

# UNLOCKING DIGITAL GROWTH BY REDUCING SECTOR TAXATION IN BANGLADESH AND PAKISTAN

A report for VEON

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# 1 Executive summary

Frontier Economics Limited has been retained by VEON to assess the economic and fiscal implications of reducing sector-specific taxation on mobile services in Bangladesh and Pakistan. In particular, our work has sought to identify new evidence on the positive impact that reforming sector-specific taxation policy can have on these countries' digital agendas and development. This report sets out our findings, demonstrating how taxation reform can benefit both economies and, over time, has the potential to increase the countries' overall tax base.

## 1.1 Mobile connectivity matters for economic development

In mobile-first low- and middle-income countries (LMICs), mobile connectivity is the foundation of digital access, enabling participation in education, commerce, finance, health, and social interaction.

While technology alone is not sufficient for development, access to digital networks and services is one of the necessary pre-conditions for digital development.<sup>1</sup> For example, digitalisation enabled by mobile connectivity supports economic development by raising productivity, enabling new digital activity, and widening opportunities, especially for smaller firms and rural populations, whilst also enabling widespread financial inclusion. In turn, shifting, over time, activity into more formal, traceable, and auditable channels and improving the effectiveness of tax collection, can help to broaden a country's tax base.

The governments of Bangladesh and Pakistan have developed a suite of policies to support their digitalisation objectives. For example, both governments have developed national strategies, set targets and prioritised reforms to promote digital payments, e-government services, digital skills, and private-sector innovation, alongside investments in "digital public infrastructure" such as digital identity, digital payments, and mechanisms for data trust and interoperability. However, as we examine in this report, the taxation of mobile services in both countries could make it harder for these digitalisation objectives to be met.

## 1.2 Both Bangladesh and Pakistan levy relatively high levels of sector-specific taxation on the mobile sector

Mobile operators in Bangladesh and Pakistan face an unusually high burden of sector-specific taxes, with multiple layers of mobile-specific taxes and fees putting them among the highest-taxed mobile markets in the world. These taxes and fees extend beyond economy-wide taxes and include sector-specific consumption taxes (including on access and usage) and sector-specific taxes on operator profits. These are in addition to other

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<sup>1</sup> Other pre-conditions include having stable institutions, reliable infrastructure, competitive markets, and an educated population.

standard sector fees and levies such as duties on equipment, spectrum fees, and regulatory payments.

As we demonstrate in this report, high taxes in the mobile sector can undermine sector outcomes and hence wider economic performance. Compared to a counterfactual of lower taxes, taxes that raise consumer prices reduce demand for mobile services (both through lower penetration and usage). In turn, this can make it less attractive for operators to invest in incremental network coverage and capacity, including in new technologies. Weaker connectivity also has economy-wide consequences by slowing digitalisation across sectors, reducing market access and competitive pressure and slowing progress in financial inclusion, restricting participation in the formal economy and investment by households and firms.

This means that sector-specific taxes on the mobile sector impose costs across the economy. In developing their taxation strategies, therefore, it is critical that governments look not only to short-term revenue-raising measures (where the mobile sector, given the often largely informal nature of economies in emerging markets, can be an important source of revenue), but also to ensuring their approaches promote the use of digital services and the expansion of digital infrastructure. Our report considers this trade-off.

### 1.3 Our analysis shows the long-term economic benefits of lowering mobile-specific taxation and shows this can be revenue neutral

Governments in some LMICs rely heavily on taxing the telecoms sector because it is visible, formal, and easy to tax, however, excessive taxation can distort the sector and act as a barrier to wider development. This creates a risk of a “tax trap”, where high taxes reduce penetration and usage, slowing digitalisation and keeping the tax base narrow, so reinforcing a continued reliance on high sector taxes.

This report assesses how reducing mobile sector taxation in Bangladesh and Pakistan and bringing it into line with other sectors of those economies could be expected to increase economic activity and growth.

While it is difficult to estimate the exact impact we show that, under a reasonable range of assumptions, removing sector specific taxes (such that the sector is taxed at the same rate as the wider economy) would reduce the combined sales / turnover tax rate on mobile services from 47% to 23% in Bangladesh, and from 37% to 17% in Pakistan. This reform could be expected to lead to *increased* tax revenues from 2030 in Bangladesh and 2031 in Pakistan, as a result of the increased penetration and consumption of mobile services driving digitalisation.

In particular, our analysis suggests that a 1 percent increase in mobile penetration is associated with an increase in the growth rate of GDP per capita of approximately 0.12 percent. This implies that reducing sector-specific taxes that otherwise hold back

penetration could unlock higher GDP levels and growth relative to a scenario in which tax reform does not take place. This increased economic activity should then, in turn, translate into higher government tax revenues.

This analysis strongly supports a rebalancing of mobile taxation away from high, sector-specific charges that directly raise consumer prices for connectivity, and towards an approach that recognises mobile connectivity as a foundational input to digital development. Whilst this can have short-term impacts on government revenue, such reform can be expected to support economic and digital development and improved fiscal outcomes over the longer term.

## 2 Introduction

Frontier Economics Limited has been commissioned by VEON to assess the economic and fiscal implications of reducing sector-specific taxation on mobile services in Bangladesh and Pakistan. This report, which sets out the results of our analysis, is intended to support evidence-based dialogue with national governments and international institutions on how mobile sector tax policy can be aligned more closely with both nations' broader digital development and fiscal sustainability objectives.

Bangladesh and Pakistan are two mobile-first economies where mobile networks are households and businesses' primary means of accessing digital services. In these markets, mobile connectivity plays a central role in enabling digital inclusion, access to finance, and participation in the formal economy.<sup>2</sup> Digitalisation also contributes to broadening the tax base over time by shifting economic activity into more formal, traceable and auditable channels and improving the effectiveness of tax collection.<sup>3</sup>

At the same time, the mobile sector in both countries is subject to a complex and unusually high burden of sector-specific taxes. In this report we explain why the development of the mobile sector is vital for Bangladesh and Pakistan, how excessive taxation acts as a barrier to digitalisation, and the potential economic and fiscal benefits associated with tax reform.

The remainder of the report is structured as follows.

- Section 3 explains why mobile development matters for digitalisation, economic growth and expanding a nation's tax base.
- Section 4 describes the current mobile taxation landscape in Bangladesh and Pakistan and outlines the rationale for the high level of sector-specific taxes seen in these jurisdictions.
- Section 5 examines how high taxation can undermine sector outcomes and wider economic performance.
- Section 6 presents a quantitative assessment of mobile sector tax reform in Bangladesh and Pakistan.
- Section 7 concludes by summarising the policy implications of our work and setting out key recommendations.

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<sup>2</sup> GSMA, State of the Industry Report on Mobile Internet Connectivity 2024 ([Executive Summary](#))

<sup>3</sup> GSMA, Digital Transformation in Pakistan: The Role of Mobile ([Asia-Pacific regional report](#))

### 3 Mobile development matters

Governments in LMICs have strong incentives to create a regulatory, policy and fiscal environment that supports the mobile sector. This is because, in these markets, mobile is the foundation of the digital economy; mobile access and usage are necessary inputs for the digitalisation upon which economic development depends in LMICs. Furthermore, in many LMICs, particularly with large rural populations, mobile connectivity enables large parts of the population to access financial and banking / payment services, something which is also essential for social and economic development. Figure 1 illustrates the main effects of mobile connectivity.

**Figure 1** Impacts of mobile connectivity



Source: *Frontier Economics*

For these reasons, governments including in Bangladesh and Pakistan, implement a suite of policies to support and grow mobile connectivity. However, these policies will only be successful where there is a supportive and consistent fiscal and tax policy. Fiscal and tax policy that is inconsistent with wider government objectives creates costs for government and means nations forego opportunities for economic and social development.

The remainder of this section explains all of these points in more detail.

#### 3.1 Mobile is the foundation of digital access

Digital technology is a necessary input to everyday lives, whether for education, finance, commerce, health or social interactions. As a result, businesses across all sectors rely on digital connectivity. Telecommunications networks sit at the heart of this digital connectivity and hence the digital economy more generally: networks that were originally conceived to carry voice calls have been updated and adapted and are now responsible for carrying all the data that drives the digital ecosystem.

In countries that had high quality legacy fixed voice networks and populations concentrated in dense urban areas, mobile and fixed networks can provide complementary services. However, many LMICs are “mobile-first”. This means that mobile networks have developed ahead of fixed networks so that in many parts of the country only mobile networks are available, and regardless of availability, consumers and businesses rely more on mobile networks than fixed networks. This is particularly the case outside the most densely populated areas.

Bangladesh and Pakistan are “mobile-first” countries. Household penetration of fixed line services (and coverage of fixed infrastructure) is low and mobile penetration is relatively high. This means mobile connectivity plays a particularly important role in both countries in supporting internet connectivity and digital services. However, despite being mobile-first there remains a significant proportion of the population that do not have mobile connectivity access (64% and 62% of individuals own a mobile phone in Bangladesh and Pakistan respectively).

### 3.2 Digitalisation is a driver of economic development

Digitalisation describes the incorporation of digital technology into production and supply processes. It increases productivity by reducing transaction costs, improving information flows, and enabling more efficient production and service delivery. It creates new economic activity (consumer apps, fintech, e-commerce etc.) while expanding opportunities for smaller businesses and enabling more people, especially in rural communities to participate in the economy. As such, digitalisation, which is dependent on internet connectivity, can play a critical role in broader economic development.

In fact, digital development has the potential to enable low middle income countries (LMIC) to “leapfrog” stages of economic development, particularly in countries like Bangladesh and Pakistan with relatively young, tech savvy populations.

For example, many advanced economies went through iterative phases of economic development from economies dominated by agriculture, to basic industrial and manufacturing dominated economies, which gradually develop to high value-added manufacturing, and to modern post-industrial high value-add services. This process can take decades (and indeed centuries).

However, diffusion of technology and innovation around the world means that, in the right circumstances, LMICs can leapfrog intermediate phases of economic development. Of course, the availability of technology is not a sufficient condition for economic development: countries also need a foundational policy environment that provides stable government and effective institutions, reliable infrastructure (power and connectivity), competitive and dynamic markets, and an educated population. But access to digital networks and services are a necessary condition for digital development.

A substantial body of economic evidence shows that weaker connectivity is associated with poorer macroeconomic outcomes, including lower productivity growth and slower GDP expansion<sup>4</sup>.

Empirical evidence from the World Bank and IMF finds that higher internet and mobile penetration are associated with faster per capita GDP growth, with stronger effects in low and middle-income countries. World Bank analysis emphasises that these growth effects are not automatic: while digital connectivity lowers transaction costs and improves efficiency and inclusion, the scale of the resulting economic gains depends on the presence of complementary policies and institutions, including competitive markets, appropriate regulation, relevant skills, and effective public institutions.<sup>5</sup>

Several studies provide indicative estimates of the magnitude of these effects. World Bank analysis reviewing cross-country evidence reports that a 10 percentage point increase in broadband penetration in developing economies is associated with an increase in GDP growth of around 1.38 percentage points.<sup>6</sup> Related evidence suggests that higher mobile penetration and mobile data usage are also linked to faster growth in GDP per capita. Complementing this cross-country evidence, IMF quasi-experimental analysis exploiting the staggered arrival of international submarine cables finds that increases in internet penetration lead to statistically significant increases in real per capita GDP growth and productivity, and are associated with shifts in output and employment towards higher value-added services.<sup>7</sup>

Importantly, recent evidence highlights the relevance of digital connectivity for leapfrogging development pathways. Global subnational analysis across more than 120 countries finds that the growth effects of mobile network expansion are strongest in areas with historically limited fixed-line infrastructure, indicating that mobile technologies can substitute for missing legacy networks.<sup>8</sup> One study suggests that moving a district from no mobile coverage to full coverage is associated with a 1.8 to 2.3 percentage point

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<sup>4</sup> See for example:

Bahia, Kalvin; Castells, Pau; Pedrós, Xavier (2019) : The impact of mobile technology on economic growth: global insights from 2000-2017 developments;

Edquist, H., Goodridge, P., Haskel, J., Li, X.; Lindquist, E. (2017). How important Are Mobile Broadband Networks for the Global Economic Development?;

Gruber, H., Koutroumpis, P., Mayer, T., & Nocke, V. (2011). Mobile telecommunications and the impact on economic development.

<sup>5</sup> World Bank (2016) World Development Report 2016: Digital Dividends. Washington, DC: World Bank.

<sup>6</sup> Qiang, C.Z.-W., Rossotto, C.M. and Kimura, K. (2009) Economic Impacts of Broadband. Washington, DC: World Bank.

<sup>7</sup> Simone, F. and Li, J. (2021) Macroeconomic Impacts of Digitalization in Sub-Saharan Africa. IMF Working Paper No. WP/21/110. Washington, DC: International Monetary Fund.

<sup>8</sup> Mensah, E. (2023) Mobile Phones and Local Economic Development: Global Evidence. Policy Research Working Paper. Washington, DC: World Bank.

(“pp”) increase in the growth rate of economic activity in that district, inferred from nightlights (i.e. artificial light observed from space) rather than measured directly from district GDP. These results should be treated as indicative, since nightlights is not a perfect proxy for district economic activity and the results relate to coverage expansion rather than actual take-up or usage of mobile services. Nonetheless these findings suggest that mobile connectivity can accelerate structural transformation and support faster convergence where complementary conditions are in place.

Findings from the economic literature are supported by the analysis we have carried out for this report, which studies the relationship between mobile penetration and economic outcomes, using data from up to and including 2024, including on the impact of mobile sector taxation.

Our new analysis estimates that an increase of 1% in mobile penetration increases the growth rate of GDP per capita by 0.115 percentage points. This impact is slightly greater than has been reported elsewhere<sup>9</sup>. However, the analysis carried out in this report uses data up to 2024, whereas most previous estimates are based on data from before 2012. This suggests that the economic importance of mobile penetration may have increased over time, as mobile connectivity has become more deeply embedded in economic activity and digital services.

### 3.3 Mobile connectivity has supported rapid changes in access to finance

Access to finance and banking and payment systems is another important contributor to economic development.<sup>10</sup> However, in many LMICs, participation in the formal banking sector is low. There will be many reasons for this which vary from country to country. For instance, lower income households may not have the necessary identity documents, may wish to avoid the costs of banking, or may live in rural areas and hence be unable to physically access the banking sector. This is also true in Bangladesh and Pakistan. For example, World Bank data report that in 2024 only 33% of adults in Bangladesh and 18% of adults in Pakistan have a bank account with a “traditional” banking institution, i.e. with a physical branch, compared with 94.9% in high income countries (based on a self-reported

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<sup>9</sup> For example, an impact of 0.06 was found in GSMA (2012), What is the impact of mobile telephony on economic growth?, A report prepared for the GSM Association. Similarly an impact of 0.06 for high income countries and 0.08 for high income countries was found in Qiang, C. Z.-W., & Rossotto, C. M. (2009). Economic impacts of broadband. In T. Qiang & C. M. Rossotto (with K. Kimura), Information and communications for development: Extending reach and increasing impact (pp. 47). Washington, DC: World Bank

<sup>10</sup> International Monetary Fund (2015) Financial Inclusion: Can It Meet Multiple Macroeconomic Goals? Staff Discussion Note SDN/15/17. Washington, DC: International Monetary Fund.

survey of respondents who have access to a traditional bank account, noting that data from official sources shows different levels of bank account penetration).<sup>11</sup>

Mobile connectivity can play an important role in expanding access to finance and payment systems. For example, using mobile payment systems such as bKash, Easypaisa and JazzCash, individuals and small businesses in Bangladesh and Pakistan can now make payments, receive funds, and borrow money.

This is having transformational social and economic impacts on LMICs. For example, a report by GSMA<sup>12</sup> highlights the positive social and economic impacts of mobile money on individuals, households and businesses. By looking at academic studies, the report explains that mobile money reduces transaction costs, improves households' ability to manage cash flows and smooth consumption, and helps manage economic risk. For businesses, mobile money enables faster and more efficient transactions, supporting expansion. Collectively, these effects have been associated with improvements in poverty reduction, employment and GDP growth. The study found that a 10 percentage point increase in mobile money adoption can increase GDP by 0.4% to 1.0%, and that globally it has led to a 1.5% increase in GDP.

### 3.4 Digital development as a driver to expand tax bases

As set out in this sub-section, by formalising more of the economy and supporting broad-based economic growth, digitalisation can also help LMICs to expand their tax base.

Effective taxation of economic activity requires that governments are able to:

- observe that economic activity;
- assess and collect, in an administratively efficient way, the tax liabilities that arise from that activity; and,
- limit opportunities for tax evasion (i.e., the illegal non-payment or under-reporting of tax obligations).

Countries with a large informal economy face particular difficulties in meeting these requirements. By definition, informal economic activity is hard for the state to observe. This reduces the accuracy of tax assessment, raises the administrative costs of collection, and

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<sup>11</sup> World Bank (2025) Global Findex Database 2025: Connectivity and Financial Inclusion in the Digital Economy. Washington, DC: World Bank. Note that “bank account penetration” is defined as: “Adults with an account at a bank or similar financial institution refers to adults with an account at a regulated institution such as a bank, credit union, microfinance institution, or post office that allows them to store money and make and receive payments. These institutions have historically maintained physical footprints in the form of branch locations.” It explicitly excludes mobile money services. Note that Bank of Pakistan data suggests that there is a higher number of individuals with bank accounts but this may include mobile money services and will include “all accounts of individuals, corporates, public and private institutions etc”. Bank of Pakistan data from 2023 suggests that there were 63.8m active depositors (table 3.7), and 2023 census data (table 4) noted that there was adult (18+) population of 128m suggesting a total penetration rate of all accounts of 53%.

<sup>12</sup> GSMA (2023). Mobile money: How digital payments have impacted economic growth. GSMA Mobile for Development.

expands the scope for evasion, as transactions generate few verifiable records and enforcement relies heavily on resource-intensive audits and inspections.

Against this backdrop, accelerating the formalisation of the economy is a central policy objective for many governments. One effective channel through which formalisation can be advanced is by increasing the share of economic activity conducted through digital transactions. Digital payments and platforms generate auditable records, facilitate third-party verification, and reduce opportunities for those transactions to be concealed. This strengthens the ability of tax authorities to assess liabilities accurately, improve compliance, and detect evasion.

Formalisation is typically supported by a broad package of complementary measures, including enhanced supervision, credible sanctions for non-compliance, reduced regulatory and compliance burdens, and stronger incentives on businesses and individuals to operate formally. Digitalisation plays a particularly important role within this policy mix. It enhances supervisory capacity, lowers administrative and compliance costs through the digitalisation of public administration, firms, and end users, and improves access to formal financial services. Together, these effects reduce the cost and increase the effectiveness of tax collection, reinforcing the sustainability of the tax base over time.

For example one IMF study<sup>13</sup> noted that countries where businesses become much more digital<sup>14</sup> tend to collect significantly more tax. In settings where tax authorities also use modern digital systems, this increase can be as large as about 3 percentage points of GDP in additional tax revenue. At the level of individual firms, greater use of digital tools is associated with firms paying more tax, equivalent to roughly 0.1 to 0.3 percentage points more of their turnover.<sup>15</sup>

### 3.5 Governments have implemented policy to improve digitalisation

Given the importance of digitalisation for economic development, many countries are adopting strategies to accelerate the adoption and integration of technology across all parts of their economy. National digital strategies typically aim to accelerate growth, inclusion, and public sector capability by encouraging digital payments, e-government services, digital skills, and private-sector innovation. Bangladesh and Pakistan government policy has been focused on increasing levels of digitalisation by setting targets for the public sector, reducing

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<sup>13</sup> Nose, M., Pierri, N. and Honda, J. (2025) Leveraging Digital Technologies in Boosting Tax Collection. IMF Working Paper No. 25/89. Washington, DC: International Monetary Fund.

<sup>14</sup> The measure uses considerations on the percentage of businesses with websites, the number of secure servers, the speed of download, and 3G (third generation) coverage in the country.

<sup>15</sup> The study found that one standard deviation increase in firm digitalisation is associated with an increase in the tax revenue-to-GDP ratio of up to 3 percentage points, with the magnitude of the effect depending on the level of digitalisation in tax administration (GovTech). At the firm level, the same study estimates that greater digitalisation is associated with higher tax payments, equivalent to an increase of around 0.12 to 0.32 percentage points of corporate turnover.

barriers to growth, and building the necessary digital public infrastructure (digital identity, digital payments, data trust and interoperability).

### **3.6 Conclusion: economic and social benefits of mobile connectivity are only realised where there are coherent and consistent policy environment, including on tax**

In many mobile-first countries like Bangladesh and Pakistan, mobile connectivity has provided a route to economic development that has the potential to improve economic and social outcomes. Mobile services provide access to financial services for a proportion of the population who would otherwise be unable to. Increased digitalisation also has the potential to increase governments' tax base (i.e., the tax to GDP ratio). Given that mobile networks are at the heart of the digital ecosystem, governments have strong incentives to develop policy that supports increased penetration and access to mobile connectivity. In this way investments in mobile networks are said to have positive externalities, that is they generate positive economic and social benefits that extend beyond the individual users.

Recognising the economic, social and developmental importance of ensuring access to digital networks and services, governments in Bangladesh and Pakistan have developed strong suites of policies to promote digital inclusion and enable the required investment in network infrastructure and digital public infrastructure. However, as explained in the following sections, these essential policies are not supported by government policies around mobile taxation. Ultimately, and as we set out below, taxation policies that limit digitalisation will frustrate the digitalisation efforts and investments of governments and private sector, and will limit economic and social development.

## 4 The current taxation landscape in Bangladesh and Pakistan

In this section we summarise the current nature of mobile sector specific taxation in both nations. Before turning to this, we first set out some key principles of effective and efficient taxation.

### 4.1 Efficient taxation requires broad-based taxes that limit market distortions

Governments levy taxes primarily to raise revenue to finance public spending on social and economic priorities. This requires transferring a share of the economic output generated in the economy to the public sector in order to fund public goods, services, and redistribution.

While taxation is necessary, all taxes distort economic behaviour to some degree. Taxes on labour reduce incentives to work, taxes on profits reduce incentives to invest, and taxes on consumption reduce incentives to consume. As a result, there is an inherent trade-off between raising revenue and preserving economic efficiency.

The objective of tax policy is therefore to raise the required level of revenue in a way that minimises economic distortions. By doing so, governments can maximise both total tax revenues and overall economic output for a given tax burden. Other objectives, such as redistribution, social development or correcting for market failures, may also be considered in setting tax policy but are typically secondary considerations to ensuring that economic output and development is maximised.

Economic theory and policy practice highlight several features of efficient tax systems. Broad-based taxes applied at relatively low rates tend to raise revenue more efficiently and reduce distortions, as they minimise incentives for consumers and firms to substitute away from taxed activities.<sup>16</sup> Neutral tax treatment across goods and services further limits inefficient substitution effects.

Tax design also takes account of externalities. Higher taxes may be justified on goods that generate negative externalities that are not fully reflected in consumer decisions, while lower taxes or subsidies may be appropriate for goods that generate positive spillovers. Mobile connectivity is widely recognised as generating positive economic and social externalities. As such, and all else equal, this means there can be a case for having lower taxes on mobile connectivity than other goods and services (and particularly those that have negative externalities).

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<sup>16</sup> OECD, Choosing a Broad Base – Low Rate Approach to Taxation ([OECD Tax Policy Studies No. 20](#))

## 4.2 Many LMICs resort to high sector-specific tax for short-term gain at the expense of longer term growth and development

In practice, tax systems often deviate from these principles due to structural constraints.<sup>17</sup> Most notably, in economies with low overall tax compliance, large informal sectors, and limited administrative capacity, governments face challenges in taxing income, profits, and consumption comprehensively across the economy.

As a result, governments tend to rely for tax receipts more heavily on sectors that are practically the most easy to tax. The mobile sector exhibits a combination of characteristics that makes it an attractive fiscal target: it is highly visible, widely consumed, operates through fully formalised firms, and generates traceable revenues. The sector also typically consists of a small number of large operators, which reduces enforcement and collection costs.

Sector-specific taxes on mobile services are therefore often perceived as a relatively straightforward way to raise revenue, particularly when compared with taxing fragmented, informal, or cash-based economic activity. This approach is not unique to telecommunications and is consistent with international practice in other sectors with similar characteristics, such as extractive industries and regulated utilities.<sup>18</sup>

However, heavy taxation of mobile services has broader economic implications because, as noted above, the sector plays a central role in enabling wider economic activity. Mobile connectivity has “positive externalities”. Use of mobile connectivity supports productivity, market access, digitalisation, and the gradual expansion of the formal economy. Distortions affecting this sector therefore propagate across the economy and can amplify economic costs.

This creates a clear policy tension. High sector-specific taxation may deliver predictable short-term revenues, but at the cost of reduced investment, lower affordability, slower digital adoption, and weaker long-term economic growth. Over time, and as we demonstrate in this report, these effects risk undermining both economic development and the sustainability of government revenues themselves.

## 4.3 Sector-specific taxes are extremely high in Bangladesh and Pakistan

When assessed against international benchmarks, taxation of telecommunications services in Bangladesh and Pakistan is exceptionally high. Both countries apply a complex set of

<sup>17</sup> Abdel-Kader, K. and De Mooij, R. (2020), Tax Policy and Inclusive Growth ([IMF Working Paper WP/20/271](#)). “There are special concerns on tax compliance in developing countries, where constraints on the implementation and enforcement of taxes are often more binding due to limited capacity.”

<sup>18</sup> [IMF \(2024\)](#), Cash-Flow Analysis of Fiscal Regimes for Extractive Industries (Working Paper). The paper notes that “Mining and petroleum projects share characteristics distinguishing them from other sectors of the economy, which has led to the use of dedicated fiscal regimes for these projects”

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sector-specific taxes and fees on mobile services which, when taken together, place them among the highest-taxed mobile markets globally.

For example, in addition to economy-wide consumption taxes, governments in both countries apply taxes and levies exclusively to mobile services and mobile equipment. However, the overall tax burden on the sector does not arise from a single tax instrument, but from the cumulative effect of multiple layers of taxation. These include:

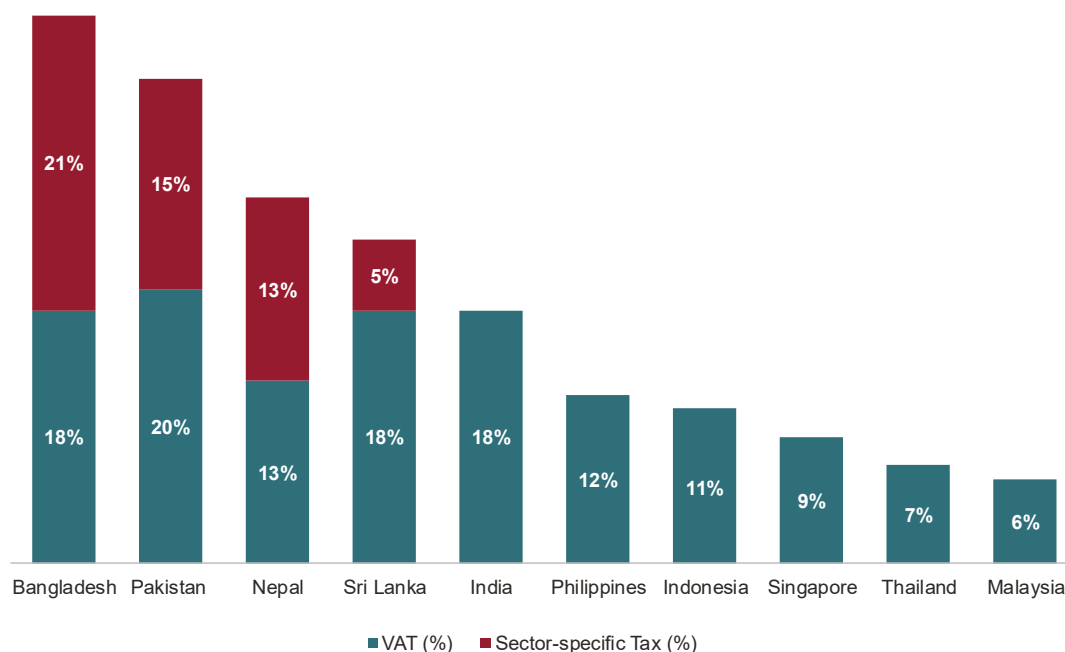
- sector-specific consumption taxes applied at different stages, such as taxes on access (including SIM cards and handsets), as well as taxes on usage and revenues;
- sector-specific profit taxes; and,
- other flat-rate fees and levies (some of which are commonly applied to mobile sectors), including duties on handsets and network equipment, spectrum fees, and other regulatory payments.

Focusing on sales (consumption) taxes, Figure 2 shows that Bangladesh and Pakistan stand out relative to both regional and global comparators in terms of the combined sales tax rate<sup>19</sup> applied to mobile internet services.

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<sup>19</sup> The combined tax rate refers to all consumer facing taxes (e.g. VAT and sector-specific sales tax) and is expressed as a percentage of service prices. This tax rate does not include the effect of other types of taxes such as taxes on revenues, which also impact consumer prices.

**Figure 2 Combined sales tax rate on the use of mobile internet services (2024/2025)**



Source: GSMA (2025), Figure 13 – [Enabling Mobile Network Investment: Policy Reforms for Bangladesh](#), supplemented by public domain research.

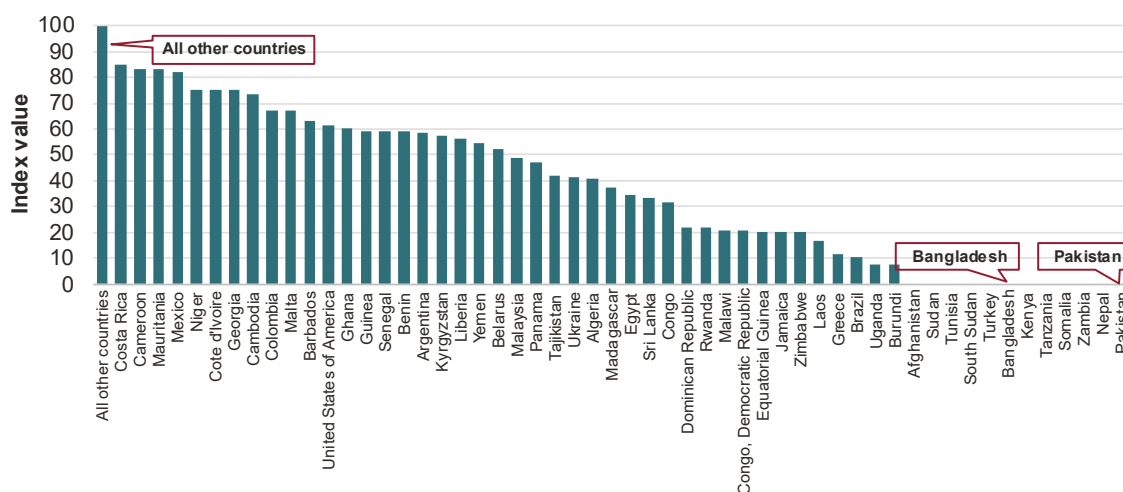
Note: The chart above provides an approximation of the output tax burden faced by mobile operators and consumers for internet provision, based on GSMA data and our own estimates. Pakistan has been added to the chart using figures from: <https://tribune.com.pk/story/2417141/gsma-proposes-cut-in-telecom-taxes>

In Bangladesh, for example, for every USD 1 revenue earned by the operator USD 0.39 is added to the price to cover sales tax.

However, sales tax is only one element. Combining all elements of taxation, the GSMA ranks Bangladesh and Pakistan as among the countries in the world with the most onerous mobile sector taxation (i.e., the least supportive sector-specific taxation regimes)<sup>20</sup>. This is shown in the figure below.

<sup>20</sup> The [GSMA Mobile Taxation Index](#) systematically compares mobile-specific tax burdens across countries. The taxation indicator is developed by estimating the proportion of the monthly cost of mobile data that are accounted for by mobile-specific taxes.

Figure 3 Degree of supportiveness of sector-specific taxes on mobile data



Source: GSMA

Note: The taxation indicator is developed by estimating the proportion of the monthly cost of mobile data that are accounted for by mobile-specific taxes

The key components of this tax structure in Bangladesh and Pakistan are summarised below.

In Bangladesh, mobile services are subject to a 39% combined sales tax rate, comprising 20% supplementary duty, 15% VAT (applied on top of the base price and supplementary duty) and a 1.0% surcharge. In addition, operators face other sales and revenues taxes such as the 5.5% revenue sharing to BTRC, a 1.5% turnover tax and a 1% contribution to a social obligation fund to fund network investment. In total, the combined sales / turnover tax rate on mobile services is 47%. Operator profits are also subject to a 40% corporate tax rate. In addition, there is a SIM activation or replacement tax of BDT 300 per SIM.

In Pakistan, mobile services face a 37% combined sales / turnover tax rate on mobile services, comprising 19.5% sales tax, 15% advance income tax from customers<sup>21</sup>, and a 2.5% annual regulatory duty. Operator profits are subject to a 29% corporate tax, plus a 10% super tax.

While taxation is not the only challenge facing the mobile sector in Bangladesh and Pakistan, it is clear from GSMA data that the level and complexity of sector-specific taxes is a defining feature of the policy environment in both countries.

<sup>21</sup> A 75% rate of advance tax applies to persons specifically listed as non-filers in the ITGO issued by the tax authorities. In other words, this higher rate is not automatically applicable to all non-filers in the general sense; it is triggered only where a person appears in the ITGO list published by the Federal Board of Revenue (FBR). For the majority of customers who are either active taxpayers (filers) or non-filers not listed in the ITGO, the advance tax collected on mobile services continues to apply at the standard rate of 15% of the bill amount or prepaid recharge value.

## 5 High taxes undermine sector outcomes

In the previous section we noted that sector-specific taxes can have distorting effects. The way in which taxes affect economic outcomes can be analysed along several dimensions. A key distinction is between short-term and long-term effects, as some taxes have more immediate impacts on prices and consumption, while others primarily affect investment decisions and sector development over time.

Outcomes also differ by type of tax, as different fiscal instruments interact with markets in different ways. In addition, taxation generates both direct and indirect effects. Direct effects arise within the taxed sector itself, while indirect effects occur because of the impact that changes in economic activity in one sector have on other sectors in the economy. For example, in the context of taxation of mobile services, reduced economic activity in that sector can hinder the development of wider economic activity that depends on connectivity.

This section explains the main channels through which high sector-specific mobile taxes can undermine sector outcomes, focusing first on direct effects on operators and users.

### 5.1 Tax has direct effects on the telecommunications sector

#### Sales taxes and value added taxes (VAT) on connectivity services

Sales taxes<sup>22</sup> are standard fiscal instruments widely used across sectors and countries. They are applied to sales to end users or sometimes business users. Regardless of their form, sales taxes have a direct effect on the final price faced by consumers.

By creating a wedge between the price paid by consumers and the price received by producers, sales taxes reduce the number of mutually beneficial transactions. This generates a classic “deadweight” loss from taxation, reflected in lower levels of consumption (i.e., in the context of the mobile sector, lower penetration of mobile services and lower data usage).

In turn, relative to a counterfactual of there being no such tax, sales taxes reduce operator revenues and operator profitability<sup>23</sup>. This in turn, affects investment. This is because network investment is driven by expected returns. All else equal, lower profitability weakens investment incentives and leads to a deterioration in investment signals.

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<sup>22</sup> Value Added Tax is conceptually similar to a sales tax, but applies only to value added at each stage of production, thereby avoiding cascading effects, whereby the same economic activity is taxed multiple times as goods and services move along the value chain. This tends to disadvantage firms with more fragmented or complex production structures, while vertically integrated firms face a relatively lower effective tax burden, as fewer taxable transactions occur within the firm.

<sup>23</sup> The effect on profits can be significant given the importance of fixed costs in the mobile sector.

Note that although VAT is intended to tax final consumption, practical restrictions on input tax credit can cause part of the VAT burden to fall on businesses. From a tax policy perspective, limiting such restrictions is important to preserve the neutrality and integrity of the VAT system, particularly in capital-intensive sectors such as telecommunications.

### Taxes on SIM cards

SIM taxes are typically either expressed as a percentage of the SIM price or as an absolute fixed amount. They have different impacts for existing mobile users and for people who are not yet connected.

For the latter group, SIM taxes directly increase the cost of getting connected (given a SIM card is a necessary input for accessing mobile voice and data services). By raising the cost of owning a SIM card, these taxes increase barriers to entry and reduce disposable income for potential users. High SIM taxes therefore tend to impact penetration and total consumption of connectivity services, rather than consumption per user. In turn, lower penetration indirectly reduces total traffic volumes and sector revenues.

For existing users, SIM-related taxes are incurred only when switching SIMs to change networks. Therefore, high SIM taxes all else equal will soften competition (they act as a barrier to competition).

### Turnover taxes

Turnover taxes are levied on gross revenues, regardless of whether a firm is profitable. They are typically recorded as operating costs in the profit and loss account. Turnover taxes are applied to all sales, regardless of whether they relate to final consumption or intermediate inputs<sup>24</sup>.

From an economic perspective, turnover taxes closely resemble sales taxes. They raise effective prices, reduce demand and equilibrium quantities, and lower revenues and profitability. Because turnover taxes apply even when firms are loss-making, they are particularly distortionary for investment incentives. In a capital-intensive sector such as telecommunications, this weakens financial resilience and reduces expected returns from future investment.

### Industry levies

An industry levy is a form of turnover tax that is set to recover certain sector-specific costs (for example the costs associated with the sector regulator, or costs of a universal service fund). In European markets countries for example, sector levies to cover regulatory costs

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<sup>24</sup> Because turnover taxes are levied at each stage of the production and distribution process, they can lead to tax cascading.

are set at around 0.05%-0.1% of turnover<sup>25</sup>. In some Asian countries levies are higher at 0.5% to 1.5%<sup>26</sup>.

While industry levies are intended to fund sector-specific functions, when applied as turnover-based charges they nonetheless distort economic signals in the same way as other turnover taxes, increasing effective prices and thereby reducing equilibrium quantities. It is therefore essential that that they only reflect costs and are not disproportionately applied.

### Profit taxes

Profit taxes are levied on profit, i.e. revenues net of operating costs, depreciation, and interest expenses. Their impact depends critically on whether firms are generating profits. When firms are not profitable, changes in profit taxation have limited immediate effects on behaviour.

When firms are profitable, profit taxes reduce post-tax returns and can affect pricing (though to a smaller degree than sales taxes), output, and investment decisions<sup>27</sup>. In the longer term, part of the burden may also fall on workers through weaker investment and lower labour productivity, which can put downward pressure on wage.

Profit taxes are generally less distortionary than revenue-based taxes. Nevertheless, profit taxes still distort investment decisions by reducing the marginal return on incremental investment. Mobile network operators (in common with all businesses) will consider incremental investment where the expected post-tax incremental profits (in present value terms) are positive, whether financed through retained earnings, equity, or debt. Higher profit tax rates will, all else equal, reduce the post-tax net present value of many investments and therefore discourage investment.

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<sup>25</sup> Examples of administrative charges based on relevant turnover include: the United Kingdom, where [Ofcom](#) levies an annual charge on providers of electronic communications networks and services equal to 0.0788% of relevant turnover for the charging year; Ireland, where [ComReg](#) applies an annual levy of 0.2% of relevant turnover above the applicable threshold; and the Netherlands, where [ACM](#) sets an annual regulatory fee as a percentage of relevant turnover (e.g. 0.03672% in 2022), with the exact rate determined each year to recover regulatory costs.

<sup>26</sup> Examples of regulatory fees based on gross or turnover-linked charges include: in Indonesia, telecom operators pay a [regulatory](#) fee (“BHP”) equivalent to 1 % of gross annual revenue; in Singapore, [JMDA](#) licence fees for certain classes of licensees include a turnover-based element with an effective rate of around 0.8 % on annual gross turnover above SGD 100 million; and in Thailand, [NBTC](#) licence fees have historically included a tiered annual charge up to about 1.5 % of total income for larger operators above a revenue threshold (with lower percentages for smaller revenue bands), reported in older fee schedules as indicative of typical practice.

<sup>27</sup> See:

Baker, S. R., Sun, S. T., & Yannellis, C. (2020). Corporate taxes and retail prices (NBER Working Paper No. 27058). National Bureau of Economic Research.

Hanappi, T., V. Millot and S. Turban (2023), “How does corporate taxation affect business investment?: Evidence from aggregate and firm-level data”, OECD Economics Department Working Papers, No. 1765, OECD Publishing, Paris

### Spectrum fees

Spectrum is an essential input for providing mobile services, without which network operators cannot provide services. Spectrum licence fees typically combine one-off upfront payments with periodic licence or usage fees. From an economic perspective, these fees largely act as fixed costs (i.e. costs that do not change with usage).

As a result, spectrum fees do not directly affect marginal prices or short-term consumption. However, high spectrum fees can discourage investment in new technologies that require additional spectrum and may lead operators to acquire less spectrum than is technically efficient. This can result in lower network quality, capacity constraints, and slower innovation.

Spectrum fees should be set to reflect market values either using carefully designed market based award processes or administrative awards with prices, for example, based on adjusted benchmarks from market levels elsewhere.

Spectrum fees are sometimes set in local currency, but in some countries they are denominated in US dollars or linked to the dollar. Where this applies to instalment payments over the life of the licence, exchange-rate risk is shifted to operators: depreciation of the local currency increases the domestic-currency cost of future payments even though operators' revenues are earned mainly in local currency. In Pakistan, for example, PTA's 2021 spectrum auction set the Initial Spectrum Fee in US dollars, with payment permitted either in US dollars or in Pakistani rupees converted at the prevailing exchange rate, and instalment options extended over five years. Given the substantial depreciation of the rupee since 2017, this structure can materially raise the rupee cost of deferred payments relative to fees fixed in local currency. However, in PTA's 2026 auction operators could defer 50% of the licence fee at a price that was set by the exchange rate at the time of the auction meaning that operators were not exposed to exchange rate risk. Bangladesh has historically also used US dollar pricing in some auctions, but BTRC moved in 2024 to allow spectrum fees to be paid in taka, which reduces this exposure.

### Tariffs / excise duties on imports

Import tariffs and excise duties affect the cost of intermediate goods required to supply mobile services. In the telecommunications sector, imported equipment accounts for a significant share of capital expenditure. These costs are predominantly fixed, reflecting the capital-intensive nature of telecom networks.

As a result, import tariffs typically do not have a direct effect on prices or short-term usage. Their strongest impact is on operator profitability and investment incentives<sup>28</sup>. Higher

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<sup>28</sup> Marginal investment decisions need to compare cost and the revenue they will generate. Therefore, either higher costs or lower revenues will both negatively affect investment.

equipment costs can delay network rollout, limit coverage expansion, and reduce service quality, weakening the sector's ability to support broader digital and economic development.

### 5.2 Tax also has indirect effects on economic growth

Given the role of connectivity in enabling digitalisation and the formalisation of economies (as described in Section 3), high taxes limit demand for connectivity, or discourage investment in networks, impose costs that extend far beyond the sector itself. They delay the diffusion of digital technologies across the economy, with effects that accumulate over time. These impacts may not be felt immediately. But they can shape a country's long-term development trajectories and persistently hold back GDP per capita growth, with weaker productivity growth translating into lower income growth and reduced fiscal capacity.

In this sense, telecommunications taxation is not only a sectoral issue but a macroeconomic one. Poorly designed taxes risk weakening the effectiveness of broader digitalisation strategies and reducing the economy-wide returns from innovation and structural transformation.

If these longer-term effects are not fully taken into account, governments risk prioritising short-term revenue at the expense of sustainable growth and creating, over time, a broader fiscal base. In this context, governments can become caught in a "tax trap". High taxes on mobile services reduce penetration and usage, slowing digitalisation. Slower digitalisation constrains the growth of the formal economy and keeps the tax base narrow. A persistently narrow tax base then reinforces a continued reliance on high taxation of the mobile sector. The result is a self-reinforcing and suboptimal equilibrium, or at minimum a significant constraint on faster digital and economic growth.

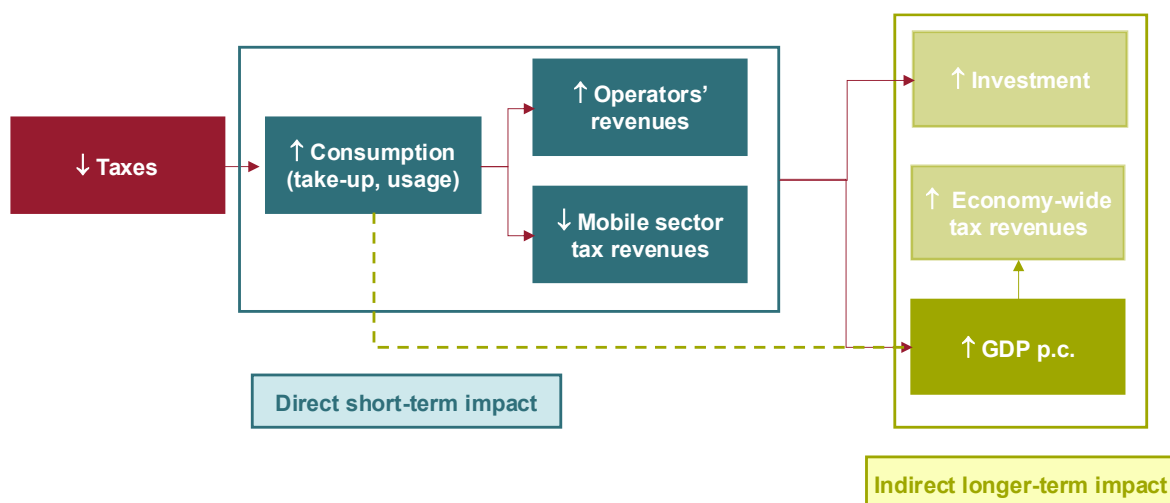
## 6 The positive case for reducing sector-specific mobile taxation in Bangladesh and Pakistan

In this section we evaluate the impact of reducing mobile sector-specific taxes in Bangladesh and Pakistan. We begin by providing an overview of our analysis, before describing the scenarios we have assessed and the positive impact they could have on each economy.

### 6.1 Our approach to the impact assessment

As we have set out in previous sections, lower sector-specific taxes can be expected to stimulate demand for mobile services, i.e. increases in adoption and usage of mobile services. Over time, greater use of connectivity services will support digitalisation expand each country's tax base, supporting higher levels of economic activity and hence (all other things the same) increased tax revenues from the wider economy. Figure 4 summarises this logic, which is reflected in our modelling.

**Figure 4** Logic of the quantitative modelling exercise



Source: Frontier Economics

#### 6.1.1 Tax reduction scenarios

As our analysis is conducted from a sector-wide perspective, we have considered representative tax treatment for each country rather than firm-specific tax positions.

Applying the general framework set out above, we model country-specific tax reform scenarios and analyse how sector and economy-wide outcomes change across those scenarios. The modelling assumes that the tax reform happens in 2027. This report aggregates taxes alongside other fees and levies which impact the costs that consumers

## UNLOCKING DIGITAL GROWTH BY REDUCING SECTOR TAXATION IN BANGLADESH AND PAKISTAN

and operators face. This has the impact of increasing the headline price of connectivity services.

For both countries we assume tax levels are reduced such that they align more closely with other sectors in each country. Given that sales taxes have the most direct impact on prices, we focus these scenarios on reducing those taxes. Whilst we have considered several scenarios and sensitivities, our central case, which we refer to as the “main scenario”, is summarised in the following table.

**Table 1**      **Modelled tax reform scenarios**

Country	Tax measure	Baseline	Reform	Comment
Bangladesh	Combined sales / turnover tax rate on mobile services	47%	23%	The Supplementary Duty of 20% is reduced to 5%. The Revenue Sharing to the BTRC of 5.5% goes down to 1%. The Social Obligation Fund of 1% and minimum turnover tax of 1.5% are eliminated <sup>29</sup> .
	Corporate tax	40%	30%	This change takes as starting point the corporate tax rate applied to publicly traded mobile companies. The 30% is a value close to the 27.5% corporate tax rate generally applied in Bangladesh to non-publicly traded companies.
	SIM tax	BDT 300	Removed	
Pakistan	Combined sales / turnover tax rate on mobile services	37%	17%	The Advance Income Tax from customers is eliminated, the annual regulatory duty reduced from 2.5% to 1% and the sales tax reduced from 19.5% to 16%.
	Corporate tax	39%	39%	

Source: *Frontier Economics*

<sup>29</sup> Turnover tax Minimum tax- 1.5% on gross turnover or advance income tax which ever is higher. Advance Income Tax serves plays a role to collect operator tax under Bangladesh’s Income Tax Act, 2023. However, for capital-intensive mobile operators, AIT can create significant cash-flow and financing pressures where tax is collected upfront, particularly on imports, and where crediting or refund is not immediate in practice. In such cases, AIT may increase the sector’s effective tax burden even though it is not intended to operate as a final tax

## 6.2 The estimated impact of reducing these tax rates

This section summarises the headline results from our analysis of the impact of reducing these taxes.

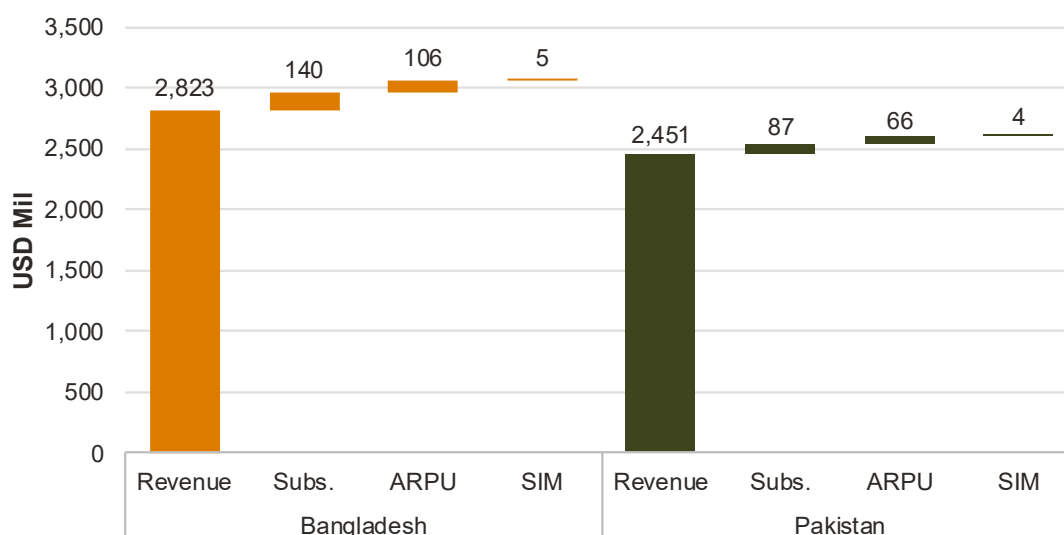
### 6.2.1 Improved sector outcomes

Lower taxes should trigger increases in both mobile penetration and usage per connection. The number of people using mobile services should also increase as additional users enter the market, while usage rises among existing subscribers.

An increase in the connected population and increased usage among those already connected will result in net revenue gain for mobile operators. Under the main scenario, total operator revenues increase by around 8.9% per annum in Bangladesh and 6.4% in Pakistan, compared to a scenario of no change (“the baseline”).

Figure 5 shows the results in absolute terms. It compares baseline revenue in 2027 and shows how it will grow through more subscribers, higher ARPU as a result of existing users using more data, and more revenues from SIM charges. Approximately 56% of the increase in operator revenues is caused by the increase in the number of people using mobile services, 42% of the increase due to increased ARPU and the remaining 2% due to an increase in the number of SIM cards sold.

**Figure 5** Change in Bangladesh and Pakistan operator annual revenues as a result of tax reform (2027)



Source: Frontier Economics

Note: Magnitudes are in 2024 constant prices real terms. Tax reduction reduce the effective price that consumers pay which increases demand and operator revenues.

## 6.2.2 Positive effect on GDP

At the macroeconomic level, higher mobile penetration and usage are associated with higher GDP. As set out in Section 3.2, our research indicates that a 1% increase in mobile penetration is associated with an increase in the growth rate of GDP per capita of approximately 0.115 percentage points.

In practice, this implies that mobile sector tax reform would allow the economies of Bangladesh and Pakistan to grow at a faster pace than under current policies. Under the main scenario, the real growth rate of GDP per capita could increase from 6.6%<sup>30</sup> to 7.2% in Bangladesh and from 4.2% to 4.5% in Pakistan.

Crucially, these gains go beyond higher output per capita. Improved connectivity also supports job creation, improves access to markets and public services, and increases household welfare through higher real incomes and lower transaction costs. At the same time, deeper digitalisation accelerates formalisation of economic activity, broadening the tax base and strengthening government revenues from the wider economy.

## 6.2.3 Net positive fiscal outcomes over the medium term

As we have shown above, higher mobile penetration and usage generates positive macroeconomic effects that raise GDP. In turn, and assuming other tax rates remain constant, this should also increase government tax proceeds from the wider economy. These economy-wide revenue gains grow over time as higher GDP levels compound, strengthening public finances beyond the mobile sector itself. The key fiscal question, therefore, is how long it takes for these broader revenue gains to offset the initial reduction in revenues collected directly from the mobile sector. The analysis in this report assumes a one year lag from changes in tax rates feeding through to higher levels of connectivity and consequent economic activity. The sensitivity assumptions in Annex B set out slower (two year lag) and faster (no lag) transmission mechanisms.

In our modelling, government revenues collected directly from the mobile sector decline in the short run following reductions in mobile sector taxes, despite the fact that increases in usage and penetration partially offset the impact of lower tax rates. For example, under the modelled scenario, mobile sector tax revenues fall by approximately USD 761 million per annum in Bangladesh and USD 439 million per annum in Pakistan.<sup>31</sup>

Relative to government revenues collected from the telecommunications sector, these amounts represent a reduction of approximately 34% in Bangladesh and 30% in Pakistan, based on 2024–25 outturn data. However, when placed in the context of overall public

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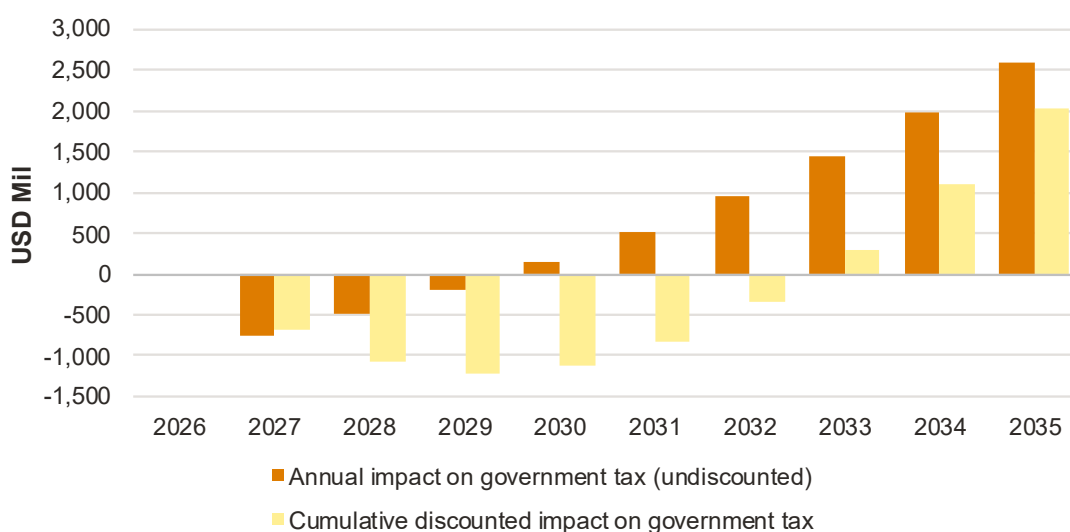
<sup>30</sup> Base GDP growth rates are sourced from the World Bank [World Development Indicators](#). The base level used in the analysis is calculated as the average annual growth rate over the period 2015–2024, excluding 2020 because of Covid.

<sup>31</sup> These magnitudes and the rest in the report are in 2024 real terms.

finances, the short-term fiscal impact is considerably more modest. The implied reduction corresponds to around 2.5% of total government tax revenues in Bangladesh and 1% in Pakistan, highlighting that the initial fiscal cost of reform is small relative to the size of the overall tax base.<sup>32</sup> Figure 6 and Figure 7 show results for Bangladesh and Pakistan, respectively. The figures show the yearly (undiscounted) government tax revenues and the cumulative (discounted) government tax revenues under the main scenario for each year to 2034.<sup>33</sup>

Considering the cumulative and discounted impact on total government revenues, the modelling indicates that the initial fiscal losses from reduced mobile sector taxation are fully offset within a defined timeframe. Under the main scenario, fiscal losses are fully offset (in present value terms) by around 2033 in Bangladesh and by around 2035 in Pakistan, marking the point at which the government has fully recovered the initial fiscal cost of reform once future revenues are adjusted for the time value of money. On an annual basis, the reforms lead to an increase in tax receipts some years earlier: by 2030 in Bangladesh and 2031 in Pakistan.

**Figure 6 Bangladesh annual impact (undiscounted) and cumulative discounted impact on government tax**



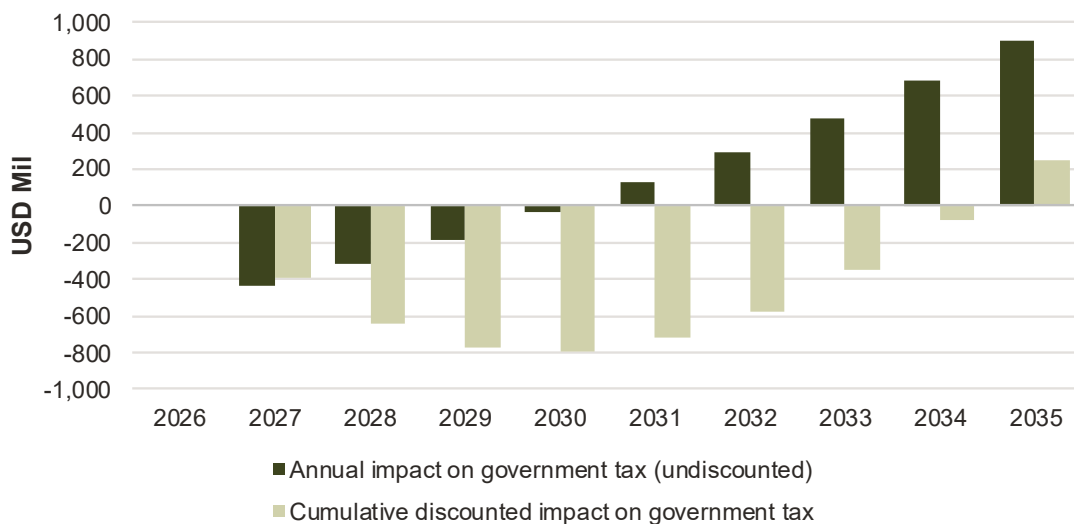
Source: Frontier Economics

Note: Magnitudes are in 2024 real terms.

<sup>32</sup> At the same time, the decrease in short-run tax revenues are also translated in more affordable prices. In other words, there is a transfer from government to consumer.

<sup>33</sup> The values for both variables are in real 2024 terms.

**Figure 7** Pakistan annual impact (undiscounted) and cumulative discounted impact on government tax



Source: Frontier Economics

Note: Magnitudes are in 2024 real terms.

Furthermore, it is important to note that these estimates are conservative. The modelling captures only the impact of higher mobile penetration and usage on GDP growth, translated into government revenues through a constant tax-to-GDP ratio. It does not account for potential structural effects on the tax base, such as increased formalisation, improved tax compliance, or the emergence of new taxable digital activities. As a result, the longer-term fiscal benefits of reform may be understated.

## 7 Conclusion and policy recommendations

Bangladesh and Pakistan are “mobile-first” countries where mobile networks are the primary route through which households and firms access digital services. Mobile services are, therefore, critical to digital inclusion, access to finance and participation in the formal economy.

The current tax burden on the mobile sector in both countries is very high. As we have shown in this report, high sector-specific taxes reduce demand, slow investment in coverage and quality, and impede the wider spillovers from connectivity across the economy.

Given this, both countries are facing a “tax trap”, whereby governments place a heavy reliance on taxing the mobile sector as it is a visible sector in the formal economy, but in so doing undermine wider policies around digitalisation and the ability to expand the countries’ tax bases. As we have set out in this report, reforming mobile sector taxation can instead, in the relatively short-term, generate broader economic benefits that more than offset the direct fiscal cost of the reform.

In light of this, we recommend that governments in both Bangladesh and Pakistan:

- **Rebalance tax policy away from sector-specific consumption taxes and surcharges that directly raise consumer prices.** These taxes have high pass-through and the strongest effects on affordability and adoption. A clear priority should be reducing taxes applied to usage and revenues.
- **Target reforms that remove barriers that prevent users from accessing services, including SIM-related taxes and other access charges.** Entry costs matter disproportionately in mobile-first economies because they determine whether marginal users join the digital economy at all. Reducing these barriers supports inclusion objectives and expands the user base that later contributes to the wider tax base.
- **Design and communicate tax reform as part of a broader government strategy to promote digitalisation, expand formal economic activity, and strengthen the tax base over time, while managing the temporary revenue loss in the short term.** The modelling results suggest a manageable transition: mobile-sector receipts fall initially, but the benefits of digitalisation means broader revenues rise as GDP improves and the tax base expands, with fiscal break-even within a few years.



## Annex A Technical Annex

The quantitative assessment is based on a detailed modelling framework designed to assess how mobile sector tax reforms affect prices, demand, sector performance and government revenues over time. The purpose of this annex is to set out the mechanics of that framework in detail.

It explains how tax changes are translated into prices, how prices affect demand, and how these changes feed through to sectoral, fiscal and economic outcomes.

The annex focuses in particular on the key assumptions that drive the results. This includes assumptions on tax pass-through, consumer demand responses, operator margins and the link between mobile penetration and economic growth.

The same modelling framework is applied consistently to both Bangladesh and Pakistan. The quantitative exercise also contains sensitivity analysis on several assumptions. The details and results of these sensitivities is explained in the country sheets.

### A.1 Modelling of direct effects on operators and users

#### Baseline assumptions

##### ARPU

In the model, final consumer prices for mobile services are constructed by starting from average revenue per user (ARPU), which represents the underlying pre-tax price of mobile services. Baseline ARPU figures are sourced from TeleGeography<sup>34</sup> and reflect average annual expenditure on mobile services per subscriber. The starting point for the base scenario is a monthly ARPU of USD 1.2 in Bangladesh and USD 1 in Pakistan<sup>35</sup>.

Country-specific mobile sector taxes are then applied to this underlying service price to derive the final price paid by consumers<sup>36</sup>. The baseline tax structures applied in the model are summarised in the country sheets. Applying these baseline tax structures to ARPU yields final consumer prices of USD 1.9 in Bangladesh and USD 1.4 in Pakistan, which provide the reference point for assessing the impact of tax reform scenarios.

##### Tax incidence

The model captures the different impact of taxes on final prices through varying pass-through rates. The pass-through rate measures how much of a tax change is reflected in

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<sup>34</sup> <https://www2.telegeography.com/>

<sup>35</sup> In annual terms, this corresponds to an ARPU of USD 14.4 for Bangladesh and USD 12 for Pakistan. These values correspond to 2024.

<sup>36</sup> This does not apply to corporate tax, since that would be embedded in the ARPU.

consumer prices rather than absorbed by firms<sup>37</sup>. Our modelling makes the following assumptions around pass-through rates:

- For VAT, sales taxes and taxes on revenue<sup>38</sup>, the model assumes a common pass-through rate of 75%. The 75% pass-through rate assumption has been drawn from a GSMA study.<sup>39</sup>
- For corporate tax, the model assumes a pass-through rate equal to 20% multiplied by the observed profit margins in the sector. Scaling the assumed pass-through by observed profit margins ensures that price effects are proportional to actual profitability.<sup>40</sup> The 20% pass-through rate is consistent with the lower impact corporate tax has on consumer prices. Profit margins are inferred from publicly available information about mobile operator's financial data in both countries<sup>41</sup>.
- For SIM taxes, which only affect Bangladesh, a pass-through rate of 100% is assumed. This is because the SIM tax in Bangladesh is a fixed charge (i.e. BDT 300 per SIM), and the modelled change is an elimination of the tax. We assume that it is likely that SIM prices set by mobile operators would not respond to the elimination of the SIM tax.

### Price reduction

Tax reform scenarios are implemented by modifying the baseline tax parameters. When a tax is reduced, the corresponding reduction in the tax burden feeds into consumer prices through the pass-through mechanisms described above, resulting in lower prices relative to the baseline. The magnitude of the price change depends on both the size of the tax reduction and the type of tax being reformed.

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<sup>37</sup> Typically, pass-through rates are lower than 100%, which means that the reduction in tax is not fully translated into a reduction in the price. This happens because when taxes are reduced, lower prices stimulate demand. The resulting increase in demand puts upward pressure on prices, meaning that prices fall by less than the full tax reduction. The following example clarifies the functioning of pass through rates. Suppose a mobile data bundle has a pre-tax price of USD 10 and is subject to a 20% sales tax, so the final price paid by consumers is USD 12. The government reduces the sales tax rate from 20% to 10%. If pass-through is 100%, the full tax reduction is reflected in prices and the final price falls from USD 12 to USD 11. If pass-through is 50%, only half of the tax cut is reflected in prices, so the final price falls to USD 11.50 and the operator retains the remaining tax saving. If pass-through is 0%, the tax reduction does not affect prices, the final price remains USD 12, and the operator retains the full benefit of the lower tax rate.

<sup>38</sup> In Bangladesh, these include value-added tax, supplementary duty and a surcharge. In Pakistan, direct taxes include sales tax, advance income tax collected from customers, and an annual regulatory duty.

<sup>39</sup> [GSMA study](#) on Digital inclusion and mobile sector taxation in Pakistan.

<sup>40</sup> The following example clarifies this logic. Suppose an operator earns USD 1,000,000 in revenue and has a pre-corporate tax profit margin of 10%, so profit before tax is USD 100,000. If the corporate tax rate is reduced from 40% to 20%, the firm's corporate tax bill falls from USD 40,000 to USD 20,000, a saving of USD 20,000. Under the model assumption, 20% of this saving is passed through to consumers via lower prices.

<sup>41</sup> The analysis assumes a 20% profit margin in Bangladesh and 10% profit margin in Pakistan. These assumptions have been drawn from publicly available information.

### Demand response

Total demand for mobile services in the model responds to price changes through both increased subscriber numbers and higher usage per subscriber. In aggregate, the assumed demand response implies a total price elasticity of mobile service to usage<sup>42</sup> of  $-0.6$ , capturing the combined effect of increased subscriber numbers and higher usage per subscriber. This elasticity is derived from academic literature on the price elasticities for mobile services. It is slightly higher than the  $-0.5$  found by the GSMA<sup>43</sup>, accounting for slightly higher regional impact in Asia, which the 2006-2007 Global Mobile Tax review finds.

Because total service demand depends jointly on the number of users and their level of consumption (i.e. usage per consumer), the modelling requires an explicit allocation of the overall demand response between these two channels. The chosen split places a slightly greater weight on the penetration response, reflecting the expectation that price reductions, particularly in markets with remaining affordability constraints, primarily facilitate market entry by new users.

Accordingly, consumer responses to price changes are modelled through two distinct mechanisms:

- Changes in mobile penetration: This response is governed by an elasticity of mobile penetration with respect to price, which determines how strongly subscriber numbers respond to tax-induced price changes. A constant price elasticity of penetration of  $-0.34$  is applied. This implies that a 1% reduction in consumer prices leads to a 0.34% increase in the number of users of mobile services.
- Changes in usage: Usage responses are modelled using an elasticity of per customer usage with respect to price of  $-0.26$ . An increase in usage is reflected as higher ARPU, as greater data consumption leads to more frequent purchases or larger data bundles.

Modelling the indirect effects of sector-specific tax reductions on GDP captures how tax-induced changes in mobile sector outcomes generate macroeconomic impacts that subsequently affect government revenues. The impact of sector-specific tax on GDP and government revenues depends on the relationship between mobile penetration and economic output.

To quantify the link between mobile connectivity and economic performance, the analysis relies on an econometric framework that estimates the elasticity of the growth rate of GDP per capita with respect to mobile penetration. This elasticity captures the average relationship between changes in mobile penetration and changes to the growth rate of GDP

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<sup>42</sup> Here usage refers to total usage, not usage per consumer.

<sup>43</sup> See GSMA Digital Divide (2005) report, further used in GSMA's Global Mobile Tax Review [2006-2007](#)

per capita, holding other factors constant. The econometric approach, data sources, and specification are described in detail later in this annex.

We assume that in the absence of tax reform, real GDP per capita will continue to evolve along a baseline growth path. This baseline path is defined using historical average real GDP per capita growth rates, calculated over the previous ten years and excluding 2020 to avoid distortions from the COVID-19 shock. For Bangladesh, this baseline growth rate is 6.6% p.a., while for Pakistan it is 4.2% p.a.. This provides a counterfactual trajectory against which the impact of tax-induced changes in mobile penetration can be assessed.

Tax reforms affect this baseline GDP path by altering mobile penetration relative to the baseline. Changes in penetration generated in the direct modelling are applied to the estimated elasticity of GDP per capita with respect to mobile penetration. In the main scenario, the GDP impact happens one year after the tax reform takes place.

Government revenues from the broader economy are modelled as a fixed proportion of GDP. Under this approach, increases in GDP generated through higher mobile penetration lead to proportional increases in government revenues from non-sector-specific taxes, such as income taxes, consumption taxes, and other general revenue instruments. This allows the analysis to capture fiscal effects that arise outside the telecommunications sector.

The modelling adopts a conservative approach by estimating fiscal impacts solely through higher GDP growth, translated into government revenues using a constant tax-to-GDP ratio. It does not account for wider structural effects on the tax base, such as increased formalisation, improved compliance, or the emergence of new digital activities, nor for additional gains associated with recent technological developments. As a result, longer-term fiscal benefits may be understated.

Therefore, to assess the overall fiscal implications of tax reform, the model combines:

- changes in government revenues collected directly from the mobile services and SIM-related taxes, as estimated in the direct modelling; and
- changes in government revenues arising from higher GDP in the broader economy, as estimated in the indirect modelling.

These components are aggregated to derive the net change in total government revenues over time under each tax reform scenario. In order to compare near-term reductions with future increases on a consistent basis, the values should be discounted using the country's discount rate. Discounting reflects time preference and the opportunity cost of capital, recognising that impacts occurring in the future are valued less than impacts occurring today. Applying a common discount rate converts impacts at different points in time into present values, allowing a like-for-like comparison and ensuring that the assessment aligns with the country's established approach to intertemporal decision-making. We use a

discount rate of 12%, consistent with standard public-sector economic appraisal practice in Bangladesh and Pakistan.<sup>44</sup>

The year in which the discounted cumulative change in government revenues becomes positive is identified as the breakeven point for tax reform, indicating when the gains from stronger economic growth offset the initial losses from reduced mobile sector taxation.

### Econometric modelling of the relationship of mobile penetration and GDP

There is a well understood link between mobile penetration and GDP (for example GSMA<sup>45</sup> and World Bank<sup>46</sup>). According to these studies a 1% in mobile penetration increases the growth rate of GDP per capita by 0.06 percentage points (GSMA) and 0.08 percentage points (World Bank).

This report has undertaken new econometric modelling to estimate the relationship using the most up to date data. The analysis contributes to already existing literature by expanding the period of analysis using data until the end of 2024. This is especially relevant because it includes the post-Covid period, with possible structural changes in economic dynamics. Beyond the extension of the period, the exercise is also, to the best of our knowledge, the first to explore whether sector-specific taxation levels have an additional impact on economic outcomes. As the mobile taxation variable is only available from 2014 onwards, the econometric specifications are estimated over 2014 to 2024, with the broader 2000 to 2024 dataset used to extend the coverage of the other macroeconomic variables.

#### Model specification

The basis of the analysis is a standard endogenous growth model, where the growth rate of GDP per capita depends on total labour force, the degree of openness of the economy represented by trade as a percentage of GDP, government expenditure as a percentage of GDP and the level of investment represented by gross capital formation as a percentage of GDP.

Additionally, the model includes a variable measuring mobile (population) penetration and a variable containing an index that reflects the degree to which a country's taxation system

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<sup>44</sup> In Pakistan, Planning Commission guidance specifies that public projects are assessed using a 12% economic discount rate, framed as the opportunity cost of capital for evaluating economic viability. In Bangladesh, public project economic appraisal similarly applies a 12% real discount rate, which is consistently used in Asian Development Bank evaluations and described as reflecting the country's economic opportunity cost of capital.  
<https://pc.gov.pk/uploads/downloads/PC-Forms/PROJECT%20APPRAISAL.doc>  
<https://www.adb.org/sites/default/files/linked-documents/35049-01-ban-ea.pdf>

<sup>45</sup> GSMA (2012), What is the impact of mobile telephony on economic growth?, A report prepared for the GSM Association.

<sup>46</sup> Qiang, C. Z.-W., & Rossotto, C. M. (2009). Economic impacts of broadband. In T. Qiang & C. M. Rossotto (with K. Kimura), Information and communications for development: Extending reach and increasing impact (pp. 47). Washington, DC: World Bank

is an enabler of mobile connectivity. The GSMA Mobile Taxation Index<sup>47</sup> systematically compares mobile-specific tax burdens across countries. The taxation indicator is developed by estimating the proportion of the monthly cost of mobile data that are accounted for by taxes.

The econometric specification of the model is the following:

$$\begin{aligned} \ln(GDP\ per\ capita_{i,t}) - \ln(GDP\ per\ capita_{i,t-1}) \\ = \alpha_1 \ln(GDP\ per\ capita_{i,t-1}) + \beta_1 \ln(GDP\ per\ capita_{i,t-2}) \\ + \beta_2 \ln(Mobile\ Penetration_{i,t}) + \beta_3 \ln(Tax\ Index_{i,t}) + \beta X_{i,t} + \eta_i + \epsilon_{i,t} \end{aligned}$$

Which can be rearranged to:

$$\begin{aligned} \ln(GDP\ per\ capita_{i,t}) \\ = \lambda \ln(GDP\ per\ capita_{i,t-1}) + \beta_1 \ln(GDP\ per\ capita_{i,t-2}) \\ + \beta_2 \ln(Mobile\ Penetration_{i,t}) + \beta_3 \ln(Tax\ Index_{i,t}) + \beta X_{i,t} + \eta_i + \epsilon_{i,t} \end{aligned}$$

where  $\lambda = 1 + \alpha$  and  $X_{i,t}$  includes the logarithms of total labour force, the degree of openness of the economy represented by trade as a percentage of GDP and government expenditure as a percentage of GDP and the level of investment represented by gross capital formation as a percentage of GDP.  $\eta_i$  is a country-specific effect and  $\epsilon_{i,t}$  is an error term.

The definition of each variable is explained in Table 2, which also specifies the source of the data.

The described econometric specification is estimated using the System GMM approach, which is a standard approach for estimating Dynamic Panel Data models. This method is used for situations with panels with relatively small number of periods and large number of individuals (in this case countries), independent variables that might be correlated with past and possibly current realisation of the error, fixed effects, and heteroskedasticity and autocorrelation within individuals<sup>48</sup>.

The coefficients of interest are  $\beta_2$  and  $\beta_3$ .  $\beta_2$  can be interpreted as the average impact that a 1% increase in mobile penetration has on the growth rate of per capita GDP, keeping all other variables constant.  $\beta_3$ , in turn, corresponds to the impact a 1% increase in the tax index has on the growth rate of per capita GDP.

<sup>47</sup> [GSMA Mobile Taxation Index](#)

<sup>48</sup> Roodman, D. (2009). How to do xtabond2: An introduction to difference and system GMM in Stata. *Stata Journal*, 9(1), 86–136.

## Results

Main results are shown in Figure 8. The coefficient on the mobile penetration variable is positive and significantly different to 0 at all confidence levels. The value of 0.115 indicates that a 1% increase in mobile penetration leads, all other things constant, to an increase in the growth rate of GDP of 0.115 percentage points. However, no statistically significant relationship is found for the tax index variable. This suggests no additional impact of a more supportive mobile taxation system on GDP growth beyond its effect through higher mobile penetration.

The positive and significant coefficients for labour force and trade suggest a positive relationship between per capita GDP growth rates and employment and trade exposure, which makes economic sense. On the contrary, the investment and government expenditure variables are not significantly different from 0.

**Figure 8** Baseline regression results

```
Balanced Panel: n = 225, T = 25, N = 5625

Number of Observations Used: 2757
Residuals:
      Min.      1st Qu.      Median      Mean      3rd Qu.      Max.
-0.4433886  0.0000000  0.0000000 -0.0000592  0.0000000  0.7082267

Coefficients:
              Estimate Std. Error z-value Pr(>|z|)
plm::lag(log_gdppc, 1:2)1  0.9756600  0.0650844 14.9907 < 2.2e-16 ***
plm::lag(log_gdppc, 1:2)2 -0.0322194  0.0627366 -0.5136  0.607555
log_mobpen                0.1153340  0.0221240  5.2131 1.857e-07 ***
log_tax1                  0.0071455  0.0109620  0.6518  0.514503
log_labour                0.0105012  0.0032044  3.2772  0.001049 **
log_trade                 0.0537279  0.0150654  3.5663  0.000362 ***
log_invest                0.0030777  0.0116489  0.2642  0.791620
log_govexp               0.0232335  0.0154716  1.5017  0.133178
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Sargan test: chisq(109) = 117.6369 (p-value = 0.26925)
Autocorrelation test (1): normal = -3.707547 (p-value = 0.00020928)
Autocorrelation test (2): normal = -0.006675347 (p-value = 0.99467)
Wald test for coefficients: chisq(8) = 3636579 (p-value = < 2.22e-16)
```

Source: *Frontier Economics*

Figure 9 shows the results for a slightly different specification of the econometric model where an additional variable is used to identify whether the magnitude of the effects of mobile penetration on the growth rate of per capita GDP are different for the 2018 period. The coefficient of the interaction between the mobile penetration and the post 2018 variable (dichotomous variable taking value 0 before 2018 and 1 after) is not significantly different from 0, which suggests there is no evidence that the magnitude of the relationship between mobile penetration and per capita GDP growth changes for the post 2018 period.

Figure 9 Regression including a dummy variable for the post 2018 period

```

Balanced Panel: n = 225, T = 25, N = 5625

Number of Observations Used: 2757
Residuals:
      Min.      1st Qu.      Median      Mean      3rd Qu.      Max.
-0.4406813  0.0000000  0.0000000  0.0000772  0.0000000  0.7124606

Coefficients:
              Estimate Std. Error z-value Pr(>|z|)
plm::lag(log_gdppc, 1:2)1  0.9847109  0.0632874 15.5594 < 2.2e-16 ***
plm::lag(log_gdppc, 1:2)2 -0.0311080  0.0597944 -0.5202 0.6028899
log_mobpen                0.0907138  0.0198254  4.5756 4.748e-06 ***
post_2018                 -0.0105300  0.0024416 -4.3128 1.612e-05 ***
log_tax1                  0.0038731  0.0092857  0.4171 0.6766023
log_labour                0.0090602  0.0025853  3.5045 0.0004575 ***
log_trade                 0.0466000  0.0129317  3.6035 0.0003139 ***
log_invest                0.0060056  0.0098936  0.6070 0.5438371
log_govexp                0.0148056  0.0137378  1.0777 0.2811536
log_mobpen:post_2018     0.0124645  0.0076734  1.6244 0.1042964
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Sargan test: chisq(111) = 120.737 (p-value = 0.24833)
Autocorrelation test (1): normal = -3.740863 (p-value = 0.00018339)
Autocorrelation test (2): normal = -0.3782997 (p-value = 0.70521)
Wald test for coefficients: chisq(10) = 5307295 (p-value = < 2.22e-16)

```

Source: *Frontier Economics*

Both regression specifications pass standard post-estimation tests for this type of econometric model. In line with good practice results, the Sargan test of over-identifying restrictions does not allow to reject the null hypothesis. Equally, the tests for autocorrelation are passed.

The results are subject to a number of limitations. First is the way in which mobile penetration is calculated. In line with common practice mobile penetration is calculated as the number of SIM cards divided by the population. However, since it is a common practice in certain countries for individuals to use more than one SIM card at the same time, this can affect the variable used for the regressions. In addition, while the estimated coefficient remains stable in magnitude across a range of sensitivity checks, the results of post-estimation robustness tests are more sensitive to alternative specifications.

## Data sources

**Table 2** Variable definition

Variable name	Definition	Source
GDP per capita	Value of goods and services produced within an economy over a given period, divided by population (per capita) and expressed in constant 2015 prices and US dollars.	<a href="#">World Bank</a>
Mobile penetration	Total number of active mobile SIM subscriptions expressed as a percentage of the total population	<a href="#">TeleGeography</a>
Tax Index	The GSMA Mobile Data Tax Index measures the extent to which taxes and fees increase the price of mobile data services. It captures the proportion of the monthly cost of a representative mobile data basket that is accounted for by taxation, including general consumption taxes (such as VAT), sector-specific ad valorem taxes, and sector-specific recurring charges applied to mobile data usage. The index is expressed on a scale from 0 to 100, where higher values indicate a lower tax burden on mobile data services. This normalised scoring allows for consistent comparison across countries and regions.	<a href="#">GSMA</a>
Labour force	Labour force comprises people ages 15 and older who supply labour for the production of goods and services during a specified period	<a href="#">World Bank</a>
Openness of the economy	Trade is the sum of exports and imports of goods and services. This indicator is expressed as a percentage of Gross Domestic Product (GDP) which is the total income earned through the production of goods and services in an economic territory during an accounting period.	<a href="#">World Bank</a>
Government expenditure share	Final consumption expenditure is expenditure on goods and services by resident institutional units for the direct satisfaction of	<a href="#">World Bank</a>

Variable name	Definition	Source
Investment	<p>human needs or wants, whether individual or collective</p> <p>This indicator is expressed as a percentage of Gross Domestic Product (GDP) which is the total income earned through the production of goods and services in an economic territory during an accounting period.</p> <p>Gross capital formation includes acquisitions less disposals of produced assets for purposes of fixed capital formation, inventories or valuables.</p> <p>This indicator is expressed as a percentage of Gross Domestic Product (GDP) which is the total income earned through the production of goods and services in an economic territory during an accounting period.</p>	<a href="#">World Bank</a>

Source: *Frontier Economics*

## Annex B Sensitivity testing

Two sensitivity analyses have been carried out. The first revolves around the strength of the indirect effects that mobile connectivity has on the wider economy, and has been calculated both for Bangladesh and Pakistan. The second analyses the effect that removing the SIM tax can have in a scenario where individuals have a much stronger discount factor, meaning that short-term cash-flows have a higher relative importance compared to future ones. This sensitivity is Bangladesh-specific.

### Sensitivity 1 – lower impact of penetration on GDP

The first sensitivity tests alternative estimates of the relationship between mobile penetration and GDP. In spite of considering that our estimates of the long-run fiscal effect are conservative, because we don't explicitly model any widening of the tax base in the form of increased tax-to-GDP ratio, we explore a sensitivity scenario where the impact of increased mobile penetration on wider economic outcomes is slightly lower and aligned to the existing literature. Sensitivity 1 therefore models the exact same tax reform scenario, but assumes that a 1% increase in mobile penetration increases the growth rate of per capita GDP by 0.08 percentage points instead of 0.115.

Using alternative assumption of a weaker (i.e. lower) relationship between mobile penetration and GDP implies that mobile sector tax reductions will have lower indirect impacts on GDP compared with the central scenario.

The increase in the annual growth rate of GDP per capita is lower than under the main scenario, reflecting the more conservative assumption on economy-wide spillovers from improved connectivity. As a result, the associated uplift in government revenues from the wider economy is also more muted, and the fiscal breakeven point occurs later than in the central case. Nevertheless, the cumulative discounted fiscal impact remains positive within the model horizon. These results can be seen in Figure 10 for Bangladesh and Figure 11 for Pakistan.

### Sensitivities 2 and 3 – faster and slower impact of higher penetration on GDP

The second and third sensitivities examine how the results vary under alternative assumptions about the timing of the GDP effect. In the main scenario, the increase in mobile penetration is assumed to raise GDP growth with a one-year lag.

Sensitivity 2 assumes a faster transmission mechanism, with the GDP effect materialising in the same year as the reform and the resulting increase in mobile penetration. By contrast, Sensitivity 3 assumes a slower transmission mechanism, with the GDP effect occurring only after a two-year lag.

Results in Table 3 and Table 4, and in Figure 10 and Figure 11 show that the timing of the GDP effect has a material impact on the results.

In Bangladesh, this breakeven point occurs one year earlier under the faster impact scenario and is delayed by two years under the slower impact scenario. In Pakistan, the effect is similar but asymmetric: the breakeven year advances by two years under the faster scenario and is delayed by one year under the slower scenario.

### Sensitivity 4 – higher impact of SIM taxes on penetration

The final sensitivity varies assumptions on how the one off price of a SIM cards affects the consumption decision of consumers (i.e. the choice of whether to subscribe to a mobile service) in Bangladesh. The cost to users of the SIM is around USD 4.45, of which the cost to operators is USD 2 and tax is USD 2.45.<sup>49</sup>

When choosing to consume mobile services a user would assume that value of the connection cost (i.e. the cost of the SIM) is reflected over the period of use of the service. The central case assumes that a consumer would rationalise the one-off connection costs as being distributed equally over the lifetime of their service (we assume a four year service – i.e. that consumers would churn every four years). This scenario implicitly assumes that the consumer's discount rate is zero (i.e. that it is perfectly indifferent between consumption today and consumption in the future).

However, this would not reflect consumption decisions for low-income populations. In particular, low income households are likely to have a high discount rate, (meaning that they have strong preference for consumption today, over consumption tomorrow).<sup>50</sup>

In line with this reasoning, the second sensitivity explores how relevant the SIM tax can be if population would have a much higher discount rate. Therefore the sensitivity assumes that the amortisation period for costs related to SIM card are decreased from 4 years to 1 year, both to the baseline and reform scenarios.

An assumption that the one off cost of a SIM is amortised over a one year period (compared with a four year period in the central scenario) leads to an effective retail price reduction of 10% (compared to the central scenario of 15% price reduction). As a result, mobile penetration is only 3% higher than the baseline, compared to about 5% higher than the baseline in the main scenario.

The growth rate of per capita GDP increases by 0.4 percentage points. This increase in the annual growth rate of GDP per capita is slightly lower than the main scenario. Government tax revenue from economic activity increases, tied to this larger indirect impact. Table 3 and

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<sup>49</sup> Using an exchange rate of 122.35 USD/BDT to convert the 300 BDT SIM tax.

<sup>50</sup> Lawrence, E. C. (1991), "Poverty and the Rate of Time Preference: Evidence from Panel Data," *Journal of Political Economy*, 99(1): 54–77. The study finds subjective rates of time preference are around 3–5 percentage points higher for households with low permanent incomes than for those with high permanent incomes

Table 4 summarise the results for the main variables of interest, which are also visible in Figure 10 and Figure 11.

### Results of sensitivity analysis

Table 3 summarises the changes between the main scenario and sensitivity analyses for Bangladesh and Pakistan.

**Table 3 Summary of key differences with respect to the main scenario - Bangladesh**

Variable	Main scenario	S1 Lower GDP impact	S2 Fast impact	S3 Delayed impact	S4 Faster SIM amortisation
Impact of a 1% increase in mobile penetration on the growth rate of GDP per capita (p.p.)	0.63	0.44	0.63	0.63	0.41
Year when net tax revenues are positive (undiscounted)	2032	2034	2031	2034	2028
NPV after 5 years (USD million)	-833	-1,417	177	-1,619	994
NPV after 8 years (USD million)	1,105	-394	2,624	-186	2,822

Source: Frontier Economics

Note: Magnitudes are in 2024 real terms.

**Table 4** Summary of key differences with respect to the main scenario - Pakistan

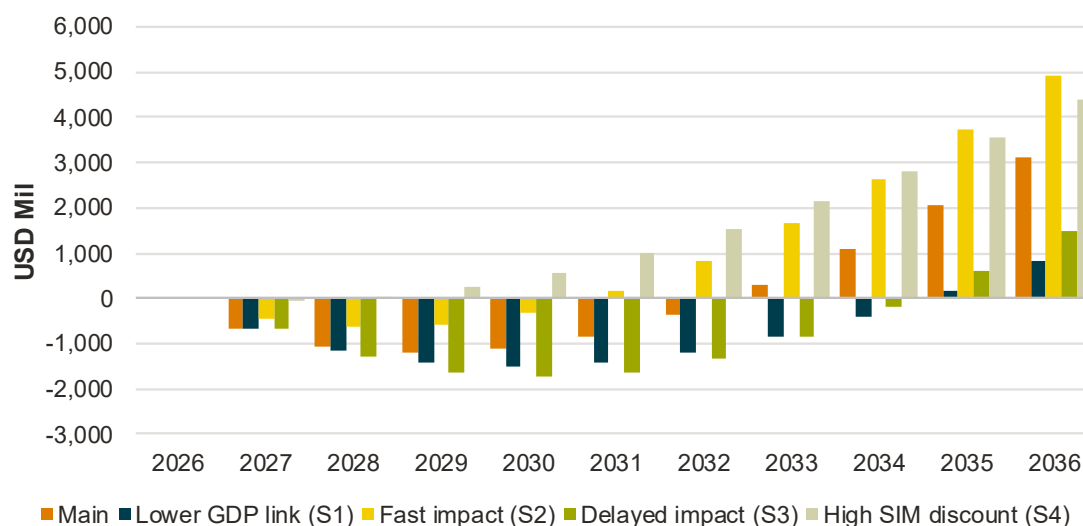
Variable	Main scenario	S1 Lower GDP impact	S2 Fast impact	S3 Delayed impact
Impact of a 1% increase in mobile penetration on the growth rate of GDP per capita (p.p.)	0.33	0.23	0.33	0.33
Year when net tax revenues are positive (undiscounted)	2034	2036	2032	2035
NPV after 5 years (USD million)	-722	-984	-257	-1,079
NPV after 8 years (USD million)	-78	-721	597	-646

Source: Frontier Economics

Note: Magnitudes are in 2024 real terms.

Figure 10 and Figure 11 show the results for the modelled scenarios in Bangladesh and Pakistan, respectively. The figures shows how the discounted cumulative government tax revenues evolve over time.

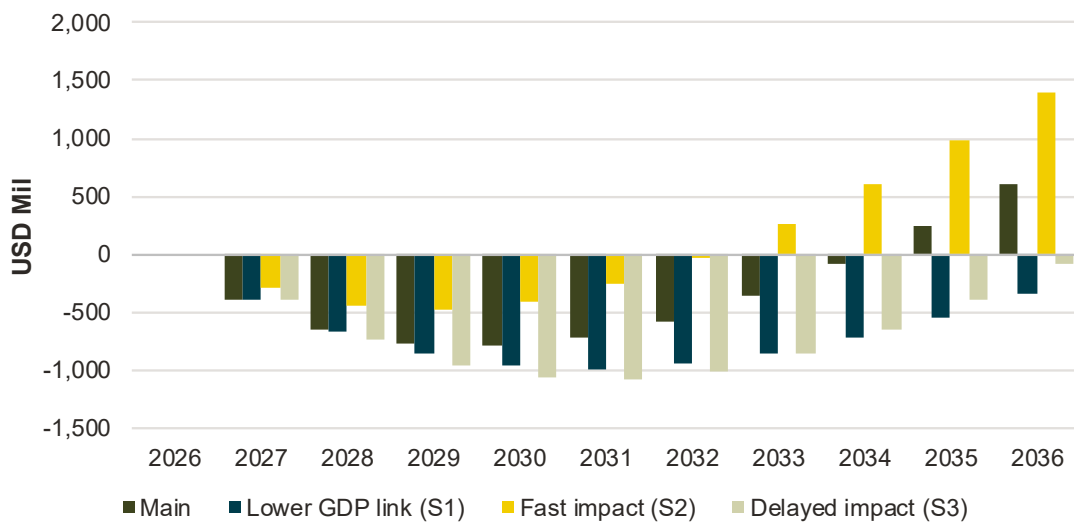
**Figure 10** Bangladesh: Total cumulative discounted government tax revenues compared to baseline



Source: Frontier Economics

Note: Magnitudes are in 2024 real terms.

**Figure 11** Pakistan: Total cumulative discounted government tax revenues compared to baseline



Source: Frontier Economics

Note: Magnitudes are in 2024 real terms.

## Annex C Bangladesh standalone summary

### C.1 Introduction

In Bangladesh, digitalisation is a route to economic growth and development. In support of this it already benefits from widespread coverage of mobile connectivity and vibrant competition among three mobile operators. However, the very high taxes applied to the mobile sector create barriers to take up and use of mobile services. This ultimately frustrates the ability of the sector to enable the kind of digital transformation on which the country's development depends.

Frontier Economics Limited has been retained by VEON to assess the economic and fiscal implications of reducing sector-specific taxation on mobile services in Bangladesh. This report explains how taxation reform in the mobile sector can unlock economic benefits, promote digitalisation, enable the economy to grow faster and increase the country's tax base.

### C.2 Mobile connectivity is central to Bangladesh's economic development

In a mobile-first economy, like Bangladesh, mobile networks are the main route through which households and firms access the internet, digital services and online transactions. New analysis conducted for this report finds that stronger digital connectivity is associated with higher productivity, and faster GDP growth. By increasing the opportunities for firms and workers to provide new innovative services, investment in digital technologies enables Lower Middle Income Countries (LMICs) to rapidly increase their economic development.

Mobile development also supports financial inclusion. In many developing economies, a significant share of the population remains outside the formal banking system. Digital and mobile-enabled services help overcome barriers to financial inclusion linked to cost, distance, documentation and access.

Indeed, given these links, mobile development can help bring more people and firms into formal, economic activity. That has broader developmental benefits, but it also has fiscal impacts, enabling the government to widen the tax base and strengthen tax administration over time.

### C.3 Bangladesh's government has implemented policies to support its digital development

Given these benefits, the Government of Bangladesh recognises the importance of developing the digital sector. Indeed, it treats digital technology as enabling productivity, inclusion, and public service delivery rather than a standalone sector. The Government's

ICT Master Plan highlights continued development of digital government, shared infrastructure (including government platforms and cloud capability), expansion of connectivity, and the use of digital tools to improve service delivery and administrative efficiency. However, achieving the objectives set out in the Master Plan and the Smart Bangladesh Vision 2041 requires significant investment by both the public and private sector.

### C.4 Mobile operators in Bangladesh have invested to support high population coverage but ARPU and investment are low

At 99% population coverage, Bangladeshi consumers benefit from extensive coverage of 4G networks, significantly above the average in LMICs (94%). However, mobile operator ARPU is very low at just USD 1.2 per month and despite the very low ARPU, only 38% of the population own a smartphone. This means a significant proportion of the population remains without access to many mobile services.

Low ARPU and weak penetration inevitably impacts on the ability of operators to profitably invest further in their networks – for example to expand capacity or deploy 5G. In turn, this means that average download speeds are relatively low. This means that, with average download speeds of 40 Mbps, Bangladesh is ranked 91st out of 105 countries in its average speeds.

This relatively low take up and potentially constrained investment in the sector will hold back Bangladesh's digital development and could limit its ability to meet its social and economic development goals.

### C.5 Mobile sector taxes hold back Bangladesh's digital development

The Government of Bangladesh relies disproportionately on sales tax and profit taxes to finance its expenditure.<sup>51</sup> It also has a very low tax to GDP ratio of 7.6%,<sup>52</sup> significantly below the Asia Pacific average of 20%.<sup>53</sup> However, within this, mobile services in Bangladesh are taxed at very high rates compared with peers. For example, the GSMA estimates total taxes and fees in Bangladesh equate to for 55% of mobile sector revenues (2021), well above global and regional average.<sup>54</sup> This implies that for each USD in sector revenues, USD 0.55 is directed at government tax.

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<sup>51</sup> OECD (2025) Revenue Statistics in Asia and the Pacific 2025: Bangladesh  
[https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/06/revenue-statistics-in-asia-and-the-pacific-2025-country-notes\\_0a069779/bangladesh\\_6a1cdf8d/8afb696d-en.pdf](https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/06/revenue-statistics-in-asia-and-the-pacific-2025-country-notes_0a069779/bangladesh_6a1cdf8d/8afb696d-en.pdf)

<sup>52</sup> World Bank

<sup>53</sup> OECD 2023

<sup>54</sup> GSMA (2023) Review of mobile taxes and fees in Bangladesh Recommendations to accelerate digital transformation

## UNLOCKING DIGITAL GROWTH BY REDUCING SECTOR TAXATION IN BANGLADESH AND PAKISTAN

These taxes are likely to impede investment in the sector and reduce demand for connectivity. As such, they conflict with the government's objectives to improve and increase the level of digitalisation. In particular:

- Total sales, usage and turnover taxes sum to 39% (compared with VAT of 15%) plus a further 8% which reflects the turnover tax, revenue sharing and Social Obligation fund. In total this means 47% of ARPU is accounted for in sales, usage and turnover taxes.
- The government levies a tax on new connections (SIM tax). Bangladesh is a mobile-first country, where a significant proportion of the population still does not have access to connectivity, and faces strong affordability constraints. As such, this tax is likely to directly hold back use of mobile connectivity services.
- The government levies high profit taxes on the sector. Profits in the sector are taxed at the above the standard rate.<sup>55</sup>

**Table 5 Summary of taxes in Bangladesh**

		<b>Standard rate (applied to other sectors)</b>	<b>Mobile sector (inclusive or standard rate)</b>
<b>Sales and turnover tax</b>	VAT	15%	15%
	Supplementary Duty		20%*
	Surcharge on mobile usage		1%
	<b>Total usage tax</b>	<b>15%</b>	<b>39%</b>
	Turnover tax		1.5%
	Revenue sharing		5.5%
	Social obligation fund		1%
<b>New subscriber / new users tax</b>	SIM Tax		300 BDT per SIM
<b>Corporate</b>	Profit tax	22.5%-27.5%	40%-45%
<b>Licence fees</b>	Annual fee		BDT 100m
<b>Equipment</b>	Imported network equipment		2-25%

Source: *Banglalink*

Note: *Turnover tax Minimum tax- 1.5% on gross turnover or advance income tax which ever is higher. Total usage tax is the standard VAT to which a 20% supplementary duty is applied, and a further 1% is added. i.e. Total usage tax = (1+15%)\*(1+20%) +1%*

<sup>55</sup> Non-publicly traded Mobile company is profit tax is 45% (publicly traded mobile company is 40%).

These high levels of tax have distorting impacts: high sales taxes reduce consumption and in the context of mobile services, limits consumers’ access to health, banking and social public services. Ultimately, low take up and use of mobile connectivity could act as a drag on Bangladesh’s growth potential and conflict with Bangladesh’s policies to promote digitalisation.

### C.6 High sector-specific taxes reduce usage, penetration and investment

To assess how high sector specific taxes affect economic outcomes our modelling estimated the impact that a more rational tax system could have on economic activity, and hence federal tax revenues. Reducing tax on mobile services so they are more consistent with the wider economy would stimulate demand. We have modelled the effect of reductions in the combined sales / turnover tax rates, the corporate tax and SIM tax on mobile services. Table 6 presents the assumptions that form the main scenario. The aim in the reform scenario is to bring sector taxes more into line with the wider economy.

**Table 6 Modelled tax reform**

Country	Tax measure	Baseline	Modelled reform scenario	Comment
Bangladesh	Combined sales and turnover taxes rate on mobile services	47%	23%	The Supplementary Duty of 20% is reduced to 5%. The Revenue Sharing to the BTRC of 5.5% goes down to 1%. The Social Obligation Fund of 1% and minimum turnover tax of 1.5% are eliminated.
	Corporate tax	40%	30%	This change takes as starting point the corporate tax rate applied to publicly traded mobile companies. The 30% is a value close to the 27.5% corporate tax rate generally applied in Bangladesh to non-publicly traded companies.
	SIM tax	BDT 300	BDT 0 (i.e. tax removed)	

Source: Frontier Economics

## C.7 Conclusion and results

Given that mobile connectivity is known to have positive economic impacts, the sector specific taxes are limiting the growth potential for the sector. Against that backdrop, this report explains how tax reform could better support Bangladesh's long-term digital and fiscal goals.

Our analysis finds that reductions in sector-specific mobile taxes stimulate demand for mobile connectivity services. Existing customers will consume more connectivity services, and penetration of mobile services will increase as more customers are able to connect.

### Positive impact on economic growth

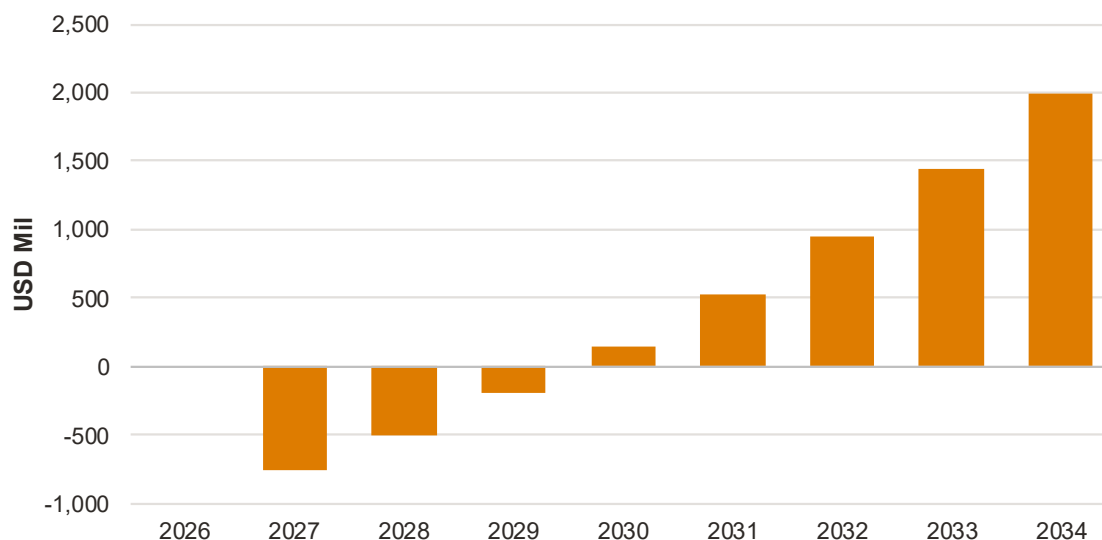
Higher mobile penetration and usage should feed through to the wider economy. Based on the estimated relationship between mobile penetration and GDP per capita growth, the modelling indicates that tax reform allows GDP per capita to grow at a faster rate than under the baseline. Under the main scenario, we assume this would lead to an increase in the annual real growth rate of GDP per capita from approximately 6.6% to 7.2%.

### Fiscal impacts and medium-term revenue recovery

In the short run, government revenues collected directly from the mobile sector are likely to decline following the reduction in sector-specific taxes. Our modelling indicates this could amount to a decline of USD 761 million in the first year, relative to the baseline. This equates to 2.5% of total government tax proceeds.

However, over a short period of time, the higher GDP generated by improved connectivity will stimulate growth in government tax receipts from the wider economy. When considering the cumulative discounted impact on total government revenues, the modelling indicates that by 2030, annual tax proceeds could be higher than in the baseline. Figure 12 shows the yearly net fiscal impact of the modelled reform.

Figure 12 Yearly net fiscal impact of the reform



Source: Frontier Economics

Note: Values in the chart are undiscounted.

Table 7 summarises the results for the main scenario.

Table 7 Summary of results

Variable	Results
Increase in average usage of data per subscriber (%)	4%
Increase in penetration (%)	5%
Increase in real growth rate of per capita GDP (p.p.)	0.63
<b>First year tax reforms are fiscally positive (undiscounted)</b>	<b>2030</b>

Source: Frontier Economics

Note: Magnitudes are in 2024 real terms.

This demonstrates the positive medium term impact that taxation reform to promote digitalisation can have, both on the economy and the broader fiscal position of the government. To realise these benefits, the Government should:

- **Rebalance tax policy away from sector-specific consumption taxes and surcharges that directly raise consumer prices.** These taxes have high pass-through and the strongest effects on affordability and adoption. A clear priority should be reducing taxes applied to usage and revenues.
- **Target reforms that remove barriers that prevent users from accessing services, including SIM-related taxes and other access charges.** Entry costs matter disproportionately in mobile-first economies because they

determine whether marginal users join the digital economy at all. Reducing these barriers promotes inclusion and expands the user base that later contributes to the wider tax base.

- **Design and communicate tax reform as part of a broader government strategy to promote digitalisation, expand formal economic activity, and strengthen the tax base over time, while managing the temporary revenue loss in the short term.** The modelling results suggest a manageable transition: mobile-sector receipts fall initially, but the benefits of digitalisation means broader revenues rise as GDP improves and the tax base expands, with fiscal break-even within a few years.

## Annex D Pakistan standalone summary

### D.1 Introduction

In Pakistan, digitalisation is a route to economic growth and development. In support of this it already benefits from widespread coverage of mobile connectivity and vibrant competition among three mobile operators. However, the very high taxes applied to the mobile sector create barriers to take up and use of mobile services. This ultimately frustrates the ability of the sector to enable the kind of digital transformation on which the country's development depends.

Frontier Economics Limited has been retained by VEON to assess the economic and fiscal implications of reducing sector-specific taxation on mobile services in Pakistan. This report explains how taxation reform in the mobile sector can unlock economic benefits, promote digitalisation, enable the economy to grow faster and increase the country's tax base.

### D.2 Mobile connectivity is central to Pakistan's economic development

In a mobile-first economy, like Pakistan, mobile networks are the main route through which households and firms access the internet, digital services and online transactions. New analysis conducted for this report finds that stronger digital connectivity is associated with higher productivity, and faster GDP growth. By increasing the opportunities for firms and workers to provide new innovative services, investment in digital technologies enables Lower Middle Income Countries (LMICs) to rapidly increase their economic development.

Mobile development also supports financial inclusion. In many developing economies, a significant share of the population remains outside the formal banking system. Digital and mobile-enabled services help overcome barriers to financial inclusion linked to cost, distance, documentation and access.

Indeed, given these links, mobile development can help bring more people and firms into formal, economic activity. That has broader developmental benefits, but it also has fiscal impacts enabling the government to widen the tax base and strengthen tax administration over time.

### D.3 Pakistan's government has implemented policies to support its digital development

Pakistan's government recognises the importance of building digital physical and public infrastructure and encouraging and enabling the use of digital services. Pakistan's core policy framework is the Digital Pakistan Policy.<sup>56</sup> This sets out a national roadmap to build

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<sup>56</sup> Approved in May 2018

a “holistic digital ecosystem” spanning connectivity, e-government, e-commerce, digital skills, innovation, and the enabling legal and regulatory environment.

The policy placed strong emphasis on broadband expansion and universal access, digitalisation of public services through common government platforms (such as government cloud and shared infrastructure), and growing the domestic IT and IT-enabled services sector through incentives, talent development, and support for entrepreneurship.

More recently, Pakistan has strengthened the governance architecture for digital transformation through legislation. The Digital Nation Pakistan Act 2025 is intended to make government delivery faster and more transparent, help more people access public services on their phones, and improve the ease of doing business.<sup>57</sup> However, the ability of these policies to deliver on the necessary investment, and increase in take up and use of digital services is likely to be inhibited by high sector-specific taxes.

### D.4 Mobile operators in Pakistan have invested to support population but ARPU and investment are low

While PTA has recently auctioned 5G spectrum and operators are now turning on 5G networks, at 81%, Pakistan currently has a relatively low level of 4G population coverage, significantly below the average in Low Middle Income Countries (LMICs) (94%).<sup>58</sup> Moreover, mobile operator ARPU is very low at just USD 1 per month.<sup>59</sup> Despite the very low ARPU, only 32% of the population own a smartphone meaning that a significant proportion of the population still remains without access to many mobile services.<sup>60</sup>

Low ARPU and weak penetration inevitably impacts on the ability of operators to profitably invest in their networks. In turn this means that average download speeds are relatively low. For example, with average download speeds of 24 Mbps – with Pakistan ranked 101<sup>st</sup> out of 105 countries studied by Speedtest.net.<sup>61</sup>

This relatively low take up and potentially constrained investment in the sector will hold back Pakistan’s digital development and could limit its ability to meet its social and economic development goals.

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<sup>57</sup> Ministry of Information Technology & Telecommunication, Government of Pakistan (2025), “Digital Nation Pakistan Act 2025”. The Act establishes a National Digital Commission to provide strategic direction and coordination across federal and provincial institutions, alongside a Pakistan Digital Authority tasked with developing and implementing a National Digital Masterplan and associated sectoral transformation plans. It also places weight on building secure, inclusive and interoperable Digital Public Infrastructure, with clearer standards and accountability across government, supported by dedicated financing mechanisms, including a Digital Nation Fund.

<sup>58</sup> <https://datahub.itu.int/data/?c=701&i=100095&s=19306>

<sup>59</sup> Source: TeleGeography .

<sup>60</sup> While headline rates of SIM penetration are high, this reflects high proportion of users that have multiple SIMs. Source: [World Bank](#)

<sup>61</sup> <https://www.speedtest.net/global-index>

## D.5 Mobile sector taxes hold back Pakistan's digital development

Pakistan has a very low tax to GDP ratio of 8.9%. This is significantly below the Asia Pacific average of 20%.<sup>62</sup> Pakistan disproportionately relies on sales tax and profit taxes to finance government expenditure.<sup>63</sup>

Mobile services in Pakistan are taxed at very high rates compared with peers. GSMA estimates overall taxes of 34.5% on telecoms users<sup>64</sup>, well above global and regional average. This implies that for each USD in sector revenues USD 0.345 is government tax. As such, they conflict with the government's objectives to improve and increase the level of digitalisation. In particular:

- Total sales, usage and turnover taxes sum to 37% (compared with VAT of 19.5%), including the advance income tax and annual regulatory duty of 2.5% of revenue. The use of the mobile sector to collect income tax has significant distorting effects. It means that the retail price for connectivity is much higher than it otherwise would be. In a country where a high proportion of the population face strong affordability constraints, the advance income tax is likely to have a strong impact on the penetration and use of mobile connectivity. Even where consumers understand that they can reclaim advance income tax in the future, price sensitive consumers (with high personal discount rates) will face strong incentives to avoid consuming connectivity.
- Mobile operators' profits (which bring positive externalities to users and the wider economy) are taxed at 39%. While 39% is a large rate compared with international standards, this rate is not sector specific, as the 10% Super Tax is dependent on profitability.
- Spectrum licence fees are denominated in US dollars. Where fees reflect long run periodic payments (over the course of the spectrum licence) this has the effect of transferring currency exchange rate risk to the sector, and of changing government incentives to adopt policies that increase inflation or depreciate the local currency (since governments benefit where they contract long-term payments in dollars and their currency depreciates). For example, Pakistan's local currency has depreciated by 50% since 2017 (from 139 rupees to the dollar, to 280 rupees to the dollar). All else equal, this has the effect of doubling nominal period payments compared to payments that were fixed in local currency.

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<sup>62</sup> World Bank

<sup>63</sup> OECD (2025) Revenue Statistics in Asia and the Pacific 2025: Pakistan  
[https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/06/revenue-statistics-in-asia-and-the-pacific-2025-country-notes\\_0a069779/pakistan\\_f7330e74/e3565533-en.pdf](https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/06/revenue-statistics-in-asia-and-the-pacific-2025-country-notes_0a069779/pakistan_f7330e74/e3565533-en.pdf)

<sup>64</sup> <https://tribune.com.pk/story/2417141/gsma-proposes-cut-in-telecom-taxes>

**Table 8** Summary of taxes in Pakistan

		Standard rate (applied to other sectors)	Mobile sector (inclusive or standard rate)
<b>Sales and turnover tax</b>	Sales Tax	15%-16%	19.5%
	Advance Income Tax <sup>65</sup>		15%
Annual Regulatory duty			2.5%
<b>Equipment</b>	Handset tax		18%-25%
	Import taxes		2% - 46% Custom & regulatory duties 5.5% advance tax
<b>Corporate</b>	Profit tax	29% + up to 10% Super Tax depending on profitability	
<b>Licence fees</b>	Annual fee		

Source: Jazz

These high levels of tax have distorting impacts: high sales taxes reduce consumption and in the context of mobile services, limits consumers' access to health, banking and social public services. Ultimately low take up and use of mobile connectivity acts as a drag on Pakistan's growth potential and is inconsistent with Pakistan's policies to promote digitalisation

## D.6 High sector-specific taxes reduce usage, penetration and investment

To assess how high sector specific taxes affect economic outcomes our modelling estimated the impact that a more rational tax system could have on economic activity, and hence federal tax revenues. Reducing tax on mobile services so they are more consistent with the wider economy would stimulate demand. We have modelled the effect of a reduction in the combined sales / turnover tax rate on mobile services. Table 9 the

<sup>65</sup> A 75% rate of advance tax applies to persons specifically listed as non-filers in the ITGO issued by the tax authorities. However, for the majority of customers, the advance tax collected on mobile services continues to apply at the standard rate of 15%.

assumptions that form the main scenario. The aim in the reform scenario is to bring sector taxes more into line with the wider economy.

**Table 9**      **Modelled tax reform scenarios**

Country	Tax measure	Baseline	Reform	Comment
Pakistan	Combined sales / turnover tax rate on mobile services	37%	17%	The Advance Income Tax from customers is eliminated, the annual regulatory duty reduced from 2.5% to 1% and the sales tax reduced from 19.5% to 16%.
	Corporate tax	39%	39%	

Source: Frontier Economics

## D.7 Conclusion and results

Given that mobile connectivity is known to have positive economic impacts, the sector specific taxes are limiting the growth potential for the sector. Against that backdrop, this report explains how tax reform could better support Pakistan’s long-term digital and fiscal goals.

Our analysis finds that reductions in sector-specific mobile taxes stimulate demand for mobile connectivity services. Existing customers will consume more connectivity services, and penetration of mobile services will increase as more customers are able to connect.

### Positive impact on economic growth

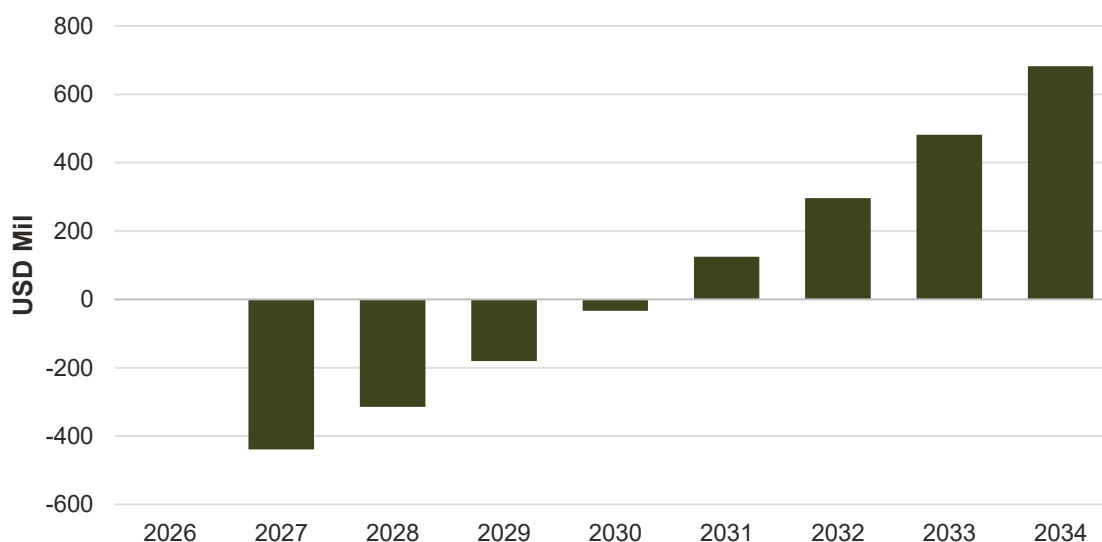
Higher mobile penetration and usage can be expected to feed through to the wider economy. Based on the estimated relationship between mobile penetration and GDP per capita growth, the modelling indicates that tax reform allows GDP per capita to grow at a faster rate than under the baseline. Under the main tax reduction scenario, we assume this means the annual real growth rate of GDP per capita increases from approximately 4.2% to 4.5%.

### Fiscal impacts and medium-term revenue recovery

In the short run, government revenues collected directly from the mobile sector decline following the reduction in sector-specific taxes. This happens across all scenarios. Under the main scenario, mobile-sector tax revenues fall by approximately USD 439 million relative to the baseline. This equates to 1% of total government tax proceeds.

However, over a short period of time, the higher GDP generated by improved connectivity will stimulate growth in government tax receipts from the wider economy. When considering the cumulative discounted impact on total government revenues, the modelling indicates that by 2031, annual tax proceeds could be higher than in the baseline. Figure 13 shows the yearly net fiscal impact of the modelled reform.

**Figure 13** Yearly net fiscal impact of the reform



Source: Frontier Economics

Note: Values in the chart are undiscounted.

Table 10 summarises the results for the main scenario.

**Table 10** Summary of results

Variable	Results
Increase in average usage of data per subscriber (%)	3%
Increase in penetration (%)	3.6%
Increase in real growth rate of per capita GDP (p.p.)	0.33
<b>First year tax reforms are fiscally positive (undiscounted)</b>	<b>2031</b>

Source: Frontier Economics

Note: Magnitudes are in 2024 real terms.

In light of this, we recommend that Pakistan can take actions to create conditions for digital development and future economic growth. In particular, it should do the following.

- **Rebalance tax policy away from sector-specific consumption taxes and surcharges that directly raise consumer prices.** These taxes have high

pass-through and the strongest effects on affordability and adoption. A clear priority should be reducing taxes applied to usage and revenues.

- **Target reforms that remove barriers that prevent users from accessing services, including SIM-related taxes and other access charges.** Entry costs matter disproportionately in mobile-first economies because they determine whether marginal users join the digital economy at all. Reducing these barriers supports inclusion objectives and expands the user base that later contributes to the wider tax base.
- **Design and communicate tax reform as part of a broader government strategy to promote digitalisation, expand formal economic activity, and strengthen the tax base over time, while managing the temporary revenue loss in the short term.** The modelling results suggest a manageable transition: mobile-sector receipts fall initially, but the benefits of digitalisation means broader revenues rise as GDP improves and the tax base expands, with fiscal break-even within a few years.



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