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Financing sustainable development – What can we learn from the Australian experience of reform?
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The *Asia-Pacific Development Journal* is published twice a year by the Economic and Social Commission for Asia and the Pacific.

Its primary objective is to provide a medium for the exchange of knowledge, experience, ideas, information and data on all aspects of economic and social development in the Asian and Pacific region. The emphasis of the *Journal* is on the publication of empirically based, policy-oriented articles in the areas of poverty alleviation, emerging social issues and managing globalization.

Original articles analysing issues and problems relevant to the region from the above perspective are welcomed for publication in the *Journal*. The articles should have a strong emphasis on the policy implications flowing from the analysis. Analytical book reviews will also be considered for publication.

This special issue contains five selected discussion papers, from the Asia-Pacific High-level Consultation on Financing for Development, which was held in Jakarta on 29 and 30 April 2015. It highlights the importance of raising substantial financial resources through various sources, including from new innovative sources of finance to invest in the social sector and infrastructure development and efforts to tackle climate change in order to ensure a transformative change to bring about inclusive growth and sustainable development in the Asia-Pacific region. The papers provide an opportunity for Asia-Pacific policymakers and stakeholders, and those from the private sector, academia and civil society organizations, to actively engage with the regional dialogue process for a follow-up to and review of the financing for development outcomes and the means of implementation of the Sustainable Development Goals in the Asia-Pacific region. Sudip Ranjan Basu has co-edited this special volume on financing for development.

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Explanatory notes

References to dollars ($) are to United States dollars, unless otherwise stated.

References to “tons” are to metric tons, unless otherwise specified.

A solidus (/) between dates (e.g. 1980/81) indicates a financial year, a crop year or an academic year.

Use of a hyphen between dates (e.g. 1980-1985) indicates the full period involved, including the beginning and end years.

The following symbols have been used in the tables throughout the journal:

Two dots (..) indicate that data are not available or are not separately reported.

An em-dash (—) indicates that the amount is nil or negligible.

A hyphen (-) indicates that the item is not applicable.

A point (.) is used to indicate decimals.

A space is used to distinguish thousands and millions.

Totals may not add precisely because of rounding.

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CAPITAL MARKET DEVELOPMENT AND EMERGENCE OF INSTITUTIONAL INVESTORS IN THE ASIA-PACIFIC REGION

Hans Genberg*

Bank credit is traditionally the largest source of finance in the Asia-Pacific region, but the role of capital markets has increased over time. There is substantial heterogeneity across countries. For capital markets to develop further, macroeconomic stability, strong property rights and enforcement of securities laws have been identified as particularly important considerations, together with building a state-of-the-art financial infrastructure, including trading platforms and clearing and settlement systems, and transparent information-sharing arrangements. Institutional investors tend to have long-investment horizons and, as such, contribute to the stability of the local market. It may therefore be appropriate to explore ways to increase their presence in the domestic bond and equity markets. Two possible approaches to accomplish this are to promote savings through national pension funds and insurance companies and to encourage the participation of foreign institutional investors in the domestic market by making it more accessible to them while at the same time being mindful of the risks to domestic financial stability associated with greater openness to international capital flows. Policymakers may also explore ways to take advantage of the emerging field of impact investment to support funding for projects that are intended to generate environmental and social impacts.

JEL classification: F21, F34, G15, G23.

Keywords: Capital market development, institutional investors, impact investment, Asia-Pacific region.

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I. INTRODUCTION

It is generally agreed that capital markets play an important role in the intermediation of funds from savers and investors. While banks have traditionally been a major source of finance for investments in developing and emerging markets, it is recognized that active bond and equity markets serve an important complementary role. The view that a vibrant financial sector has a positive effect on economic growth and development has long been uncontroversial. Recently, however, and as a reaction to recent financial crises in the United States of America and the eurozone, some economists have argued that if it grows beyond a certain size, the financial sector may become so large that its marginal contribution to growth would be negative (Cecchetti and Kharroubi, 2015; Arcand, Berkes and Panizza, 2012). The size at which this occurs appears relevant mostly for advanced economies and is far beyond the current state of financial development in developing and emerging markets in general and in the Asia-Pacific region in particular.

The present paper is based on the premise that further development of capital markets in developing and emerging markets is beneficial, and asks what can be done to encourage growth in bond and equity markets. Particular emphasis is on what measures might be taken to induce financial markets to channel funds to infrastructure and sustainable development investments and on the role that institutional investors may play in this process.

The next section of the paper reviews the current structure of financial markets in the Asia-Pacific region.

Recognizing that the vast diversity of financial development in the region makes it nearly impossible to draw general conclusions, most of the discussion focuses on emerging markets with nascent financial markets. The section also reviews what is known about the economic and institutional reasons behind observed differences in financial development across countries.

Section III looks specifically at the role of institutional investors in financial intermediation and capital market development. It notes that institutional investors, particularly pension funds and insurance companies, have an incentive to be long-term investors as their liabilities have long terms to maturity. By taking on liquidity risk, they can add to their return performance. The section also notes that there are reasons to believe that long-term investors can have a stabilizing effect on financial markets, and that policymakers may for this reason consider ways to encourage the growth of the institutional investor base in their financial markets. How this can be accomplished is discussed with reference to international experiences.
Special characteristics of infrastructure and sustainable development projects and the implications for public policy vis-à-vis financial markets are discussed in section IV. An important characteristic of such projects is that they typically entail significant spillover effects, or “externalities” to use the technical economic term. The presence of such spillovers introduces a wedge between private and social returns, which implies a role for public policy. The section discusses what role policies aimed particularly at financial aspects of infrastructure and sustainable development projects can play.

Section V contains a discussion of a new class of investors and investment approaches, which may reduce the wedge between social and private costs and benefits inherent in environmental and sustainable development investments. The new approach is referred to as impact investment, which is generally defined as the provision of capital that is expected to generate both a financial return, usually in line with the market but not necessarily, as well as a social or environmental return. As such, it internalizes the externalities associated with economic activities that have an environmental and social impact. The section points to actions policymakers may take to promote this kind of investment.

The penultimate sector of the paper briefly takes up a trade-off identified with an aspect of financial development that involves the liberation of international flows of capital. Opening domestic capital markets to foreign investors and removing restrictions on outward financial investments by domestic residents has been advocated as a way to permit greater risk diversification and increased competition in the domestic market, thereby supporting economic development. At the same time, however, it has been noted that greater international financial openness makes an economy vulnerable to volatile international capital flows that may threaten domestic financial stability. The section discusses the extent to which regional financial integration may help improve the terms of the trade-off.

The final section lists some of the key policy messages that emerge from the analysis.

II. THE CURRENT STATE OF CAPITAL MARKET DEVELOPMENT

This section reviews the basic characteristics of the financial sectors of the economies of the Asia-Pacific region, focusing first on the size and evolution of capital markets and then on what is known about the determinants of the structure of capital markets across economies.
The size and evolution of the banking sector and capital markets

Diversity in economic structure and financial development

The Asia-Pacific region is diverse in terms of most indicators of economic development, including gross domestic product (GDP), industrial structure, commodity dependence, size of primary versus tertiary sectors. Data from ESCAP show that gross national product (GNP) per capita differs by a factor of one hundred between the poorest and the wealthiest economies (ESCAP, 2014a, table 24). The size of the agricultural sector varies between essentially 0 per cent of GDP in some economies to close to 60 per cent in others. Industrial sector value added accounts for less than 10 per cent of GDP in the least industrialized economies to between 40 and 50 per cent in the most industrialized ones, and the size of the service sector varies between 30 and 90 per cent. One common characteristic of the region’s economies is that most are highly open to foreign trade as measured by standard criteria, such as exports/GDP or imports/GDP.

In view of the diversity in economic development and economic structures it is not surprising that significant diversity also characterizes financial sectors. One indicator, given in table 1, shows the domestic credit provided by the banking sector to the economy as a percentage of GDP, a common indicator of the size of the banking sector. The variation across countries is large at about a factor of thirty. There is a notable increase, 28 per cent on average, in the importance of bank credit in most countries from before the financial crisis of 2008-2009, attesting to the continued special role of bank credit in the region. The diversity remains, however, as shown by the coefficient of variation across countries, which was high before the crisis.

Similar diversity is found in terms of capital market development as illustrated in table 2 by the size and evolution of stock market capitalization. The gap between the least and most developed markets is large as expected. As in the case of bank lending, there is a notable increase in the size of stock markets (relative to GDP) in the past decade, attesting to the ongoing deepening of the financial markets in the region. In fact, when a comparison is made for the group of countries for which data on stock market capitalization are available, the increase from 2000 is almost the same for the two measures. It is noteworthy that the diversity in both measures, even

1 The statements refer to the year 2011.

2 The average of 2010 and 2012 is taken as the latest observation (data for 2011 are not presented in the source) in order to be comparable to stock market capitalization data presented in table 2. The latter are from 2011.
### Table 1. Domestic credit provided by the banking sector (% of GDP)

<table>
<thead>
<tr>
<th>Country</th>
<th>2000</th>
<th>Average of 2010 and 2012*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solomon Islands</td>
<td>26.5</td>
<td>12.0</td>
</tr>
<tr>
<td>Brunei Darussalam</td>
<td>38.6</td>
<td>19.7</td>
</tr>
<tr>
<td>Myanmar</td>
<td>31.2</td>
<td>24.8</td>
</tr>
<tr>
<td>Lao People’s Democratic Republic</td>
<td>9.0</td>
<td>26.5</td>
</tr>
<tr>
<td>Cambodia</td>
<td>6.4</td>
<td>33.9</td>
</tr>
<tr>
<td>Papua New Guinea</td>
<td>28.2</td>
<td>37.0</td>
</tr>
<tr>
<td>Indonesia</td>
<td>60.7</td>
<td>42.6</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>12.3</td>
<td>43.3</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>43.7</td>
<td>44.4</td>
</tr>
<tr>
<td>Pakistan</td>
<td>41.6</td>
<td>46.0</td>
</tr>
<tr>
<td>Philippines</td>
<td>58.3</td>
<td>50.1</td>
</tr>
<tr>
<td>India</td>
<td>51.2</td>
<td>73.9</td>
</tr>
<tr>
<td>Singapore</td>
<td>77.9</td>
<td>91.0</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>32.6</td>
<td>114.8</td>
</tr>
<tr>
<td>Malaysia</td>
<td>138.4</td>
<td>130.5</td>
</tr>
<tr>
<td>China</td>
<td>119.7</td>
<td>150.7</td>
</tr>
<tr>
<td>Australia</td>
<td>93.2</td>
<td>154.5</td>
</tr>
<tr>
<td>Thailand</td>
<td>138.3</td>
<td>156.2</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>74.7</td>
<td>165.8</td>
</tr>
<tr>
<td>Hong Kong, China</td>
<td>134.0</td>
<td>198.0</td>
</tr>
<tr>
<td>Japan</td>
<td>304.7</td>
<td>335.4</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>72.4</strong></td>
<td><strong>92.9</strong></td>
</tr>
<tr>
<td><strong>Coefficient of variation</strong></td>
<td><strong>0.94</strong></td>
<td><strong>0.87</strong></td>
</tr>
</tbody>
</table>

**Source:** Asian Development Bank Key Indicators for Asia and the Pacific, 2014.

**Note:** * 2011 for Lao People’s Democratic Republic and Myanmar.
though high, has been declining somewhat over time as measured by the coefficient of variation.

Given that some economies in the region are at very early stages of financial development and only have rudimentary capital markets, the discussion in following sections of the potential role of institutional investors in Asian capital market focuses on the economies with more developed markets.

**Emerging capital markets in Asia in the global context**

In a recent comparative study of financial systems in emerging Asian economies and emerging and developed economies in other regions, Didier and Schmukler (2014) provide a broad perspective on capital market developments. The study compares the state of the markets in the 2000s with that in the 1990s and

<table>
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<tbody>
<tr>
<td>Viet Nam</td>
<td>1</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Pakistan</td>
<td>9</td>
<td>34</td>
<td>17</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>9</td>
<td>13</td>
<td>28</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>8</td>
<td>19</td>
<td>34</td>
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<tr>
<td>Indonesia</td>
<td>27</td>
<td>26</td>
<td>45</td>
</tr>
<tr>
<td>China</td>
<td>38</td>
<td>32</td>
<td>59</td>
</tr>
<tr>
<td>Japan</td>
<td>84</td>
<td>91</td>
<td>69</td>
</tr>
<tr>
<td>India</td>
<td>34</td>
<td>57</td>
<td>69</td>
</tr>
<tr>
<td>Philippines</td>
<td>38</td>
<td>34</td>
<td>74</td>
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<tr>
<td>Papua New Guinea</td>
<td>46</td>
<td>63</td>
<td>81</td>
</tr>
<tr>
<td>Thailand</td>
<td>35</td>
<td>69</td>
<td>82</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>55</td>
<td>71</td>
<td>96</td>
</tr>
<tr>
<td>Australia</td>
<td>97</td>
<td>118</td>
<td>103</td>
</tr>
<tr>
<td>Malaysia</td>
<td>140</td>
<td>132</td>
<td>144</td>
</tr>
<tr>
<td>Singapore</td>
<td>182</td>
<td>243</td>
<td>145</td>
</tr>
<tr>
<td>Hong Kong, China</td>
<td>366</td>
<td>374</td>
<td>396</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td>77.90</td>
<td>86.10</td>
<td>91.10</td>
</tr>
<tr>
<td><strong>Coefficient of variation</strong></td>
<td>1.21</td>
<td>1.13</td>
<td>0.99</td>
</tr>
</tbody>
</table>

focuses on seven Asian economies, namely China, India, Indonesia, the Republic of Korea, Malaysia, the Philippines, and Thailand, while the comparison groups are G7 economies, seven other advanced economies, seven emerging economies of Latin America and seven emerging economies of Eastern Europe (see Didier and Schmukler, 2014, pp. 202-203, for a full list). Among the authors’ findings, the following seven are particularly relevant for this paper:

First, financial systems in Asia have grown over the past two decades and are generally more developed than those in Eastern Europe and Latin America. They remain less developed in advanced countries, however. This suggests that there is scope for further growth in Asian markets, and that they appear to have attributes that make them more attractive than emerging markets in other regions as a destination for investment allocation. It is important to note, however, that even among the restricted group of Asian emerging markets considered in the Didier-Schmukler paper, there is considerable diversity in terms of the size of capital markets. This is illustrated in table 3 for stock markets and in table 4 for bond markets. The markets in Malaysia and the Republic of Korea stand out as having the greatest depth, while those in Indonesia are still in relatively early stages of development. The markets in the Philippines and Thailand occupy the middle.

Table 3. Stock market capitalization (% of GDP)

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2005</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>8</td>
<td>19</td>
<td>34</td>
</tr>
<tr>
<td>Philippines</td>
<td>84</td>
<td>91</td>
<td>69</td>
</tr>
<tr>
<td>Thailand</td>
<td>97</td>
<td>118</td>
<td>103</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>97</td>
<td>118</td>
<td>103</td>
</tr>
<tr>
<td>Malaysia</td>
<td>140</td>
<td>132</td>
<td>144</td>
</tr>
<tr>
<td>Average</td>
<td>85.20</td>
<td>95.60</td>
<td>90.60</td>
</tr>
<tr>
<td>Coefficient of variation</td>
<td>0.56</td>
<td>0.47</td>
<td>0.46</td>
</tr>
<tr>
<td>China</td>
<td>38</td>
<td>32</td>
<td>59</td>
</tr>
<tr>
<td>India</td>
<td>34</td>
<td>57</td>
<td>69</td>
</tr>
<tr>
<td>Average</td>
<td>36</td>
<td>44.5</td>
<td>64</td>
</tr>
</tbody>
</table>

Second, the role played by bond and stock markets has increased over time, in absolute terms and relative to the role played by the banking sector.\(^3\)

Third, the nature of bond financing is changing, though slowly. For example, private sector bond issues in the domestic market have longer maturities. The increased role of bond and stock markets and the ability of debtors to place longer maturity issues are also attributes that contribute to the attractiveness of the region as an investment destination. This appears to be supported by conclusion four, namely that institutional investors have gained importance, and sovereign wealth funds are also growing rapidly.

A further positive development is finding number five, which states that institutional investors are moving towards environmentally and socially responsible investment strategies, a topic that will be covered in some detail in section III.

Not all findings in the Didier-Schmukler study are positive, however. The sixth conclusion states that capital-raising activities have often not expanded beyond a few large companies that continue to capture most of the issuances, suggesting that small and medium-sized enterprises may have difficulties in financing expansion with debt instruments. The public sector also captures a significant share of the bond market, raising concerns that the private corporate sector may be crowded out. As

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\(^3\) This is also a feature of the data presented here. A careful comparison between tables 1 and 2 shows that while bank credit was about twice as large as stock market capitalization as a ratio to GDP in 2000, the difference in 2011 declined to 1.6 times as large. Hence, even though the banking sector still dominates, the equity market is gaining ground. Similar remarks can be made with respect to bond market development.
illustrated in table 4, corporate bond markets in Asia are small relative to government bond markets with the notable exception of those in the Malaysia and the Republic of Korea. Finally, the seventh finding is that secondary markets remain illiquid. Possible remedies to these factors are discussed below.

**What determines the evolution of capital markets?**

Aside from being positively related to the size of the economy (figure 1), the size and evolution of capital markets depend on a number of factors spanning macroeconomic conditions, legal frameworks and the state of economy’s financial infrastructure. Empirical research recently reviewed in Laeven (2014) has identified a number of critical relationships.

**Figure 1: Stock market capitalization vs. per capita GDP, 2011**

![Graph showing stock market capitalization vs. per capita GDP](image)

*Source:* Author’s calculations based on data from ESCAP (2014a).

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4 The grey dots in the figure refer to the set of economies represented in table 2 and to the year 2011. Hong Kong, China was taken out as its stock market capitalization is an outlier. The black dots represent (from top to bottom) the United States, United Kingdom and Germany as representing advanced Western economies. One would be hard put to conclude from this comparison that the Asia-Pacific economies in the graph and the three advanced economies are significantly different.
Macroeconomic instability is detrimental for the development of domestic capital markets. High and variable inflation tends to be associated with suppressed local currency bond markets as investors and issuers both seek the relative certainty of foreign currency-denominated instruments even though that entails exposure to currency mismatches. Cross-country experiences indicate that equity market development is similarly held back by volatile inflation and economic growth.

With respect to institutional and legal frameworks, the literature suggests that strong property rights protection, such as enforcement of securities laws and debt contracts, and strong corporate governance, are beneficial for capital market development.

Financial infrastructure refers to both the organization of trading activities and the regulations that govern trading. A well-functioning infrastructure is essential for trades to be executed rapidly and, thereby contributing to the liquidity of the market. It also contributes to building confidence among issuers and investors in the integrity and fairness of the process of price discovery, elements that are necessary for their participation in the market.

As Laeven (2014) points out, governments have an important role to play in each of the three areas mentioned through: providing a stable macroeconomic environment; introducing and maintaining a strong legal framework supportive of the enforcement of financial contracts; and encouraging the creation of robust trading platforms and practices. In addition, measures that increase the size of the investor base and facilitate the participation of a wider group of borrowers could effectively increase the breadth and liquidity of the market, contributing to its growth and contribution to economic activity. Measures that make it easier for pension funds and other institutional investors to participate in the domestic capital market and that encourage the introduction of innovative investment vehicles should be explored. Opening the domestic market to foreign investors may also be considered. The potential benefits and risks associated with such strategies are discussed in section VI.

III. THE ROLE OF INSTITUTIONAL INVESTORS

The participation of institutional investors in Asian markets

Data on the size of holdings of Asian assets by institutional investors are fragmentary. ESCAP (2014b) presents revealing data on the size of Asian institutional investors from a global perspective. These data show that the assets of private sector asset managers in the Asia-Pacific region amounted to 9.7 per cent of the assets of
asset managers globally. Asia-Pacific pension funds accounted for 26.3 per cent of the world total, with the pension fund of the Government of Japan occupying the number one position among the world’s pension funds by size. Asia-Pacific sovereign wealth funds held 44.8 per cent of the assets of such funds globally with the China Investment Corporation occupying fourth place and the fifth place taken by SAFE Investment Company. The assets of the three types of institutional investors together accounted for 14.9 per cent of the world total.\(^5\) When this figure is compared with the size of Asia-Pacific economies’ combined GDP, which is approximately one quarter of world GDP, it can be concluded that institutional investors in Asia and the Pacific have room to grow as financial deepening in the region proceeds.

Didier and Schmukler (2014) also contains information on the size of asset holdings of institutional investors, which corroborates that contained in the ESCAP study and provides some additional insights. Three generalizations can be made: first, institutional investors are significantly larger in advanced countries than in emerging markets measured by the size of their assets; second, institutional investors play a larger role in Asia than in other emerging markets, except for the pension funds that have a large presence in Latin America; third, insurance companies are the largest institutional investors in the Asian markets, but mutual funds seem to be growing rapidly and may soon catch up.

While comprehensive data on the country allocation and the allocation by asset classes of the institutional investors’ portfolios are not available, Didier and Schmukler report, albeit based on patchy data, that most of the assets of the institutional investors in Asia, as in emerging markets in general, are in the form of government bonds and bank deposits. Corporates appear not to be attracting funding from institutional investors at present, either in the form of bonds or equity financing. This suggests both a limitation of the capital markets and an opportunity: the limited size and liquidity of the markets as well as institutional constraints may be a reason for the lack of interest among institutional investors, but, if this is the case, there is hope that growth of the markets and institutional reforms will make them more attractive for this class of investors.

Measures that may be considered to increase the attractiveness of capital markets to institutional investors comprise those mentioned in the previous section in the discussion of the study by Laeven. Apart from safeguarding macroeconomic

\(^5\) The figures refer to December 2012 for asset managers and pension funds and to December 2014 for sovereign wealth funds. The total for the three types of institutional investors was thus obtained by adding information for different time periods. This should not have a critical influence on the final result as sovereign wealth funds account for only about 20 per cent of total institutional assets holdings in the Asia-Pacific region and only 7 per cent in the world as a whole.
stability, measures to strengthen corporate governance and legal frameworks with respect to property rights protection and enforcement of securities laws have been shown to be supportive of market development in general, and that there is every reason to believe that those measures would be viewed favourably by institutional investors.

Integrating the domestic market with the global financial markets or with a regional grouping could also be considered as it would increase its effective size (this is discussed at more length in section VI). It is also pointed out, however, that such integration involves a potential trade-off between the benefits of participating in a larger financial area versus the potential costs associated with being subject to the vagaries of volatile international capital flows.

The attractiveness of the domestic capital market to institutional investors may also be boosted by improving financial infrastructure through increasing the speed and safety of the execution and settlements of trades. Such measures may also increase the liquidity of the domestic market. Liquidity may furthermore be increased by modifying restrictions on institutional investors’ portfolio allocation strategies. Allowing pension funds to invest in a wider variety of asset classes than in the traditional government bonds and bank deposits could make it attractive for them to trade more actively. Liquidity may also be increased by allowing foreign institutional investors to enter and exit the domestic market without restrictions on holding periods. Note, however, that this would potentially lead to greater volatility of capital flows.

In this context, one may ask whether foreign institutional investors are more or less likely to invest in domestic infrastructure and other socially beneficial projects than domestic institutional investors. On the one hand, foreign investors typically hold investments in a larger universe of assets than domestic investors. Therefore, they may view domestic (foreign for them) infrastructure projects as a convenient way to diversify risk. Domestic investors are more likely to be heavily exposed to domestic economic risks, which would make them less likely to take on further risks of a similar, or correlated, nature. On the other hand, domestic investors can be assumed to have more in-depth knowledge of economic conditions in their own country, and have greater access to public bailout funds should a project underperform. This would make them more willing to accept the risk associated with domestic investments. On balance, it is not clear which type of investor is more likely to view domestic socially beneficial projects more favourably. A policymaker would be well advised to treat both equally.
The potential benefits of a greater presence of institutional investors

Pension funds and insurance companies carry liabilities with long terms to maturity. To hedge against the risk associated with maturity mismatches, they can hold assets with a similarly long return horizon. This is fundamentally why institutional investors are viewed as long-term investors, although there are some concerns that their asset allocation strategies have become increasingly “short-termist” (Della Croce, Stewart and Yermo, 2011, p. 2).

Long-term investments typically benefit from assuming liquidity risk and avoiding fees associated with frequent trading and portfolio rebalancing. As such, they can be expected to earn a superior return compared to short-term investments.

Investors with a long-investment horizon are also believed to have a stabilizing influence on asset price movements. In downturns, they are not as constrained as some asset managers who may have to liquidate positions, and thereby contribute to reinforcing the downswing when they face redemption requests by their clients. In periods of excessive market optimism, they can afford to “see through the cycle”, as their funds under management tend not to be as sensitive as those of many hedge funds to short-term market movements.

It has even been suggested that institutional investors should actively seek to act in a counter-cyclical fashion by taking advantage of market downturns to add riskier assets and selling overvalued assets in upswings (Della Croce, Stewart and Yermo, 2011, p. 2). This, however, assumes that institutional investors are able to predict market movements more accurately than other investors in the market, an assumption that does not have empirical support.

It has also been suggested that institutional investors should take environmental and sustainable economic development objectives into account in their asset allocation decisions. This is uncontroversial to the extent that these objectives have a direct impact on the returns and risks associated with the asset allocations. If it means that institutional investors should incorporate the spillover effects of the projects they invest in, the situation is different. The case for making individuals, such as pensioners who are dependent on institutional investors’ performances for their livelihood, suffer a loss of financial return for the common good of greater environmental protection is weak. Such protection should be paid for by society as a whole.

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6 See the next section for a brief discussion of the importance of spill-over effects (externalities) in discussions about infrastructure, environmental, and sustainable development projects.
Measures to support the growth of institutional investments.

The Organisation for Economic Co-operation and Development (OECD) recently published *G20/OECD High-level Principles of Long-term Investment Financing by Institutional Investors* (OECD, 2011) with the objective to

“...assist OECD, G20 and any other interested countries to facilitate and promote long-term investment by institutional investors, particularly among those institutions, such as pension funds, insurers and sovereign wealth funds, that typically have long duration liabilities and consequently can consider investments over a long period provided these are prudent and capable of producing a reasonable risk-adjusted return.” (OECD, 2011, p. 3)

The document contains eight principles; some of them are intended to guide government policy and others are meant to serve as recommendations for the industry itself. Principle 1, “Preconditions for long-term investments”, points to factors, such as stable macroeconomic conditions, a predictable regulatory framework and effective enforcement of the rule of law and tax neutrality, that are important elements to encourage long term investments by institutional investments. Recall that these are some of the same factors that have been identified as being useful for the development of capital markets in general.

Principle 6, “Investment restrictions”, advises governments to

“...avoid introducing or maintaining unnecessarily barriers to international investment – inward and outward – by institutional investors, especially when targeted to long-term investment. They should cooperate to remove, whenever possible, any related international impediments.” (OECD, 2011, p. 10)

While such removals of barriers to international flows of capital would be beneficial in terms of diversification gains, efficiency and competition, they also may lead to increased risk of financial instability brought about by volatility of such flows, as discussed briefly below.

The OECD document also contains recommendations regarding: the governance of institutional investors; the need for robust regulatory frameworks; information-sharing; and financial education/consumer protection.

For the purpose of this paper, principle 5, “Financing vehicles and support for long-term investment and collaboration among institutional investors”, is interesting. It suggests that “[g]overnments may consider providing risk mitigation to long-term
investment projects” (p. 9). These would include “credit and revenue guarantees, first-loss provisions, public subsidies, and the provision of bridge finance via direct loans” (p. 9). Each of these would reduce the risk borne by the investor in infrastructure or environmental protection projects. Credit and revenue guarantees would protect the investor from failure of the project to generate enough revenue to pay the investor the contractual return. First-loss provisions would provide financial support to a financing vehicle so as to increase the credit rating of the securities it issues to finance the infrastructure project. Similarly, public subsidies and provision of bridge finance at below-market interest rates would reduce the cost for the investor.

It is important to emphasize that in each of these examples, there is a potential call on public funds to “bail out” the private investor. The budgetary consequences of this must be considered carefully in the cost-benefit calculus involved in using these measures to attract private-sector institutional investors. The justification for such support makes reference to the socioeconomic and environmental impacts of the investments, in other words to consequences beyond the narrow scope of an individual project. The implications of such spillover effects are taken up in the next section.

IV. SPECIAL CHARACTERISTICS OF INFRASTRUCTURE AND SUSTAINABLE DEVELOPMENT PROJECTS

Externalities and the case for policy intervention

Infrastructure and sustainable development projects have characteristics that pose challenges for public policy. Projects in these areas typically involve spillovers or externalities to use the technical economic term. What this refers to is that the benefits and costs do not accrue only to their direct users, but also to others. For example, a new railroad line from a suburb to the city centre will benefit users of the train service by reducing commuting time, but it may also benefit those who continue to commute by automobile or bus because it may reduce congestion on the road connection. Furthermore, to the extent that the suburb is now more accessible, land and house prices may increase benefiting existing owners. Restaurants and other service providers in the suburb may also benefit from clients in the city centre who now find that the shorter commute makes their services more readily available.

Similarly, promoters of development projects may not take sustainability concerns into account because the full benefits and costs of the project do not accrue only to the immediate users but also to what we may call innocent bystanders. Clearing rainforests to make room for agricultural production will have benefits for the producers and consumers of the produce grown, but to the extent that carbon...
dioxide (CO$_2$) absorption by the now smaller rainforest is lost, it may have implications for climate change affecting people long distances away.

The presence of positive or negative externalities means that unfettered free enterprise will not in general guarantee that an optimal amount of resources will be devoted to the corresponding projects. In cases in which the spillovers are predominantly positive, the projects tend to be underfunded and vice versa in cases in which negative externalities predominate. In both cases, some kind of policy intervention could lead to superior outcomes.

**Regulations and taxes**

To deal with externalities, policymakers typically make use of regulations, taxes or subsidies. Regulations may take the form of prohibiting or limiting activities that entail severe negative spillovers on bystanders. Examples include restrictions on activities that result in environmental pollution or prohibitions on smoking in public places. Taxes can in some cases be designed to have similar effects as outright prohibitions, albeit being less far-reaching, such as imposing taxes on CO$_2$ emissions or on cigarettes.

While regulations and taxes typically are designed to restrict activities that create negative spillovers, subsidies are meant to encourage those with positive external effects. Tax concessions for installing solar panels in homes or factories and subsidies to users of public transport services in congested cities are examples of this.

Properly designed regulations, taxes and subsidies may go a long way to limit activities that cause negative spillovers and encourage those with positive ones. However, difficulties of enforcement may in some situations limit their effectiveness and fiscal costs may reduce their feasibility. Seeking to incentivise financial markets to steer funds into preferred activities may constitute a useful complement.

**Incentives through financial markets and instruments**

Financial markets driven purely by private risk-reward considerations do not take into account external effects in intermediating funds. Incentives need to be provided in order to align private and social benefits and costs. Regulations, taxes and subsidies may be used to this end. For example, restrictions on the ability of foreign investors to participate in the local financial markets are used in some jurisdictions to limit the perceived dangers associated with capital inflows. Section VI contains a discussion on the costs and benefits for such capital flow management restrictions in more detail.
Subsidies to encourage funds to flow to favoured sectors are also used. Government subsidies to mortgage insurance is an example of this. More subtle forms of subsidies have also been designed. Consider the case of financing private-sector investments in transport infrastructure, such as toll roads, railroads, or airports. Such investments come about only if the investor can earn a return from road tolls, railroad tickets, and airport user charges. The returns must accrue over a relatively long period of time for the project to be profitable. However, as the road, train, and airport charges are often subject to government approval because of their political sensitivity, there is potentially a great deal of uncertainty about their permanency. There is a time-consistency problem at work. To induce the private sector to invest in a toll road project, the government must promise to keep road charges at a profitable level for a certain number of years. Once the road is built, however, there is a temptation to reduce charges to gain political support by easing the financial burden on users. To offset the inherent risk to the private investor, some guarantee is required. One way of doing so would be to securitize the expected future returns from the road charges and provide a guaranteed rate of return on the security. Any difference between the actual return from the toll road and the guaranteed return on the security would be borne by the government.\footnote{ESCAP (2014b) contains a further discussion including references to specific examples of measures introduced in Asian economies.}

Sustainable development projects, such as wind farms, face similar concerns. The initial costs need to be recouped over a relatively long period, and uncertainty about the evolution of electricity tariffs may make investors unwilling to provide finance. If the tariffs are determined in a competitive market, the uncertainty about their evolution is not different from the price uncertainty facing any business decision, but to the extent that electricity tariffs are determined in part by government electricity boards subject to political pressure, the time consistency problem discussed above is present, potentially leading to underinvestment in the industry.\footnote{As explained above, irrespective of issues related to price uncertainty, the positive externality associated with wind farms implies that private enterprise will tend to underinvest in them. Hence, the case for some public policy involvement.}

**Private-public sector partnerships**

In addition to regulations, taxes and incentives through financial markets and instruments, concluding public-private sector partnerships has been proposed as a means to support long-term investment, particularly in infrastructure. In this sector, there is a large gap between the needs of many developing and emerging markets
and the financing available through government budgets and external assistance. Similar to the publication for long-term investments by the institutional investors, OECD has published guidelines in the form of principles for private sector participation in infrastructure (OECD, 2007). Twenty-four principles are offered to serve as a guide for policymakers. Among the most relevant for the purposes of this paper are those that call for (a) careful cost-benefit analysis of alternative methods to provide infrastructure capital; (b) proper allocation of risk between the public and private sector participants; (c) authorities to be watchful for the potential fiscal costs of alternative support mechanisms for private-sector involvement; and (d) access to the financial market, including the removal of restrictions on international capital movements. The reader can recognize these from discussions earlier in this section. In the final section of the paper, these principles are put in a fuller context.

V. THE GROWTH OF THE IMPACT INVESTMENT

In previous sections, it has been argued that expanding the scope of capital markets is key to developing the region’s financial infrastructure. An important component of capital markets expansion is the increased participation of institutional investors. The previous section contains a discussion on a number of means by which this can be promoted. Beyond mere participation, however, is there a way to encourage institutional investors to participate in development more broadly? These types of investors typically have fiduciary responsibilities that emphasize financial returns first and foremost. Is there a way to incentivize them to think of returns in broader terms, as inclusive of social and environmental returns, thus fulfilling the twin goals of financial as well as economic, social and environmental development?

In fact, many institutional investors already do take social and environmental factors into account in their investment decisions. Such considerations can take the form of negative screening (eliminating certain sectors or companies from the manager’s investment universe based on specific environmental, social and governance (ESG) criteria), positive screening (investment in sectors or companies with best-in-class ESG performance), and integration of ESG criteria into the investment valuation process. Such “socially responsible” or “sustainable” investment, however, does not generally lead to an increase in the aggregate amount of investment, but rather to a reallocation of the existing volume. More pertinent would be the rise in themed investments related to sustainability, such as clean technology or green energy funds, in which capital is supplied to sectors and companies because of their specific activities, though the positive impact of those activities is still considered an externality rather than being explicitly measured. Finally, there is the emerging asset class of impact investment, which is generally
defined as the provision of capital that is expected to generate both a financial return, usually in line with the market but not necessarily, as well as a social or environmental return. The latter should be both intentional and measurable. In order to encourage truly sustainable development, policymakers may consider focusing on growing the impact investment market.

The term impact investment was coined in 2007 at a conference organized by the Rockefeller Foundation (E.T. Jackson & Associates, 2012), and impact investment as a separate asset class has gained increasing prominence with the publication of reports and policy papers by JPMorgan, the Monitor Institute, OECD, the G8 sponsored Social Impact Investment Taskforce (headed by Sir Ronald Cohen, founding father of the United Kingdom venture capital industry), and the World Economic Forum, among others. The concept has developed in line with several factors.

On the one hand, social and economic issues are presenting both the international community and individual countries with immense challenges. These challenges are increasingly beyond the fiscal reach of governments and philanthropic organizations, which are thus seeking innovative modes of financing.

On the other, there is growing investor demand for responsible investment options, which had been tempered by the impression that taking into account social and environmental impact necessarily meant foregoing financial returns. One estimate values the potential market over the next ten years as ranging from $400 billion to nearly $1 trillion (O’Donohoe, Leijonhufvud and Saltuk, 2010). In this context, policymakers should think of impact investment as a tool with the potential, ideally, to harness the efficiency and range of the private sector to meet and scale solutions to public needs.

As an emerging concept, impact investment is facing a number of development challenges. Key among these are insufficient intermediation, lack of supporting infrastructure, and a shortage of absorptive capacity for capital. Intermediation allows investors to connect efficiently with investment opportunities. To develop this function, a number of solutions have been proposed, such as establishing landmark funds focused on ESG issues, including venture capital or “catalytic” finance type structures, building investment banking expertise, fostering the growth of impact-driven fund managers and designing financial products to facilitate access. By definition, institutional investors play a crucial role in these efforts. In terms of infrastructure, certain features are considered to be fundamental to a functional market, such as standardized impact and risk measurement criteria and tools, widely available benchmarking data, and a formal network of institutions engaging in information-sharing, marketing, lobbying and other activities supporting the industry.
Finally, recent surveys have shown that the lack of investment opportunities is one of the crucial factors holding back industry expansion. Possible remedies cited include supporting management skill training for potential entrepreneurs and developing scalable ESG-driven business models. (Freireich and Fulton, 2009; Saltuk and others, 2014).

While the private sector can and should take the lead on many of these proposals, government also has a key role to play in furthering the development of the impact investment field, thereby facilitating institutional investor involvement and furthering national and regional development goals (Freireich and Fulton, 2009; IIPC, 2014; Wilson, 2014; Wilson, Silva and Richardson, 2015). Public sector involvement can extend from general framework conditions, ranging from legislative and regulatory actions to direct investment, to simply displaying goodwill. On a general scale, conditions allowing for robust financial markets, such as a fully convertible exchange rate, unrestricted capital flows and streamlined regulatory requirements for investment, are obviously more likely to promote investment, including impact-driven investment. Specific supportive measures might include tax relief for impact investment products. Eventually, public authorities could promote standardization by requiring certification of impact investments, which could evolve into a rating system. Government can also help establish intermediaries, such as exchanges (trading platforms) or wholesale banks. More direct forms of participation could take the form of guarantees, subsidies, and the outright provision of capital by establishing or co-investing in landmark funds, including in the form of subordinated capital (remaining cautious of the crowding-out effect). Another form of support could be to use the public sector’s clout as a major procurer to secure demand for impact-driven enterprises or simply to provide technical assistance. In addition, public-private partnerships can easily be impact-driven, in the form of outcome-based finance or pay-for-success structures, such as social impact bonds. Note that one should be mindful of contextual specificities, taking into account country and regions’ sociopolitical and cultural environments, structural development, and policy goals; there is no one-size-fits-all model.

Several of these policies are already being implemented in various countries around the world. Among others, social impact bonds have been rolled out in the United States of America and in the United Kingdom of Great Britain and Northern Ireland, for example. The United Kingdom has also introduced tax relief initiatives and the European Union is putting in place a fund labelling system (O’Donohoe, 2014).

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9 What institutional arrangement could provide such ratings is an open question. Existing rating agencies may not have the expertise to undertake ratings of environmental, social, and infrastructure investments that involve extensive externalities. The issues involved in doing so are worthy of a separate study.
Leijonhufvud and Saltuk, 2010). Most impact investors are in developed countries in the West. Investors from this group have taken the lead in promoting impact investment. A majority of impact investments are made in developing countries, however, and aside from these outside investments, developing countries have been increasingly active in the sector. In Asia, the focus of interest for this paper, a number of initiatives are under way. The 2014 Asia Sustainable Investment Review notes the following projects, plans and proposals, among many others (ASrIA, 2014). In China, authorities are considering policies, regulations and standards that would promote green bonds, such as incorporating environmental risk into credit ratings, making lenders and investors liable for environmental pollution, and implementing environmental metrics to foster disclosure and facilitate the creation of indices and benchmarks in public equities markets. In 2012, the government of Hong Kong, China set up the Social Innovation and Entrepreneurship Development Fund, with an initial commitment of HK$500 million (US$64 million), to help foster new ways of tackling poverty and social exclusion. On a smaller scale, the Government of Indonesia established the Indonesia Climate Change Trust Fund (ICCTF) in 2009 to bring together funds from the public and private sectors and international donors to finance the country’s climate change programmes. The fund, though small – $21.01 million pledged and $11.21 million deposited as of June 2015\(^\text{10}\) has created a framework for enhanced public-private collaboration. Another notable endeavour is the Singapore-based Impact Investment Exchange Asia (IIX), which was established to help channel return-seeking capital to impact-driven enterprises. While most sustainable investment in Asia still takes the form of negative screening (inherent to sukuk bonds, for example), integration of ESG criteria in traditional investing has become more prevalent, which could eventually help pave the way for the deeper commitment required by impact investing.

So is there a way to attract institutional investors not just to invest but to invest responsibly and sustainably and in a way that will actively support the social and environmental development of host countries and regions? As shown above, there is. By promoting themselves as destinations for impact investing, governments can tap into a deep vein of demand for investments that actively “do good” without giving up financial benefits. However, it is not only a question of marketing. Governments also need to provide supportive environments in the form of sound micro and macroeconomic policies and take measures to enhance the attractiveness of local capital markets as discussed in section I. Absence of corruption and a clean record on human rights and similar high-profile areas are also critical. No investor who wants to be seen as “doing good” wants to risk his reputation by being seen investing in a country that has issues with corruption, human-right violations and the like.

\(^\text{10}\) www.climatefundsupdate.org/data (accessed 19 October 2015).
VI. FINANCIAL MARKET DEVELOPMENT VERSUS FINANCIAL OPENNESS: IS THERE CONFLICT?

One of the recurring recommendations in proposals to increase the size and scope of the domestic capital market is that restrictions to international movements of capital should be lifted. Among the expected benefits would be greater participation of foreign investors in the domestic market, thereby expanding the investor base, leading to greater competition and liquidity in the market. In addition, the opportunity of domestic borrowers to seek funds in foreign markets would be a source of competition in the local market.

Openness to external financial markets can, however, be a double-edged sword. A potential counterbalance to the benefits from the presence of foreign investors is the exposure to the volatility of capital flows and hence to financial instability imported from abroad. This potential trade-off between the benefits and costs of free international capital mobility explored in recent literature has concluded that a fully open capital account may not be fully optimal when the potential financial stability risks associated with volatile capital flows is taken into account (see, for example, Korinek, 2011).

Pursuing capital account openness on a regional level has been offered as a way to modify the terms of the trade-off between efficiency and stability. While foregoing full integration with global financial markets would constitute a cost, this would be more than compensated for, the argument goes, by having a larger regional capital market that would be better able to absorb swings in international investor sentiment. The threat of financial stability would be reduced.

A number of conceptual questions arise from this argument. One is with what constitutes the optimal domain of the regional financial integration. In other words, which countries should be included and which should not? Another question is whether regional financial integration should mainly be viewed as a step towards full integration with global markets or as a final arrangement.

At a concrete level, a number of initiatives have been launched in the Asia-Pacific region to develop regional capital markets, in particular debt markets. In their review of these initiatives, Goswami and Sharma (2011) identify the principal objectives of the initiatives are to create trading platforms that would facilitate intraregional trading, establish clearing and settlement systems, and strengthen regional rating agencies.
VII. KEY POLICY OPPORTUNITIES AND CHALLENGES

The topics covered in this paper point to a number of opportunities and challenges that policymakers will have to wrestle with in order to support the development of capital markets in their jurisdictions, promote the participation of long-term institutional investors in their markets, and take advantage of new investment trends.

For the development of capital markets, macroeconomic stability, strong property rights and enforcement of securities laws have been identified as particularly important considerations together with building of a state of the arts financial infrastructure, including trading platforms, clearing and settlement systems, and transparent information-sharing arrangements. Increasing the size of the investor base by opening domestic markets to foreign investors has also been suggested as a way to promote domestic financial market development.

While the benefits of such an opening is well understood, it must also be recognized that greater international financial integration of the domestic economy will also expose it to risks associated with volatility of international capital flows. Regional financial integration initiatives may serve to limit this risk by spreading the capital flows over a larger market while at the same time expanding the investor base to also include those from the regional partners. Whether such regional financial integration can be a substitute for full integration in global financial markets is, however, an open question.

Institutional investors tend to have long investment horizons and as such contribute to the stability of the local market. It may therefore be appropriate to explore ways to increase their presence in the domestic bond and equity markets. One way to do this is to promote savings through national pension funds and insurance companies. In view of the long-term orientation of institutional investors’ investment portfolios, it is particularly important for authorities to provide predictable macroeconomic and regulatory frameworks as well as effective enforcement of the rule of law and absence of corruption.

Authorities may also consider measures for long-term investors that would offset political risks associated with changes in regulatory frameworks that are introduced after a project has already been financed and which impact its profitability. Public-private partnerships may have a role to play in this regard, as would credit and revenue guarantees, first-loss provisions, public subsidies, and the provision of bridge finance through direct loans, but as with other risk mitigating measures, careful cost-benefit analysis needs to be conducted and safeguards must be included so as to
limit potential moral hazard problems. The potential budgetary implications of such schemes should also be factored in.

Promoting the participation of institutional investors in the domestic market may also be pursued through enhanced access for foreign institutional investors, again being mindful of the risks to domestic financial stability associated with greater openness to international capital flows.

Finally, policymakers should explore ways to take advantage of the emerging field of impact investment for the support of funding for projects with environmental, social, and infrastructure content, being mindful that doing so should not involve a “race to the bottom” in terms of tax concessions or regulatory leniency or a “race to the top” in terms of providing risk-reducing inducements. Some degree of international coordination and adherence to generally accepted principles in these regards need to be implemented.
REFERENCES


Several studies have shown the significant interlinkage between infrastructure and development among various economies in the Asia-Pacific region. Recognizing the central role of infrastructure in contributing to the improvement of human welfare and achieving the 2030 Agenda for Sustainable Development, the present paper looks into the following key areas: (1) status of infrastructure in Asia-Pacific economies and infrastructure financing; (2) evidence linking infrastructure and development; (3) public-private partnership (PPP) as an emerging infrastructure financing scheme for developing economies; and (4) the creation of new financial institutions for infrastructure financing in the region. Overall, the Asia-Pacific region's large and expanding infrastructure needs may be addressed through various forms of financing. While tax revenues and borrowing will continue to be significant sources of financing for most economies in the region, PPPs and other emerging sources could play a major role in addressing infrastructure gaps.

JEL classification: H540, O180, O190.

Keywords: Infrastructure, sustainable development, official development assistance, public-private partnership, financial institutions, infrastructure financing.

I. INTRODUCTION

A cursory review of the state of infrastructure in Asia-Pacific economies shows the critical need to improve quality and accessibility to help foster more inclusive
growth, especially in the developing economies of the region.\textsuperscript{1} Infrastructure plays a key role in the 2030 Agenda for Sustainable Development, as it had done in achieving the Millennium Development Goals.

The present paper discusses infrastructure financing with emphasis on the public-private partnership (PPP) mode of financing, and financial institutions recently created for infrastructure financing. Data from 2005 onward are presented as most economies only began to report data on infrastructure and financing indicators in 2005. The exceptions are data for electrification and official development assistance (ODA). The paper presents some evidence linking infrastructure and development, and discusses PPP as an emerging infrastructure financing scheme for developing economies. It also reports on the establishment of new financial institutions for infrastructure financing. The final section gives concluding remarks.

II. STATUS OF INFRASTRUCTURE AND FINANCING MODALITIES

Infrastructure development in the region can be evaluated by looking at connectivity, access and quality indicators. Connectivity of citizens and firms within domestic economies can be gauged through domestic transport and information and communications technology (ICT) indicators while connectivity of domestic economies to the rest of the world is suggested by global transport indicators. The extent of access to basic infrastructure services is indicated by transport, ICT, water supply and electricity access indicators. Service level indicators using information from quality perception surveys measure infrastructure quality.\textsuperscript{2} This section looks at infrastructure financing, basically ODA flows, which have supported infrastructure development in the region.

Status of infrastructure in the region

Data used in this section are the averages of experts’ responses to the survey question “How would you assess general infrastructure, such as transport, telephony, and energy, in your country?” in the 2014 Global Competitiveness Report. Figure 1 depicts a summary of the overall perception on the quality of infrastructure in the region. The average score for the region is 4.3. The scores of sixteen developing economies and the Russian Federation are below this average.

\textsuperscript{1} The economies of the Asia-Pacific region are those listed in the ESCAP Statistical Yearbook for Asia and the Pacific.

\textsuperscript{2} Such as those conducted by the World Economic Forum for its annual Global Competitiveness Report.
Figure 1. Quality of overall infrastructure in Asia and the Pacific


Note: 1 = extremely underdeveloped or among the worst in the world; 7 = extensive and efficient or among the best in the world.
Transportation

Developing economies commonly have low road density. This is also the case for developed economies with large land areas, such as Australia and the Russian Federation. Information on road density does not adequately describe the population’s level of access to roads. A more revealing indicator of this may be the availability of motor vehicles for the population. The average number of motor vehicles per 1,000 people for the region in 2011 was 220.67. Poor countries, such as Afghanistan, Myanmar, and Nepal, had less than 30 motor vehicles per 1,000 people. In developed economies that fell below this average, highly developed mass transport systems were substitutes for motor vehicle transport. Some economies, such as Brunei Darussalam and New Zealand, exhibited a negative rate of motorization during the period 2005-2011. Afghanistan, Bhutan, China and Kazakhstan had the highest growth of motorization.

During the period 2005-2011, vehicles per kilometer of road grew the most in China (16 per cent growth) and Kazakhstan (14 per cent growth) while in Japan they declined. Bhutan, Brunei Darussalam, Malaysia and Myanmar had the lowest vehicle density in the region (table 1).

In 2011, the region had an average paved road ratio of 71 per cent. Countries that fell below this average were Australia, Azerbaijan, Bhutan, China, India, Indonesia and Myanmar. The low paved road ratio in Australia and New Zealand may be explained by low population density in their respective rural areas (figure 2).

The quality of road transport infrastructure had an average score of 3.8, with 17 economies in the region falling below that score (figure 3).

The average score for quality of port infrastructure was 3.8. The scores of 14 developing economies was below the average (figure 4).

The average quality of air transport infrastructure was 4.3. The scores of 17 economies were below that average (figure 5). With respect to quality of rail transport infrastructure, 13 developing economies were below the average score of 3.5 (figure 6).

The liner shipping connectivity index shows wide disparity among Asia-Pacific economies (figure 7). This index (maximum value in 2004 = 100) indicates how well countries are connected to global shipping networks. In 2014, China had the highest index at 165 and the Federated States of Micronesia had the lowest.

---

3 For transportation and the other infrastructure sectors, only those economies where data are available are included in determining the patterns and calculating averages.
## Table 1. Transportation infrastructure indicators

<table>
<thead>
<tr>
<th>Country/territory</th>
<th>Road density</th>
<th>AAGR (%)</th>
<th>Motor vehicles per 1 000 people, 2011</th>
<th>AAGR (%)</th>
<th>Vehicles per km of road</th>
<th>AAGR (%)</th>
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**Notes:**
- Road density is the number of kilometers of road per 100 square kilometer of land area. The road network consists of motorways, highways, main or national roads, secondary or regional roads, and other urban and rural roads.
- Motor vehicles include cars, buses, and freight vehicles, but do not include two-wheelers. Population refers to mid-year population in the year for which data are available.
- AAGR – average annual growth rate from 2005 to 2011.

a Covered period 2007-2011.
b Covered period 2006-2011.
Figure 2. Paved roads as per cent of total roads in 2011


Note: Paved road ratio is defined as paved roads (those surfaced with crushed stone (macadam), hydrocarbon binder or bituminized agents, concrete or cobblestones) as a percentage of total roads, measured in kilometers. For the Philippines, government data are used.
Figure 3. Quality of road transport infrastructure in Asia and the Pacific


Note: Quality of roads: 1 = extremely underdeveloped or among the worst in the world; 7 = extensive and efficient or among the best in the world.
Figure 4. Quality of port infrastructure in Asia and the Pacific


Note: Quality of port infrastructure: 1 = extremely underdeveloped or among the worst in the world; 7 = extensive and efficient or among the best in the world.
Figure 5. Quality of air transport infrastructure in Asia and the Pacific


Note: Quality of air transport infrastructure: 1 = extremely underdeveloped or among the worst in the world; 7 = extensive and efficient or among the best in the world.
Figure 6. Quality of rail transport infrastructure in Asia and the Pacific

Note: Quality of railroad infrastructure: 1 = extremely underdeveloped or among the worst in the world; 7 = extensive and efficient or among the best in the world.
Figure 7. Liner shipping connectivity index in Asia and the Pacific


Note: The United Nations Conference on Trade and Development computes the index based on five components of the maritime transport sector: number of ships; their container-carrying capacity; maximum vessel size; number of services; and number of companies that deploy container ships in a country's ports.
Information and communications technology

Data show a wide digital divide among the population with many developing economies below the average of the access indicators. Those economies are in a catch-up mode (table 2).

Table 2. Information and communications technology indicators in Asia and the Pacific

<table>
<thead>
<tr>
<th>Country/territory</th>
<th>Telephone lines per 100 people</th>
<th>AAGR (%)</th>
<th>Mobile cellular subscriptions per 100 people</th>
<th>AAGR (%)</th>
<th>Fixed broadband Internet subscribers per 100 people</th>
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Table 2. (continued)

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<th>Mobile cellular subscriptions per 100 people</th>
<th>AAGR (%)</th>
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</table>
Regarding telephone density, 31 economies were below the regional average of 17.69 telephone lines per 100 people in 2013. From 2005 to 2013, Cambodia and the Lao People's Democratic Republic exhibited high average annual growth rates of 35 per cent and 27 per cent, respectively. The region had an average of 100.25 mobile cellular subscriptions per 100 people in 2013, with twenty-six economies falling below this average. The mobile density growth of many developed economies was low because their high mobile cellular density was already high to begin with. Most developing economies had experienced high mobile cellular density growth.

The average fixed broadband Internet subscription for the region was 36.4 subscriptions per 100 people in 2013; 26 economies were below this average. Most economies had experienced high broadband growth.

### Electricity

Per capita electric power consumption in the region was 3,286.25 kWh in 2011, with 22 economies having consumption levels below this average. The economies with the highest average annual consumption growth, such as Cambodia, 16 per cent
and China, 11 per cent, also experienced high economic growth in the period considered (table 3).

Seven economies had low access to electricity (75 per cent of households) in 2012. The Democratic People’s Republic of Korea had the lowest electrification rate in the region.

Table 3. Energy infrastructure indicators in Asia and the Pacific

<table>
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<tr>
<th>Country</th>
<th>Electric power consumption (kWh per capita), 2011</th>
<th>AAGR (%)</th>
<th>Electricity access (% of population), 2012</th>
</tr>
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<tbody>
<tr>
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<td>75.0</td>
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<td>76.0</td>
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<td>1.07</td>
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<td>..</td>
<td>78.0</td>
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<td>4 246.47</td>
<td>6.83</td>
<td>100.0</td>
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<td>1 576.86</td>
<td>3.42</td>
<td>90.0</td>
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<td>7.11</td>
<td>32.0</td>
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<td>Philippines</td>
<td>646.96</td>
<td>1.85</td>
<td>70.0</td>
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<td>Republic of Korea</td>
<td>10 161.95</td>
<td>4.50</td>
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Table 3. (continued)

<table>
<thead>
<tr>
<th>Country</th>
<th>Electric power consumption (kWh per capita), 2011</th>
<th>AAGR (%)</th>
<th>Electricity access (% of population), 2012</th>
</tr>
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<tr>
<td>Russian Federation</td>
<td>6 485.96</td>
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<td>Singapore</td>
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<td>-0.20</td>
<td>100.0</td>
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<td>3.53</td>
<td>89.0</td>
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<td>Tajikistan</td>
<td>1 713.79</td>
<td>-3.67</td>
<td>..</td>
</tr>
<tr>
<td>Thailand</td>
<td>2 315.99</td>
<td>3.26</td>
<td>99.0</td>
</tr>
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<td>Turkey</td>
<td>2 709.26</td>
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<td>Turkmenistan</td>
<td>2 443.86</td>
<td>2.93</td>
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<td>Uzbekistan</td>
<td>1 625.97</td>
<td>-0.85</td>
<td>..</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>1 073.28</td>
<td>10.80</td>
<td>96.0</td>
</tr>
</tbody>
</table>


Notes: Electric power consumption measures the production of power plants and combined heat and power plants less transmission, distribution, and transformation losses and own use by heat and power plants. Access to electricity is the percentage of population with access to electricity. AAGR – average annual growth rate, 2005 to 2011.

On the quality of electricity supply, in 2014, the average reliability score for the region was 4.5. Thirteen economies scored below this average, with Nepal recording the lowest score (figure 8).

Water and sanitation

In 2012, access to improved water sources in eight economies remained very low, with three or more people for every ten people without access. The worst case was Papua New Guinea, where six of ten people did not have access to an improved water source (table 4). In 2012, twenty economies had very low access (three or four people) to improved sanitation facilities. Only 18.7 per cent of the population of Papua New Guinea had access to improved sanitation facilities (table 4).
Figure 8. Quality of electricity supply in Asia and the Pacific


Note: Quality of electricity supply: 1 = not reliable at all; 7 = extremely reliable.
Table 4. Water and sanitation infrastructure indicators in Asia and the Pacific

<table>
<thead>
<tr>
<th>Country</th>
<th>Improved water source (% of population with access)</th>
<th>Improved sanitation facilities (% of population with access)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afghanistan</td>
<td>64.2</td>
<td>29.0</td>
</tr>
<tr>
<td>American Samoa</td>
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<td>62.5</td>
</tr>
<tr>
<td>Armenia</td>
<td>99.8</td>
<td>90.5</td>
</tr>
<tr>
<td>Australia</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>80.2</td>
<td>82.0</td>
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<tr>
<td>Bangladesh</td>
<td>84.8</td>
<td>57.0</td>
</tr>
<tr>
<td>Bhutan</td>
<td>98.1</td>
<td>46.9</td>
</tr>
<tr>
<td>Cambodia</td>
<td>71.3</td>
<td>36.8</td>
</tr>
<tr>
<td>China</td>
<td>91.9</td>
<td>65.3</td>
</tr>
<tr>
<td>Democratic People’s Republic of Korea</td>
<td>98.1</td>
<td>81.8</td>
</tr>
<tr>
<td>Fiji</td>
<td>96.3</td>
<td>87.2</td>
</tr>
<tr>
<td>French Polynesia</td>
<td>100.0</td>
<td>97.1</td>
</tr>
<tr>
<td>Georgia</td>
<td>98.7</td>
<td>93.3</td>
</tr>
<tr>
<td>Guam</td>
<td>99.5</td>
<td>89.8</td>
</tr>
<tr>
<td>India</td>
<td>92.6</td>
<td>36.0</td>
</tr>
<tr>
<td>Indonesia</td>
<td>84.9</td>
<td>58.8</td>
</tr>
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<td>Iran (Islamic Republic of)</td>
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<td>Japan</td>
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<td>100.0</td>
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<td>Kiribati</td>
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<td>39.7</td>
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<td>Kyrgyzstan</td>
<td>87.6</td>
<td>91.8</td>
</tr>
<tr>
<td>Lao People’s Democratic Republic</td>
<td>71.5</td>
<td>64.6</td>
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<tr>
<td>Malaysia</td>
<td>99.6</td>
<td>95.7</td>
</tr>
<tr>
<td>Maldives</td>
<td>98.6</td>
<td>98.7</td>
</tr>
<tr>
<td>Marshall Islands</td>
<td>94.5</td>
<td>76.2</td>
</tr>
<tr>
<td>Micronesia (Federated States of)</td>
<td>89.0</td>
<td>57.2</td>
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<td>Mongolia</td>
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<td>56.2</td>
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<td>Myanmar</td>
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<td>79.7</td>
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</table>
Table 4. (continued)

<table>
<thead>
<tr>
<th>Country</th>
<th>Improved water source (% of population with access)</th>
<th>Improved sanitation facilities (% of population with access)</th>
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</thead>
<tbody>
<tr>
<td>Northern Mariana Islands</td>
<td>97.5</td>
<td>47.6</td>
</tr>
<tr>
<td>Pakistan</td>
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<td>100.0</td>
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<tr>
<td>Papua New Guinea</td>
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<td>18.7</td>
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<td>Philippines</td>
<td>91.8</td>
<td>74.3</td>
</tr>
<tr>
<td>Republic of Korea</td>
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<td>100.0</td>
</tr>
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<td>Russian Federation</td>
<td>97.0</td>
<td>70.5</td>
</tr>
<tr>
<td>Samoa</td>
<td>98.5</td>
<td>91.6</td>
</tr>
<tr>
<td>Singapore</td>
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<td>100.0</td>
</tr>
<tr>
<td>Solomon Islands</td>
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<td>28.8</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>93.8</td>
<td>92.3</td>
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<td>Tajikistan</td>
<td>71.7</td>
<td>94.4</td>
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<td>Tonga</td>
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<td>91.3</td>
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<td>99.1</td>
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<td>Tuvalu</td>
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<td>100.0</td>
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<tr>
<td>Vanuatu</td>
<td>90.7</td>
<td>57.9</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>95.0</td>
<td>75.0</td>
</tr>
</tbody>
</table>


Notes: Access to an improved water source refers to the percentage of the population using an improved drinking water source. The improved drinking water source includes piped water on premises (piped household water connection located inside the user's dwelling, plot or yard), and other improved drinking water sources (public taps or standpipes, tube wells or boreholes, protected dug wells, protected springs and rainwater collection).

Access to improved sanitation facilities refers to the percentage of the population using improved sanitation facilities. The improved sanitation facilities include flush/pour flush (to piped sewer system, septic tank or pit latrine), ventilated improved pit latrine, pit latrine with slab, and composting toilet.
Overseas development aid for infrastructure financing in the region

This section covers only overseas development aid (ODA) financing because of severe data limitations. Domestic public resources used for infrastructure are not covered in this discussion due to very limited data for many ESCAP economies.

Overseas development aid is defined as grants or loans undertaken by the official sector with promotion of economic development and welfare as the main objective and at concessional financial terms (if in the form of a loan, having a grant element of at least 25 per cent). This definition does not include grants, loans and credits for military purposes and transfer payments to private individuals, such as pensions, reparations, or insurance payments.

The share of ODA directed to infrastructure to total ODA was about 23 per cent during the period 2005-2013. Annual shares ranged between 19 and 29 per cent (figure 9). Over the period 2005-2013, ODA to infrastructure with an average annual

Figure 9. Total overseas development aid and overseas development aid to infrastructure


4 The definition is from the Development Assistance Committee of the Organisation for Economic Co-operation and Development (OECD).
growth rate of 9 per cent outpaced overall ODA average annual growth rate of 6 per cent. ODA directed to the water and sanitation sector grew rapidly during this period (table 5).

Global commitments to meet the Millennium Development Goals helped channel more ODA to water and sanitation. ODA to the communications sector declined during the period 2005-2013 because of extensive private funds flow to the sector, fueled by rising demand, rapid technological advancements and privatization.

Table 5. Growth of overseas development aid to infrastructure in Asia and the Pacific

<table>
<thead>
<tr>
<th></th>
<th>Average annual growth, 2005-2013</th>
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<tbody>
<tr>
<td>Water and sanitation</td>
<td>10%</td>
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<tr>
<td>Transport and storage</td>
<td>9%</td>
</tr>
<tr>
<td>Communications</td>
<td>-3%</td>
</tr>
<tr>
<td>Energy</td>
<td>8%</td>
</tr>
<tr>
<td>Total</td>
<td>9%</td>
</tr>
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</table>


The composition of ODA flows to infrastructure was stable with the transport and storage sector experiencing the highest annual share of 47 per cent during the period of 2005-2013, followed by energy (29 per cent), and water and sanitation (21 per cent). Figure 10 shows the ODA flows directed to infrastructure, while figure 11 shows the yearly sectoral composition in 2005-2013.

Most ODA flows are coursed to the public sector but some are channeled to PPPs, albeit in relatively small amounts (0.1 per cent). The annual growth rate of ODA flows to PPPs was high, at 14 per cent, during the period 2006 to 2013. ODA flows directed to PPPs initially were mostly for water and sanitation, but subsequently, other sectors were also covered (figures 12 and 13). This implies collaboration among donors, governments and the private sector in addressing infrastructure needs in the region.

The Asian Development Bank (ADB) has served as a major source of finance for infrastructure. In 2013, about 66 per cent of ADB loans were for infrastructure, with loans for transport and ICT the largest, at 34.9 per cent of the total, followed by loans for energy, at 21.7 per cent, and loans for water and others, at 8.7 per cent.
Figure 10. ODA flows to infrastructure, 2005-2013

Figure 11. Sectoral composition of overseas development aid flows to infrastructure

Figure 12. Overseas development aid flows to public-private partners in Asia and the Pacific

![Figure 12: Overseas development aid flows to public-private partners in Asia and the Pacific](image)


Figure 13. Sectoral composition of overseas development aid flows to public private partnerships in Asia and the Pacific

![Figure 13: Sectoral composition of overseas development aid flows to public private partnerships in Asia and the Pacific](image)

During the period 2005-2013, India was very successful in attracting private investments in infrastructure, followed by the Russian Federation and Turkey while PPP investments in infrastructure in most developing economies were insignificant (figure 14, table 7).

**Figure 14. Infrastructure investments with private participation in Asia and the Pacific, 2005-2013**

<table>
<thead>
<tr>
<th>Country</th>
<th>USD million</th>
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</tr>
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<td>50,000</td>
</tr>
<tr>
<td>China</td>
<td>20,000</td>
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<td>Indonesia</td>
<td>5,000</td>
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<td>300</td>
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<td>200</td>
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<td>Malaysia</td>
<td>200</td>
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<tr>
<td>Bangladesh</td>
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<td>Sri Lanka</td>
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<td>Cambodia</td>
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<td>Georgia</td>
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<td>Armenia</td>
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<tr>
<td>Azerbaijan</td>
<td>20</td>
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<tr>
<td>Tajikistan</td>
<td>20</td>
</tr>
<tr>
<td>Afghanistan</td>
<td>20</td>
</tr>
<tr>
<td>Myanmar</td>
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<td>Nepal</td>
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<tr>
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<td>Democratic People’s Republic of Korea</td>
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<td>Kyrgyzstan</td>
<td>10</td>
</tr>
<tr>
<td>Fiji</td>
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<td>Tuvalu</td>
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</tr>
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<td>Turkmenistan</td>
<td>10</td>
</tr>
<tr>
<td>Bhutan</td>
<td>10</td>
</tr>
<tr>
<td>Philippines</td>
<td>10</td>
</tr>
<tr>
<td>Papua New Guinea</td>
<td>10</td>
</tr>
<tr>
<td>Mongolia</td>
<td>10</td>
</tr>
<tr>
<td>Vanuatu</td>
<td>10</td>
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</table>

**Source:** World Bank (2005-2013).
### Table 7. Trends in infrastructure investments with private participation in Asia and the Pacific

<table>
<thead>
<tr>
<th>Country</th>
<th>2005-2009</th>
<th>2010-2013</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>118 279</td>
<td>159 542</td>
<td>277 821</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>59 401</td>
<td>58 399</td>
<td>117 800</td>
</tr>
<tr>
<td>Turkey</td>
<td>35 248</td>
<td>44 666</td>
<td>79 914</td>
</tr>
<tr>
<td>China</td>
<td>36 375</td>
<td>15 869</td>
<td>52 244</td>
</tr>
<tr>
<td>Indonesia</td>
<td>18 136</td>
<td>15 411</td>
<td>33 547</td>
</tr>
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<td>Pakistan</td>
<td>19 637</td>
<td>4 466</td>
<td>24 103</td>
</tr>
<tr>
<td>Thailand</td>
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<td>9 567</td>
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<td>Malaysia</td>
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<td>8 052</td>
<td>15 228</td>
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<td>4 813</td>
<td>8 150</td>
</tr>
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<td>4 535</td>
<td>3 457</td>
<td>7 992</td>
</tr>
<tr>
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</tr>
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<td>3 051</td>
<td>6 991</td>
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<td>3 610</td>
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<td>3 382</td>
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<td>685</td>
<td>3 153</td>
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<td>49</td>
<td>514</td>
<td>563</td>
</tr>
<tr>
<td>Democratic People’s Republic of Korea</td>
<td>427</td>
<td>47</td>
<td>474</td>
</tr>
<tr>
<td>Kyrgyzstan</td>
<td>138</td>
<td>135</td>
<td>273</td>
</tr>
<tr>
<td>Fiji</td>
<td>173</td>
<td>72</td>
<td>245</td>
</tr>
<tr>
<td>Bhutan</td>
<td>219</td>
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<td>219</td>
</tr>
<tr>
<td>Turkmenistan</td>
<td>158</td>
<td>61</td>
<td>219</td>
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<tr>
<td>Tuvalu</td>
<td>158</td>
<td>61</td>
<td>219</td>
</tr>
<tr>
<td>Papua New Guinea</td>
<td>150</td>
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<td>Philippines</td>
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<tr>
<td>Mongolia</td>
<td>..</td>
<td>120</td>
<td>120</td>
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<tr>
<td>Vanuatu</td>
<td>41</td>
<td>..</td>
<td>41</td>
</tr>
</tbody>
</table>

III. DEVELOPMENT, INFRASTRUCTURE AND FINANCING MODALITIES

Infrastructure, growth and poverty reduction

The literature confirms the close link between infrastructure development, growth, and poverty reduction. Sahoo, Dash and Nataraj (2010) found unidirectional causality from infrastructure development to output growth from 1975 to 2007. Infrastructure has substantial impacts on growth that may vary across countries, time, and within infrastructure subsectors (Dissou and Didic, 2013, p. 42; Estachea and Garsous, 2012, among others). Infrastructure positively affects growth by increasing labour productivity and reducing transaction costs, while investments in roads and irrigation infrastructure contribute positively to economic growth and poverty reduction (figure 15).

Figure 15. Links between infrastructure and poverty reduction

A long-term positive impact on growth may be obtained from investments in power and telecommunications (Egert, Kozluk and Sutherland, 2009). In China, sustained high economic growth is largely attributed to the massive investments in physical infrastructure starting in the early 1990s. Llanto (2013) shows the positive impacts of infrastructure on Philippine agricultural productivity. The Philippine regions with higher infrastructure investments have experienced higher economic growth. Studies indicate that quality infrastructure serves as the backbone of a strong economy and a significant factor for reducing poverty. Jones (2004) found compelling evidence that investments in water, sanitation and roads were critical to growth and have benefited the poor in East Asia and the Pacific. Lack of essential infrastructure, such as water, transportation, housing, and energy, hinders inclusive growth and poverty reduction (Geest and Nunez-Ferrer, 2011). Figure 16 illustrates how infrastructure development leads to poverty reduction.\(^5\)

Figure 16. Framework on infrastructure for inclusive growth and poverty reduction

![Diagram of infrastructure development leading to poverty reduction]

Source: ADB (2012c).

Note: PPP = public-private partnership.

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\(^5\) In this framework, PPPs are included as a mechanism to provide infrastructure.
Infrastructure needs in the Asia-Pacific region

Infrastructure development in Asia has greatly contributed to a decrease in the number of poor people from 903.4 million in 2005 to 754 million in 2008,6 and the rapid increase in gross domestic product (GDP) per capita from $2,490 in 2000 to $5,489 in 2009 (ADB, 2012b). Infrastructure investments have resulted in substantial improvement in human development in the region.

The Asian Development Bank has noted that Asia needs to raise approximately $8 trillion in overall national infrastructure funding for the period 2010 to 2020 (table 8) or $730 billion per year (68 per cent for new capacity and 32 per cent for maintaining and replacing existing infrastructure) (Das and James, 2013).

Table 8. Infrastructure needs in the Asia-Pacific region, by sector, 2010-2020 ($ million)

<table>
<thead>
<tr>
<th>Sector/subsector</th>
<th>New capacity</th>
<th>Replacement</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy (electricity)</td>
<td>3 176 437</td>
<td>912 202</td>
<td>4 088 639</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>325 353</td>
<td>730 304</td>
<td>1 055 657</td>
</tr>
<tr>
<td>Mobile phones</td>
<td>181 763</td>
<td>509 151</td>
<td>690 914</td>
</tr>
<tr>
<td>Landlines</td>
<td>143 590</td>
<td>221 153</td>
<td>364 743</td>
</tr>
<tr>
<td>Transport</td>
<td>1 761 666</td>
<td>704 457</td>
<td>2 466 123</td>
</tr>
<tr>
<td>Airports</td>
<td>6 533</td>
<td>4 728</td>
<td>11 261</td>
</tr>
<tr>
<td>Ports</td>
<td>50 275</td>
<td>25 416</td>
<td>75 691</td>
</tr>
<tr>
<td>Railways</td>
<td>2 692</td>
<td>35 947</td>
<td>38 639</td>
</tr>
<tr>
<td>Roads</td>
<td>1 702 166</td>
<td>638 366</td>
<td>2 340 532</td>
</tr>
<tr>
<td>Water and sanitation</td>
<td>155 493</td>
<td>225 797</td>
<td>381 290</td>
</tr>
<tr>
<td>Sanitation</td>
<td>107 925</td>
<td>119 573</td>
<td>227 498</td>
</tr>
<tr>
<td>Water</td>
<td>47 568</td>
<td>106 224</td>
<td>153 792</td>
</tr>
<tr>
<td>Total</td>
<td>5 418 949</td>
<td>2 572 760</td>
<td>7 991 709</td>
</tr>
</tbody>
</table>

Source: ADB and ADBI (2009).

As traditional financing from taxes and borrowings will not be sufficient in addressing infrastructure gaps, the private sector should be tapped for infrastructure financing. Properly structured and managed PPPs could significantly contribute such financing based on the experiences of some Asia-Pacific economies. An enabling legal and regulatory environment, and appropriate and clear procurement rules and

6 Based on a $1.25 per day poverty line.
processes, at the minimum, are necessary to make PPPs a significant financing mechanism.

**Procurement of infrastructure and public-private partnerships**

Procurement methods for infrastructure differ across countries in the region. The procurement of goods and services in Armenia accounted for 4.5 per cent of GDP and 16.8 per cent of total budget in 2010 (ADB, 2011a). The Law on Procurement, adopted in 2010, changed procurement from a semi-centralized to a centralized system. Instead of using PPP, Armenia selects private constructors based on tenders for procurement of infrastructure services. However, Armenia has turned to PPPs as a means to finance infrastructure (TRACECA, n.d.).

In Pakistan, procurement follows the traditional and non-traditional procurement methods. Under the non-traditional method, the build-operate-own-transfer scheme was once used for a hydropower project. In general, the scheme is the most commonly used procurement method (Khalfan and others, 2013). In the Philippines, the Government is the single largest procuring entity (ADB, 2011c). Most of infrastructure investment targets for the period 2013-2016 are to be provided by the Government (70 per cent), but a sizeable share will be extended by the private sector\(^7\) (figure 17).

![Figure 17. Investment targets by funding source, 2013-2016](image)

**Source:** Philippines, National Economic and Development Authority (2014).

**Notes:** ODA = official development assistance; LGU = local government unit; GOCC = government-owned and controlled corporation; GFI = government financial institutions; NG = national government.

\(^7\) Public Investment Program 2011-2016.
In China, government procurement rose from 3.1 billion Chinese yuan (RMB) ($470 million) in 1998 to 842.2 billion RMB in 2010 (ADB, 2011b), with physical infrastructure comprising the bulk of the procurement in 2010 (453.7 billion RMB); followed by goods (317.6 billion RMB), and services (70.9 billion RMB). Central government procurement excludes those made by State enterprises. For example, the Beijing-Shanghai High Speed Railway system was procured by State-owned enterprises. The Government Procurement Law allows the following procurement methods: (1) public tender; (2) private tender or tender by invitation; (3) competitive negotiation; (4) single-source procurement; (5) inquiry; and (6) other methods approved by the State Council regulatory authority for government procurement (Zhang, 2010). This law requires that public procurement comes from domestic sources except in certain instances. Infrastructure financing is sourced from fiscal resources, such as central, provincial, and local-level financing and off-budget fees, borrowing and market-based financing (Sahoo, Dash and Nataraj, 2010).

Public procurement in Viet Nam mostly covers expenditures for education, health care and infrastructure. The Tender Law, issued in 2013, allows the following procurement methods: (1) open competitive bidding, without restriction on the number of participants; (2) designated competitive bidding, which requires a direct invitation to at least five candidates; (3) appointed bidding, used in special circumstances; and (4) other methods subject to the prime minister’s approval, if none of the aforementioned methods are viable (Hai and Watanabe, 2014).

Infrastructure financing remains largely dependent on traditional sources, such as tax revenues, external and domestic borrowings and ODA (ESCAP, 2013). Procurement of infrastructure has traditionally been the domain of the public sector, but some economies have tapped PPP to provide infrastructure. Infrastructure, such as toll roads, power plants and mass rail transport are amenable to PPP schemes. These schemes have freed public resources for other societal expenditures. PPP holds promise for developing economies that are unable to muster the resources, and managerial and technical expertise for the provision of infrastructure.

Public-private partnerships became popular in the United Kingdom of Great Britain and Northern Ireland and in the United States of America in the 1980s because of their potential for reducing public spending through the delegation of certain responsibilities to the private for-profit sector, and voluntary collaboration for the provision of public goods (Mitchell-Weaver and Manning, 1992). Since then, various PPP schemes have been adopted in different countries, depending on agreements on risk allocation, financing, operation and maintenance (figure 18). PPP schemes are now widely used in financing infrastructure, such as power, railways and roads (Felsinger, 2011).
Rationale for using public-private partnerships

ESCAP (2013) points out some reasons for using PPPs, namely: (a) access to private sector capital; (b) better risk allocation; and (c) efficiency gains. Increased access to private sector financing frees significant amounts to finance other important development projects. PPP schemes enable the involved parties to have better risk allocation depending on their relative comparative advantage and the project characteristics. The government is more efficient in handling regulatory risks while the private sector can better manage construction and operational risks. If structured carefully, PPPs lead to efficiency gains on the back of greater attention being focused on outputs rather than inputs to projects.

The World Bank Institute (2014) listed the following as advantages of PPPs as an infrastructure financing mechanism: (1) whole-of-life costing allows a single party to design, build, operate, and maintain the project, creating an incentive to complete the project at the least cost; (2) risk transfer and allocation; (3) focus on service delivery; (4) innovation; (5) asset utilization; (6) mobilization of additional funding, and; (7) accountability.

Public-private partnerships and sustainable infrastructure

Public-private partnerships may be useful in developing sustainable infrastructure. In a review of PPP cases, Colverson and Perera (2011) found that PPPs
provide timely and less costly infrastructure. For a large desalination project in Victoria, Australia, private proponents demonstrated how a PPP could efficiently integrate environmental considerations in large infrastructure projects. Project risks, such as those arising from meeting timeframes, obtaining necessary permits and getting community acceptance, are more efficiently allocated between the public and private sectors.

A successful PPP is the Nam Theun 2 Project, the largest hydropower project in the Lao People's Democratic Republic, which cost about $1.2 billion (approximately one third of the country’s GDP). The Nam Theun 2 Power Company (NTPC), the operator of the project, is owned by the Électricité de France (35 per cent), the Government of the Lao People’s Democratic Republic (25 per cent), the Electricity Generating Public Company of Thailand (25 per cent), and Italian-Thai Development Corporation (15 per cent). ADB provided $20 million in the form of a public sector loan, a $50-million private sector loan to NTPC, and a $50-million political risk guarantee to NTPC (ADB, 2012c). During the 25-year concession period, the Lao People’s Democratic Republic expects to receive $2 billion of revenues from royalties, dividends, and taxes to be used for poverty reduction.

A case study on build-transfer-operate projects for ports (Kim, Kim and Choi, 2011) revealed the following: (1) from 1994 to 2008, transport volumes at ports increased by 4.9 per cent annually on average, with a steady rise in annual public investments; and (2) private investments to expand port facilities peaked in 2009 and then declined gradually until 2015. The study estimated savings of $580 million from the use of a public-private partnership instead of relying on turnkey-based government projects; and savings of $310 billion from using a public-private partnership instead of government bidding methods. A major issue was the difficulty of predicting cargo throughput, which is highly sensitive to market conditions. The study found the PPP scheme to be a viable and profitable alternative to public sector infrastructure provision.

Marins (2009), conducting an assessment based on information from more than 65 PPPs for urban water utilities serving a total population of about 100 million, found that private operators have the potential to improve project quality and efficiency in operations. One important concern is the incorporation of social goals in PPP water projects. The following recommendations were made: (1) make projects pro-poor; (2) account for the cost of social goals in the design of PPP projects; (3) subsidize access by the poor; (4) separate customer tariffs from the remuneration of the operator; (5) address the impact of PPPs on labour; and (6) maintain transparency in regulations. Some successful PPP projects on urban water utilities have been implemented in Western and Central Africa, namely the Cote d’Ivoire Hybrid Affermage/Concession and Semegal Affermage (Fall and others, 2009).
Case studies of the Cartagena Water Supply, Sewage, and Environmental Management project in Colombia and the Vancouver Landfill Project in Canada showed that PPPs play an important role in providing sustainable infrastructure (Hamilton and Holcomb, 2013). The Cartagana Water Supply PPP provided significant management expertise that improved operational efficiency and effectiveness. Substantial social and economic benefits, such as greater water reliability, increased access to about 35,000 additional households, most of which were poor, significant reduction in water leaks, and employment of local social workers, community relations specialists and construction workers, which strengthened company-community relationship, were realized.

As for the Vancouver Landfill Project, private sector expertise and technology transformed waste into commercial energy; three hundred persons were employed, and the annual revenues of $300,000 covered most of the operating costs (Hamilton and Holcomb, 2013). The project (1) reduced gas emissions by 200,000 tons per year of carbon dioxide equivalents, which translates to the emissions volume of 40,000 automobiles, (2) captured about 500,000 gigajoules (GJ) of energy a year, the energy requirement for 3,000 to 4,000 households and (3) reduced the annual natural gas use of CanAgro® by about 20 per cent.

PEMSEA (2009) assessed the Sabang Sewerage Collection and Treatment System in Puerto Galera, Mindoro, the Philippines and found that PPP serves as an alternative delivery mechanism, especially when the government has limited technical, financial and management capability.

The importance of PPP is seen in efforts to include it in development strategies for the infrastructure sector. Indonesia established the PPP Center to handle project preparations and auctions. Indonesia has two PPP projects as of October 2014: (a) Central Java Power Plant in Batang; and (b) Mine South Power Plant in South Sumatera (PPP center, 2014). Priority infrastructure investment needs is estimated to be about 5,452 trillion Indonesian rupiah (Rp) ($477 billion). PPPs represent an innovative way for government-private sector collaboration in providing high-quality public services and helping to close infrastructure funding gaps. The following are critical factors in achieving PPP success: (1) credibility of developers and equity financier supported by adequate local, technical, and financial resources; and (2) long-term funding and expertise (Indra, 2014).

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8 A private company that has the facilities to generate electricity and power through landfill gases.

9 This initiative is a fulfilment of the commitment made by the Ministry of Finance during an APEC meeting held in Bali, Indonesia on 4 and 5 October 2013.
On 4 April 2013, the new PPP Act in Thailand, which replaced the Public Participation in State Undertaking Act B.E. 2535 (1992) enabled the approval process of projects through the PPP Policy Committee, headed by the Prime Minister of Thailand, to be streamlined. The State Enterprise Policy Office, the PPP secretariat, drafts a PPP strategic plan, assesses the feasibility of projects and provides a database on PPP schemes. The new PPP Act requires the host government agency to hire consultants to conduct feasibility studies of proposed infrastructure projects. A Private Investment Promotion Fund was created to give seed money for new investment projects. The Act provides the following (Larkin, 2014): (a) a comprehensive institutional and regulatory framework; (b) methodology for risk allocation and project evaluation; (c) value for money analysis; (d) contract management; and (e) a central agency to monitor investments. The government recognizes PPPs’ role in infrastructure financing and efficient execution and management of projects. Rojanavanich (2014) estimated the total value of PPP projects in Thailand at about 1.7 trillion Thai baht ($57 billion) during the period 2014-2019.

Lessons from public-private partnership experiences

Experiences with PPPs in several countries have yielded valuable lessons for future implementation. PPP schemes are complex by nature, requiring a high level of managerial and technical expertise for project preparation, financing, and implementation. There are certain concerns associated with PPPs. Private borrowing costs for PPP projects are higher than government borrowing rates; this may lead to more costly projects in the long run while accountability and transparency issues arise because the private sector tends to be more stringent in releasing proprietary and confidential information on profits, costs, and other information (Colverson and Perera, 2011). Notwithstanding the success of PPPs in India, Verougstraete and Kang (2014) found that investment in detailed project preparation in India was significantly lower than in other countries. They attributed this to limited access to debt and equity financing, legal disputes, land acquisitions and related environment clearance issues.

In another review on PPPs, Ogunlana and Abednego (2009), using data from a perception survey of stakeholders of Yen Lenh Bridge BOT project in Viet Nam, reported serious issues of fairness, transparency, accountability, sustainability, effectiveness, and efficiency. On fairness, it found that government officials who had the authority over the concession company did overly optimistic feasibility studies to increase the chance of project approval. Biased information was used in project design and planning work. On transparency, the lack of transparent information resulted in varying and conflicting approaches to project risk mitigation. On accountability, an overly optimistic forecast of future growth and demand was made but actual revenue fell very short of projected revenue. On sustainability, lack of
Coordination between government and the private sector put at risk the sustainability of the infrastructure development plan while corruption resulted in inefficient and poor quality construction, which created risks for the sustainability of the bridge. On effectiveness and efficiency, proper documentation of the project’s risk profile for better risk management and administration was not done.

**Box 1. Critical factors for successful public-private partnerships**

- **An adequate legal and regulatory framework**: The UNCITRAL Legislative Guide on Privately Financed Infrastructure Projects provides basic guidelines for PPPs.

- **A consistent policy orientation**: Firm policies could help ensure continuity in contracts and project implementation despite changes in government administration.

- **Long-term relationship with the private sector**: Governments need to learn about long-term relationship management.

- **Need to build capacity**: Central and local governments, especially the latter where projects are located, need to develop capacity to manage PPPs.

- **Financial support measures**: Support measures, such as a viability gap fund, direct government payments, availability payments for projects that cannot charge user charges, state guarantees, and project development fund to support project preparation, are needed to encourage PPPs.


Several economies in the region have limited capacity to formulate PPP structures. Box 1 summarizes critical factors for creating successful PPPs.

**IV. NEW INSTITUTIONS FOR INFRASTRUCTURE FINANCING**

The development finance landscape continues to change. New financial institutions have recently emerged\(^\text{10}\) as alternative or complementary financing sources.

\(^{10}\) There is a dearth of data on these institutions but it is important to mention them here because of their large potential in addressing the infrastructure gap in the Asia-Pacific region.
The Asian Infrastructure Investment Bank\textsuperscript{11}

Twenty-one countries\textsuperscript{12} launched the Asian Infrastructure Investment Bank on 24 October 2014 in Beijing to augment infrastructure financing. China provided initial capital of $40 billion, (80 per cent of the authorized capital of $50 billion). As the single biggest shareholder, China can control voting rights and bank decisions.

China declared that any country committed to regional and global development may join the Asian Infrastructure Investment Bank (AIIB). As of 20 March 2015, there are 34 prospective founding members.\textsuperscript{13} Negotiations on the Articles of Agreement are ongoing with the target to sign and ratify it, and start operations within 2016.

Silk Road Infrastructure Fund\textsuperscript{14}

China established the Silk Road Infrastructure Fund in November 2014 with capitalization of $40 billion (40 per cent of the authorized capital of $100 billion), using foreign exchange reserves and contributions from China Investment Corporation, the Export-Import Bank of China, and China Development Bank. It aims to finance infrastructure linking markets across Asian and Eurasian territories.

It began operations on 16 February 2015, focusing on roads, railways, ports, and other forms of infrastructure across Central Asia and South Asia (Jianxin and Wong, 2015). Plans include the development of a pilot economic zone in Taiwan Province of China, a new port city and highway in Sri Lanka and port facilities in Oman.

China views the Fund as an investment facility similar to a private equity fund and not a State-owned sovereign fund. Asian and non-Asian investors are welcome to invest in the Fund. An outstanding issue is the Fund’s unclear allocation system (Bin, 2015).

\textsuperscript{11} Sources: Shaohui (2014); Current Affairs (2014); Asian (2015a; 2015b); Philippines, Department of Finance (2015).

\textsuperscript{12} Bangladesh, Brunei Darussalam, Cambodia, China, India, Kazakhstan, Kuwait, the Lao People’s Democratic Republic, Malaysia, Mongolia, Myanmar, Nepal, Oman, Pakistan, the Philippines, Qatar, Singapore, Sri Lanka, Thailand, Uzbekistan and Viet Nam.

\textsuperscript{13} The additional members are: France; Germany; Hong Kong, China; Indonesia; Italy; Jordan; Luxembourg; Maldives; New Zealand; Saudi Arabia; Tajikistan; the United Kingdom; and Switzerland.

\textsuperscript{14} China (2014; 2015), CMS HK (2015).
New Development Bank

Brazil, Russian Federation, India, China and South Africa (BRICS) established the New Development Bank (NDB) on 15 July 2014 during the Sixth BRICS Annual Summit (Preuss, 2014) to provide long-term financing for infrastructure and sustainable development projects (Griffith-Jones, 2014).

The bank is headquartered in China and its first president is India. NDB has initial capital of $50 billion, contributed equally by the BRICS members, of which $10 billion will serve as paid-in capital. A Contingent Reserve Arrangement, an emergency reserve fund of $100 billion will address short-term liquidity and global financial safety needs. With an annual lending limit of $34 billion, the bank is expected to start lending by the end-2015 (Watson, 2014).  

Some view the creation of NDB is the result of the frustration BRICS had with existing multilateral institutions; others see it as a new infrastructure finance bank (Khanna, 2014), with the following features (Griffith-Jones, 2014): (a) it is for financing infrastructure and sustainable development projects; (b) BRICS and developing countries accepted as members could provide additional contributions to paid-in capital; (c) loans are for BRICS and member developing countries, with priority to low-income countries which may receive subsidies; and (d) NDB will foster complementary financing with other banks.

ASEAN Infrastructure Fund

Incorporated in April 2012 in Malaysia to finance infrastructure and environmentally sustainable and socially inclusive projects, the ASEAN Infrastructure Fund (AIF) became operational in 2013 (ADB, n.d.). The ASEAN economies and ADB made initial equity contributions of $485.3 million. Malaysia provided the largest contribution of $150 million. The ASEAN economies and ADB have committed to led funds amounting to $4 billion and $9 million, respectively. (ADB, 2012a; Sim, 2013). AIF will issue bonds starting in 2017 (ADB, n.d.).

The first project involving AIF was in December 2013 for the 500 kV Power Transmission Crossing Project between Java and Bali, Indonesia. AIF contributed $25 million, ADB, $224 million, and the Government of Indonesia, $161 million (ASEAN, 2013). AIF targets six infrastructure projects annually to be selected based on economic and financial criteria and impacts on poverty reduction.

15 Other sources are Jia (2015); Asian (2015a).
V. CONCLUDING REMARKS

The infrastructure needs of Asia and the Pacific are massive and growing because of population growth and rapid urbanization. Tax revenues and borrowing continue to be significant sources of infrastructure financing for most economies. Only about 19 to 29 per cent of ODA has been used to finance infrastructure. Although relatively small and declining, ODA could serve as a strategic financing instrument for regional public goods, such as climate change and, public health, that resource-constrained developing economies could not ordinarily finance.

As public sector resources and ODA cannot fully cover infrastructure needs, PPPs have the potential to play a significant role in financing infrastructure. PPPs are a novel and important instrument as regional experience attests. PPPs are a complex type of financing instrument that would require, among other things, the right policy and regulatory frameworks, institutional capacity, effective risk mitigation and credit enhancement. Efficient risk allocations require a good understanding of such risks and appropriate risk mitigation instruments. In a few large countries, a substantial amount of infrastructure is financed through PPPs. However, PPPs have yet to become a significant infrastructure financing instrument for smaller developing economies. Those countries need to learn how to use that instrument for addressing infrastructure gaps.

New international finance institutions have emerged as alternative or complementary sources of infrastructure financing. Those new institutions, which are being bankrolled by China, have the financial muscle to finance large infrastructure projects. They could be the main sources of infrastructure financing in the future, given the large stock of foreign reserves held by China and the country’s determination to have a greater influence in the region. China has used ODA to access food and raw materials in Africa and Asia.

In the absence of information, it is hard to say whether the Chinese-financed institutions will be complementary infrastructure financing sources, or operate independently and serve as a substitute for existing multilateral institutions. Collaboration, complementation and cooperation in infrastructure financing are the rational pathway to solve infrastructure gaps in the region. The challenge is to learn how to effectively deal with China, the rising economic and political power in the Asia-Pacific region.
REFERENCES


Llanto, G. (2013). Productivity growth in Philippine agriculture: the impact of infrastructure on agricultural productivity. Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA), Department of Agriculture-Bureau of Agricultural Research (DA-BAR), and Philippine Rice Research Institute (PhilRice).


Asia and the Pacific is one of the most disaster-prone regions and the possibility that climate change may exacerbate the frequency and severity of extreme weather events is a real threat to progress made towards achieving sustainable development. To secure sustainable development gains and build resilience in the region, there is an urgent need to undertake climate mitigation and adaptation action. Despite an estimated $391 billion in climate finance flows internationally in 2014, the gap between available climate finance and the financing required to limit global warming to two degrees Celsius and adapt to unavoidable impacts of climate change is growing. The present paper offers an overview of the climate finance landscape with a focus on the Asia-Pacific region, and of finance flows from international climate funds, multilateral development banks and subregional and national climate finance initiatives. The ultimate goal of the discussion is to provide policymakers in the region with an understanding of the state of climate finance and recommendations on approaches for mobilizing climate finance in the light of global efforts, regional trends and successful initiatives.

JEL classification: F39, Q01, Q54, Q56, R11.

Keywords: Asia-Pacific, climate change, climate finance, mitigation, adaptation.
I. INTRODUCTION

While climate change is a global phenomenon, some geographic regions are being affected by it to a greater extent than others. Asia and the Pacific is one such region. It is home to the largest number of poor people in the world who are also the most vulnerable to the impacts of climate change. In the past decade, about three million people were affected by disasters and almost 900,000 lost their lives. A person living in Asia and the Pacific is almost twice as likely to be affected by a natural disaster than a person living in Africa; almost six times more likely than someone in Latin America and the Caribbean, and almost 30 times more likely than a person living in North America or Europe (ESCAP, 2012a). All regions of the world are projected to experience varying impacts because of climate change. In Asia and the Pacific, increases in flooding, heat-related mortality, and drought-related water and food shortages have been identified as the main risks. If current climate change and development patterns continue, by 2100, hundreds of millions of people, most of them in the coastal areas of East, South-East and South Asia, may be displaced unless adaptation measures are put in place. Each degree of warming is projected to decrease renewable water resources by at least 20 per cent for an additional 7 per cent of the global population, adding to the risk faced by millions of vulnerable people (IPCC, 2014). It is evident that climate change impacts, if not effectively managed, may breach ecological tipping points, which would then have magnifying effects on interrelated socioeconomic and environmental systems, with a reach far beyond national borders (IPCC, 2012).

At the same time, the economic damage caused by disasters has grown. The financial impact on cities in the region will be significant. According to recent data, costs from major flood events will likely be counted in the billions of dollars with potential serious impacts on national GDP (World Bank, 2010), as well as on the lives of poorer and marginalized communities, in particular. The international community, multilateral development banks and United Nations funds and programmes are working to support delivery of and direct access to existing and pledged international climate finance. However, international flows alone will not be sufficient to meet the growing demand for climate mitigation and adaptation finance. Filling the growing “climate financing gap” not only requires identifying alternative and innovative sources of funds from both the public and private sectors, but also developing appropriate institutional arrangements and policy landscapes to redirect existing financial flows towards climate mitigation and adaptation activities that also deliver on sustainable development priorities.2

2 ESCAP defines Green Growth as economic progress that fosters environmentally sustainable, low-carbon and socially inclusive development.
In the light of this, the present paper first touches on the evolution of the climate finance landscape and outlines the current state of play of global sources of climate finance. In the absence of an internationally acknowledged definition of climate finance, in this paper, the United Nations Framework Convention on Climate Change (UNFCCC) definition is used, which is “local, national or transnational financing, which may be drawn from public, private and alternative sources of financing” (UNFCCC, 2014a) and which target low-carbon and climate-resilient development. The discussion covers a variety of international and national actors, including development finance institutions, international climate funds, governments and relevant government agencies. Data regarding global finance flows are mostly drawn from the Climate Policy Initiative (CPI) reports as they represent the most comprehensive source of such flows to date. Second, the paper focuses on the regional landscape of climate finance in the Asia-Pacific region, with particular attention given to active climate funds, multilateral development banks, the distribution of climate finance across countries, and national-level initiatives. Mitigation, adaptation and reduction of emissions from deforestation and degradation plus conservation (REDD+) initiatives across a variety of sectors are outlined by examining data available through the Climate Funds Update (CFU). As the analysis of regional trends undertaken is affected by the lack of coherent data, this paper focuses on selected regional experiences with the aim to shed light on relevant programmes across the region. Finally, the paper provides recommendations for policymakers on how to effectively address identified challenges and mobilize additional resources for climate finance across Asia and the Pacific.

II. SETTING THE CONTEXT: THE CURRENT STATE OF CLIMATE FINANCE AT THE GLOBAL LEVEL

The complexity of the current global landscape of climate finance (see figure 1) poses serious challenges to both policymakers and potential investors. Significant knowledge and data gaps that complicate understanding of the issue and hinder the ability to adequately address investments in climate change-related activities exist. In addition, “the cumulative gap between the level of finance needed and finance actually delivered is growing” (Buchner and others, 2014, p. 5).

The Climate Policy Initiative has been tracking and consolidating the most comprehensive estimates for climate finance, represented in the figure 2 below by the now well-known CPI spaghetti diagram. Even though the spaghetti diagram has its

---

3 The choice of countries and sectors is dictated by the availability of data and existing literature.
Figure 1. The complexity of the current global landscape of climate finance

Figure 2. Climate Policy Initiative climate finance landscape

Source: Buchner and others (2015).
limitations (Buchner and others, 2015), including data availability of certain climate flows, this paper primarily uses the CPI 2015 Climate Policy Landscape to provide an overview of key elements of the current state of global climate finance. The present study is not intended to provide a comprehensive overview, but instead report on key figures to provide a broad view of the current situation.

According to latest reports issued by CPI, in 2014, annual global climate finance was $391 billion. Despite still lagging far below the levels needed to limit warming to two degrees Celsius, climate finance flows have increased when compared to the 2013 level of $331 billion. In 2013, climate finance flows were directed almost equally to developed (OECD) and developing (non-OECD) countries, with each group receiving $164 billion and $165 billion, respectively (Buchner and others, 2014). North-South flows accounted for $34 billion in 2012 (Buchner and others, 2014). Developing countries invested $2 billion in developed countries and $10 billion in South-South cooperation (Buchner and others, 2014). However, approximately three fourths of total flows, particularly those from the private sector, were invested in their country of origin (Buchner and others, 2014). The 2015 report confirms these trends: about 74 per cent of total finance and 92 per cent of private investments were raised and spent within the same country. East Asia and the Pacific was the largest destination of climate finance flows accounting for $119 billion, while Western Europe was the second main destination with $93 billion (Buchner and others, 2015).

In 2014, the public sector contributed $148 billion, an 8 per cent and a 10 per cent increase from 2013 and 2012 levels, respectively (Buchner and others, 2015), while the private sector provided $243 billion, a record raise from 2013 levels, when

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4 The Climate Policy Landscape tracks incremental (including grants) rather than total investment costs, and includes public framework expenditures for, among other, capacity-building, strategies and plans, MRV systems and demonstration projects, but excludes policy-induced revenues for such sources as taxes, feed-in tariffs, subsidies and concessional loans. Significant data gaps impede a full report of climate flows, including for example private sector investments in energy efficiency, including transport, land use, and adaptation. The 2015 report also does not capture “the value of public budgets dedicated to domestic climate action beyond some national DFIs commitments and financing”, nor “the level of climate finance that governments contribute as shareholders of companies.” (Buchner and others, 2015, p. 6)

5 It is estimated that despite investments totalling $1.095 trillion between 2011 and 2014, as much as $16.5 trillion will be needed over the next 15 years to limit the global temperature increase to two degrees Celsius (IEA, 2015).

6 It is important to note that data limitations restrict the ability to identify private sector flows in developing countries systematically and concretely.

7 It is estimated that public actors in emerging and developing economies alone invested $544 billion in 2012 on fossil fuel subsidies alone.
private investments accounted for $193 billion, as elaborated in table 1 below (Buchner and others, 2015). It is estimated that three fourths of climate finance flows were invested with the expectation of earning commercial returns (Buchner and others, 2014).

Table 1. Summary of public and private total finance flows

<table>
<thead>
<tr>
<th>Source</th>
<th>Total ($ billion)</th>
<th>% change</th>
<th>% Mitigation</th>
<th>% Adaptation</th>
<th>% Mixed (mitigation/adaptation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>148</td>
<td>+8</td>
<td>38</td>
<td>93</td>
<td>1</td>
</tr>
<tr>
<td>Private</td>
<td>243</td>
<td>+26</td>
<td>62</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Source: Based on Buchner and others (2015).
Note: There is no reliable data source of project level private sector adaptation interventions.

With regard to public finance flows, direct foreign investments (DFIs) accounted for the majority investments by public actors and have contributed $131 billion, or 33 per cent of total flows in 2014. Other public actors included multilateral and national climate funds that approved about $2 billion for projects with mitigation and adaptation benefits. CPI further tracked $15 billion on average of direct public contributions from government agencies and ministries in 2014 (Buchner and others, 2015). However, limited data on domestic public budgets and expenditures for climate change make it hard to capture the latter trends.

In September 2014, six multilateral development banks reaffirmed their shared commitment to take the lead in further developing climate financing. They pledged to maintain a strong focus on climate change. In particular, this included leveraging additional private sector investments and continuing to innovate and promote more

---

8 Private investment figures need to be explored critically as drops in private sector investments can be attributed to changing cost structures. For example, investments in solar decreased by $19 billion, however, installed capacity increased by 5 GW, indicating that the investment decrease is largely associated with improving costs necessitating less financial investment.


10 ADB (2014).
robust and transparent climate finance tracking and reporting. Those six multilateral development banks began to jointly track climate finance flows in 2011 (table 2) and since then have delivered $75 billion in financing assistance to developing countries to support responses to climate change challenges. About 80 per cent ($18.9 billion) of this lending has supported mitigation activities, while 20 per cent ($4.8 billion) has supported adaptation measures (Buchner and others, 2014). Of the total commitments, 9 per cent, or $2.2 billion, came from external resources, such as bilateral or multilateral donors, including the Global Environment Facility and the Climate Investment Funds.

### Table 2. Multilateral development banks climate finance commitments to adaptation ($ million)

<table>
<thead>
<tr>
<th>Multilateral development bank</th>
<th>Adaptation 2013</th>
<th>Mitigation 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>African Development Bank</td>
<td>473</td>
<td>768</td>
</tr>
<tr>
<td>Asian Development Bank</td>
<td>980</td>
<td>2 272</td>
</tr>
<tr>
<td>European Bank for Reconstruction and Development</td>
<td>187</td>
<td>3 242</td>
</tr>
<tr>
<td>European Investment Bank</td>
<td>166</td>
<td>5 058</td>
</tr>
<tr>
<td>Inter-American Development Bank</td>
<td>121</td>
<td>1 097</td>
</tr>
<tr>
<td>International Finance Corporation</td>
<td>8</td>
<td>2 662</td>
</tr>
<tr>
<td>World Bank</td>
<td>2 927</td>
<td>3 830</td>
</tr>
<tr>
<td>Total</td>
<td>4 826</td>
<td>18 928</td>
</tr>
</tbody>
</table>

Source: UNFCCC (2014b).

The Global Environment Facility (GEF) Trust Fund is the primary source of grants extended to developing countries through the financial mechanism. During this GEF 5 (2010-2014) cycle, GEF had funded 787 projects on climate change mitigation for a total volume of $4.5 billion. Funding to support adaptation by GEF is now delivered directly through the Least Developed Countries Fund (LDCF) and the Special Climate Change Fund (SCCF). As at 30 June 2014, about $1.3 billion overall has been programmed by GEF for adaptation. The contributions from donor countries for LDCF and SCCF are voluntary and have experienced a substantial increase during the past years. Cumulative pledges to LDCF reached $900 million in 2014 while those to SCCF were $344 million.

Meanwhile, private sector investments have accounted for the majority of climate finance, which is highlighted in table 3. It is estimated that private climate finance flows to developing countries are between $27 billion and 123 billion, based
on data from 2008 to 2011 from a variety of sources — with the caveat that private climate finance flows to developing countries are not systematically tracked, so their magnitude is highly uncertain (UNFCCC, 2014b). In 2014, “project developers”\(^\text{11}\) (Buchner and others, 2014, p. 5) invested the most, with a contribution of $92 billion. Corporate actors invested $58 billion of total private finance, while households (including family-level economic entities, high net worth individuals and their intermediaries) invested $43 billion. Commercial financial institutions contributed $46 billion (19 per cent of private investments). Private equity, venture capital, and infrastructure funds intermediated $1.7 billion. Institutional investors spent about $0.9 billion on renewable energy projects. The majority of these sources are being provided through a variety of instruments, namely grants, low-cost debts (including concessional loans), and capital instruments at commercial terms, such as project-level market rate debt, project-level equity, and balance sheet financing, as elaborated in table 4 (Buchner and others, 2014).

Table 3. Breakdown of investments by type of public and private actor, 2014

<table>
<thead>
<tr>
<th>Public actors</th>
<th>Total ($ billion)</th>
<th>% Share</th>
<th>Private actors</th>
<th>Total ($ billion)</th>
<th>% Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governments and government agencies</td>
<td>15</td>
<td>10</td>
<td>Project developers</td>
<td>92</td>
<td>38</td>
</tr>
<tr>
<td>National and multilateral climate funds</td>
<td>2</td>
<td>1.3</td>
<td>Corporate actors &amp; manufacturers</td>
<td>58</td>
<td>24</td>
</tr>
<tr>
<td>DFI</td>
<td>131</td>
<td>88.5</td>
<td>Households</td>
<td>43</td>
<td>18</td>
</tr>
<tr>
<td>National DFIs</td>
<td>66</td>
<td>~51</td>
<td>Commercial financial institutions</td>
<td>46</td>
<td>19</td>
</tr>
<tr>
<td>Multilateral</td>
<td>47</td>
<td>36</td>
<td>Private equity, venture capital, infrastructure funds</td>
<td>1.7</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Bilateral</td>
<td>17</td>
<td>~13</td>
<td>Institutional investors</td>
<td>0.9</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Total</td>
<td>~$148</td>
<td></td>
<td>Total</td>
<td>~$243</td>
<td></td>
</tr>
</tbody>
</table>

Source: Based on Buchner and others (2015).

\(^{11}\) Project developers refer to “dedicated energy project developers, engineering, procurement and construction (EPC) contractors, utilities and independent power producers.”
Compared to 2013, in 2014 mitigation finance has increased by $59 billion, totalling $361 billion, and accounting for 93 per cent of total investments; adaptation finance has instead decreased, totalling $25 billion (Buchner and others, 2014; 2015). Given that more than 40 per cent of greenhouse gas emissions are caused by energy production and use, the majority of mitigation finance projects are aimed at promoting renewable energy sources (Halimanjaya and others, 2014). In particular, public mitigation finance targeted three main sectors, namely renewable energy generation (33 per cent of the total), energy efficiency (18 per cent) and sustainable transport (14 per cent). The remainder of mitigation flows were directed towards non-energy GHG reduction, low-carbon technologies, agriculture, forestry, and land use, transmission and distribution systems, and waste and wastewater management (Buchner and others, 2015). Current levels of funding are, however, deemed to be insufficient to enhance mitigation measures and CPI envisions that mitigation measures will require between $200 billion-210 billion per annum in 2030 (Buchner and others, 2013).

Adaptation funding reached $25 billion in 2014, of which 25 per cent was invested in water and wastewater management (Buchner and others, 2015). Table 5 depicts the most active funds in delivering climate adaptation finance for the period 2003-2014. However, these contributions remain low and adaptation unfortunately remains underfunded at the global level (Caravani and others, 2014). Additional investments needed are estimated to amount to several billion dollars, with at least an

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**Table 4. Climate finance flows by instruments, 2014**

<table>
<thead>
<tr>
<th>Instruments</th>
<th>Total ($ billion)</th>
<th>% Share of total climate finance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grants</td>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td>Low-cost debt</td>
<td>69</td>
<td>18</td>
</tr>
<tr>
<td>Balance sheet financing</td>
<td>178</td>
<td>46</td>
</tr>
<tr>
<td>Project level market rate debt</td>
<td>102</td>
<td>26</td>
</tr>
<tr>
<td>Project level equity</td>
<td>25</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>**388 ***</td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Source: Based on Buchner and others (2015).*

*Note: *Due to data limitations, there are no details on instruments for about $0.5 billion.*

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12 Adaptation finance recorded is only from public sources, as there is no reliable data source for project-level private adaptation interventions, and Buchner and others (2014) also do not take into account data on domestic public budgets.

13 Figures must be seen as indicative only.
additional $28 billion-67 billion of estimated required flows to developing countries (Buchner and others, 2013).

To this end, the Green Climate Fund has recently committed to devote 50 per cent of its funding to adaptation measures, starting from 2015, with half of it going to small island developing States, least developed countries and African States, to help address the problem of insufficient funding for adaptation. In addition to mitigation and adaptation finance, since 2008, $2.81 billion has been pledged to five multilateral climate funds to support REDD+. However, the future of those mechanisms still remains highly uncertain. Encouragingly, pledges were made at the United Nations Climate Summit in 2014 for additional REDD+ finance and as 2014 80 per cent of the total funding pledged has been deposited.

On the one hand, climate funds, such as GEF, LDCF and SCCF, as well as the Climate Investment Funds (CIFs) of the World Bank, successfully dispensed funds for climate finance by promoting projects that have the potential to reduce emissions and increase resilience to climate change. Thus, for example, mitigation finance has targeted middle-income countries where emissions are already high and growing; poor and vulnerable countries have also been specifically targeted by climate funds that provide support for responsible ministries in investment planning and financial-

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14 REDD-plus activities are located in developing countries and are funded by a combination of domestic and developed country finance.

15 The Climate Investment Funds include four key programmes that held 63 developing countries pilot low-emissions and climate resilient development including the $5.3-billion Clean Technology Fund (CTF), the $1.2-billion Pilot Program Climate Resilience (PPCR), the-$785 million Forest Investment Program (FIP) and the $796 million Scaling Up Renewable Energy in Low Income Countries Program (SREP). Available from www.climateinvestmentfunds.org/cif/.
management decisions. On the other hand, however, these funds have not always been dispersed efficiently, mostly because some programmes were not carefully designed to target national circumstances. Therefore, it is clear that “a focus on the underlying policy, regulatory and enabling environment in developing interventions is needed alongside efforts to make large investments” (Nakhooda and others, 2014, p. 72).

III. THE STATE OF CLIMATE FINANCE IN THE ASIA-PACIFIC REGION

Asia and the Pacific is increasingly responsible for rising levels of greenhouse gas emissions despite the extensive socioeconomic impacts climate change has on the region. While per capita emissions are still low in most countries, the economic and population growth in major Asian economies has led to an increasing need for energy, especially from cheap and readily available fossil fuels. Estimates suggest that the Asia-Pacific region, with a 6 per cent annual growth rate, has the potential to account for 44 per cent of total global GDP by 2035 (ADB, 2013a). In this “Asian Century” scenario, the region’s share of world energy consumption is projected to rise rapidly from about 33 per cent in 2010 (one third of world consumption), to up to 56 per cent by 2035 (ADB, 2013a). In 2035, China and India alone will account for 70 per cent of total electricity generated. Demand for coal in Asia and the Pacific is projected to increase by 52.8 per cent from 2010 to 2035, to reaching 3.5 billion tons of oil equivalents (Mtoe) (ADB, 2013b). As demand for coal, oil and other resources increases rapidly, carbon dioxide (CO2) emissions are projected to increase from 13.4 billion tons of CO2 in 2010 to 22.1 billion tons of CO2 in 2035, growing at an annual rate of 2.0 per cent, under business as usual scenarios (ADB, 2013b).

The region’s prospect for pursuing higher, inclusive and sustained growth, as well as reducing poverty and addressing inequalities, critically depends on its capacity to adapt its development patterns to those that are low carbon, resource efficient and that sustainably manage natural resources while delivering on inclusive growth necessary for poverty eradication. As rising and increasingly volatile commodity prices are becoming the “new normal” (ESCAP, 2013), the region cannot sustain its resource intensive growth pattern that currently uses three times more resources than world average per unit of GDP (ESCAP, 2012b).

One of the key challenges in undertaking this transformation is availability and access to climate finance. A report from UNFCCC estimates that additional investments and financial flows needed in order to address climate change in 2030 would amount to 0.3-0.5 per cent of global GDP and 1.1-1.7 per cent of global investment (UNFCCC, 2008). It is estimated that the energy sector alone will require
new investments of about $19.9 trillion under an alternative approach to business-as-usual scenarios (ADB, 2013a).

Obtaining a comprehensive picture of the state of climate finance in the Asia-Pacific region is complicated by the fact that most governments have their own climate change plan as well as different institutional arrangements to coordinate climate change actions (Haites, 2014). Some countries also have independent mechanisms to fund adaptation and mitigation measures. In addition, private climate finance flows to developing countries are not systematically tracked, so their magnitude is highly uncertain (UNFCCC, 2014b). Furthermore, some countries devote significant domestic resources to climate change, while others rely almost entirely on bilateral and multilateral finance (UNFCCC, 2014b). The landscape presented below seeks to highlight some of the key flows that have been tracked in the region to date, as well as key country-level initiatives to mobilize climate finance.

Finance flows from international climate funds

Currently, twenty-two climate funds and initiatives are active in the region, which have approved a total of $3.35 billion for projects, with $1.25 billion approved for new projects in 2013 alone (Barnard and others, 2014). Despite concerted efforts from a variety of funds and initiatives, the distribution of climate finance flows within the region has been uneven. Over two thirds of the climate finance directed to Asia and the Pacific since 2003 has supported mitigation initiatives, while the remaining funding supported adaptation activities, REDD+ and multiple focuses programmes (Buchner and others, 2013). The most recent data from CFU show that 32 countries in the region have received more than a quarter of total public climate finance from dedicated climate funds. China, India and Indonesia alone have received almost half, approximately 46 per cent of total mitigation and adaptation funding approved by dedicated climate funds for the region since 2003.

The Asia-Pacific region received 31.1 per cent of total mitigation funding from climate funds active in the region, with Indonesia being the largest recipient, accepting $382.86 million approved for mitigation activities (Halimanjaya and others, 2014). China, India, Indonesia, the Philippines and Thailand together received 82 per cent, or $1.7 billion, of the total amount approved for mitigation in the region. CTF,

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16 In this case, Climate Funds Update follows the World Bank classification of countries in East Asia and the Pacific and South-Asia, which includes: American Samoa, Cambodia, China, Fiji, Indonesia, Kiribati, Democratic Republic of Republic of Korea, Lao People's Democratic Republic, Malaysia, Marshall Islands, Micronesia (Federated States of), Mongolia, Myanmar, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Thailand, Timor-Leste, Tuvalu, Tonga, Vanuatu, Viet Nam; and Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka.
Figure 3. Top 10 recipient countries in the Asia-Pacific region by amount of funding approved ($ million)


Figure 4. Focus areas in East Asia and the Pacific and in South Asia

Figure 5. Top active funds by data available for East Asia and the Pacific and for South Asia ($ million)

Top funds supporting East Asia and the Pacific by amount approved

Top funds supporting South Asia by amount approved

under the World Bank CIFs, has provided the majority, or $706 million, of newly approved mitigation finance.

Sixty-two per cent of total climate finance from funds extended to the Asia-Pacific region since 2003 has supported mitigation activities (Barnard and others, 2015). On average, most of mitigation finance is being directed towards countries with higher CO₂ intensity, larger carbon sinks, lower per capita GDP and good governance (Haites, 2014, p. 34). Most mitigation funding supports large-scale renewable energy, energy efficiency and transport projects. SREP is an exception to this as it is supporting decentralized renewable energy and energy access programmes in Nepal, Maldives and Vanuatu for a total approved amount of almost $63 million (Barnard and others, 2014).

During the period 2003-2015, the Asia-Pacific region received 17 per cent of total adaptation finance (Canales Trujillo and others, 2015). The $346 million in adaptation finance approved in 2013 represents only 28 per cent of the total increase of financing for the whole region. Since its establishment in 2008, CTF has approved more than $1.20 billion for twenty projects across the region, mostly through concessional loans (Barnard and others, 2015). As for adaptation, the largest amounts are being provided by PPCR, which has approved $857 billion to support adaptation projects, of which 17 per cent was invested in East Asia and the Pacific, and 14 per cent in South Asia (Canales Trujillo and others, 2015). Adaptation finance flows tend to go to more vulnerable countries. However, vulnerability alone does not explain the allocation of those funds. Nonetheless, approved finance for projects in vulnerable countries, particularly the small Pacific island States, has arguably been modest. The Cook Islands, Fiji, Kiribati, Marshall Islands, Micronesia (Federated States of), Palau, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu altogether have received only 4.6 per cent ($155 million) of the total amount approved for the Asia-Pacific region, primarily for adaptation activities (Normand and others, 2014). The Asia-Pacific region has only received 7 per cent of the total amount of REDD+ finance approved between 2008 and 2015, with Indonesia being the largest recipient in the region, mostly through bilateral relationships with Norway and Australia (Norman and others, 2015).

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17 Further information on such projects can also be found here: www.climateinvestmentfunds.org/cif/node/2.

18 More information on the PPCR can be found here www.climateinvestmentfunds.org/cif/Pilot_Program_for_Climate_Resilience.
Table 6. Funds active in East Asia and the Pacific and in South Asia

<table>
<thead>
<tr>
<th>Fund</th>
<th>Year of initiation</th>
<th>South Asia – amount approved (in $ million)</th>
<th>East Asia and Pacific – amount approved (in $ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adaptation Fund Board (UNFCCC Kyoto Protocol)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adaptation Fund (AF)</td>
<td>2009</td>
<td>24.1</td>
<td>43.6</td>
</tr>
<tr>
<td>Brazilian Development Bank</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amazon Fund</td>
<td>2009</td>
<td>–</td>
<td>53.5</td>
</tr>
<tr>
<td>Indonesia's National Development Planning Agency</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indonesia Climate Change Trust Fund (ICCTF)</td>
<td>2010</td>
<td>–</td>
<td>9.5</td>
</tr>
<tr>
<td>UNDP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Millennium Development Goals Achievement Fund</td>
<td>2006</td>
<td>5.0</td>
<td>20.0</td>
</tr>
<tr>
<td>UN-REDD Programme</td>
<td>2008</td>
<td>6.3</td>
<td>24.4</td>
</tr>
<tr>
<td>World Bank</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clean Technology Fund (CTF)</td>
<td>2008</td>
<td>375.0</td>
<td>888.7</td>
</tr>
<tr>
<td>Forest Carbon Partnership Facility (FCPF)</td>
<td>2008</td>
<td>3.6</td>
<td>11.5</td>
</tr>
<tr>
<td>Forest Investment Program (FIP)</td>
<td>2009</td>
<td>–</td>
<td>19.3</td>
</tr>
<tr>
<td>Scaling Up Renewable Energy in Low Income Countries Program (SREP)</td>
<td>2009</td>
<td>66.1</td>
<td>0.6</td>
</tr>
<tr>
<td>Pilot Program for Climate and Resilience (PPCR)</td>
<td>2008</td>
<td>170.0</td>
<td>168.4</td>
</tr>
<tr>
<td>The Global Environment Facility (GEF)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Climate Change Fund (SCCF)</td>
<td>2001</td>
<td>–</td>
<td>70.1</td>
</tr>
<tr>
<td>Least Developed Countries Fund (LDCF)</td>
<td>2002</td>
<td>77.6</td>
<td>143.2</td>
</tr>
<tr>
<td>Strategic Priority on Adaptation (SPA) (from GEF4)</td>
<td>2004</td>
<td>6.9</td>
<td>3.1</td>
</tr>
<tr>
<td>GEF4</td>
<td>2006</td>
<td>137.7</td>
<td>–</td>
</tr>
<tr>
<td>Global Environmental Facility (GEF4)</td>
<td>–</td>
<td>297.5</td>
<td></td>
</tr>
<tr>
<td>Global Environment Facility (GEF5)</td>
<td>2010</td>
<td>90.0</td>
<td>–</td>
</tr>
<tr>
<td>GEF 5</td>
<td>–</td>
<td>268.6</td>
<td></td>
</tr>
<tr>
<td>Global Environmental Facility (GEF6)</td>
<td>–</td>
<td>9.8</td>
<td></td>
</tr>
<tr>
<td>The European Commission</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Global Climate Change Alliance (GCCA)</td>
<td>2007</td>
<td>375.0</td>
<td>84.8</td>
</tr>
<tr>
<td>The International Fund for Agricultural Development (IFAD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adaptation for Smallholder Agriculture Programme (ASAP)</td>
<td>2012</td>
<td>30.0</td>
<td>27.0</td>
</tr>
</tbody>
</table>

Source: Based on CFU. Available from www.climatefundsupdate.org/regions/asia-pacific.
Finance from multilateral development banks

Table 7 provides figures for multilateral development banks climate finance delivered to East Asia and the Pacific, non-European Union and Central Asia and South Asia in 2013 (in US$ million).

Table 7. Climate Finance delivered by multilateral development banks to East Asia and the Pacific, South Asia,\(^a\) and non-European Union and Central Asian countries\(^b\)

<table>
<thead>
<tr>
<th>Region</th>
<th>Multilateral development bank resources</th>
<th>External resources</th>
<th>Total multilateral development bank climate finance per region</th>
<th>Total multilateral development bank finance per region</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Investments and technical assistance</td>
<td>Policy-based instruments</td>
<td>Investments and technical assistance</td>
<td>Policy-based instruments</td>
</tr>
<tr>
<td></td>
<td>Public</td>
<td>Private</td>
<td>Public</td>
<td>Private</td>
</tr>
<tr>
<td>East Asia and the Pacific</td>
<td>1 438</td>
<td>978</td>
<td>798</td>
<td>0</td>
</tr>
<tr>
<td>South Asia</td>
<td>1 399</td>
<td>847</td>
<td>514</td>
<td>0</td>
</tr>
<tr>
<td>Non-European Union and Central Asia</td>
<td>2 403</td>
<td>214</td>
<td>2 218</td>
<td>46</td>
</tr>
<tr>
<td>Total</td>
<td>12 545</td>
<td>260 079</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Note: M = Mitigation, A = Adaptation.


\(^{b}\) According to EIB, countries considered as part of non-European Union and Central Asia countries are: Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Georgia, Kazakhstan, Kyrgyzstan, Kosovo, Montenegro, Republic of Moldova, Russian Federation, Serbia, the Former Yugoslav Republic of Macedonia, Turkey, Tajikistan, Turkmenistan, Ukraine and Uzbekistan. Available from www.eib.org/attachments/documents/joint_report_on_mdb_climate_finance_2013.pdf.
Of the total adaptation finance provided by multilateral development banks in 2013, East Asia and the Pacific received $1.072 billion and South Asia received $1.008 billion. As for the multilateral development banks mitigation finance, $3.236 billion was disbursed to East Asia and the Pacific and $2.113 to South Asia (MDBs, 2013). Among multilateral banks, ADB is the Asian regional development bank; it is supporting climate change mitigation and adaptation initiatives throughout Asia and the Pacific through a variety of initiatives, including, among them: the ADB internal Climate Change Fund; trust funds managed by ADB, which receive contributions from developed countries (Australia, Canada, Japan, Norway, Spain, Sweden and the United Kingdom); the Global Carbon Capture and Storage Institute; and climate funds that are externally managed but can be accessed by ADB. As of the end of 2013, the total amount of externally managed climate funds that ADB has managed and/or has had access to amounts to $1.5 billion (Haites, 2014, p. 38).

Subregional climate finance initiatives

Subregional organizations are increasingly leveraging the benefits of cooperation to address the large gaps in finance and action in the region on mitigation and adaptation. Through the creation of subregional frameworks for action on climate change, subregional bodies are setting the stage for concerted action at the national level towards climate change mitigation and adaptation. Subregional frameworks also offer a key opportunity to facilitate partnership building and engagement on strengthening the science-policy interface through scientific partnerships, capacity-building, information and even technology exchange among subregional organizations. With support from subregional and regional partners comprehensive, multisectoral and strategic road maps for action can be developed and jointly implemented. With these strong policy signals from the subregion, climate finance can be directed to appropriate investments for low-carbon development. Also, importantly, subregional consensus can ensure that important issues of concern are raised effectively at global negotiations. In addition, G20 leaders are poised to make a significant contribution to climate change finance, thanks to their influential position, by engaging in a meaningful discussion on climate change. During the twenty-first Conference of the Parties (COP21), held in Paris from 30 November to 11 December 2015, they reached an agreement on the reduction of climate change (the Paris Agreement), which will become legally binding only if signed by at least 55 countries over the next two years. One of the most pressing questions that leaders also need to keep address is where will the money come from and where it will be spent (Jorgensen, 2013). In another forum, which was held in Brussels on 4 and 5 June

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2014, G7 leaders committed, from their side, to take concrete action to address climate change by pursuing low-carbon economies and taking the lead in collecting resources to meet the target of mobilizing $100 billion per year by 2020.20

One example21 of such initiatives is being undertaken by the Association of Southeast Asian Nations (ASEAN), which has been active in addressing climate change, including by issuing declarations/statements related to climate change in 2007, 2009, 2010, 2011 and 2014 that express the subregion's common understanding and aspirations towards climate change and their resolve to achieve an ASEAN community resilient to climate change through national and regional actions, including by technology transfer, capacity-building and financial assistance from developed countries to support nationally appropriate mitigation actions (NAMAs) and Intended Nationally Determined Contributions (INDCs). The statements highlight the importance of climate change mitigation and adaptation actions that are consistent with broader sustainable development goals. The ASEAN Socio-Cultural Community (ASCC) Blueprint 2009-2015 strategic objectives are to “enhance regional and international cooperation to address the issue of climate change and its impacts on socioeconomic development, health and the environment, in ASEAN member States through implementation of mitigation and adaptation measures...". The ASEAN Multi-Sectoral Framework on Climate Change: Agriculture, Fisheries and Forestry towards Food Security (AFCC) was endorsed by the ASEAN Ministerial Meetings on Agriculture and Forestry (AMAF) in November 2009. The overall aim of AFCC is to contribute to food security through sustainable, efficient and effective use of land, forest, water and aquatic resources by minimizing the risks and impacts of and the contributions to climate change. The ASEAN Working Group on Climate Change (AWGCCC) was established in 2009 and the Action Plan on Joint Response to Climate Change was developed in 2012. Key actions include: encourage an ASEAN common understanding to engage in joint efforts; develop an ASEAN climate change initiative (ACCI); facilitate information/knowledge exchange, including transfer of technology; engage with the international community; develop regional strategies to enhance capacity for low carbon economies; enhance collaboration to address climate related hazards; develop observation systems and conduct policy and scientific studies;


21 Other similar initiatives are the South Asian Association for Regional Cooperation (SAARC) (http:// saarc-sec.org/areaofcooperation/cat-detail.php?cat_id=54); the Pacific Island Forum Secretariat (PIFS) (www.forumsec.org/pages.cfm/strategic-partnerships-coordination/climate-change?printerfriendly=true) and the Secretariat of the Pacific Regional Environment Programme (SPREP) (www.sprep.org/ attachments/Publications/PIFACC-ref.pdf); and www.pacificclimatechange.net/index.php/component/ content/article/400-announcements/7529-call-rtsm.
promote public awareness and advocacy for increased stakeholder engagement; and promote a win-win synergy between climate change and economic development.  

National climate finance flows

The local dimension of climate finance is of great importance, not only because of the intrinsically local nature of climate change effects, but also on account of the crucial role of local policymakers and practitioners in achieving results on the ground. Country systems were devised during the Global Forum on Using Country Systems to Manage Climate Change Finance, which was held in Incheon, Republic of Korea, on 2 and 3 December 2013, as a way to manage climate finance at the national level (UNDP, 2013). They combine a variety of instruments to address climate finance, including: national and local systems for planning; policy coordination and implementation; budgeting and financial management; procurement; and monitoring and evaluation. In this regard, country systems may prove to be essential resources for national governments to manage climate finance at the local level while actively engaging the private sector, non-governmental organizations and households.

Given the importance of mobilizing domestic resources according to national circumstances, climate finance needs to be defined according to country-led definitions of climate expenditures. Therefore, countries in the Asia-Pacific region have started to produce their own Climate Public Expenditure and Institutional Reviews (CPEIRs), which are aimed at helping ministries of finance, environment and planning assess how to configure national budgets in order to respond to climate change. Five countries have initiated pilot CPEIRs, namely Bangladesh (Bangladesh, 2012), Cambodia (ODI, 2012a), Nepal (Nepal, National Planning Commission, 2011), Samoa (ODI, 2012b) and Thailand (ODI, 2012c), which altogether signal that across the region, countries are becoming aware of the need to bring climate finance into national agendas as a key issue to be addressed in both the short and the long term.

Establishing a national climate fund (NCF) is another effective way to tailor coordination and strengthen national ownership of climate finance. Such mechanisms, which are already being pursued in some countries in the Asia-Pacific region, extend support in directing finance towards climate change programmes (Flynn, 2011). NCFs can help national governments focus on country-driven climate change priorities based on national realities by addressing four main goals: collecting and distributing funds to climate change-related activities that target national circumstances; facilitating the blending of public, private, multilateral and bilateral

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sources of finance; coordinating country-wide climate change programmes; and strengthening national institutions and financial management, for example through the creation of National Implementing Entities (NIEs), to deliver climate change projects. If aligned with existing national institutions and objectives, NCFs have the potential to create an effective system to translate financial opportunities into real achievements. Some countries that have set up NCFs are Indonesia (Flynn, 2011, p. 48);23 Bangladesh (Flynn, 2011, p. 49);24 and China (Flynn, 2011, p. 50).25

Furthermore, there has been increasing interest in using NAMAs as a tool for countries to promote climate change mitigation actions in the context of national sustainable development strategies. The concept of NAMA was introduced in the Bali Action Plan, which was set at the thirteenth Conference of Parties (COP13) in 2007 in Bali, Indonesia. Paragraph 1(b)(ii) calls for “(n)ationally appropriate mitigation actions by developing country Parties in the context of sustainable development, supported and enabled by technology, financing, and capacity-building, in a measurable, reportable and verifiable manner” (UNFCCC, 2007a). NAMAs include any action that is aimed to reduce emissions in developing countries and should be part of a national governmental initiative. They may include policies directed at transformational change within an economic sector or actions across a variety of sectors with a broader national focus. NAMAs are defined at two levels: (a) at the national level, as a formal submission by parties declaring their intent to curb greenhouse gas emissions in accordance with their capacity and in line with their national development goals; and (b) at the individual action level, as actions designed to help Parties meet their national mitigation objectives.26

Nationally appropriate mitigation actions can be a key instrument for implementing low-carbon sustainable development strategies, as well as for specific sectorial policies and strategies, and can help leverage financing, technology and capacity-building. Since 2010, 48 NAMA proposals have been submitted by developing countries for inclusion in appendix II of the Copenhagen Accord,27 many

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23 See also www.iccf.or.id. As of 2012, ICCTF is being funded by: DFID ($9.5 million); AusAID ($1.4); Swedish International Development Cooperation ($332,000) and United Nations Development Programme ($88,000). Exact breakdowns can be found at www.iccf.or.id/finance-and-performance/read/29/funding-status-2012.

24 See also www.bccrf-bd.org.


26 See http://unfccc.int/focus/mitigation/items/7172.php.

of which are indicated as conditional on receiving appropriate support. Of these, 17 were submitted by Asia-Pacific countries.\textsuperscript{28} The content of those NAMAs are diverse, ranging from targets and goals for reducing carbon emissions to specific sector-based actions that lead to carbon reductions, such as in energy, energy efficiency, agriculture, forestry, construction and transport sectors. The ESCAP Low Carbon Green Growth Roadmap for Asia and the Pacific (ESCAP, 2012b) highlights low-carbon development strategies and NAMAs as key tools for green growth and provides practical examples of potential NAMAs. Although each country has different priorities in terms of the sectors and technologies needed to achieve the target, many Asian countries have now set their own target for greenhouse gas emissions or relevant indicators, including emissions intensity or energy efficiency, and are using their developed NAMAs as a first step and a key input into developing Intended Nationally Determined Contributions (INDCs). INDCs not only serve as a demonstration of national and political commitment, but they also offer the opportunity to identify and realize non-climate multiple benefits to climate mitigation and adaptation action. Such strong signals and clear communication of objectives from countries on their intended actions to climate mitigation and adaptation can stimulate climate relevant investments, technological innovation and participation by non-government stakeholders.

Finally, national development banks are considered key players in climate finance, given their capacity to leverage international funding and increase its impact and effectiveness, thanks to their field knowledge, expertise and innovative financing schemes. Furthermore, their capacity to access and coordinate international climate finance represents a key element for enhancing developing countries’ effectiveness in combating climate change. Thus, collaboration with local financial institutions and finance ministries has become an essential precondition to ensure that climate finance is used efficiently to catalyse both public and private climate finance investments and promote low-carbon green economies.\textsuperscript{29} Public financial institutions, such as national development banks and central banks, can serve as effective change agents in advancing environmental sustainability solutions that can help overcome the dilemma of pursuing green policies without sacrificing economic growth in developing

\textsuperscript{28} Afghanistan, Armenia, Bhutan, China, Georgia, India, Indonesia, Kyrgyzstan, Maldives, Mongolia, Papua New Guinea, the Republic of Korea, Singapore, Tajikistan and Thailand are countries that have set NAMAs, according to the UNFCCC web page. While there may be additional NAMAs this report takes the UNFCCC page as the final count. Available from http://unfccc.int/meetings/cop_15/copenhagen_accord/items/5265.php. Viet Nam and Malaysia also made pledges at Copenhagen (2009). Available from www.adbi.org/files/2013.06.28.book.low.carbon.green.growth.asia.pdf.

\textsuperscript{29} See, for example, information pertaining to the meeting entitled “The Role of National Development Banks in Mobilizing International Climate Finance”, which was held in Washington, D.C. on 18 and 19 April 2012. Available from http://events.iadb.org/calendar/eventDetail.aspx?lang=En&id=3472.
countries. Thus, both national development banks and central banks should not miss the opportunity to focus on priority change programmes regarding three pillars, namely monetary policy, which entails encouraging innovation and adoption of green technologies; banking supervision, which concerns the exploration of both costs and opportunities arising from climate change for financial institutions; and payment systems, which point at ensuring eco-friendly products for payment systems (Lim, 2010). Within the Asia-Pacific region, several countries have been active in pursuing policies to promote green banking. Among them are Bangladesh, China, Indonesia and the Republic of Korea (ESCAP, 2014).

IV. THE WAY FORWARD FOR THE ASIA-PACIFIC REGION

The extent of public and private climate finance needed in the Asia-Pacific region is not known because of lack of reliable data, however, it is clear that substantial gaps for financing climate mitigation and adaptation action exist. Given the impact climate change is expected to have on the region, mobilizing adequate financing is a priority for the region. In the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), the need for transformations in economic, social, technological, and political decisions and actions to enable climate-resilient pathways for sustainable development was emphasized (IPCC, 2014, pp. 1-32). The analysis of relevant country-level initiatives suggests that some key strategies can be identified for the Asia-Pacific region with regard to climate finance, are further elaborated below.

Aligning climate finance and financing for sustainable development

While countries in the region urgently need to mobilize the necessary climate finance in order to limit warming to two degrees Celsius and adapt to the impacts of unavoidable climate change, the region also faces a myriad of sustainable development challenges that must be equally prioritized. This includes not only international-level commitments, such as those proposed by the Open Working Group on Sustainable Development, and the outcomes of negotiations for the United Nations 2030 Agenda or Sustainable Development, which was adopted on 25 September 2015, but importantly, national and regional sustainable development priorities.

Aligning climate finance and sustainable development finance is, therefore, key to effectively addressing both concerns, particularly as a number of benefits can be derived in terms of sustainable development from climate mitigation and adaptation actions, and vice-versa. This alignment is considered to have positive effects on the region as “it results in a more efficient use of financial and human resources than if
climate change and development projects are designed and implemented separately” (Haites, 2014, p. 43). Sustainable development projects have the potential of being adapted to climate change, while at the same time mitigation and adaptation measures can be conceived in a way that yields sustainable development benefits. Pursuing a national sustainable development strategy that is focused on low-carbon development is one such way to overcome the perceived trade-offs between investing in climate finance and investments in sustainable development (Haites, 2014). In the Asia-Pacific region, low-carbon green growth has been identified as one such strategy that aligns climate and sustainable development objectives.

Redirecting national public finance towards climate change and sustainable development through low-carbon development strategies

Acknowledgement of the need to align sustainable development and climate finance will prompt the question of how to invest additional resources in order to achieve both ends. Governments are emerging as key players in climate financing — facilitating frameworks for climate action and investment through development of appropriate national policy and institutional frameworks, redirecting investments towards climate mitigation and adaptation, and incentivising low-carbon investments in infrastructure and industry through national development and finance institutions.

In order to cover additional investments, appropriate policies and incentives should be pursued at the national level to leverage the significant financial resources that are available to the region. Public financial institutions should facilitate a transition to low-carbon and greener economies based on national policy frameworks through developing new incentives and reorienting existing public resources to greener activities.

A successful policy framework together with government incentives and shared initiatives could prove fundamental in the region’s transition to a sustainable low-carbon green economy. It is estimated that more than $7 trillion in foreign exchange reserves and more than $2.5 trillion in sovereign wealth funds are available to the Asia-Pacific region. Overall, countries in Asia and the Pacific have among the highest savings in the world. As a result, there is great potential to use the region’s savings, which is currently largely invested outside the region.30 Making only some of those resources available for development in the region would go a long way towards attaining climate and sustainable development objectives: using 5 per cent of the currently available Asia-Pacific regional public savings could generate more than $350

30 Most of the region’s reserves, for instance, are invested in low-yielding securities in advanced economies, particularly in United States dollar treasury securities.
billion of additional resources. National development banks are beginning to establish specialized climate finance facilities to address mitigation and adaptation measures. Particularly, climate bonds are expected to become a growing trend (Buchner and others, 2013; USAID, 2013).

**Mobilizing national private sector and non-government climate finance flows**

Despite the key role of public institutions, it is clear that the public sector alone will not be able to mobilize the financial flows required to achieve mitigation and adaptation objectives. An ADB study in 2009 estimated an investment need of $8 trillion for infrastructure alone (ADB and ADBI, 2009). Other estimates for investments to provide a robust system of social protection range between 5 and 8 per cent of GDP (ESCAP, 2013). Though national development banks are emerging as leaders in climate finance mobilization, equal attention must be directed to facilitating and incentivizing private sector finance flows for mitigation and adaptation efforts. Non-government sources are most likely to contribute an increasing share of both sustainable development and climate finance.

Domestic capital may be mobilized from different sources, such as private investors, commercial banks and public capital markets. The actual capacity of capital markets is to a large extent determined by the level of economic development of a country, and the national institutional and policy incentives that direct investments towards climate change mitigation and adaptation projects. The main challenge to be addressed in this sector is to shift these investments to low-carbon alternatives. There is also a growing need for governments to provide incentives and mitigate risks for private equity funds to invest more robustly in climate friendly low-carbon development initiatives. To this end, policy certainty becomes crucial (UNFCCC, 2007b). Barriers specific to green investments have been identified, and include: market, institutional and policy failures that make green investments unattractive (price-gap); high risks perceptions on green markets that have long payback period, mainly due to uncertainties and lack of information (time-gap); absence of policy and/or regulatory measures to internalize climate change-related externalities (knowledge gap); low access to finance in developing countries and least developed countries in particular; and the instability of the financial systems in those countries (UNEP, 2012). Addressing this “time gap”, “price-gap”, “knowledge gap” and other challenges between short-term costs and long-term benefits of green investments requires collaborative action between governments and the private sector to overcome the present financial barriers and risks that restrict capital flows into green projects for climate change, thereby leading to increased investment.

While there is no one-size-fits-all policy prescription that applies to all parts of the world, common key areas to be addressed include the development of effective
policies to create investment-grade environments or to compensate for market failures, and securing predictability and policy-certainty for investors (Maheshwari, Miller and Patel, 2013).

**Regional and subregional cooperation and support from the international community**

Financing for sustainable development is important in Asia and the Pacific in the light of the region’s vast population, persistent high levels of poverty and the adverse environmental impacts associated with its rapid development. Greater efforts must be made to invest existing resources within the region. However, it will also be critical to raise additional resources, as outlined above. South-South cooperation, triangular cooperation and regional cooperation will form further critical complementary elements of a financial strategy in support of sustainable development in Asia and the Pacific.

The Economic and Social Commission for Asia and the Pacific is leading the way for improved regional integration and cooperation. In that regard, in the Bangkok Declaration on Regional Cooperation and Integration in Asia and the Pacific it was emphasized that “fostering trade, investment, economic and development cooperation among countries in Asia and the Pacific can create opportunities not only for supporting economic growth but also for achieving wider developmental objectives.” The Commission, in the resolution, resolved to work together to pursue enhanced regional economic cooperation and integration in the following four areas: (a) moving towards the formation of an integrated market; (b) the development of seamless connectivity across the region; (c) enhancing financial cooperation for, among other things, closing infrastructure gaps across countries in the region and exploring the possibility of providing liquidity support; and (d) increasing economic and technical cooperation to address shared vulnerabilities and risks. The Working Group on Shared Vulnerabilities and Risks subsequently launched proposed key streams of action, which included, among them, the strengthening science-policy-practice interface and the leveraging of economic opportunities that could arise from addressing sources of risk and vulnerabilities for including climate change adaptation efforts.

In addition, ESCAP has been working with countries in the region to develop and integrate low-carbon and sustainable development strategies into national frameworks and to enhance regional cooperation to deliver on sustainability

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31 E/ESCAP/RES/70/1.
32 Ibid.
objectives. Low Carbon Green Growth approaches to policy development can help countries to strategize appropriate development pathways across key sectors, such as urban development, transportation, water and energy. Low Carbon Green Growth entails instituting key budget and system reforms that, despite minimal technology and financial support, can help place developing countries on a leapfrogging path towards achieving sustainable development and reaching their climate targets.

Subregional organizations are increasingly leveraging the benefits of cooperation to address the large gaps in finance and action in the region on mitigation and adaptation. Subregional frameworks for action on climate change can provide a unified vision for countries of similar circumstance and geographic proximity to identify key priorities in line with national development strategies, develop win-win partnerships, and take action collectively to maximize impact and learning. By articulating a unified policy vision on climate change for the subregion, international and other climate finance actors can strategically channel resources to tackle priority issues. This includes financing from national public, private and other non-government actors. A subregional strategic vision can support improved trade and knowledge exchange, help to open up sustainable and climate investment opportunities across markets, and minimize “first-mover” risk. Also, importantly, subregional consensus can ensure that important issues of concern are raised effectively at the global negotiations.

V. CONCLUSIONS

There is a widening gap in the Asia-Pacific region between the amount of climate finance directed towards adaptation and mitigation of climate change and the amount of finance necessary to address these and sustainable development issues. Despite concerted efforts at the international level, climate finance mobilized by international public sources will never reach the levels required to meet investment costs to transform economies in the region to resource-efficient, low-carbon models. However, countries in the Asia-Pacific region have at their disposal a number of tools that can be utilized in addition to international finance and capacity support delivered by the international community and United Nations organizations to meet this growing demand for climate finance. The present paper has offered an overview of both the global and the Asia-Pacific climate finance landscape, thus highlighting how countries in the region are already leveraging the force of national low-carbon and climate resilient development policies to mobilize and redirect national public climate finance, as well as to incentivize private and other non-government financial flows towards low-carbon development.
Aligning climate and sustainable development national strategies, including through national low-carbon green growth sustainable development strategies, can transform the deficit of climate finance from a burden to a potential opportunity to facilitate a transformation in the region to ensure poverty reduction and economic growth. Aligned national strategies and supporting policy frameworks and interventions can help to incentivize action from a wide range of public and private stakeholders and mobilize adequate investments in climate and sustainable development in the region.

As the world began moving towards a binding global agreement on climate change at the UNFCCC COP 21 in Paris in December 2015, the Asia-Pacific region has emerged as a key driver for mitigation and innovator for adaptation. Subregional and regional frameworks can help to coordinate national actions, facilitate information and capacity exchanges, and strategically orient climate finance towards priority areas for mitigation and adaptation. In addition, regional cooperation can provide the common frameworks to facilitate information, low-carbon market and trade network development, and technology exchanges among countries in the Asia-Pacific region as they work towards the common goal of limiting global warming.
REFERENCES


TRADE FINANCE FOR SUSTAINABLE DEVELOPMENT IN ASIA AND THE PACIFIC

Sailendra Narain*

Over the years, the Asia-Pacific region has maintained its global lead position as the largest user of trade finance. Actively involved in international trade, Asian and Pacific small and medium-sized enterprises have been important contributors for sustaining the region’s lead position. Juxtaposed to the interregional high position enjoyed by the Asia-Pacific region as the largest user of trade finance in the world market, trade within the region is facing a persistent demand-supply mismatch and widening of trade finance gaps. Small and medium-sized enterprises, despite being the largest contributors to Asian international trade, are more adversely affected than large companies, giving rise to operational constraints and challenges. This has prompted some policymakers, national governments and international organizations to address the issues, invite suggestions to halt the persistent trend of the widening of trade finance gaps and take suitable measures to ease the flow of trade finance.

Recognizing the importance and significant role of trade finance as an engine of growth, this paper reviews the status of and constraints to easy access to trade finance in Asia and the Pacific; assesses trade finance gaps estimated by institutional surveys; and identifies emerging issues and challenges, especially those faced by the small and medium-sized enterprise sector. Analysing the resultant policy implications, the paper finally brings to the forefront a set of remedial measures, presents recommendations together with a road map for policymakers to consider for implementation. The recommendations are innovative and suggestive of national action and regional cooperation.

JEL classification: L53, G01, G28.

Keywords: SME trade finance, SME financing, SME sustainable development.

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I. INTRODUCTION

The flow of bank-intermediated trade finance is falling short of meeting the growing demands in the Asia-Pacific region. While the Asia-Pacific region has been the largest user of trade finance globally, the persistent trade finance gaps in the recent past have been inhibiting business development, job creation and growth, especially for small and medium-sized enterprises (SMEs). Even with its large presence and sizable contribution to the Asia-Pacific economy, the SME sector has been more adversely affected than the large companies by the gap in bank-intermediated finance (ADB, 2014). The problems are continuing and the gap is widening. This has prompted some policymakers to identify the roadblocks and find ways and means to meet the challenges. The present paper reviews the status of trade finance in the Asia-Pacific region, highlights the specific issues (obstacles and the needs) faced by SMEs with regard to accessing trade finance and presents a set of recommendations for national action and regional cooperation.

Recognizing the importance and significant role of trade finance as an engine of growth, this paper proceeds with a review of trade finance in the Asia-Pacific region — its status and constrains, followed by an assessment of trade finance gaps identified by institutional surveys, the resultant policy implications, emerging issues and the challenges, especially those faced by the SME sector, and finally, brings to the forefront a set of recommendations along with a road map for policymakers to consider. In addition, a few major issues are presented for thinking ahead. The recommendations are innovative, calling for much-needed conceptual, systemic and operational changes to be implemented comprehensively at the national level with a built-in regional cooperation mechanism.

II. TRADE FINANCE IN ASIA AND THE PACIFIC: MODALITIES, STATUS AND CONSTRAINTS

Asia-Pacific international trade

Before an analysis is made of the trade finance situation in the Asia-Pacific region, it is perhaps useful to review the current trade situation in the region.

Contrary to the global lead position retained by the Asia-Pacific region in terms of using trade finance, growth in merchandise goods exports in the region slowed gradually from 29.9 per cent in 2010 to 19.5 per cent in 2011 and then to 2.2 per cent in 2012 before reaching a new low of 2.1 per cent in 2013. A similar slowdown from 4.3 per cent in 2012 to 2.3 per cent in 2013 was recorded in the imports of merchandise goods. Despite the gradual slowdown, the region accounted for 36 per
cent of global merchandise exports and 36.1 per cent of global merchandise imports, “making it the biggest trading region in the world, in terms of both imports and exports, overtaking Europe in 2012” (ESCAP, 2014, p. 28). However, the current slowdown of economic growth and trade in China is likely to put a damper on an increase in the intraregional trade volume.

The ESCAP Statistical Yearbook 2014 observes that “in order to enhance the competitiveness of a country in the world of globalized production, focus needs to be placed on raising domestic value-added rather than just increasing gross exports”.

**Overview of trade finance**

During the period 2013-2014, despite witnessing phases of both “ups and downs”, the Asia-Pacific region remained the largest user of trade finance and trade credit insurance globally (CGFS, 2014, p. 9 and graph 2, p.11).

Over the years, the Asia-Pacific region has been able to enhance and widen the use of trade finance for business. The progressive increase in trade finance by volume and demand is indicative of the importance the region attaches to trade finance as one of the contributory factors and prime movers to growth.

Trade finance mechanisms provide a combination and degree of support in the following four areas (ITC, 2009):

1. Payment facilitation, enabling secure and timely payment across borders, for example, through proven communication methods, such as SWIFT\(^1\) (a secure bank-to-bank messaging system used to transmit bank instruments, such as letters of credit, as well as payments between financial institutions).

2. Financing to one or more parties in a trade transaction, whether it is the importer, exporter, or one of the banks.

3. Risk mitigation, either directly through the features available in a trade financing mechanism or indirectly through insurance or guarantee products designed to meet the needs of importers and exporters.

4. Providing information on the movement of goods and/or the status of the related financial flow.

The matrix of trade finance instruments commonly used is given below (table 1).

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\(^1\) Society for Worldwide Interbank Financial Telecommunication.
The role of the banking sector and other actors in trade finance

Trade finance assistance is mainly provided by the commercial banks and development financial institutions (DFIs). Bank-intermediated trade finance acts as the lifeline for trade and commerce, especially in the field of international trade. Banks are the main providers of trade finance in various forms of working capital at a much reduced payment risk as compared to the finance from non-institutional sources. Inter-firm trade credit is slowly emerging as a non-banking channel of trade finance. A firm's ability to directly extend credit, however, primarily depends on interfirm business relationships with trust and is generally backed by purchasing trade credit insurance to mitigate payment risks.

A commercial bank acts as a trusted third party to guarantee delivery of goods and services from the exporter and payment by the importer. Many Asia-Pacific countries have set up national SME Banks, such as BRAC Bank—Bangladesh, Small Industries Development Bank of India (SIDBI), Philippines SME Bank Inc., SME Bank of Thailand, which, among other things, extend trade finance and offer risk mitigating products (see Abe and others, 2012).

An overview of the schemes and services offered by SIDBI provides examples of best practices in SME trade financing. SIDBI, in addition to providing financing in general and resource support to the banking sector and financial institutions, offers a full range of traditional and innovative trade finance products/services, including business development services to the SME sector at large. It has successfully implemented an innovative collateral-free and third party guarantee-free credit guarantee scheme for the micro, small and medium-sized enterprises in collaboration with the Government of India, which had been in operation for about 15 years (box 1).

### Table 1. Matrix of trade finance instruments commonly used for raising capital, facilitating payments and mitigating risks

| Raising working capital for exports: debt financing; asset-based financing; export factoring; and leasing |
| Facilitating payments: cash-in-advance; letter of credit (L/C); documentary collection; and open accounts |
| Mitigating risks: export credit guarantee; export credit insurance; forfeiting; and hedging. |

*Source:* Compiled by the author.

*Note:* Warehouse receipts are also in use as specialized financial instrument for commodity trade.
Box 1. Trade finance schemes, products and services of the Small Industries Development Bank of India for small and medium-sized enterprises

The Small Industries Development Bank of India, established in April 1990 under an act of the Indian Parliament, is the “principal financial institution for the promotion, financing and development of the micro, small and medium enterprise sector and for coordination of the functions of the institutions engaged in similar activities”. Facilitating access to finance by SMEs has been one of the prime areas of concern for SIDBI. The bank has therefore designed a number of relevant financial products and services to meet the demand for finance.

The Small Industries Development Bank of India, in addition to various financial schemes and business development services (BDS), has effectively implemented trade finance schemes for SMEs. Some of the widely used trade finance schemes operated by SIDBI for SMEs are trade financing and factoring services, lines of credit in foreign currency to commercial banks (LOCFC) for on-lending to exporting SMEs, export houses/trading houses sourcing their export requirements from micro, small and medium-sized enterprise receivable finance scheme and discounting scheme.

The collateral-free and third party guarantee-free Credit Guarantee Fund Scheme for Micro and Small Enterprises is an innovative and successful credit risk mitigation initiative of SIDBI. This solves the problem of the inability of SMEs to meet the most vexing demand for collateral and guarantees to access bank finance. The scheme helps small entrepreneurs to obtain collateral free loans (including trade finance) of up to 10 million Indian rupee (Rs) ($147,000). As of the end of January 2013, more than one million guarantees (by number of entrepreneurs) for an aggregate loan amount that exceeded Rs480 billion had been provided under the Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE).

Under the Union Budget 2013/14, the establishment of the Credit Guarantee Fund for Factoring was announced with a fund of Rs5 billion. This fund will further pave the way for orderly growth of factoring services and provide an alternative to bank-intermediated trade credit.

The main channel for institutional trade finance to micro, small and medium enterprises is the commercial banking sector. SIDBI serves the sector by providing resource support to a country-wide banking sector network of more than 80,000 branches. It is ranked among the top 30 development banks of the world as rated by The Banker, London.

Source: www.sidbi.in.
In the Asia-Pacific region, there are four common methods of payments available to firms engaged in international trade: (a) cash-in-advance, (b) letters of credit (L/Cs), (c) documentary collection, and (d) open account (table 2).

Table 2. Methods of payment in international transactions

<table>
<thead>
<tr>
<th>Method of payment</th>
<th>Definition</th>
<th>Applicability</th>
<th>Risk distribution</th>
<th>Pros/cons for exporter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash in advance</td>
<td>Full payment prior to shipment</td>
<td>Recommended for high risk export markets</td>
<td>Exporter is exposed to virtually no risk; burden is greatest on the importer</td>
<td>Pros: Payment before shipment, eliminates risks of non-payment Cons: May lose customers to competition over payment terms</td>
</tr>
<tr>
<td>Letter of credit (L/C)</td>
<td>A commitment by a bank on behalf of the buyer that payment will be made to the exporter when the terms and conditions of the L/C are met</td>
<td>Recommended in new and established trade relationships; exporter should be confident of the credit worthiness of buyer's bank</td>
<td>Evenly spread between seller and buyer if conditions are adhered to</td>
<td>Pros: Transaction is secured by a third party. Goods against payment. Cons: Complex and labour-intensive process. Relatively expensive.</td>
</tr>
<tr>
<td>Documentary collection</td>
<td>Exporter entrusts the collection of payment to a bank with payment instructions</td>
<td>Recommended in established trade relationships and in stable markets</td>
<td>Riskier for the exporter but cheaper than L/Cs</td>
<td>Pros: Payment is made with the assistance of a bank. The process is simple, fast and less costly than L/Cs Cons: Bank role is limited, payment is not guaranteed</td>
</tr>
<tr>
<td>Open account</td>
<td>Payment by importer after receiving the goods, usually within a timeframe of 30 to 90 days</td>
<td>Recommended in low-risk trading relationships or in a competitive market to win new customers (should be combined with one or more trade finance techniques)</td>
<td>Significant risk to exporter because buyer could default on payment after goods are shipped</td>
<td>Pros: Boosts competitiveness in the global market; helps establish and maintain a successful trade relationship Cons: Significant risk of non-payment; additional costs associated with risk mitigation measures</td>
</tr>
</tbody>
</table>

Firms in the Asia-Pacific region have been relying mainly on banks’ short term maturity products, namely L/Cs and documentary collection for their export transactions. This mode of international payment obligations has so far been considered as a liquid, low-cost payment risk, time-tested and well-functioning mode for overseas business transactions. However, in the changing global market and with growing demand, heavy reliance only on these traditional modes of payment is no longer sufficient to meet market requirements and unmet credit needs of SMEs. Therefore, the wider use of interfirm transactions, such as an “open account system” backed by suitable risk mitigation mechanism and other support mechanisms, is necessary.

**Market size of trade finance: global and regional**

There is no comprehensive single source to determine and measure the global and regional size of trade finance and the composition of the trade finance market. Different sources use their own modalities and conduct surveys to measure the bank-intermediated trade finance size, structure and developments, including:

- The Society for Worldwide Interbank Financial Telecommunication (SWIFT) provides a window to trends related to documentary credits, such as L/Cs. It helps to track high frequency global and regional transactions.

- The International Chamber of Commerce (ICC) collects data from a number of banks considered to be the global leaders in providing trade finance. Currently, the *ICC Annual Global Trade Finance Survey* is the main broad industry document for exploring drivers and trends (ICC, 2014a).

- The International Monetary Fund (IMF), in conjunction with the Bankers’ Association for Finance and Trade (BAFT) and the International Financial Services Association (IFSA), undertook a series of surveys (2009, 2010, and 2011) on volumes, pricing and drivers in the trade finance market. Another survey was undertaken by ICC in 2011 in collaboration with IMF.

- The Institute of International Finance (IIF) undertakes the quarterly Emerging Markets Bank Lending Conditions Survey and currently collects responses on trade finance markets from 130 banks. IIF conducts a quarterly survey among banks based in five emerging markets regions: Emerging Asia, Latin America, Emerging Europe, Middle East and North Africa and Sub-Saharan Africa. The available statistics, however, show significant variation across countries and regions (see www.iif.com).
Global market

The Committee on the Global Finance System (CGFS) (CGFS, 2014, table 2, p. 10), based on national statistics, SWIFT and the ICC Trade Register Survey, estimated that trade finance directly supported about one third of global trade, with L/Cs covering about one sixth of total trade. The Survey mentions that the bank-intermediated products are primarily used to finance trade involving emerging markets economies, particularly in Asia. Global banks appear to provide about one quarter to a third of the global trade finance, and almost half of their exposure is to firms in emerging Asia. The global market size of bank-intermediated trade finance was estimated by CGFS to amount to $6.5 trillion-8 trillion in 2011, of which around $2.8 trillion was provided through L/Cs. IMF, jointly with BAFT and IFSA (2009; 2010; 2011), estimated that about 40 per cent of global trade was supported by bank-intermediated trade finance, while industry studies (ICC, 2009) estimated it to be about 20 per cent.

Regional: Asia-Pacific market

Data of individual economies show a wide variation in the measurements of trade finance stocks and annual flows, and the percentage of merchandise trade covered by trade finance, which ranges from 2 per cent for Mexico to more than 40 per cent for China (47 per cent), India (41 per cent), Hong Kong, China (29-38 per cent), and the Republic of Korea (56 per cent) as compared to global estimates at 36-40 per cent. The percentages of measured intensity of trade finance over trade ranged from 29-38 per cent to 56 per cent relating to major Asia-Pacific economies (table 3).

Table 3. Bank-intermediated trade finance markets in 2011

<table>
<thead>
<tr>
<th>Country/territory</th>
<th>Trade finance $ billion: stocks&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Trade finance $ billion: annual flows&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Percentage of merchandise trade&lt;sup&gt;c&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>218</td>
<td>871</td>
<td>47</td>
</tr>
<tr>
<td>Hong Kong, China</td>
<td>44</td>
<td>131-175</td>
<td>29-38</td>
</tr>
<tr>
<td>India</td>
<td>82</td>
<td>164</td>
<td>41</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>76</td>
<td>304</td>
<td>56</td>
</tr>
<tr>
<td>Global estimates</td>
<td>1 625-2 100</td>
<td>6 500-8 000</td>
<td>36-40</td>
</tr>
</tbody>
</table>

Source: ICC; IMF, national data; and CGFS (2014, table 2, p. 10).
Notes:  
<sup>a</sup> Average quarterly stock for 2011.  
<sup>b</sup> Annual flows for national data are derived by assuming a 90-day maturity of stocks, except in India (and Mexico) where maturities are known to be six months for India (and 12 months for Mexico).  
<sup>c</sup> Trade is measured as the average of exports and imports of goods.
Figure 1 shows that the Asia-Pacific region relied most heavily on trade finance among the regions in the world.

**Figure 1. Geographical distribution of trade finance**

(as a share of total, in per cent)

There are various logistic and economic factors contributing to the higher use of trade finance in the Asia-Pacific region. Among them are long distance trade transactions between partners, level of local market efficiency, new trade relationships, expanded trade with countries with weaker legal and contractual systems, political risks, historical preferences and costs of operating through L/Cs. The above-mentioned factors may be more pronounced in countries with foreign exchange regulations or strict banking regulations.

**Users of letters of credit**

The ICC Trade Register estimates that about 90 per cent of the L/C transactions go through SWIFT. As noted before, of the total flow of bank-intermediated global trade finance, which was estimated at $6.5 trillion–8 trillion, about $2.8 trillion was through L/Cs in 2011. The Asia-Pacific region accounted for more than half of all L/C-related transactions, while Europe accounted for one quarter.
and North America, Latin America, Africa, and the Middle East each around 5-10 per cent. The Asia-Pacific region registered the highest volume of L/Cs used, covering 75 per cent of exports and 68 per cent of imports.

**Factoring in the Asia-Pacific region**

The overall global factoring volume in 2013 was $3.1 trillion, recording nearly 10 per cent growth. Europe followed by Asia and the Pacific jointly accounting for about 87 per cent of the global factoring volumes (figure 2). Over the past five years, the factoring industry has grown annually at a rate of 15 per cent, nearly doubling in size globally.

Factoring in the Asia-Pacific region is gradually gaining popularity as a product designed to provide finance to SMEs. Funding is offered by the factoring companies based upon the accounts receivables created by the client. China and Hong Kong, China are the Asia-Pacific economies with most factoring facilities.

**Figure 2. Global factoring by region**

<table>
<thead>
<tr>
<th>Region</th>
<th>2012</th>
<th>2013</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>1,298</td>
<td>1,354</td>
<td>4.3</td>
</tr>
<tr>
<td>Asia</td>
<td>572</td>
<td>599</td>
<td>4.7</td>
</tr>
<tr>
<td>Americas</td>
<td>188</td>
<td>192</td>
<td>2.1</td>
</tr>
<tr>
<td>Africa</td>
<td>23</td>
<td>23</td>
<td>0.0</td>
</tr>
<tr>
<td>Others</td>
<td>50</td>
<td>62</td>
<td>24.0</td>
</tr>
<tr>
<td>Total</td>
<td>2,132</td>
<td>2,230</td>
<td>4.6</td>
</tr>
</tbody>
</table>


*Note:* 1 euro = $1.12.

**Forfaiting in the Asia-Pacific region**

Comparative and comprehensive data are not readily available on the volume of trade finance transactions through forfaiting in the Asia-Pacific region.
Under the forfaiting system of trade finance, international trade receivables, such as promissory notes, bills of exchange, receivables and deferred payment under letters of credit guaranteed or issued by banks, with credit periods ranging from 90 days up to 5 years, are discounted without recourse to the exporter. Over the years, this facility has emerged as an effective sales tool in the Asia-Pacific region. It improves cash flows and eliminates risks. A number of major companies have started to offer forfaiting services in the region. This trend is gaining ground.

Global value chains and Asia-Pacific small and medium-sized enterprises

Most Asia-Pacific economies are well integrated into the global trading system. The Asia-Pacific region is witnessing a gradual emergence and expansion of global and regional supply or value chains systems benefitting SMEs. However, the process in the region is slow.

The term “global value chains” (GVCs) refers to the full range of cross-border, value-added business activities that are required to bring a product or service from the conception, design, sourcing raw material, and intermediate inputs stages, to production, marketing, distribution and supplying the final consumer (ESCAP, 2007).

Small and medium-sized enterprises participate as suppliers, distributors and business service providers by entering into GVCs. In Asia and the Pacific, both producer-driven chains and networks, such as Tata Motors and Toyota sourcing automotive components from a large number of small suppliers, and buyer-driven chains or networks, such as Levi's in the apparel market, systems are prevalent.

In the supply chains system, the lead firm decides some of the key details, including, among them, information pertaining to outsourcing, capacity-building of the suppliers for quality control and product standardization. SMEs as global suppliers offer the products and services to the lead firm. The GVC framework offers room for multiple SMEs to provide services based on their experience and expertise as suppliers, distributors and business service providers (Abe and others, 2012).

The development of GVCs in Asia and the Pacific provides business opportunities for export-oriented and supporting industry SMEs (ESCAP, 2009b). GVCs are expected to provide an efficient network by establishing links with large enterprises or even with other efficient SMEs. They help to boost the value-added activities of affiliated SMEs in international trade by providing an established market. However, Asia-Pacific SMEs currently play a limited role due to low value-addition and lack of proper networking. SMEs are generally at a disadvantage because of their limited operational capacity and lack of knowledge necessary to penetrate regional and global markets (ESCAP, 2007). SMEs in the Asia-Pacific developing countries typically lack the environment to improve their capacity, including a proper policy and
regulatory framework, supporting infrastructure, access to finance, a strong entrepreneurship culture, technology incubation and business development services (ESCAP, 2009a).

Global value chains are an effective way to expose SMEs to foreign markets. There are a number of benefits for SMEs to join these chains, but the main advantage is that GVCs increase SMEs competitiveness and widen the scope of international trade. Some of the initiatives taken to promote supply chains system-related trade finance are given below:

For instance, the Global Trade Supplier Finance (GTSF), a $500 million multicurrency investment and advisory programme, was established by the International Finance Corporation (IFC) in 2010 (box 2). It has started to show positive

<table>
<thead>
<tr>
<th>Box 2. The Global Trade Supplier Finance programme</th>
</tr>
</thead>
</table>

The following paragraphs have been extracted from the IFC-GTSF website.

“GTSF extends and complements the capacity of banks to deliver trade financing by providing risk mitigation in new or challenging markets where trade lines may be constrained. IFC issues credit guarantees where others won’t and supports trade that would not be possible without an IFC guarantee. Through the Global Trade Finance Program (GTFP) bank network, local financial institutions (“issuing banks”) can establish working partnerships with a vast number of major international and regional banks (“confirming banks”) in the programme, thus broadening access to finance and reducing cash collateral requirements. GTFP offers confirming banks partial or full guarantees covering payment risk on banks in the emerging markets for individual trade-related transactions evidenced by a variety of underlying instruments, such as L/Cs, trade-related promissory notes, accepted drafts, bills of exchange, guarantees, bid and performance bonds and advance payment guarantees. Guarantees are available for all private sector trade transactions that meet eligibility criteria of IFC. Trade Advisory Services extended by IFC include more than a dozen technical assistance modules to provide basic and intermediate trade finance skills for issuing banks.

“The GTSF programme aims to: increase access to finance for suppliers in emerging markets; maximize inclusion of SMEs and their ability to access finance at competitive terms; support reduction in financing costs; and develop market appetite for supplier finance.”

Source: www.ifc.org.
results in benefitting SME suppliers from emerging economies. SMEs are increasingly, though slowly, joining the IFC Global Supply Chain support programme for making cross-border transactions.

Developing more programmes similar to GTSF seems a workable solution and an alternate source to ease the pressure on banks' intermediation. Figure 3 shows the two GVC-related trade finance programmes of IFC, GTSF discussed above and the Global Warehouse Finance Program.

**Figure 3. The global value chain-related trade finance programmes of the International Finance Corporation**

![Diagram of global value chain-related trade finance programmes](image)


Gartner, Inc., a leading information technology research and advisory global company, in its 2014 annual list of the leading supply chains in the Asia-Pacific region, ranked “ten of the best supply chains in Asia and the Pacific” key strategies, initiatives and best practices. Samsung, Lenovo and Toyota ranked as the top three of the list. These multinational companies are benefitting a large number of SMEs through their supply chains system.

The above scenario of supply chain position in Asia and the Pacific seems to offer enough potential and scope to enhance SMEs integration into GVCs. The Asia-Pacific Economic Cooperation (APEC), in its survey *Integrating SMEs into Global Value Chains: Policy Principles and Best Practices*, which was published in May 2014 (see Zhang, 2014), observed that SMEs in developed and newly industrialized economies, particularly in the agriculture and electronics sectors, offer higher potential to participate in GVCs.
Access to trade finance, both globally as well as in the Asia-Pacific region, has been the key obstacle for exporting SMEs. More than 60 per cent of the exporting SMEs in the Asia-Pacific region rely on internal financing. Sources other than bank-intermediated finance, particularly supply chain financing, is perceived as advantageous to facilitate the direct export participation of SMEs (see Duval and Utoktham, 2014).

Inter-firm trade credit

The system of inter-firm trade credit between importers (not necessarily manufacturers) and exporters is an alternative to trade finance extended by the banking sector; it is different from credit afforded under supply chains system, which are operated by large manufacturing companies. The system of inter-firm trade credit is based on business relationships and trusts. It includes open account transactions in which goods are shipped in advance of payment, or through cash-in-advance transactions in which payment is made before shipment. This type of transaction involves lower fees and has greater flexibility, but higher payment risks. Hence, reliance on this form of transaction is mostly confined to firms with well-established commercial relationships. In Viet Nam, the system of inter-firm credit has been in existence for a long time. A firm trusts its customers enough to offer credit when the customer finds it hard to locate an alternative supplier. A longer duration trade relationship is associated with large credit. Customers identified through the business network receive more credit (see MacMillan and Woodruff, 1999).

Other new non-banking products

Global banks see supply chains finance as an important new area of activity, and a focal point of current competition. Citing new regulatory demands and high marginal costs of equity capital, the trade finance industry is experimenting, though on a limited scale, with new structures and products to distribute trade finance to non-bank companies.

For instance, the Royal Bank of Scotland introduced a suite of non-traditional global trade finance products, which provide visibility in supply chains events, such as the purchase-to-payment and order-to-cash cycles. These products enable access to liquidity by allowing suppliers to sell credit term invoices, unlocking working capital while mitigating risks and leveraging the lower cost of capital of a well-rated purchaser to reduce risk and costs throughout the supply chains. Asset-heavy companies may have to change their mindset to explore alternative forms of financing also to supplement their financial requirements to conclude the transactions efficiently. Those that fail to could be forced to sell assets or face a shut market in the long run (Narain, 2014).
III. AN ASSESSMENT OF TRADE FINANCE GAPS

Trade finance gaps, particularly during and after the 2008-2009 global financial crisis, have become a persistent feature of the global trade regime. The Asia-Pacific region is also witnessing the same trend of a widening gap: “supply falling short of demand”. Market gaps for trade finance in the Asia-Pacific region have persisted even as the global economy has recovered. Anti-money laundering regulations and companies lacking awareness of trade finance options were significant contributors to trade finance gaps, as observed by ADB (2014). However, measuring the trade finance gaps has proved to be a challenge.

The lack of comprehensive data on Asia-Pacific trade finance from a single source makes it difficult to realistically assess the demand-supply constraints and gaps. For the purpose of making an Asia-Pacific trade finance gap assessment, this paper, heavily relies on two important sources: (1) 2014 Rethinking Trade & Finance (prepared by ICC and released in June 2014) and (2) ADB-Trade Finance Gap, Growth, and Jobs Survey 2013, released in December 2014 (the first series relates to the year 2012).

ICC-Rethinking Trade & Finance 2014

The ICC-Rethinking Trade & Finance 2014 report brought out three major findings from its survey participation of 298 banks in 127 countries:

(a) In comparison to the previous survey of 2012, there was a more positive global outlook regarding the availability of trade finance in 2013. However, 55 per cent of the surveyed banks believed that there was a shortfall of trade finance globally (ICC, 2014b, pp. 94-96).

(b) A gap between supply and demand persisted, even though more than 80 per cent of the respondents reported an increase in the number of credit lines offered in 2013. Trade finance constraints became more pronounced and concentrated in emerging markets for want of necessary skills to propose bankable propositions by entrepreneurs, which ultimately led to a high rate of rejections.

(c) Financial crimes triggering anti-money laundering/know your client (AML/KYC) requirements proved to be impediments to trade finance. Among firm types, SMEs were the most negatively affected.

The key findings of the ICC Global Trade & Finance Survey 2014 are summarized below (box 3).
Box 3. Key findings of the ICC Global Trade & Finance Survey 2014

- While there are signs that trade finance is more available, the reported increase is marginal.

- The shortage of trade finance for international trade remains a major challenge for economic recovery and development.

- To finance exports and imports traders, SMEs in emerging markets, in particular, continue to rely on loans/overdrafts in local currency (rather than in foreign currency), restricting their ability to trade at optimum levels during challenging times caused by volatile exchange fluctuations.

- Encouragingly, 68 per cent of respondents reported that trade finance increased by value, but the rate was lower that for the previous year.

- The alarming rise in fees for trade risk after the 2009 trade collapse has abated.

- An enigma surfaced: a large gap remains in the market for trade finance and risk coverage even while 80 per cent reported trade finance pricing is lower or unchanged.

- A total of 69 per cent of the respondents noted a decline in reported court injunctions barring payment under trade finance instruments, indicating a return to normal trading conditions.

- Banks remain cautious in examining documents. Worryingly, only 7 per cent reported a decrease in spurious discrepancies when documents are presented under a letter of credit.

- Know your customer principles are seen as hampering the smooth flow of trade finance.

- Some 65 per cent said implementation of Basel III regulations is to some extent or a large extent affecting the cost of funds and liquidity for trade finance.

- Documented losses are low on trade finance products.

Source: ICC (2014b, p. 31).
Results from the above surveys on trade finance gaps bring to focus a number of common factors responsible for narrowing the supply line across the board. SMEs, as a sector, were the worst hit subsegment of the Asia-Pacific economy. Despite the increase in bank credit (by volume), the overall trade finance gaps persisted.

**The Asian Development Bank – Trade Finance Gap, Growth, and Jobs Survey**

According to ADB, in 2013, the global trade finance gap was estimated at $1.9 trillion. Of that amount, $1.1 trillion was in developing Asia, and $699 billion was attributed to India and China. Geographically, Asia recorded the highest share of proposed transactions at 57 per cent of the global trade and had the highest percentage (79 per cent) of global rejections, with India and China jointly recording 35 per cent of the rejected transactions (table 4).

<table>
<thead>
<tr>
<th>Region</th>
<th>Proposed transactions (per cent)</th>
<th>Rejected transactions (per cent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia</td>
<td>57</td>
<td>79</td>
</tr>
<tr>
<td>Europe</td>
<td>22</td>
<td>13</td>
</tr>
<tr>
<td>Commonwealth of Independent States</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Americas</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Africa</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>

*Source: Compiled by the author using data from ADB Trade Finance Gaps 2013.*

About 75 per cent of the banks reported that they had increased the level of credit lines in 2013 — firms and financial institutions reported a more positive situation about the availability of finance. As opposed to SMEs, large corporate companies tended to report sufficient availability of trade finance.

Some of the major findings of the ADB Survey are:

(a) **Small and medium-sized enterprise constraints were more pronounced:**

- The trade finance gaps affected SMEs more negatively than other company respondents.
- Rejection rates of trade finance applications were the highest for SMEs. 50 per cent of SME proposals were rejected in 2013 as compared to only 7 per cent for multinational corporations.
(b) Commercial risk averse bank transactions had a negative impact:

- The risk factor in banking transactions acted as a systemic credit constraint.
- Sixty-one per cent of responding banks reported that AML/KYC due diligence requirements were significant impediments to the provision of credit.

(c) Costs constrained access to finance:

- More than 74 per cent of the respondent banks cited factors related to the price of trade finance as a key bottleneck to access.
- The high borrowing costs worked out mainly due to high interest rates/premiums, insufficient collaterals offered by SMEs and hence stringent credit terms imposed by financial institutions.

Impediments to the provision of trade finance identified by the ADB Survey are presented in table 5.

Table 5. Impediments to the provision of trade finance

<table>
<thead>
<tr>
<th>Impediments</th>
<th>Very significant (per cent)</th>
<th>Significant (per cent)</th>
<th>Total (per cent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Issuing bank’s low credit ratings</td>
<td>30</td>
<td>33</td>
<td>63</td>
</tr>
<tr>
<td>2. Low country credit ratings</td>
<td>33</td>
<td>29</td>
<td>62</td>
</tr>
<tr>
<td>3. AML/KYC requirements</td>
<td>43</td>
<td>18</td>
<td>61</td>
</tr>
<tr>
<td>4. Low company/obligator credit ratings</td>
<td>18</td>
<td>40</td>
<td>58</td>
</tr>
<tr>
<td>5. Previous dispute or unsatisfactory performance of issuing banks</td>
<td>31</td>
<td>21</td>
<td>52</td>
</tr>
<tr>
<td>6. Insufficient collateral from company</td>
<td>23</td>
<td>28</td>
<td>51</td>
</tr>
<tr>
<td>7. Constraints on your bank’s capital</td>
<td>11</td>
<td>32</td>
<td>43</td>
</tr>
<tr>
<td>8. Basel regulatory requirements</td>
<td>17</td>
<td>24</td>
<td>41</td>
</tr>
<tr>
<td>9. High transaction costs or low fee income</td>
<td>18</td>
<td>21</td>
<td>39</td>
</tr>
<tr>
<td>10. Lack of dollar liquidity</td>
<td>7</td>
<td>28</td>
<td>35</td>
</tr>
</tbody>
</table>

Source: Compiled by the author using data from ADB (2014, figure 3).
According to the Survey, high interest rates/premiums followed by insufficient collateral or guarantee, were identified by the respondents as a very significant factor limiting companies’ ability to obtain trade finance (table 6).

Table 6. Factors limiting companies’ ability to obtain trade finance

<table>
<thead>
<tr>
<th>Impediments</th>
<th>Very significant (per cent)</th>
<th>Significant (per cent)</th>
<th>Total (per cent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Interest rates/premiums too high</td>
<td>38</td>
<td>20</td>
<td>58</td>
</tr>
<tr>
<td>2. Insufficient collateral or guarantee</td>
<td>34</td>
<td>16</td>
<td>50</td>
</tr>
<tr>
<td>3. Long processing time</td>
<td>25</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>4. Financial institution’s requirements unacceptable</td>
<td>21</td>
<td>23</td>
<td>44</td>
</tr>
<tr>
<td>5. Documentation requirements are too burdensome</td>
<td>17</td>
<td>20</td>
<td>37</td>
</tr>
<tr>
<td>6. No previous transaction/lack of business relationship</td>
<td>19</td>
<td>16</td>
<td>35</td>
</tr>
<tr>
<td>7. My country has “high risk” ratings</td>
<td>19</td>
<td>13</td>
<td>32</td>
</tr>
<tr>
<td>8. No law on receivables or invoice financing</td>
<td>18</td>
<td>10</td>
<td>28</td>
</tr>
<tr>
<td>9. Company records are incomplete/unacceptable</td>
<td>14</td>
<td>12</td>
<td>26</td>
</tr>
<tr>
<td>10. No law on asset based lending</td>
<td>14</td>
<td>10</td>
<td>24</td>
</tr>
</tbody>
</table>

Source: Compiled by the author using data from ADB (2014, figure 5).

(d) Non-traditional financial products were underutilized:

- Uptake of innovative products, such as supply chain finance, had been slow. One reason appeared to be information asymmetries.
- In the case of non-traditional products, such as factoring, forfaiting, bank payment obligation and supply chains finance, less than 40 per cent of companies reported familiarity with these instruments.

(e) Trade finance-contributor to production and employment growth:

- Responding firms indicated that additional trade finance would have a positive impact on production and employment levels. A 15-per cent increase in access to trade finance was estimated by them to increase production by 22 per cent.
• Responses also suggest that greater access to trade finance would have a positive impact on employment levels. Respondents noted that a 15-per cent increase in trade finance may enable the firms to hire 17 per cent more staff.

The ADB Survey concluded by observing that significant trade finance gaps remained, and that SMEs continued to be credit constrained in every region. Narrowing of trade finance gaps would lead to more economic growth and job creation. Unintended consequences of (overlapping) regulatory requirements, particularly with respect to financial crimes compliance, were contributing to the gap. More outreach to companies about “non-traditional” forms of trade finance can contribute to closing trade finance gaps.

IV. EMERGING ISSUES AND CHALLENGES

Introduction

While the surveys cited above clearly identify the short supply of finance as the most critical major factor causing trade finance gaps, a close look at the factors other than finance indicate that non-financial factors, such as high rate of credit rejections, high collateral/guarantee requirements, non-availability of timely credit, lack of adequate awareness about international trade and insufficient skills to make cross-border trade transactions and the risk-averse banking sector not willing to lend to SMEs, also indirectly affect the flow of trade finance and the efficacy of the institutional finance framework. This gives rise to a question as to whether the insufficient supply of institutional funds causing persistent gaps is the only major factor hindering trade development in the region. While on the one hand paucity of trade finance has been by far the largest complaint of the private sector, on the other hand, the Asia-Pacific region, despite the demand-supply gaps, has emerged as the largest user of trade finance in the global market. Europe, Latin America, Middle East, North America and Africa have followed the trail. This trend gives rise to certain policy implications and a clear signal to stakeholders to identify factors other than the paucity of bank-intermediated funds as barriers to growth. An attempt has been made in this section to identify the emerging issues and challenges that directly or indirectly affect credit flow, business growth and sustainability. Recently, many vexing issues have surfaced, giving rise to policy implications and posing systemic and operational challenges.

Concerns have also been voiced about the inadequate infrastructure of trade finance that would geographically cover and adequately service emerging markets in the region; an inadequate financial corpus, which leaves behind sizable gaps; a rigid
banking system insensitive to the changing global market; unmet demands of information and communications technology-related transactions, such as e-marketing, and mobile banking, an absence of legal provisions and appeals in most of the Asia-Pacific countries and above all such electronic transactions not being recognized by the courts of law. The lack of innovative financial products and trade finance instruments is yet another area of major concern.2

The Asia-Pacific region is the largest user of bank-intermediated trade finance globally, yet it has lagged behind Europe in making effective use of inter-firm non-banking trade transactions through supply chains, factoring, and forfaiting. These innovative non-banking channels offer scope to supplement the dwindling supply of trade credit available from the formal banking sector. Asia and Pacific economies, similar to many other economies in other parts of the world, are saddled with various operational issues and constraints within the region.

Identifying the major factors and challenges

Some of the major factors and challenges affecting credit flow and, more generally, the systemic and operational efficiency of the trade finance infrastructure in the Asia-Pacific region are discussed below:

(a) Trade finance demand and supply gaps persisted
A persistent trade finance gap has been the most critical constraint and an issue of growing policy concern in the Asia-Pacific region. This phenomenon, as noted earlier, has become a continuing feature of the Asia-Pacific financial sector.

(b) Small and medium-sized enterprises are the most credit constrained sector
Despite being the largest employer with a high potential of exports and a significant contributor to national economies, the SME sector is the most trade credit constrained segment of the Asia-Pacific economies. In addition, banks generally consider SMEs as highly vulnerable to market shocks and therefore are largely not viable customers for bank credit.

(c) Shortages of trade finance affect trade
Whether shortages of trade finance actually affect trade has been an issue of recent debates in academia, particularly after the global financial crisis of 2008-2009 (Chor and Manova, 2012; Berms, Johnson

2 See for example, International Trade Centre (2009, p. 36, box 3.4 “Pitfalls in trade transactions-a case study”).
and Yi, 2010; Amiti and Weinstein, 2011; Bricongne and others, 2012; Auboin and Meier-Ewert, 2003; Aubion and Engemann, 2013). While most scholars agree that a fall in the demand for trade finance has been largely responsible for the slowdown and drop in trade flows, the debate has focused on the extent to which other potential culprits, such as trade restrictions, a lack of trade finance, vertical specialization, and the composition of trade, may have played a role. Market surveys conducted by ICC (2009), and IMF and BAFT-IFSA (2009) point to the sharp fall in trade finance during the financial crisis as the main reason for the drop in trade flows. Given the rapid decline in trade and emerging challenges, a number of protectionist trade policy measures were taken during 2008/09 by the policymakers and central banks around the world. The major policy responses can be viewed in CGFS (2014, box 3, p. 22). Although the exact amount of “missing” trade finance may remain unknown, the literature cited in this context has highlighted the wider link that exists between financial conditions, trade credit and trade (Auboin, 2015). Taken together, it transpires that credit shocks, including working capital and trade finance, possibly account for 15-20 per cent of the decline in trade during the crisis.

The recent financial crisis revealed that trade finance markets are vulnerable to abrupt dislocations (Auboin, 2015, para 2.2). The emerging markets and least developed countries are more prone to such shocks, making policy interventions and support essential to sustain the availability and flow of trade finance. Even with its large presence and pivotal role in making sizable contribution to Asia-Pacific economies, the SME sector remains highly vulnerable to market dislocations and exposed to volatility, especially in least developed countries.

(d) **Inadequate trade finance infrastructure and network**

The inadequate infrastructure and weak networks of financial institutions and poor geographical coverage of banking facilities in many parts of Asia and the Pacific inhibit the timely availability of trade finance to the private sector, including SMEs.

(e) **Absence of risk-mitigation mechanism**

Branch-line managers lend to SMEs only when such loans are backed by high collateral and third-party guarantees. The stipulation imposed by the banks asking for high collateral and third party guarantees has been a major barrier for companies in accessing trade finance.
(f) Problems of least developed countries in accessing affordable trade finance
Least developed countries, in particular, face the problem of accessing affordable trade finance. This has gradually resulted in a “trade finance divide” between the least developed countries and other developing economies of the Asia-Pacific region. The banking sector is generally wary of entertaining credit proposals in such countries; it tries to insulate itself against risks of loan defaults by charging higher interest rates backed by high collateral requirements and guarantee conditions.

(g) De-risking bank transactions are a constraint
De-risking requirements in bank transactions and interbank relationships have become a major systemic credit constraint. Regulatory requirements to mitigate the risk of financial crimes are compelling reasons for banks to sever bank-to-bank relationships, particularly in emerging markets. In particular, the AML/KYC due diligence requirements have become significant time-consuming impediments to effective trade finance access and have resulted in high compliance costs. These reporting requirements have led to a significant reduction in trade transactions in Asia and the Pacific.

(h) Advantages of low-risk letters of credits have yet to make inroads in emerging markets
Given the fact that L/Cs are a low-risk, safe and a more reliable mode of trade finance transactions, many least developed countries, especially those in the Pacific subregion, have yet to become fully aware of the potential and advantages of L/Cs. Unfamiliarity with this instrument and high transactional costs are perceived as the main obstacles.

(i) Awareness and uptake of both existing and new financing structures and products has been limited
Global banks view supply chain finance as an important new area of activity, and a focal point of current competition. Citing new regulatory demands and high marginal costs of equity capital, the trade finance industry is experimenting with new structures and products to distribute the exposure of trade finance to non-bank investors. To date, the scale of this activity has been limited and is not likely to pick up considerably in the near future (CGFS, 2014).

The reach and uptake of non-financial products, such as supply chain related finance and factoring, has been slow. Information asymmetries appear as a main reason, as less than 40 per cent of responding
companies reported familiarity with these non-traditional products in an earlier cited ADB survey. Even familiarity with established products, such as credit insurance was limited (ADB, 2014).

(j) Banking sector does not catch early warning signals

The global financial crisis of 2008-2009 and consequent strains in 2011-2012 adversely affected the trade finance sector. Bank finance exposure in almost all countries fell sharply soon after U.S. investment bank Lehman Brothers filed bankruptcy. The banking sector failed to effectively catch early warning signals. Trade finance disruptions had a secondary but economically significant role in the sharp reduction in global trade volumes. Given their short-term nature, banks have been able to quickly reduce their exposure in times of stress. However, because of this latter feature, trade finance has acted as a conduit of stress from the financial system to the real economy (CGFS, 2014).

(k) Emerging markets in the Asia-Pacific region tend to be less globally integrated

Asia-Pacific countries are very well integrated into the global trading system, but they are lagging in terms of financial integration. Emerging markets in Asia and the Pacific tend to be less globally integrated than the markets of other countries. As always, there are exceptions. Malaysia, with a large and active institutional investor base, is as globally integrated as any emerging market. In contrast, India and Indonesia are at the other extreme and have smaller international investment positions than emerging markets in other regions (Walsh, 2014).

V. POLICY IMPLICATIONS AND RECOMMENDATIONS

Implications

The issues and challenges identified above give rise to various policy implications. The matrix below presents an overview of these implications in a tabular form (table 7). In this context, it is desirable that the policies are periodically reviewed and securely aligned with expanding demand for trade finance. They should be market-oriented and designed to adapt to future change. In particular, they should aim at (a) strengthening inbuilt stability of the trade finance sector, (b) increasing competitive resilience, (c) adequately insulating the sector from possible market shocks, (d) limiting the negative spillover effects likely to affect the national economy, and in particular, (e) addressing the following issues:
(i) How to make trade finance innovative, resilient, stable and relevant to changes occurring in the trading environment;

(ii) How to insulate trade finance, such as pre-shipment and post-shipment, from market shocks and related credit risks;

(iii) How to structure central banking credit policies to ensure adequate resource support to the banking sector and set up risk mitigation mechanisms, which would encourage banks to lend without inhibition;

(iv) How to effectively monitor market developments and disseminate market intelligence to policymakers to help them make informed policy decisions;

(v) How to design and set up an effective mechanism to catch early warning signals to alert the financial sector of risks and shocks well on time.

Table 7. Matrix of trade finance conceptual, systemic and structural issues and policy implications

<table>
<thead>
<tr>
<th>Conceptual, systemic and structural issues</th>
<th>Policy implications</th>
</tr>
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<tbody>
<tr>
<td><strong>Conceptual changes needed to address the supply side:</strong> Some of the traditional trade finance concepts have become outdated and are no longer relevant to the changed context of global trade transactions. As a result, the supply side of trade finance falls short of demand and trade finance gaps are increasing.</td>
<td>New concepts and instruments, such as innovative non-finance and non-bank intermediated instruments (often supply chains related), have to be promoted and regulated to satisfy unmet demand for trade finance and close the trade finance gap.</td>
</tr>
<tr>
<td>SME demand side of trade finance is not well served</td>
<td>In particular, additional attention should be given to the trade financing needs of SMEs through the implementation of viable government-sponsored financing and credit guarantee programmes aimed at risk mitigation and cost reduction of credit.</td>
</tr>
<tr>
<td><strong>Systemic and structural changes are highly required</strong></td>
<td>The administrative, legal and banking systems need to be given a holistic reassessment, which leads to an identification of structural factors and constraints that need to be addressed to allow steady credit availability.</td>
</tr>
<tr>
<td><strong>Lack of skills and capacity:</strong> SME borrowers of trade finance are generally not aware of the products available; they lack skills and access to credit</td>
<td>Suitable measures need to be adopted to sensitize and improve the low credit rating of banks. Develop capacity-building programmes for training SME clients.</td>
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</table>
The need for change of future trade finance

From the previous sections, an important conclusion emerges: for trade finance systems in the Asia-Pacific region to be relevant in the future, they need to be globally competitive, innovative, cost-effective and sustainable to effectively address needs-based “changes”. The banking system should work with non-banking channels to supplement the supply side of trade finance. This may partially reduce the pressure on banks. The systemic and operational changes need to be made on an ongoing basis, adopting a holistic approach to both financial and non-financial factors of change.

The Society for World Interbank Fund Transfer (SWIFT) and the Fung Global Institute have jointly reviewed trade flows in Asia and observed the following: “By 2020, the Asian region is expected to account for almost 35 per cent of world GDP, compared to 27 per cent today. Finance is still stuck in the letters of credit and multilateral support world, but [...] times will change quite rapidly.” This raises a very basic question: whether trade finance and trade finance products in their present form will be able to keep pace with the expanding demand and changes in the future? The Asia-Pacific trade finance sector is large, diverse and differs in many ways from similar sectors in other parts of the world, especially in least developed countries, but is not yet as sophisticated as those in Europe or America. Most Asia-Pacific banks also tend to be more focused on providing traditional bank-intermediated trade finance and are averse to taking commercial risks.

“As Asia leads the world in growth, will its financial systems lead too”, observed James P. Walsh, Deputy Division Chief of the Monetary and Capital Markets Department of IMF. He further stated: “Across Asia, the rapid growth of financial sectors is an important part of the growth miracle that has made Asia the world’s most dynamic region. Analysts look closely at the financial risks that Asia faces today, but sometimes it’s interesting to look farther forward. So with this dynamism expected to continue, what will Asian financial sectors look like in the future?” (Walsh, 2014)

The role of international institutions is important to make trade finance responsive to change and resilient. ADB, ESCAP and the World Trade Organization (WTO) could coordinate efforts for this purpose by forming a joint group, which would initially concentrate on the following:

(a) Play a diagnostic and advisory role to alert, aid and advise the Asia-Pacific public and private sector trade finance community on trends, development, pending changes and shocks;

(b) Provide international support to Asia-Pacific economies to help them augment trade finance resources;
Strengthen the capacity of both banking and non-banking actors to provide trade finance by improving their stress management capacity, resilience, openness and adaptability to change;

Work out synergies for providing technical assistance to developing countries in this area;

Monitor trade finance markets to disseminate timely market intelligence and early warning signals.

Policy recommendations

A review of trade finance policies and programmes to identify conflicting issues, emerging challenges and resultant policy implications is essential. For that purpose, this paper presents a set of policy recommendations, adopting a holistic approach. The challenges confronting trade finance have been addressed from the lenders’ and borrowers’ angle, and after taking due cognizance of the realities on the ground. The matrix of suggested policy recommendations is presented in table 8.

Table 8. Suggested policy recommendations

<table>
<thead>
<tr>
<th>Conceptual</th>
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<tbody>
<tr>
<td>• Redefine the traditional concept of working capital by splitting it into two: (a) conventional working capital (for day-to-day operations up to the pre-shipment stage); and (b) trade finance and market development working capital, such as short-term credit, export credit, insurance, risk mitigation charges and, exchange fluctuations, and all post-shipment trade related transactions. For the latter, trade-related market development services need to be developed, such as trade fairs, fashion shows, market forecasts, product and design development, capacity-building for development of viable and bankable business plans, which will ultimately reduce the rates of rejections increase the supply of bank intermediated funds; product development in the global market and identification of potential markets to attract potential business.</td>
</tr>
<tr>
<td>• Set up and enlarge the scope and coverage of a national exchange fluctuation fund to cover all export-import transactions. This may be set up as a national fund to cover the negative impact of exchange fluctuations. ADB could link up with central banks to design and operate the fund. Risk coverage should be available for up to 100 per cent for SMEs and 90 per cent for other companies. SMEs would pay premiums at subsidized rates. This would halt the default rate. Modalities can be worked out once this is accepted as a concept.</td>
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<tr>
<td>• Supply chains and factoring transactions of the private sector should be defined as negotiable financial instruments. This would promote</td>
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markets for securitization of such instruments and augment supply of the trade finance.

| Government & sector public | Design trade-friendly export-import policies aimed at the development of both domestic value-added trade activities and exports/imports.  
|                           | National governments and central banks should promote effective policies to make the trade finance sector stable, forward looking and vibrant and to cushion the after-effects of any financial crisis.  
|                           | Develop a suitable legal frameworks and appeal system for redressing grievances arising out of international transactions.  
|                           | Strengthen collaboration with international agencies, such as the Centre for the Promotion of Imports – the Netherlands and IFC for ongoing market tie ups, generating market intelligence and technical assistance.  
|                           | Implement sufficient trade facilitation measures to contain trade transaction and transportation costs.  
|                           | Strengthen trade facilitation and trade finance mechanisms in multilateral, regional and bilateral trade agreements.  
|                           | Trade missions attached to the embassies should support the private sector as central points for trade related matters, such as help in establishing supply chains contacts, making forecasts.  
|                           | Introduce risk-free e-marketing and online procurement mechanisms backed by suitable legal and regulatory frameworks. |

| Central banks and the financial sector | While most of the Asia-Pacific central banks have been proactive and quite vigilant in making need-based changes in trade finance policies governing banks, some of them have to enhance the stability and resilience of their banking sector.  
|                                         | In view of the persisting trade finance gaps, in addition to releasing liquidity supply to the banks, trade finance supply through non-traditional/non-financial channels with adequate safety net and risk minimization mechanisms needs to be expanded.  
|                                         | Encourage companies to enter open market borrowings. The SME sector will need special dispensation to do this.  
|                                         | Encourage and institutionalize inter-firm credit systems, mainstreaming them in cooperation with banks and with adequate risk mitigation support.  
|                                         | Instil confidence and encourage banks to lend without any inhibition, introduce suitable risk mitigation, export credit insurance and workable guarantee mechanisms. Set up a guarantee fund to extend guarantee cover to collateral-free cum third party guarantee-free bank loans to SMEs. |
| **International and multilateral Institutions** | Asia-Pacific countries are very well integrated into the global trading system, but financial integration has lagged. Emerging markets in Asia and the Pacific tend to be less globally integrated. ADB and the World Bank should lend support to national governments and central banks to accelerate the financial integration of emerging economies.  
ADB should take the lead in collaborating with other international institutions, such as IFC, to set up an Asia-Pacific trade development fund for funding innovative and non-financial products, inter-firm trade credits and trade development services that have not been funded by the banking sector. Assistance can be given to companies through their local banks backed by a suitable collateral-free guarantee mechanism. The participating banks/companies need to participate in the share capital to become members eligible to get a suitable line of credit from the fund. Detailed operational modalities can be developed at a later stage.  
A joint group comprised of ADB, ESCAP and WTO may be set up to monitor trade and trade finance trends and developments, and alert, aid and advise Asia-Pacific trading communities and governments to enhance the resilience of the banking and financial sector in the region. |
| **Private sector** | ICC should be made the central agency for compiling global and regional trade finance data/information for use by various stakeholders. This will enhance the capacity of ICC to add value to its leading publication, the *ICC Trade Register*. To enlarge the reach and supplement the coverage of its ongoing annual series of surveys and publications of the *Trade Register*, all concerned should agree to supply relevant information to ICC for this purpose.  
ICC, in collaboration with ESCAP, ITC and national chapters/apex chambers and export agencies could organize capacity-building programmes on, for example, international trade, exports, trade facilitation and the WTO regime. |

**Note:** The Committee on the Global Financial System in its report on trade finance development and issues 2014, has cited the findings of various surveys conducted by the World Bank and others, “firms that were more reliant on trade credit to fund their own operations (and hence less reliant on bank funding for working capital) were less affected” during the financial crisis. Fourteen developing countries show that trade credit was relatively more resilient than bank credit during the 2008-2009 global financial crisis (CGFS, 2014, p. 55).
REFERENCES


International Monetary Fund (IMF), and Bankers’ Association for Finance and Trade and International Financial Services Association (BAFT-IFSA) (2009). IMF-BAFT trade finance survey: a survey among banks assessing the current trade finance environment.


FINANCING SUSTAINABLE DEVELOPMENT — WHAT CAN WE LEARN FROM THE AUSTRALIAN EXPERIENCE OF REFORM?

Wayne Swan*

Finance is fundamental to supporting sustainable development. It drives investment and jobs, which is the way most people escape poverty. Countries in the developing world face significant financing needs as they seek to modernize their economies, hence the importance of mobilizing all forms of finance (domestic, international, public and private) and ensuring they are put to their most effective use.

JEL classification: O10, O16, O56, Q56, Q58.

Keywords: Sustainable development, economic growth, Australia, development finance.

I. INTRODUCTION

Finance is fundamental to supporting sustainable development. It drives investment and jobs, which is the way most people escape poverty. Countries in the developing world face significant financing needs as they seek to modernize their economies, hence the importance of mobilizing all forms of finance (domestic, international, public and private) and ensuring they are put to their most effective use.

Financing sustainable development presents many challenges, including the need to balance the desire for growth today with the needs of future generations who face the impact of climate change and increasingly fragile ecosystems. It needs to ensure that growth is inclusive, allowing everyone the opportunity to participate in and

* This paper was prepared by the Honourable Wayne Swan MP, formerly the Deputy Prime Minister and Treasurer of the Commonwealth of Australia. The views expressed in this discussion paper do not necessarily reflect those of the United Nations or countries mentioned herein.
benefit from growth. It also needs to ensure that the benefits of growth reach the most vulnerable as new and innovative approaches to development finance are pursued.

Respecting and striking the right balance in relation to each of those challenges is critical to the global effort to secure sustainable development finance.

Both the private and public sectors play critical roles in this process, with the private sector serving as an increasingly important source of finance and development and the public sector being important for investment, the provision of a social safety net, and for ensuring an enabling economic and regulatory environment for development.

The experience of the Asia-Pacific region has been mixed with respect to sustainable development finance. Despite the diversity and varying stages of development in the region, there are issues and lessons that can inform and guide how best to approach the 2030 Agenda for Sustainable Development in terms of sustainable development finance.

The present paper considers a number of proposals that were made at the Financing for Development meeting, which was held in Addis Ababa from 13 to 16 July 2015; and discusses the experience of Australia in pursuing sustainable development. Some of these proposals relate to how countries themselves can expand their access to finance for sustainable development, while others refer to how developing nations, international agencies and other stakeholders may support development in the Asia-Pacific region.

The experience of Australia is relevant to this discussion not only as a country that has thus far successfully navigated economic fluctuations and change, but also because of the challenges it confronted in pursuing reform. Despite having what are widely considered to be the prerequisites for development, namely a relatively stable investment and regulatory environment and the benefit of significant resources and human capital, financing sustainable development in Australia has still proven to be challenging.

The Australian experience suggests that mechanisms for sustainable development finance alone are not enough to deliver the reform and investment that developing countries require. Instead, a range of other considerations must be incorporated into sustainable development finance, such as the process for achieving domestic reform, managing diverse interests and accepting that first-best policy options may not always be viable. Policy recommendations also need to reflect the stage of development of local financial markets and the regulatory environment of
each country given the differences in the stage of development among the countries in the Asia-Pacific region.

There are opportunities and innovations available to finance development but the domestic and international constraints to achieving the objective of financing sustainable development should not be underestimated. These constraints and possible responses are considered here.

The present paper considers a number of priorities for sustainable development finance, namely domestic resourcing, financial market strengthening, infrastructure and climate financing options and overseas development assistance (ODA).

II. CHANGING SOURCES OF FINANCE FOR SUSTAINABLE DEVELOPMENT

The availability of finance and investment has been a critical factor in supporting the growth and development in the Asia-Pacific region in recent decades. However, the composition of finance and sources of investment continue to change, presenting both opportunities and challenges for financing development in the region.

Exploring the opportunities for financing development has become a global priority in the context of the development of the 2030 Agenda for Sustainable Development. Building on the Monterrey Consensus and the Doha Declaration, renewed commitments to ODA and more innovative approaches are essential for financing development beyond 2015. Public domestic investment remains critical to supporting the development agenda and strengthening financial markets to support international capital flows and foreign and private investment.

Dependence on various sources of finance and related regulatory environments in development countries is changing. A report by the Institute for International Finance notes the following: “Since the financial crisis, we’ve seen a retrenchment of cross-border flows and more fragmentation of financial markets, which jeopardizes the long-term outlook for global growth. The challenge now is to ensure that financial globalization regains momentum. Meeting this challenge will require a conscious decision by policymakers to shift back to global approaches in regulation, regaining consistency and convergence of local rules, and to encourage development of resilient market frameworks for investment in areas like infrastructure finance.” (Institute of International Finance, 2014)

Sources of finance for development are changing from being predominantly public investment to a range of potential sources, including the private sector, foreign
direct investment and trade. These sources of finance potentially present opportunities to fund the necessary investment in infrastructure, social services and the management of climate change that is necessary to achieve more inclusive growth in the Asia-Pacific region.

The rise of non-traditional donors such as the BRICS (Brazil, Russian Federation, India, China and South Africa), philanthropic initiatives and new development banks also present opportunities to meet the financing needs for development in the Asia-Pacific region.

III. SOURCES OF FINANCE FOR DEVELOPMENT — REFORM AND LESSONS

Domestic resourcing

Public revenue remains a critical source of funding for investment and infrastructure spending. It is the means by which countries fund education for children, basic health services and roads and other infrastructure. It is particularly important for ensuring the inclusion of the least well off in societies and economy.

Domestic public finance is the largest source of revenue available to countries. Recent analysis by the Brookings Institution has suggested that public revenues of about $300 per person per year in 2011 purchasing power parity (PPP) terms are necessary to provide the global social floor that is developing through the Sustainable Development Goals. “The International Comparison Program has worked with countries’ national income accounts to derive a new database that permits cross-country comparisons on the amounts they spend on items that can be consumed individually by households. In high-income European countries, such as Denmark, Norway and Sweden, governments spend about $10,000 per person per year in 2011 PPP terms. The average for OECD [member countries] is about PPP $5,000 per person per year. Kharas and McArthur (2015, p. 11) estimate PPP $300 per person per year as the approximate amount required to deliver a package of basic services of education, health and other services consistent with the global social floor being established through the Sustainable Development Goals. This is consistent with the United Nations. Millennium Project’s estimates a decade ago of $120-$140 per capita in nominal 2003 dollars for minimum service delivery to achieve the Millennium Development Goals. The minimum necessary value will rise as economies grow into middle-income status and beyond. We therefore further estimate 10 per cent of average per capita incomes as a minimum reference point for economies with gross national income (GNI) per capita of PPP $3,000 or above.”
Given the role of public revenue to deliver essential services and ensure an inclusive economy, and in some cases the declining share of revenue to GDP, it is appropriate that the world’s attention is increasingly turning to strengthening domestic revenue.

**Figure 1. General government revenue (per cent of GDP)**

![Graph showing general government revenue over years for countries including Australia, China, India, Indonesia, and Papua New Guinea.](image)

*Source: IMF.*  
*Note: IMF forecast.*

Domestic revenue strengthening is relevant to both developed and developing countries in terms of broadening the tax base and ensuring an efficient and equitable tax regime, but also with regard to strengthening the capacity of governments to raise revenue and avoid revenue leakage. Illicit financial flows alone are estimated at around $1 trillion per year, representing a massive lost revenue source (World Bank, 2013).

Domestic resourcing has domestic and international reform implications. Countries need to develop their tax regime and build institutional capacity to administer and collect revenue. For example, in Australia, the decline in taxation revenue as a share of GDP from 24.9 per cent in 2004/05 to 22.6 per cent in 2014/15 (Australian Government, 2014, Budget paper 1, table 9) requires reform to broaden the tax base and close tax loopholes and concessions.
The potential for countries to support these activities through development assistance should be expanded and prioritized in ODA. As the Brookings Institution notes and recommends, “Very little ODA is allocated for strengthening domestic revenue systems, despite a record of considerable success where it has been tried. On average, less than one per cent of ODA goes towards tax improvements. This should be expanded in line with developing countries’ needs to meet the target threshold for domestic revenues that might be agreed upon, focused on both efficient taxation and, where applicable, robust resource-royalty agreements.” (Kharas and McArthur, 2015, p. 14)

It is here that multilateral institutions such as the International Monetary Fund (IMF) have a particular role in strengthening the capacity of countries to design and implement an efficient tax regime.

Global efforts towards improving international tax arrangements and the treatment of multinational corporations must also continue to be prioritized. This includes the work of the G20 on Base Erosion and Profit Shifting and the automatic exchange of information between tax authorities, as well as the work of the Organisation for Economic Co-operation and Development (OECD) on multinational taxation and tax transparency.

The international agenda should also continue to pursue standards and agree to principles of open and transparent government. The Publish-What-You-Pay principles and Extractive Industries Transparency Initiative (EITI) present real opportunities to support global standards. Leadership among developed countries is required in those areas, including further progress in Australia particularly around extractives.

As Australia identified in its statement on the first drafting session of the Financing for Development Conference “This sort of global initiative, combined with greater focus on capacity development for national revenue authorities, plus national action on tax system strengthening and regulatory frameworks to combat corruption, can add up to genuine impact.” (United Kingdom, 2015)

One lesson from the efforts of Australia is that the strengthening of the Australian tax entailed the challenge of building the case for tax reform and dealing with opposition from various interest groups. In the case of Australia, this was particularly challenging in terms of reforming the taxation of the mining sector and resources, but also in other areas of tax expenditures in which existing beneficiaries sought to maintain the status quo.

Part of the solution to addressing opposition to tax reform in terms of communication is to link revenue measures to expenditures that the public values and
expects to be funded. The initiation in Australia of the National Disability Insurance Scheme (NDIS), a major investment in the services available to people with permanent and significant disability, had significant public support that enabled the existing Medicare levy to be increased to fund this major public investment. There was public support for the Medicare levy increase because the economic and social case had been extensively made for NDIS over many years. Only after the case for reform was made for the NDIS, and support built across a broad constituency, funding mechanisms were developed.

While the Medicare levy itself is not hypothecated to funding NDIS, or other health expenditure more generally, by linking the expenditure to the revenue, reform was achieved. This lesson can be applied to a range of other policy discussions. For example, in the case of climate finance, focus should be first placed on the required reform and investment and securing an agreement. After that has been achieved, the next step would be to formulate policy and rally public support for revenue sources. In Australia, a similar approach was adopted in linking action on climate change through a price on carbon in part to financing investments in alternative/sustainable energy (discussed further below).

Tax reform is challenging in the domestic political context. There is a need to link revenue reform to expenditure that the public values. Existing interests will challenge tax reform and an approach to manage these interests needs to be factored into the design and discussion of any tax reform. First best policy will not always succeed but other approaches and compromises that start the process of reform are still worth taking.

Domestic and international revenue reform is a win-win situation for all counties. It builds the capacity of countries to deliver basic and essential services while providing a foundation for inclusive growth.

Of course, the counterpart to mobilizing domestic revenue for development purposes is making sure that those revenues are allocated efficiently and effectively. Ensuring revenue is allocated productively and inclusive growth is achieved is critical to the success of domestic revenue strengthening. Public sector efficiency is particularly important here, as is strengthening domestic financial markets and economic governance, discussed further below.

**Financial market strengthening**

Strengthening financial markets is also necessary to prepare the Asia-Pacific region for future sources of finance for development. Having capital available to fund the significant infrastructure and other investment financing needs is critical to
sustainable development not only because it provides the means to fund infrastructure and other investments, but also because it attracts the private sector, which is critical to development.

A financial system that includes a stable and independent central bank and deep capital markets is a prerequisite for creating alternative sources of finance for development and attracting private sector investment.

This is particularly the case in many Asia-Pacific countries that lack sufficient domestic capital to finance infrastructure and development. The opportunities presented by international investment suggest the need for further liberalization of financial markets. The need for additional domestic finance sources is highlighted by the fact that many Asia-Pacific countries record deficits on their primary income account.

Figure 2. Primary income account (per cent of GDP)

Source: World Development Indicators.

Asia is expected to account for about half of the global economy by 2050 and projections suggest that the Asian financial system could be four times its current size by 2030, and more than twice as large as the United States financial system over the same period (ANZ, 2014, p. 47).
The rise of Asian financial markets and investment presents many opportunities for financing development, but the transition also presents challenges. Ensuring this transition takes place in a reliable and sound regulatory environment is critical. Clearly, countries throughout the Asia-Pacific region are at very different stages of development and therefore the process and sequencing of financial sector reforms must be analysed and recommended accordingly.

In the case of Australia, central to the sustainability of the country’s financial system is a strong, independent central bank and regulatory supervision. Maintaining and continuing to strengthen this independence in the central bank and supervision of the sector has been important in bringing down sovereign risk. The challenge for the Asia-Pacific region is to similarly reduce sovereign risk, which will not only involve institutional strengthening but also require a stable political environment, an improved policy environment, and an ongoing reform and regulatory effort.

The Central Bank Governor of Australia describes the challenges facing the region’s financial markets well:

Thanks partly to the painful lessons of the Asian crisis and other episodes, banks [in the Asia-Pacific region] had generally stronger capital positions and higher lending standards, while supervisors had also done their job in the years prior to 2007. Moreover, several banking systems in the region are among the earliest adopters of the new, tougher, Basel standards. It goes without saying that we want this prudence to continue. But unlike the case in some other countries, the financial sector in the region is well placed to play its role in supporting the sustainable growth of economic activity and trade. It is noteworthy that as European banks sought to pull back from some activities in the region, including trade finance, banks from within the region have stepped up. So this is a point for confidence. (Stevens, 2013)

Ensuring this “point for confidence” is well founded depends on the ongoing prudence and regulation of financial markets in the region. There is much reason for optimism in this regard with financial markets continuing to develop along with the strengthening of central banks and financial markets. China provides a good example of this, which is considered further in the case study below.
The liberalization of the financial system of China

The Chinese authorities have continued to make significant progress in liberalizing the country’s financial system. In addition to domestic financial market reform and development, the partial liberalization of the exchange rate and cross-border capital flows have been key elements of the reform process. While cross-border trade flows have been subject to relatively few restrictions for some time, the country’s cross-border capital flows have been managed much more closely. However in recent times, restrictions on direct investment flows have been relaxed, and the capital account liberalization process has also extended to portfolio investment flows. In particular, the Chinese authorities have started to open up the country’s debt and equity markets to foreign investment and have also allowed Chinese residents to invest more freely in offshore markets. The substantial effects of the country’s earlier trade liberalization process on the global economy suggest that its ongoing capital account liberalization process will also have significant implications for the global financial system. (Hatzvi, Nixon and Wright, 2014)

Related to the liberalization of financial markets of China have been efforts to make the Chinese yuan (RMB) an international currency. The region has identified opportunities to support this process. For example, Australian authorities have worked together with the Chinese authorities to facilitate the development of the local RMB market.

These steps recognize the already close economic relationship Australia has with China and the increasingly close financial linkages between the two countries. Most recently, these initiatives have included:

- The establishment of an official RMB “clearing bank” in Australia, which will make it easier for Australian residents to transact in RMB with their counterparts in mainland China;
- The establishment of a quota as part of the RMB Qualified Foreign Institutional Investor (RQFII) programme, which will allow Australian-domiciled financial institutions to invest RMB obtained in the offshore market in the onshore bond and equity markets of China.

These announcements are in addition to existing initiatives, including: the local currency swap agreement between the Reserve Bank of Australia.
(RBA) and the People’s Bank of China (PBC), signed in 2012; the commencement of direct trading between the RMB and the Australian dollar in interbank foreign exchange market in mainland China in 2013; and the investment by RBA of a portion of its foreign currency reserves in RMB-denominated assets in the past year. There has also been ongoing engagement on RMB internationalization between Australian officials (including RBA and the Treasury) and the private sector through forums, such as the Australia-Hong Kong RMB Trade and Investment Dialogue and the newly established “Sydney for RMB” working group, which is a private sector-led initiative. (Hatzvi, Nixon and Wright, 2014)

Capital controls remain a persistent challenge to the liberalization of the renminbi. In order to fully integrate the yuan, capital account liberalization, such as further financial market liberalization, market-determined interest rates and effective financial regulation and supervision, are necessary (Eichengreen and Kawai, 2014). This would of course expose the yuan to external risks and consequently reform would need to be introduced gradually. Given this, the yuan is still a number of years away from realizing its potential in the region and the world, but nevertheless the potential opportunity remains for the yuan to be a common currency for trading.

Figure 3. Cumulative foreign direct outflows to members of the Asian Development Bank

Source: UNCTAD FDI Database.
The growth in foreign direct investment in the region demonstrates this potential as a source of finance for development.

Stronger financial market regulation alone will not suffice to increase available finance. Sovereign risk remains a persistent challenge in reducing the cost and increasing availability of finance. According to Torsten, Packard and Remolona (2015), financing is most feasible when the country has a high sovereign rating, especially when this reflects a credible legal framework, political stability and a reasonably efficient bureaucracy. It also helps to have well-functioning markets for hedging currency risks. Establishing this broader environment of stability and human capital will take time but must continue to be part of any country’s plans for sustainable development.

Strong financial markets also require strong macroeconomic fundamentals — strong and stable growth and sustainable levels of inflation. Manageable current accounts and public sector debt are important to minimize the risks of capital flight and to provide necessary comfort to offshore investors. Maintaining its AAA credit rating during and following the financial crisis was critical to the economic performance of Australia and relative stability during this period. This need not mean mindless austerity. Instead, options that achieve fiscal reforms, such as the removal of generous tax concessions for higher earners, should be considered.

The eventual normalization of monetary conditions around the world makes the risk of capital outflows from the Asia-Pacific region even more pressing. This, in turn, would place a higher premium on strong macrofundamentals in the region.

Continuing to strengthen financial market regulation and access to capital is important to the ongoing growth and stability of the Asia-Pacific region. It is also a critical enabler to increasing investment and the financing of development. There is a role for the G20 in this process, as demonstrated during the 2007-2008 global financial crisis when the G20 supported efforts taken by emerging countries, such as China, India, Indonesia and the Republic of Korea, through such initiatives as the Basel III agreements. Agreements, such as these, recognize that sound regulatory policy can support stability in the financial system and a role for regional and international forums and institutions to support those reforms.

Related to this is the ongoing deepening of local capital, particularly local bond markets, so that countries in the Asia-Pacific region are less reliant and exposed to foreign capital flows. Local currency bond markets reduce risks associated with currency mismatch and are very important for financial stability, especially in the countries that suffered greatly during the Asian financial crisis. The Association of Southeast Asian Nations (ASEAN), IMF and other regional and international
institutions with the requisite capacity, have been supporting the development of local capital markets. This effort should continue.

Infrastructure financing

While the Asia-Pacific region boasts relatively high savings, the challenge of financing significant infrastructure remains. The World Bank (2013) finds that the undersupply of infrastructure in developing economies has been estimated at around $1 trillion per year through 2020, with an additional $200 billion to 300 billion per year to ensure that investment in infrastructure projects are for low-emitting and climate resilient infrastructure.

As discussed above, boosting domestic resources and strengthening financial markets are critical to addressing the financing gap, but other policy and planning reforms are also necessary to mobilize finance, particularly in relation to financing major infrastructure projects.

Meeting the financing needs for infrastructure is critical to development, but also for generating demand and for growth. As Michael Spence, Nobel Laureate in Economics, has identified:

Given the extent to which insufficient demand is constraining growth, investment should come first. Faced with tight fiscal (and political) constraints, policymakers should abandon the flawed notion that investments with broad — and, to some extent, non-appropriable — public benefits must be financed entirely with public funds. Instead, they should establish intermediation channels for long-term financing. At the same time, this approach means that policymakers must find ways to ensure that public investments provide returns for private investors. Fortunately, there are existing models, such as those applied to ports, roads, and rail systems, as well as the royalties system for intellectual property. Such efforts should not be constrained by national borders.

Given that roughly one third of output in advanced economies is tradable — a share that will only increase as technological advances enable more services to be traded — the benefits of a programme to channel savings into public investment would spill over to other economies. That is why the G20 should work to encourage public investment within member countries, while international financial institutions, development banks, and national governments should seek to channel private capital towards public investment, with appropriate returns. With such an approach, the global economy’s “new normal” could shift from its current mediocre trajectory to one of strong and sustainable growth. (Spence, 2015)
When the Labor Party came into power in Australia following the 2007 election, it was apparent that even if funds were available for infrastructure investment a major constraint was the lack of a pipeline of ready, productive investments. This view has been confirmed by Australian Financial Services Council (2015) which notes that, a consistent theme is that the level of fund investment is primarily limited by a lack of suitable projects reaching the investment market, particularly with respect to government-sponsored projects.

Australia has sought to address this challenge with the establishment of Infrastructure Australia, an independent body that undertakes cost-benefit analysis of potential infrastructure projects and prioritizes those projects. The success of this process has largely been the focus on better planning and preparedness for infrastructure needs into the future.

The Reserve Bank of Australia has identified a similar concern for the region more generally (Ehers, Packard and Romolona, 2014):

Infrastructure investments entail complex legal and financial arrangements, requiring a lot of expertise. Building up the necessary expertise is costly, and investors will only be willing to incur these fixed costs if there is a sufficient and predictable pipeline of infrastructure investment opportunities. Otherwise, the costs can easily outweigh the potential benefits of investing in infrastructure over other asset classes such as corporate bonds. Creating a pipeline of suitable projects requires a coherent and trusted legal framework for infrastructure projects. The economic viability of infrastructure projects is often dependent on government decisions, such as pricing, environmental regulation, or transportation and energy policy. In some countries, reliable frameworks do not exist. Cases of political interference — for example arbitrary cuts in the prices private infrastructure operators are allowed to charge — greatly increase the perception of political risks, which are among the greatest concerns of private investors. But even if solid legal frameworks exist, best practices or experience with large infrastructure projects can be lacking on the side of the government.

In the case of Australia, it was clear that despite more than a trillion dollars being held on behalf of members in superannuation funds, there is reluctance to invest those funds in major infrastructure projects. While the Australian superannuation funds under management have grown from 140 billion Australian dollars ($A) ($100 billion) to $A1.3 trillion over the past 20 years, the country’s infrastructure gap has widened (Financial Services Council, 2011).
Infrastructure investment models have been particularly attractive to superannuation funds because of the misalignment of interests with traditional bid sponsors with short-term investment horizons. This can result in poor pricing of risk, stripping of value due to transaction fees, and inability to achieve best of breed partners for debt, construction, and operations and maintenance.

Under the current procurement model, Australia’s major infrastructure investors, including Industry SuperFunds via IFM Investors, rarely, if ever, participate in greenfield [public-private partnership] PPP projects either as a bid sponsor or primary equity investor. Yet, combined, they control the majority of infrastructure investment in Australia. Very high bid costs and long procurement processes with ‘patchy’ deal flow limit the number of parties who can afford to dedicate large teams for such projects. Long-term equity investors like superannuation funds do not see the relative value to divert resources away from pursuing brownfield infrastructure to greenfield PPP projects that involve such a costly, lengthy and uncertain process. Their long-term investment horizon and their appetite for illiquid assets make them ideal partners for such projects. However, the current process is biased towards short-term financiers and contractors and requires reform to level the playing field.

(Industry Super Australia, 2014, p. 2)
Feedback from the sector provided guidance on necessary reforms to access superannuation savings for infrastructure investment. For example, Financial Services Council (2011) states the following: Institutional investors have particular requirements around the risk/return mix of long term illiquid investments and projects that do not conform to these will not attract sustained investor interest. Governments need to understand these requirements and the impact they have on the structure of infrastructure projects when developing value for money transactions.

To address this challenge, the Government of Australia announced an infrastructure tax incentive for nationally significant projects assessed by Infrastructure Australia. This measure allowed infrastructure investment vehicles to carry forward their losses uplifted by the 10-year government bond rate, and to be exempt from the continuity of ownership and same business tests to access this offset. These incentives mean investors who tend to invest after the asset is already built and operating, such as superannuation or pension funds, can still access the benefits of those investments.

These reforms are helping to support greater investment in infrastructure by Australian superannuation funds. As the Financial Services Council (2011) reports, Australian superannuation funds have approximately 5-10 per cent allocation to infrastructure. This allocation is typically higher for industry funds. “In the 2010 client survey of the consultant firm Mercer, only 2.0 per cent of United Kingdom pension plans are shown to invest in infrastructure (an increase from 0.7 per cent in 2008). The average allocation to infrastructure by those plans is 3.8 per cent. For Continental Europe, only 1.4 per cent of pension plans are said to be invested in infrastructure, with an average allocation of 5.5 per cent to the asset class by those funds invested.”

A further proposal being developed in Australia by Industry Super is a proposed “inverted bid model” whereby “the traditional bidding process is reversed by fixing the terms of project financing through a funding competition prior to the construction, operation and maintenance (O&M) tender and raising of any additional debt. In other words, the government tenders initially for the long-term owner-operator followed by separate bids for construction, operation and maintenance and residual debt.” (Industry Super Australia, 2014, p. 2)

The inverted bid model is intended to support a reasonable return for long-term investors through the upgrade of services and facilities delivered to meet demand over time, as opposed to through the initial bidding, structuring and building of the asset. “Preliminary analysis suggests bid costs can be expected to fall from 1.5 per cent to 0.8 per cent of the total value of the project and procurement timeframes are likely to be compressed from 17 to 12 months or by 30 per cent.” (Industry Super Australia, 2014)
The inverted bid model may provide an avenue for access to finance through pension and superannuation funds, not only in countries with large savings pools but also internationally as those funds continue to expand international investment opportunities. The key benefit of the inverted bid model is the improved alignment of investors and projects, in addition to a more open bidding process that should help reduce financing costs and procurement times.

More generally, increasing available finance for infrastructure depends on the level of confidence in the broader stability of the economy and investing environment. Developing economies often lack the regulatory, legal, and political frameworks to make the risk return viable. These broader policy reforms and institutional strengthening are therefore be critical to the long-term viability of private sector financing for infrastructure.

As the Brookings Institute suggests, “The multilateral development banks have a special leadership role to play on this dimension, since they provide much of the financing leadership for infrastructure. In practical terms, they need to take on more risk; invest in project preparation and the development of bankable projects; help build teams on the ground in priority countries; and ensure projects are moving within timeframes consistent with [Sustainable Development Goal] achievement by 2030. Safeguards, for example, still present major barriers to timely implementation. At the moment, a hydro project can take seven years from concept to approval and then another seven years for construction. This would imply that new projects conceived in 2015 or 2016 would not even begin operating until the 2030 [Sustainable Development Goal] SDG deadline is reached.” (Kharas and McArthur, 2015, p. 17)

Improving the infrastructure pipeline and the capacity to deliver projects is a regional imperative to boost infrastructure investment. The emerging Asian Infrastructure Investment Bank (AIIB) has the potential to improve access to finance for large-scale infrastructure (Elek, 2014).

A related political challenge of infrastructure investment is the growing concern around public debt, arguably necessary to fund major public investments. With the 10-year bond rate currently at an all-time low in Australia, there is seemingly an impenetrable reluctance and public concern around borrowing to undertake the necessary investments that will drive growth and deliver services into the future.

As one seemingly frustrated Australian journalist puts it, “The 10-year bond rate is the rate at which the Government can borrow for 10 years at a fixed rate of interest. Right now it’s just 2.55 per cent, an all-time low...If Australia was to borrow, big time, for important projects that took the best part of a decade to complete, it would have no risk of ever having to fork out more than 2.55 per cent a year in
interest. The record low rate would be locked in for 10 years. It’s rare to be offered money for nothing. All we would need is confidence in the worth of our ideas.” (Martin, 2015)

**Climate change financing**

The recent Australian experience of implementing a carbon price provides an example of how an environmental policy can also generate incentives that finance sustainable development.

Options for carbon pricing and reform present opportunities not only to finance further action and abatement on climate change, but can also provide the means to incentivise investments of a more sustainable nature. The approach applied by Australia is through:

(i) The Clean Energy Financing Corporation (CEFC);

(ii) Carbon pricing

**The Clean Energy Finance Corporation**

The previous Government of Australia established CEFC to act as a catalyst to increase investment in emissions reduction and accelerate the country’s transformation towards a more competitive economy in a carbon-constrained world.

The Clean Energy Financing Corporation is the second longest operating national clean investment bank in the world after the Green Investment Bank of the United Kingdom of Great Britain and Northern Ireland. Since CEFC began operations, a number of countries have established similar domestic clean energy investment institutions.

The Clean Energy Financing Corporation is an independent, government-backed institution and its role is to work in partnership with other banks and financiers to mobilize investment in the clean energy sector. This includes investment in renewable energy, low-emissions technology and energy efficiency.

The Clean Energy Financing Corporation was first announced in 2011 as part of the country’s national package of climate-change-related reforms. Cumulatively, the CEFC has committed more than $A1 billion in total finance and, with the contribution of co-finance partners, has catalysed investments in projects valued at more than $3.2 billion.
The Clean Energy Financing Corporation was established through federal legislation. Its investment mandate is provided by the Government. The roles and functions of the CEFC, include that it:

- Focus on projects at the demonstration, commercialization and deployment stages rather than at earlier stages of innovation.
- Apply commercial rigour when making its investment decisions.
- Can provide concessional finance in certain circumstances but limits the amount of concessionality to $300 million per annum. To date, CEFC has been participating largely without making concessional loans.
- Not invest in nuclear energy or carbon capture and storage and that at least 50 per cent of the CEFC portfolio is invested in renewable energy, with the remaining being met from low-emissions technologies or energy efficiency.

The Clean Energy Financing Corporation operates and makes its investment decisions independently of Government based on rigorous commercial assessments of their board. It is not a grants organization; its investments are made with an

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**Green Investment Bank of the United Kingdom**

The Green Investment Bank is a corporatized government company, established in 2012, with the aim of attracting private finances to private sector initiatives for environmental innovation. The types of projects the bank is intended to fund include: offshore wind power generation; waste-handling plants; energy efficiency measures; biofuels; biomass; carbon capture; and storage, marine energy and renewable heat generation. It was born out of a House of Commons committee, which found that traditional sources of finance could not meet the funding gap for green investment projects required for industry sustainability.

The bank started with a 3.8 billion United Kingdom pound sterling (£) ($5.51 billion) government injection and has lent out £1.8 billion. This money has funded 44 separate projects and is estimated to have created transactions in the country’s green economy worth £6.9 billion. In some cases, the bank co-invests with other government departments or the private sector. For example, the bank has committed £190 million to a renewable energy plant in Thames with the support of the Irish electricity utility Electricity Supply Board (ESB).

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For further information on the Green Investment Bank see www.greeninvestmentbank.com/.

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expectation of being repaid. CEFC invests responsibly, manages risk and is expected to be operationally self-funding through its investment returns.

The Fund looks for gaps in the clean energy finance market and tries to identify new financing models that can help meet those financing gaps and ensure projects go ahead.

One of the primary aims of the CEFC is to facilitate increased flows of finance into the clean energy market. To do this, the Fund also provides significant technical assistance, working with many project proponents and other financiers to match project developers with interested parties, such as equity partners. It aims to broker negotiations and bring parties together, including in financing consortiums and bringing in other co-financiers. Most private financiers do not have the resources nor the time to offer these services in new and emerging market segments, electing instead to fund more well-known technologies because they are perceived as having less risk. The Fund’s public purpose means that it can work collaboratively with clients to restructure financing arrangements to help make their projects bankable.

Every dollar CEFC invests leverages more than $A2 in additional private sector finance into the clean energy sector. The Fund has already partnered with more than 15 co-financiers, including all of the major Australian banks and banks from overseas that have never before been active in the Australian clean energy market. Its role, as a government-backed clean investment bank has, in some transactions, been critical to building the confidence to attract these types of investors into the market.

To date, the projects CEFC has invested in, once operating, are expected to deliver more than 4.2 million tons of CO$_2$ emissions abatement per annum and involve more than 600 MW of clean electricity generation capacity.

As Indonesia has identified, “In an increasingly carbon-constrained world, there is likely to be an expansion of both private market and public finance to support climate change mitigation in developing countries (figure 5 below). If suitable mechanisms are put in place internationally and domestically, Indonesia could be a major recipient of such finance.” (Ministry of Finance, 2009)

There have been regional attempts to deal with this problem. A notable one is the Carbon Market Program of ADB. A key initiative of this scheme is the Future Carbon Fund (FCF), which seeks to support energy efficiency schemes and reduce the risk in adopting low-carbon technologies. Further efforts to build regional approaches, potentially modeled on CEFC, could provide opportunities to address a problem threatening every country.
Carbon pricing

From 1 July 2012 to 30 June 2014, Australia had a carbon pricing scheme in place, the centrepiece of the “Clean Energy Future” policy (Clean Energy Act 2011) passed by the Labor Government in 2011. However, following a change of government in September 2013, the carbon price was repealed in July 2014. Australia, therefore, provides a unique test case on the impact of a carbon price policy on emissions by comparing data before, during, and after its operation.

Under the carbon pricing mechanism, emitters responsible for more than 60 per cent of the country’s emissions were covered by a liability to acquire permits for their emissions arising from the combustion of fossil fuels, as well as for some other processes and emissions. In 2012/13, this equated to 349 of the country’s highest emitting entities, including power stations, mines and emissions-intensive manufacturers (Clean Energy Regulator, 2013).

Note: UNFCC = United Nations Framework Convention on Climate Change, EU = European Union, CDM = Clean Development Mechanism.

Figure 5. Carbon finance needs in developing countries, financing proposals, and the size of the Clean Development Mechanism

<table>
<thead>
<tr>
<th>Project Catalyst</th>
<th>EU Commission</th>
<th>UNFCCC</th>
<th>World Bank</th>
<th>EU Comm. proposal</th>
<th>UK proposal</th>
<th>China proposal</th>
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Proposals for financing

Estimates of developing country costs

Available under Kyoto Protocol

Low (or single) estimate ■ High estimate

Note: UNFCC = United Nations Framework Convention on Climate Change, EU = European Union, CDM = Clean Development Mechanism.
The carbon pricing mechanism was a permit scheme in which the price was fixed at $A23 per ton of carbon dioxide and equivalent in 2012/13 and $A24.15 in 2013/14. The Government sold an unlimited amount of permits at the fixed price and neither international trading nor banking of permits were allowed. The legislation called for the fixed price scheme to be moved to a floating price in 2015, linked with international carbon markets, including the European Union, however it was repealed before this transition could occur.

Other notable features of the scheme included recycling of about half the revenue to low and middle-income households through lower income tax rates and increases in welfare payments; assistance to emissions-intensive trade-exposed industries through output-linked free permits at a declining rate; an offset mechanism for agriculture and forestry; funding for investment in renewable technology and innovation; and newly created independent institutions, such as the Climate Change Authority, to provide independent advice on national emissions targets.

The impact of the policy on the electricity sector is the most relevant as emissions from electricity generation are the largest contributor to overall emissions of Australia, and are the greatest opportunity for reducing emissions both in the near term and the longer term. The electricity sector also made up the majority of emissions covered under the carbon price (O’Gorman and Jotzo, 2014).

Research by the Australian National University (ANU) found that carbon emissions in the country’s national electricity market would have been 11 million to 17 million tons higher during the 2012/13 and 2013/14 if Australia had not introduced a carbon price.

It found that the carbon price had been performing well in its main job: delivering emissions cuts in the power sector, which is the largest source of emissions in Australia and the sector with the biggest opportunity for cuts. Besides helping to reduce power demand by households and industry, the carbon price had a strong effect on the relative costs of running different types of power plants, making highly polluting plants more expensive, and cleaner ones cheaper. Some black and brown coal generators reduced their hours of operation; others were mothballed. As a result, electricity generated from renewables and gas increased significantly while the share of electricity generated from black and brown coal reached a record low. Together, ANU estimated that the emissions intensity (the amount of carbon dioxide released per kilowatt hour of electricity produced) of the power grid of Australia fell by 2-3 per cent as a direct result of the carbon price, while demand fell by 1-2 per cent and overall emissions by 3-5 per cent.
Because the revenue from the carbon price was recycled to reduce distortionary taxes for low-income earners and encourage investment in renewable energy while providing incentives for energy efficiency for households and businesses, the actual economic cost of the scheme was much smaller than the value of permits sold, or the tax take.

Political uncertainty, however, dogged the carbon pricing policy over its entire existence. At the introduction of the carbon price in mid-2012, a survey found that 40 per cent of experts, including decision makers at liable entities under the Australian carbon pricing mechanism expected the scheme to be repealed by 2016 (Jotzo, 2012, p. 2). As a result its effect was not as great as it would have been under a stable policy framework.

For investors in assets with lifetimes of several decades, what matters most is the expectation of policy settings over the medium to longer term. For any country seriously considering moving to a carbon pricing or emissions trading scheme, a stable, bipartisan, long-term policy framework that creates economic incentives to cut emissions would be the foundation of its success. The world’s major economies are pushing ahead with policies that will clean up their energy systems and modernize their economies. The Australian experience shows that pricing the emissions is the most efficient and cost-effective approach to tackling climate change. Other mechanisms, such as implementing strict regulations or introducing subsidies and incentive schemes, can play a complementary role.

By adopting a carbon price, Australia was not only putting a price that captures the externalities of carbon emissions and thereby changing behaviour, but also incentivising investment in more sustainable forms of energy production.

**Development assistance**

The international agenda to identify finance for development should not be a guise for reducing ODA when it is needed. This is particularly the case in the most vulnerable environments in which alternative sources of finance are unlikely to be forthcoming in the short, medium and even longer-term.

According to OECD, ODA reached an all-time high $134.8 billion in 2013. At this level of investment, ODA clearly remains an important source of finance for many countries and “particularly for countries dealing with widespread extreme poverty and/or conflict – in the foreseeable future.” (Lomøy, 2015).
Similar to many nations (the United Kingdom being the noteworthy exception) Australia has not achieved its commitment to 0.7 per cent of GNI for ODA. While significant increases in ODA were made under the previous government, the economic and political imperative for ongoing increases in ODA proved challenging in a drastically changing economic environment. Subsequent cuts to the ODA budget will put the country’s aid programme at its lowest disbursement level ever in 2016/17 at 0.22 per cent of GNI (Howes and Pryke, 2014).

Central to this challenge was not only the fiscal environment in which declining revenues were placing pressure on the budget, but there were also concerns around the effectiveness of an aid programme, which had been growing at a significant pace. Declining public support for ODA during a period of fiscal consolidation is also a real consideration for governments.

While there can be no excuse for reduced efforts to alleviate poverty throughout the world, governments remain accountable to their constituency. The domestic challenge to maintain commitments to ODA requires significant international consensus to regain momentum and support.

There is also an ongoing role of the development banks, including in relation to accountability of development finance and investment. Finance for development must increasingly reflect the need for sustainable investment, with development banks supporting this work through both technical expertise and some level of oversight of investment decisions. For instance, increasingly, investors appreciate the problem of “carbon bubble” or stranded asset risks of building infrastructure with a 40 to 50-year life that will be caught by carbon dioxide (CO₂) regulations potentially in a 5 to 20-year timeframe. As a consequence, new coal-fired power plants are becoming increasingly difficult to finance in developed countries. Ensuring finance in the developing world for similar projects that may become stranded assets over time will be challenging and critical. The problem is when those building such infrastructure understand this challenge, and yet continue to expand their markets in the developing world through ODA and development banks.

It is important that future ODA programmes keep in mind the growth of Asian nations such as China, India, Indonesia, Malaysia, the Republic of Korea, Thailand, and Singapore, in shifting from aid receivers to aid donors. This opens up additional avenues of finance for ODA and allows priority to be placed on those most in need. Given that these Asian nations recently underwent transformation, they are perhaps best placed to provide advice to neighbouring developing Asian countries.
Overseas development aid has an ongoing role as a source of financing for development. All countries must renew their commitment to this as part of the 2030 Sustainable Development Agenda. The world community must agree to another decade of development that hopefully reaps further gains for the world’s poor.

**Summary of policy lessons**

The above discussion has identified a range of experiences and lessons from reform that have the potential to inform future approaches to policy reform across the Asia-Pacific region. A number of policy implications are briefly summarized below:

- Given the role of public revenue to deliver essential services and ensure an inclusive economy, strengthening domestic revenue remains critical to financing development. Broadening the tax base, ensuring an efficient and equitable tax regime, and strengthening the capacity of governments to raise revenue and avoid revenue leakage are critical to financing the 2030 Sustainable Development Agenda.
Countries need to build institutional capacity to administer and collect revenue. Donor nations and multilateral institutions, such as IMF, have a role in strengthening the capacity of countries to design and implement an efficient tax regime.

Global efforts towards improving international tax arrangements and the treatment of multinational corporations must continue to include the work of G20 on Base Erosion and Profit Shifting and automatic exchange of information between tax authorities, as well as the OECD work on multinational taxation and tax transparency.

There is a need to continue to strengthen financial systems throughout the Asia-Pacific region. This includes ensuring stable, independent central banks, a stronger regulatory environment and deepening capital markets. Clearly countries throughout the Asia-Pacific region are at very different stages of development and therefore the process and sequencing of financial sector reforms must be staged accordingly. There is a role for international and regional institutions, including ADB, ASEAN, G20 and the World Bank, in supporting reforms to strengthen financial markets.

Meeting the financing needs for infrastructure is critical to development, but also essential for generating demand and growth. Policies need to be adopted that recognize the role of public and private finance in infrastructure in cases which there are clear public benefits.

The establishment of institutions, such as Infrastructure Australia, an independent body that would undertake cost-benefit analysis of potential infrastructure projects and prioritize projects, could be beneficial.

Opportunities for sovereign wealth or superannuation funds to invest in major public infrastructure requires stability of the economy and investment environment, as well as strengthened regulatory, legal and political frameworks to make investing viable.

Innovative approaches to addressing climate change that can also support new approaches to financing development exist.

The Clean Energy Financing Corporation, a national clean investment bank that facilitates finance into the clean energy market, is a potential model that could help transform the Asia-Pacific region in a carbon constrained world.

Carbon pricing, despite having been repealed in Australia, has been found to be an effective and efficient mechanism for delivering emissions cuts in the power sector.
• Renewing global commitments to ODA require international consensus, demonstration of aid effectiveness and accountability for development finance and investment. Increasing the share of ODA to target the most vulnerable nations should be part of this increased focus and accountability.

• Each of the above approaches to financing development requires consideration of the political and economic context within each nation. Innovation in finance and policy reform often challenges the status quo and as such, countries could do well to share policy experiences and approaches to achieving lasting reform including through international forums.

IV. CONCLUSION

There are significant opportunities to pursue finance for development in the Asia-Pacific region. The above discussion sets out the changing sources of finance but also considers challenges involved in accessing those sources of finance.

Across all sources of finance for development, whether domestic revenue strengthening, foreign capital and investment, new sources of finance for climate change and ODA, among others, the domestic political and economic environment is critical to delivering the reforms that are necessary access to those sources of finance.

The lesson from the relatively recent experience in Australia is that delivering reform to finance and supporting sustainable investment can be challenging. Whether it is ensuring the economic case is made for reform, managing existing interests in the design of policy reforms, or ensuring reforms are future proofed, achieving the goal of financing development through innovative policy and new sources of finance can be difficult. Emphasis should be placed on financial market liberalization, regulatory stability and deciphering the public good away from vested interests.

At the same time, the potential sources of finance for development are plentiful and great. They present a real opportunity to fill the investment gap in many countries across Asia and the Pacific. The potential for innovative finance and policy also provides an opportunity to deliver investment that is inclusive and sustainable.

Developed nations have a particular role, along with international organizations, such as OECD, to support nations in building their revenue systems to be able to afford the services and public investment necessary for inclusive growth. An increased share of ODA should be allocated to strengthening domestic revenue
systems. Efforts to improve revenue collections should also be coordinated with greater measurement and support for effective allocation of revenue to achieve inclusive growth.

There are clearly also lessons from developing nations in how they pursue reform, including the need to plan for domestic reform that is likely to be challenged by existing interests, and to factor in the need for reform and investments to be sustainable. Again, there is a role for international forums to support dialogue on the process of reform and for international organizations to provide greater accountability and oversight of both ODA and international investment. The Economic and Social Commission for Asia and the Pacific may also support member States in this endeavor at the regional level.

Innovative opportunities exist to finance development. Whether it relates to new approaches to climate finance or creating the necessary environment to enable pension funds to invest in development, non-traditional opportunities exist to support the achievement of the 2030 Sustainable Development Agenda.

There is a clear role for regional partnerships in the delivery of this agenda. However, those partnerships will be contingent on ensuring greater coordination across the various international forums, such as the Asia-Pacific Economic Cooperation (APEC), ASEAN and G20, the expanding number of international financial organizations, new development banks and philanthropists.

The challenge for the 2030 Sustainable Development Agenda is to achieve consensus on what finance for development looks like, ensure that it is realistic in the domestic political and economic context and that it is capable of achieving the development outcomes the world needs to see in the next decade.
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