

DEVELOPING THE FINANCIAL SECTOR AND EXPANDING MARKET INSTRUMENTS TO SUPPORT A POST-2015 DEVELOPMENT AGENDA IN ASIA AND THE PACIFIC

Vivek Rao

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Developing the Financial Sector and Expanding Market Instruments to Support a Post-2015 Development Agenda in Asia and the Pacific

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No. 36 | March 2015

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CONTENTS

FIGURE AND TABLES.....	iv
ABSTRACT.....	v
ACKNOWLEDGMENTS	vi
I. INTRODUCTION: MOTIVATION AND AIMS	1
II. FINANCING REQUIREMENTS AND CHALLENGES FOR THE POST-2015 DEVELOPMENT AGENDA	1
III. ROLE OF FINANCIAL SECTOR DEVELOPMENT IN GROWTH.....	2
IV. FINANCIAL SECTOR LANDSCAPE OF ASIAN ECONOMIES	4
V. ROLE OF SMALL AND MEDIUM-SIZED ENTERPRISES AND INFRASTRUCTURE AND FINANCIAL INCLUSION IN EMPLOYMENT GENERATION AND POVERTY REDUCTION	5
VI. AVAILABILITY AND USAGE OF LONG-TERM SAVINGS IN ASIA	7
VII. FINANCIAL SECTOR GAPS FOR EXPANDING CAPITAL INVESTMENT AND MARKET ACCESS	8
VIII. FINANCIAL PRODUCTS AND INSTITUTIONS FOR LONG-TERM CAPITAL EXPANSION	11
A. Specialized Financial Intermediaries for SMEs	11
B. Infrastructure Financing.....	12
C. Country Applications for SME Finance Initiatives	20
D. Country Applications for Infrastructure Finance and Capital Market Development Initiatives.....	22
IX. LEVERAGING CONCESSIONAL RESOURCES	27
A. Country Applications for Leveraging Concessional Resources.....	28
X. BOOSTING EFFORTS FOR FINANCIAL INCLUSION.....	29
A. Options for Commercial Banks to Deepen Financial Access	30
B. Microfinance Model	31
C. Risk Management for the Small Farmer	34
D. Country Applications for Microfinance and Agricultural Finance Initiatives	36
E. Harnessing the Post Network for Financial Inclusion	39
XI. DISASTER RISK FINANCING	39
A. Country Applications for Disaster Risk Finance.....	40
XII. CONCLUSION	42
REFERENCES	44

FIGURE AND TABLES

FIGURE

1	Catastrophe Risk Layering.....	41
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TABLES

1	Future Trends in Real Domestic Savings Rates in Developing Asia.....	7
2	Comparison of the Asian Development Fund and Modified Loan Terms	28

ABSTRACT

Meeting the financing requirements of the post-2015 development agenda presents significant challenges in light of unfulfilled Millennium Development Goals (MDG) targets and the likely increased development targets post 2015. With weak fiscal balances even in middle income Asian economies, it is necessary to promote efficient allocation of resources and enhance availability of financial instruments to catalyze commercial financing to meet development goals and complement fiscal resources. New partnerships and innovative sources of financing can complement traditional financing modalities and governments can pursue these options by establishing an enabling environment through sound macroeconomic policies and fostering a dynamic private sector. The adoption of enabling financial frameworks contributes to private finance mobilization. The adoption of new financing modalities is critical for expanding investments in infrastructure and manufacturing to boost employment, growth, and productivity. To provide the necessary incentives for sustained private investment, macroeconomic, legal, environmental policy, and regulatory frameworks that reduce risks and uncertainty for investors is necessary.

Further, a key aspect of ensuring that the benefits of growth reach all sections of society is to foster an inclusive financial system. Promoting “inclusive finance” implies providing financial services to poorer and disadvantaged groups through instruments tailored to provide savings, insurance, remittances, credit, and other financial services to people and enterprises at the bottom of the economic ladder. Inclusive finance enables and accelerates food security, nutrition, and rural development and critical for investment to (i) increase food production and consumption; (ii) contribute to greater food security; (iii) adopt climate change adaptation and mitigation technologies; (iv) protect from risks and unforeseen events; and (v) create new livelihoods, businesses, and nonfarm employment. Even outside the rural sector, an expanded set of financial services help agents strengthen their asset base to invest in income generation and create “buffer capital” for times of crisis.

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The paper was conceptualized as part of ADB's broader technical work on financing for a post-2015 sustainable development agenda led by Strategy and Policy Department in collaboration with the Regional and Sustainable Development Department. It is also an input to ADB's joint work with UNDP and UNESCAP on the Millennium Development Goals.

I. INTRODUCTION: MOTIVATION AND AIMS

1. There are growing ambitions in Asia and the Pacific for a post-2015 development agenda, in the context of Millennium Development Goal (MDG) targets, at a time of increasing pressure on official development assistance (ODA) given prevailing economic challenges in donor countries.¹ At the same time, there is also an interest among developing countries to move away from aid-dependency, fueling the need for market-based solutions to meet increasing financing requirements. In this context, the paper explores (i) market instruments for expanding availability for financing for manufacturing and infrastructure and (ii) initiatives for financial inclusion with the related topics of credit delivery, risk insurance, income generation and smoothing, agricultural finance, and microfinance which are relevant to the marginal producer, the poor and financially excluded. In addition, given the importance of urban infrastructure on urban poverty reduction (footnote 2), a discussion on instruments relevant to the urban sector is provided in addition to options on mitigating disaster risk. The applicability of proposed initiatives in various economies is also discussed.

2. The study also discusses complementary initiatives in terms of legal and regulatory reforms necessary to sustainably support market-oriented financing options. Given market orientation, the paper is complementary to studies that focus on philanthropy, corporate social responsibility type initiatives, debt relief, and outright grants. In line with this approach, the following section provides an overview of development and financing challenges and provides a motivation for the paper. Sections III and IV then address key aspects of financial sector development for preparing an enabling environment for expanding market-based financing for capital investment or financial inclusion, and provide the prevailing Asian context. This is followed by sections that suggest a rationale for supporting manufacturing and infrastructure sectors, and followed by a discussion on options for long-term capital expansion and financial inclusion, as well as disaster risk finance necessary for climate change adaptation. A discussion on how to leverage concessional ODA funds through various mechanisms is also provided. The final section provides conclusions and a way forward.

II. FINANCING REQUIREMENTS AND CHALLENGES FOR THE POST-2015 DEVELOPMENT AGENDA

3. **Current status of MDG targets.** In developing countries, the proportion of people living on less than \$1.25 a day fell from 47% in 1990 to 22% in 2010, significantly in rural areas. The target of halving the percent of people suffering from hunger by 2015 is within reach. The proportion of undernourished people in developing countries fell from 23.2% from 1990–1992 to 14.9% in 2010–2012. In addition, while the mortality rate for children under 5 years old dropped by 41% between 1990 and 2011, the target was for a two-thirds reduction. Similarly, the maternal mortality rate fell by 47% over the past 2 decades, which while significant, is still short of the 75% target. The last decade saw a 25% global fall in mortality rates from malaria, sparing the lives of an estimated 1.1 million people. Between 1995 and 2011, 51 million tuberculosis patients were treated successfully, saving

¹ In 2012, the Organisation for Economic Co-operation and Development (OECD) reported that aggregate ODA flows from donor countries decreased by around 13% in real terms, the largest decline in ODA since 1997. While the 2005 G-8 summit saw the highest commitments of all time, the group failed to deliver its collective promises by at least \$18 billion by 2010. Although some countries like the United Kingdom have this year admirably made good on their promise to reach the 0.7% of gross national income aid target, none of the other 10 countries that made 0.7 commitments for 2015 are on track to deliver them. Nor did the 2009 G-8 L'Aquila commitments for agriculture come to full fruition. Two years after the conclusion of the initiative, donors had only disbursed 74% of their commitments.

20 million lives. A few targets for ensuring environmental sustainability have also been achieved such as for improved water sources, and over the past decade, over 200 million slum dwellers, double the target, benefited from improved water and sanitation and durable housing.

4. **Key development challenges.** However, the forward looking challenges are also formidable. Even if the poverty target has been met, 1.2 billion people still live in extreme poverty. One in eight people remain chronically undernourished, and one in four children suffers from stunted growth due to malnutrition. Without renewed efforts, the target of universal primary education by 2015 is beyond reach, particularly in conflict-affected countries. Stronger efforts are needed to improve the quality of education and provide lifelong learning opportunities, especially for girls, those belonging to ethnic minorities, persons with disabilities and children living in conflict-affected areas, rural areas as well as urban slums.²

5. **Estimates of financing requirements.** The Education for All Global Monitoring Report (2013) estimates the post-2015 education financing gap at \$38 billion per year. The Lancet Commission on Global Health 2035 (Jamison et al. 2013) estimates that incremental investments of \$57 billion–\$91 billion per year in low and lower middle income countries could save at least 10 million lives per year by 2035. Incremental investment requirements in infrastructure are on the order of \$1 trillion a year for developing countries and \$2.7 trillion–\$3.2 trillion a year globally (UN Task Team 2013). Required global investments in agriculture range from \$50 billion to \$80 billion a year. To achieve energy access for all, International Energy Agency has estimated a need of \$49 billion a year in investments up to 2030. Required investments in renewable energy are on the order of \$500 billion annually. Estimated global required investments in climate change mitigation range from \$400 billion to \$1,200 billion a year by 2030; \$200 to \$700 billion for developing countries. Similarly, the figures for investment needs for climate change adaptation range from \$50 billion–\$170 billion per year by 2030 globally and around \$20 billion–\$100 billion per year for developing countries.

III. ROLE OF FINANCIAL SECTOR DEVELOPMENT IN GROWTH

6. Evidence suggests that the depth of the financial sector has a positive and significant effect on economic growth, as suggested by King and Levine (1993a, 1993b) who show that the level of financial development measured by various indicators is positively and strongly associated with economic growth.³ It is found that increasing financial depth (measured by the ratio of liquid liabilities to GDP) from the mean of the slowest growing quartile of countries to the mean of the fastest growing quartile of countries would increase a country's per capita income growth rate by almost 1% per year. Given that the difference in average annual growth rate between these sets of countries is about 5% points

² In many developing countries, girls are denied their right to primary education. Women have been gaining employment in nonagricultural sectors, but often in less secure jobs with fewer social benefits than men. Intensified efforts are needed to reach the most vulnerable women and children and ensure their sexual and reproductive health and reproductive rights, including full access to basic health services and sexual and reproductive education. With rapid urbanization and population growth, the number of slum dwellers is on the rise and two and a half billion people lack access to improved sanitation, while a billion practice open defecation.

³ King and Levine (2003) constructed four indicators of financial development to measure the services provided by financial intermediaries: (i) the ratio of liquid liabilities to gross domestic product (GDP), which measures financial depth (the overall size of the formal financial intermediary system); (ii) the ratio of commercial bank domestic credit to the sum of commercial bank domestic credit and the central bank domestic credit, which measures the relative importance of specific financial institutions; (iii) the ratio of credit issued to nonfinancial private firms to total credit; and (iv) the ratio of credit issued to nonfinancial private firms to GDP (the last two measure domestic asset distribution).

over 1960–1989, differences in the depth of the financial sector alone explain about 20% of the growth difference. In addition, the results suggest that the level of financial depth in 1960 is a good predictor of subsequent rates of economic growth, capital accumulation, and productivity growth over the next 30 years, even after controlling for income level, education, and measures of monetary, trade, and fiscal policies (King and Levine 1993a, 1993b).

7. The positive effect of financial sector deepening on economic growth appears to be greater for developing than developed countries. Mavrotas and Son (2006) find that the magnitude of the positive impact of financial sector development on economic growth varies, depending, *inter alia*, on the level of development (industrial *vis-à-vis* developing countries). The estimation results show that the effect of financial sector development in developing countries is more persistent and larger than those in developed countries.

8. Rajan and Zingales (1998) argue that better-developed financial intermediaries and markets lower the costs of external finance (as opposed to internal finance such as retained earnings) that, in turn, facilitates firm growth and new firm formation. Hence, industries that are dependent on external finance should benefit disproportionately from greater financial sector development.⁴ Similarly, Claessens and Laeven (2005) demonstrate that industries dependent on external finance grow faster in countries with more competitive banking systems.

9. Beck, Demirgüç-Kunt, Laeven, and Levine (2004) show that industries composed of smaller firms grow faster in countries with a better-developed financial sector. This reflects the fact that small firms generally face greater barriers to raising funds than large firms, and thus, financial development is particularly important for the growth of industries that are disproportionately composed of small firms. De Serres et al. (2006) examine the effect of financial system regulation on real value-added growth and productivity growth, as well as on industry entry rates. They find that financial depth has a significant impact on output and productivity growth. Similarly, barriers to bank competition and securities market regulation impact value-added and productivity growth significantly. The strong association is attributed to the heavy reliance of industrial sectors on external funding.

10. Demirgüç-Kunt and Maksimovic (1998) show that the proportion of firms that rely on external financing is positively associated with stock market liquidity and banking system size. These empirical results are consistent with Ayyagari, Demirgüç-Kunt, and Maksimovic (2007) who find that financing obstacles are the most important binding constraint on firm growth based on the World Business Environment Survey.⁵ Their analysis also illustrates the importance of high interest rates in constraining firm growth. This underlies the importance of macroeconomic policies in influencing growth at the firm level as indicated by the correlation between high interest rates and banks' lack of money to lend. High interest rates are also found to be correlated with high collateral and paperwork requirements, the need for special relationships with banks, and unavailability of long-term loans.

⁴ Financial development is measured by: (i) total capitalization (the sum of stock market capitalization and domestic credit as a share of GDP), and (ii) accounting standards (a rating of the quality of the annual financial reports issued by companies within a country) (Rajan and Zingales 1998).

⁵ Financing obstacles include: (i) collateral requirements imposed by banks and financial institutions, (ii) bank paperwork and bureaucracy, (iii) high interest rates, (iv) need for special connections with banks and financial institutions, (v) banks lacking money to lend, (vi) access to foreign banks, (vii) access to nonbank equity, (viii) access to export finance, (ix) access to financing for leasing equipment, (x) inadequate credit and financial information on customers, and (xi) access to long-term loans.

IV. FINANCIAL SECTOR LANDSCAPE OF ASIAN ECONOMIES

11. The Asia and Pacific region is characterized by high levels of savings. According to PricewaterhouseCoopers (PwC), the region's high net worth individuals had \$12.7 trillion in assets in 2012, while the region's mass affluent had \$20.5 trillion in assets. PwC estimated that these values will increase, respectively, to \$43.3 trillion and \$22.6 trillion by 2020.⁶ These large and growing savings can provide financing for sustainable development. However, the development of capital markets in the region has not kept pace with rapid economic growth, and, as a result, substantial amounts of the region's savings are held outside the region.⁷

12. **Banking sector.** Asian economies are undergoing challenges different from advanced markets as many Asian financial systems are still relatively less developed and depend more on retail deposits vis-à-vis wholesale funding, which is one of the areas of focus under Basel III. While Basel III also deals mostly with stability within banking institutions, systemic risks can arise from the interconnectivity and interaction with shadow banking institutions, volatile capital flows on asset prices and the systemic impact of the real economy on bank portfolios and funding models. However, Asian banks are well capitalized and many Asian jurisdictions have moved beyond Basel III with higher capital requirements and ahead of the January 2015 deadline. Nearly half of all jurisdictions currently implementing Basel III are Asian. This is also reflected in the capital adequacy ratio of banks in Central Asia which is above 8% as required by Basel regulations. However, most banks have not started official implementation of the Basel III framework. Pakistan is Basel II compliant, and the country's Central Bank issued instructions to banks for implementation of Basel III starting 31 December 2013, to be completed by 2019.

13. While Asian banks are not immediately capital-constrained, their ability to support growth may be impaired in the medium term as credit demand continues to expand, underpinned by ongoing economic development and infrastructure needs. Further, since the Asian financial crisis, Asian economies have been at the forefront of experimenting with different macroprudential policies and tools in conjunction with the Basel III prudential rules. These have varied from calibrating Loan-to-Value ratios (Hong Kong, China and Singapore), varying reserve requirements (the People's Republic of China [PRC] and the Republic of Korea), exchange controls (Malaysia), land supply measures (Singapore) and stress tests (Australia).

14. As many Basel III requirements on liquidity, risk weights and overall leverage are still being formulated, their full impact on Asian bank credit remains unclear. The real effects of Basel III on bank lending could also be disguised at times of ample global liquidity. The more stringent Basel III requirements for liquid assets may also trigger unintended consequences in terms of reallocation of funds at the sectoral level that penalize bank lending for trade and SMEs finance and infrastructure projects, all critical to Asia's future growth. In this context, the requirement of higher equity will squeeze lending to SMEs as SME carry higher risk than corporate lending and will be impacted through higher capital requirements.

⁶ PricewaterhouseCoopers International. 2014. *Asset Management 2020: A Brave New World*. www.pwc.com/gx/en/asset-management/publications/pdfs/pwc-asset-management-2020-a-brave-new-world-final.pdf

⁷ ESCAP. 2014. Sustainable Development Financing: Perspectives from Asia and the Pacific. Background Paper for the Regional Outreach Meeting United Nations Intergovernmental Committee of Experts on Sustainable Development Financing 2014. Jakarta. 10–11 June 2014.

15. **Asset management.** Of the \$68.30 trillion in assets under management by the world's top 500 asset management firms, the share of Asia and the Pacific was only 9.7% or \$6.65 trillion at the end of 2012. The vast majority of this amount was managed by firms from the region's developed countries: \$4.82 trillion (72.4%) by Japan and \$850 billion (12.8%) by Australia. Among the region's economies, the Republic of Korea had the largest share (7.3% or \$488 billion), followed by the PRC (5.8% or \$390 billion) and India (1.4% or \$90 billion). It should be pointed out that none of the Asia-Pacific companies in the world's top 500 was among the world's 20 largest. The largest one in 2012 was Nippon Life Insurance which, with \$663 billion in assets, was ranked 23rd in the world that year. In addition, sovereign wealth funds (SWFs) from developing economies represented 96% of the region's total assets under management, of which the PRC represented \$1.31 trillion or 45.8%; Singapore, \$493 billion or 17.3%; and Hong Kong, China \$327 billion or 11.4%. In addition, smaller countries, such as Timor-Leste, Azerbaijan, and Brunei Darussalam, had SWFs with assets exceeding \$10 billion.

16. **Fixed income markets.** The fixed income market is under-developed in much of Asia, compared with those of the US, Europe, Australia, and Japan. Although the domestic institutional investor bases in a number of countries are currently modest, they are growing rapidly. Asian pension systems, especially defined contribution schemes, are becoming more important. Insurance companies in the region forecast strong growth in demand for life, annuity and retirement savings products. All of these products require deep and liquid fixed income markets, particularly ones with a greater supply of longer-maturity instruments. Finally, global investors are keen to diversify their portfolios. Asian domestic debt securities (excluding Japan) are expected to grow strongly over the next two decades, and be worth around \$65 trillion by 2030, of which the PRC will account for nearly half. In addition, the growth in debt markets will be even stronger between 2030 and 2050. The Republic of Korea, India, the PRC, and Indonesia are expected to account for almost 75% of Asia's international debt securities by 2050.⁸

17. **Equity markets.** By 2030, Asian equity markets will represent around 42% of global market capitalization and by 2050 Asia could represent as much as 72% of global market capitalization as countries such as India and Indonesia move into their demographic "sweet spot", with large working-age, tax-paying populations. Over the next two decades, emerging equity markets will increase substantially, and will overtake the mature developed markets in terms of capitalization.

V. ROLE OF SMALL AND MEDIUM-SIZED ENTERPRISES AND INFRASTRUCTURE AND FINANCIAL INCLUSION IN EMPLOYMENT GENERATION AND POVERTY REDUCTION

18. **Small and medium-sized enterprises (SMEs) sector.** The SMEs sector is the backbone of the economy in high-income countries, but is less so in low-income countries. The OECD reports that more than 95% of enterprises in the OECD area are SMEs. These enterprises account for almost 60%

⁸ As per ESCAP (footnote 7) as of September 2013, while Japan remained the largest issuer of domestic currency bonds in the region, its share decreased to 44.3% from 66% in September 2005. The growth of LCY bond markets in India was particularly fast over 2009-2013 at 90% per year. Other countries where domestic currency issues grew rapidly are the PRC (22%), Thailand (18%), Australia and Pakistan (13.9%). On average, there was an increase in amounts outstanding of LCY bonds as percentages of the GDP between 2005 and 2009 for both developing and developed countries in the region. The largest ratios of LCY bonds outstanding to GDP in the region in September 2013 were for Japan (263%), Republic of Korea and Malaysia (104%), Australia (86%), and Thailand (74%).

of private sector employment and make a large contribution to innovation. Among high-growth firms, small firms exhibit higher net job creation. There is evidence that in developing economies, SMEs could contribute more to economic development.⁹ SMEs tend to be smaller in developing countries, suggesting greater constraints to growth, including financial constraints. Recent World Bank research indicated that small firms are important contributors to total employment and job creation, but that small firms also have lower productivity growth than large firms.¹⁰ SMEs worldwide listed financing constraints as the second most-severe obstacle, while large firms placed it only fourth.¹¹

19. **Infrastructure sector.** Improved infrastructure could impact poverty reduction by way of:

- (i) The extent to which access to services is improved and employment opportunities created by improved infrastructure. In particular, the potential labor market to which the poor have access may be enlarged by improved transport and communications.
- (ii) The indirect impacts of improved infrastructure on the poor accrue through complementary markets. Improved road transport may lead to price reduction in food and consumer goods. Reduced energy costs may lead to price reduction of locally manufactured goods. The willingness of service suppliers such as doctors and teachers to locate in an area may also be positively affected by improved infrastructure.¹²
- (iii) Estache and Fay (1995) show that enhanced access to roads and sanitation has been an important determinant of economic convergence for the poorest regions in Argentina and Brazil. Studies of rural roads (e.g., Jacoby 2000) have shown how they raise the productivity and value of land for poor farmers. There is also evidence that a better transportation and safer roads increase school attendance and electricity allows more study time, while water and sanitation access reduce child mortality (Leipziger, Fay, Wodon, and Yepes 2003).

20. **Financial inclusion.** Fostering financial inclusion is a critical factor in strengthening domestic demand in the region to address rising inequality and social progress. The large majority of the adult population, especially the poor and vulnerable sections of the society, is typically excluded from core financial services—savings, credit, insurance, and remittances in the Asia and Pacific region. Despite progress, billions of adults in Asia lack access to reliable financial services and suffer from low financial literacy and capability. Recent data show that 50% of adults worldwide have an account at a formal financial institution such as a bank, a credit union, a cooperative, a post office, or a microfinance institution, but most developing Asian countries fall below this.

⁹ R. Hasan et al. 2013. Growth, Structural Change, and Poverty Reduction: Evidence from India. *South Asia Working Paper Series*. No. 22. Manila: ADB. The paper finds that a 1% increase in the annual rate of productivity growth leads to a 0.64% increase in the annual rate of poverty reduction.

¹⁰ Ayyagari, Demirgüç-Kunt, and Maksimovic (2011).

¹¹ Banks are not adequately providing SMEs with capital in developing countries. There is large financing gap for SMEs in developing countries. The top five banks serving SMEs in non-OECD countries reach only ~20% of formal micro enterprises and SMEs. In sub-Saharan Africa, this number is even lower, at 5%. Nearly 25% of SMEs in emerging markets have a loan but are financially constrained, and almost 60% do not have a loan overdraft, but need one. This deteriorated further during the 2008–2010 financial crisis.

¹² Indirect impacts (even more than direct impacts) depend on the complementarity of infrastructure investments. An improved road without power or communications infrastructure may have little effect in improving the productivity of investment in a remote location.

21. The cost of credit is an important factor determining financial inclusion in the region. The targeting of credit to state-owned enterprises, limits credit availability to the private sector, while high interest rates crowding out borrowers. In addition, some are simply unaware of what is available, while others may find services offered inappropriate to their needs. Banks may be concerned about the credit quality of poorer customers, the risks they may present, and the processing costs of larger number of small transactions. Also, while basic consumer protection requirement is on the books in most economies, enforcement mechanisms are weaker than legislative requirements and institutional structures are weak.

VI. AVAILABILITY AND USAGE OF LONG-TERM SAVINGS IN ASIA

22. Horioka and Terada-Hagiwara (2011) provide data on trends in domestic saving in 12 Asian economies (Table 1) during FY1966–FY2007, analyze determinants of those trends, and project trends over FY2011–FY2030.¹³ They find that domestic saving in developing Asia has been high and rising but with differences across economies. Further, the main determinants of domestic saving during FY1960–FY2007 appear to be the age structure of the population, income levels, and the level of financial sector development. They also find that the domestic saving rate will remain roughly constant over the next 2 decades as the negative impact of population aging will be roughly offset by the positive impact of higher income levels. However, there will be substantial variation, with aging economies showing a downturn in domestic saving rates by 2030, as the negative impact of aging will dominate the positive impact of higher income. Conversely, less rapidly aging economies are expected to show rising domestic saving rates, at least until 2020, as the positive impact of higher income levels thereon will dominate the negative impact of population aging.

Table 1: Future Trends in Real Domestic Savings Rates in Developing Asia
(% of GDP)

Economy	FY2001–FY2007	FY2011–FY2010	FY2021–FY2030
	Fitted	Projected	Projected
People's Republic of China	31.82	30.30	31.88
Hong Kong, China	29.75	24.33	20.02
Indonesia	24.08	21.59	20.80
India	14.54	14.92	15.91
Republic of Korea	42.02	35.53	37.36
Malaysia	44.65	43.74	41.97
Pakistan	6.66	7.01	10.05
Philippines	14.90	12.91	11.81
Singapore	58.74	47.02	40.43
Thailand	31.31	28.59	23.53
Taipei, China	25.10	20.68	15.65
Viet Nam	16.76	19.19	15.44
Developing Asia	27.38	26.33	27.21

FY = fiscal year, GDP = gross domestic product.

Source: Horioka and Terada-Hagiwara 2011 (footnote 13).

¹³ C. Yuji Horioka and A. Terada-Hagiwara. 2011. *The Determinants and Long-Term Projections of Savings Rates in Developing Asia*. Osaka University: The Institute of Social and Economic Research.

23. Given the availability of savings, both within economies and the region as a whole, the key challenge is to develop markets to channel savings into investments. On a regional basis, for the further development of liquid and well-functioning bond markets, ASEAN+3 Finance Ministers in 2008 agreed on the new Asian Bond Market Initiative (ABMI) Roadmap to provide momentum to future work to be undertaken under ABMI.¹⁴ In 2012, a new roadmap for the direction of ABMI was further clarified. This involved promoting issuance of local currency-denominated bonds, improving the regulatory framework, facilitating the demand for local currency denominated bonds, and improving related infrastructure for the bond markets.

24. Accordingly, there have been parallel initiatives for achieving these objectives. These include establishing the Credit Guarantee and Investment Facility (CGIF), as an ADB trust fund to support the issuance of corporate bonds in ASEAN+3 by providing credit enhancement to eligible issuers to access local currency bond markets. Further, to foster harmonization and standardization of market practices, regulations and settlement for cross-border bond transactions, the ASEAN+3 bond market forum (ABMF) was established. The objective of the ABMF was also to introduce the ASEAN+3 Multi-currency Bond Issuance Framework (AMBIF) to harmonize and standardize clearing and settlement to promote cross-border bond transactions. Next, AsianBondsOnline was developed and maintained by ADB, and is a one-stop clearinghouse of information on sovereign and corporate bonds.¹⁵ It presents both regional and market-specific information in a structured format, giving market participants and potential investors a clear perspective of the current market. Government and private sector initiatives to enhance market depth and liquidity are also detailed.

VII. FINANCIAL SECTOR GAPS IN EXPANDING CAPITAL INVESTMENT AND MARKET ACCESS

25. **Challenges in financing SMEs.** Banks in countries with immature financial systems face little competition and a low threat of entry and can therefore earn high returns by lending to large players. Next, banks incur higher administrative costs by lending to SMEs. The costs of lending to SMEs are relatively high, as loan sizes are small and the transaction costs per loan are relatively constant, reducing incentives for regular banks to lend to them. Further, banks have difficulty providing long-term capital as they are often reliant on short-term deposits. Banks in developing countries sometimes face restrictive local regulation and limited forex availability that make tailored foreign exchange solutions more difficult. Finally, many banks have limited information, skills and regulatory support for lending to SMEs. The lack of lending to SMEs leads to poor familiarity and knowledge, which in itself can lead to adverse selection (only the riskiest SMEs seek external financing), which in turn can lead to higher interest rates and less lending.

26. As per PwC (footnote 6) lending in Asia (excluding Japan) rose by more than 60% between 2007 and 2012 to reach \$1.66 trillion. In a further indication of the market potential, the bank with the largest growth in profit in Asia in 2013 was from Thailand (United Overseas Bank) and the institution with the highest return on equity was from Indonesia (Bank Rakyat Indonesia).¹⁶ With the domestic credit market still subdued, local banks' determination to put large funding reserves to work has

¹⁴ ASEAN+3: Ten countries of the Association of Southeast Asian Nations (Brunei, Cambodia, Indonesia, the Lao People's Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Viet Nam), the People's Republic of China, Japan, and the Republic of Korea.

¹⁵ <http://asianbondsonline.adb.org/>

¹⁶ The Asian Banker Performance Rankings 2013.

spurred a renewed appetite for international lending. The increasingly international outlook is reflected in the fact that Japanese banks are now the biggest cross-border lenders in the world (13% of global total, ahead of the US, UK, and Germany) and more than 40% of their profits are generated overseas, compared to less than 10% ten years ago. At present, most Japanese credit in Southeast Asia is denominated in yen and targeted at large companies and major projects. Building up the loan book in the region to its full potential will require a greater readiness to lend in local currencies and to a broader customer base. This includes targeting retail and SME customers. This, in turn, is going to require a stronger presence on the ground and more extensive credit evaluation, currency hedging and other risk management capabilities.

27. With respect to Central Asia, the depth of financial intermediation remains weak as evidenced by the high advances to deposit ratios, and low advances to GDP and deposits to GDP ratios. The low deposit base signifies a lack of confidence in banks and low capacity to intermediate funds. This increases vulnerability of banks, and in turn increases vulnerability of the real economy to availability of financing. During the 2008 global financial crisis, most banks that financed their assets through borrowing were faced with a liquidity crunch and deteriorated risk rating, resulting in reduced lending to enterprises. Overall, banks lack foreign currency liquidity, negatively affecting the transmission of monetary policy since interest rates on the US dollar are not set according to the economic policy of the US Federal Reserve and not local governments. Further, banks are exposed to foreign currencies volatility which is not controlled by the central banks. In case the bank lends in foreign currency and the revenues of enterprises are denominated in the local currency, the currency-induced credit risk is assumed by the borrower. However, if the bank lends in local currency, it assumes the potential currency-induced credit risk.

28. **Raising long-term capital for infrastructure.** The infrastructure deficit across the economies in Asia and the Pacific is vast and little was done during 2010–2013 except in the People’s Republic of China. To sustain current growth levels, it will be necessary to inject between \$800 billion and \$1.3 trillion annually into infrastructure projects between now and 2020. A case in point is Viet Nam, where an estimated \$170 billion in investment is required by 2020. There is sufficient capital to fund projects that are currently being procured across the region, as the global stock of capital managed by pension funds, sovereign wealth funds, insurance companies, and other institutional investors is \$50 trillion out of which only 0.8% is allocated to infrastructure.¹⁷ However, sufficient resources are needed to prepare a project for the market. Feasibility studies are required to establish the economic and technical viability of large transactions and project owners need to identify the most appropriate commercial structure that can be achieved within the regulatory framework.

29. Asian countries such India, and the ASEAN suffer from underdeveloped infrastructure. In India, for example, electricity generation is 16%–20% short of what is needed to meet peak demand, due to underinvestment and poor maintenance. In Indonesia, infrastructure investments dropped from 5%–6% of GDP in the early 1990s to 2%–3% of GDP for much of the last ten years. PwC estimates (para 11) indicate that the consequent deterioration in energy, transport, housing, communications, and water facilities has restrained economic growth by 3%–4% of GDP. Across Asia, it is estimated that around \$8 trillion will be committed to infrastructure over the next decade to remedy underinvestment and accommodate the explosion in demand. To sustain current growth levels, it will be necessary to inject between \$800 billion and \$1.3 trillion annually into infrastructure between now and 2020. The legal and regulatory framework that exists within a country is critical in determining the success of any infrastructure market.

¹⁷ *The Economist*, ‘The trillion-dollar gap’, 22 March 2014.

30. In the oil and gas exporting Central Asian economies investments were mostly in energy infrastructure, in the importing countries, they were mostly in transport. In terms of source of finance, \$123 billion were invested at the own expense of the companies (i.e., corporate nonproject investments), \$79 billion were channeled through public projects, \$25 billion were invested in the form of private projects, and only \$8 billion in the form of public-private partnerships (PPPs) and concessions.

31. Commercial banks do not constitute a big share of infrastructure finance in Central Asia due to the high risks and decelerating rate of return of infrastructure projects. Nevertheless, commercial banks provide a bunch of risk capital as subordinate debt. The main private banks that invested in infrastructure were mostly subsidiaries of European banks. However, recently finance from banks in the Russian Federation has been growing as well. In 2010, the first private equity infrastructure fund in the region, Macquarie Renaissance Infrastructure Fund was created to invest in infrastructure in the Russian Federation and other Central Asian markets for an amount of \$630 million.

32. In the context of PPP projects, these are characterized by nonrecourse or limited recourse financing, implying that lenders can only be re-paid from project revenues. Thus, the market and commercial risks, including uncertainty of demand forecasts, assume greater significance for lenders. Besides market risks, projects are also exposed to risks from the public interest nature of projects and the interface with regulators and government agencies. Many financial institutions are limited in their ability to invest in long-term illiquid assets. The nonrecourse nature, unique risks of infrastructure, as well as the complexity of arrangements, also call for special appraisal skills.

33. In India, where PPP infrastructure projects depend on bank loans for over 80% of their debt, the Reserve Bank of India (RBI) indicates that the compound annual growth rate (CAGR) of bank loans to infrastructure has been in excess of 40% per annum.¹⁸ Further, with an exposure of around \$100 billion to infrastructure, banks are fast approaching sector exposure limits. With private sector debt requirements at around \$350 billion for infrastructure during FY2012–FY2017, banks will have to significantly expand their infrastructure portfolios while facing severe constraints. Second, long-term infrastructure loans increase the asset-liability management (ALM) mismatches in banks due to their largely short-term deposit base, which are potential sources of macroeconomic vulnerability.¹⁹ Third, the structural mismatch in tenor is passed on to the borrower in the form of floating loan rates, which increase project risk, which in turn results in credit risk for banks.

34. From the perspective of the borrower, the absence of an interest rate derivative market in most developing countries implies that investors are unable to manage interest rate risks. In addition, external commercial borrowings restrictions that may be in force impose all in cost ceiling that allows access only to highly rated companies. Foreign exchange hedging is not available for long tenures in several markets, and when available, they attract high premiums. Most life insurance players have limited non-unit-linked insurance plan liabilities that they can deploy in infrastructure. Thus, they face asset liability mismatch in investing long term.²⁰ Where PPP project sponsors are significantly over-leveraged, they are unable to raise incremental debt financing. Moreover, constraints such as labor and manpower shortage, lack of skilled resources, and shortage of equipment add to time and cost

¹⁸ Reserve Bank of India. 2010. *Financial Stability Report*. Mumbai.

¹⁹ RBI data indicates that as of end September 2010, the ALM positive gap in >5 year bucket constituted 42% of the total ALM positive gap, followed by 3–5 years (31%) and 1–3 years (27%).

²⁰ Public insurance companies are inherently risk averse, investing mostly in government securities and in publicly-listed infrastructure companies towards meeting their mandated minimum infrastructure and social sector requirements rather than funding projects.

overruns, leading to additional challenges of over-leveraged sponsors in raising financing.²¹ Further, low ratings of infrastructure special purpose vehicles (SPVs) restrict the flow of debt as SPVs normally do not have a proven credit history and strong balance sheets.²²

VIII. FINANCIAL PRODUCTS AND INSTITUTIONS FOR LONG-TERM CAPITAL EXPANSION

35. This section provides some guidance and experiences that could be replicated to address the challenges raised above.

A. Specialized Financial Intermediaries for SMEs

36. An enabling regulatory framework and supportive financial infrastructure are essential in the medium term to encourage sustainable, viable, and significant improvements in access to finance. However, in the short term, more direct public interventions may be merited, although these are not without risks in terms of market distortion, the optimal use of using public resources (and the associated opportunity cost), and perverse incentives to financial institutions and SMEs. While SMEs account for 80%–90% of Asian businesses several factors prevent SMEs from accessing finance including high transaction costs, imperfect information, high default risk and limited collateral.²³

37. Public interventions can also be counter-cyclical, as in the case of the recent global financial crisis, or can address more structural market failures. In this context, a sound legal and regulatory framework should be complemented by a sound financial infrastructure, which improves the efficiency and effectiveness of financial intermediation. A sound payments system and a well-functioning credit information framework are two essential elements of a financial infrastructure. They are crucial to ensure the efficient functioning of financial systems, even in the presence of an otherwise flawless legal and regulatory framework.²⁴

²¹ Equity markets are not favorable for financing projects because of uncertainties in the global economy and due to present regulatory requirements limiting exit options, which hinder equity infusion. Moreover, most infrastructure companies have already diluted their equity in public to raise capital and further dilution may not be possible due to contractual restrictions.

²² In India, Insurance Regulatory Development Authority has stringent guidelines towards investment in infrastructure bonds. As per the guidelines, the rating quality of investment bonds should not be less than AA whereas a typical nonrecourse infrastructure project is rated BB. Moreover, 75% of all debt investments in an insurance company's portfolio (excluding government and other approved securities) must have AAA rating.

²³ International Trade Centre. 2009. *How to Access Trade Finance: A Guide for Exporting SMEs*. Geneva.

²⁴ A case in point is the February 2011 Merlin Agreement which was established between the Government of the United Kingdom (UK) and major banks in the UK—specifically Barclays, HSBC, LBG and RBS, and Santander—recognizing their responsibility to support economic recovery in the UK. The agreement sets lending targets of around £190 billion this year, including £76 billion to small firms. The Bank of England will monitor whether the loans targets are being met. This is part of a wider agreement that also includes curbs on bonuses and requirements to disclose salaries, and has been negotiated as a result of the banking sector bailout that occurred in the context of the crisis. The banks are also committed to implementing the recommendations of the UK Business Finance Taskforce (which also comprises Standard Chartered), in particular the following: (i) support a network of mentors from the banks, attached to existing mentoring organizations, to deliver a free finance service to small and medium sized businesses across the UK; (ii) improve service levels to micro enterprises through a new lending code; (iii) publish lending principles that clearly set out the minimum standards for medium-sized and larger businesses; (iv) establish transparent appeals processes for when loan applications are declined, with processes independently monitored by a senior independent reviewer, who will publish the results of their review; (v) initiate a pre refinancing dialogue 12 months ahead of any term loan coming to an end; (vi) establish and

B. Infrastructure Financing

38. Traditionally, most Asian infrastructure projects have been funded by governments or domestic banks. Foreign investors were mostly excluded. Those that were allowed to participate faced severe restrictions, including complex regulatory and legal regimes and uneven workforce quality. A weak legal or regulatory framework will block private sector capital and expertise from participation in infrastructure projects that are inherently governmental (power, water, transport). Market participants need to be comfortable that they will be treated fairly in any competitive process, that their investments are secure, and that their intellectual property is respected.

39. The development of debt and equity capital markets is particularly crucial to economic growth in emerging economies, where the corporate sector relies heavily on external financing for expansion. Long-term finance is the provision of long-dated funds to pay for capital-intensive undertakings that have multiyear payback periods. Various sources act as providers of long-term finance including domestic and foreign households, corporations, and governments. Funds may also come from corporate earnings, government revenues, or household income and wealth, and a proportion of the financing may go directly to the end users. Long-term finance also flows through various intermediaries (such as banks, insurance funds, pension funds, and so forth), or alternatively the intermediation may be undertaken by capital markets. The users of long-term finance apply them to different investments including infrastructure, commercial and residential real estate, plant and equipment, etc.

i. An Enabling Environment for PPP

40. In addition to a long-term debt facility, governments may also streamline project management by setting up a committee to fast track PPP approvals.²⁵ Project identification, preparation of the initial screening report, and approval of the initial screening report by the committee should be supported by PPP cells, serviced by a panel of technical advisors. The technical advisors could assist line ministries in conducting project development studies including demand assessment, cost and risk estimation, financial structuring, development of contracts, and bid preparation and selection. Further, a set of master concession agreements should be developed for subsectors such as roads, airports, ports, power, etc., to guide the PPP process and establish the risk sharing framework. A website exclusively devoted to PPP could function as a virtual marketplace for PPP. Finally, a government Infrastructure Project Development Fund may be necessary to support project development costs by providing an interest-free loan for a significant portion of project development costs.

invest in a new £1.5 billion Business Growth Fund (built over a number of years); (vii) support the Enterprise Finance Guarantee Scheme; (viii) help mid-sized businesses access syndicated debt markets; (ix) improve access to trade finance; (x) signpost alternative sources of finance; (xi) fund and publish a regular independent survey on business finance demand and lending supply; (xii) enhance the cross-industry lending dataset by broadening the statistics on (among other things) lending to deprived areas and national and regional data on the provision of bank support to business start-ups; (xiii) hold regional outreach events throughout 2011; (xiv) improve customer information including a review of literature and other materials (e.g., loan applications); and (xv) establish a Business Finance Round Table.

²⁵ In India, the Cabinet Committee on Economic Affairs approved the procedure for approval of PPP projects in October 2005. Pursuant to this decision, the Public-Private Partnership Approval Committee was set up comprising the secretary, Department of Economic Affairs (chair); secretary, Planning Commission; secretary, Department of Expenditure; secretary, Department of Legal Affairs; and secretary of the project-sponsoring department.

41. **Legal and regulatory aspects.** Most PPP projects have conflicting objectives between low tariffs and high service quality which translates into availability, reliability, safety, accessibility, and safeguards of public interests. In pursuit of the former goal, the concessioning authorities will impose price caps on the operator, which undermines the second goal, since the operator's incentive is to reduce costs or over utilize assets and thereby neglect or reduce quality. The responsibilities of regulators can be grouped under four areas: (i) determining the need and strategy for quality regulation; (ii) customizing quality targets; (iii) designing appropriate incentives; and (iv) developing cost-effective monitoring. The above rationale for regulation is to mitigate "market-failure" where competition is either not feasible, limited, or does not produce results that are compatible with public interest. In infrastructure, market failure may take on a number of forms:

- (i) **Natural monopolies.** Where natural monopolies exist, competition is not possible and regulation protects customers from (a) private monopolists levying tariffs that are significantly above costs; and (b) public monopolies who allow costs to rise above efficient levels or offer services of inferior quality.
- (ii) **Information failures.** In certain sectors there are substantial information failures whereby customers are unable to assess the quality of the service (drinking water quality, safety of transport vehicles, etc.). Regulation may mitigate these information failures.
- (iii) **Externalities.** These necessitate regulatory intervention (environmental costs associated with greenhouse gas emissions in power generation, sewerage disposal in sanitation, and pollution in transport).

42. Regulation entails a balanced trade-off between attractiveness for the private sector and safeguarding public interests. While the trade-offs are sector, country, and asset-specific, the underlying principle is to allocate risks to the party is best able to manage them. A case in point is that governments can increase investor attractiveness by sharing or mitigating risks, such as traffic volume by guaranteeing minimum off-takes or through availability-based concessions.²⁶ On the other side, governments can protect the public by choosing a concession model and pricing regime that incentivizes the concessionaire to operate efficiently and invest adequately, or quality incentives via bonus and penalty schemes.

ii. Developing the Corporate Bond Market

43. A bond is a debt contract and usually provides for a number of contractual protections in its founding documents (e.g., collateral as security, priority in bankruptcy, periodic payments, etc.). However, enforcement of contracts is riddled with difficulties in many developing countries, due to the excessive delays in enforcement and costs in bringing civil action. One of the most important provisions in the debt contract relates to when and how a lender can collect on any collateral or effect a secured claim. This is often through the process of insolvency, winding up, and liquidation. The current regime for corporate insolvency in many developing countries is inefficient.²⁷

²⁶ Availability-based concession agreements provide for periodic payments by public entities in return for the private entity constructing, operating, and maintaining a project in a manner that ensures availability for public use in accordance with specified criteria.

²⁷ For example, in India, a special body in the form of the Board for Industrial and Financial Reconstruction was set up under special legislation to enable quick recovery. However, the track record of has been unsuccessful.

44. Given that bonds are designed to be tradable amongst debt investors, their terms need to be sufficiently standardized to facilitate trading. Similarly, sufficient disclosure is necessary so investors can price these terms. Nonstandard terms (or opaque disclosure) would add uncertainty and make bonds less attractive as investments and reduce liquidity. The current regime of bonds in many developing countries hinders standardization, as foreign lenders are required to comply with central bank guidelines, and have to bear a more onerous burden than domestic lenders on terms such as interest rate caps, tenor of the loan, restrictions on the end use of proceeds, etc. Facilities such as shelf prospectus and on-tap issuance of bonds are available only in certain cases and this is a significant impediment in the use of the public offering route for corporate bonds.²⁸ The emphasis on private placement significantly undermines the goals of standardization and transparency.²⁹ In addition, while contractual provisions can provide some protection to parties, no contract covers every contingency. Thus, the law can step in through rules and standards to reduce opportunistic behavior. However, these protections again require court enforcement, which raises concerns given delays in the judicial system.

45. The development of the secondary market is also of concern as vibrant secondary market impacts liquidity. For corporate bonds, investors have to report to multiple trading platforms, and this fragmentation creates data mismatch. Next, warehousing of information is very important and centralized information on issue size and details like in-built options, etc., should be publically available to price a corporate bond. In addition, it is necessary for investors to have centralized information on credit migration. Though rating agencies provide such information individually whenever there is a credit event, but it is difficult to source all information together effectively to price a bond. Further, unlike sovereign bonds, several markets do not have a corporate yield curve and hence, it is difficult to price nontraded bonds in portfolios. Since no credible history is available to test credits spreads, it is difficult to use them effectively in pricing corporate bonds. Finally, given lack of credible data on corporate bonds, it is difficult to find out the probabilities of default (PDs) for corporate bonds.³⁰

iii. Potential Infrastructure Financing Initiatives

46. **Specialized financial intermediaries:** Policy makers intent on unlocking new sources of long-term finance should foster growth of new markets and instruments that can help fill the gap between the current sources and projected future demand for long-term investment. While emerging economies account for a rising share of the world's wealth, their corporate bond, securitization, and even equity markets are currently underdeveloped. Bank lending provides the majority of financing in most of these economies (75% of financing in the People's Republic of China [PRC]). In this context the role of nonbank financial intermediaries (NBFIs) assumes importance. NBFIs comprise a mixed bag of institutions, ranging from leasing, factoring, and venture capital companies to various types of contractual savings and institutional investors (pension funds, insurance companies, and mutual

²⁸ The availability of a shelf prospectus facility would be advantageous for companies to access funds from the bond market as and when they require funding and, that too, without significant procedural hurdles, except for updating the prospectus in order to make it more current.

²⁹ A key aspect of standardization includes the creation of a market for credit default swaps, which will also introduce an element of transparency through information that participants in the market will generate. It also acts as a useful risk-sharing mechanism, by shifting risks from issuers who are affected by issues of insolvency risk.

³⁰ The risk of default affects virtually every financial contract. Therefore, the pricing of default risk has received much attention both from traders which have a strong interest in pricing transactions and from economists who can learn from the way such risks are priced. At each instant, there is some probability that a firm defaults on its obligations. Both this and the recovery rate in the event of default, vary stochastically over time. The stochastic processes determine the price of the credit risk. In developing markets where historical data on PDs is limited, determining and pricing default risk is difficult.

funds). The common characteristic of these institutions is that they mobilize savings and facilitate the financing of different activities, but they do not accept deposits from the public. NBFIs complement the role of commercial banks by filling gaps in their range of services and also compete with commercial banks and force them to be more efficient and responsive to the needs of their customers. Most NBFIs are also actively involved in the securities markets and in the mobilization and allocation of long-term financial resources. The state of development of NBFIs is usually a good indicator of the state of development of the financial system.

47. **Credit enhancement.** In order to complement banks and expand the availability of infrastructure financing, credit enhancement mechanisms provide security comfort to bond holders for investing in infrastructure project bonds. The need for credit enhancement arises due to a variety of risks associated with infrastructure. These include the fundamental credit (default) risk, inflation and interest rate risk, liquidity concerns due to absence of a secondary debt market, and concerns due to political instability. A credit enhancement scheme would provide partial credit guarantee (PCG) to enhance the rating of the infrastructure project thereby enabling channelization of funds from various sources which were earlier restricted from investing in the infrastructure project due to its lower ratings.³¹

48. The following are salient aspects of the PCGs to be issued under the proposed facility: (i) an SPV operating an eligible infrastructure project will issue a project bond; (ii) an eligible financial intermediary (FI) will enhance the credit of the project bond to AA level by providing a first loss guarantee; (iii) in an enforcement situation, the FI will have access to the security of the underlying project assets; and (iv) the guarantee fee will depend on the underlying project risk and guarantee structure. Rating agencies typically prefer a “first loss” as it is the most efficient way to lower the PD to bond holders and uplift credit of the underlying bonds. The first loss guarantee essentially acts as a credit buffer to bondholders.³²

49. Available evidence suggests the importance of developing the project bond market by establishing a credit enhancement product to improve credit ratings of the underlying projects, which will create an investable asset class for insurance and pension funds. The funds raised through this mechanism will be used to prepay bank debt thereby enabling banks to lend to new greenfield projects. Banks typically have sufficient project finance experience and the risk appetite to take greenfield project risk. Prepayment of bank debt through bond issuances by projects that have completed 1–2 years of successful commercial operation post COD, implies that banks will only have around 4 years of exposure to the projects (2 years of construction and 2 years of operation) which matches better their liability profile in terms of bank deposits, thereby mitigating ALM mismatch risk. On the other hand, by investing in the credit enhanced bonds, long-term investors will take exposure to the projects for the length of the bond issue which also matches their long-term liabilities. Further, as construction related risks do not exist post COD, such bonds can possibly trade in the secondary market, unlike in the case of bank loans. Issuers will look to refinancing bank loans at a lower rate post COD as construction risks disappear. Finally, banks typically lend at floating rates linked to the interest rate cycle, while bonds are fixed rate instruments providing projects with predictability in funding costs.

³¹ Statutory restrictions imposed by some governments on infrastructure include minimum credit rating for debt instruments and minimum dividend payment record of 7 years for equity. These are difficult conditions for private projects to meet as they have been set up recently and do not enjoy high credit rating in the initial years.

³² A first-loss PCG covers the entire bond service obligation on interest payment dates, subject to a cap, rather than partially covering debt service to bond holders.

50. **Establishing a bond guarantee fund.** The role of a bond guarantee fund (BGF) is to provide credit enhancement products in a commercially oriented and sustainable manner.³³ The BGF will function much like monoline insurers in developed markets who provided a credit wrap to municipal bonds. A functional BGF will help to roll out and mainstream the credit enhancement product and channel available savings to the infrastructure and noninfrastructure corporates. Through its activities, the BGF would (i) support a new asset class for institutional investors and investment assets, (ii) mobilize additional long-term financing for infrastructure development, and (iii) diversify infrastructure funding sources to complement bank financing and thereby reduce systemic risk to the financial system. However, for a BGF to be successful in developing markets, technical assistance support would be required to provide a (i) a detailed framework and institutional arrangements for BGF and (ii) a blueprint to operationalize the BGF.

51. The BGF would charge guarantee fees on the basis of the market spread and the reduced interest cost accorded through the guarantee upgrade. The benefit that BGF accords the issuer through lower interest rates would be shared in part with the issuer, although the majority of the gains would go to BGF to cover its risks. If the spreads available in the market were not adequate to cover the cost of capital, the guarantee would be declined.³⁴

52. **Covered bonds.** Covered bonds are a hybrid between asset-backed securities/mortgage backed securities and normal secured corporate bonds and are an instrument of refinancing, primarily used by mortgage lenders. Unlike secured corporate bonds which provide recourse against the issuer, covered bonds provide a bankruptcy-protected recourse against the assets of the issuer (collateral pool) too. They are full recourse debt obligations of the issuing institutions, secured by pool of performing mortgage loan assets and remain on the balance sheet of the issuer. Covered bonds are known to be a dual recourse instrument, wherein investors have priority of claim over the cover pool and in case of default also has claim over the general assets of the issuer.

53. Despite the fact that covered bonds are regarded as a safer alternative to residential mortgage backed securities, this instrument has not received a high degree of attention from potential issuer countries such as India such as commercial banks and housing finance companies. There are a number of reasons for this lack of interest such as: (i) unawareness of the product in the market; (ii) unclear regulatory environment; (iii) significant cost for being the “first mover”; and (iv) other available funding alternatives such as (short-term) bank loans, conventional bonds, etc., which are perceived to be more cost efficient and straightforward.

54. **Project completion risk guarantees.** The proposed guarantee fund would provide guarantee to the private sector player against certain well-defined risks on account of public authorities. The private sector player would pay an annual guarantee fee against the guarantee offered under such a facility. In case of proven default of the concession agreement by the contracting authority, the

³³ Credit rating agencies typically require a first loss guarantee structure to recognize any credible level of rating upgrade. A first loss guarantee covers the entire bond service obligation on interest payment dates, covering interest and principal payments up to a maximum cap amount, rather than partially covering a portion of debt service to bond holders. However, this modality which is particularly suited for the infrastructure sector, requires further dissemination in the Indian market.

³⁴ ADB has provided a TA grant to India for developing a diagnostic study on establishing a BGF for India. The TA will examine the modalities, scope, and potential for the establishment of a bond guarantee fund for India (BGF1) that (i) serves India’s unique institutional and regulatory environment; and (ii) supports the development of the local currency bond market, to meet India’s infrastructure and noninfrastructure financing requirements. ADB. 2012. *Technical Assistance to India for Preparing the Bond Guarantee Fund for India*. Manila (TA 8279-IND approved on 17 December).

guarantor is liable to pay the guaranteed amount immediately.³⁵ The guarantor would then have recourse to the public authority. The proposed facility would cover the risks due to breach of concession agreement by contracting government authority in PPP projects. Some of the risks that may be covered are:

- (i) failure/delay in land acquisition;
- (ii) failure/delay in issuance of license, approval or clearances;
- (iii) changes in law or regulations; and
- (iv) changes in tariff determination model.

55. The guarantee facility would cover the estimated losses due to the above risks. The guarantee would typically be triggered only after the government's liability is determined as per the arbitration procedures defined in the concession agreement. The arbitration procedure would need to be completed in time-bound manner for the scheme to be successful.³⁶

56. **Take-out financing.** A financial intermediary (other than a bank) can offer a “take-out finance” loan to a project company of a post COD project which uses the loan proceeds to re-pay existing bank debt. This could expand long-term debt availability and facilitate bank financing by mitigating bank limits and ALMi concerns. In addition, the FI could offer the takeout product at financial close stage itself wherein it agrees to take-out of a portion of bank debt after project completion. This assures the bank that it will have a shorter exposure and thus, prices its loan accordingly. The terms of the take-out are based on project rating and experience shows that it can result in a 200 bps borrowing cost reduction for the project.

57. **Subordinate debt.** Subordinate debt provides an additional degree of flexibility to infrastructure companies. This is most useful in the context of overleveraged balance sheets of PPP project sponsors and provides them with the flexibility to raise additional debt without additional equity. Sector issues including regulatory risk, toll collection risk, etc., can make equity providers hesitant.

58. **User rights as a mezzanine capital instrument.** In search for innovative methods of infrastructure financing, the possibility of “user right”—as one component of infrastructure financing—may be of emerging interest. “User right” is a debt instrument to raise capital based on legitimate expectations of urban residents for consuming infrastructure services. It emphasizes the consumers’

³⁵ Indonesia has set up facility called Indonesia Infrastructure Guarantee Fund (IIGF). IIGF was operationalized in June 2013 and provides guarantee to the private sector investments in the infrastructure sector against the breach of contract by government agencies. No projects were guaranteed as on August 2013. ADB and the World Bank provide partial risk guarantee (PRG) against certain well-defined risks of independent projects by the private players. PRG usually covers noncommercial risks such as political risks including confiscation, expropriation, nationalization, and deprivation. The Mexican Government Infrastructure Fund (Fondo Nacional de Infraestructura-FONADIN) offers performance guarantees and political risk guarantees for PPP projects.

³⁶ The need for such a facility can be determined from the RBI's Financial Stability Report (December 2013), which indicates that the push for infrastructure projects, many of which later got into a logjam, resulted in accelerated growth in gross nonperforming assets (NPAs). Gross NPAs and restructured advances for the infrastructure sector increased considerably from Rs121.90 billion (4.66% of total bank advances) as of March 2009 to Rs1,369.70 billion (17.43%) as of March 2013. Further, infrastructure accounts for about 18% of the total restructured assets as on September 2013. This high level of stressed assets has resulted in a slowdown in lending by financial institutions and higher interest rates to cover risks. Apart from the challenges in debt funding, there is also a significant equity funding gap in the infrastructure sector, because of lower-than-expected returns due to project delays.

role as a stakeholder. As an independent instrument, it could be sold to segments of the public—pure investor, investor-user, or pure users. In summary, “user right” is an interest free debt during construction period. It reduces the debt raised via bonds or loans with consequent reduction in interest payment. The cost of servicing the rebate contained in the “user right” is deferred to a stage when revenues start owing from operations, which helps in mitigating the spikes in cash outflows (upon maturity of bonds) and allows superior alignment of costs with revenues of the project, together with significant improvement in net present value.

59. The key insight is to harness financing from users from amongst the universe of investors, with a high yield tradable debt instrument that provides them with a rebate on user charges once the projects becomes operational. Liquidity would come about through trading at exchanges, which would yield a liquidity premium. Equally, institutional mechanisms need to be reconfigured to better protect and serve public interest investing in public infrastructure. Users as bond-holders would have the incentive to perform monitoring functions, which would enhance accountability.

iv. Specific Initiatives for the Urban Sector

60. **Blended financing.** A potential innovation in the area of municipal finance is to provide a sovereign line of credit (from ADB, for example) blended with commercial financing from the market. In the context of accessing finance, specialized urban infrastructure funds (UIFs), play a key role in leveraging financing from difference sources for lending to municipalities given the low capacity of municipalities in raising their own funds. The market financing will require a commercial due diligence on UIFs and on the quality of underlying assets. This will demonstrate the extent of commercial viability of urban sector projects and the potential for leveraging private sector resources to fill the resources gap. The terms of commercial financing will also provide pricing benchmarks for the wider market and expand the viability of commercial financing instruments (including bond issuances). Accordingly, this innovation will introduce and expand commercial financing in areas that are pursuing reforms designed to enhance the commercial viability of municipalities.³⁷

61. The leveraging could also occur by way of issuance of municipal bonds.³⁸ A push is needed to create a municipal bond market through an effort at addressing challenges related to bond rating, accounting practices followed by the municipal bodies, rationalization of user charges for generating sustainable cash flows needed to service the bonds, and creating a secondary market.

62. **Future flow transactions.** Future flow securitization transactions are transactions in which investor payments are met out of cash flows that are to be generated in future, such as property rental receivables, toll receivables, oil and gas sale receivables, etc. Thus, collateral used by the originator are not existing assets (like loans) on the books of the issuer but separate escrowable claims against current or future obligors. In this case, the servicing of the bond will be done through the specified set of receivables viz. local body tax, property tax, etc. (in the urban sector). An escrow account will be set up for collection of specified set of receivables, which is operated and supervised by a trustee and the issuer will have access to the receivables in the escrow only after the debt for that specified period is

³⁷ ADB is currently in the process of processing a line of credit to UIFs in a few Indian states for re-lending to municipalities. The UIFs will have to blend commercial financing along with the ADB credit line to the extent is possible given the weak tariff regime at the municipal level. As part of the program, the municipalities will be incentivized to undertake reforms to improve revenue generation.

³⁸ In the Indian context, one of the very few examples from past is the municipal bonds issued by Municipal Corporation of Ahmedabad in 1998.

serviced. The rating on this bond can be notched up based on the assessment of the linkage between issuer and the ability to generate receivables.³⁹

63. **Pooled debt obligation facility structure.** In order to attract commercial debt into infrastructure projects, it may be possible to establish a pooled debt obligation facility (PDOF) to provide debt to SPVs promoted under PPP. The PDOF would involve a various sponsors namely banks and FI and other lenders pooling together a line of credit facility for a maximum agreed sum and by entering into a memorandum of agreement (MoA). Further, such facility would require an asset manager and a trustee company. The key benefits of a PDOF arrangement include services of a professional asset manager with sector experience and assistance to borrowers for viability and “bankability” of projects. In addition, it provides structuring of the PDOF assistance to suit project needs as well as requiring common loan documentation and subproject specific security creation and postdisbursement and follow up.

64. The key responsibilities of the asset manager include (i) manage, operate, and monitor the PDOF in accordance with a MoA; (ii) identify borrowers and opportunities that have the potential to be subprojects; (iii) carry out an appraisal and due diligence including on financial, technical, legal, commercial, and environmental to establish the feasibility of proposed subprojects and identify critical issues; (iv) formulate the risk rating framework to evaluate subprojects; (v) sanction and disburse funds to borrower(s) along with terms and conditions, as approved by the credit committee; (vi) negotiate, finalize, and execute financing documents on behalf of the lenders; (vii) send copies of executed financing documents to lenders; (viii) ensure that conditions precedent for disbursement have been complied with; (ix) submit timely reports to lenders appraising them of subproject(s) which have been sanctioned by the credit committee; (x) issue drawdown notice to lenders; (xi) submit progress reports to the credit committee; (xii) submit reports on the conduct of the PDOF and progress of the subprojects on issues deemed necessary for the credit committee; (xiii) provide lenders with financial statements of borrowers; (xiv) oversee covenant compliance; (xv) assist the security trustee and trust and retention account agent in ensuring payment and recovery of dues; and (xvi) carry out any activity/function incidental or ancillary to the above functions.⁴⁰

65. **Tax increment financing.** Tax increment financing is a financing mechanism used by cities in most states in the United States to revitalize poorer urban areas, generally in the downtown. Cities designate a tax increment financing area for capital improvements and then earmark any future growth in property taxes to pay for the investments. Developing Asian cities as well could utilize a modified version of this concept for redensification of urban cores.

³⁹ Covered bonds typically involve assets already created on the balance sheet of the issuer, whereas future flow transactions are executed for receivables from separate escrowable receivables that may even become available in the future. Further, covered bonds would typically have a trigger which would be invoked if the specified cash flow coverage is breached, future flow transactions do not have such triggers. In future flow transactions, the assets are not protected in the event of insolvency of the issuer, whereas a covered bond (through a trigger) can provide protection for the assets in the event of issuer’s insolvency.

⁴⁰ In line with the Government of India objectives of attracting commercial debt into urban infrastructure projects, both to urban local bodies directly and to the SPVs promoted under PPP arrangements, IL&FS along with other sponsors viz. IDBI, IIFC, Canara Bank, and other lenders have pooled together a line of credit facility for a maximum sum of Rs2,750 crores by entering into a MoA on 13 October 2006. The initiative was formally launched as “Pooled Municipal Debt Obligation (PMDO) Facility.” The other signatories to this MoA are the asset manager viz., IL&FS Urban Infrastructure Managers Limited (IUIML) and the IL&FS Trustee Company Limited (ITCL) in the capacity of trustees to the facility.

66. While charging for additional floor space index (FSI) is acknowledged as a key instrument for capturing value appreciation on account of infrastructure addition in a developed urban context, previous attempts at realizing the same have not been very effective, for e.g., in India. Development authorities have had no means to enforce these charges against building expansions beyond permitted FSIs. ULBs while being more effective (by use of coercive actions like withdrawal of water supply to enforce recovery of dues) have lacked professional planning skills for the determination of these charges. Therefore, the densification authorizations should be in the context of an area level comprehensive redensification scheme with charges against additional FSI and land-use conversions determined professionally, as is being done in Japan or in other Southeast Asian countries.

67. **Developing a comprehensive asset management framework.** The aim of the framework is to enhance the sustainable management of local government assets by encouraging “whole of life” and “whole of organization” approaches and the effective identification and management of risks associated with the use of assets. It encourages a long-term view of asset management and requires local governments to understand and then meet the impacts of social, economic, and environmental changes in ways that ensure sustainable use of resources. The framework enables local governments to develop robust asset management plans linked to long-term financial and strategic planning as part of an integrated planning approach as set out within the integrated planning and reporting framework and guidelines.⁴¹

C. Country Applications for SME Finance Initiatives

68. In Asia, SMEs and microenterprises account for more than 90% of total enterprises. The annual growth in the number of SMEs ranged between 1.2% (Kazakhstan) and 5.6% (People’s Republic of China [PRC]) in 2012. The number of SMEs in Cambodia increased by 34.1% over 2009–2011, and by 17.7% in Malaysia from 2003–2010. SME access to banks has gradually improved because of the various government support measures such as credit guarantees and mandatory lending. Bank lending to SMEs is relatively large in the Republic of Korea (38.9%, 2012), Thailand (33.7%, 2013), and Malaysia (20.1%, 2012). However, it is small in Cambodia (7.8%, 2013), Bangladesh (6.7%, 2012), Indonesia (6.4%, 2012), and Kazakhstan (4.7%, 2012).⁴² The ADB study (footnote 43) confirms that SMEs in general are less likely to have access to banks, which is more acute for small firms than medium-sized ones. In addition, with the high rate of female ownership of Asian SMEs, increasing financial access would support gender equality. Given the prominent role of state owned banks in SME lending in Asia, increasing the supply of financing would also require expanding private sector financing, which needs to be supported by improvements in financial reporting and availability of credit bureaus to reduce information gaps.

69. **Uzbekistan.** In 2006, there were at least 2.8 million entrepreneurs managing 253,000 micro, and 15,300 small enterprises in Uzbekistan. With an average loan size for \$1,000 for 25% of potential borrowers, estimates suggest a credit demand of over \$750 million. According to a 2007 World Bank study, demand for microfinance is estimated at around \$500 million, and only less than 8% of business

⁴¹ A good example of asset management framework is provided by the Government of Victoria in Australia, which describes the purpose and fundamental principles of effective asset management in public sector agencies and provides a strategic framework through which these can be effectively implemented. It also sets out the policies and practices for asset management that apply to all Victorian Government departments and agencies wholly or partly funded through the state budget. The Victorian Government also provides assistance for asset managers to interpret policy requirements in the light of their particular situation.

⁴² ADB. 2014. *ADB–OECD Study on Enhancing Financial Accessibility for SMEs Lessons from Recent Crises*. Manila.

financing is covered by loans—the lowest percentage in the region where the average is around 23%.⁴³ This indicates a large unmet demand for loans and bank services, which is significant in the context of the size of the micro and small enterprises sector whose contribution to GDP increased from 30% in 2000 and to 53% in 2010 to almost 60% currently.

70. **Tajikistan.** In Tajikistan, 25% of SMEs identified ease of access to electricity, high and uncertain taxes, and access to finance as major business obstacles and around identify access to finance as a major obstacle to growth. High borrowing costs with interest rates ranging from 30%–40% and collateral requirements of 130% to 150% of the loan amount are cited as key constraints on loan demand. The IFC estimates that 70% of SMEs do not have a relationship with a bank and that there were around 4,000–7,000 SMEs in Tajikistan.⁴⁴

71. **Kazakhstan.** Small enterprises were the hardest hit by the global financial crises in Kazakhstan. As of 2011, as much as 32% of small enterprises, excluding start-ups, were in liquidation, while 3% of medium and large enterprises were in this position. The small enterprise bank loan portfolio declined from 17% of total lending in 2007 to less than 13% in 2011, mainly on account of a decline in construction, trade and agriculture.

72. **Viet Nam.** SMEs have become key drivers of Viet Nam's economy following policy reforms starting with the Enterprise Law of 2000. As a result, the number of registered enterprises grew to over 550,000 in 2011, up from 14,500 in 2000. SMEs now represent nearly 97% of firms and 46% of GDP. While the government has made significant progress in streamlining registration and business procedures, many obstacles still exist. Business regulations in Viet Nam are changing and between 2005 and 2009. Viet Nam issued more legal normative documents that affected businesses than in the previous 18 years combined. To simplify regulation, the government set a goal to reduce compliance costs for businesses by 30%. Reform of customs and tax payment processes remains priorities.⁴⁵

73. **People's Republic of China.** A good example of the success of SME financing initiatives is in the PRC. In 2004, the PRC began a reform of its movable collateral framework to encourage financing against valuable moveable collateral. Earlier, bank lending took place mainly through real estate collateral, which SMEs often did not possess. Moveable assets accounted for over 50% of assets owned by Chinese SMEs. There were three main phases to the establishment of the movable collateral framework which included (i) the development of a property law; (ii) the creation of an electronic registry for pledging assets; and (iii) training for lenders in order to teach them how to use moveable assets as a basis for lending. In the first 2 years following the adoption of the property law and the establishment of the electronic registry for account receivable, total commercial loans involving moveable assets grew by an annual rate of 21%, while the value of loans increased by 24% on May 2013, in a period of 5½ years. Cumulatively about 1 million registrations including loans based on accounts receivable and financial leases have been recorded by the Credit Reference Center (collateral registry) in the PRC, for a total amount of least 36 trillion yuan in amount disbursed.⁴⁶

⁴³ World Bank. 2007. *Microfinance Development in Uzbekistan*. Technical Note. Washington, DC.

⁴⁴ IFC. 2009. *Business Environment in Tajikistan as Seen by Small and Medium Enterprises*. December. Washington, DC.

⁴⁵ ADB. 2013. *Report and Recommendation of the President to the Board of Directors: Proposed Policy Based Loan for Subprogram 2 Socialist Republic of Vietnam: Second Small and Medium Sized Enterprises Development Program*. Manila.

⁴⁶ IFC. 2013. *Closing the Credit Gap for Formal and Informal Micro, Small, and Medium Enterprises*. Washington, DC.

D. Country Applications for Infrastructure Finance and Capital Market Development Initiatives

74. **Pakistan.** Pakistan faces a severe energy and infrastructure shortage generated by structural constraints and domestic and international supply side financing constraints have generated a severe shortage of accessible capital in the short to medium term. Currently, banks have around \$4 billion in exposure to the energy sector.⁴⁷ Due to the circular debt issue, banks have significant exposure to the power sector, which is concentrated in the top five banks, despite various efforts to restructure and morph circular debt.⁴⁸ The increase in public and private energy sector debt, running finance debt, and overt circular debt are all constraining credit to the energy sector.

75. A specialized funding vehicle in Pakistan is essential for the infrastructure sector as a whole and the energy and housing sectors in particular, as no dedicated financial intermediation vehicle for project finance and long-term capital exists. Domestic commercial banks provided most of the long-term domestic lending to the energy sector under the Energy Policy 2002 of the government.⁴⁹ Unfortunately, commercial banks are not structured for long-term capital provision as their balance sheets, asset and liability, and credit risk management systems are geared towards extending asset-backed loans.

76. The trading of fixed income securities lacks transparency in Pakistan, with the majority undertaken by banks. Further, the majority of these are hold-to-maturity Pakistan Investment Bonds (PIBs). Legal reform in Pakistan's capital markets is required, with key pieces of legislation either drafted and awaiting enactment or awaiting drafting. The drafted laws include the SECP Regulation and Enforcement Bill, the Securities Bill, the Futures Trading Bill, and the Corporate Rehabilitation Bill. To develop the debt market, the possibility of listing government debt instruments on the stock exchange and integration of the national savings schemes instruments with mainstream capital markets is under review. Further, initiatives that could facilitate the market development include:

- (i) the creation of a bond pricing agency to promote transparency and price discovery and to minimize pricing issues for debt securities and help stimulate primary and secondary markets, increase market depth, reduce information asymmetry, and increase the accuracy of financial statements; and
- (ii) establishment of a centralized know-your-customer agency for the registration and maintenance of investors' know-your-customer records in line with relevant international best practice, as well as customer due diligence policies with know-your-customer records accessible to all market intermediaries. This would avoid the duplication of the existing know-your-customer process.

⁴⁷ Table 1.1: Domestic Lending by Sector of Economy: State Bank of Pakistan. *Financial Sector Review—First Half 2011*. Karachi.

⁴⁸ Circular debt stems from (i) higher transmission losses than allowed by the National Electric Power Regulatory Authority (NEPRA); (ii) low recoveries from the billed amount; (iii) nonpayment of public sector entities; (iv) high differential between generation cost and notified tariff; (v) delays and lag in determination of Fuel Price Adjustment by NEPRA, and recoveries by distribution companies; (vi) payment of GST upfront on the billed amount; (vii) theft and distribution parked against transmission and distribution companies; (viii) delay in release of the Tariff Differential Subsidy; (ix) nonrecovery of receivables; and (x) abrupt disruptions in gas supply, which increases the cost of generation. Circular debt thus refers to the situation where one entity in the power supply chain—having inadequate cash-flows—is unable to discharge its obligations to its suppliers and withholds payments, resulting in cash flow problems in other players in the sector, none of whom are able to function at full capacity. Source: State Bank of Pakistan. 2012. *Annual Report 2011–2012*. Islamabad. <http://www.sbp.org.pk/reports/annual/arFY12/Energy.pdf>

⁴⁹ Private Power and Infrastructure Board (Government of Pakistan. Ministry of Water and Power). 2003. *Salient Features of the Power Policy 2002*. Islamabad. http://www.ppib.gov.pk/n_pp2002.htm

77. **Kazakhstan.** The First Credit Bureau was established in September 2004 as a commercial organization, supported by the Financial Institutions Associations of Kazakhstan. The First Credit Bureau was the first bureau to conduct centralized collection, storage, and processing of data, as well as to form credit histories and issue credit reports. Its clients include more than 60 organizations to conduct centralized collection, storage, and processing of data and form credit histories and issue credit reports. This enables the creation of a sizable database containing more than 3.9 million credit histories and more than 11.0 million credit contracts.⁵⁰

78. Kazakhstan is also the third largest insurance market in the Commonwealth of Independent States, behind the Russian Federation and Ukraine.⁵¹ Compared with the around \$950 million in premiums in 2010, the premiums grew to over \$1.6 billion in 2013. The growing economy, supported by its relative stability and high growth energy sector, has boosted per capita incomes and raised demand. As living standards have increased, the development of social insurance for the under privileged has helped drive the insurance segment.⁵²

79. However, profitable corporate and individual insurance business has led to nondiversification of retail insurance services by local insurance companies. Further development of voluntary retail insurance is perceived as costly for local insurance companies, due to two major changes in insurance laws, namely (i) the law on Mandatory Insurance for Employees against Workplace Accidents of January 2012 only allowed life insurance companies to reinsure risks for this class of risk; and (ii) in May 2012, new reinsurance rules were introduced under which insurers cede up to 75% of risks to a domestic insurer and rating requirements for foreign reinsurers were increased. The last measure was aimed at increasing domestic risk retention as well as to ensure that reinsurance premiums ceded overseas are with reinsurers with sound ratings.

80. **Public-private partnership initiatives.** The Kazakhstan Private-Public Partnership Center is a special joint-stock company fully owned by the Government of Kazakhstan created in July 2008. Its role includes: (a) examining PPP projects at all stages of their preparation; (b) preparing recommendations for governmental agencies on the development of legislation and methodological frameworks for PPP projects; (c) monitoring PPP projects during the course of development and construction; and (d) organizing seminars, training courses, conferences and other events related to PPPs. As of the time of writing, more than 30 projects had been approved by the Kazakhstan PPP Center. They include construction of motor roads, railways, hospitals, polyclinics, parking lots, a bus terminal, a light rail system, a garbage recycling plant and prisons. The total amount of investment in these projects is about \$3 billion. The new law on PPP signed in July 2013 introduced new forms of PPP contracts, such as build-operate-transfer (BOT), build-own-operate (BOO) and design-finance-build-operate (DBFO), as well as availability payments based on meeting specific project milestones or facility performance standards. The public availability of default data will assist in pricing commercial credit and insurance funds are well suited for investment in infrastructure.

81. **Housing finance.** The affordability of housing loans is a social and economic concern in Kazakhstan. In Astana/Almaty, the cost of an 80 square meter apartment would cost over \$1,500/square meter. A loan equal to the cost of such an apartment is at least \$120,000 and equal to

⁵⁰ First Credit Bureau. <http://www.1cb.kz/index/razdeli/c/1/i/2/?langen>

⁵¹ The finance sector is dominated as a whole by banking, which account for 85% of overall financial services. Insurance, private equity, leasing, and micro insurance represent the rest.

⁵² In total, the 38 licensed insurance (reinsurance) companies (as of 1 January 2013) included both 7 life and 31 nonlife insurers.

two-thirds of its value would be around \$80,000, and would result in interest and principal payments of over \$20,000/year based on a 7-year loan re-payment period and an interest rate of around 20% per annum. The wage income required to service a debt of this nature would be around \$66,000–\$87,000/year, well above the national average wage of \$9,000 per year. A decline on loan rates to around 10% and extending loan tenor to around 20 years would reduce loan servicing costs to around \$7,000/per year, almost within the reach of a household with two income earners.

82. **Uzbekistan.** Credit rating in Uzbekistan is at an early stage of development with three credit rating agencies. The Uzbekistan Banking Association established Ahbor Rating in 1996 pursuant to the Resolution of the Cabinet of Ministers to provide rating services to commercial banks, insurance and leasing companies, issuers of corporate bonds, credit unions, microcredit, and other organizations.⁵³ It is a closed joint stock company, wholly owned by the Uzbekistan Banking Association, raising a possible conflict of interest.

83. However, there is no unified collateral register containing information on both movable and immovable collateral and delivery mechanisms and products are undeveloped. For example, microlending is concentrated in banks, the availability of housing finance is not commensurate with needs of the economy, and insurance including micro insurance has low penetration, and demand for leasing products remains unmet. The capital market remains marginal and underdeveloped. Capacity constraints include weak financial literacy among women, low income individuals and the underserved. There is also a shortage of experienced and trained personnel for prudential supervision and the regulation of nonbank financial institutions, as well as undeveloped corporate governance and risk management practices in financial institutions.

84. Uzbekistan remains among the smallest insurance markets in the world. The size of the sector of around 0.4% of GDP in 2010 compares poorly with the global average of around 7% and of around 3% in the emerging markets. The slow penetration of general insurance and negligible growth of life insurance can be attributed to regulatory, social, human development, and cultural factors. Major impediments include (i) weak competition in the insurance market; (ii) weak knowledge on insurance products; (iii) an unbalanced relationship between the insured and the insurer, which favors industry profitability but undermines the development of the market; (iv) difficulty in regulating solvency of private insurers, and weak separation of shareholder and policy holder funds; and (v) low per capita income.

85. To increase consumer willingness to use insurance, a World Bank study suggests the use of financial literacy programs to educate consumers on risks and insurance products to manage them.⁵⁴ It also calls for the establishment of insurance mechanisms, such as Islamic insurance and microinsurance to manage them. Additional steps include capacity building of loan accountants, auditors and actuaries, adopting strong professional standards that are consistent with international best practices, encouraging professional bodies for accountants, auditors and actuaries, establishing robust and flexible payments systems, and encouraging the adoption of a code of ethics by insurance industry associations. These are important initiatives for catalyzing financing for infrastructure and SME finance.

⁵³ No. 427 from 9 November 1995.

⁵⁴ World Bank. 2007. Microfinance Development in Uzbekistan. Technical Note. Washington, DC.

86. **Armenia.** Insurance penetration is low at 1.75%, compared with 8.14% in OECD countries and 2.62% in Central and Eastern Europe.⁵⁵ The slow development of the insurance sector can be attributed to regulatory factors, market structure, the development of other segments of the financial sector, and social and human development factors. During 2007–2011, legislative reforms pertaining to the operation of the financial system produced a foundation for the implementation of insurance and capital market reforms. The transfer of supervisory authority to the central bank in 2006, adoption of new legislation, rising incomes, and initiatives that cover consumer protection and financial literacy, could lead to further development of this sector.

87. **Indonesia.** The Government of Indonesia has established the Indonesia Infrastructure Guarantee Fund in 2013 to provide government guarantees to support PPP infrastructure projects development. Structured along the lines of the project completion risk guarantee facility indicated above (para 54), the objectives of the fund are to (i) mitigate risks that are difficult for private sector to cover; (ii) improve transparency, clarity, and certainty of guarantee provision and processes; (iii) reduce cost of capital for project sponsors and lengthen financing maturities; (iv) provide incentive for concessioning authorities to prepare good contracts and fulfill obligations; and (v) improve project risk monitoring framework and improve the risk environment.

i. India

88. **The India Infrastructure Finance Company Limited model.** In the context of developing a viable NBF1 model (para 28), a useful approach for expanding finance for PPP infrastructure projects in India is the setting up of a dedicated infrastructure financing vehicle, namely the India Infrastructure Finance Company Limited (IIFCL), which is a NBF1. IIFCL was established with the mandate to (i) play a catalytic role by leveraging resources and specialized skills and (ii) be a nodal PPP financing agency as an integral element of the overall PPP development strategy. IIFCL was set up on 5 January 2006 as a wholly-owned government company under the Companies Act (1956). IIFCL provides commercial long-term debt financing for stand-alone nonrecourse infrastructure projects, such as subproject specific SPVs established for PPP or projects that are units of larger corporate entities whose cash flows can be “captured”. The government guarantees all IIFCL borrowings. ADB has taken the lead in assisting IIFCL by providing lines of credit for on-lending to PPP infrastructure projects.⁵⁶

89. IIFCL’s operating paradigm, namely the Scheme for Financing Viable Infrastructure Projects through the India Infrastructure Finance Company Limited (the Scheme), provides IIFCL’s mandate and guides its business plan and operations manual.⁵⁷ Recognizing the constraints in the domestic

⁵⁵ Swiss Re. 2011. *World Insurance in 2010*. Swiss Re sigma study reveals growth in global premium volume and capital. http://www.swissre.com/media/news_releases/nr_20110706_World_insurance_in_2010.html

⁵⁶ ADB’s interventions through IIFCL have been very successful with over 60 PPP infrastructure projects being provided financing. While the first two facilities have been fully disbursed, the third facility is currently under implementation. ADB. 2007. *Report and Recommendation of the President to the Board of Directors: Proposed Multitranchise Financing Facility to India for the India Infrastructure Project Financing Facility*. Manila (MFF 0017-IND, approved on 14 December, \$500 million); ADB. 2009. *Report and Recommendation of the President to the Board of Directors: Proposed Multitranchise Financing Facility to India for the Second India Infrastructure Project Financing Facility*. Manila (MFF 0037-IND, approved on 17 November, \$700 million); ADB. 2013. *Report and Recommendation of the President to the Board of Directors: Proposed Multitranchise Financing Facility to India: Accelerating Infrastructure Investment Facility in India*. Manila (MFF 0077-IND, approved on 27 September, \$700 million).

⁵⁷ The Scheme was notified to the Committee on Infrastructure headed by the Prime Minister by the Ministry of Finance, Department of Economic Affairs vide O.M. No. 10/12/2005-INF dated 4 January 2006. Under the provisions of the Scheme, the government may review it at the end of 5 years or earlier if required. The Scheme was first amended on

capital markets,⁵⁸ the Scheme allows IIFCL to catalyze funds and evolve an origination and syndication approach. First, the Scheme allows IIFCL to take an exposure not exceeding 20% of total capital costs in a project, thus, requiring consortium financing with loan origination occurring at a lead bank.⁵⁹ This also protects IIFCL from developing a concentrated asset profile that resulted in the restructuring of earlier financial institutions dedicated to project financing. IIFCL follows the pricing of the lead bank in the lending consortium.⁶⁰ IIFCL's 20% participation results in efficient capital allocation for consortium members. With IIFCL providing independent funding, participating institutions take project exposures in line with limits. Where their combined exposures are insufficient to cover project costs, IIFCL's resources fills the financing gap. The Scheme requires project appraisal to be done by specialized agencies thereby leveraging diverse skills to address the requirements of financing complex projects. Finally, the Scheme requires IIFCL to finance commercially viable projects only.⁶¹

90. **Partial credit guarantee facility.** ADB introduced for the first time pilot infrastructure bond financing initiatives through partial credit guarantees in September 2012, in partnership with IIFCL.⁶² The credit enhancement by way of an irrevocable first loss guarantee the facility is to enhance ratings of bond issued by completed and functioning infrastructure project SPVs to the AA level to enable investment by domestic insurance and pension funds in accordance with domestic regulation.⁶³ The funds raised by the SPVs will be used to prepay existing banks debt and will reduce ALM mismatches to banks and enable banks to re-cycle capital for new greenfield projects (para 33).

91. **Covered bonds.** The Republic of Korea is the only country in Asia that has issued covered bonds, outside of Australia. However, it was reported in 2012 that State Bank of India and Housing Development Finance Company of India were interested in issuing covered bonds, but there have not been any issuances. In the emerging covered bond market in India, the National Housing Bank would help get the market started and play a role in monitoring and ensuring repayments to investors. This which would help housing finance companies and banks issue new covered bonds in India.⁶⁴

23 April 2007, and subsequently, additional amendments have expanded and further defined the role of IIFCL in line with the evolving infrastructure financing scenario in India. The Scheme is provided in Supplementary Appendix B.

⁵⁸ When financial markets are illiquid or deviate from the economic price, markets become incomplete not permitting innovations to provide the set of products required for the financial closure of PPP projects.

⁵⁹ The lead bank is defined as a bank in the lending consortium that takes the maximum exposure to the project.

⁶⁰ Currently, 80%–85% of infrastructure loans are estimated to be priced below prime lending rates of banks.

⁶¹ Both take-out financing and subordinate debt products are supported by ADB through its loans to IIFCL (paras 56–57).

⁶² ADB. 2012. *Report and Recommendation of the President to the Board of Directors: Proposed Guarantee Facility for Credit Enhancement of Project Bonds*. Manila (Gu 7360-IND approved on 20 September for \$128 million).

⁶³ The Insurance Regulatory and Development Authority (Investment) (Amendment) Regulations, 2001. As per IRDA, the investment assets shall be of a grade not less than AA as per their current rating. In case AA-rated investments are not available, then for the reasons accorded in investment committee's minutes, investment committee may approve investments carrying rating of not less than A+, with A+ investments kept to the minimum.

⁶⁴ ADB is considering using its PCG product to support the development of the covered bond market in India. ADB PCGs are typically designed to cover a portion of the credit risk associated with a financial instrument. Unlike a full guarantee, which protects lenders and bondholders for 100% of the credit risk, PCGs will expose investors to some level of the underlying credit risk. For example, a covered bond issue—credit-enhanced by a PCG—could cover half of the principal repayment and the first and second coupon payments, thereby leaving some of the risks with the buyers of the bond. Based on previous experience the use of a PCG could extend the tenor and/or lower the pricing of a bond issue by increasing the rating of the bond by up to three notches. The increased rating would allow the issuer to access a wider investor base, including pension funds, life insurance companies, and other fixed-income investors.

92. **Project completion risk guarantees.** ADB is exploring the viability and applicability of establishing a project completion risk guarantee facility in India.⁶⁵ The objective of the facility is to provide guarantees to infrastructure projects for risks that are outside the control of SPVs or project developers. In case the risks impact the ability of the SPVs to make payment of debt obligations to lenders during the construction stage the proposed facility will step in to make the lenders whole. These include delays in land acquisition, acquiring environment and forest clearances and protests by local parties amongst others.

93. **Blended financing for the municipal sector.** ADB is in discussion with the Government of India and a few select states to provide a sovereign credit line that would be blended with commercial financing provided to (i) specialized urban financial intermediaries for on-lending to municipalities; or (ii) at the municipality itself. This would encourage commercial best practices as well as due diligence at the municipal level and develop a template that could be replicated in other states where a potential for absorbing quasi commercial financing exists (footnote 38).

IX. LEVERAGING CONCESSIONAL RESOURCES

94. While the above suggestions are linked to market instruments, a key concern of less developed countries is the scarcity of concessional assistance, as suggested by the difference in the availability and demand on International Development Association (IDA) and Asian Development Fund (ADF) resources from the World Bank and the Asian Development Bank, respectively. A key point of interest is thus on how to make better use of available resources and prioritize usage. A potential way forward could be to use IDA/ADF resources for projects genuinely in need of long-term investments where economic benefits accrue over a 30–40 year period such as in rural education and health care. Where there is some immediate cost recovery such as infrastructure, investment could be on harder terms.⁶⁶

95. **Selectively reducing concessionality.** Grant element, as a measure of loan concessionality, is determined as the difference in the face value of a loan and the discounted present value of service payments borrowers make over loan life, expressed as a percentage of face value. Currently, loans with a 25% grant element are considered concessional.⁶⁷ In the example below, a reduction in loan maturity by 7 years marginally reduces the grant element but can free up resources for investment elsewhere. The implications can be significant when used on a multi-year programmatic basis.

⁶⁵ TA-7997 REG: Strengthening Knowledge-Driven Development in South Asia.

⁶⁶ Recent studies on poverty and growth projections indicate that with reasonable growth rates the number of countries eligible for concessional finance to decline to 26 in 2025, from 39 in 2012 and while the number of extremely poor may reduce by half it may still exceed half a billion. Projected relative poverty headcount ratios indicate that even if the number of extremely poor is significantly lower by 2025, most countries will face sizeable problems with social exclusion and deprivation. While higher domestic resource mobilization may reduce reliance on concessional flows, the marginal tax rates required to close the poverty gap is prohibitive. In countries like Bangladesh, India, and Pakistan where higher domestic taxes could be envisaged, challenges for fiscal federalism and cross-state revenue sharing remain formidable. H. Reisen and C. Garroay. 2014. *The Future of Multilateral Concessional Finance*. Berlin: Deutsche Gesellschaft für Internationale Zusammenarbeit.

⁶⁷ <http://www.worldbank.org/ida/ida-grant-element-calculator.html>

Table 2: Comparison of the Asian Development Fund and Modified Loan Terms

Case I (ADF)		Case II (Modified)	
Loan amount	\$100 million	Loan amount	\$100 million
Loan maturity	32 years	Loan maturity	25 years
Grace period	8 years	Grace period	8 years
Interest during grace	1.0%	Interest during grace	1.0%
Interest during maturity	1.5%	Interest during maturity	1.5%
Weighted average interest	1.38%	Weighted average interest	1.34%
Discount factor	5%	Discount factor	5%
Grant element	43.26%	Grant element	39.29%

ADF = Asian Development Fund.

96. **Leveraging concessional resources for attracting international capital.** Even strong infrastructure projects in weaker economies have difficulty in accessing international capital due to constraints in the sponsor or in demand. To mitigate this risk, multilateral development banks (MDBs) could use IDA/ADF funds as an overseas trust account. For a fee, domestic sponsors could use the trust as a debt service reserve account (DSRA) to fund two debt service payments in the event of the project's failure to meet debt obligations, and thus, partially mitigate credit risk. Additionally, because the funds are held offshore in US dollar, they are not subject to convertibility and transfer risks.

97. The overseas DSRA trust would align risks. If the project performs, then the trust will generate sufficient investment revenues to pay the interest on the IDA/ADF loan and be self-liquidating. If the sponsor does not perform, the shortfall devolves on the government. The overseas DSRA would significantly leverage scarce ADF resources. For example, a \$10 million DSRA could provide protection for around \$50 million of international investment.

A. Country Applications for Leveraging Concessional Resources

98. A key lesson of the subregional advocacy workshop in Southeast Asia was the concern from participants of the Lao People's Democratic Republic, Cambodia, and Timor-Leste on the shrinking of concessional resources compared with country needs.⁶⁸ These economies, as well as others that qualify for concessional lending, may be interested in engaging with development partners to explore the possibility of selectively reducing concessional resources to expand availability of resources.

99. ADB is in discussion with the Government of Nepal to develop a mechanism for encouraging international investors into the Nepal hydroelectricity sector. While these investors may be reluctant to take exposure to projects that have a power purchase agreements with domestic off-takers, the existence of an offshore facility providing a two-period DSRA cover and for risks that are beyond the scope of the project company, may incentivize investors. A key aspect of the proposed facility is the alignment of risks. In the event that structural reforms reduce risks, the facility will liquidate and risk free investments of the corpus can pay off the loan. In the event of pay-outs under the facility, the paid-out amounts can devolve either back on the government or on the project sponsor(s) at lower costs.

⁶⁸ Held on 24–26 June 2014 in Vientiane, Lao People's Democratic Republic with participants from the Asian Development Bank; Food and Agriculture Organization of the United Nations; United Nations Development Programme, Economic and Social Commission for Asia and the Pacific; and regional economies.

100. While currently under discussion in Nepal, variants of the proposed structure can potentially be applied in any number of cases where there is an interest on the part of ADF/IDA eligible countries to attract foreign investment.

X. BOOSTING EFFORTS FOR FINANCIAL INCLUSION

101. The record of progress on financial inclusion is weak in most developing countries. On both financial inclusion (defined as the spread of financial institutions and financial services across the country) and financial depth (defined as the percentage of credit to GDP at various levels of the economy), the overall situation remains poor and uneven. Financial services must help a household manage and increase its consumption and fully utilize its human and financial capital. Consequently, there are two core functions that the financial system has to fulfill for households: (i) management of risk by movement of resources across contingent states and (ii) inter-temporal consumption smoothing by movement of resources across time.⁶⁹

102. The outcomes of financial inclusion efforts must be benchmarked to these core functions.⁷⁰ Financial markets and institutions should evolve to promote complete markets that allow households to hedge future uncertainty by trading in every state of the world.⁷¹ Consumers should be able to bundle securities in portfolios to choose patterns of consumption over uncertain states.⁷² By enabling trade in insurance policies covering factors outside the control of agents, financial services can help agents overcome uncertainty and allow the efficient and welfare enhancing allocations to be achieved.⁷³ The functions of a well-operating financial system would remain stable across rural and

⁶⁹ In September 2013, the RBI appointed a committee on Comprehensive Financial Services for Small Businesses and Low-Income Households under the Chairmanship of Dr. Nachiket Mor, member of the Central Board of Directors of the RBI. The role of the committee was to frame a clear and detailed vision for financial inclusion and financial deepening in India and to design principles for achievement of financial inclusion and financial deepening in India. The committee submitted its report in December 2013.

⁷⁰ Inclusive financial development is the development of the financial system that is biased towards the poor. A stronger definition of inclusive financial development is that it is financial development that is actually driven by access of the poor to financial services and products. It is important to note that inclusive financial development is not the same thing as financial inclusion. The latter simply captures the increasing access of poor households to financial services (for example, the possibility of depositing funds in a financial institution by a poor household in a remote rural village), regardless of its effect on the growth of the financial sector in the economy. Inclusive financial development implies both financial inclusion and growth in the width and depth of the financial sector.

⁷¹ Arrow (1964) details how risky financial securities can help in risk management by allocation of risk bearing. Arrow and Debreu (1954) developed the idea of an integrated model of production, exchange, and consumption in a complete market. Debreu (1959) captures uncertainty by expanding the characteristics in the model used to define consumption goods by making them state contingent, where all possible future states of the world are defined by unique combinations of a set of environmental variables.

⁷² Financial securities eliminate diversifiable (individual) risk from consumption expenditure and transfer nondiversifiable (market) risk across consumers.

⁷³ There is evidence that poor households who have access to financial services do better over time in terms of economic well-being than poor households who do not have access to such services. For example, borrowers in a microfinance institution (MFI) called Bank Rakyat Indonesia increased their incomes by 12.9% compared to increases of 3% in households who did not belong to the MFI. Three-fourths of clients of a MFI called SHARE in India saw significant improvements in well-being and half moved out of poverty. Members in Bangladesh of a MFI called BRAC in Bangladesh who stayed in program for more than 4 years increased household expenses by 28% and assets by 112%. Grameen Bank is one of the most well respected MFI in the world, and members of the Grameen Bank in Bangladesh had incomes which were 43% higher than incomes of nonmembers in villages not served by the Grameen Bank and 28% higher in villages served by the Grameen Bank.

urban contexts, developed and developing country, rich and poor, etc. These functions are universal, and are particularly important for low-income households, who are often financially excluded.⁷⁴

A. Options for Commercial Banks to Deepen Financial Access

103. Banks would need to appoint a local nonprofit microfinance institution (MFI)/cooperative society/new institution as a business correspondents (BC)/business facilitators (BF) after necessary due-diligence and needs assessment. Deepening financial access in a viable manner is possible with commercial banks expanding and strengthening BCs and BFs that are the local touch points at the front-end. The comprehensive set of BCs that are established at the village level could be strengthened by (i) building their capacity through training, (ii) enabling them with appropriate technology, (iii) infusing them with sufficient working capital, (iv) providing them a line of credit to originate loans at the local level, and (v) equipping them to provide a first loss guarantee to the bank once the loan portfolio is bought over by the bank.

104. The model which was discussed in the Mor Committee (footnote 71) addresses two of the most difficult obstacles to rural finance: (i) banks find it unprofitable to establish branches in rural areas where populations are scattered; and (ii) due to major information asymmetries and the generally small loan size for rural populations, the required due diligence is not cost effective. By partnering with business people who already have offices and, ideally, the necessary office equipment, the bank almost completely eliminates the cost of establishing a branch. By partnering with successful business people who know the local customer base through their existing business(es) and who have an interest in maintaining good customer relations and timely repayments due to their joint default liability with the bank, the bank lowers the cost of due diligence.

105. **Equipping BCs with basic infrastructure.** Each BC has to be equipped with a biometric reader, automated cash counting machine and a safe which ensures transparent access to direct government transfers and subsidies and enables savings. The bank, acting through the BC, may levy a small charge to the customer to recover a part of the costs of offering these services. The bank may need to sanction a small-term loan to the BC to meet its infrastructure expenses and to fund its preoperative costs.

106. Further, the bank would need to collaborate with training partners, to offer comprehensive training to the BCs in self-help group/joint liability group methodologies through guaranteeing a portion of re-payments to banks (para 103). In addition, the bank would also need to collaborate with a technology provider to offer a simple technology platform to the BC to manage its own lending operations.

⁷⁴ For e.g., in India, the scale of the problem can be determined by recent initiatives of RBI which recently notified 292 districts in India as “under banked” with poor microfinance penetration, meagre bank network, and a low credit deposit ratio. The Rangarajan Committee on Financial Inclusion (January 2008) estimates that 111.5 million households have no access to formal credit and 17 million households are in debt trap with money lenders. Data from the 59th Round of NSS (2008) show that 73% of the 89 million farmer households have no access to formal credit. The Arjun Sengupta Report on Financing Enterprises in the Unorganized Sector (2007) estimates that 95.86% of the units (with investment of less than INR25,000) have no access to formal credit. According to K.C. Chakrabarty (deputy governor, RBI), only 13% of people with an annual income of less than INR50,000 avail loans and 53% of people are still avail institutional and noninstitutional loans only for emergencies.

107. **Providing BCs long-term working capital loans for ensuring sustainability.** Having satisfied itself that the BC is fully prepared for basic lending operations, the bank would need to sanction a long-term working capital limit to the BC. The limit would carry a commitment charge of around 10%, when it is not used and an interest rate (which will be higher than the commitment charge, of around 20%) when it is used. It would be unsecured and would be used to provide a first loss guarantee to the purchaser of the loan portfolio originated by the BC.

108. **Providing additional credit line for BCs to originate loans.** The bank would then need to sanction an additional line of credit at a sustainable rate for the BC to originate loans on its own books. As soon as the portfolio crosses a certain minimum size, the first loss piece would be guaranteed by the BC using the working capital limit offered by the bank, while the rest of the portfolio could be assigned to the books of the bank at a competitive rate of interest. This structure ensures that any profits that are made by the BC on account of these transactions continue to be at risk until all the loans originated by it are completely paid off. This is a key lesson from the sub-prime crisis.

109. **Encouraging BCs to expand operations.** In addition, the BC could be encouraged to offer domestic remittance, international remittance, and insurance schemes such as life and personal accident. The block level branches of the bank could also provide cash management services to the BC for an additional fee.

B. Microfinance Model

110. MFIs lend small sums of money to low-income households for income generation, asset building, and consumption smoothening. Many MFIs also provide products and services such as insurance, savings, and remittances. By making finance available to a segment of society that has no access to banks or other formal credit, they play an important role in financial inclusion. However, most MFIs are overly reliant on banks and development financial institutions (DFIs) for funding. Therefore, it is imperative for MFIs to diversify their sources of capital and access mainstream capital markets investors.

111. The Committee on the Global Financial System (2005)⁷⁵ defines structured finance based on three characteristics:

- (i) pooling of assets (either cash-based or synthetically created);
- (ii) tranching of liabilities that are backed by the asset pool; and
- (iii) delinking of the credit risk of the collateral asset pool from the credit risk of the originator, usually through a stand-alone SPV.

112. In direct securitization, loans originated by MFIs are pooled into an SPV that is typically a trust. In addition, microloans originated by multiple MFIs could be pooled as well. The trust issues securities backed by cash flows from the pool. The proceeds for the issuance may pay off any original financier. The buyers of these securities now own a portfolio of microloans. Typically, these securities are sold in “tranches” and the waterfall mechanism defines how the cash flows will be distributed across the

⁷⁵ Report by a working group established by the Committee on the Global Financial System; Bank of International Settlements.

various tranches.⁷⁶ One can then create and sell a high-quality “senior” tranche of securities with low default risk, which is served first from the cash flow received by the SPV. Once the senior tranche is paid off, the cash flow services a second, lower quality tranche for which the repayment risk is higher. In this form of securitization, investors have an exposure to the underlying borrower and the performance of these transactions depends upon the credit worthiness of the borrower and the MFI’s ability to collect repayments.

113. Microfinance securitization provides the same benefits that conventional structured finance products provide. For the originator of the microfinance assets, the advantages of securitizations include relief in regulatory and economic capital, diversification of the investor base, and access to new (and potentially cheaper) sources of funding based on asset risk rather than corporate risk and portfolio management. Rating analysis and market-based pricing also create credit history that may enable the originator to raise future capital at market-linked rates. For investors, buying into structured securities gives access to a diversified portfolio with a return profile that matches their risk appetite. High repayment rates, low volatility of returns, low prepayment, granularity of loans, and low correlation with other asset classes make microfinance an interesting asset class for securitizations.

114. **The underlying asset structure.** Most microcredit models, including the joint liability group (JLG) model are based on simple well-designed processes that drive repayments. The JLG product is typically a one to 2-year loan with weekly, fortnightly, or monthly repayments. Borrowers get together and form the basic unit called the JLG, which is based on self-selection by the members in the group. The group members have better insights into the ability and willingness of their members to repay than those provided by any formal credit evaluation process. Members in a group agree to collectively guarantee the loans given to them. Very often nonpayment of an installment is due to reasons of liquidity and not willful default. The model effectively replaces physical collateral with social collateral.⁷⁷

115. Most rural households engage in income-generating activities such as grow farming, livestock, and daily wage labor. Thus, repayments often come from existing activity, rather than from new businesses. These small repayments match well with the high frequency cash inflows. The group guarantee based on self-selection, repayment discipline with close group monitoring, and a financial product that matches the household’s cash flow patterns result in high repayments.

116. The low correlation observed between returns on this asset class and other mainstream asset classes such as equities, bonds, commodities, and bullion is because in the short run, the small-scale activities and occupations engaged in by borrowers continue irrespective of the happenings in mainstream markets (Krauss and Walter 2009). As markets for end products/services produced by borrowers are largely local, the micro economy continues to function irrespective of rise in interest rates or inflation, fall in stock market indexes, or exchange rates. The small-ticket size of loans with diversified businesses underlying them make for a well-diversified loan portfolio. This makes securitization attractive to capital market investors who may prefer a shorter term exposure until sufficient track record is established. Also, as loan repayments map well with the periodic cash inflows

⁷⁶ When several thousand microloans are pooled, one can statistically estimate the percentage of cash flows that will be available to meet investor payout.

⁷⁷ The efficacy of the social collateral may be best understood by observing the normal cash flow behavior of low-income households. Such households as a normal practice borrow from and save with each other and the JLG model builds upon this behavior. Hence, the model effectively allows households to provide a “liquidity cushion” to each other, aided by the small size of each individual loan installment payable.

from livelihood activities, it minimizes the proportion of prepayments and preclusions, enhancing the predictability of cash flows to the SPV.

117. Loans extended by reputed MFIs are an attractive asset class due to four main reasons:

- (i) high loan portfolio quality due to the MFI's loyal client base, which results in lower acquisition costs and excellent loan repayment rates;⁷⁸
- (ii) high liquidity and solvency due to the short tenure of the micro loans, typically less than a year;
- (iii) high returns and portfolio diversity as microfinance loans have low correlation with mainstream markets;⁷⁹ and
- (iv) high growth in MFI sector.⁸⁰

118. Additionally, there is low prepayment risk as in most cases. MFI loans are linked to periodic cash flows of the clients' business and involve regular weekly, fortnightly, or monthly repayment of fixed small amounts. Businesses that generate lumpy cash flows are not preferred. This minimizes the proportion of prepayments and preclusions.

119. **Small enterprise finance as an asset class.** A large number of micro, small, and medium enterprises (MSMEs) are dependent on informal sources for debt both for working capital and investment. While MFIs also provide credit to microentrepreneurs, they are constrained by loan size caps. Several MSMEs have debt requirements that are well below loan ticket sizes that are attractive to banks are left with very few sources of credit. A certain set of NBFIs typically have in addition to MSME loans other assets such as two-wheeler loans, commercial vehicle loans, etc., that are also provided to the informal, self-employed segment. There are NBFIs that are established by experienced professionals, and with equity support from mainstream investors, that focus exclusively on SME lending and on specific sectors such as education, textiles, etc.

120. **Affordable housing as an asset class.** The demand for housing stock in semi-urban and rural areas is only increasing. This is also a segment that banks and mainstream housing finance companies are not attracted to, mainly on account of the loan size, and also because most of the customers of affordable housing are from the informal segment. Over the last 3 to 4 years, several specialized categories of housing finance companies focusing on the affordable housing finance sector have been

⁷⁸ The MIX micro banking bulletin's December 2009 industry benchmarks (based on 2008 data) show that the average portfolio-at-risk for more than 30 days (PAR >30 days) for the 1084 MFIs under study was 3.1%. PAR >90 days was 1.6%. PAR is lowest in the village banking model of microfinance. Asia had the lowest PAR among all regions and average PAR >30 days for Asia was 1.5%. Also, the loss rates are quite low worldwide at 0.8%. Key factors that contribute to the good portfolio quality of microfinance loans are (i) small ticket size and short repayment tenure of the loans; (ii) group pressure ("social collateral") for timely repayment; and (iii) strong credit discipline maintained by the MFIs for timely repayment of principal together with interest. Due to these reasons, credit loss in reputed MFIs is typically around 2% only.

⁷⁹ Returns have been quite high in the microfinance sector. The average real yield on gross portfolio as per the micro banking bulletin was 22.8% for all the MFIs combined and more than 20% for Asian MFIs in 2008. Further, microfinance loans are used to finance basic economic activities such as small-plot agriculture, animal husbandry, grocery and provision stores, roadside hotels, fruit and vegetable vending, and small-scale artisanship. These businesses have a reasonably stable demand in and around the location of the business itself, and are thus largely insulated from swings in mainstream markets.

⁸⁰ Data collated by MIX micro banking bulletin 2008 shows that the average growth rate of MFIs in 2005 was 38% in terms of the size of loan portfolio and 33% in terms of the number of borrowers. On an average, Indian MFIs have been growing at the rate of 30%–50% in terms of number of borrowers and 50%–60% in terms of portfolio size.

set up—most often with equity support from private equity firms and social investors. Similar to the small business lenders, these housing finance companies have also developed origination and credit underwriting models that are based on cash flow assessment through personal discussions with the customer. The housing finance companies have also developed expertise in evaluating the value of the title documents of affordable housing properties and projects. In this case as well, it would be important for an underwriter working with such institutions to evaluate their origination model.

C. Risk Management for the Small Farmer

121. A majority of small farmers face an increasingly challenging situation, as a result of (i) fragmentation of land holdings; (ii) degradation of soil quality, inadequate level of investments, and poor productivity; (iii) high exposure to rainfall risks and commodity price risks; (iv) low levels of “equity capital” with the small farmer to absorb these risks; (v) high levels of leverage; (vi) poor quality of seeds; (vii) inadequate access to information regarding sowing practices, choice of crops, and market trends; and (viii) weak access to credit.

122. While many steps taken by governments when viewed discretely may be beneficial to the small farmer in the short run, taken together they do not represent a coherent policy response that can have a long-term systemic impact on the life of the small farmer. For example, low interest rates on priority sector may be encouraging higher levels of capital intensity in farming that is optimal given the relative availability of labor; subsidized crop insurance may encourage farmers to systematically underestimate rainfall risk in their cropping decisions and the massive loan waiver may make it harder for farmers to get access to credit in the future. An excessively high minimum support price which is provided for free to the farmer represents a deep-in-the-money put option that is being offered to the farmer as a conditional cash transfer only if the farmer takes the “incorrect” decision of planting a crop for which there is inadequate demand. Unless the expectation is that the farmer will not exercise the put option, it would perhaps be better to offer her unconditional cash transfer instead and let her plant a different crop.

123. **Market-based interventions.** A key decision making point for the small farmer is around the time of sowing the crop. The farmer has to make a number of decisions and take on a number of uncertainties without necessarily possessing the competency to assess them correctly or to protect herself against their impact. Before the farmer makes the decision, she needs to be aware, based directly on experience and the nature of risks, what a good set of choices might be. The farmer would need advice on cropping practices based on the soil type and crop choice and a firm estimate of what he would earn if he is able to plant a certain crop and fully hedge all the risks away. Once she has made the decision, she needs to be able to actually hedge all these risks and be virtually guaranteed a good return on investment—this will make it possible for her to access bank credit even with low levels of “equity” since the returns are now virtually certain. Some of these interventions include:

- (i) Addressing the access to credit and warehousing challenges being faced by the large farmers and traders. This would include warehouse receipt finance (WRF) for the larger trader. It is argued that there is a great deal of underlying price risk even around the seasonal pattern and it would be difficult for the small farmer to “play” this market.
- (ii) Providing the smallholder farmer with good weather forecasts, rainfall insurance contracts, and good advice on cropping patterns.

- (iii) Developing and permitting a range of hedging and price risk management products and aggregation services for smallholder farmers including options on spot and futures prices.
- (iv) Improving spot price discovery for the small farmer.⁸¹

124. **Futures and forward contracts.** Participants on the exchange include grain producers, grain millers, oilseed processors, feed manufacturers, food companies, grain merchandisers, importers, exporters, and speculators. However, empirical evidence across other markets in the world shows that as markets mature, these numbers improve, making the contracts more attractive for hedging. However, these markets are only accessible to large traders and producers. The small farmer is still left with no choice but to take the exposure on her commodity and rely on the MSP provided by the government. Also, futures market offer only standardized contracts of fairly large sizes and are much more suitable for the aggregators, traders, and large farmers and not at all appropriate for the small farmer—forward contracts offered by risk aggregators such as banks would, for example, be much more appropriate for their hedging needs.

125. **Options contracts and price guarantees.** Trading in options contracts on agricultural commodity futures began in the United States in 1984. These contracts, though not existent in several developing country markets, are useful to study because of their interesting payoffs. Options on futures require the delivery of an underlying futures contract when exercised. From a buyer's point of view, the risks are limited. However, these positions involve an immediate cash outflow towards the premium. From a seller's point of view, short position in options on futures are easier to delta hedge because it involves trading in the underlying futures contracts which are often more liquid than the spot and can be traded at almost one-tenth the transactions costs of trading in the spot. While basis risk does exist, options on futures contracts offer an attractive alternative risk-management mechanism. Agricultural options on spot prices can enable farmers to obtain a similar price protection as that available through government run agricultural support programs such as MSP. Ever since the early days of options, economists have argued that price support programs and target price programs available to farmers in many countries are actually options markets (Gartner 1981, Belongia 1983, Petzel 1984).⁸² In addition, options also give the farmer a say in the amount of insurance he would like to avail of by choosing the strike price of the puts he would like to purchase. The economic rationale for using options to achieve the same means is that trading in options would lead to price movements and price equilibrium. MSP on the other hand restricts price movement and does not result in equilibrium. Thus, using options market would give price signals and in turn lead to effective allocation of resources.

⁸¹ Many steps are involved here—all of them eminently feasible. These include encouraging channels such as (i) the banking correspondent and bank branches to act as links between the smallholder farmer and spot exchanges; (ii) development of transportation exchanges so that there is the possibility of remotely located buyers entering the spot market through the agency of the exchange; and (iii) making all the Mandi infrastructure available for testing, grading, and storage of commodities to the small farmer so that she is able to trade directly on an exchange with her warehouse receipt.

⁸² In economies where traded options markets exist, the farmer pays for the protection. In the absence of these markets, the protection is paid for by taxpayers. The MSP program is actually a put option whereby if the farmer meets all the requirements, he is guaranteed a price by the government and an undertaking that all his production will be bought at the predetermined price. The farmer is thus the buyer of the put option while the government is the seller of the put. In short, both the MSP as well as the traded option gives the farmer a limited downside (the government determined price in an MSP environment and the exercise price of the option in an options markets environment) and an unlimited upside (if prices are higher than the MSP or the strike price of the option, he can choose to sell to the government or exercise her option and sell in the open market instead).

D. Country Applications for Microfinance and Agricultural Finance Initiatives

126. **Pakistan.** The State Bank of Pakistan's survey of commercial banks on the introduction of warehouse receipts has shown that apart from a lack of a long-term infrastructure finance facilities, the challenges include poor understanding and awareness and a lack of specialized products, requiring development of capacity among farmers, traders, and warehouse operators.⁸³ The development of warehousing/depository receipts is a critical link in the development of an efficient agricultural sector in Pakistan. The development of efficient spot and futures markets for agricultural commodities depends on the creation of physical infrastructure, in particular storage systems capable of grading, certifying, and storing. Current attempts to trade a few agricultural commodities futures on the Pakistan Mercantile Exchange (PMEX) such as wheat and rice are a step in the right direction. However, for them to be catalyzing and transformational, capital-intensive and complex storage and good chain systems need to exist.⁸⁴

127. Successful use of agricultural receipts is beginning to emerge in the cold chain system now coming up in the private sector for storing fruits, vegetables, and seeds. These receipts are tradable within peripheral agricultural markets, but not on any formal trading platform or accepted by scheduled banks. However, they are paving the way for a more sophisticated goods storage/food chain system, which could expand to include food grains and formal commodity trading markets and platforms if a sufficient concentration of capital and infrastructure is achieved.

128. **Tajikistan.** The Tajik Agricultural Finance Framework (TAFF) project recommended a risk-sharing facility for agricultural finance, in which proposed shareholders would include the state and international and participating financial institutions with a recommended share capital of not less than 30% of estimated risk. Through TAFF's business forums and consultants, attractive investment opportunities have been identified in beef, dairy, high-value crops, orchards, and dried fruits. While microfinance institutions already have around 30% of their aggregate loan portfolio in agriculture, rural recipients of worker remittances may use funds for consumption, education, and housing, and possible investments in renewable energy. The efficiency of microfinance services could be enhanced through mobile financial instruments.

129. A survey by the Warsaw Microfinance Center of the potential market in Tajikistan indicated that less than 5% of households keep savings in financial institutions, while 84% keep savings at home.⁸⁵ Despite holding licenses to accept deposits, microfinance deposits organizations have shown little deposit taking activity. The survey indicated that people would prefer to place their deposits in banks rather than in microfinance institutions. The development of safe and accessible savings deposit accounts appears to offer the best opportunity for microfinance deposit organizations to increase deposit taking. In 2010, 7,350 individual customers held on average \$745 in demand deposits and

⁸³ Pakistan is an agricultural country with agriculture contributing 21% of GDP and providing 45% of total employment. Pakistan ranks among the world's major producers of tradable agricultural commodities and is the fourth largest producer of cotton, ninth largest producer of wheat, and the twelfth largest producer of rice.

⁸⁴ The main delivery center for wheat futures contracts for PMEX is in warehouses in Faisalabad with other delivery centers in the Punjab in Jhang, Okara, Multan, Rahim yar Khan, and Bahawalpur. For IRRI-6 rice futures, the delivery center is Karachi or Port Qasim at exchange-approved and designated warehouses. Seven commodities, including gold, silver, crude oil, rice, wheat, sugar, and palm oil are available for trade, with PMEX providing different contracts for each commodity in terms of lot size and tenor. In 2011, about 2.9 million contracts were traded at the PMEX, with a traded value of around \$8 billion. The bulk of activity was concentrated in gold and crude oil.

⁸⁵ J. Pytowska and P. Korynski. 2010. *The Market for MDO Deposit Services in Tajikistan*. Warsaw Microfinance Center.

\$5,763 in time deposits. These three banks in 2009 held 40% of total personal deposits (\$106 million) in the banking sector, with 37,000 depositors between them. Data indicates that less than 9% of total households have bank deposits.

130. **Georgia.** Georgia has a comparative advantage for agriculture based on fertile land, availability of water, and favorable weather. Georgia has both favorable agronomic factors for large crops (maize, barley, and wheat) and for various types of fruits (citruses, apple, and pears). However, Georgia has not managed to expand production and contrary to other Caucasian and small Central Asian countries, yields have decreased in Georgia. According to data from the National Statistics Office of Georgia, total sown areas contracted from 701,900 ha in 2006 (88% or arable land) to around 281,000 ha (35%) in 2011. This contraction can be partly explained by problems in agricultural production such as lack of access to finance, inputs and machinery, low productivity, and profitability of agriculture, as well as the absence of a legal framework that reduces uncertainty of propriety rights on land.

131. As per the Bank of Georgia (BoG) Annual Report 2011, agricultural loans accounted for only 0.33% of the total bank loan portfolio. The contribution of banks to the agriculture sector has not significantly improved despite the implementation of the Georgia Agricultural Finance Framework (GAFF).⁸⁶ In fact, the share of credit to agriculture in total bank portfolio fell in mid-2012 to a low point. Key reasons for the low exposure of banks to agriculture include the fact that agriculture lending is considered unprofitable and banks are hesitant to enter into this sector. Further, banks are not comfortable with financing complex assets. Banks lend more on the basis of SME financing techniques and little has been done to develop capacity in evaluation of future cash flows of farmers.

132. It can be suggested that experiences from TAFF be shared with Georgia, in particular with regard to (i) development of credit scoring systems that allow for a systemic professionalization of lenders in the field of credit to agriculture and reduce operational and transaction costs; and (ii) the coordination of technical assistance providers with financial institutions, farmers, and agri-businesses. Additional initiatives may include:

- (i) develop a system of cooperative credit;
- (ii) develop an effective system of crop insurance based on modern technology, based on schemes that have been implemented in sub-Saharan Africa; and
- (iii) promote warehouse finance using warrants that could be connected with development of storage cooperatives.

133. **Armenia.** The share of agriculture in Armenia is unstable, with interchanging phases of growth and decline during the past decade. The share of agriculture shrank from more than one-third of GDP in 1997 to less than one quarter in 2004. However, the sector recorded an unprecedented over 14% growth rate in 2004 and contributed to around 3.1% of the total 10.1% growth for that year. In 2012, agriculture accounted for around 20% of the GDP, the highest share since 2005.

134. Given weakness in available information, it is difficult to estimate current demand for agricultural finance. World Bank estimates that effective demand was more than \$100 million from 2005 until 2010, with the average loan size of around \$300.⁸⁷ Based on these considerations, it appears that there is a large unmet demand for rural services, which is growing and getting more

⁸⁶ Launched in October 2011 and ended in June 2013.

⁸⁷ World Bank. 2005. *Armenia's Rural Economy—from Transition to Development*. Washington, DC.

challenging every year. The share of agricultural loans is at around 6%, which is low given the share of agriculture in the economy. This is typically because the sector is considered risky and costly and lending technologies appropriate for agricultural finance not widely available. Additionally, demand exceeds supply, and infrastructure and technology in rural areas remains underdeveloped.

135. Conditions for agricultural credit clients are often subject to irregular cash flows in terms of date frequency and amount. Agriculture is defined by seasonable variables and agricultural businesses are naturally concentrated in rural areas, implying long distances for travel. To cope with these challenges adapted credit technologies could be further developed. To compensate for the cost factor, better infrastructure for rural areas, including telecommunications, could be further developed. This would allow financial intermediaries, through technology to enhance distribution and make it more cost efficient by adding channels such as ATMs, point of sale terminals, mobile banking and the internet to traditional branch outlets.

136. **Cambodia.** The Government of Cambodia has identified rural finance as a critical sector requiring development and support. It recognizes that banks have not been able to address the demand for finance among the poor, smoothen consumption, build assets, and develop microenterprises. To address the lack of rural financial services, the Royal Government of Cambodia adopted a series of policy measures including (i) establishment of the Credit Committee for Rural Development; (ii) introduction of a framework establishing laws to enable eligible NGOs and other rural finance providers to become regulated MFIs; (iii) creation of a unit in the National Bank of Cambodia to supervise and monitor MFIs; and (iv) establishment of an apex institution to provide wholesale financing for MFIs, namely the Rural Development Bank.

137. Going forward, development of a wholesale market for loan financing operated within the private sector and linking the MFIs with the commercial banking sector is required. A national wholesale payment system and money/interbank market should not only link the MFIs and banks but should also provide flexibility in the currency in which loans are provided. Additionally, linkages should be extended via measures enabling the banks to obtain experience of lending to, and working with MFIs. This requires a less collateral-based approach to lending and the development of a more cash flow/accounts analysis-based approach. Potential for interim guarantee measures to enable banks to gain such experience may also be considered.

138. **People's Republic of China (PRC).** Village and Township Banks (VTBs), Rural Credit Cooperatives (RCCs), and the Postal Savings Bank of China (PSBCs) provide large-scale financial services in the PRC. There are about 2,000 country-level RCCs, 147 rural cooperative banks, 800 VTBs, and 39,000 frontline branches for the PSBC. Until recently, RCCs provided the majority of financial services outside cities. With its expansion branch network, PSBCs service about 2.2 million microcredit clients with an average outstanding loan size of RMB54,000 (\$8,800). The main products offered by PSBCs are agricultural loans, women's loans, re-employment loans, and loans with informal collateral. Challenges facing these rural institutions include a lack of microfinance expertise and reluctance to try new methodologies. According to the People's Bank of China, the central bank, the number of microcredit companies (MCCs) in the country totals 8,217. The majority of MCCs target financing for SMEs, not for individuals. To advance financial inclusion, incentives for MCCs to offer less-profitable microlending need to be integrated. One barrier MCCs face to improving their services to microfinance clients is low access to credit reporting information held by the PBC.

E. Harnessing the Post Network for Financial Inclusion

139. The primary building blocks of financial inclusion are storage of cash, payments, and credit. Importantly, post networks already has several decades of experience in performing the first function through post office savings bank (POSB) accounts, and the second through money orders. However, the postal networks do not yet deliver credit. It is feasible to harness broad based banking and payments infrastructure of the postal network in delivering a range of risk management tools including insurance, pension, and credit, as well as a variety of government to person (G2P) payments targeted at the presently excluded population including the poor. The POSB account is well placed to serve as the basic building block of financial inclusion. However, the system for issuing and managing POSB accounts should however be modernized by implementing a customized and scalable lightweight technology solution. The following options for using the existing postal network may be considered:

- (i) The postal system can establish contractual arrangements with multiple information technology vendors who will provide a specified application programming interface (API).
- (ii) The postal network may also look for ways to leverage its low cost platform by providing branded accounts to other strategic partners, such as MFIs, mutual fund and insurance companies, and telecom operators.
- (iii) The postal network could evolve the money order system to become a mechanism for transferring money from one POSB account to another, instead of just being a mechanism for delivering cash from one person to another.
- (iv) The postal network could build a payments infrastructure, through an array of contracts with partners, connecting up all POSB accounts and accounts of its partners, to effectively become a person-to-person money order capability (through mobile phones or web browsers);
- (v) The postal network must elicit a large number of partners in terms of financial inclusion players, mobile service providers, and innovative new technological choices in order to increase the size of the network.
- (vi) The postal network must work closely with government agencies so that their G2P payments requirements are met through a combination of POSB accounts held by citizens and money orders delivered by government to those POSB accounts. The Ministry of Finance should work the postal network in rolling out this platform and network, given its important implications for direct, targeted delivery of government subsidies.
- (vii) The postal network may also play a role in the emergency credit aspect of financial inclusion, through a platform building approach where private lenders deliver credit to the poor through a competitive framework.

XI. DISASTER RISK FINANCING

140. Several factors determine a government's use of disaster risk financing instruments and strategies including income level, geographic spread of expected disasters, and the economic base. Purchasing a weather derivative is not appropriate for a country that is vulnerable to earthquakes. Similarly, sponsoring a catastrophe bond is irrelevant to a country that does not expect natural hazards. Further, low-income countries usually lack data on past events, making it difficult to price risk, contributing to their inability to access international markets. Thus, while Ethiopia and Malawi have

accessed weather derivatives, it is through the intermediation of the World Food Program and the World Bank. Middle-income countries have greater technical capacity and can interact directly with international reinsurance and capital markets.

141. Disaster risk financing strategies are typically developed starting with bottom risk layers and adding protection against more severe but less probable events as the government's risk financing capacity develops. Governments can also reduce their contingent liability to natural disasters through the promotion of property catastrophe risk insurance and agricultural insurance markets. Developing these insurance markets provides individuals, businesses, and farmers/herders with reliable financial protection against natural disasters and extreme weather.

142. When a government decides to develop a disaster risk financing strategy, assessing its exposure to natural disasters is critical for effective financial protection. An economic and fiscal risk assessment based on all available data on past natural disasters will inform the government of the cost of events of varying frequency and severity, the potential for postdisaster funding gaps, and the most suitable disaster risk financing options. Fiscal and economic impact studies require extensive data analysis and modeling. Yearly, contingency budgets can be exhausted at any point in the fiscal year. Establishing a multi-year reserve for natural disasters, therefore, can help the government ensure the year-round availability of funds. Establishing and maintaining a multi-year reserve can be politically challenging but having a dedicated fund for natural disasters ensures the availability of more significant resources to cover more severe events.

143. An SPV is established, usually in an offshore location with little capital but which can enter into contracts to accept risk from a transferring entity. The risk is then made good by simultaneously issuing bonds to raise capital to secure the risk. The amount of the bond is set equal to the limit on the risk and the premium accruing from the risk transferee is passed through to the bondholder in the form of a coupon. The bond proceeds are held in trust until needed to cover the risk, or if the covered risk does not occur the proceeds are returned to the bondholder at maturity. The bond proceeds can be invested in securities and the interest passed back to the bond investor in addition to the premium.

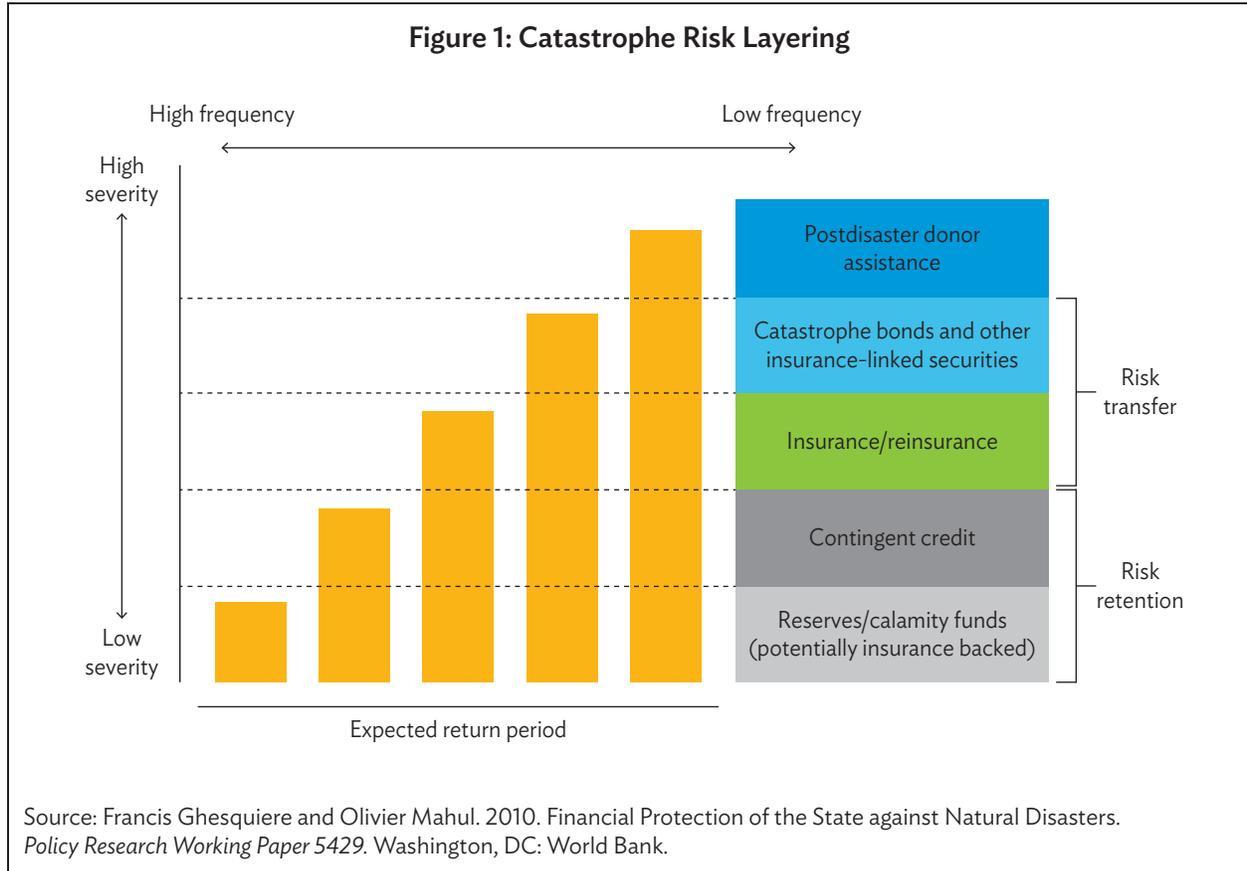
A. Country Applications for Disaster Risk Finance

144. **Pakistan.** Pakistan has faced both high-severity and high-frequency catastrophes such as floods, and high-severity and low-frequency catastrophes such as the 2005 earthquake. Two of the most devastating catastrophes in the past 10 years, the earthquake cost an estimated \$5.2 billion and the floods \$8.8 billion–\$10.9 billion. In this context, Pakistan may incorporate a disaster risk finance component into its National Disaster Management Program. A catastrophe bonds (CAT bond) is a high yield instrument that is usually insurance-linked and meant to raise money in case of a catastrophe such as an earthquake or a cyclone. It has a special condition that if in the event that if the issuer suffers and loss from a particular predetermined event, then the issuer's obligation to pay interest and/or principal is either deferred or forgiven.

145. The advantage of these types of instruments is that they are not closely linked to with the equity market or economic conditions and thus provide risk diversification. In addition, for the same level of risk, investors can obtain higher yields for CAT bonds compared with alternative instruments.

146. Figure 1 sets out the risk-return parameters for optimizing the use of various disaster risk finance instruments. Insurance is best employed against low frequency risks that cannot be eliminated,

reduced or self-financed through fiscal or credit measures on a cost-effective basis. This aids decision making in the use of risk reduction by providing a price threshold that shows to what extent risk can be transferred at a given price and when it becomes uneconomic to spend more to reduce it. Thus, Pakistan can use CAT bonds to insure against earthquake as floods. While CAT bonds can easily manage earthquake risk, flood risk with its high frequency and high severity needs more sophisticated structuring of bond triggers, without which the cost can become un-economic.



147. **Armenia.** Multiple hazards including earthquakes, floods, hail, landslides, and drought have caused substantial social and economic damage over the past few decades in Armenia. In *Natural Disasters Hotspot—A Global Risk Analysis of 2005*, the World Bank lists Armenia in the top 60 countries exposed to multiple hazards. A 2004 UNDP report on reducing the natural disaster risk revealed that during 1980–2000, Armenia averaged about 325 deaths per million people due to disasters, ranking third behind the Republic of Korea and Mozambique.⁸⁸ The government needs to reduce its fiscal exposure to both common and catastrophic events as Armenia does not have adequate budget to mitigate, respond to, or recover from recurrent crises. At the same time, if Armenia’s citizens can more easily purchase disaster insurance products, it would reduce government financial risk from disasters.

⁸⁸ UNDP. 2004. *Reducing Disaster Risk. A Challenge for Development*. New York.

148. **People's Republic of China (PRC).** The PRC's environmental investment plans are enormous. The Development for Emerging New Industries, for example, requires around \$820 billion in investment up until 2020. The PRC has also announced that around \$275 billion will be invested in improving air quality in the next 5 years. In this context, it is expected that PRC financial markets can and should play a key role in this transition. In May 2013, the China Banking and Regulatory Commission introduced Green Credit Guidelines, which require banks to ensure environmental assessments are in place for projects using bank loans and requiring banks to develop green credit products that support environmental protection goals.

149. Green bonds are bonds or debt securities specifically issued to finance environmental protection, sustainability, or specific climate mitigation and adaptation measures. Green investments include projects in areas ranging from renewable energy development and environmental investments that improve water supply, to low-carbon transport and energy-efficient buildings. In practice, they can be no different from normal bonds except that proceeds are transparently channeled for green purposes. Green bonds can be issued by governments, development banks, commercial banks or corporations. Transparency on use of proceeds is required to (i) ensure that investors can actively mandate "green bond" allocations in their fixed income portfolios; and (ii) to allow governments to support green bond issuance in the market that aligns with green growth policies through tax incentives, etc.⁸⁹

150. **Bangladesh.** Recognizing the important role of the financial sector in creating opportunities for green businesses, the government has introduced directions to banks and the Central Bank has issued green banking guidelines in 2011. These introduced disclosure and reporting requirements for environmentally friendly and green financing on quarterly basis and created favorable conditions for investment in environmentally sustainable sectors and stimulated the emergence of green investments. In two years, these investments have reached various sectors of the economy, from renewable energy projects to green buildings, to green financing to promote solar energy, biogas plants, effluent treatment plants and energy efficient installations. The boom of these investments is in biogas energy plants, which by November 2012 amounted to 850 in over 5 districts, and are projected to grow to 5,000 plants by 2015, while long-term projections reach 20,000 biogas plants by 2020.

XII. CONCLUSION

151. The above overview provides a perspective on the complementary programs that integrate financial, social, and business development support can help beneficiaries graduate from extreme poverty in a sustainable manner. This can be achieved through promoting a wide range of financial institutions, models and delivery channels, pioneering innovative models and delivery channels and ensuring inclusive finance mechanisms go hand in hand with the development of inclusive food systems and business practices, developing and supporting long-term strategies focusing on sustainability and poverty outreach, promoting an enabling environment for food security and rural finance, drawing farmers and rural entrepreneurs, especially women and youth, into the formal financial system, enhancing financial service providers' viability and transparent information on

⁸⁹ Barclays, a publisher of leading broad market bond benchmarks, and MSCI Inc., a leading provider of investment decision support tools worldwide, announced today the launch of a new green bond index family measuring the global market of fixed income securities issued to fund projects and initiatives with direct environmental benefits. The Barclays MSCI Green Bond Index family complements the existing Barclays MSCI ESG (Environmental, Social, and Governance) Fixed Income Index family, and is now available to clients.

financial and social performance etc. Key to this endeavor is to develop on a complementary basis, financial infrastructure including credit bureaus, payment systems, movable collateral registries, etc., for universal rural access to affordable financial services.

152. The availability of finance acts as a buffer for sudden emergencies, business risks, climactic shocks or events, such as a flood or a death in the family that can push a poor family into destitution. Investing in education of their children is the most likely way that poor households can break out of the intergeneration poverty trap. This is perhaps why one of the first things poor people do with new income from microenterprise is invest in their children's education. Studies show that children of microfinance clients are more likely to go to school and stay in school longer.

153. With respect to catalyzing long-term capital, the report dwells on the infrastructure deficit as one of the critical development challenges facing South Asia and India. Unless there are roads connecting people to towns and cities, reliable power supply that can expand production capacity and thereby generate employment, and schools and health centers that can improve people's lives, there will be limited scope for socioeconomic development. Accordingly, economy-wide benefits to investing in infrastructure include improving growth prospects in the economy and, with it, poverty alleviation goals. Enhancing infrastructure development also contributes to catalyzing greater private investment attracted by better quality infrastructure and facilitates greater scope for service delivery improvements.

154. Seamless Asia projects \$8 trillion infrastructure investment requirements across Asia through 2010–2020. While this figure is a projection—and projections are as good as their underlying assumptions—the order of magnitude is large enough to place the challenge into perspective. Indeed, in India alone, India's Planning Commission projects infrastructure investment of approximately \$1 trillion in 2012–2016.

155. The key question is therefore, how to develop a sustainable delivery mechanism that can mobilize large resources for infrastructure development? Indeed, with limited fiscal space, external commercial borrowing limits and limited capacity to expand bank lending, where is financing expected to be sourced? A finding from this study is that from a public policy debate, no amount of public money and know-how can alone address the infrastructure deficit challenge. Conversely, the private sector alone cannot address this challenge given the nature of the risks and returns associated to infrastructure development. The main message is therefore that infrastructure development is about getting the best of the public and private sector initiatives in place in order to promote an enabling environment that can leverage private investment into infrastructure supported by conducive market policies and institutions.

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Developing the Financial Sector and Expanding Market Instruments to Support a Post-2015 Development Agenda in Asia and the Pacific

In light of financing challenges in meeting the post-2015 development agenda, this paper explores market instruments for expanding finance for capital expansion and financial inclusion, as well as for disaster risk mitigation and climate change. With weak fiscal balances even in middle income Asian economies, it is necessary to promote efficient allocation of resources and enhance availability of financial instruments to catalyze commercial financing to meet development goals and complement fiscal resources.

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ADB's vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries reduce poverty and improve the quality of life of their people. Despite the region's many successes, it remains home to approximately two-thirds of the world's poor: 1.6 billion people who live on less than \$2 a day, with 733 million struggling on less than \$1.25 a day. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration.

Based in Manila, ADB is owned by 67 members, including 48 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance.

