Digital inclusion and mobile sector taxation in Pakistan

Deloitte.

FEBRUARY 2015

Important Notice from Deloitte

This report (the "Report") has been prepared by Deloitte LLP ("Deloitte") for the GSMA on the basis of the scope and limitations set out below.

The Report has been prepared solely for the purposes of assessing the economic impacts of mobile sector taxation in Pakistan by modelling the potential impacts that could be realised by a change in mobile taxation under a set of agreed assumptions and scenarios. It should not be used for any other purpose or in any other context, and Deloitte accepts no responsibility for its use in either regard.

The Report is provided exclusively for the GSMA's use under the terms of the contract between Deloitte and GSMA. No party other than GSMA is entitled to rely on the Report for any purpose whatsoever and Deloitte accepts no responsibility or liability or duty of care to any party other than the GSMA in respect of the Report or any of its contents.

As set out in the contract between Deloitte and GSMA, the scope of our work has been limited by the time, information and explanations made available to us. The information contained in the Report has been obtained from the GSMA and third party sources that are clearly referenced in the appropriate sections of the Report. Any results from the analysis contained in the Report are reliant on the information available at the time of writing the Report and should not be relied upon in subsequent periods.

Accordingly, no representation or warranty, express or implied, is given and no responsibility or liability is or will be accepted by or on behalf of Deloitte or by any of its partners, employees or agents or any other person as to the accuracy, completeness or correctness of the information contained in this document or any oral information made available and any such liability is expressly disclaimed.

This Report and its contents do not constitute financial or other professional advice, and specific advice should be sought about your specific circumstances. In particular, the Report does not constitute a recommendation or endorsement by Deloitte to invest or participate in, exit, or otherwise use any of the markets or companies referred to in it. To the fullest extent possible, both Deloitte and the GSMA disclaim any liability arising out of the use (or non-use) of the Report and its contents, including any action or decision taken as a result of such use (or non-use).

Deloitte contact
Davide Strusani
Assistant Director, TMT Economic Consulting, London
dstrusani@deloitte.co.uk
www.deloitte.co.uk

CONTENTS

Executive Summary

Digital inclusion: the role of mobile

In the last two decades the **mobile sector in Pakistan has enabled 60 million Pakistanis to gain access to transformative technologies, including mobile broadband**. This increase in access is bringing wide-ranging benefits to the Pakistani economy and society, is boosting productivity and is supporting increased economic growth. Furthermore, mobile has the potential to accelerate Pakistan's economic and social development towards the objectives of *Vision 2025*[1]. A number of economic studies have recognised the potential mobile has to support positive economic impacts, in particular:

- Studies by the GSMA and the Word Bank have estimated that a 1% increase in mobile penetration could lead to an increase in the GDP growth rate of 0.28%, while a 1% increase in internet penetration can lead to an increase of up to 0.077% in the GDP growth rate[2].
- The World Bank has found that in low and middle-income countries, such as Pakistan, every 10% increase in broadband penetration accelerates economic growth by 1.38%[3].
- Other research suggests that for every new job created in the Pakistani mobile sector, 11 are generated in the wider economy[4].

Socially, mobile operators support a wider ecosystem which enables millions of Pakistanis to benefit from exchanges of ideas and information, as well as improved access to healthcare, education, financial and agricultural information services.

Today, Pakistan's fixed line penetration is less than 20%[5]. Mobile represents the most cost-effective way of extending access to ICT and broadband internet in the country. Already, it is the preferred platform for 50% of the country's 30 million internet users[6].

Despite substantial growth recently, 120 million Pakistanis remain without access to mobile services, particularly in rural areas[7]. This places Pakistan behind its neighbouring countries in terms of subscriber penetration, which remains below global and regional averages.

By investing in network rollout and quality of service improvements, mobile operators have the potential to further contribute to Pakistan's growth and help bridge this gap. **Already, mobile operators' turnover represented about 1.3% of the country's GDP in 2013 and they contributed 7% to Pakistan's total tax revenues[8]**. Extending access to mobile services – or "digital inclusion" - could enable more Pakistanis to fully participate to the economy, rise out of poverty and gain access to vital services, while supporting the country in achieving its Vision 2025 goals.

1. Vision 2025 Policy document. One Nation, One Vision. Pakistan Ministry for Economy and Planning (2014).
2. This is based on GSMA 2012 and Qiang, C. Z. W., Rossotto, C.M., 2009.
3. Qiang, C. Z. W., Rossotto, C.M., 2009.
4. See, for example, Moretti (2010), O2 for ONS (2002), Ovum (2010); Zain, Ericsson (2009),Kaliba et al (2006).
5. GSMA, Asia Pacific Mobile Observatory 2011.
6. World Bank and Haque, J., Ilyas, F. and Syed, F. (2014): 'Pakistan's Internet Landscape' A Report by Bytes for All.
7. GSMA Intelligence database.
8. Deloitte analysis based on operator data and IMF. This includes non-recurring fees, such as the initial spectrum fee, 2G licence fee and advance income tax. If these fees are excluded, mobile operators contributed 4.1% to total tax revenues in 2013.

Despite substantial growth recently, 120 million Pakistanis remain without access to mobile services.

What is holding digital inclusion back?

Today, the expansion of mobile broadband and extension of digital inclusion in Pakistan are constrained by two significant barriers that are both related to mobile-specific taxation.

Affordability:

In Pakistan, nearly 13% of the population live below the poverty line[9], and GDP per capita was approximately US$1,300 in 2012[10]. This means the cost of a smartphone is in some cases similar to a monthly wage. As tax on mobile services represents over 30% of mobile ownership costs, of which over 15% is from mobile-specific taxation, there is real potential to extend affordability through a consumer tax reduction[11].

Some of the key taxes that directly impact the affordability of mobile in Pakistan are[12]:

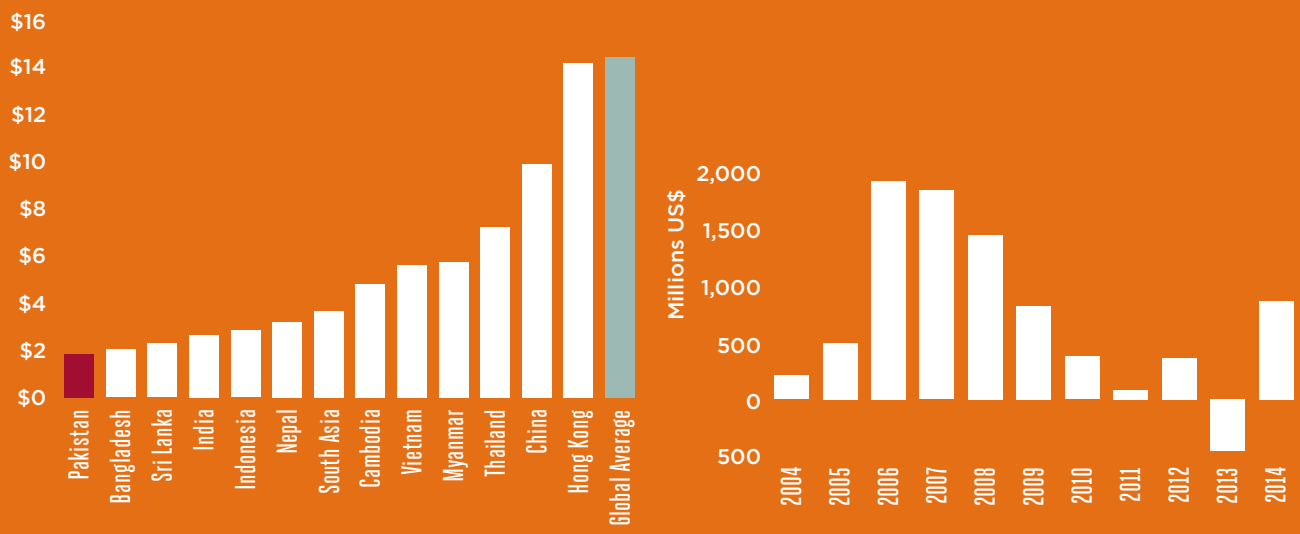
- **The SIM card tax:** A special tax on SIM card sale amounts to about US$2.46 (PKR 250). This equates to 30% of the average daily wage in Pakistan[13].
- **Higher PST and FED:** Mobile services such as calls, SMS and data usage are subject to Provincial Sales Tax ('PST') and the Federal Excise Duty ('FED') at the rate of 19.5% and 18.5% respectively. This is higher than the standard rate, which is as low as 15% on other services.
- **Withholding Tax:** An additional 14% ad valorem tax on usage (the 'Withholding Tax') applies to all mobile services. This tax can in theory be claimed back by the consumer but in practice rarely is. Effectively, it is equivalent to an airtime tax. This tax is also 4% higher for mobile than for most other industries. The resulting total burden from ad valorem taxes is up to 33.5%, of which up to 6.5% is mobile-specific.
- **Handset tax:** Handsets are subject to import duties of up to PKR 250 and a sales tax varying from PKR 150 to 500, plus an additional income tax on imports.

Investment:

In Pakistan, Average Revenue per User ('ARPU') is one of the lowest worldwide and the lowest in the region. The high level of competition in the market means that mobile operator revenue has been decreasing recently, creating a challenging environment for investment. At the same time, Foreign Direct Investment ('FDI') in the telecoms sector has fallen substantially since its 2006 high. In an already uncertain climate for investment, high mobile-specific taxes may further discourage investment, especially in new 3G and 4G technologies. This is reflected by Pakistan's low ranking on the Ease of Doing Business Index, which was 127 in 2013[14].

9. The poverty line is defined as the minimum level of income regarded as adequate to secure access to basic necessities. The common international poverty line, as defined by the World Bank, is US$1.25 at 2005 purchasing power parity (PPP).
10. IMF.
11. GSMA/Deloitte Global Mobile Tax Review 2011.
12. International Bureau of Fiscal Documentation, Pakistan Telecommunications Authority and operator data.
13. International Labor Organization and Deloitte analysis.
14. World Bank's Doing Business index.

ARPU (left) and FDI (right) in the Pakistan telecoms sector



Source: GSMA Intelligence database and Pakistan Telecommunications Authority

Figure 1

In particular, mobile operators are also subject to a number of corporate taxes and fees. **Mobile operators in Pakistan pay more than US$1.2 billion in taxes each year, representing about 30% of total revenues in the sector.** In addition to corporation tax, mobile operators pay:

- **Custom duties and other charges on imports:** A number of import duties, taxes and surcharges are levied on network equipment, including customs duty varying between 10% and 25%, a 17% Provincial Sales Tax and a 5.5% non-adjustable income tax[15]. In 2013 mobile operators paid a total US$57 million in income taxes and US$30 million in custom duties on imported network equipment[16]. This has a significant negative impact on the incentive for mobile operators to invest and could have long-run implications for network coverage and 3G rollout.

- **Annual regulatory fees:** Mobile operators pay a number of regulatory fees, including annual fees such as the Universal Service Fund, the R&D Fund, and annual numbering and licence fees, all of which amounted to approximately US$70 million in 2013[17]. This is in addition to one-off payments for spectrum and licences.

- **Spectrum acquisition costs:** Overall, mobile operators paid over US$1.1 billion to acquire spectrum in 2014, after repeated delays to 3G and 4G licence auctions[18]. In other countries, such as Sri Lanka and Bangladesh, spectrum auction payments amounted to US$35 million and US$525 million respectively in 2013-2014[19]. High costs can limit scope for investment, as can regulatory uncertainty.

Pakistan's taxation policies are characterised by a lack of transparency and a lack of harmonisation. Taxes vary between Pakistan's four provinces. **This multitude of fees, charged differently in each province and on a variety of tax bases, makes the tax system complicated and opaque and adds to compliance costs.**

15. This tax is not related to the personal income tax, but is instead levied on the value of goods at import.
16. Deloitte analysis based on operator and GSMA Intelligence database data.
17. Ibid.
18. Ibid.
19. http://www.lankabusinessonline.com/news/sri-lanka-dialog-buys-1,800mhz-band-spectrum-for-rs3.2bn/855311875; http://www.dnaindia.com/scitech/report-bangladesh-3g-spectrum-auction-attracts-525-million-in-bids-1886594

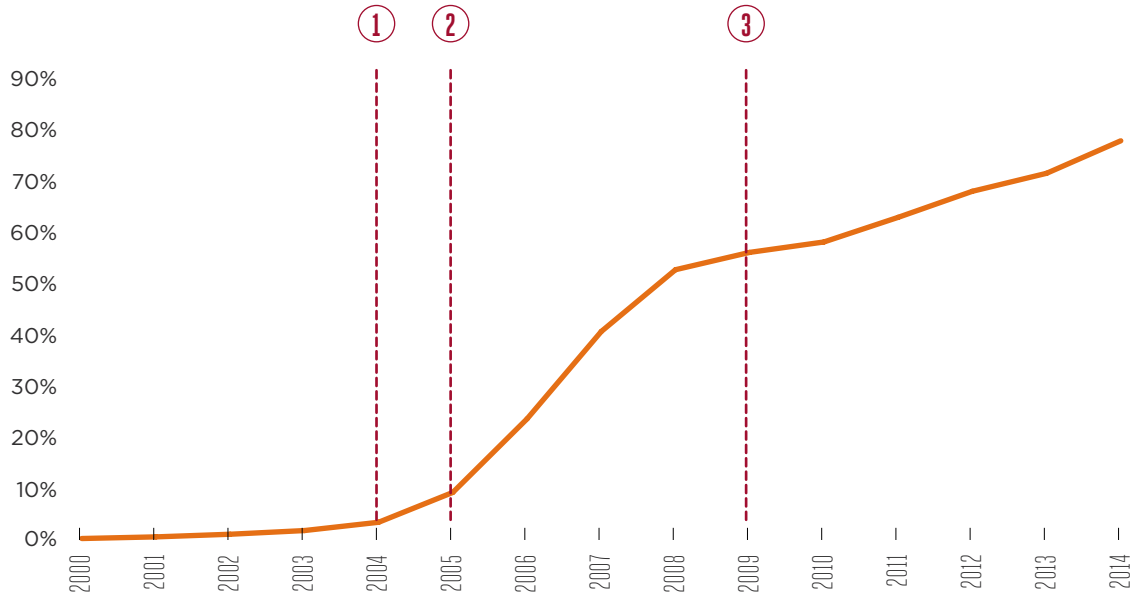
An agenda for mobile taxation reform: Digital inclusion, economic growth and fiscal stability

Today, the mobile sector makes a significant contribution to Pakistani government revenues. It accounted for 7% of the US$31.5 billion in tax revenue collected in 2013[20]. However, it is important to recognise that while taxation on the mobile sector may deliver short-term benefits for government, this comes at the cost of long-run economic growth, and is ultimately counterproductive.

By reducing and rationalising taxes on the mobile sector, the Pakistani government can not only increase digital and financial inclusion and economic growth, but it can also generate higher tax revenues through more efficient and broader-based taxation. Furthermore, reforming mobile taxation has the potential to increase and enable the investment required to further expand mobile broadband network infrastructure.

The Pakistani government has already seen some of the benefits of reforming mobile-specific taxes. The SIM card sales tax was reduced from PKR 2000 to PKR 1000 in 2004, then again to PKR 500 in 2005 and finally to PKR 250 (about US$2.46) in 2009. During the same period, mobile penetration increased substantially, as did government tax revenues from mobile. In the five years since the latest reduction, government revenues from the sector amounted cumulatively to over US$8 billion[21].

Total market penetration and SIM card taxes over time



1. **SIM card sale tax** reduced from 2000 PKR to 1000 PKR per SIM.
2. **SIM card sale tax** further reduced to 500 PKR.
3. **SIM card sale Tax** lowered from 500 PKR per SIM to 250 PKR.

Source: GSMA Intelligence database and Pakistan Telecommunications Authority

Figure 2

20. Deloitte analysis based on operator data and IMF.
21. Pakistan Telecommunications Authority.

A model of the Pakistani mobile sector and its macroeconomic impacts is used to estimate the impacts of changes to taxation on mobile penetration, GDP growth and tax revenues. The quantitative impacts of the following three potential reforms and their estimated impacts are:

1. Removing the SIM sales tax promotes affordability and access to mobile services.

Removing the tax could increase the number of mobile connections by 500,000. It is estimated that 170,000 would be 3G/4G connections. The productivity increase and growth induced by the expanding mobile sector could produce an increase of US$270 million in GDP, lifting 43,000 Pakistanis out of poverty. While tax revenues could be lower in the short-term due to decreased tax on the mobile sector, increased GDP growth means that the government could gain revenues from more broad-based taxation; over time, the net impact on government revenues could be an increase of up to US$13 million in 2020[22].

2. Reducing sales taxes on mobile services in line with other sectors reduces barriers to mobile usage and promotes digital inclusion.

In 2013, mobile operators paid over US$510 million in PST/FED payments on mobile services; reducing both rates to 17% could reduce this payment by about US$65 million. If these savings are passed through to consumers, an additional 2 million connections could be supported by 2020[23]. This has the potential to increase GDP by up to US$1.1 billion in 2020 and increase productivity by 0.3%. These impacts on the wider economy have the potential to increase tax revenues to achieve neutrality by 2017.

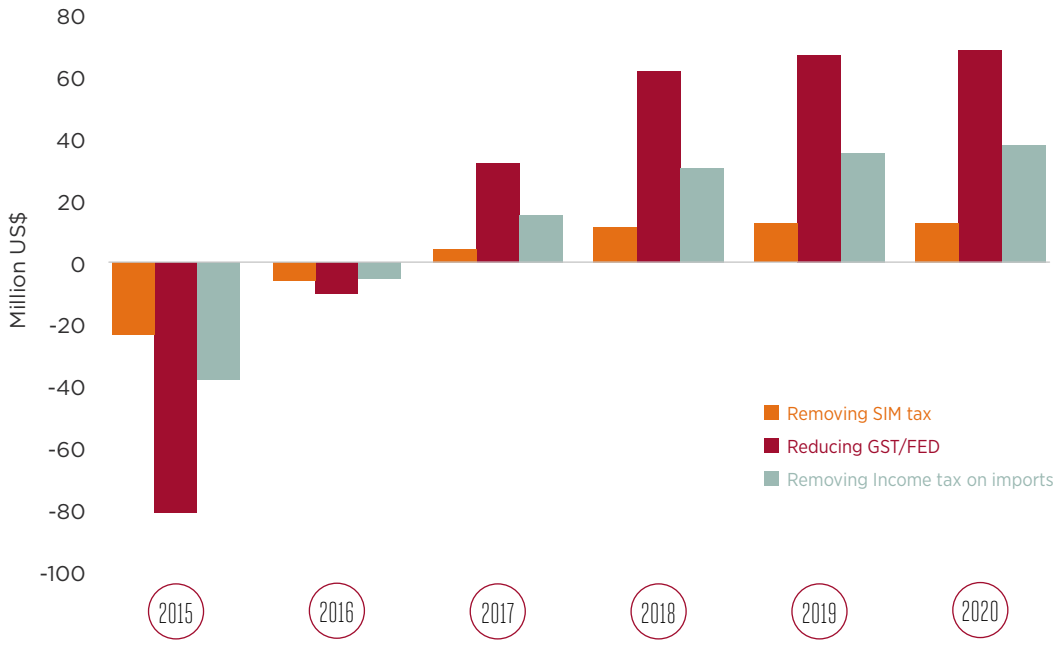
3. Removing the income tax on imported network equipment[24] supports greater investment in networks by reducing the cost of electronic network equipment such as base stations. This could improve the business case for infrastructure investment in remote areas and could have a particularly strong impact on 3G mobile broadband coverage.

By granting mobile operators equivalent tax treatment to that enjoyed by Industrial Undertakings in Pakistan, the mobile sector could enjoy the exemption to the income tax paid on imported network equipment that is already enjoyed by other industries that use imported goods for their core operations. This has the potential to increase mobile operators' revenues by an additional US$28 million in 2020, result in an overall economic impact of US$480 million and increase investment by over US$100 million across the Pakistani economy.

In addition to the wide economic benefits that they can deliver to Pakistan, these proposals have the potential to increase government tax revenues in the long term. While government revenues could decrease in the first two years of implementing these policies, the positive spillovers generated by mobile have the potential to be revenue neutral by 2017 and make an even greater contribution to the government's budget in subsequent years.

22. Please see Appendix A.3 for further details.
23. Please see Appendix A.3 for further details.
24. This tax is not related to the personal income tax, but is instead levied on the value of goods at import.

Potential tax revenues compared to the counterfactual under tax reform alternatives



Source: Deloitte analysis based on operator, GSMA, IMF and World Bank data

Figure 3

Similarly to the tax reform alternatives modelled quantitatively, the following policies have the potential to promote access to mobile services, contribute to Pakistan's economic development and to government tax revenues:

4. Reducing the customs duty on network equipment could increase investment and access to mobile services, which would allow more of the Pakistani population to benefit from 2G and 3G technologies, promoting digital inclusion. This could have wider economic impacts on the Pakistani economy.

5. Reducing the Withholding Tax on the usage of mobile services could promote affordability of services and reduce the tax burden on the poorest consumers.

6. Harmonising PST and FED taxes across Pakistani provinces could promote transparency of the tax system and enhance enforceability of the fees levied. Importantly, it could reduce the administrative burden of complying with multiple laws, thus delivering efficiencies and cost savings for mobile operators. It is recognised, however, that this will need to be balanced against the specific requirements of each province and their taxation objectives.

7. Removing advance taxes on spectrum auction payments could incentivise investment and the rollout of new 3G and 4G networks, supporting the government's ICT objective and the transition of Pakistan to a knowledge-based economy.

Over 30% of the cost of owning and using a mobile in Pakistan is accounted for by tax. This is among the highest proportions in the world.

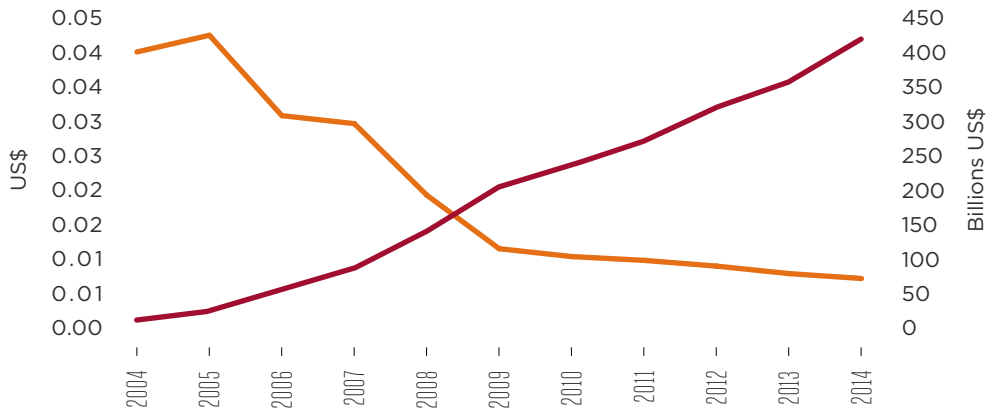
1 The mobile sector in Pakistan

1.1 Overview of the mobile sector

Since the introduction of mobile telecommunications in Pakistan in 1991, the sector has experienced massive expansion, and the number of connections grew by a Compounded Annual Growth Rate ('CAGR') of 52.8% over the period 2000-2013[25]. Today, approximately 85% of the population is covered by mobile networks, with total mobile penetration standing at around 80%, and subscriber penetration at around 32%[26].

With five national mobile operators, competition in the market has led to a significant fall in the cost of mobile ownership for Pakistani consumers, extending access and enabling millions of Pakistanis to enjoy the benefits of mobile services.

Effective price per minute[27] and minutes of use



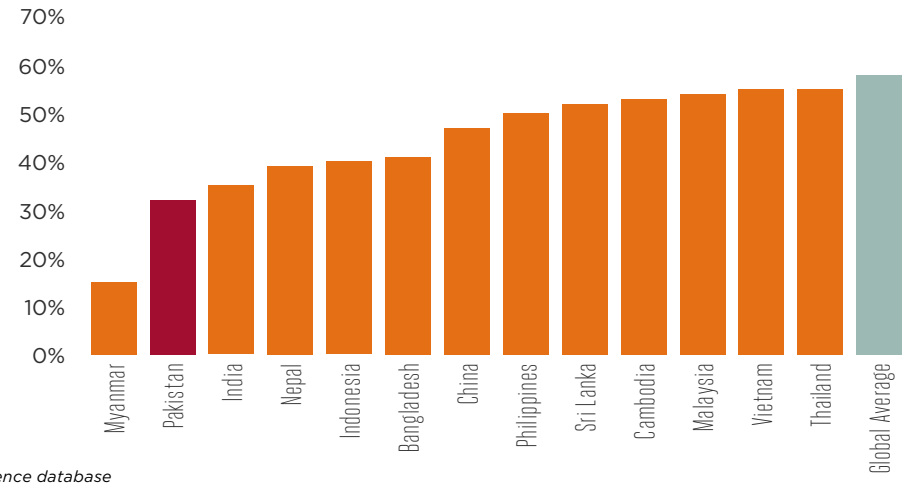
Source: GSMA Intelligence database

Figure 4

However, total mobile penetration, along with the number of unique subscribers in Pakistan remains low compared to other countries in the region, and the market's subscriber base has grown less rapidly over recent years. There were just over 60 million unique subscribers in Pakistan at the end of 2013, which means that mobile services remain unavailable to more than 120 million Pakistanis.

25. Deloitte analysis based on data from GSMA Intelligence database.
26. GSMA Intelligence database 2014.
27. Blended ARPU divided by minutes of use per connection.

Unique subscriber penetration, regional comparison

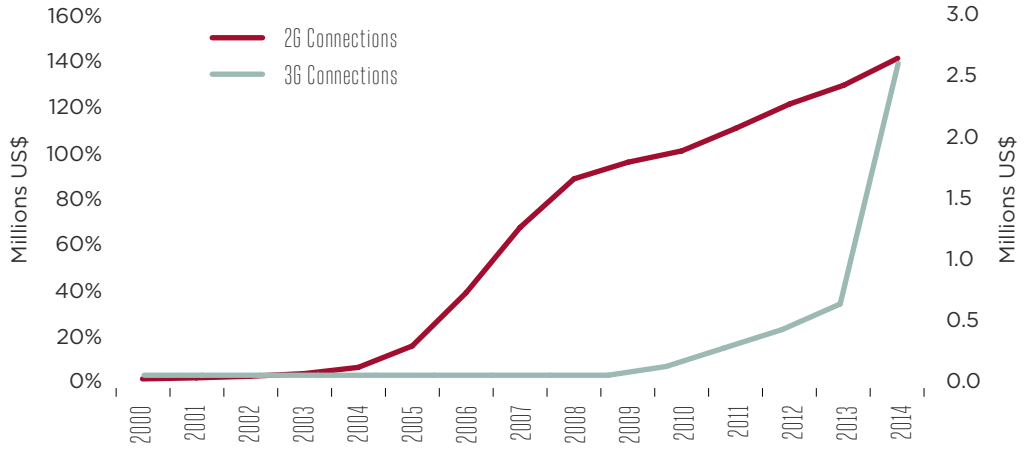


Source: GSMA Intelligence database

Figure 5

The rollout of and take-up of 3G and 4G in Pakistan is lower than the regional average, currently reaching only 1% of the population: 3G connections currently account for around 1.3 million, while there are currently less than 600,000 4G subscribers[28]. Since the successful launch of 3G and 4G services by a number of mobile operators, these numbers are growing, but it is crucial to maintain the investment required to increase network coverage and extend high-quality new generation infrastructure.

2G and 3G connections



Source: GSMA Intelligence database

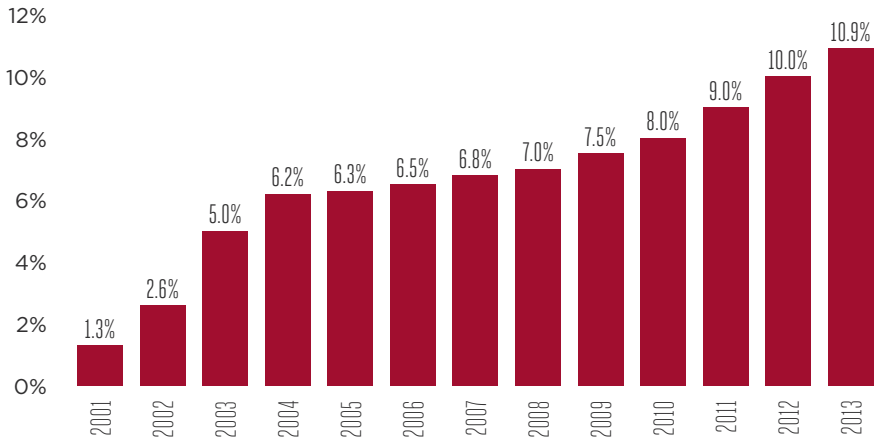
Figure 6

Importantly, mobile represents the most affordable and accessible means to extend internet access in Pakistan, with 50% of internet users accessing it on mobile through feature-phones[29].

28. GSMA Intelligence database, Q2 2014 data.
29. Haque, J., Ilyas, F. and Syed, F. (2014): 'Pakistan's Internet Landscape' A Report by Bytes for All.

While the proportion of the population with access to the internet network (whether fixed or mobile)[30] remains low, the market for mobile broadband in Pakistan presents considerable potential for growth, especially given the country's young population. This is driving internet adoption, largely thanks to social media usage – 64% of Pakistanis are under the age of 30[31] and 62% of social media users are under 25[32].

Fixed and mobile internet penetration in Pakistan



Source: World Bank Development Indicators database

Figure 7

1.2 Mobile supports the government's growth objectives

The development of mobile services has brought an extensive range of benefits to both consumers and businesses in Pakistan and has the potential to make an even greater contribution with the development of 3G and 4G services and the expansion of the 'knowledge' economy across the country.

Specifically, mobile services provide widespread benefits across a country's economy and society in the following ways:

1. Mobile services promote digital inclusion and the growth of a knowledge-based economy

Digital inclusion means that the benefits of Information and Communication Technology ('ICT') should be available to all, regardless of location or socioeconomic status. Mobile services provide the most cost-effective way of achieving digital inclusion and, by facilitating the exchange of ideas and information, can support a move towards a knowledge-based economy. Mobile can also enable more effective delivery of public services. In particular, mobile and broadband communication offers an

30. Specifically, the proportion of the population who use either DSL, HFC, WiMax, FTTH or EvDO technology to access the internet.
31. United Nations: http://data.un.org/.
32. We Are Social's Guide to Social, Digital and Mobile in Asia (2014)

effective means of bringing healthcare and education services to remote and under-served areas, through m-Government initiatives and mobile applications.

Mobile technology can help support and advance the education system by providing access and personalisation of the learning experience. In India, for example, primary schools used mobile-phone tools to help students from rural, low-income households learn English. Researchers devised an application to improve listening, sentence construction and spelling. Test scores of students using the mobile tool improved by nearly 60%[33]. Similarly, there exists a wealth of mobile applications, such as m-Agriculture, m-Women and m-Health, which have the potential to bring significant socio-economic benefits to Pakistan, by delivering access to knowledge and skills across a variety of sectors.

The World Bank[34] has stated that the movement towards a knowledge-based economy should be the aim of all governments, as knowledge becomes increasingly crucial to preserving national competitiveness. It identifies four pillars of knowledge-based economies, one of which is information infrastructure, with technology such as mobile phones required to facilitate effective communication and the dissemination and processing of information.

2. Mobile services enhance productivity, innovation and economic growth

By enabling businesses and government to deliver their services faster, and at a lower cost, mobile services increase productivity across the Pakistani economy. Mobile services can reduce transaction costs, making it less costly for Pakistanis to communicate and conduct everyday business operations, supporting the expansion of businesses and enterprises. Through wider effects on the economy, this helps to increase living standards in Pakistan and improve Pakistan's international competitiveness.

Mobile services also create opportunities for investment, innovation and employment in the mobile sector and in a variety of other jobs that form part of the mobile ecosystem, such as equipment providers, workers in the network engineering and maintenance industry, and providers of related business services. Other opportunities enabled by mobile services include the development of mobile applications in healthcare, education and agriculture, and the creation of local content. This has an additional impact on economic growth, and supports the diversification of the Pakistani economy.

3. Mobile services promote long-run economic growth and fiscal stability

The mobile sector also makes an important contribution to the revenues of the Pakistani government. This includes the direct contribution made by mobile operators, which is estimated at 7%[35] of Pakistan's total tax revenues, and also the tax revenues generated by the wider ecosystem of industries supported by mobile services.

Moreover, a number of studies have already recognised the growth potential of mobile, in particular:

- Studies by the GSMA and the Word Bank have estimated that a 1% increase in mobile penetration could lead to an increase in the GDP growth rate of 0.28%, while a 1% increase in internet user penetration in high-income countries can lead to an increase of up to 0.077% in the GDP growth rate[36].

- The World Bank has found that in low to middle-income countries, such as Pakistan, every 10% increase in broadband subscriber penetration[37] accelerates economic growth by 1.38%[38].

33. GSMA (2013): Transforming learning through m-Education.
34. World Bank (2009): 'The four pillars of a knowledge-based economy' http://go.worldbank.org/5WOSIRFA70
35. Source: Deloitte analysis based operator and World Bank data.
36. This is based on a study of 40 economies over the period 1996-2011; for full details of the methodology, see http://www.gsma.com/publicpolicy/wp-content/uploads/2012/11/gsma-deloitte-impact-mobile-telephony-economic-growth.pdf; Qiang, C. Z. W., Rossotto, C.M., 2009. Economic Impacts of Broadband, in Information and Communications for Development 2009: Extending Reach and Increasing Impact, World Bank, Washington D.C., 35-50.
37. The distinction between users and subscribers of telecommunications services should be noted. Users refer to individuals who do not necessarily own or pay for telecommunications services, but who have access to such services through work, family etc. Subscribers, on the other hand, are individuals who pay for subscriptions to such services, to which a number of individuals may have access. Based on ITU (2014). 'Manual for measuring ICT Access and Use by Households and Individuals.'
38. Qiang, C. Z. W., Rossotto, C.M., 2009.

- Other research suggests that for every new job created in the Pakistani mobile sector, 11 are generated in the wider economy[39].

Through these positive impacts, the mobile industry can support many of the government's objectives outlined in Pakistan Vision 2025, both those that are specifically focused on ICT policy and those related to wider economic and social developments[40]. In Vision 2025, the Pakistani government has demonstrated its commitment towards revolutionising ICT usage across the country. In particular, it aims to complete Pakistan's transition towards a knowledge-based economy through innovation, education and value addition, whilst promoting efficient, sustainable and effective ICT initiatives through the development of both industrial and academic resources. The government has also recognised the importance of the youth in facilitating further uptake of ICT and in fostering innovation and entrepreneurship within the sector, and has outlined several specific aims to promote the adoption of these technologies:

- **Increase the flow of knowledge and ideas through wider broadband internet access**, particularly through 3G and 4G/LTE networks, which offer huge increases in bandwidth and internet speed.

- **Introduce m-Education, m-Commerce, m-Health and m-Government**, aimed at increasing the adoption and promotion of technology in the public sector.

- The Pakistani government intends to **reduce tariffs and taxes on R&D equipment**, fostering innovation in new technologies.

- Improve the flow of knowledge across sectors, with a particular aim of **improving agricultural productivity.**

'We are committing ourselves to driving national competitiveness by leveraging knowledge to increase efficiency... Every school, college and university will be digitized and computerized by 2025'

Pakistan Vision 2025

The government of Pakistan recognises that ICT is a key driver of innovation, economic competitiveness and greater social inclusion. Through advances in ICT and by extending access to mobile services, Pakistan has the potential to achieve the following wider social and economic goals:[41]

PAKISTAN'S VISION 2025: THE ROLE OF MOBILE-ENABLED ICT

Launched in August 2014, Pakistan's Vision 2025 strategy sets out a range of challenging aspirations for the country's future development. The Vision encompasses seven key pillars, which are aligned with the United Nation's Millennium Development and Sustainable Development Goals. Under those seven pillars, a total of 25 challenging targets have been set which the country aims to complete by 2025.

39. This figure was based on a number of studies conducted in developing and developed countries; see, for example, Moretti (2010), O2 for ONS (2002), Ovum (2010); Zain, Ericsson (2009),Kaliba et al (2006).
40. Vision 2025 Policy document. One Nation, One Vision. Pakistan Ministry for Economy and Planning (2014).
41. Ibid.

The role of mobile in achieving Pakistan Vision 2025 objectives

	The Pillars of Vision 2025	Key relevant objectives
1.	Putting people first	• Increase Primary education enrolment and completion to 100% and literacy to 90% • Reduction in infant and maternal mortality rates • Reduce incidence/prevalence of communicable diseases by 50%
2.	Achieving Sustainable Growth	• Become one of the largest 25 economies in the world, reaching Upper Middle Income country status • Reduce poverty level by half • Increase annual FDI from US$600 million to over US$15 billion • Increase tax to GDP ratio from 9.8% to 18%
3.	Energy, Water and Food Security	• Double power generation to provide uninterrupted and affordable electricity, and increase access to over 90% • Ensure access to clean drinking water for all Pakistanis • Reduce food insecure population from 60% to 30%
4.	Private Sector and Entrepreneurship-Led Growth	• Rank in the top 50 countries on the World Bank's Ease of Doing Business Rankings
5.	Developing a Competitive Knowledge Economy through Value Addition	• Become one of the top 75 countries identified by the World Economic Forum's Global Competitiveness Reaport • Triple labour and capital productivity • Improve Pakistan's score on the World Bank Institute's Knowledge Economy Index from 2.2 to 4.0

How mobile can help

By providing access to learning resources and fostering information sharing, mobile access can **promote primary and secondary education and increase literacy rates.**

Increased access to information promotes **better health education and health outcomes.**

Mobile services and m-Government initiatives contribute to administration efficiency at local and national government levels, improving **ease of doing business** and making **FDI** more attractive.

Mobile operators actively contribute to **energy efficiency** by installing alternative power sources for their cell sites.

By supporting a large ecosystem of industries and small businesses, mobile services improve **labour and capital productivity,** thus contributing **to increase economic growth, decrease poverty and foster investment.**

Source: Pakistan Vision 2025

Figure 8

Case study:

THE BENEFITS OF M-EDUCATION IN SOUTH AFRICA

Mobile services, especially mobile broadband, can change the way students approach learning, making it more interactive and enabling the provision of more flexible individual teaching that can be tailored to individual students and enable them to progress at their own pace. A review of mobile learning by UNESCO showed how users can access educational resources, tools and materials anytime from anywhere, using electronic technologies such as personal smartphones and other mobile devices.

MoMaths in South Africa is a mobile mathematics service which provides learners and teachers with access to interactive mathematics learning materials, using a mobile delivery platform combined with a social media application for peer-to-peer support. Evaluation of the initiative has found a significant improvement in maths performance of the students exposed to the programme, leading to a 14% increase in maths competency[42].

1.3 Barriers to digital inclusion in Pakistan

Today, a number of barriers are preventing the full benefits of mobile services from being realised by all Pakistanis. Key challenges include affordability of mobile and 3G services for all consumers, 3G coverage in rural and under-served areas and the quality of service for mobile customers. These in turn depend on the incentives that mobile operators have to maintain appropriate investment levels in their networks. Each of these risks is exacerbated by high taxation.

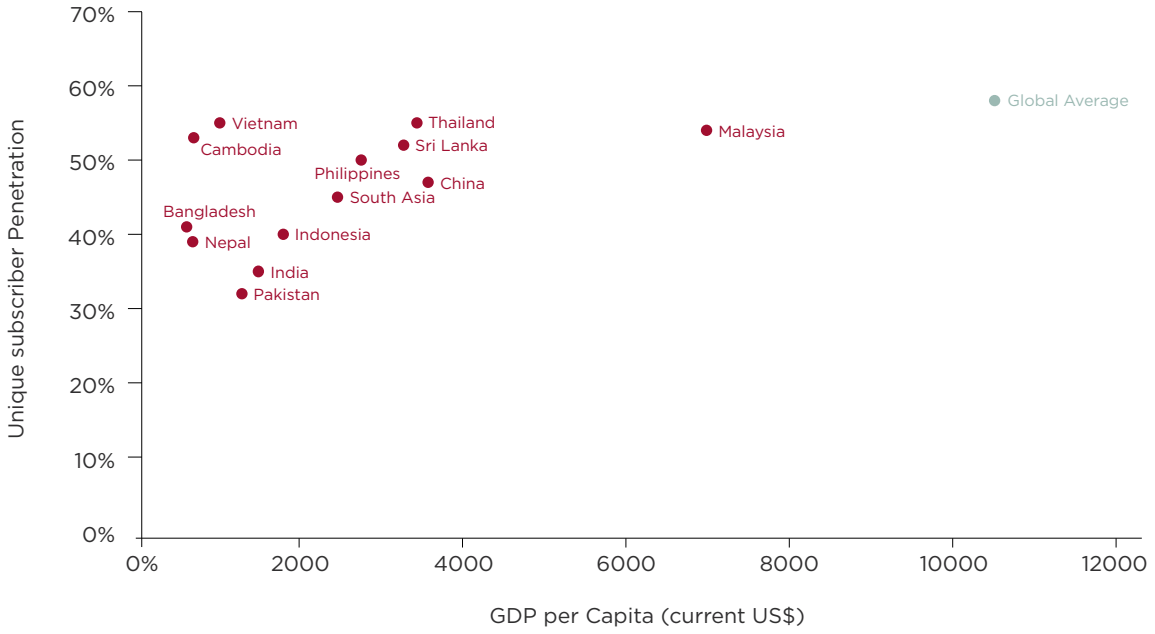
Key barriers to digital inclusion in Pakistan: Affordability, consumer taxation, network coverage, pressure on revenues, policy uncertainty

42. UNESCO Turning on Mobile Learning in Africa and the Middle East, 2012. Studies on other initiatives find similar results, for example: Jenny C. Aker, Christopher Ksoll and Travis J. Lybbert, "ABC, 123: The Impact of a Mobile Phone Literacy Program on Educational Outcomes", 2010.

The main barriers to digital inclusion in Pakistan include:

AFFORDABILITY: The mobile market has experienced impressive growth despite Pakistan's challenging economic conditions. However, affordability remains one of the biggest barriers to mobile adoption in the country. 12.7% of people in Pakistan live below the poverty line[43] and GDP per capita was approximately US$1,300 in 2013[44].

Unique subscriber penetration and GDP per Capita



Source: GSMA Intelligence database and World Bank Development Indicators database

Figure 9

CONSUMER TAXATION: Taxation on mobile services in Pakistan constitutes a significant proportion of the total cost of utilising mobile services. In 2011, taxes in Pakistan were found to represent 30.44% of the cost of mobile ownership, compared to a global average of 18.14%. This is the third highest level of taxation found in a sample of 111 countries,[45] as will be discussed in more detail in Section 2.

NETWORK COVERAGE: An additional barrier to mobile access in Pakistan is network coverage. Approximately 85% of the population in Pakistan is covered by mobile networks but, with over 60% of Pakistanis living in rural areas, extending networks to rural areas requires significant investment from mobile operators. Furthermore, the rollout of 3G networks is still at an early stage, and it is key to the development of the market that mobile operators are able to sustain the necessary investment levels. Mobile operators also face challenging general infrastructure conditions in Pakistan due to the limited complementary infrastructures, such as energy and transportation, which further raise network investment costs, particularly in rural areas.

43. World Bank.
44. World Bank and IMF Economic Outlook.
45. GSMA/Deloitte, Global Mobile Tax Review, 2011.

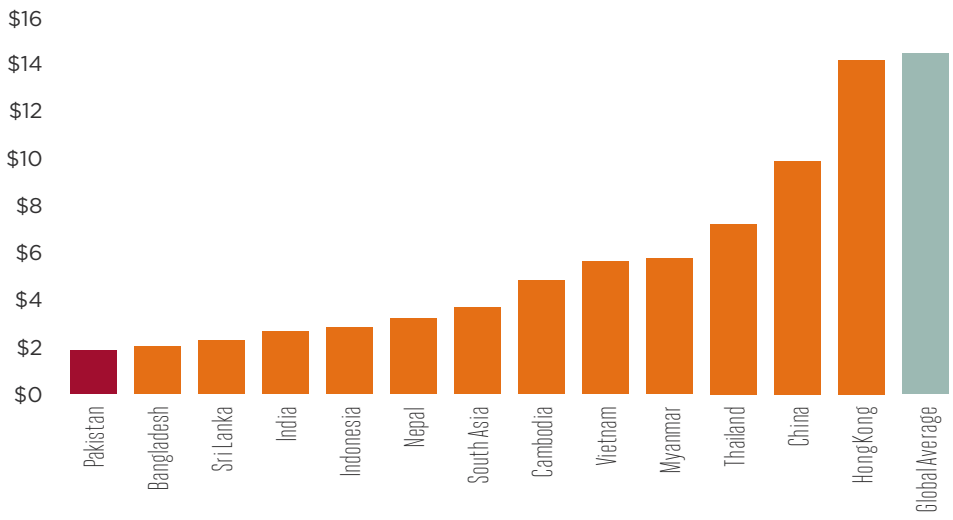
Mobile coverage in Pakistan (Green point indicates coverage available)

Source: Pakistan Telecommunications Authority[46]

Figure 10

PRESSURE ON REVENUES: Pakistan has one of the lowest levels of revenue per user in the world. While consumers have benefitted from lower prices and hence increases in usage, mobile operators have experienced a decline in ARPU, which implies Pakistan's mobile market offers limited incentives for investment. While part of this pressure comes from greater competition within the market, it is aggravated by the high mobile-specific taxes levied on the sector. This makes it more difficult to maintain the levels of investment needed to enhance service availability and quality, and for the rollout of 3G and 4G services.

ARPU, a regional comparison



Source: GSMA Intelligence database

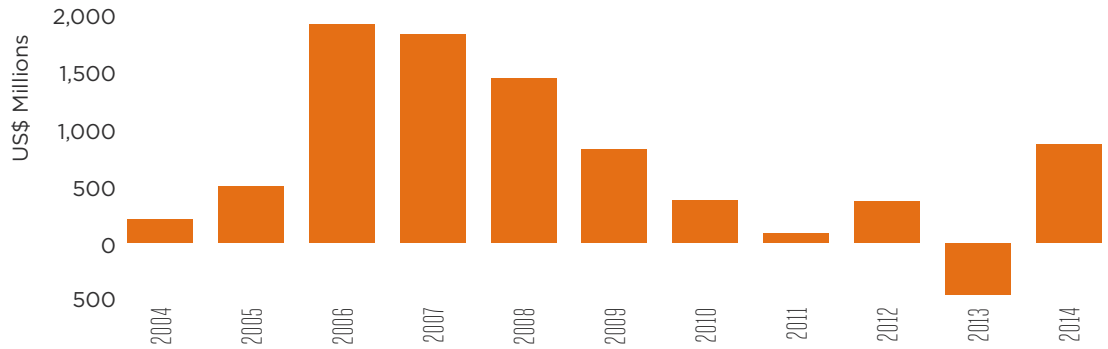
Figure 11

POLICY UNCERTAINTY: Uncertainty in the regulatory environment has also limited mobile operators' ability to invest in recent years, as investment infrastructure is particularly sensitive to policy uncertainty. There have been several changes to the tax regime, as well as repeated delays to 3G licence auctions. Eventually, 3G and 4G auctions took place in April

46. http://www.pta.gov.pk/digitalmaps/digitalmaps.php

2014. However, a low response by mobile operators meant that this only raised US$1.1 billion, as opposed to the US$2 billion hoped for, possibly reflecting the expectations of low revenues combined with high taxation in the future[47]. This issue has been identified by mobile operators as a key factor in whether future efforts by the Government of Pakistan to auction more spectrum are as successful as they could be. At the same time, Pakistan has experienced a fall in foreign direct investment in the telecoms sector in recent years, from a peak of US$1.9 billion in 2006.

FDI in the Pakistan telecoms sector



Source: Pakistan Telecommunications Authority

Figure 12

High taxes on the mobile sector, as well as uncertainty in the tax policy environment, may discourage investment, especially in new 3G and 4G technologies. This is reflected in Pakistan's ranking on the Ease of Doing Business Index, which was 127 in 2013, lower than other countries in the region[48]

Ease of Doing Business Index for selected countries, 2013

Country	Ease of doing business index
Malaysia	20
Thailand	28
Vietnam	72
Philippines	86
China	93
Sri Lanka	105
Nepal	109
Indonesia	117
Pakistan	127
Cambodia	134
India	140
Bangladesh	170
Myanmar	178

Source: World Bank (2013) Ease of Doing Business Index

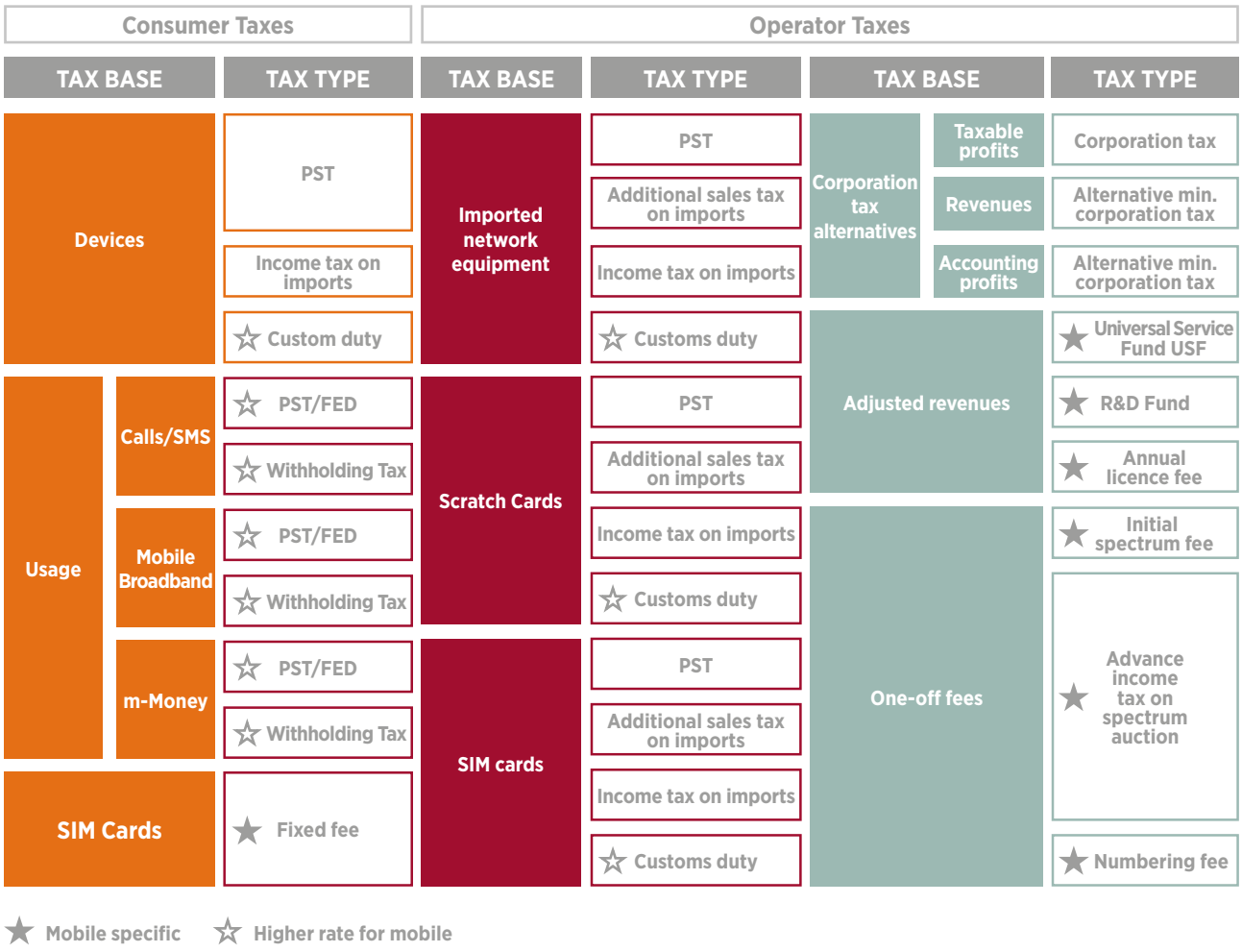
Figure 13

47. thenews.com.pk. 23 April 2014.
48. Ease of doing business ranks economies from 1 to 189, with first place being the best. A high ranking (a low numerical rank) means that the regulatory environment is conducive to business operation. The index averages the country's percentile rankings on 10 topics covered in the World Bank's Doing Business. The ranking on each topic is the simple average of the percentile rankings on its component indicators.

2 Mobile taxation in Pakistan

The mobile sector is heavily taxed in Pakistan, with numerous taxes levied both on mobile operators and consumers.

Overview of consumer and mobile operator taxation in Pakistan



Source: International Bureau of Fiscal Documentation, Pakistan Telecommunications Authority and operator data

Table 1

Many of these taxes are mobile-specific, such as the tax levied on SIM card sale, or are applied at higher rates in the mobile sector, such as the Provincial Sales Tax ('PST') and the Federal Excise Duty ('FED') on usage. This puts the mobile industry at a competitive disadvantage with respect to other industries and makes Foreign Direct Investment in ICT less attractive.

2.1 Taxes on mobile consumers in Pakistan

Consumer taxes in the mobile sector in Pakistan directly impact affordability of services and create barriers for access to basic telephony services and advanced technologies such as mobile internet and mobile broadband.

Consumer taxes in Pakistan apply to ownership of devices, usage of services such as SMS, and also to calls and the activation of connections. The table below summarise the taxes that are applicable to each component.

Consumer taxes on mobile devices and services in Pakistan

	TAX BASE	TAX TYPE	TAX RATE
Taxes on consumers	Devices	PST	Handsets: PKR 150, 250 or 500 Other devices (incl. tablets): 17% Additional sales tax on imports: 3%
		Income tax on imports	5.5%
		Custom duty	PKR 0-250
	Usage: Call/SMS, Mobile Broadband and m-Money	PST/FED	19.5%/18.5%
		Withholding Tax	14%
	Sim Cards	Fixed fee	PKR 250

Source: International Bureau of Fiscal Documentation, Pakistan Telecommunications Authority and operator data

Table 2

2.1.1 Taxes on devices and SIM card sale

Taxes on devices and handsets

Handsets are subject to import duties of up to PKR 250 and sales tax varying from PKR 150 to 500, plus an additional income tax on imports of 5.5%. Other devices, such as tablets, are subject to the PST at the standard rate, plus an additional 3% ad valorem sales tax and the 5.5% income tax on imports.

These costs are passed on from the importers to consumers. They work in a similar way to a luxury tax on access to mobile devices and services, and can act as a barrier to the broader social and economic benefits that digital inclusion can deliver.

The SIM card tax

In addition, customers have to pay a tax of PKR 250 for the purchase of new or replacement SIM cards[49]. This type of tax has a particularly adverse effect in Pakistan, given the low average income of the population. By constraining mobile access, these taxes represent a significant barrier to Pakistanis gaining access to both basic mobile services and the internet.

Case study:

ABOLITION OF SIM CARD TAXES ON M2M

Around the world, only a small number of countries impose a SIM card tax. They include Brazil, Bangladesh, Chad, Egypt and Turkey.

Turkey recently abolished these types of taxes on specific services and, at the same time, has seen significant growth in Machine to Machine (M2M) penetration. In 2012, the Government exempted M2M SIM cards from its SIM card tax equivalent. In the following year, M2M connections almost doubled[50].

The Brazilian government introduced tax reductions for Internet of Things (IoT) services, i.e. devices that are connected to the internet via multiple networks and enabled with a, M2M SIM card, over the time period 2012-2014.

The GSMA estimates that the tax cut will reduce the tax burden on IoT services by up to 80 per cent in total[51]. The tax cut has had a significant positive impact on the development of the Brazilian IoT market, as it provided a positive stimulus for mobile operators to develop their services. Shortly after the tax cut was enacted, mobile operators invested BRL 13 billion ($6billion) into IoT sections[52]. The Brazilian communications minister, Paulo Bernardo, estimates that as a result of the tax cut the number of M2M devices in Brazil will increase by 33%, from 17.5m to 23.3m, until 2016[53].

49. Some operators have indicated that there exist an additional PKR 250 tax on activation, but its application is in dispute.
50. Turkcell annual reports 2011, 2012, 2013. Retrieved from http://www.turkcell.com.tr/en/aboutus/investor-relations/key-financial-and-operational-data/financial-reports
51. GSMA, May 9th 2014, "GSMA welcomes Brazilian government decision to reduce machine-to-machine taxation", retrieved from http://www.gsma.com/newsroom/gsma-welcomes-brazilian-government/
52. TelecomEngine, May 7th 2014, "Brazilian operators invest $6 billion in M2M", retrieved from http://www.telecomengine.com/node/87301
53. Telefonica, June 4th 2014,"Brazil tax reductions: A movement to the leadership", retrieved from https://m2m.telefonica.com/m2m-media/m2m-blog/item/673-brazil-tax-reductions-a-movement-to-the-leadership

2.1.2 Taxes on usage

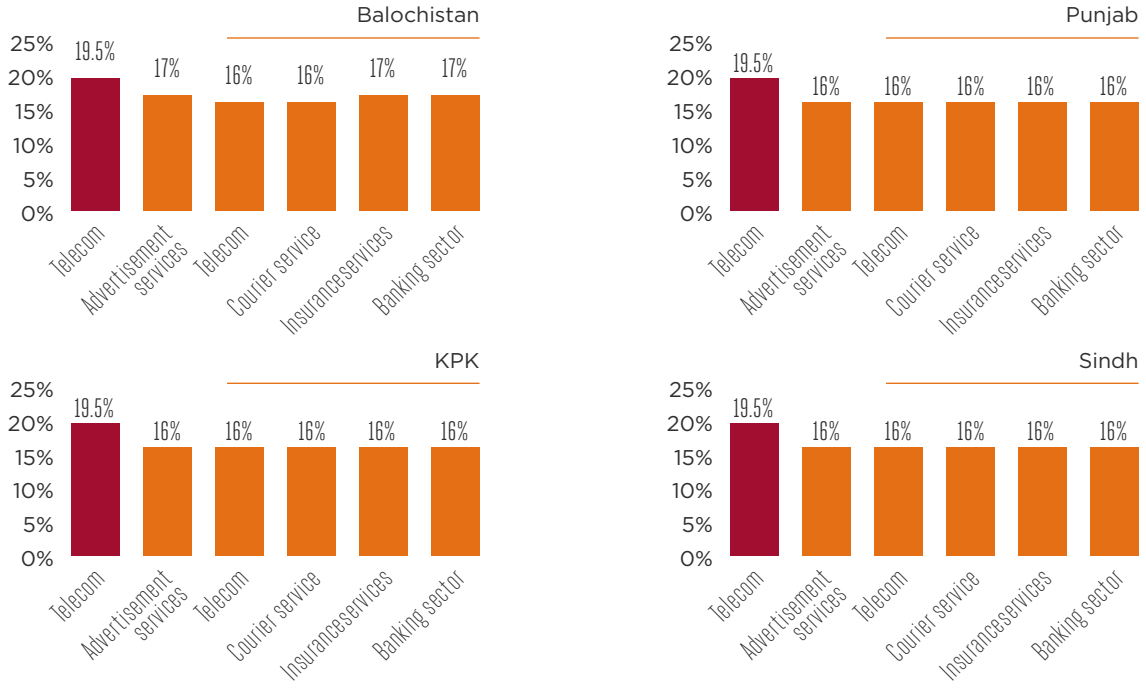
The Provincial Sales Tax and the Federal Excise Duty

Usage of mobile services such as calls, SMS, broadband and m-Money are subject to an ad valorem taxes, the PST or the FED, depending on the province.

Under both of these tax policies, mobile services are subject to higher rates compared to other sectors of the Pakistani economy. The standard rate of FED and PST varies by province and is set at between 15% and 17%. For services such as m-Money the banking sector pays between 15% and 16% PST. However, mobile and other telecoms services are taxed at 19.5%.

The budget for fiscal year 2014/15 has reduced the FED rate to 18.5% from 19.5% and withdrawn it from those provinces which have imposed PST, while the PST remains at 19.5%.

Comparison of PST rates across sectors in Pakistan, 2013-2014



Source: Pakistan Federal Bureau of Revenue Sales Tax Guide, operator data and Deloitte analysis

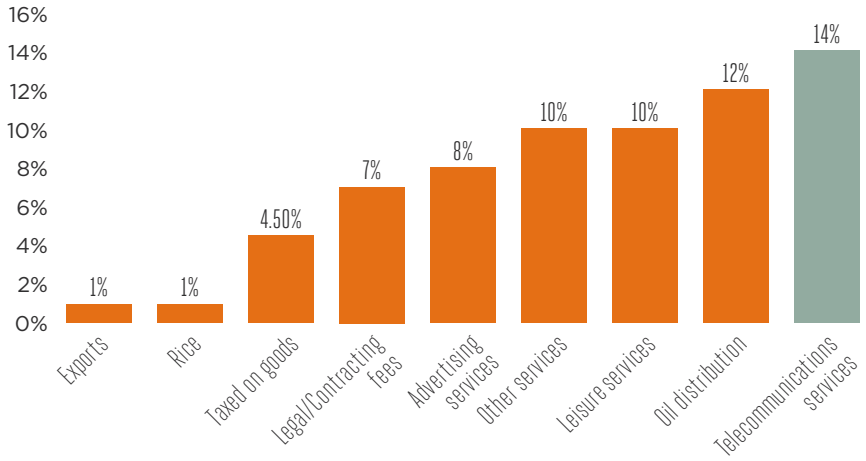
Figure 14

As shown above, taxes vary between Pakistan's four provinces. Across the economy, companies are taxed at both the federal and provincial level, which poses a significant administrative burden and often causes double taxation. This system is particularly costly for mobile consumers, who face higher rates on both PST and FED.

The Withholding Tax on mobile services

In addition to the PST and FED, mobile services are subject to a 14% ad valorem withholding tax. The Withholding Tax is higher for telecoms than for most other sectors, for which it varies between 1% and 12%. Although in theory these taxes can be claimed back by consumers, mobile operators noted that in practice they effectively result in an extra tax burden on mobile subscribers because the majority of them are either not liable for personal income tax or simply do not claim the tax in their annual return. Therefore, the tax is effectively equivalent to an airtime excise.

The Withholding Tax across sectors



Source: PwC Pakistan Budget Review and discussion with operators

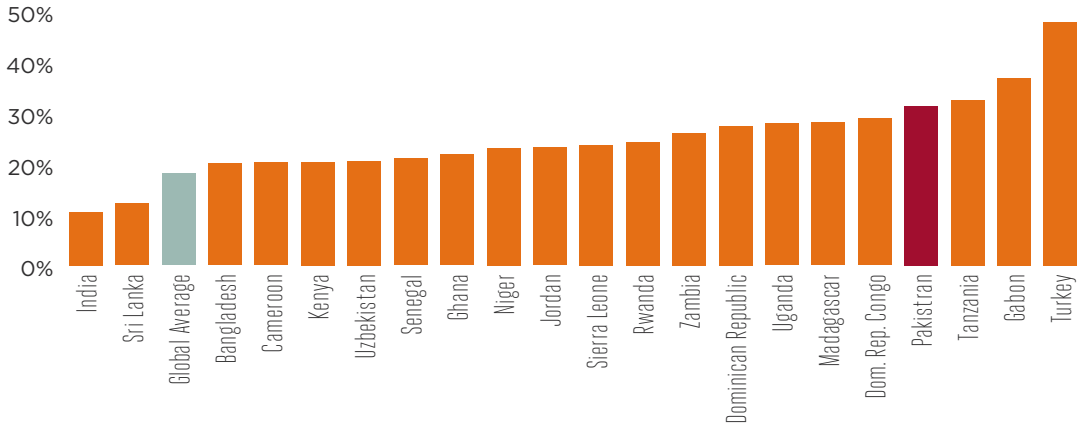
Figure 15

2.1.3 Total Cost of Mobile Ownership

The Total Cost of Mobile Ownership to consumers ('TCMO') consists of the cost of purchasing the handset/device and the recurring costs of using it. In Pakistan, 31.61% of this cost is due to taxation[54], and 15.4% comes directly from mobile-specific taxation (including taxes on usage, device and activation)[55], namely the higher rate of PST/FED, import duties and the SIM card tax.

This means that in order to own and use a mobile device, the average Pakistani consumer needs to pay US$22 in taxes yearly[56], while her average wage is only US$255 per month[57].

Tax as a proportion of Total Cost of Mobile Ownership



Source: Deloitte/GSMA Global Mobile Tax Review 2011

Figure 16

The tax burden on mobile usage in Pakistan is higher than both the regional average and the global average. In fact, in 2011 taxes as a proportion of TCMO in Pakistan were found to be the fourth highest in a sample of 111 countries, against a global average of 18.14%.

54. GSMA Mobile Tax Review 2011.
55. Ibid.
56. Deloitte analysis based upon Aamir, M., Ikram, W. and Zaman, K. (2010): Customers' switching in mobile phone service providers in Pakistan. Int.J.Buss.Mgt.Eco.Res., Vol 1(1),2010,34-40).
57. International Labour Organization, Global Wage Report 2014/2015.

2.2 Taxes on mobile operators in Pakistan

Mobile operators in Pakistan are subject to general taxes, such as corporation tax, as well as numerous mobile-specific taxes. The latter include various regulatory fees and significant taxes on imports of equipment, which is vital for network rollout and improvements in the quality of service.

Taxes levied on mobile operators in Pakistan

	TAX BASE	TAX TYPE	TAX RATE	TAX BASE		TAX TYPE	TAX RATE
Taxes on operators	Imported network equipment, Scratch Cards and SIM cards	PST	17%	Corporation tax alternatives	Taxable profits	Corporation tax	34%
					Revenues	Additional corporate tax	17%
					Accounting profits	Minimum tax	1%
		Additional sales tax on imports	3%	Adjusted revenues		Universal Service Fund USF	1.5%
						R&D Fund	0.50%
						Annual licence fee	0.50%
		Income tax on imports	5.5%	One-off fees		Initial spectrum fee	Set in auction
						Advance income tax on spectrum auction	10% advance income tax applies to auction of new licences
		Customs duty	0-25%			Numbering fee	PKR 0.50 per number

Source: International Bureau of Fiscal Documentation, Pakistan Telecommunications Authority and operator data

Table 3

2.2.1 Duties and surcharges on imports

Mobile operators pay four different taxes on imported equipment, including on SIM cards and base stations. Firstly, they pay the custom duty, then on the imported value they pay the PST plus and an additional 3%, and finally they are subject to a 5.5% income tax on imports[58].

The customs duty

Customs duty was previously levied at 5%, however the Statutory Rule Order ('SRO') 575 finance act in 2014/15 increased customs duties to 10%-25%[59] and removed the exemption of imported equipment from sales tax.

The income tax on imports

Pakistan's legislation defines "Industrial Undertakings" for taxation purposes, and these are allowed to deduct the income tax on imported network equipment from their final tax liability[60]. Mobile operators are not granted this status and thus are not allowed to adjust the income tax paid on imports, despite the fact that the network equipment they import is being used as an input for their operations. **In 2013, it is estimated that mobile operators paid a total US$57 million in income tax at import[61].**

2.2.2 Taxes on mobile operators' profits and regulatory fees

The corporation tax rate for mobile operators stands at 34% and is due to decrease to 33% in 2015. Compared to other countries, both globally and within the region, Pakistan has a relatively high rate of corporation tax, 10% higher than the global average[62]. Moreover, the minimum tax payment due is the higher of 33% on taxable profit (as above), 17% of accounting profit and 1% of annual revenues.

Furthermore, mobile operators in Pakistan are subject to a number of regulatory fees, including annual fees such as the Universal Service Fund, the R&D Fund, the annual numbering and licence fees, as well as fixed amounts that are paid by operators in order to acquire and provide for the administration of spectrum frequencies.

Annual regulatory fees amounted approximately to US$70 million in 2013, which represents 2.2% of sector revenue[63]. This is in addition to one-off payments for spectrum and licences.

In April 2014, the government auctioned four 3G licences and one 4G license for which mobile operators paid respectively US$903 million and US$210 million[64]. **Overall, mobile operators paid over US$1.1 billion to acquire spectrum in 2014[65].** Generally, half the fees are paid up front and half in five annual instalments. These payments are also subject to a 10% income tax. Although this can be reclaimed by mobile operators, it represents a significant upfront cost.

58. This tax is not related to the personal income tax, but is instead levied on the value of goods at import.
59. Operators have indicated that there are some exceptions that follow from trade agreements, for example under the Free Trade Agreement between China and Pakistan a 1% custom duty is usually applicable for IT servers, while 25% applies for cables and other equipment varies between 10%, 15% or 20%. SIM cards are exempt, whilst scratch cards fall under a reduced rate of 5% customs duty.
60. https://www.bmf.gv.at/steuern/int-steuerrecht/rueckerstattung/Pakistan-Info.pdf?4jwmte
http://www.brecorder.com/company-news/601:/1206687:pakistan-tobacco-company/
The income tax on imports in Pakistan is not related to the personal income tax, but is instead levied on the value of goods at import.
61. Deloitte analysis based on operator and GSMA Intelligence database data.
62. Deloitte Tax Database and analysis.
63. Deloitte analysis based on operator and GSMA Intelligence database data.
64. Sources: http://www.dawn.com/news/1101760, http://www.cellular-news.com/story/Regulatory/65570.php, http://www.dailytimes.com.pk/islamabad/24-Apr-2014/govt-auctions-3g-4g-licences-for-1-1bn
65. Deloitte analysis based on operator and GSMA Intelligence database data.

2.3 Best practice in taxation policy

An effective tax policy has to balance a number of potentially competing factors. These include the government's revenue needs, supporting key sectors, the practicalities of enforcement and collection, as well as the desire to minimise any detrimental impact on the wider economy. Consequently, tax policy frequently must strike a balance between the theoretically correct response and one that recognises the practicalities of taxation in a market[66].

There are, however, a number of principles that are generally recognised as contributing to an effective tax system and if applied in Pakistan, these principles have the potential to expand investment in the mobile sector and lead to significant economic growth and increased tax revenues for the government. The following principles have been indicated by organisations such as the IMF:

1. **In general, taxation should be broad-based:**

Taxation alters incentives for production and consumption, and so economic distortions will generally be minimised where the burden of taxation is spread evenly across the economy. In practice this equates to adopting broadly defined bases for taxation, limiting rate variations and effectively enforcing tax compliance.

2. **Taxes should account for sector and product externalities:**

The case for taxation to address negative externalities[67] (such as those arising from tobacco consumption) is recognised. The same logic also applies to sectors and products with positive externalities. Taxation policy should encourage sectors, such as mobile, that create positive network effects and externalities in the wider economy.

3. **The tax and regulatory system should be simple, easily understandable and enforceable:**

Uncertainty and lack of transparency over taxation systems and liabilities may deter investors and are also likely to increase enforcement costs for government.

4. **Dynamic incentives for the operators should be unaffected:**

Taxation should not disincentivise efficient investment or competition in the ICT sector. In situations where the tax system does provide disincentives, tax revenue could be significantly reduced in the long run.

5. In addition, it is widely accepted that **taxes should be equitable, and that the burden of taxation should not fall disproportionately on the poorer members of society.**

These principles are intended to minimise the inefficiencies associated with taxation and the distortive impacts that taxes may have on the wider economy.

66. IMF (2001), 'Tax policy for developing countries'.
67. An externality refers to an impact on the wider economy that is not accounted for by the consumer purchasing the good. For example, consumers of tobacco create an additional cost for others through second-hand smoke, but do not take into account this impact when choosing whether to smoke.

The table below summarises how the taxes levied in Pakistan align with these principles.

Alignment of taxes on the mobile sector in Pakistan with the principles of taxation

Tax	Broad-based	Accounts for externalities	Transparent and enforceable	Incentives for competition and investment	Equitable (not regressive)
Corporation tax	✓	✗	✓	✓	✓
PST/FED	✗	✗	✗	✗	✗
SIM Tax	✗	✗	✗	✗	✗
Withholding tax	✗	✗	✓	✗	✗
Income tax on imported equipment	✓	✗	✗	✗	✗
Customs duty	✗	✗	✗	✗	✗
Universal service fund	✗	✓	✓	✗	✓
Annual licence fee	✗	✗	✓	✗	✓
Numbering fee	✗	✗	✓	✗	✓
Spectrum administration Fee	✗	✗	✗	✗	✓

Source: Deloitte analysis

Table 4

As shown in Table 4, many of the taxes levied on the mobile sector fail to align with the key principles of efficient taxation, which has ramifications for the development of the sector and the wider economy. In particular, mobile-specific taxes in Pakistan – such as the 250 PKR tax on SIM card sales and the telecommunications specific Sales Tax/FED – have the highest negative impact and lack of alignment with the established principles of taxation:

Mobile-specific taxes such as the customs duty create consumption and investment distortions:

These taxes are not broad-based, as they are specific to mobile sector revenues and as such may create distortions. This approach means that consumers are discouraged from using mobile services and mobile operators are not incentivised to invest. This can result in under-consumption and under-investment in the mobile sector. The fact that many of these taxes, for example customs duty, are charged at different rates across different items or services can also create further competitive distortions including across the types of devices that are imported.

Higher 'ad valorem' taxes (e.g. PST and FED) for mobile fail to account for positive externalities:

Mobile has positive impacts for the wider economy through network effects and facilitation of innovation and productivity in other sectors such as agriculture, healthcare and education through the use of mobile applications and services. Taxing mobile in a disproportionate manner could be taken as a signal that the government wishes to discourage, rather than encourage, consumption.

Lack of harmonisation between provincial and federal taxation complicates the tax system:

Charging FED and PST at different rates across sectors and provinces complicates the tax system, increases the cost of administration and can lead to uncertainty regarding tax payments and total cost of mobile ownership. It is recognised, however, that this will need to be balanced against the specific requirements of each province and their taxation objectives.

The tax system's lack of overall transparency increases uncertainty and deters investment:

In addition to the lack of harmonisation of taxation across provinces, mobile operators have indicated that tax authorities in Pakistan often lack a consistent enforcement mechanism. For example, some do not allow deduction of certain items such as marketing and promotional costs or foreign exchange losses. There are also other compliance costs that have to be borne by mobile operators, for example concerning interception of communications and retention and disclosure of data. This is likely to cause a significant administrative burden and disincentivises investment, especially from foreign countries.

Mobile-specific taxes on imports of network equipment reduce incentives for investment in infrastructure and quality of service improvements:

Taxes on revenues, in particular, are typically viewed as inefficient since they fail to provide incentives for investment in infrastructure and quality of service improvements.

Mobile-specific taxes such as the SIM card tax hit the poorest consumers hardest:

If taxes on mobile are passed through to consumers, they create a barrier to affordability. This barrier is greater for low income consumers and therefore risks excluding them from the benefits of mobile and the internet.

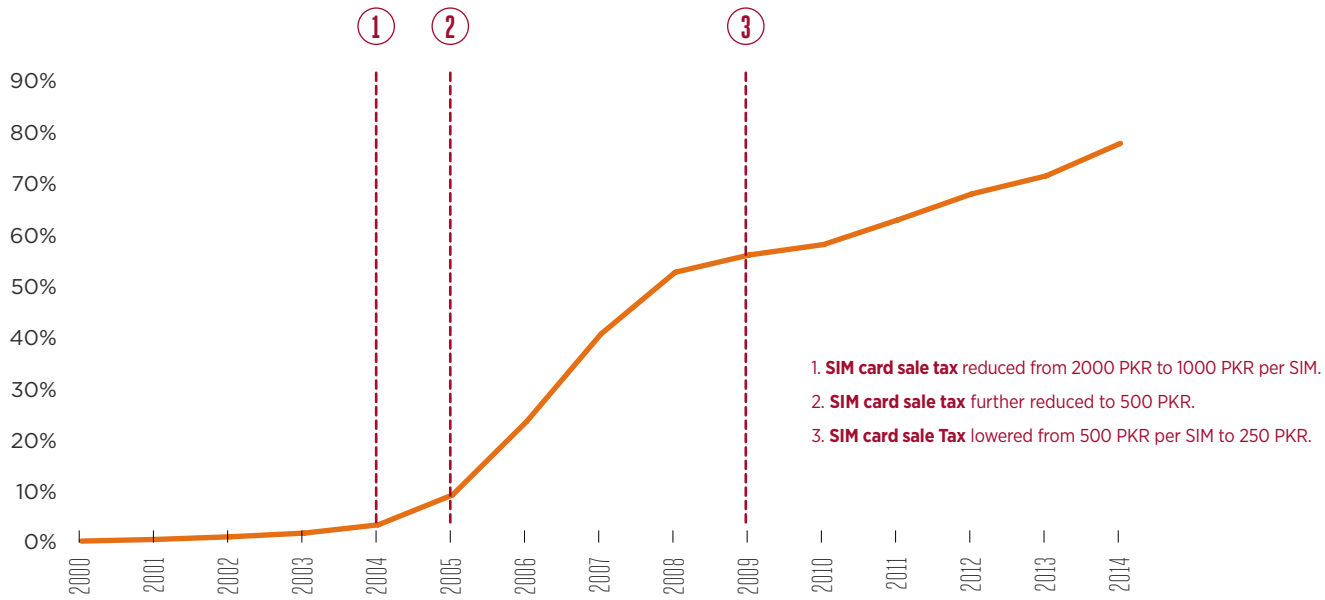
The inefficiencies created by these various mobile-specific taxes not only limit the development of the mobile sector, but also hinder economic growth and the realisation of the positive externalities created by mobile services, specifically mobile broadband. **In the medium term, the Government of Pakistan could generate more tax revenue if the current tax regime, as applied to mobile operators and consumers, was reformed.**

3 Economic benefits of reforming mobile taxation in Pakistan

3.1 How mobile taxation in Pakistan impacts the economy

The Pakistani government has already seen some of the benefits of reforming mobile-specific taxes. The SIM card sales tax was reduced from PKR 2000 to PKR 1000 in 2004, then again to PKR 500 in 2005 and finally to PKR 250 in 2009. During the same period, mobile penetration increased notably, together with government tax revenues from mobile. In the five years since the latest reduction, government revenues from the sector amounted to over US$8 billion[68].

Total market penetration and SIM card taxes over time



Source: GSMA Intelligence database and Pakistan Telecommunications Authority

Figure 17

68. Pakistan Telecommunications Authority.

Nonetheless, the level of taxation on the mobile sector in Pakistan remains high and risks limiting the benefits that can be achieved through mobile from digital inclusion, economic growth and long-run fiscal stability. Reforming mobile taxation could help to make mobile more affordable for consumers, increase investment and also help to make Pakistan's economy more competitive.

By reforming mobile taxation, the Pakistani government can further its Vision 2025 agenda by promoting digital inclusion and broadening access to ICT. At the same time, it could achieve increased tax revenues in the medium term.

This section discusses the impacts of reforming mobile taxation. A number of illustrative tax policy reforms are assessed, using a combination of qualitative evidence and a quantitative model of the mobile sector and its impact on the wider economy (described in detail in Appendix A). Specifically, the quantitative impacts for the following three alternatives of tax reform are estimated:

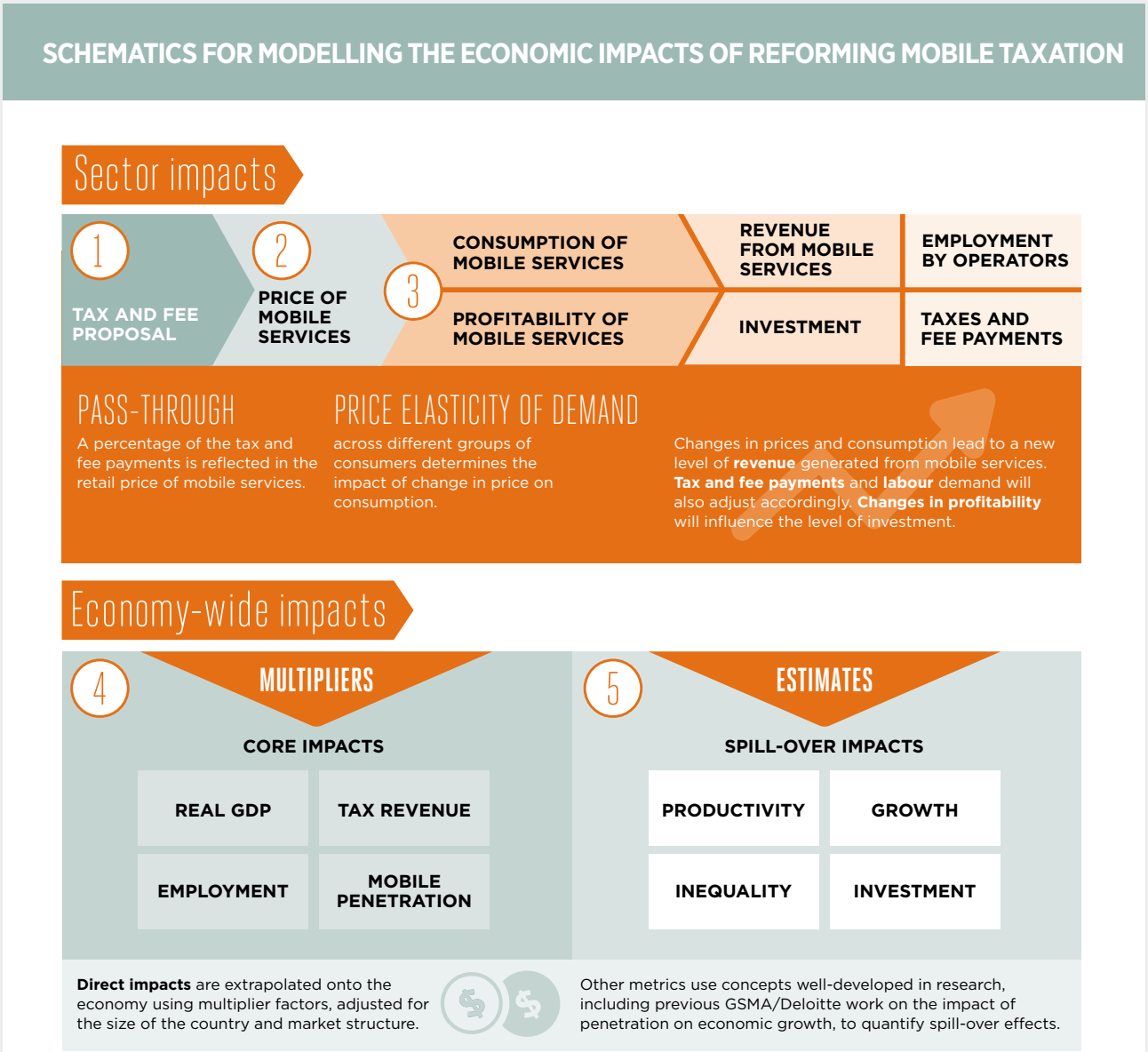
- Removing the PKR 250 tax on SIM card sale and replacement.
- Reducing the PST/FED for telecom services to 17%, to align it with the rates on other sectors.
- Allowing for the adjustment of income tax on imports by granting mobile operators equal tax treatment to that enjoyed by Industrial Undertakings.

Furthermore, the following policies are discussed qualitatively:

- Reducing other import duties and surcharges on network equipment.
- Reducing the Withholding Tax on mobile services.
- Removing the advance income tax on spectrum auctions.
- Harmonising provincial and federal taxation.

To estimate the quantitative impacts of tax reform, a macroeconomic model of the Pakistani economy and mobile sector was constructed, using sector-specific data from both the GSMA and the largest mobile operators in Pakistan, together with macroeconomic data from the IMF and World Bank. This allows the model to represent both the mobile sector and the economy as a whole.

The figure below illustrates the impacts of tax reform on key economic and sector variables.



Source: Deloitte analysis

Figure 18

The modelling involves several steps which encompass the impacts outlined in the figure above:

1 The level of taxation and fees applied to the mobile sector are reflected in the retail prices mobile operators charge for using their services. Therefore, a change in taxation or fees will lead to a change in the retail price of mobile services. A pass-through rate represents the percentage of the tax and fee payments which is reflected in the retail price of mobile services.

2 The price of mobile services determines the demand and therefore the aggregate consumption of mobile services. The price elasticity of demand describes the responsiveness of demand to a change in the price, and is defined as the percentage change in demand resulting from a given percentage change in price.

3 Changes in the level of consumption of mobile services lead to a new level of revenue generated by mobile operators, which changes the level of taxes, and fee payments and labour demand accordingly.

4 There are direct impacts on the wider economy, in particular on real GDP, tax revenues, employment and investment. Multipliers are assumed which allow changes in the mobile sector to affect the wider Pakistani economy.

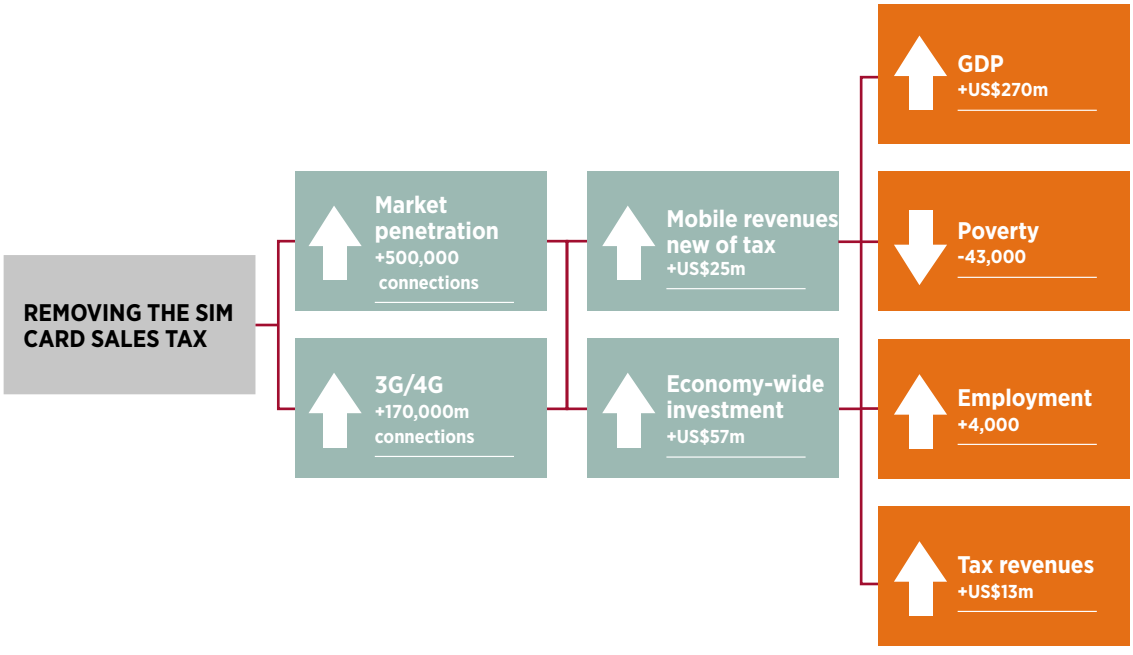
5 These direct impacts lead to spillover effects; changes in Pakistan's GDP and employment determine productivity and economic growth. An elasticity determines the impact of a change in mobile penetration on GDP growth. Productivity is calculated using the total factor productivity impact, described in the appendix.

3.2 Removing the PKR 250 tax on SIM cards

The special tax of PKR 250 on the purchase of new and replacement SIM cards results in an increase in the cost of accessing mobile services and a constraint on the overall mobile penetration and the range of uses.

Reducing this tax has already proved effective in enhancing penetration and value-add in past years and its abolition has the potential to further the benefits for the mobile sector and the wider economy in Pakistan.

Potential impact of removing the SIM card tax, 2020



Source: Deloitte analysis based on operator, GSMA, IMF and World Bank data

Figure 19

It is estimated that eliminating the tax on SIM card sales and replacement could drive the following impacts:

By 2020, increased demand for mobile broadband has the potential to add an extra 500,000 connections, including 170,000 3G connections, and increase usage of mobile services by 0.28%.

This uptake in mobile penetration could increase mobile revenues by up to an additional US$25 million in 2020 and the productivity of Pakistani workers and businesses, potentially leading to the Pakistani economy being 0.08% more productive.

Through the direct impacts of the mobile operators and the indirect impacts generated by the activities enabled by mobile operators, increased mobile usage could lead to additional GDP growth, delivering up to an additional US$270 million in 2020 and potentially providing employment for an additional 4,000 Pakistanis.

Moreover, despite an initial fall in tax revenues after the reduction in tax, the government could potentially achieve tax neutrality within three years and by 2020 the increase in GDP growth has the potential to enable up to an additional US$13 million in tax revenues to be collected through more broad-based taxation.

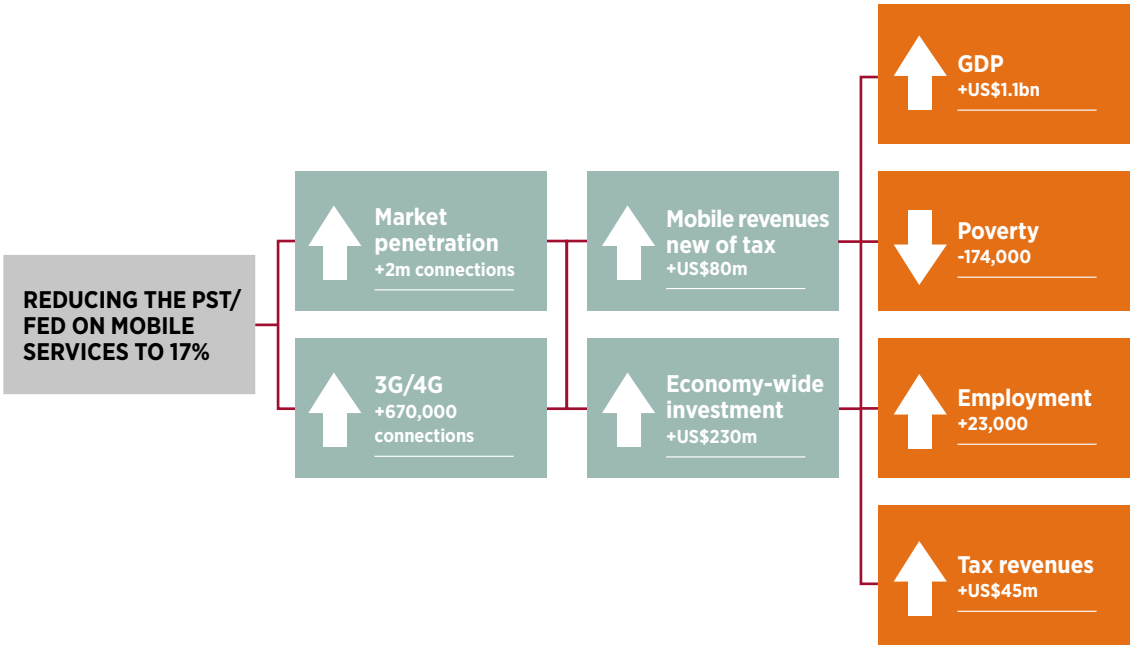
Eliminating the sales tax on SIM cards could increase access to mobile and improve affordability, thus promoting higher mobile penetration in Pakistan. This could have large positive impacts in terms of digital inclusion and adoption of new 3G technologies, while at the same time increasing GDP per capita and lifting 43,000 people out of poverty.

3.3 Reducing the PST/FED rates on mobile services

The PST in Pakistan is currently levied at 19.5% while the FED rate was recently reduced to 18.5% in the provinces where PST is not applied. Reducing both these taxes to 17% on mobile services would bring them in line with taxes on other goods and services and has the potential to provide a positive impact on affordability, digital inclusion and economic growth.

Eliminating taxes on mobile connections and services improves affordability, thus promoting higher mobile penetration in Pakistan.

Potential impact of reducing PST/FED to 17%, 2020



Source: Deloitte analysis based on operator, GSMA, IMF and World Bank data

Figure 20

In particular, reducing and harmonising the PST and FED rates at 17% has the potential to generate the following impacts:

By 2020, increased demand for mobile broadband could add an extra 2 million connections, including 670,000 3G connections, and increase usage of mobile services by 1.12%.

This uptake in broadband penetration could increase the productivity of Pakistani workers and businesses, leading to the Pakistani economy being up to 0.31% more productive.

Through the direct impacts of the mobile operators and the indirect impacts generated by the activities enabled by mobile operators, increased mobile usage could lead to additional GDP growth, potentially delivering an additional US$1.1 billion in 2020 and providing employment for an additional 23,000 Pakistanis.

Moreover, despite an initial fall in tax revenues after the reduction in tax, the government could potentially achieve tax neutrality within three years and by 2020 the increase in GDP growth could enable up to an additional US$69 million in tax revenues to be collected through more broad-based taxation.

Reducing PST/FED, and other taxes like it, promotes the growth of digital inclusion by making mobile more affordable for ordinary citizens. This has wider economic impacts; specifically higher economic growth, greater productivity and growth in employment.

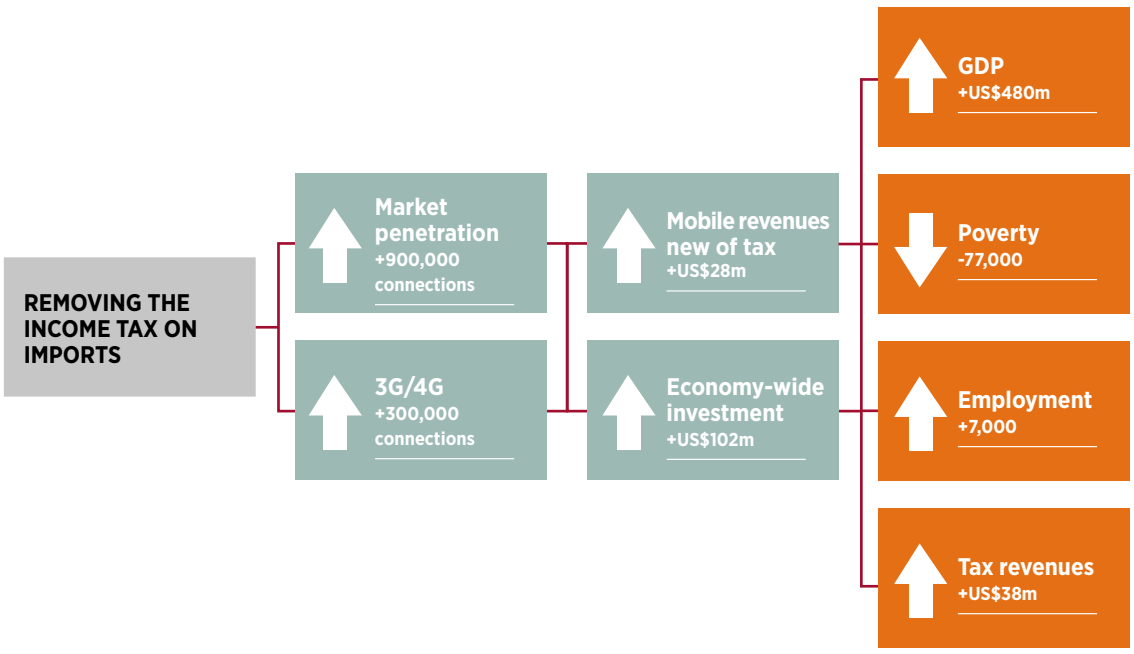
3.4 Allowing adjustment of the Income Tax on imports by granting mobile operators equal tax treatment to that enjoyed by Industrial Undertakings

For mobile operators, it is essential to import telecom equipment in order to provide their services, and especially in order to increase network coverage and maintain quality of service. Nonetheless, currently they are not categorised under the definition of Industrial Undertaking and accordingly, the 5.5% income tax collected at import stage is being treated as a final tax.

Granting the mobile industry equal tax treatment to that enjoyed by Industrial Undertakings has the potential to have a significant positive impact on network investment, thus implying better network coverage and faster 3G rollout for Pakistanis and long-run economic and social benefits.

Due to data limitations, the impacts of granting mobile operators equal tax treatment to that enjoyed by Industrial Undertakings were estimated based on applying the exemption to income tax on imports only[69]. Therefore, it is expected that the benefits of the change in policy could be larger than those reported below.

Potential impact of allowing deduction of the income tax on imported network equipment, 2020



Source: Deloitte analysis based on operator, GSMA, IMF and World Bank data

Figure 21

69. Operators have indicated that other benefits of the Industrial Undertaking status include: exemption of withholding tax from repatriation of interest against foreign loans and reduction in tax liability of up to 10% of the total capital expenditure.

It is estimated that if mobile operators were allowed to deduct their income tax payments on imports:

Investment could potentially increase by up to US$102 million and mobile revenues by US$28 million in 2020.

By 2020, increased demand for mobile broadband could add an extra 900,000 connections, including 300,000 3G connections.

This uptake in broadband penetration has the potential to increase the productivity of Pakistani workers and businesses, leading to the Pakistani economy being up to 0.14% more productive.

Through the direct impacts of the mobile operators and the indirect impacts generated by the activities enabled by mobile operators, increased mobile usage could lead to additional GDP growth, potentially delivering up to an additional US$480 million in 2020 and providing employment for up to an additional 7,000 Pakistanis.

Moreover, despite an initial fall in tax revenues after the reduction in tax, the government could potentially achieve tax neutrality within three years, and by 2020 the increase in GDP growth could enable up to an additional US$38 million in tax revenues to be collected through more broad-based taxation.

Granting mobile operators equal tax treatment to that enjoyed by Industrial Undertakings supports increased investment in ICT. This is likely to help Pakistan's broader competitiveness and supports its transition to the knowledge-based economy proposed in Vision 2025. It could also help to promote increased levels of investment in expanded 3G and 4G networks, whilst also improving existing service quality. In the long term, this could lead to higher economic growth and broader access to the internet and ICT.

3.5 Other tax reform alternatives

3.5.1 Reducing other import duties and surcharges on network equipment

The lack of continued investment is a barrier to providing access to mobile and internet services. This issue has been exacerbated by the SRO 575 finance act in 2014/15, which has increased customs duties from 5% to 10%-25% (depending on the type of item imported) and removed the exemption of imported equipment from the additional 3% PST[70].

These duties and surcharges have a direct effect on the cost of infrastructure investment, and may have a particular impact in remote and rural areas where the returns on investment are likely to be lower. While the different tax rates applied to the different items that fall into the definition of network equipment make exact data difficult to gather, mobile operators have indicated that[71]:

> Over the next five years, the total expected market investment in network equipment would be US$1.3 billion. However, due to the increase in customs duty, mobile operators estimate that they could need to spend US$195 million in additional fees and divert these resources from investment in new 3G/4G rollout.

> One mobile operator has indicated that high taxation on network equipment may lead to up to US$170 million underinvestment per year.

Reducing the cost of network equipment increases investment and access to mobile services, which allows more of the Pakistani population to benefit from 2G and 3G technologies and promotes digital inclusion. This could have wider economic impacts on the Pakistani economy.

70. http://propakistani.pk/2014/06/16/government-doubles-the-custom-duty-on-import-of-telecom-equipment/
71. Operators' submission to the ministry of IT & Teleco

Case study:

INCREASES IN MOBILE-SPECIFIC TAXATION REDUCED INVESTMENT IN NETWORK INFRASTRUCTURE IN CROATIA

After years of growth, 2009 saw Croatia enter a recession in the wake of the global financial crisis. In addition to the direct impact of the recessionary environment on the mobile industry, the Government introduced a 6% tax on MNOs' gross revenue from mobile calls and SMS in 2009. This aimed to raise funds as part of its response to the financial crisis.

Following the introduction of this tax, the tax burden increased to 28% of the cost of mobile ownership, the highest in Europe. Croatia's mobile tax had important implications:

- Volumes of mobile calls and SMS decreased (for the first time) in 2010 by 4% and 14% respectively.
- Unlike VAT, the tax could not be itemised in prices/ receipts, and was therefore not transparent to consumers.
- Mobile-specific taxation, as a proportion of MNOs' revenue, increased significantly after 2008. The total tax burden on mobile grew by 2% in 2009 and by 10% in 2010 as a result of the introduction of this mobile-specific tax.
- Falls in mobile operator revenues led to noticeable decreases in MNO capital expenditure, particularly towards network expansion.

Tax as a proportion of the total cost of mobile ownership, 2011

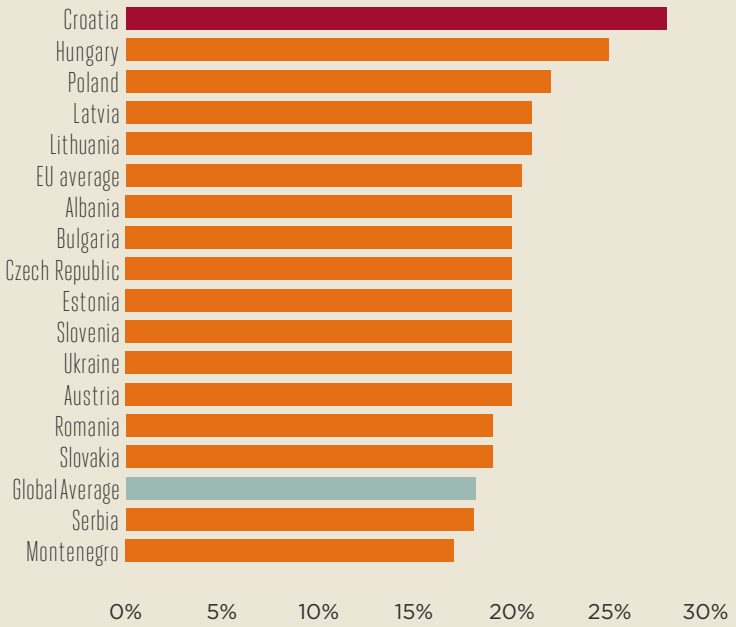


Figure 22 *Source: GSMA/Deloitte, Global Mobile Tax Review 2011*

MNO capital expenditure in Croatia

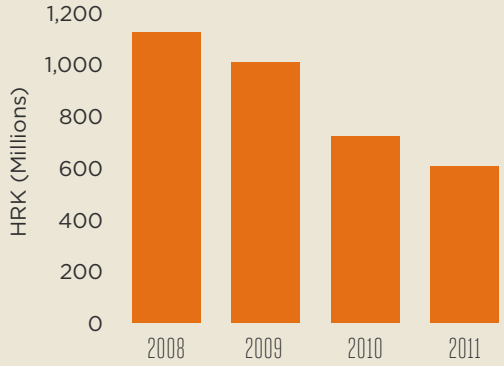


Figure 23 *Source: GSMA Intelligence database and Deloitte analysis*

At the same time as the increase in mobile-specific taxation, the market experienced reduced usage of mobile services and as well as lower mobile operator investment in network infrastructure, with a subsequent reduction in the quality of service. By taxing MNOs at a higher rate than other businesses, the government imposed an additional cost on consumers and raised barriers to entry. Consequently, the Croatian government removed the 6% tax on calls and SMS in 2012.

3.5.2 Reducing the Withholding Tax on mobile services

The ad valorem Withholding Tax on the usage of mobile services is levied at 14%, while the rate on most other service sectors is 10%. Furthermore, this tax fails to recognise that many mobile subscribers in Pakistan are below the threshold of taxable income and therefore cannot claim back the tax. Therefore the tax is actually equivalent to an airtime excise and, together with the PST/FED, brings the tax burden from mobile-specific taxation from ad valorem taxes to about 6.5%.

Reducing this tax to the level seen in other sectors could have a similar impact as a reduction in PST/FED on mobile services. Namely, it would promote digital inclusion by increasing access to mobile and improving affordability, and achieving wider economic benefits as a result.

Reducing the Withholding Tax on the usage of mobile services could promote affordability of mobile for the poorest Pakistanis.

Case study:

LOWER TAXATION BOOSTS MOBILE SECTOR GROWTH IN URUGUAY

In 2007, the Uruguayan government abolished an excise tax (ITEL) on airtime that affected telecom usage, directly impacting mobile consumers. This fixed tax, consisting of UYU 0.4 per minute for local calls and UYU 2 per minute for long distance calls, accounted for 30%-50% of the cost of calls.

This fixed tax is shown to have affected usage and also contributed to increasing barriers to mobile ownership, especially for low income consumers. Following the removal of this tax, a number of positive effects have been observed:

- Call prices have fallen by 67%.
- In the years following the tax abolition, mobile penetration has more than doubled, increasing from 65% to 141%.
- Usage increased by more than three times.

As a result of the growth in the market, the tax contribution of mobile operators has also increased fourfold, providing a significant windfall to the government. This illustrates that revenues lost through reductions in distortive, mobile-specific taxes can be recovered through more broad-based taxation on the sector as it grows.

Tax as a percentage of total cost of mobile usage, 2011

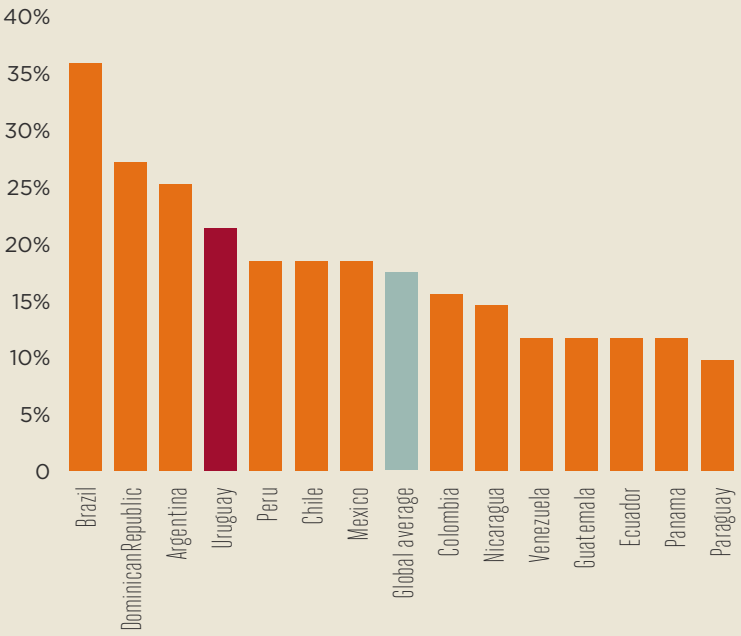


Figure 24 *Source: Deloitte/GSMA (2014): Mobile Taxes and fees: A toolkit of principles and evidence*

Mobile and smartphone penetration in Uruguay

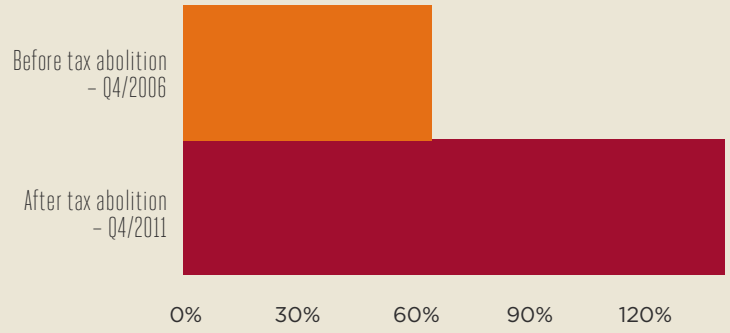


Figure 25 *Source: Deloitte/GSMA (2014): Mobile Taxes and fees: A toolkit of principles and evidence*

Through the reduction of mobile-specific taxation, the government of Uruguay increased the usage of mobile services by removing barriers to affordability. By developing supportive taxation and regulatory policies, the government enabled the growth of the mobile sector, and the associated benefits from increased employment and investment.

3.5.3 Removing the advance income tax on spectrum auctions

During the 3G and 4G spectrum auctions held in 2014, out of a total auction payment of US$1.1 billion, the government also levied a 10% advance income tax on the basis that this fee applies to all auctions by tender of any property or goods and shall be collected from the person or entity acquiring the item. This tax is deposited by the Federal Board of Revenue ('FBR') and it is recoverable against the tax liability of the tax year in which it is paid[72]. However, the advance payment is significant. It badly impacts mobile operators' cash flow and it often takes many years to obtain the refund.

Reducing the 10% advance income tax on the auctioning of new licences could help to increase spend on new technologies and incentivise mobile operators to invest in new spectrum.

3.5.4 Rationalising and harmonising provincial and federal taxation

Mobile operators have indicated that PST and FED are not currently being applied homogeneously across Pakistan's four provinces. This gives rise to a number of issues, namely:

Different legislation applies in the provinces of Sindh, Punjab and KPK than in Baluchistan, so that different rates are applied across the country. Therefore, mobile operators are striving to comply with four different sets of legislation in order to provide telecom services.

In addition, mobile operators are facing issues with their input sales tax adjustment and its identification with a specific province, given their output may fall under the provincial law and their input under Federal as well as provincial law.

The double taxation of FED and PST has been partially addressed by the budget for fiscal year 2014/15 which established that the FED on telecom services be withdrawn from those provinces which have imposed the PST. However, issues remain relative to the application of the two taxes at different rates since 2014/15 and due to the fact that often different rates apply in different provinces.

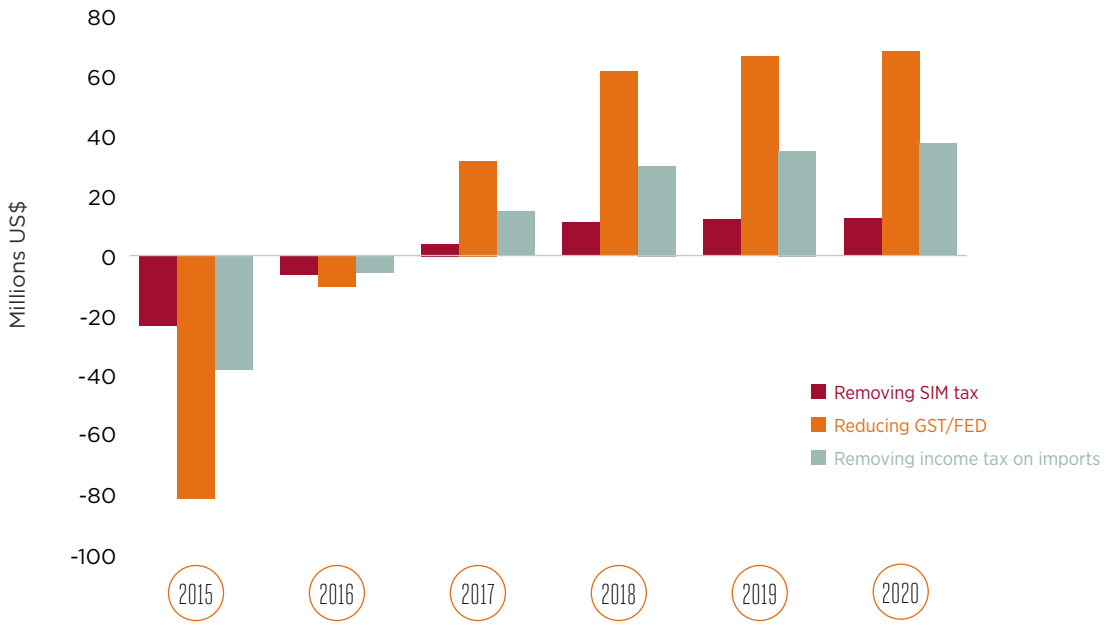
Rationalising and harmonising provincial and federal taxation laws would provide a single point of deposit and audit for mobile operators. In parallel, the overall business environment could benefit greatly from specific legislation defining each province's input and output share, as well as a uniform application of FED and PST. In addition, a centralised body (such as the FBR) assessing and monitoring the sectors tax affairs would bring Pakistan into line with international best practice. Such a reform, while desirable, would have to be balanced against the taxation objectives of each province.

72. http://www.accaglobal.com/uk/en/student/acca-qual-student-journey/qual-resource/acca-qualification/f6/technical-articles/pakistan-tax.html

4 Mobile taxation in Pakistan: an agenda for reform

It is recognised that reducing the level of taxation on the mobile sector may impact government revenues in the short-term. However, by increasing mobile penetration and promoting economic growth, reducing the tax burden on mobile could also increase the tax base, presenting the potential for the government to recover these revenues. As shown in the figure below, the scenarios modelled suggest that this second effect could potentially take place rapidly in Pakistan, with additional economic growth potentially enabling the government to reach tax neutrality within three years.

Potential tax revenues compared to the counterfactual under tax reform alternatives



Source: Deloitte analysis based on operator, GSMA, IMF and World Bank data

Figure 26

In all scenarios modelled, the Pakistan government has the potential to achieve tax revenue neutrality by 2017, if the policies are applied in 2015. Furthermore, the government could attain a cumulative increase in revenues in the period 2015-2020. This is due to the widening of the tax base following increased economic growth as a result of mobile sector taxation reforms.

The three taxation alternatives imply a potential increase in GDP of up to US$1.1 billion following the reduction in FED/PST, additional investment of up to US$230 million and a potential increase of employment of up to 23,000. This wider economic development could significantly increase living standards within the region, potentially raising 170,000 Pakistanis above the US$1.25 per day poverty threshold. It is estimated that the removal of the SIM tax or income tax would have a lower impact, yet still has the potential to generate US$270 million in GDP, US$57 million in investment and an additional 4,000 jobs for Pakistani citizens. Access to mobile telecommunications could also raise living standards, potentially bringing over 43,000 citizens out of poverty.

By reforming taxes on mobile, the government of Pakistan can promote digital inclusion, increase productivity and generate economic growth, whilst also benefitting from increased tax revenues. This tax reduction could therefore bring significant benefits to all: the government, mobile operators, consumers and the economy as a whole. Moreover, the subsequent spread of mobile services could contribute to the economic and social objectives of Pakistan, improving access to life-enhancing services such as education and health applications and facilitating the country's transition to a knowledge-based economy.

By working in partnership with the mobile operators to minimise the distortions and inefficiencies created by sector-specific taxation, the Pakistani government has the opportunity to make progress on its key ICT and development ambitions.

Development of ICT usage across sectors:

By reducing mobile-specific taxation, the government could increase the number of mobile broadband connections promoting digital inclusion. This has the potential to enable the widespread use of ICT across areas such as healthcare, education and the provision of government services. Moreover, this could provide new opportunities for innovation and the development of new applications and content, fostering further growth within the sector.

Increased economic development:

Based on the modelling described above, the scenarios considered have the potential to increase the usage of mobile services and uptake of mobile broadband and generate up to US$230 million in additional investment and increase GDP by up to US$1.1 billion for Pakistan.

Poverty reduction and support of the move towards a knowledge-based economy:

By increasing economic growth, reformed mobile sector taxation has the potential to bring over 170,000 Pakistanis out of poverty. The development of mobile applications for use in agriculture, healthcare and education, and the creation of local content can also promote higher-skilled employment.

Improved network infrastructure:

Reforming taxation on network equipment has the potential to increase enable the investment required to further improve mobile broadband network infrastructure. Moreover, further international investment could allow for economies of scale for mobile operators, allowing reduced prices for consumers in the longer term and facilitating the spread of mobile broadband.

Sustainable government revenues:

Achieving the government's ICT objectives need not result in a reduction in government revenues in the medium to long term. By increasing productivity and economic growth, a reduction of taxes on the mobile sector has the potential to generate up to almost US$70 million in additional tax revenues by 2020 through the expansion of the tax base.

Appendix A: Methodology

A.1 Estimation of the economic impact of a tax change

In order to conduct the tax scenario analysis, a macroeconomic model was created to describe the mobile sector and the macro-economy of Pakistan. This model is able to forecast the impacts of more than 25 sector-specific and macroeconomic variables up to 2020, which can be driven either by removing or changing current taxes and fees or by the introduction of a new tax or fee.

Firstly, a base case scenario is developed for the mobile sector and economy, where taxes and fees remain at their current level throughout the period 2015-2020. Then, a simulation of alternative policy scenarios quantifies the economic impact of mobile sector taxation reform. It is assumed that the tax policy is implemented in 2015 and the model estimates the effects up to 2020.

Modelling the macroeconomic impact of changes to mobile taxation in Pakistan

As illustrated in Figure 21 in Section 3.1, the following steps are involved in the modelling process:

1. The tax or fee change affects the price of mobile services. This depends on the extent to which the tax reduction is passed onto consumers, modelled by a pass-through rate which determines the percentage of the tax and fee payments that is reflected in the retail price of mobile services. All assumptions in the model are described in more detail in the section below.

2. Changes to the price of mobile services affect their consumption. In order to estimate this, assumptions are made on the price elasticity of demand[73], which measures how much demand for mobile services will change in response to a price change.

3. Changes in prices and consumption alter the amount of revenue generated from mobile services. Increased demand generates additional employment opportunities in the sector, while increased operator revenues enable additional capital expenditure on the development of network infrastructure.

4. These sector impacts lead to economy-wide impacts, which are estimated through assumptions that describe the impact of the mobile sector on the wider Pakistani economy. These effects include the impact on GDP, calculated through a multiplier that links mobile and 3G penetration rates to economic growth, and the effect on employment, calculated through a multiplier which estimates the number of jobs created across the economy for every job created within the telecom sector. The proliferation of mobile services also benefits productivity, quantified through the change in Total Factor Productivity ('TFP').

5. Thanks to additional GDP growth from reformed taxation on mobile, the potential short-term loss of tax revenues from the mobile industry can be offset by tax revenues from more broad-based consumer and operator taxes.

73. An elasticity describes the quantitative impact of a variable on another variable; the usual notation is that a 1% increase in a variable will lead to an x% change in another variable.

The inputs for the model are provided by three of the four leading mobile operators in Pakistan, the GSMA and publicly available statistics from the World Bank and the IMF. The outputs are derived based on estimates of the elasticity of demand for mobile services from a number of developing markets, while the impacts of mobile and broadband penetration on GDP have been derived from econometric studies of similar developing markets.

A.2 Key assumptions behind the model

The assumptions underlying the model have been researched from a review of academic literature and previous studies in this area. These are discussed in more detail below.

Pass-through rates

Taxes and fees paid by mobile operators and consumers may be completely or partly passed-through to the end-consumer prices. The level of pass-through of taxes and fees to final prices will depend on market power and the price elasticity of demand, among other factors. For this analysis, an average pass-through rate of 75% has been assumed for both operator and consumer taxes; this is based on conversations with mobile operators and Deloitte analysis of developing markets in Asia.

Price elasticity of demand

A change in the price of mobile services leads to a change in the consumption of these services, both in terms of ownership and usage. Consumption changes depend on the price elasticity of demand, that is, the responsiveness of consumers to price changes. The assumptions regarding elasticity of demand are based on a review of studies conducted in a number of developing markets on the elasticity rates observed in recent years (countries include Sri Lanka, Turkey and Kenya). The elasticity of demand for mobile subscriptions is assumed to be -0.61[74]. For those that own mobile devices, demand for mobile services is more elastic: the elasticity of demand for mobile services is assumed to be -0.70, based on a number of studies within the field[75].

Employment multiplier

The employment multiplier is used to estimate the impact of a change in employment in the sector on total employment in the economy. The magnitude depends on the economic features of the sector, such as the degree of interconnection across the supply chain. The employment multiplier is assumed to be 11.1[76]. That is, for every additional job created within the mobile sector, an additional 11.1 jobs are generated in the wider Pakistan economy.

Market penetration Impact

There is substantial evidence in the literature on the impact of mobile penetration on GDP growth. Analysis conducted by the GSMA on the impact of mobile and 3G penetration on GDP growth estimated that a 1% increase in market penetration leads to an increase in GDP growth of 0.28 percentage points[77]. In terms of the impact of internet penetration, it is assumed that a 1% increase in internet penetration increases the GDP growth rate by 0.077 percentage points[78]. This model does not consider switching between 2G and 3G services and so these impacts are treated separately[79].

74. Chabossou et al (2009), UK Competition Commission (2003).
75. See, for example: Gruber and Kontroupis (2010): Mobile telecommunications and the impact on economic development, Wheatley, J. J. (1998). Price elasticities for telecommunication services with reference to developing countries or GSMA. (2005). Tax and the digital divide: How new approaches to mobile taxation can connect the unconnected. London: GSMA
76. This figure was based on a number of studies conducted in developing and developed countries; see, for example, Moretti (2010), O2 for ONS (2002), Ovum (2010); Zain, Ericsson (2009),Kaliba et al (2006).
77. This is based on a study of 40 economies over the period 1996-2011; for full details of the methodology, see http://www.gsma.com/publicpolicy/wp-content/uploads/2012/11/gsma-deloitte-impact-mobile-telephony-economic-growth.pdf
78. Qiang, C. Z. W., Rossotto, C.M., 2009. Economic Impacts of Broadband, in Information and Communications for Development 2009: Extending Reach and Increasing Impact, World Bank, Washington D.C., 35-50.
79. That is, given that it is not known whether a new 3G subscriber may previously have been a mobile user, this is treated as an increase in internet penetration only, not as an increase in mobile and internet penetration.

Total Factor Productivity Impact

The impact on TFP is calculated based on the change in GDP, employment and investment. TFP is a measure of economic productivity that accounts for changes in output over and above those expected as a result of increased employment and investment. It is defined as follows:

$$TFP = \frac{GDP}{Capital^{a} Labour^{\beta}}$$ where it is assumed that a = 0.3 and β=0.7[80]

A.3 Scenario simulation results

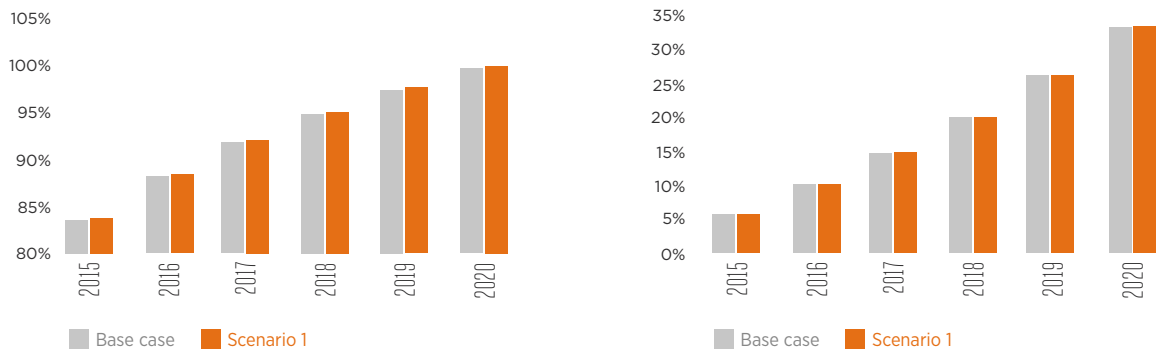
This report uses a taxation policy simulation model in order to assess the impacts of a change in taxation policy on the mobile sector and the wider economy. Three scenarios were addressed and each compared against the base case scenario, where there is no change in tax policy. The overall findings of each scenario are described in more detail in the sections below, on the assumption that the change in tax policy is implemented in 2015.

Scenario 1

Scenario 1 models the abolition of the PKR 250 tax on SIM card sale. This abolition could remove a significant barrier to ownership of mobile telephony, increasing access to the technology across Pakistan and stimulating increased demand for handsets.

In particular, the reduced cost of acquiring a mobile phone following the removal of the SIM tax could stimulate an additional 500,000 mobile connections in the region, 170,000 of which could be mobile broadband enabled. This could raise total market penetration by 0.24% relative to the base case in 2020, extending access to mobile telephony across Pakistan. The increased availability of mobile phones could also increase usage of mobile services, with a forecasted increase of 1.7 billion minutes of use relative to the base case in 2020.

Potential impact on total mobile penetration (left) and mobile broadband penetration (right) relative to the base case in 2020



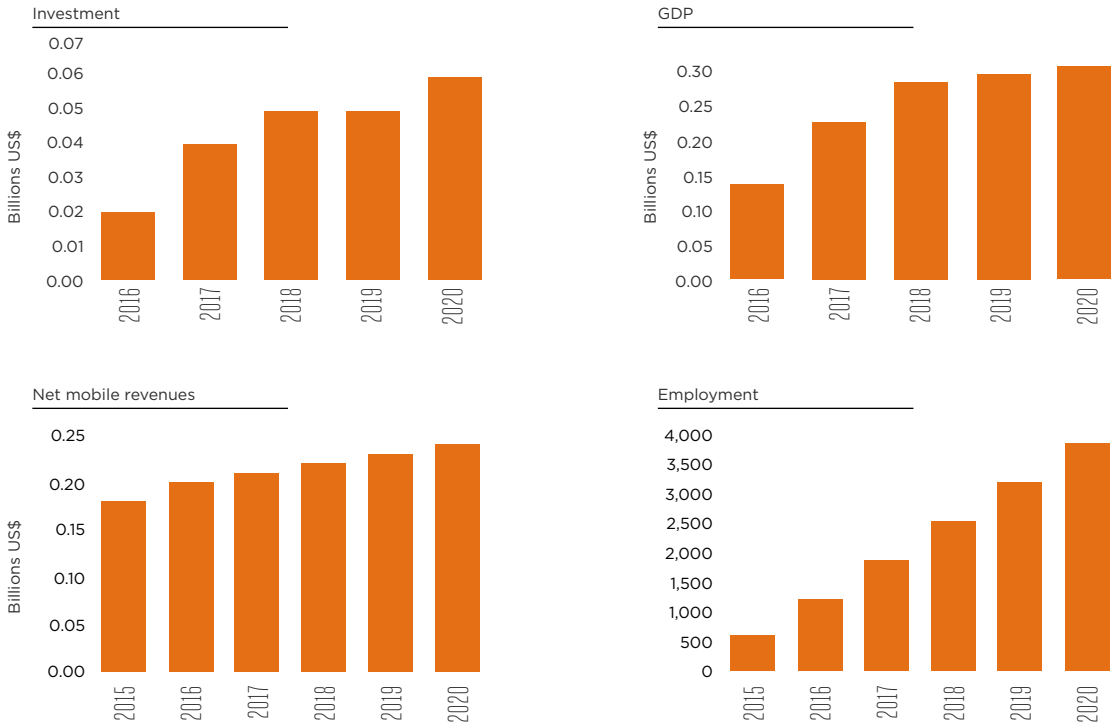
Source: Deloitte analysis based on operator, GSMA, IMF and World Bank data

Figure 27

80. Bassanini A and Scarpetta S (2001), "The Driving Forces of Economic Growth: Panel Data Evidence for the OECD countries"

The increase in connections could subsequently benefit both the mobile sector and wider economy. Increased demand for handsets and usage of mobile services could increase operator revenues by US$25 million, enabling an additional US$2.4 million of capital expenditure, which could be used for expanding additional sites across Pakistan, further increasing coverage of 2G and mobile broadband services. Increased economic activity and the development of technology and innovation as a result of the growth of the mobile sector could then be reflected in an additional US$270 million and US$57 million in GDP and investment respectively relative to the base case in 2020, whilst employment could also rise by over 4,000 relative to the base case. Increased access to mobile telephony, together with wider economic development, could reduce the number of people living in poverty by 43,000.

Potential impact on macroeconomic indicators relative to the base case in 2020

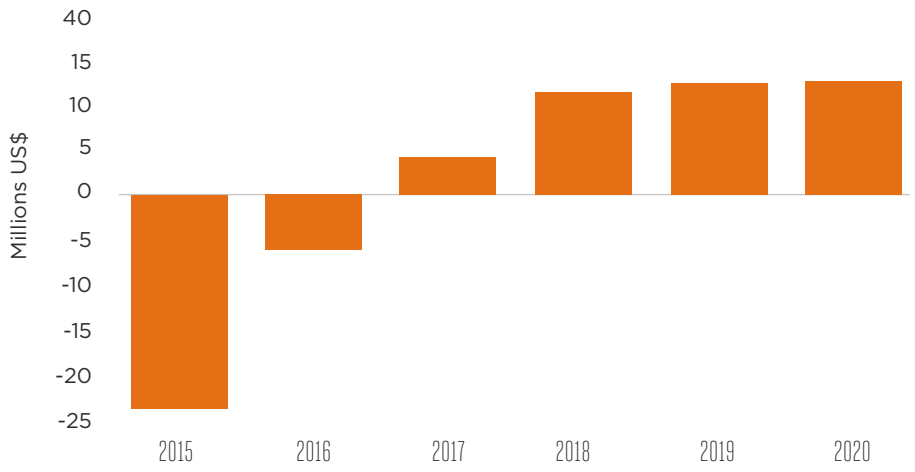


Source: Deloitte analysis based on operator, GSMA, IMF and World Bank data

Figure 28

As a consequence of wider economic growth, it is estimated that the government of Pakistan could also benefit from increased tax revenues in 2020 relative to the base case. Although tax revenues could fall in the first years following the abolition of the SIM card tax, the expansion of the tax base following wider economic growth could allow for tax neutrality in 2017 and an increase in tax revenues of US$2.5 million relative to the base case in 2020.

Potential tax revenues relative to the base case in 2020



Source: Deloitte analysis based on operator, GSMA, IMF and World Bank data

Figure 29

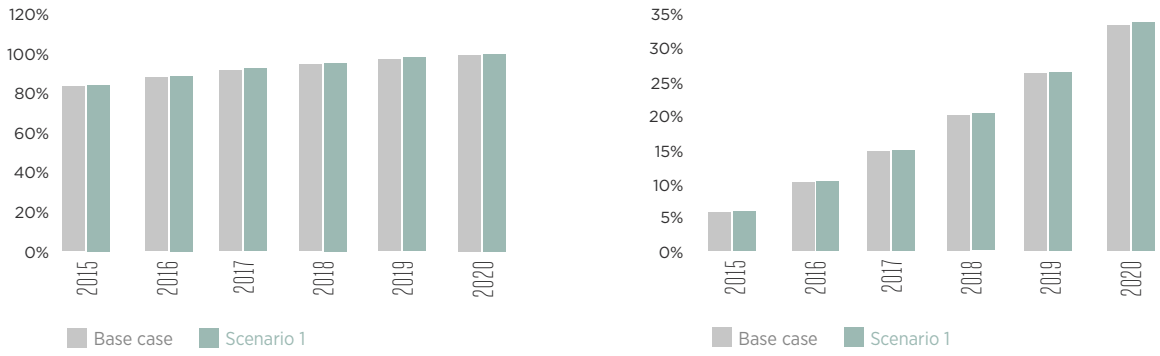
Scenario 2

Scenario 2 models the reduction of the PST/FED on all mobile services to 17%, in line with other sectors. In 2013, mobile operators paid US$510 million in PST/FED on mobile services, and reducing the level of the tax to 17% could reduce this payment by just over US$65 million[81].

It is estimated that the reduction in the cost of mobile ownership could stimulate an additional 2 million connections in 2020 relative to the base case, with 670,000 of these mobile broadband enabled. This represents a 0.98% increase in total mobile penetration relative to the base case. Furthermore, the reduced cost of mobile usage could generate an additional 6.6 billion minutes in 2020 compared to the base case scenario where taxes and fees remain unchanged.

81. Source: Deloitte analysis

Potential impact on total mobile (left) and mobile broadband penetration (right) relative to the base case in 2020



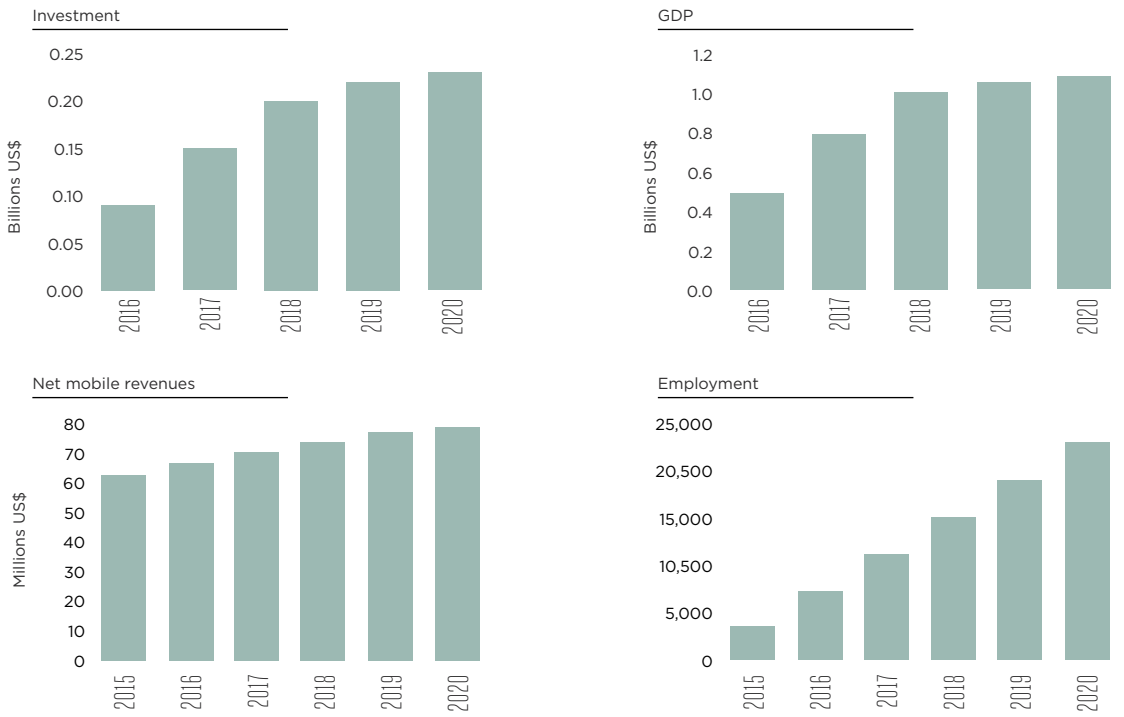
Source: Deloitte analysis based on operator, GSMA, IMF and World Bank data

Figure 30

Positive spillovers across the economy as a consequence of this growth could stimulate an additional US$1.1 billion in GDP and US$230 million worth of investment in 2020 relative to the base case. This could create employment opportunities for nearly 23,000 Pakistanis, whilst this workforce could also be 0.3% more productive. Furthermore, wider economic development and employment opportunities following growth within telecommunications could reduce the number of people living below US$1.25 per day by 174,000, helping the Pakistani government to achieve its development objectives.

The increase in demand for handsets and usage could also benefit mobile operators in the form of an additional US$80 million in total sector revenues. This could allow mobile operators to increase capital expenditure on the development of network capacity by US$15 million relative to the base case in 2020, which could deliver additional 2G and mobile broadband sites across the region.

Potential impact on macroeconomic indicators relative to the base case in 2020

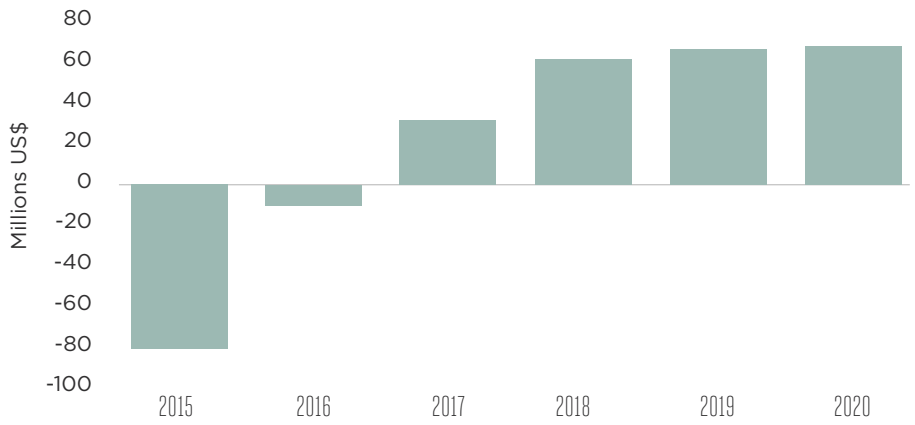


Source: Deloitte analysis based on operator, GSMA, IMF and World Bank data

Figure 31

Together with this macroeconomic improvement, the government of Pakistan stands to benefit from increased tax revenues as a result of wider economic growth and the expansion of the tax base. It is estimated that the government could achieve revenue neutrality by 2017 and a cumulative benefit of US$69 million in 2020.

Potential tax revenues relative to the base case in 2020



Source: Deloitte analysis based on operator, GSMA, IMF and World Bank data

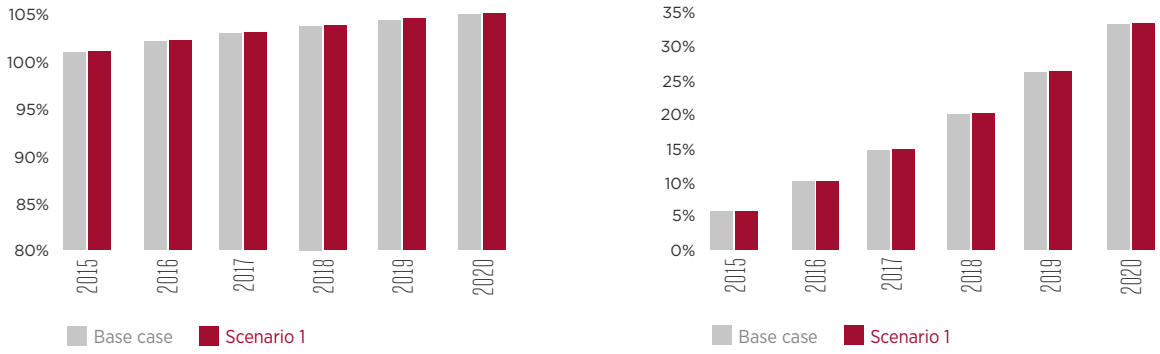
Figure 32

Scenario 3

The third scenario models the deduction of the 5.5% income tax on imported network equipment. This could stimulate demand for mobile devices, meanwhile reducing barriers to operator investment in the coverage and quality of mobile networks.

The abolition of the income tax could reduce the cost of acquiring a mobile device, increasing total connections by 900,000, of which 300,000 could be mobile broadband enabled. It is estimated that this could represent an increase in total mobile penetration of an additional 360,000 unique subscribers relative to the base case in 2020, further contributing to the spread of both basic telephony and internet services across the region.

Potential impact on total mobile (left) and mobile broadband penetration (right) relative to the base case in 2020

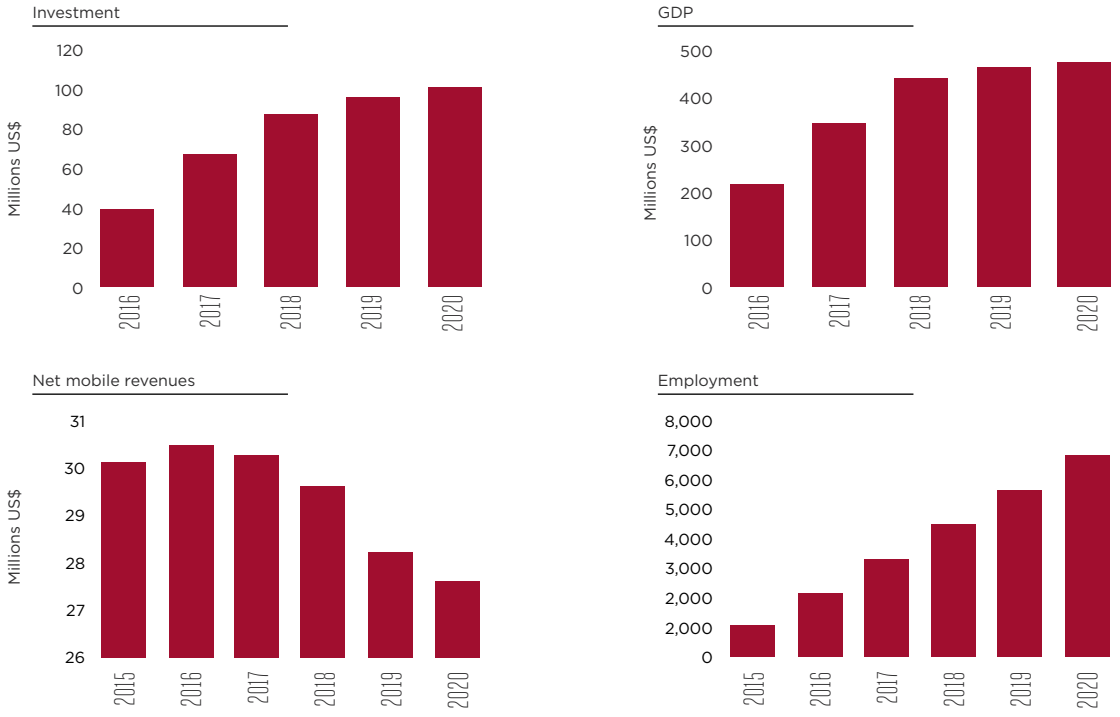


Source: Deloitte analysis based on operator, GSMA, IMF and World Bank data

Figure 33

The spread of 2G and mobile broadband handsets could subsequently benefit both the growth of the sector and the wider economy in Pakistan. The increase in acquisition and usage of mobile services could raise net operator revenues by US$28 million relative to the base case in 2020, enabling an additional US$4 million of capital expenditure. The positive spillovers from the mobiles sector, particularly towards the development of technology and knowledge-based sectors in Pakistan, could subsequently increase GDP and investment across Pakistan by US$480 million and 102 million respectively, whilst also increasing employment by 7,000 relative to the base case in 2020. Wider economic development, combined with employment opportunities and access to the benefits of mobile telephony could also reduce the number of citizens living in poverty by 77,000.

Potential impacts on macroeconomic indicators relative to the base case in 2020

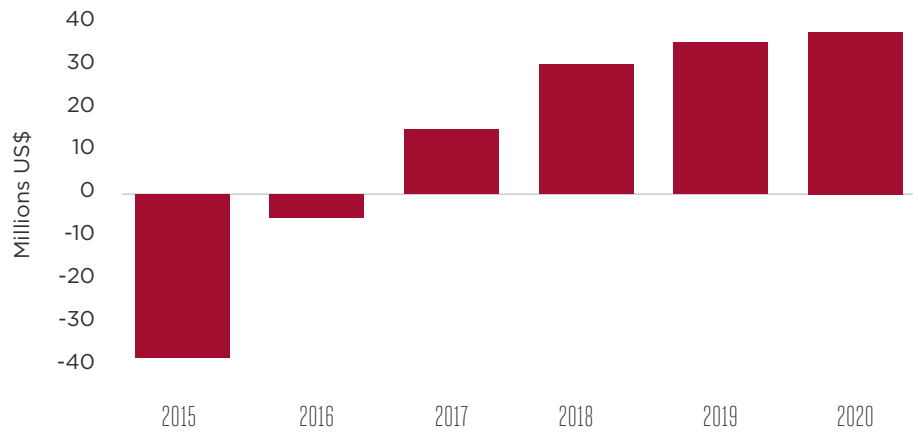


Source: Deloitte analysis based on operator, GSMA, IMF and World Bank data

Figure 34

The growth of the mobile sector and wider economy, following the removal of the income tax, could subsequently increase the tax base and hence government tax revenues over time. It is estimated that by 2017 the government of Pakistan could achieve revenue neutrality, following an initial loss of US$38 million in 2015. Indeed over the period 2015-2020, the government could potentially achieve a cumulative benefit of US$75 million from removing the income tax, contributing to the government budget position while delivering the widespread economic benefits associated with the proliferation of mobile services.

Potential tax revenues relative to the base case in 2020



Source: Deloitte analysis based on operator, GSMA, IMF and World Bank data

Figure 35

Reducing mobile-specific section would lead to growth of the mobile sector and wider economy, and could subsequently increase the tax base and hence government tax revenues over time.

Glossary of Terms

Term	Description
ARPU	Average Revenue per User
CAGR	Compounded Annual Growth Rate
GDP	Gross Domestic Product
FDI	Foreign Direct Investment
FED	Federal Excise Duty
IMF	International Monetary Fund
PST	Provincial Sales Tax
TCMO	Total Cost of Mobile Ownership, includes the cost of purchasing a handset or mobile device, and the recurring cost of using it
TFP	Total Factor Productivity
Industrial Undertaking	For taxation purposes, an Industrial Undertaking can be defined as follows: 1. An undertaking established in Pakistan and which employs, (i) ten or more persons in Pakistan and involves the use of electrical energy or any other form of energy which is mechanically transmitted and is not generated by human or animal energy, or (ii) twenty or more persons in Pakistan and does not involve the use of electrical energy or any other form of energy which is mechanically transmitted and is not generated by human or animal energy and which is engaged in either the manufacture of goods or materials or the subjection of goods or materials to any process which substantially changes their original condition; or 2. Any other industrial undertaking which the Central Board of Revenue may by notification in the official Gazette, specify
Mobile penetration	Mobile cellular subscribers per 100 inhabitants
Poverty line	The minimum level of income regarded as adequate to secure access to basic necessities. The common international poverty line, as defined by the World Bank, is US$1.25 at 2005 purchasing power parity (PPP)
Revenue neutrality	Taxing practice that enables government to receive the same level of tax revenues, despite changes in tax laws

GSMA Head Office
Level 2, 25 Walbrook
London, EC4N 8AF,
United Kingdom
Tel: +44 (0)207 356 0600

www.gsma.com