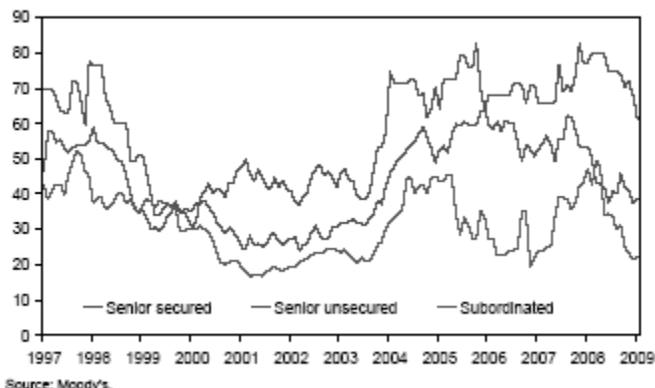
Over this time period, project finance industries have weathered considerable stresses comparable if not more severe than the present contraction in credit markets. For instance, the power and telecom industries both underwent deregulation and intense “bust” contractions. Key project finance commodities, including electricity, crude oil, natural gas, and metals, have experienced sizeable price movement and volatility. In addition, the S&P time period incorporates financial crises and macroeconomic recessions—notably, significant emerging market growth declines following the Asian (1997), Russian (1998), and Argentine (2001) crises; vast growth contractions in the former centrally-planned economies and the Soviet Union¹⁰; consistently low and negative growth rates throughout Africa and lower-tier developing countries¹¹; and acute country-specific shocks.

Chart 9. Annual Default Rate By Industry



The S&P project finance study found that the long-term median annual default rate for project finance bank loans falls between 2% and 3%. For an asset class with large exposure to emerging markets and a few historic boom/bust industry cycles (Chart 9), this default rate is much lower than traditionally anticipated. S&P also found the median project finance recovery rate to be between 80% and 90%, with a very significant percentage of instruments recovering between 90% and 100%. These high recovery statistics make project finance credit fundamentals or “loss given default” metrics stronger than expected. Indeed, even in the extreme and rare expropriation scenarios like Hugo Chavez’s nationalization of the Petrozuata oil projects in the Orinoco Basin, the project finance debt holders were ultimately paid out their principal (100% recovery) plus a small premium. Relative to even U.S. senior secured bonds, which have ranged between 30% and 80% recovery, global project finance bank loans compare favorably (Chart 10).

Chart 10. Average Recovery Rates on Defaulted U.S. Bonds
In percent, trailing twelve months



While a prediction based solely on historical data is a fool's errand (witness yesterday's reliance on models of never-ending growth in U.S. residential housing), these historical trends make a compelling argument for considering the project finance asset class. This is particularly true given the level and, at times, randomness of the historic stresses across countries and industries. Although funding of new projects and refinancing of old projects has substantially dried up (akin to the 2/3s decline of private capital flows to emerging markets) and pricing spreads for assets have widened significantly (in some cases by as much as four times), this is more a product of liquidity constraints at banks and insurers than it is an indication of the underperformance of the asset class. In this, investor behavior in project finance has followed expectations of the top-down Liquidity Model – that funds flow based on the investor liquidity and not project fundamentals. Deals that were sufficiently protected from sponsor or bank illiquidity and refinancing or merchant risks have managed through the down turn just fine.¹²

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Indeed, to the best of my knowledge, a *de minimus* amount of project debt financings have defaulted or breached for credit reasons, save for those few that failed to adequately address risks in the first place (like ethanol plants, merchant power in problematic jurisdictions, and certain chemical plants or refiners without margin protection). Most projects have found that their contracted cash flows, liquidity cushions and reserve funds, and strategic and operational rationale have sufficiently protected them from today's extreme and unpredictable volatility. The bottom-up risk mitigation strategy worked. The project finance asset class appears to have withstood this crisis, in both emerging and emerged markets and under both Liquidity and Investment model frameworks. I predict that it will continue to do so.

How Should Investment Strategies Change?

All investors (and academics) should be Bayesian, willing to change their beliefs about the state of the world based on new information. The current global crisis has brought an onslaught of new information and, in some ways, reaffirmed old ideas.

Before the current crisis, I had already reached the academic conclusion that earlier work focused merely on pull models of investment missed the larger picture of exogenous push factors and that, likewise, liquidity models failed to tell the story of the micro-analytics of investment. Similarly, my investment

focus was on underwriting project financings that mitigated risks from the top down (for instance, by limiting exposure to refinancing or merchant risk) and the bottom up (by efficiently and effectively allocating risks to appropriate counterparties).

PROJECT FINANCE IS AN EFFECTIVE WAY FOR THE PRIVATE SECTOR TO FUND DEVELOPMENT-POSITIVE INFRASTRUCTURE AND ENERGY PROJECTS WHILE STILL PRESERVING ITS RETURN MANDATE.

In 2009, I reaffirm that no one model can make sense of emerging market behavior or investment performance, despite the overwhelming convergence by many academics and practitioners on systemic risk causal stories. Only taken together can the bottom-up, “pull” Investment Model and the top-down, “push” Liquidity Model help investors predict and mitigate risks in emerging markets. Specifically, to the extent foreign investors are willing to invest in good credit underwriting, safe yet profitable investments in emerging markets still exist. Project financings of infrastructure and energy assets is a compelling example.

Accordingly, my fundamental belief in investing over the long-term in project finance in emerging markets has been supported. That matters to me as an investor, with capital at risk, and as an academic, with theories being tested. But it also matters to me as a global citizen concerned about development. Project finance is an effective way for the private sector to fund development-positive infrastructure and energy projects while still preserving its return mandate. Being able to assist development, especially at a time when many asset classes have generated collateral damage and amplified the human costs of recession, is no small achievement. ■

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- Samantha Raneri served as lead editor for this article.

NOTES

*Unless otherwise noted, all data from International Monetary Fund, Global Financial Stability Report: Responding to the Financial Crisis and Measuring Systemic Risk, Washington (April 2009).

¹ Credibility refers to the commitments a state makes with respect to investments and the stability and predictability of its governance institutions; lack of credibility is akin, though not identical to, sovereign and country risk.

² For full discussion please see Allison Fine. “Dealing Away Risk in Foreign Infrastructure Investment,” *Journal of Structured and Project Finance*, Vol. 9, No. 2, pp. 53-64. Also refer to *ibid*, *Dealing Away Risk: The Political Economy of Foreign Investment in Emerging Telecommunications Markets*, UMI Microform 3066837, Doctoral Dissertation, 2002.

³ To test the relationship among market opportunity, country risk, specific deal mechanisms, and private foreign investment performance, I compiled market, country, and unique deal-specific data on 103 countries over a 10-year period, 1990-1999. Employing difference-in-means hypothesis testing, testing, ordered probit regression analysis, and a sample-selection Heckman model, I determine when foreign investors make positive foreign investment decisions in the context of significant risk, what profit safeguards and commitment institutions are available, and under what conditions those mechanisms are implemented.

⁴ “The Perils of Global Capital,” *The Economist* (April 9, 1998).

⁵ A good example is Michael Pettis, *The Volatility Machine: Emerging Economies and the Threat of Their Financial Collapse*. Oxford University Press, 2001. The IMF’s revised methodology is explicated in Johan Mathisen and Anthony Pellechio, “Using the Balance Sheet Approach in Surveillance: Framework, Data Sources, and Data Availability,” IMF (April 2006).

⁶ For a summary of these arguments see M. Ayhan Kose, Eswar Prasad, Kenneth Rogoff, and Shang-Jin Wei. “Financial Globalization: A Reappraisal,” IMF Working Paper 06/189 (August 1, 2006).

⁷ “The outlook for private capital flows to emerging economies has deteriorated significantly in recent months. Net flows are now projected to be just \$165 billion in 2009, down from \$466 billion in 2008. This estimate for capital flows in 2009 is an unambiguously weak one, and a decline of 82 percent from the boom year of 2007 (\$929 billion).” Institute for International Finance, “Capital Flows to Emerging Economies,” (January 27, 2009), p. 1.

⁸ An analytical distinction in project finance explicated by Bob Dewing.

⁹ See Standard & Poor’s “Project Finance Consortium Study Reveals Credit Performance Trends Since Early 1990s,” (August 8, 2007). There are additional S&P private studies that confirm these results with more recent data.

¹⁰ For instance, Russia -15% and Central Asia -17% in 1992 and Ukraine -23% in 1994. Data from IMF.

¹¹ Such as Mexico (-6% following 1994 crisis), Indonesia, Malaysia, and Thailand (-13%, -7%, and -11%, respectively, following 1998 crisis), Brazil (no growth following 1999 devaluation), Argentina (-11% following 2001 crisis), and Turkey (-6% in 1994 and -8% in 2001). Data from IMF.

¹² See “The Fear Factor,” *Project Finance Magazine* (November 2008).