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Financing Basic Utilities for All: A Survey of Issues

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Introduction

Over the past two decades, the debate around the issue of access to basic utilities for all has focused on public versus private provision of services. Privatization was expected to bring about supplementary financing for upgrading and expansion of basic utilities, in addition to more efficient service delivery. Widespread failure of privatization policies to do so has led to the recognition that public budget resources are likely to remain the biggest source for investment.[2]

The Millennium Development Goals call for halving the proportion of people without

billion per year (Lenton & Wright, 2005). For electricity, the numbers are staggering as well. The International Energy Agency (IEA) estimates that approximately $700 billion of investment will be required to reach an additional 1.4 billion people (IEA, 2003).

Mobilizing finance: Stable and predictable financing mechanisms for utility providers at all levels

Financing options at the international and national level

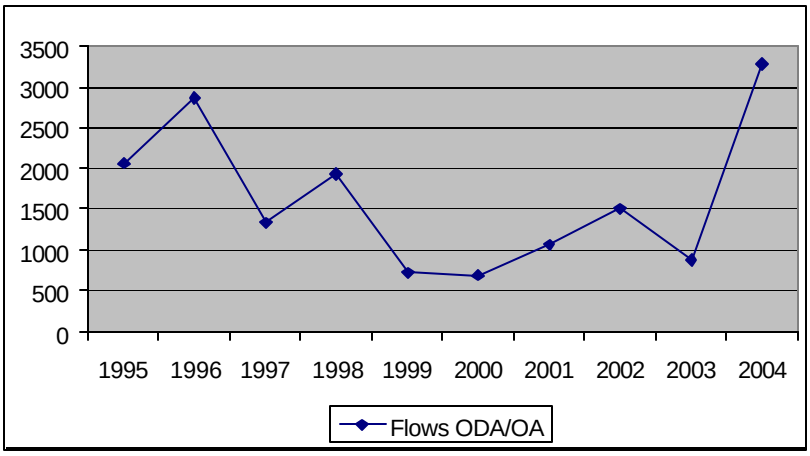
Mobilizing sufficient financing for investing into utilities is difficult due to low levels of cost recovery for both the water and electricity sectors. Consequently, domestic Governments cover the biggest share of new investments with the remaining balance coming from foreign aid and from private investments. More specifically, it is estimated that in 2000, 65% of funding for water and sanitation came from the domestic public sector, 12% from international donors, 19% from the domestic private sector and 5% from international private companies (Fonseca & Cardone, 2004).

In developing countries, government funding for water has been stationary. With regards to ODA for both water & sanitation and electricity, 1999 represented a year of decline and 2004 a year of recovery. More specifically, between 1999 and 2003 grant and loan funding for water supply and sanitation ranged between US$2.5 billion and US$3 billion, a decline compared to previous years

Bank, 2004). Recently, this trend has been reversed: World Bank lending for infrastructure related programs and projects amounted to $8.1 billion dollars during fiscal year 2006, a 10 % increase compared to 2005 and much larger compared to 1999.[5]

Table 1:

Annual flows of development aid for electricity (transmission and distribution) from 1995-2004 in millions of US-Dollars



Meanwhile, private investment in water and electricity in developing countries has been declining. Overall, since peaking at $131 billion in 1997, private investment in infrastructure projects fell to $50 billion in 2003.[6] In addition, investments are heavily concentrated in telecommunications and transport in the East Asian and Latin American regions. Even at peak times, financing has been lower than expected for many reasons. These include the high risk involved in investing in poor countries and risks related to the capital intensive and long term nature of infrastructure. Moreover, private investment declined as a result of pressure by

[5] www.worldbank.org/infrastructure/
[6] www.worldbank.org/infrastructure/

governments and social movements, as in the case of Aguas Argentinas (controlled by France-based Suez) and Suez in Bolivia, where disputes arose related to prices and quality of services. Along the same lines, legislation that prevents foreign corporations' participation in the water sector, as implemented in Uruguay, has discouraged foreign investments (UN World Water Assessment Programme, 2006; Van Hofwegen, Paul, 2006). Comparable considerations apply to commercial bank lending for both sectors, which has been declining in recent years (Winpenny, 2003).

Programmatic Financing Instruments

In recent years participatory poverty assessments (PPAs) have been a popular instrument for including poor people's views in the analysis of poverty and the formulation of strategies to reduce it through public policy. A common result of these PPAs has been a call on governments in developing countries to allocate a bigger share of their budget for investments in the water and electricity sectors. Yet, in many cases little resources are allocated to these sectors within national planning strategies. One major reason for this is the sectors' weak bargaining power. This is mostly due to a lack of consensus among institutional stakeholders representing different sub-sectors and interests (e.g., water for agricultural use, water for domestic use). In addition, sector information and cost estimates are weak. Finally, at the national level, financing tends to be fragmented, because of the variety of sources.

The 2005 World Summit Outcome has called for the adoption of National Development Strategies (NDS) with a particular commitment to achieving the Millennium Development Goals

(MDGs).[7] If adopted, NDS will promote higher priority to sectors such as water & sanitation and electricity.

Both ODA and national resources are more and more shifted from financing of individual projects to Sector Wide Approaches to Planning (SWAPs), yet financing geared towards single projects still dominates globally. For national government resources, SWAPs translate into sector expenditure plans as part of countries macro-development-frameworks. This could unite and strengthen the voice of different stakeholders and lead to more integrated strategies for water and electricity. The SWAP approach has been successful in Uganda (see box 1).

Nevertheless, the sector approaches cannot be applied everywhere. Knowledge of the country's needs and available resources, a clear division of responsibilities among different sector institutions are critical for their success. There are countries, for instance Eritrea, where water laws do not exist or are only in a draft form. Also, many countries do not have a clear institutional set-up for water resources management and policy. In Eritrea, for example, responsibility for water policy making has been shifting between the Ministry of Local Government, and the Water Resources Department of the Ministry of Land, Water and Environment. The Ministry of Public Works and the Ministry of Agriculture are also involved.[8] Another major constraint, in the case of Eritrea as in other countries, is represented by the lack of knowledge of the country water endowments.[9] Where these are the conditions in places and/or in cases where domestic government commitment to reform is lacking, resources could be allocated to single projects through simpler mechanisms of coordination among different financing sources. In Eritrea, both government and donor funds are not disbursed within a national water development framework, but are channeled into projects that respond to specific temporary needs. This approach has

[7] See http://www.un.org/summit2005/
[8] In The Water Policy Paper of Eritrea (DRAFT) – MoLWE, WDR, August 2004, the Government of the State of Eritrea indicates the water sectors lack a clear institutional set up.
[9] The Water Policy Paper of Eritrea (DRAFT) – MoLWE, WDR, August 2004.

allowed Eritrea to increase access to water of 25% from 1990 to 2004 and to be portrayed as a successful case by the Second Report of WHO and UNICEF on MDG in Water and Sanitation.[10]

Box 1

SWAP in Uganda

The Uganda SWAP for water and sanitation is a success story.

Inadequate co-ordination among actors in the sector was perceived as hampering efficiency and efficacy in financing and delivery. Since 1997, the sector has been undergoing reform. Programs - based on a demand responsive approach and decentralized implementation through district governments-have been set up for rural water supply and sanitation. The reform envisaged a comprehensive sector work which included a *National Water Policy*, *Urban WSS Strategy*, *P,*

[10] WHO and UNICEF, 2004.

At the same time, more feasible initiatives are being proposed and probably worth pursuing in this and similar countries, such as water harvesting or the establishment of water user associations at the regional level in charge of small scale water needs assessment.[11] While such initiatives may be unsustainable due to the inability to predict long term water availability, they may very well be the best available alternative. The focus should be on low cost and small scale intervention to minimize waste of resources. Contextually, donors could encourage the creation of those conditions that would allow for a sector wide approach to be developed.

ODA financing

At present, aid assistance is mainly provided via bilateral grants with limited coordination between different donors (Van Hofwegen, 2006). In addition, ODA for basic utilities tends to be allocated to countries less in need of it than others. For instance, the European Union estimates that countries in Sub-Saharan Africa with the least access to water, i.e. Mauritania, Ethiopia and Guinea receive much less of European Commission's aid for water than Ghana, Burkina Faso and Tanzania (European Union, 2003). Similar considerations apply to other DAC resources for the sector. Donor countries tend to give priority to the geo-strategic visibility of and their historic ties with recipients (World Water Council 2006). Moreover, there is a large lag in time between commitments and disbursement. Disbursement tends to start 4-5 years after initial commitment, with gradual disbursement in the following 3-4 years (Cardone, 2005). This creates a significant mismatch between planned activities and available resources.

If implemented successfully, the Paris Declaration on Aid Effectiveness could ameliorate the situation. Its recommendations are geared towards improving the alignment of assistance and

[11] Water Harvesting for Sustainable Development national Confederation of Eritrean Workers17-18/02/05.

monitoring, building institutional capacities, reducing transaction costs and eliminating unnecessary bureaucratic procedures.

Coordination and targeting of aid could be improved if donors made larger use of existing water and electricity initiatives. In addition, many experts believe that assistance for water attracts less attention then other social sectors, such as health and education, due to the inexistence of initiatives at the international level for water and sanitation provision (Cardone, 2005). Meanwhile, initiatives such as the Education for All Fast Track Initiative or the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFTAM) seem to be able to attract significant global attention. However, global initiatives may not be very responsive to regional and national needs. Giving more publicity and making more use of existing regional and country initiatives for water could represent a good alternative. For instance, some of the existent initiatives in water supported through the African Development Bank (AfDB) are worth exploring. They include the African Rural Water Supply and Sanitation Initiative (RWSSI), which aim at decreasing poverty in Africa through the development of water and sanitation services. The AfDB intends to mobilize resources internationally to cover approximately 80% of requirements with the remaining 20% percent to be financed by recipient government and beneficiary resources. The African Water Facility (AWF) has been established as a Special Water Fund managed at the AfDB, with the aim of improving the enabling environment and strengthening water resources management in Africa. To date, pledges and contributions have been made mainly by international and bilateral donors. At the continental level, NEPAD Tc 0.s0 Tw (id.21145 Tc 0 Tw (ing) Tj 1d84l T

er Facility (AWF)

SWAPs have been more useful in enhancing the capacity to prepare clear sector strategies than in building capacity to manage the sector and improve service delivery. The abovementioned case of

the public partner on the award of the project to the successful bidder. This would make sense if the provision of such assistance came from local providers lacking own financing to provide such service.

The World Bank proposal of broadening capacity building activities to include the strengthening of public institutions, with emphasis in Africa on public financial management, decentralization, and governance, should be met with some skepticism (World Bank, 2005). This effort could be detrimental to simpler 'education and training' already receiving as little as 0.2% of total ODA for water and sanitation (World Water Forum, 2006). Little resources earmarked for this crucial component of water and electricity projects is likely to lead not only to difficulty in disbursement, but also to lack of sustainability of investments. The First Water Decade, for instance, is often referred to as having been successful in dramatically increasing water services while failing at making them sustainable. Although it is true that smaller scale initiatives, such as local training, may end up creating 'enclaves of efficiency', this may provoke real and effective action and is maybe preferable to *"Olympian councils of perfection whose intimidating severity leads them to be ignored"* (Roberts et al., 2002: 77).

The use of Conditionalities

Various more recent financing instruments used in both the water and electricity sectors (e.g. budget or basket support, often phased) follow the concept of output-based aid, whereby both commitments and disbursement of resources are strictly linked with achievement of outcomes (Van Hofwegen, 2006). This follows the growing consensus that investments must be complemented with policy and regulatory reforms and institutional capacity building. Reform efforts should focus on improving regulation and legal systems, protecting creditors and investors' rights, introducing reliable cost recovery schemes and implementing effective systems

of subsidies. According to the Department for International Development (DFID), donors should focus on improving the overall governance framework in a country, rather than fund unsustainable projects and programs in institutionally weak water sectors (ERM, 2005). There are three main limitations to this approach.

Thirdly, the use of programmatic approaches and output based aid generally involves the use of 'trigger' conditions. The IMF and World Bank are fostering the inclusion of privatization and liberalization of trade in services reforms in developing countries PRSPs. Also decentralization is at time prescribed as a condition for access to credit. The strong support for privatization of electricity distribution in Latin America is a case in point. In India, access to World Bank credit is dependent on implementation of a legal framework promoting administrative and fiscal decentralization (Alexander, 2005). Conditionalities often also prescribe the allocation of water to different users depending on the profitability of water use, the departure from cross-subsidization, and a reform of tariff structures. This approach is shared also by the IMF, by most national development banks, and by some bilateral donors. The IMF signals countries as 'off-track' to private and official investors for a lack of compliance on privatization (Alexander, 2005). Similar conditionalities are attached to debt relief initiatives such as the Highly Indebted Poor Countries initiative launched in 1996 by the World Bank and the IMF, now supported by the Multilateral Debt Relief Initiative. These initiatives allow countries to enter debt SWAPs as means to increase local currency funds available for social projects, including financing of basic utilities. In addition, many recently created 'special fund mechanisms' are only active in countries following privatization, decentralization, and liberalization measures. The Private Infrastructure Donor Group of UK, Sweden, and Netherlands, for instance, provides capacity building and financial guarantees to countries and operators, yet it is mainly available for privatization concessions (Hall, 2003). These independently managed mechanisms are strictly linked to reforms and are often used to bypass national governments. These funds are capitalized through public or donor resources and generally operate as revolving funds covering operational costs through interest earnings. Some of these schemes are established at the local level, others at country, regional or global level. At the global level, for instance, the Public-

Forces on Financing Water for All, all give high priority to the use of international loans and grants to attract private investment. This is envisaged through the introduction of innovative mechanisms to reduce risks faced by private sector both nationally and internationally. The Social Investment Fund (SIF) of the World Bank is one example of support provided to provincial-level initiative with the main purpose of increasing local investment (Mehta, 2003). Calls are also made for official sources to be channeled into enhancing community contributions and enabling local service providers: aid could be used to support pro-poor tariffs to enhance

global phenomenon. According to UN estimates, urban population increased from 732 million in 1950 to 3.2 billion in 2005 and is projected to reach 4.9 billion in 2030 (UN, 2005). Urbanization has led to greater demand for investment in water systems, wastewater collection and treatment, electricity, and other facilities. At the same time, fiscal decentralization strategies have become more popular which has shifted much of the responsibility for infrastructure and utility investment to local governments. Thirdly, fiscal subsidies from central governments to municipalities have become fewer (Peterson, 2000). Lastly, there has been an increased focus and interest in financial sector development in developing countries. In the Monterrey Consensus world leaders explicitly recognized "the need to strengthen and develop the domestic financial sector, by encouraging the orderly development of capital markets (…), including the insurance sector and debt and equity markets, that encourage and channel savings and foster productive investments" (Monterrey Consensus, 2002). Yet, despite these developments there is only very little research available on the long-term-financing arrangements of municipal governments in developing countries (Martell, 2003). Further study is needed to explore how municipalities can attract cheaper and a greater amount of capital. This section will mainly focus on the potential of subnational bonded debt in developing countries. However, other financing options will be summarily discussed as well. These include, inter alia, traditional municipal bank lending and more innovative mechanisms such as pooled financing arrangements. Due to the general paucity of data on the amount of actual subnational bonded debt outstanding in the developing world, most of currently available research derives lessons learned and best practices from case studies. Accordingly, this section will incorporate concrete country experiences, wherever they seem relevant. In addition, the annex of this paper includes some brief accounts of case studies of successful issuances of subnational bonded debt in developing counties.

The main part of this section is structured around four questions:

(a) What is the extent of subnational bonded debt financing in developing countries and what are the driving factors behind it?

(b) What possibilities of bond financing exist at the subnational level?

(c) What are the key micro- and macroeconomic constraints in issuing subnational bonded debt and how can they be overcome?

(d) What is the potential role of other subnational financing arrangements - traditional or innovative in nature - in relation to subnational bonded debt?

The extend of subnational bond issuances in developing countries

While it is well-known that subnational bonded debt markets are not well-developed in developing countries,[14] actual data is hard to come by. To the knowledge of the authors, the only attempt to compile a publicly available and comprehensive overview of subnational bonded debt (including amounts, types, yields and maturities) in developing countries was made by the World Bank. However, the data, which had been laboriously compiled with the help of World Bank country offices, has not been updated since 1999[15]. At one level this is understandable due to the magnitude of the work involved. On the other hand, it is surprising, given the importance the Bank attaches to the development of sub-national bond markets[16].

One fast track strategy is to research the number of subnational issuers that have credit ratings by the three major rating agencies S&P, Moody's and Fitch. Table 2 lists the number of

subnational bond issuers in developing countries that are rated by the three agencies with issues in domestic or foreign currency as of August 2006. This approach gives some indication of the potential access of developing countries to international financial market at the subnational level. Focusing on the three major rating agencies should yield a useful approximation of the number of rated subnational issuers in developing countries. It is assumed that these three rating agencies together reach a global market share of roughly 95 percent.[17] However, it is important to note that unrated bonds or those rated by other less dominant rating agencies are not included in the table below. [18]

The table illustrates that the subnational bonded debt market in the developing world remains at an embryonic stage. The large majority of developing countries either do not have subnational bond markets or issue bonds that are not rated by one of the major rating agencies. Countries that do have rated issuers have only very few (with the exception of Mexico). It is also evident that only one low-income country (India) has successfully issued subnational bonds rated by the three major rating agencies.

Another striking feature of the table is the comparably large number of rated issuers in Mexico. This can be best understood in light of recent changes in Mexico's federal fiscal system.

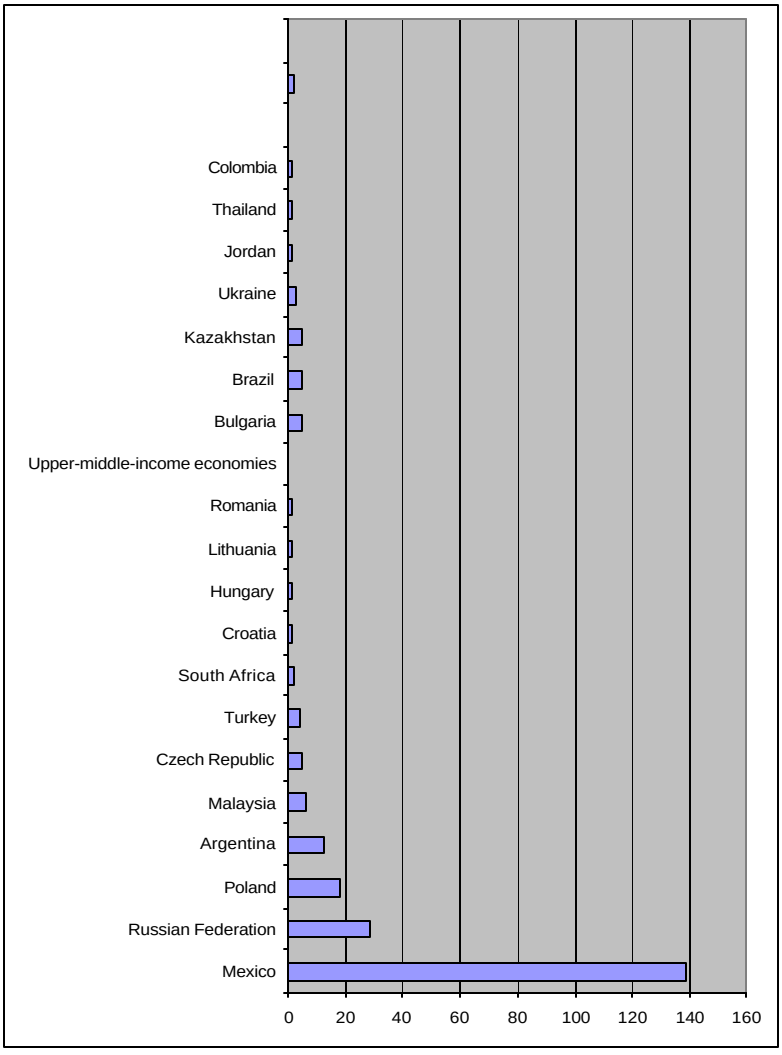
In the early 1990s, Mexican states and municipalities increased their degree of autonomy regarding tax collection and expenditures, while new support funds and programs were put in place providing additional resources for infrastructure finance. Most importantly, however, since March 2000, new financing and credit underwriting structures are in effect in Mexico. As a result, subnational entities do not receive any implicit or explicit credit guarantees from the national government.

[17] The 95 per cent estimate is based on 2001 numbers presented in US Congressional hearings on the role of the major rating agencies.
[18] It is difficult to establish the exact global number of rating agencies. The author is aware of 57 entitities. 18 are located in developing countries, of which only 3 could be found in low-income countries.

Consequently, subnational entities have to have their own creditworthiness assessed (Fitch, 2002).

Table 2:

Number of subnational issuers in low and middle-income countries rated by the three major credit rating agencies



Source: Fitch, S&P, Moody's

Bond financing at the subnational level-key options

Many experts argue that a critical factor for the appropriate choice of the subnational financing instrument is the project revenue raising capacity (Martell and Guess; 2006; Attinasi and Brugnoli, 2001). According to this approach projects with no return should be financed through grant financing while projects with partial cost recovery are suitable for "general obligation"-, "double barreled"- or "special assessment " - bond or asset backed securities financing. Projects with full cost recovery could access markets through revenue bonds and project financing instruments, including project bonds. These different types of subnational bonded debt are characterized by some notable differences.

General obligation bonds are backed by the issuing jurisdiction. The capacity to repay depends on the overall revenue of the jurisdiction that is "generated" through taxation, capital transfers or project revenue. Generally, no assets are used as collateral in a general obligation bond. The first general obligation bond in South Asia was successfully issued by the city of Ahmedabad, India in 1998. The bond issuance raised Rs. 1050 Million (equivalent to US$ 20.5 million), which covered 20% of the overall costs of the water and sewerage expansion programmes. The example is discussed in more detail below.

Double barreled bonds rely on two separate entities making the financial commitment. For example, a bond could be tied to the revenue stream of a utility but backed through a secondary guarantee of a municipality that owns the utility in case revenue falls short of obligatory interest payments. A popular form of the double barreled bond is the double barreled revenue bond mentioned below.

Special assessment bonds are tailored towards funding development projects as they are funded by taxes levied on the community benefiting from the particular bond-funded project. The downside of a special assessment bond is that economic and financial risks are concentrated in

relatively small areas. Therefore, special assessment bonds usually require a "guaranty fund" or legal protections, which increase costs and ultimately interest rates. Concrete examples of special assessment bonds in developing countries are sparse. One example is that of the Argentinean city of Bariloche, which issued SABs for USD 1 million in 1997 with three-year maturity and an interest rate of 12.5%. Banco Macro S.A. formerly known as Banco Macro Bansud S.A., entered into a fiduciary agreement with the city of Bariloche and deposited taxes levied on beneficiaries of infrastructure projects into a current account designated for repayment of the bond (Attinasi and Brugnoli, 2001).

Asset-backed securities (ABS) are bonds or notes collateralized by the cash flows from a specified pool of underlying assets. Typical collaterals for ABS are credit card future flows,

Nowadays, specific purpose revenue bonds are the primary source of funding US capital projects. Revenue bonds are among the "more ambitious" subnational bonded debt instruments as they rely on predictable and sufficient future revenue streams. India's first revenue bond was issued in Tamil Nadu and is discussed in the corresponding case study below.

Project bonds are a popular form of project finance. The number of project bonds to fund long-term infrastructure projects has risen in the developing world. Most existing project bonds, however, are corporate bonds, i.e. they are not issued by the municipality. Some high-profile transactions, including the $125 million issued by the Quezon power project in the Philippines, have sparked interested in this type of financing mechanism. Essential for the success of the Quezon project bond was the guarantee and backing of the project by reputable financial institutions. Construction loans were underwritten by the Union Bank of Switzerland and political risk guarantees were provided by the Export-Import Bank of the United States (Ex-Im Bank). A part of the loans was also insured by the US Overseas Private Investment Corporation (OPIC) (Boston Business Wire, 1997).

Supply-side constraints

Issuing a bond roughly comprises nine successive steps, all of which pose distinct challenges, especially in a developing country setting. The typical steps are: (a) the compilation of a corporate plan and capital improvement plan; (b) the completion of a feasibility study; (c) the decision to issue or not issue bonds; (d) the identification and involvement of all essential stakeholders, including underwriter, legal advisor, financial advisor, auditor, trustee/paying agent, notary and guarantor (if needed); (e) the completion of a public audit; (f) the preparation of documents, including an offering circular that presents the basic terms of the transaction to potential investors (prospectus), financial information on the issuer and a fiscal agency agreement

(trust indenture), c

recommendations to market participants. One crucial element for successful development of municipal bond markets could thus be the introduction of public disclosure guidelines (Peterson, 2002). This would also help avoid economically unhealthy vested interest relationships between underwriter, credit-rating agency and issuer.

Where reliable data exists, the issuer might prefer to turn to a major credit rating agency in order to access international capital and widen its investor base at home. However, for a municipality in a developing country this is a costly affair. Municipal ratings are issued on request. Rating fees are paid by issuers themselves or covered by insurers, guarantors, other obligors, and underwriters. For instance, Fitc2872ess..1554 conoho9ity iny TD -0au3mr9ity1niters. For rnt 7c TD -0

level. Such a framework is often weak or absent at the municipal level in developing countries. Moreover, in many cases these institution are already weak at the national level and as result investors and financial intermediaries might be even more reluctant to enter the sub-national market. An issue that deserves particular attention is the question of a lack of enforcing covenants on local government revenues pledged as collateral assets (Noel, 2000).

Finally, developing countries face a general scarcity of capital resulting from a shallow financial sector and underdeveloped or often non-existent insurance, pension and mutual funds. This type of constraint will hamper the successful development of the sub-national markets as much as it constrains the development of the overall credit market. Pension funds, in particular, have the potential to support the development of national and municipal bond markets. Through the purchase of municipal bonds, pension funds, who are generally the largest holders of long-term savings, can cater to the long term financing needs of municipalities. Further research is necessary, however, on strategies to effectively utilize this mechanism in developing countries. Major challenges persist where pension systems are dramatically underdeveloped as is the case in Sub-Saharan Africa and other non –African least developed countries. In countries with a large informal sector, low levels of contributions and fiscal problems, fully funding pension systems is a particularly daunting task. At the same time, investing in pension reserves is especially tricky when the economy is weak with an underdeveloped financial sector that provides very limited investment opportunities. Moreover, attempts by pension funds to become financial intermediaries in least developed countries were often unsuccessful and weakened the financial institutions even further (Barbone, Sanchez B., 1999). It would be critical to explore the factors that could help safeguard the value of pensions while not hindering investments in viable and profitable infrastructure projects (Vives, 1999).

erosion of the investor base caused by the financial crisis that hit Indonesia in 1997. During the crisis, the collapse of the rupiah drastically increased foreign currency debt and led to wide spread bankruptcy in the corporate sector. Moody's eventually downgraded Indonesia's long-term debt to junk bond with devastating consequences for the countries overall financial system. Consequently, potential long-term investors such as pension funds have become extremely conservative holding almost all of their funds in deposit, insured by the central bank. As a result, the banking system is still facing liquidity problems and there is no primary market (let alone a secondary one) for municipal bonds today in Indonesia. The experience of Indonesia shows that even where conditions seem favorable for the issuance of municipal bonds such an exercise remains vulnerable to systemic risks emanating from global financial markets. Indonesia's experience is not unique. The Asian, Russian, and Brazilian financial crises of 1997–1999 derailed and temporarily froze the development of the global municipal bond market (USAID, 1997; Fitch, 2002).

Overcoming constraints through pooled financing arrangements

Given all of these constraints even advanced market economies are bound to encounter challenges in building up successful municipal bond markets. The crucial question is how developing countries could overcome some of these impediments. A possible solution could lie in some sort of pooled financing arrangement. Municipal development funds (MDFs) have been used in the developed world, in particular outside the U.S., for local government debt financing. These funds access national bond markets for capital and then lent it on to local governments.

As of today, more than 60 countries have established municipal development funds or specialized financial intermediaries for raising capital to on-lend to subnational governments. The results are mixed. Only few of these MDFs have grown capable of mobilizing private sector

The role of municipal development banks

theoretically that bundled pricing generates welfare losses, both in terms of social welfare and in terms of consumer surplus (Aaron and Wildman, 1999).

Developing country experiences: The first South Asian municipal bond for improvement of water, sewerage and waste

Ahmadabad, the seventh largest city in India, includes surrounding slums with very limited access to drinkable water or sewerage system. To generate new financing for improving infrastructure the Ahmedabad Municipal Corporation (AMC) launched South Asia's first municipal bond for improvement of water, sewerage and waste, backed by USAID guarantees. Ahmedabad raised Rs. 1050 Million (equivalent to US$ 20.5 million) through over 5,000 investors, 75% of which came from the Indian general public through private placements. Around 20% of the overall costs of the water and sewerage expansion programmes could be covered through bond issuance. 80% came from a loan from HUDCO, India's Housing and Urban Development Corporation (USAID also guaranteed US $10 million in loans that HUDCO borrowed from US capital markets). The biggest investment financed through these bonds was the "Raska Project", which now supplies water to 60% of the city's population. In issuing the bond the city of Ahmedabad had to overcome constraints similar to many urban areas in the developing world. First and foremost, municipal revenues were low. In particular, property tax collection was low. Ahmedabad was no exception to the many other Indian cities with large informal settlements, which often only collected 1% of eligible property taxes. It was thus critical to improve the municipal revenue base through an impartial, efficient but also more aggressive tax. To this end the city employed well-trained professionals to help computerize and standardize the collection of property taxes and octroi - duty imposed on incoming goods. As result, the city achieved a 100% improvement in octroi and 80% improvement in property tax collection. The next step was to gain trust with investors through obtaining a credit rating. This

turned out to be a complex process as there was no precedence for evaluating subnational bonds in India. Eventually, Credit Rating Information Services of India, Ltd. (CRISIL), India's largest credit rating agency, ranked the municipality, after officials from CRISIL spent four months in Ahmedabad trying to assess its financial environment and credit worthiness. Ultimately, AMC was awarded an A+ rating (later upgraded to AA).

A major benefit resulting from his exercise was that evaluation criteria could be used to evaluate other subsequent subnational bond issuances in India. The success prompted AMC to issue a second tax-free 10 year bond offering at 9% interest to finance a water and sewerage project in 2002. Stakeholders involved in the issuance of the AMC bond have listed the following factors as critical for its success: (a) a solid capital investment plan (b) improved tax collection; (b) improved cost recovery, (c) improved accounting and financial management systems; (d) improved service delivery systems; (e) speed in project implementation is essential for a variety of reasons; (f) adequate legal and institutional framework that enables subnational government to introduce fiscal measures independently from the national government (Vaidya and Johnson, 2001; USAID FIRE Project 2001).

Developing country experiences: -Pooled financing and other innovations in Tamil Nadu

Tamil Nadu has become a very popular case study in the existing literature on subnational bond market development in developing countries. The state has mobilized nearly Rs.3000 million within five years through India's first bond by a joint private-public municipal fund, the Tamil Nadu Urban Development Fund, India's first revenue bond, and the world's first pooled financing bond outside the US. The Tamil Nadu Urban Development Fund (TNUDF) has successfully supported bond issuance by urban local bodies ULBs and promoted some other

innovative schemes to access private capital. TNUDF is a trust fund with private equity participation that is located outside the government.

In addition, the Fund had access to a line of credit of about Rs.3.7 billion (US$ 80 million) from the World Bank. In late 2000 TNUDF issued the first non-guaranteed, unsecured bond in India. The size of the issue was Rs. 1,100.5 million ($23 million) with a maturity of 5 years and an annual interest rate of 11.85%. The Indian Investment Information and Credit Rating Agency, Ltd. (ICRA) rated this issuance LAA+ (SO) (high safety and modest risk). The issuances were funded through ULB cash flow formed the base of this issuance, ICRA. Critical for obtaining a good rating was the fact that TNUDF established a debt service fund equivalent to one year's principal and interest payment as collateral throughout the life of the bond. The bond was placed privately, with commercial banks purchasing 70.5 percent, TNUDF's contributors 11.0 percent, regional rural banks 9.5 percent and insurance companies 8.0 percent (Kehew, Matsukawa, Petersen, 2005).

An interesting pooled financing arrangement promoted in Tamil Nadu was the Water and

Financing options at the local level

In many countries of Sub-Saharan Africa, as well as South Asia informal small-scale service providers (SSPs) account for a large share of the serviced population

needed. Yet, in cases where communities are required to pay a high share, sustainable access to financing would enable the development of more efficient, cheaper, and higher quality services. For instance, it is estimated that one of the reasons for lower than average bills for water provision by local water utilities in China (3.5% of household income) is developed financing mechanisms for local rural providers.

Small-scale service providers limited access to needed finance

One of the main constraints with respect to the quality and the expansion of services of small-scale providers is the lack of access to financing (Collignon & Vezina, 2000). SSPs' finance usually comes from informal sources such as earnings, savings and loans from friends and families. Community and private schemes recover cost through membership fees, connection charges, and tariffs.

However, additional sources of finance are needed in most cases to maintain service delivery. The nature of the demand varies across different types of SSPs. The potential demand for financing appears greater for community-level providers and small scale private enterprises given the higher capital requirements for initial investments, major repairs, expansion or augmentation. There is a wide variation in investment levels, depending upon the level of technology. For instance, manual latrine cleaners call for small amounts of finance compared to suction tanker businesses. The amount of capital required also depends on the regulatory environments and the levels of utility development and coverage.

For community-level providers most countries offer government subsidies for new investments. However, decentralization policies and demand responsive approaches are leading to a decline in available government finance. Moreover, government financing is in general not

private providers, the lack of access to credit for capital investments is often one of the most significant barriers to entry, which in turn limits competition. At the household level, financing requirements are smaller. Funds are primarily needed to meet the cost of family water and sanitation facilities, or connection fees to a community or urban scheme. Yet, these are sizable investments for most poor households, especially in countries where government policy is shifting emphasis away from household subsidies.

In the first case credit risk is related to the household's saving and credit history. There is a direct incentive to repay due to the direct benefit for the household. In the second case, a credit history is not available and common community benefits may lead to higher risk of delays and defaults. In ongoing community and private schemes, a history of user charge payments and the possibility of linked service improvements have helped facilitate granting of credit. The risk is lowered, or can be better assessed, as the MFI establishes a relationship and cash-flow history with the community or private scheme.

Successful cases of microfinance can be found all over the world for both electrification projects and water and sanitations schemes. One successful experience comes from Sri Lanka, where the micro-hydropower scheme of the Kandal Oya village was founded through a micro-loan by a commercial bank. The Intermediate Technology development Group (ITDG), a British NGO promoting small-scale technologies, facilitated this process. In order to finance the project the bank gave a loan to a newly formed village society composed of 80 members on the basis of the member's individual guarantees. The village society contributed in the form of labour, material and cash. The community did all the construction work with some technical assistance from ITDG. A management committee was set up for the scheme. A monthly payment was established for each household to pay for operational and maintenance cost and the repayment of the loan (Harper, 2000).

Nevertheless, while the use of microfinance for shelter related credit has been high (Prahalad, 2004), the same cannot be said for infrastructure related credit. It has to be seen whether MFIs can be an effective medium for increasing access to basic utilities. Many MFIs restrict their loans to amounts that are sometimes too small and too short term to meet local infrastructure financing requirements. Certainly, larger-scale supply solutions such as power generation or reservoir construction are not amenable to such approaches, even if considerable groups could be put together to pool financial resources. Thus an MFI-led approach appears most

applicable either to urban or peri-ruban communities in close proximity to existing infrastructure facilities or to rural communities whose requirements could be met at a relatively low cost (e.g. t

Other models are revolving funds for covering capital costs. The capital costs are recovered with regular repayments of the recurrent costs over a period of time. Through such approaches the community mobilizes and manages the resources itself.

The broader framework for financing of small-scale service providers

Some experts claim that i China micro-financing of local schemes seems to be successful due to the absence of a culture of subsidies and the use of government resources to promote private investment. These claims question the traditional role of government as a provider of basic services, in particular for the poorest. The focus of the debate should be on how Government resources could be used most effectively to support small-scale service providers. For instance, governments could focus on the development of credit assessment tools, or on lowering high initial transaction costs for micro-finance institutions.

For instance, in Ethiopia a Rural Water Supply and Environment Project funded by the government of Finland has involved the Amhara Credit and Savings Institute (ASCI), a local microfinance institution, in providing financial services to Water & Sanitation Cooperatives (WATSANCOs), i.e CBOs. Capacity building and technical support were critical in the course of the project. About 39% of the community-based schemes supported through this project used the services of ASCI to deposit the fees collected. Initially, regular savings of the MFI enabled access to funds for repairs and maintenance while the cash flow history of a given CBO provided favorable conditions for future loans (Mehta, 2003). At

present, detailed procedures are being worked out to deliver credit services for water-point construction for groups organized under the WATSANCOs.[21]

Another important task is to address supply-side constraints and help local communities develop bankable opportunities. This was done in the above mentioned case of Sri Lanka hydro-power schemes, where an NGO provided technical assistance. In order to scale-up services, there is a need to create links between existing financial mechanisms and formal financial institutions. Greater information exchange and transparency should be promoted. Mehta (2003) provides the example of CLIFF, a partnership of UK based Homeless international and its Indian partners and local organizations.[22] The initiative focuses on project development support, partial guarantees for risk mitigation and market-based investment funds in the attempt to scale-up existing local utilities.

Other issues which require further attention are information constraints and high transaction costs incurred by local financial institutions. Further development of credit rating agencies or rating of local infrastructure projects could address these matters. In general, financial institutions need to further explore the possibility of local utility markets. Credit mechanisms specifically tailored for financing of utilities can be developed. At the same time, tariff setting, cost recovery policies, and connection costs require further study. For instance, companies (e.g. New Infrastructure Development Finance Company – IDFC – in India) exist, which explore opportunities for financing the private sector for decentralized utilities. It is too early to properly assess the performance of these companies. Yet, careful monitoring should be ensured to expand evidence on what works, under which conditions, and why. More evidence is needed also on the type of financing of community and household utilities (CREPA, 2000).

[21] Amhara Credit and Saving Institution (ACSI) Institutional Profile, Current Status and Future Strategy Bahir Dar May 2004 http://topics.developmentgateway.org/poverty/rc/filedownload.do?itemId=1007720
[22] Homeless International is a charity internationally supporting community-led housing and infrastructure related development in partnership with local partner organizations.

Realization and articulation of finance mobilization at the local level must of course be combined with the appropriate regulatory framework. For instance, the legal basis of community organizations will influence the risk perception of the lenders (Harper, 2000). In both cases of CBOs in Ethiopia and Sri Lanka, the lack of legal status of the beneficiary organizations caused problems and delays in credit provision and required the mediation of a third actor. Also one should define clear and firm legal basis for group investment, transparent procedures for handling money and ensuring accountability, as well as guidelines for the role of local governments (e.g. monitoring and regulation). For private providers there is a call for transparency in contracts, efficiency in billing and collection systems, and regulation to ensure fair competition (Snell, 1998). SSPs are a temporary solution, but they cannot survive as enclave: they need an appropriate sector framework providing necessary incentives and making sustainable access to credit possible (Chandavarkar, 1994).

Paying off the debt: ensuring the sustainability of access to utilities for all

Cost recovery

During 1990s frustration with inefficiency and low quality of basic services, as well as limited capabilities for expansion, led to less emphasis on subsidies in favor of cost recovery. The notion of cost recovery refers to the practice of charging consumers for the cost of providing services. The idea of cost recovery rests on different arguments. Firstly, there is the fiscal rationale: the need for governments to reduce tax burdens. This type of pressure is more and more prevalent at the local level as municipalities face cutbacks in national transfers and compete to attract human and financial capital. Secondly, cost recovery is important to ensure sustainability, i.e. the availability of funds to increase coverage as well as the quality of services. Thirdly, a moral argument can be made, for the need for consumers, in particular higher-income groups, to value the use of services appropriately. Finally, it is believed that cost recovery promotes efficiency, accountability, and transparency by providing clear financial indicators of performance (McDonald, 2002).

Costs to be covered are diverse. They may include economic costs and benefits, for instance the lost value of water for other usage, gains from the productive use of electricity, environmental costs, or other positive and negative externalities. In addition, information system development, monitoring, and regulation costs may be recovered. Yet, typically, cost recovery refers only to the cost of development of community institutions and capacity as well as systems

construction, operation, and maintenance. More rarely, cost recovery also includes systems rehabilitation and/or extension (Cardone & Fonseca, 2003).

TariffseTcovery 19

not formally applied, remote communities do pay more because they purchase water from resellers, as they are not reached by official utilities. Finally, output-based tariffs are a new concept of tariffs which have not been applied yet. According to this type of tariff users should pay based on a schedule of improvements of service promised by the utility.

The drive for increased cost recovery in the context of wide-spread privatization in the 1990s led to steep price increases in electricity and water and sewerage networks. As the poor have spent a higher percentage of their income on these services than the better-off, they have suffered the most. A number of studies have revealed that the amount and structure of these price increases have produced increased inequity, e.g., in Peru (Birdsall & Nellis 2002). Also, elimination of illegal connections by private utilities has hurt the poor disproportionately and has accounted for a significant amount of the increased price impact. Under privatisation many poor households suffered from a price that was higher than the old state price for electricity supply. This has led to an increase in income inequality and exclusion of many people from services. Utility privatization has also often led to network expansion limited to urban areas. The rural poor have been generally left with the infinite price of no service at all. This scenario has occurred in Peru, Argentina, Bolivia, Mexico and other Latin America countries (Birdsall and Nellis 2002).

At present, tariffs in developing countries are usually set well below the level needed to cover operation and maintenance costs. About 39 % of average tariffs for water utilities do not cover operation and maintenance cost and 30 % of water utilities tariffs are too low to contribute to capital costs (World Bank, 2005i).[23] In electricity, the tendency to under-price service is less prevalent, yet 50 % of electricity utilities worldwide have average tariffs unable to cover operation and maintenance and 44 percent have tariffs which do not make any contribution to capital costs (World Bank, 2005i).

[23] Data from a Global Water Intelligence surveys covering 132 major cities worldwide.

In a nutshell, a substantial proportion of the population in developing countries finds it difficult to pay the full cost of service, even if it may be able to pay consumption charges. Full cost recovery has practically failed even in countries with the political will to pursue it (World Bank, 2005i). At present, the World Bank (2005i) estimates that raising prices to achieve full cost recovery would on average increase the poverty headcount by 2-3 percent.

Subsidies

The rationale of subsidies arises from equity considerations that seek to rectify a mismatch between affordable tariff levels, connection charges and the costs of providing the service (Mehta, 2003). Subsidies are widely applied due to characteristics of the cost structure of basic utilities. Providing basic utilities implies a relatively high proportion of fixed costs to total costs. This means that the economically efficient pricing solution (marginal cost pricing) does usually not lead to full cost recovery unless demand, i.e., the consumer's ability and willingness to pay, increases significantly. Moreover, there is a high percentage of common costs, which are difficult to allocate to different consumers. Finally, high capital intensity of water and electricity combined with long asset lives leads to under-pricing of services in the short and medium term.

Who pays for subsidies?

Subsidies may be paid by service providers through internal cross-subsidization. Cross-subsidization is a mechanism, whereby one group of customers pays a relatively high price for a certain service and thus enables another group to pay a relatively low price for the same service. The two most common forms of cross-subsidization are for industrial/urban customers to pay prices in excess of costs to subsidize residential/rural consumption, and for high-volume

consumers to subsidize low-volume users. In Gabon, the national water and electric utility provider uses profits from urban electricity supply to subsidize water and electricity service in small towns and rural areas. Cross-subsidies allow utilities to achieve cost recovery without relying on central government transfers. However, cross-subsidization has its risks. Customers have the option of reacting to cross-subsidization by disconnecting themselves from the public network and by arranging their own private supply of water, or by relocating to a different service area. For instance, the cross subsidization scheme between urban and rural customers introduced in the Ivory Cost in the 1980s failed as industrial customers exited from the public network. (Mehta, 2003).

Subsidies may also derive from allocations by government (local or central) or donors. The total value of subsidies represents a large share of public expenditure and utility costs. The most prominent examples of government-funded subsidy schemes come from the countries of the former Soviet Union. Generally, power and water sector subsidies remain an important fiscal drain in many regions of the world. For instance, electricity subsidies in India and Mexico exceed 1 percent of GDP. Fiscal transfers for drinking water and sanitation tend to be smaller as a percentage of GDP. In India drinking water subsidies are estimated to represent 0.5 percent of GDP (World Bank, 2005i).

The government subsidy can be provided directly to consumers or to service providers. Either of these mechanisms carries substantial risk. In the first case, targeting may become difficult, while in the second case

It is important to note that only a subgroup of the general public ultimately pays for utility subsidies, in the form of higher taxes, higher utility prices, or deteriorating utility service. Which subgroup of the general public this will be depends on how taxes are raised, how cross-subsidies are structured, and how service restrictions are allocated across the population. Thus, funding mechanisms can play important roles in determining the distribution of the net benefits of the subsidy (World Bank, 2005i).

Consumption versus connection subsidies

Much of the current debate on subsidy design centers on the pros and cons of consumption versus connection subsidies. Consumption subsidies can make services less expensive to existing utility customers on a continuous basis. The defining feature of consumption subsidies is that they are available only to current utility customers. Consumption subsidies may operate through the tariff structure or may appear as a percentage discount applied to customer bills. They may also take the form of a cash transfer to reimburse households for utility expenditures. Consumption subsidies are widespread in both the water and electricity sectors. They may take different forms. Consumers may be charged differently based on their level of consumption (self-selection quantity targeting). They may also be charged differently based on different type of service they use (self-selection service-level targeting), or be selected administratively (e.g., social tariffs for the poor, geographically differentiated tariffs etc.).

In the water sector, it is very common to find higher average prices for urban than rural areas due to cross-subsidization between the two classes of consumers. Most water tariff

pricing between urban and rural areas is less common than in the water sector, due to increasing liberalization of power markets and the sensitivity of industries to electricity pricing. However, the use of special social tariffs for lower income households is used extensively. Quantity targeting is also widespread, although less than in the water sector while service level targeting is quite rare.

Recent studies have shown that consumption subsidies hardly reach the poor. Most quantity based subsidies are highly regressive. The main reason is that many poor households do not benefit from these programmes simply because they are not connected to the network. In addition, application of quantity subsidies requires well functioning meters, which are unlikely to be found in poor households. Moreover, differences in consumption between poor and non poor have turned out to be less relevant than expected. In addition, fixed charges lead to a higher unit price for small consumers than large consumers.

One possible strategy is to reduce the threshold of quantity subsidies while raising the rate charged in the unsubsidized portions of tariffs to above average cost. More far reaching strategies would focus on expanding coverage and metering. Other consumption subsidies, such as administrative or service level targeting have proven to be more progressive. In Chile, social subsidies based on means-testing were introduced in the 1990s to mitigate effects of increases in water prices. According to this strategy, utilities apply a discount to water bills of eligible households and are later reimbursed by the government. While this mechanism tends to be more effective in reaching the poor, it requires government capacity to administer means-testing systems. In Bangalore, subsidies are provided to those obtaining water from public taps. The shortfall is that subsidies are relatively small and the margin of exclusion error is large, as many poor households access private taps in urban areas.

Connection subsidies, by contrast, are one-time subsidies that reduce or eliminate the

price customers pay to connect to the system. Thus, they are available only to unconnected households. These subsidies may come in the form of partial capital grants for rural schemes. They are used in both the water and electricity sectors. Connection subsidies do reach the poor more as they tackle the main problem of non-access to the network. In additions, it is widely believed that covering the relatively high initial cost of connection may be a bigger obstacle than paying for regular water use. Expanding utility networks into rural and peri-urban areas may be hampered by financial constraints. However, the impact of connection subsidies might be further reduced by the fact that poor households also face non-financial obstacles to connection, such as acquiring legal title to the property they occupy (World Bank, 2005i).

Targeting

Another aspect of subsidies to be taken into account is the question of appropriate targeting. Untargeted subsidies may lead to generalized under-pricing of services while targeted subsidies support certain population groups as explained above. High costs of the provision of water and electricity have lead to the prevalence of untargeted subsidies. As a result, most utility services are indeed under-priced[24]. However, carefully targeted subsidies to fewer households may cause fewer distortions in3893 Tn24conne

As a result, subsidies were claimed for reconnections where services were cut off for lack of payment of tariffs. Thirdly, not all providers are eligible as they must be ready to respond to incentives and operate at a distance from regulators and the funding source. This means that the international private sector, small-scale service providers, community groups and NGOs are the best suited providers for output-based schemes. Moreover, OBA is costly and capacity is needed to collect the necessary information on poor customers. In addition, choosing the form, level, and structure of payment is crucial for success. For instance, the lack of up-front payment may automatically exclude all providers facing difficulties in mobilizing financing for service delivery. Moreover, administering an OBA system is not easy. Finally, for ODA to work properly appropriate governance and monitoring systems must be in place (Brook & Petrie, 2001; Meetha, 2003)

Many alternative systems may be proposed, such as collection of payments through banks and supermarkets or community churches. In many developing countries, improvement of customer relations is also an option. Allow ing consumers to express their concerns and complaints as well as give their input for system operation and maintenance through interactive programmes leads to higher cost recovery. Punitive measures/threats used to persuade and force consumers to pay thei

based tariffs assume low mobility of the population, which is not the case in many developing countries.

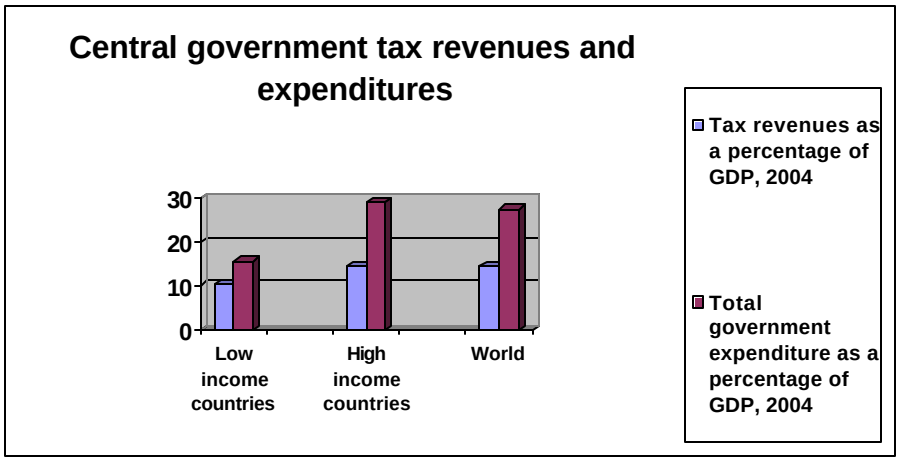
With regard to subsidies, there seems to be an emerging consensus that connection subsidies may be a better option than consumption subsidies. Yet, continuous research is needed. For instance certain approaches to connection subsidies have been more successful than others. Several community approaches to design and implementation of access subsidies have been more successful than household subsidies in generating new demand for services. In addition, connection subsidies should ensure the provision of a minimum service level. The cost of this basic service level should be assessed and affect the subsidy level. If there are savings, the community should be allowed to keep them: this would foster cost-effective designs.

Where consumption subsidies are in place, expansion of coverage and metering as well as elimination of implicit subsidization should be attempted. Generally speaking, designing subsidies should strike a balance between supply (e.g. subsidy design, criteria, targeting mechanisms etc.) and demand driven factors (i.e. local context, needed social mobilization, technical choices etc.). As with tariffs, simplicity is helpful. Multiple and conflicting subsidy rules can create confusion resulting in inadequacy of demand articulation and making it difficult to implement rules and conditions. Finally, targeted schemes seem more successful than untargeted options although they implty

The role of tax revenue

Sustainable, adequate and stable financial resources play a critical role in enabling governments to deliver public utilities and promote overall socio-economic development. Yet, most low-income countries still have a long away to go in order to mobilize sufficient resources to achieve their development objectives. Table 3 underlines the urgency for improving the tax systems in developing countries. It shows two striking facts. First, low-income countries collect a significantly lower share of tax revenue relative to their GDP than high-income countries. Second, the relative share of government expenditure to GDP is much higher in developed countries than in developing ones.

Table 3



Source: data from World Bank World Development Indicators 2006

The challenges developing countries face in mobilizing tax revenues are manifold. Firstly, the potential for tax revenue is generally low given the prevailing low average income in

developing countries, the economies of which are often characterized by a large share of agriculture in total employment. This severely limits the revenue potential of income and consumption taxes. Secondly, there are large informal sector activities and many occupations without any record of transactions. The problem of data collection is exacerbated by the fact that most transactions even in the formal sector are often cash transactions, a fact that makes it difficult to establish the true level of income. Thirdly, tax administration capacities are weak due to inadequate funding of revenue collecting agencies, lack of training, insufficient manpower, heavy competition and often more favorable remuneration from the private sector. Fourthly, tax awareness is low. Taxpayers are often not aware of their rights and obligations. Moreover, the incentive to pay taxes is low where the rates are too high and it does not exist where public services do not reach the poor. Lastly, there is a significant loss of revenue due to liberal tax incentives and exemption schemes, liberal capital allowances (the "race to the bottom" to attract foreign investors) as well as other sectoral exemption schemes (such as mining and agriculture), location incentives and the establishment of export processing and manufacturing zones.

Improving tax administration

The following sections offer a brief survey of common challenges related to improving revenue collections in developing countries. They center around two interconnected issues, tax administration and tax policies. The role of tax administration is to collect taxes as specified in the law. The biggest challenge is hence to reduce the difference between the tax due according to the law and the amount actually collected, i.e., the goal is to narrow the so-called "tax-gap". Common types of non-compliance result from non-registration, non-filing and non-payment, under-reporting of tax voluntary paid and abuse in refund systems, in particular in case of the

VAT[25]. Table 4 li

A quick look at these challenges suggests that the following objectives are critical for improving tax administration in developing countries. First and foremost, there seems to be an urgent need for improving data collection and improving taxpayer information to correctly asses the revenue base. Secondly, measures must be taken to increase potential tax payer's ability and willingness to pay. This can be done through more simplifying compliance procedures, educational efforts, lower tax rates and a more universal and better provision of public services. Secondly, the administrative capabilities of the revenue authority should be increased. Possible vehicles for this could be better remuneration for employees, upgrading of technology and a higher degree of autonomy of the agencies. Finally, much revenue is lost through tax incentives, a trade-off, which should be critically examined.

One popular avenue of administrative reform intended to tackle these challenges more effectively has been the establishment of semi-autonomous revenue agencies, in particular in Sub-Saharan Africa. The justification of the establishment of these agencies is based on considerations of efficiency and effectiveness. An autonomous organization is believed to be free from political interference in day-to-day affairs and other constraints of civil service personnel systems. More specifically, concrete advantages of establishing an autonomous revenue agency are perceived increased effectiveness, efficiency and equity of a new agency by taxpayers, greater flexibility in human resource management, an opportunity for integrating revenue functions into one agency, and the independence of such an agency to take legal action against tax payers. Among the possible disadvantages are the additional costs of establishing and the higher costs of running the new agency (compared to the tax agency it typically replaces). In addition, the establishment of a new executive agency might contribute to fragmentation of civil service with a negative impact on inter-agency coordination and cooperation. It is also important to put in place a clear regulatory and supervisory framework to prevent abuse and political interference. This is often lacking in poor countries.

should go hand in hand with growing ecommerce. Like most internet transactions ESD has an enormous potential for gains in efficiency and effectiveness. On the other hand it implies its own set of inherent risks and challenges, which are outlined in table 5 below.

Table 5:

Risks and challenges to be taken into account in ESD (based on Hadler 2000)

Stakeholder	Risk
Taxpayer	• Issues of security, privacy and

It is important to stress that a more efficient tax administration must go hand in hand with a more equitable tax systems. As Amartya Sen has demonstrated countries with the most impressive levels of economic growth and social development in the last half of the 20

The following section will discuss some of the critical aspects to be taken into account when contemplating these and other tax reform measures.

The potential or non-potential of VAT in poor countries

While the sales tax is a tax levied on the retail price of a good or service and collected by the retailer, the VAT is levied on every business involved in the production process as a fraction of the price of each taxable sale they make. However, every business is reimbursed the VAT on

the lowest indirect tax burden is an exportable good. Yet in developing countries public services are either untaxed or enjoy consumption subsidies and hence public utilities are non-exportable commodities with low indirect tax burdens. This weakens the case for simultaneous VAT and trade reform even further. Empirical research is needed to examine the welfare effect of this common reform measure.

Lower personal and corporate income taxes (PIT and CIT)

A notable difference between developed and developing countries is the ratio of PIT to CIT revenue. This ratio is about four in developed countries while it is smaller than 1 in developing countries. The PIT has traditionally yielded very little revenue in most developing countries. Despite its political importance as a visible policy instruments for governments to underscore social justice it is often undercut by high rates of personal exemptions and deductions. Indeed, the more progressive the nominal PIT rates are the higher is the potential tax loss in form of deductions. An increase in the effective rate along with a substantial equity improvement could be brought about by reducing the nominal degree of the rate. If restructuring is not a possibility, replacing PIT deductions with tax credits is another option. This would provide the same benefits to taxpayers in all tax brackets.

Another important consideration is the level of the top marginal PIT rate. This rate should not exceed the CIT rate since otherwise taxpayers are tempted to choose the corporate form of doing business simply for tax reasons which would have a distortionary effect on the economy. A further problematic area in countries with weak administration is the tax treatment of financial income. In developing countries interest income is typically taxed by applying a final withholding on interest income. This should be carefully targeted, however, since taxpayers with business

income can circumvent this tax through fairly simple arbitrage transactions (i.e., by fully deducting all interest expenditures from interest incomes before the withholding tax is applied).

Tax issues of the CIT are no less complex. Two areas are especially problematic. Firstly, many developing countries have multiple CIT rates in various sectors. This can lead to a distortion of sectoral resource allocation due to a difference in tax rates. Secondly, many low-income countries have inappropriate systems to take into account allowable depreciation of physical assets for tax purposes. This is caused by an excessive number of asset categories and depreciation rates, excessively low depreciation rates and a structure of depreciation that is not in accordance with the relative obsolescence rates of different asset categories. This could be overcome by classifying assets according to a smaller group of categories, applying one depreciation rate per asset category, setting depreciation rates higher than actual physical lives of assets (to compensate for inflation) and exploring new methods of accounting that allow for automatic accounting of capital gains and losses from asset disposals, such as the declining-

Macroeconomic factors to be taken into account in the design and use of financing mechanisms

Possible macroeconomic implications of aid inflows

The "Dutch Disease"

The potential for considerable inflows of foreign money to trigger an appreciation of the real exchange rate with adverse effects on economic growth is usually referred to as the "Dutch Disease". The now widely-used term was introduced by "The Economist" in 1977 referring to the loss of international competitiveness of the manufacturing sector in the Netherlands after the discovery of natural gas in the 1960s resulted in increased foreign exchange inflows. Recent pledges of scaling up aid flows have rekindled the debate on whether the Dutch Disease should be of concern to developing countries. At the outset it should be noted that the potential for ODA targeted at water and electricity to cause Dutch Disease is limited. ODA for water is usually a small share of overall ODA varying between 3% and 5% since 1990. Moreover, the rise in ODA for water has been slower than the rise in total ODA since 1998. As a result, the share for ODA for water in total ODA has been decreasing. Similarly, ODA flows to energy declined significantly in the 1990s and dropped to 3.3% in 2004.[26] However, calls have been made by the international community to increase these flows sharply and if delivered, large and sudden inflows of aid can pose real challenges to small and fragile economies.

[26] See World Water Council report "Official Development Assistance for Water Supply and Sanitation-Figures and trends" (2005) for ODA flows to water and http://siteresources.worldbank.org/DEVCOMMINT/Documentation/20898330/DCS2006-0002-OPECFund.pdf for ODA flows to energy

In theory, the potential for Dutch Disease for aid-receiving low-income countries can be easily understood: Many low-income countries are characterized by exogeneity of their terms of trade due to their small share in the world economy and the composition of their exports, which are mostly comprised of primary commodities. Exogeneity of terms of trade essentially means that the low-

As a result, increased demand might push up the price level for non-traded goods. In such a scenario P^N will rise leading to an appreciation of the real exchange rate. A higher P^N might increase wage pressure in the non-tradable goods sector. This in turn can have spillover effects to the tradable goods sector and might put upward pressure on wages in that sector as well. In the worst case scenario, export industries will suffer from increased labour costs, which will lower their competitiveness on international markets. Lower export revenues might result in lower per capita growth, in which case the country suffers from "Dutch Disease". It is important to note, however, that a decline in the export sector will only lower growth if it outweighs the benefits of aid-financed investments, as will be discussed later.

Empirical Evidence

The question whether aid recipient countries are indeed susceptible to the Dutch Disease remains controversial (Heller, 2005). Empirical evidence for Dutch Disease in developing countries is mixed. A recent research paper by Ouattara and Strobl (2004) analyzes the

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the 1980s and 31 countries for the 1990s and using a methodology that exploits both cross-country and within-

money supply increases. This might lead to a depreciation of the exchange rate. In the latter scenario the government aid is not contributing to a real resource transfer. The government could have simply borrowed from the central bank.

It was mentioned earlier that production bottlenecks in the non-traded goods sector can cause problems for additional inflows in the form of inflation and ultimately real exchange rate appreciation. The actual rationale of spending aid is the assumption that developing countries have spare capacities and do not produce at the frontier of their production possibilities. Indeed, the high unemployment rates in developing countries illustrate that these economies are not fully utilizing their potentials.[28]

Supply bottlenecks in developing countries are therefore of a very different type than those encountered by developed countries. Usually, poor countries suffer from a lack of infrastructure or skilled personnel. The government should try to target these supply-side blockages by investing in domestic goods and services that increase overall productivity, such as roads, communication, health clinics and – critical for the overall topic of this paper-electricity grids, irrigation, water and sanitation.[29] This is indeed a crucial aspect for the discussion on "Financing basic utilities for all". Absorptive capacity constraints should not be used as a counterargument to development aid targeted at water and electricity. Rather, absorptive capacity can be increased through investment in these basic utilities and productivity spillovers between the non-tradable and tradable sectors can overturn the Dutch Disease (Torvik, 2001; Adam and Bevan, 2004).

[28] This is a noteworthy difference to the original "Dutch" model which was built on the neoclassical assumption of full employment.

[29] Further long term productivity enhancing investments include improvements in human capital, development of the judicial system and deepening of the financial sector.

In order to minimize potential inflation and other distortionary effects, the developing country should use as much of its foreign exchange as possible to import capital goods that target productivity bottlenecks of the domestic economy. These capital goods should be non-competitive in the domestic economy to avoid adverse effects on domestic production. This strategy would be identical in its macroeconomic effects to aid-in-kind. Spending and absorption would be one and the same. It is important to note, however, that aid recipient countries face a significant challenge in determining the composition of net imports. Often aid is tied to donor country exports. Moreover, international tendering requirements and conditionalities effectively leave little control of developing countries on actual purchases (Heller, 2005). Another severe constraint is limited fiscal space. In this regard, some have called on the IMF to treat public capital expenditures differently to current expenditures in the fiscal analysis. This would give developing economies more room to expand the productive capacity of the economy (McKinley, 2008).

Absorbing aid or sterilizing inflows?-The central bank's dilemma of finding the right exchange rate and monetary policy

The central bank has to make a strategic choice. On the one hand it should ensure that aid is not only spent but also absorbed, i.e., that a real resource transfer in the form of higher net imports takes place. For this to happen, the central bank has to sell foreign exchange. Consequently, some appreciation of the exchange rate might be inevitable. On the other hand, the central bank might be inclined to sterilize aid inflows based on concerns about loosing competitiveness caused by inflation and real exchange rate appreciation. One policy tool to limit inflation is to introduce restraints on fiscal policy by limiting net credit to the government. This, however, would be counterproductive to the purpose of aid. Aid would neither be spent nor absorbed but simply be hoarded as reserves. On the one hand, accumulating reserves can help

The net impact of development aid

The second aforementioned question asks whether foreign aid can still be beneficial for countries suffering from Dutch disease. In this regard, the recent WIDER study (2006) "A Wider Approach to Aid Effectiveness" suggests a "substantial positive impact" of aid on development despite the macroeconomic challenges related to absorptive capacity. Wider emphasizes that aid affects various dimensions of development, and focusing on a single development indicator such as GDP per capita can lead to an excessively narrow view (Fielding, 2005). Consequently, the study employs different development indicators. These measures include health, education, fertility indicators as well as access to piped water. Allowing for interaction between these measures WIDER finds that aid promotes many of these development outcomes. The WIDER study shows that upon careful examination net welfare effects might outweigh the Dutch Disease. Some form of Dutch Disease might be acceptable if these net benefits remain positive. A study by Matsen and Torvik (2003) is entitled "The optimal Dutch Disease". It concludes that some Dutch disease is always optimal in the sense that a positive fraction of a country's resource wealth should be consumed in each period. In terms of aid, this means that Dutch Disease is not per se an argument against additional inflows. The challenge of scaling up aid lies in striking the right balance between policy measures that minimize competitive problems and ensure a real transfer of resources.

Table 7:

Possible impacts of macroeconomic policy responses to aid surges

Outcome	Aid is spent	Aid is not spend
Aid is absorbed	***Policy action*** (i) Government spends foreign exchange directly on new import components of development programme (ii) Alternatively, government spends on domestic goods, triggering an increase in demand for imports, for which the central bank provides the foreign exchange. ***Benefits*** (i) A real transfer of resources takes place (ii) No distortionary effects if foreign exchange from aid flows goes directly to finance imports ***Detriments*** (i) Slow supply side response in the non-traded goods sector may trigger Dutch Disease (ii) Possibility of capital outflows if foreign exchange is purchased by private agents (iii) Exchange rate appreciation can hurt economy (especially where not diversified and heavily dependent on commodities) ***Environment**** (i) Most favorable environments are diversified economies with quick supply side responses.	***Policy action*** (i) Government cuts back on other budgetary expenditures or reduces domestic debt (ii) Central bank sells foreign exchange. ***Benefits*** (i) Real resource transfer can take place if reduced public debt spurs private investment (ii) Inflation will be reduced (iii) Exchange rate appreciation can hurt economy (especially where not diversified and heavily dependent on commodities) ***Detriments*** (i) Real resource transfer might not take place if private investment does not change (ii) Large capital outflows if there are not sufficient investment opportunities. ***Environment*** (i) Inflation prone economies with significant public debt but good private investment opportunities.
Aid is not absorbed	***Policy action*** (i) Government spends foreign aid (ii) Central Bank does not sell foreign exchange but might undertake open market operations. ***Benefits*** (i) Multiplier effect of government expenditures (ii) Benefits of holding reserves ***Detriments*** (i) No real resource transfer (ii) Inflation (if no sterilization occurs) (iii) If sterilization occurs in the form of open	

Addressing macroeconomic risk, in particular foreign currency risk

Private or public investors in utility projects face various kinds of risks, including political risk, regulatory and contractual risk, credit risk, and foreign exchange risk. This section will focus on macroeconomic risk, which is not to minimize the significance other types of risks. Indeed, all of types of risks mentioned above and possible mechanisms for risk mitigation have been discussed in great detail during a set of multi-stakeholder consultations on "Improving the climate for private investment" organized in 2004-2005 by the World Economic Forum in cooperation with the Financing for Development Office of UN DESA[30].

Foreign currency risk in financing utilities

According too several studies one of the major reasons that investors shy away from developing countries is regulatory risk and foreign exchange risk[31]. While regulatory risk does not necessarily qualify as macroeconomic risk it is closely related to currency risk. Regulatory risk worsens in the event of a financial crisis or a currency devaluation, as the government might be prompted to default on contractual obligations. Foreign exchange rate risk is of particular concern to water and power projects in developing countries for several reasons. First, as a result of a shallow financial sector the large financing needs of water and power projects can often note be met through commercial loans. Moreover, as discussed above, financial deregulation aimed at but not always succeeding in deepening the financial sector has limited the access of public utility

[30] The final report of these consultations is entitled "Building on the Monterrey Consensus: The Untapped Potential of Development Finance Institutions to Catalyse Private Investment" and is available on the FFD website at: http://www.un.org/esa/ffd/09multi-stake-dialog-WEF-INV.htm

[31] See for example the report of the World Panel on Financing Water Infrastructure (Camdessus Report), 2003.

providers to official sources of capital. As a result, international capital markets have become more attractive for infrastructure investors. This, however, implies greater exposure to foreign exchange rate and interest rate risks. Second, amortization is a lengthy process for water and power assets. During the 20-30 years it takes to recover the investment it is not unlikely that a currency crisis might occur. Third, thermal power generation projects rely on fuel, which is denominated in hard currencies. Similarly, expansion costs are mostly priced in hard currency, as many countries import the equipment required for network extension from outside the country. Whoever invests in these parts, whether public or private investor, is exposed to foreign exchange risk. Fourth, in the event of a financial crisis, investors are in a weak bargaining position. Power and water project assets, once installed, may not be redeployed. As a result, it is more difficult for investors to exit the investment in order to minimize foreign exchange losses. Fifth, with some notable exceptions in power-generation, water and power outputs are usually non-tradables. Consequently, currency movements are not compensated for by increases and decreases in revenue. Lastly, there is a significant risk for households in the vent of a financial crisis. Higher interest rates that result from a currency crisis may decrease the incentive of the government to honour price regulations to curb the abuse of monopoly power in these sectors. If prices of utilities go up as a result of higher interest rates, households will be the one to suffer the most. This will be further exacerbated by factors that usually accompany a financial crisis, such as rising unemployment and inflation (Matsukawa, Sheppard, Wright, 2003).

Protective mechanisms against foreign exchange risk of investors include: (i) the use of local currency instruments (ii) currency hedging; (iii) exchange rate guarantees (often based on tariff indexation); (v) other innovative mechanisms such as liquidity facilities, sovereign guarantee pools and escrow accounts.

The use of local currency instruments

Local currency instruments can be an effective instrument for currency risk mitigation. Increasing the share of local currency loans in investment in utilities has the advantage of limiting foreign currency exposure. Local currency schemes may include, local currency financing, local capital and bank market development, local currency fund schemes, local currency credit enhancement, or public sector lending in local currency. However, a major problem with local currency debt is often its short-term structure, which does not match the long-term nature of water and power industry assets. As a result, while currency mismatch might be reduced through the increased use of local currency, investors are still vulnerable to interest rate increases that can follow currency devaluation. The development of long-term interest bearing instruments such as municipal bond markets can therefore play a critical role in making local currency a viable financing option for utility providers. An innovative mechanism to deepen local bond markets could be guarantees by multilateral development banks for international investors in local currency bonds. These guarantees would provide utility infrastructure investors with partial compensation for devaluation losses and could be based on local guarantees currently provided by the IADB only to domestic investors in several developing countries (Griffith-Jones, Fuzzo de Lima, 2004).

Currency hedging

Currency hedging usually relies on long-dated forward exchange rates. Forward exchange rates specify in advance the amount of local currency needed to meet future debt service obligations in hard currency. Through buying forward contracts the debtor can ensure the ability to pay the required amount in hard currency according to an agreed schedule. Yet, long-dated forward exchange rates exist only for a few non-OECD countries with investment ratings.

Similarly, hedging with derivatives is not an option in most developing countries as derivative markets do not exist for most developing countries currencies. In both cases, deepening of local capital markets would help developing these instruments.

Exchange rate guarantees

Governments, multi-lateral development banks and export credit agencies play an important role in providing guarantees that can ensure the viability of investments into basic utilities. Yet, while many governments in developing countries provide such foreign exchange rate guarantees to investors, their financial capacity to deliver on such commitment is in doubt. Moreover, mechanisms that allocate exchange rate risk of investors to fiscally constrained governments in developing countries are highly controversial. For many it is hard to see why state governments and municipalities should bear the risk of foreign exchange movement when they have no control over these fluctuations. Opponents of this concept argue that foreign exchange risk is market risk and it should be borne by the market players, i.e. the private sector itself. Furthermore, these guarantee mechanisms are usually structured in a way that revenues have to increase in the event of currency devaluation. As a result, either the end-users will have to bear the burden of a tariff increase or governments may simply default on their obligations.

A further advantage of having export credit agencies in developed countries and/or multilateral development banks provide guarantees is that they are a more creditworthy source for guarantees than developing countries governments. Consequently, they are in a much better position to bear currency risk. Future research should focus on the role these banks and agencies can play in providing guarantee mechanisms. These guarantees could also entail a countercyclical element. Where developing countries show relatively sound long-term fundamentals MDBs and

by the proceeds of the project's senior debt hey typically costly to maintain. Similarly to liquidity facilities the critical question is who funds these escrow accounts.

Griffith-Jones and Fuzzo de Lima (2004) suggest an interesting regional approach for creating guarantee agencies that enables currency risk sharing among countries. The proposed mechanism would be a sovereign guarantee pool, which is a contractual mechanism for risk sharing among governments. Governments that benefit from the same infrastructure investment, but that enjoy complementary sovereign ratings could come together to pool their guarantees and share the risk. The country with the better rating may have an incentive to participate due to budget constraints and a likely multiplier effect of the infrastructure project in terms of social and economic development. At the same time, the country with the worse rating will enjoy access to financial resources it would otherwise not have.

Environmental sustainability and investor risk

Innovative mechanisms for risk mitigation are critical for investing in renewable energy. As mentioned before, burning fossil fuels is not a long-term option for sustainable economic development and new investments into utilities in developing countries should also be seen as a chance to invest in renewable energies. Besides the obvious environmental benefits, not relying on hard currency intermediate input would also decrease foreign exchange risk in the long run. Yet, given the high upfront costs of renewable energy technologies serious challenges persist. According to a recent study by UNCTAD[32] two factors are critical for promoting the use of renewable energies in developing countries. First, the costs of renewable energy have to become competitive in a growing number of situations; and second, the investors and consumers need access to long-term finance to invest in renewable energy. Interestingly, the study concludes that

[32] UNCTAD (2005)"Potential uses of structured finance techniques for renewable energy projects in developing countries": http://www.unctad.org/en/docs/ditccom20054_en.pdf.

the greatest potential lies with decentralized schemes that aggregate the renewable energy investments of a large number of people, rather than large-scale dams, wind

removal of these restrictions with a positive feedback effect on the financial development of the economy. The more recent endogenous growth literature supports this view and explicitly models the services provided by financial intermediaries (e.g. collecting and analysing information, risk sharing, liquidity provision) suggesting that financial intermediation has a positive impact on steady-state growth (Greenwood and Jovanovic, 1990; Bencivenga and Smith, 1991). At the same time government intervention in the financial system should be avoided due to its negative effect on the growth rate (King and Levine, 1993b). In some ways the endogenous growth literature goes beyond the MS –School in its focus on financial institutions and markets, in particular stock markets. While the MS School focuses on the equilibrium interest rate as an instrument to raise the savings rate, and the quantity and quality of investment, endogenous finance literature places a similar function on financial markets and institutions, in particular the stock market (King and Levine, 1993; Allen 1993; Levine and Zervos,1995; Atje and Jovanovic,

accompanied by other economic reforms (such as fiscal, international trade, and foreign exchange reforms). In such cases it is virtually impossible to isolate the effects of financial components of the reform package transformations of the economy." Other difficulties that arise when studying the finance and growth nexus include the assumption that the financial system is "well behaved" during the process of form and liberalization. As Arrestis (2005) points out, there is significant evidence from a number of empirical studies that the process of financial liberalization is far from being a smooth or continuous one. Moreover, the fact that in many developing countries financial liberalization reversals take place due to exogenous shocks makes it difficult to assess the costs and benefits of financial liberalization. Furthermore, financial dualism, i.e., the coexistence of formal alongside informal credit markets in developing countries, is rarely taken into account in empirical studies. Much of the Structuralist critique was supported by the actual Latin American experience in the 1970a and 1980s. In his famous article "Good-bye financial repression, hello financial crash", Carlos Diaz-Alejandro (1984) f

can also serve to re-engineer and revitalize the financial sector. In order to promote a constructive dialogue and to avoid a polarized discussion around laissez-faire and interventionist views the book sets out seven strategic questions for governments, which are outlined below:

1. Government intervention in the market for financial services — how much intervention, what kind, where and when?

2. How can we achieve affordable and sustainable interest rates?

3. How to fashion financial infrastructure for inclusive finance?

4. What should regulators and supervisors do to foster financial inclusion?

5. How to promote consumer protection?

6. How many financial institutions and of what types?

7. How should governments be organized to promote financial inclusion?

Answers to these questions will vary from country to country. For instance, whether Governments should provide financial services critically depends on two closely related questions. First, is there a lower end of the market that is not efficiently served by the commercial financial sector? - And second: Is there evidence that state-owned banks have filled that role successfully? While the first questions can be answered in the affirmative for almost all developing countries, the response to the second query depends on how effective state-owned institutions are functioning. Based on experience state-owned banks seem to be more effective where they have a clear mandate, work on commercial principles, clearly account for subsidies and demonstrate sound governance and management practices. If these basic fundamentals are in

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activities within the framework of the International Year of Microcredit (2005).The publication can be accessed at: http://www.uncdf.org/bluebook/index.php.

place, public provision of financial services might indeed make sense. Where they are missing public sector reform or stronger reliance on commercial providers might make for the better alternatives. Interest rate ceilings should be discussed from a similar angle. The debate whether these ceilings should be imposed by government authority or whether interest rates should be liberalized has gained new significance with the proliferation of microfinance loans in the developing world. High rates for microfinance

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