

Leveraging technology in fiscal management¹

Fiscal management is an important channel through which governance affects development outcomes.² The beneficial impact of public spending on education and health tends to be lower in countries that score poorly on various aspects of governance. Poor governance also undermines the tax morale of people and limits the fiscal space needed to improve public services. The situation could even become worse as these two effects reinforce each other. Could technology help Governments break this cycle?

Technology – broadly defined to encompass information and communications technology (ICT), digital finance and “big data” – is reshaping the environment in which Governments operate as well as furnishing new tools for improving fiscal management. The digital economy potentially expands the information base of Governments while better ICT infrastructure enables Governments to better use and act upon such information. For instance, government agencies responsible for anti-poverty programmes could more easily monitor the impact of economic shocks on poor households and act swiftly through direct benefit transfers, based on a shared database to facilitate their coordination. Tax authorities, on the other hand, could more easily track transactions and taxpayers, and use new software to process huge amounts of data to cross-check and validate the data and information declared by taxpayers.

The potential benefits of such measures could be significant. The increased use of e-government systems has been associated with improvements in the perception of corruption control.³ A recent study estimated that digital finance could save developing country Governments \$110 billion annually by plugging leaks in expenditures and non-collection of taxes, improving the targeting of subsidies and effecting efficiency gains in government operations as a result of digitizing payments.⁴

To provide more insight, two specific cases are discussed in which technology is applied to improve fiscal management – one in the context of tax administration; the other in the implementation of direct benefit transfers.

Technology and tax administration

A main reason why tax revenue as a share of GDP remains persistently low in several countries in the region is weak tax administration and low tax compliance. Addressing tax evasion is important because it affects not only tax revenues, but also society’s perception of fairness and fiscal responsibility. There is an extensive literature which shows that strengthening tax administration is a core component of building fiscal capacity, or State capacity.⁵

Governments in the Asia-Pacific region have begun to leverage technology to improve tax administration. A recent survey of tax administrators found that priorities in the use of online platforms include: online or electronic filing of tax returns for major taxes; enhanced websites that include more information and applications; integrated taxpayer accounts; and enhanced data capture methods (table 1).

Table 1. Priorities for use of online services by tax authorities

	Online filing	Prefilled returns	Online payment	Website service or tools	Integrated taxpayer accounts	Other online services	Enhanced data capture	Digital mailbox
Australia	X	X	X	X	X	X	X	X
Brunei Darussalam	X		X	X				X
Cambodia	X			X		X		
China								
Hong Kong, China	X	X		X		X		
Indonesia	X	X	X			X	X	
Japan	X		X	X				
Kyrgyzstan	X		X	X	X		X	X
Lao People's Democratic Republic								
Malaysia	X	X	X	X		X		
Maldives	X		X	X	X	X		
Mongolia	X	X	X	X				X
New Zealand	X	X	X	X	X	X	X	
Papua New Guinea	X	X	X		X		X	
Philippines	X		X	X	X	X	X	X
Republic of Korea	X		X		X	X		X
Singapore	X	X				X	X	X
Tajikistan	X							
Thailand	X		X	X	X		X	

Source: Asian Development Bank (ADB), A Comparative Analysis of Tax Administration in Asia and the Pacific (Manila, 2016). Available from www.adb.org/sites/default/files/publication/182221/ado2016.pdf.

Note: The absence of a tick mark means the type of service is not a priority.

Particularly in the context of tax enforcement, technology could play a key role in improving the quantity and quality of information available to tax authorities and their ability to use that information effectively. For instance, the increased use of credit cards or other electronic payment mechanisms provides not only information concerning the financial capacity of the purchaser but also confirmation of the VAT and income-filing status of the sellers.⁶ Technology could help in processing such information, for instance by detecting discrepancies between the information declared by the taxpayer and the large quantity of information gathered from third parties, such as banks, credit card providers, online vendors, stock exchanges, customs and other government agencies, including registries of land and property, which in turn would enable more effective risk-based audits.

Another area which has received greater attention is corporate profit shifting and other forms of cross-border tax evasion and avoidance, which require international tax cooperation to remedy. Several countries in the region have committed to participating in automatic exchange of information, which requires, among other things, some harmonization of information technology modalities for secure transmission of data.⁷

The flipside of tax enforcement is voluntary tax compliance, and here too the role of technology could be significant. Several countries have been able to reduce the number of hours that firms spend on filing taxes through better provision of information and use of online platforms.⁸ Indirectly, open budget initiatives may boost tax morale and voluntary compliance. For instance, individuals may comply as a result of reciprocal motivation: the willingness to pay taxes in exchange for benefits that the State provides them and others, even though pecuniary payoffs would be higher if they did not pay taxes.⁹ Technology could support open and participatory budget initiatives through information services that enable Governments to provide real time information on how taxes are put to use and for taxpayers to access such information through online platforms and mobile devices.

Technology and direct benefit transfers

Public expenditure efficiency tends to be low in developing countries in part due to leakages in the transfer of subsidies and other social assistance programmes. For instance, in Indonesia, it was estimated that in a programme that distributed subsidized rice, at least 18 percent of the programme's rice disappeared before reaching households. In India, it was estimated that in the National Rural Employment Guarantee Scheme, 236 rupees were stolen per actual day paid, where the wages for an actual day paid would be about 60 rupees.¹⁰

To address such problems, Governments are increasingly leveraging technology. Digital payments, often facilitated through digital identity systems, are being deployed on a massive scale in such countries as India, where more than 1 billion people have been enrolled in a unique identification system known as Aadhaar. By moving towards digital payments, the traceability of the payment process is improved.

For instance, evidence from the state of Andhra Pradesh in southern India showed that the use of a biometrically authenticated payments infrastructure ("Smart cards") by beneficiaries of a rural employment guarantee scheme and social pension programmes resulted in a faster, more predictable and less corrupt payments process – including a significant reduction in the incidence of demands for bribes and payments to fake recipients – without adversely affecting programme access.¹¹ In that study, it was also found that the investment was cost-effective as time savings to beneficiaries alone were equal to the cost of the intervention, and there was also a significant reduction in the leakage of funds. Moreover, beneficiaries of both programmes overwhelmingly preferred the new system.

Such application of technology has been possible only with broader institutional changes. In the case of Andhra Pradesh, the Government contracted with banks to manage

payments, and these banks in turn contracted with technology service providers (TSPs) to manage the "last mile" logistics of delivery. TSPs then hired and trained customs service providers (CSPs), who came into direct contact with the beneficiaries and disbursed the amount of cash requested after confirming their identity through fingerprint scanning devices. The Reserve Bank of India had to allow banks to partner with TSPs to jointly offer and operate no-frills accounts that could be used for savings, benefit transfers, remittances and cash withdrawals, given that the fixed cost of bank branches is typically too high to make it viable to profitably serve people in rural areas.

Effective, secure, and inclusive use of technology

Technology, accompanied by institutional changes, can bring about significant fiscal savings while contributing directly to enhanced transparency and accountability in public administration. At the same time, both cases point to the importance of broader reform measures. Public sector ICT projects are often criticized for not being able to deliver the desired results and/or leading to unproductive investments. Such factors as strategic planning, commitment from the Government, ICT maturity levels among stakeholders, and acceptance of the system within and outside the Government influence the outcomes of these projects.¹² Without the upgrading of staff skills and changes in organizational culture, the benefits of technology could be much lower than otherwise would be expected.

Digital tax and transfer systems are effective when they include sensible policies to address privacy and data integrity concerns and to prohibit passive exclusion when documents for registration are difficult to obtain.¹³ To address increasing privacy concerns, legal safeguards are being implemented to check data theft or misuse.

Another issue that should be considered in the application of technology is the potential exclusion of eligible beneficiaries, particularly in rural areas with limited access to the banking system. There is an important gender dimension in e-government to ensure that new policies include and empower women (table 2).

Service delivery	<ul style="list-style-type: none"> - Balance between digital processes and human mediation - Robust governance of emerging boundary-spanning arrangements in service delivery - Investments in both data and connectivity capacities - Gender-responsive data governance to balance transparency and privacy
Citizen uptake	<ul style="list-style-type: none"> - Technology design that is aimed at expanding women's choices and engagement in government structures - Frontline workers to nurture women's appreciation for, and trust in, digitalized service delivery - Leadership of national women's machineries to encourage gender-responsive e-government
Connectivity	<ul style="list-style-type: none"> - Models to promote meaningful online participation for women - Subsidized access and safe public spaces for including all women

Source: ESCAP, E-government for Women's Empowerment in Asia and the Pacific (Bangkok, 2016). Available from www.unescap.org/sites/default/files/E-Government-for-Women-in-Asia-Pacific.pdf

For instance, in the previous example of Andhra Pradesh, the Government required that CSPs be women resident in the villages where they served, have completed secondary school, not be related to village officials, preferably be members of historically disadvantaged castes and be members of a self-help group.

¹ This policy brief is based on United Nations, Economic and Social Commission for Asia and the Pacific (ESCAP), *Economic and Social Survey of Asia and the Pacific 2017: Year-end Update*, ST/ESCAP/2808 (Bangkok, 2017). Available from www.unescap.org/sites/default/files/publications/Economic_and_Social_Survey_of_Asia_and_the_Pacific_2017_Year-end-Update.pdf.

² ESCAP, *Economic and Social Survey of Asia and the Pacific 2017: Governance and Fiscal Management*, Sales No. E.17.II.F.8 (Bangkok, 2017). Available from www.unescap.org/publications/economic-and-social-survey-asia-and-pacific-2017.

³ United Nations, Department of Economic and Social Affairs (United Nations), *UN E-Government Survey 2016: E-Government in Support of Sustainable Development* (New York, 2016).

⁴ Susan Lund, Olivia White and Jason Lamb, The value of digitalizing government payments in developing economies. In *Digital Revolutions in Public Finance*, edited by S. Gupta, M. Keen, A. Shah, and G. Verdier, 305–323 (Washington, D.C., International Monetary Fund, 2017).

⁵ Timothy Besley and Torsten Persson. *Pillars of Prosperity: The Political Economics of Development Clusters* (Princeton, New Jersey: Princeton University Press, 2013).

⁶ Richard M. Bird and Eric M. Zolt, Technology and taxation in developing countries: from hand to mouse. Law-Econ Research Paper, No. 08-07 (Los Angeles, California: UCLA School of Law, 2008). Available from https://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID1263562_code109222.pdf?abstractid=1086853&mirid=1.

⁷ Jurisdictions undertaking first exchanges by 2017 or 2018 include: Australia; Azerbaijan; China; Cook Islands; Hong Kong, China; India; Indonesia; Japan; Marshall Islands; Macao, China; Malaysia; Nauru; New Zealand; Pakistan; Republic of Korea; Russian Federation; Samoa; Singapore; Turkey; and Vanuatu.

⁸ For specific country examples, see PwC, and World Bank Group, *Paying taxes 2017*. Available from www.pwc.com/gx/en/services/tax/paying-taxes-2017.html.

⁹ Erzo F. P. Luttmer and Monica Singhal, Tax morale. *Journal of Economic Perspectives*, vol. 28, No. 4 (2014).

¹⁰ Benjamin A. Olken, Rohini Pande, Corruption in developing countries. NBER Working Paper, No. 17398 (Washington, D.C.: National Bureau of Economic Research, 2012). Available from www.nber.org/papers/w17398.

¹¹ Karthik Muralidharan and others (2014). Building state capacity: evidence from biometric smartcards in India. NBER Working Paper, No. 19999 (Cambridge, Massachusetts: National Bureau of Economic Research, 2014). Available from <http://www.nber.org/papers/w19999>.

¹² Asian Development Bank, *A Comparative Analysis of Tax Administration in Asia and the Pacific* (Manila, 2016). Available from www.adb.org/sites/default/files/publication/182221/ado2016.pdf.

¹³ ESCAP, *Economic and Social Survey of Asia and the Pacific 2017: Governance and Fiscal Management*. Sales No. E.17.II.F.8 (Bangkok, 2017). Available from www.unescap.org/sites/default/files/publications/Survey%202017-Final.pdf.

The MPFD Policy Briefs aim at generating a forward-looking discussion among policymakers, researchers and other stakeholders to help forge political will and build a regional consensus on needed policy actions and pressing reforms. Policy Briefs are issued without formal editing. This issue was prepared by Daniel Jeongdae Lee, Kiatkanid Pongpanich and Achara Jantarasengaram, under the guidance of Hamza Ali Malik. For further information on this issue, please contact Hamza Ali Malik, Director, Macroeconomic Policy and Financing for Development Division, ESCAP (escap-mpdd@un.org).