



Reforming mobile sector taxation in Uzbekistan:

Unlocking economic and social benefits
through tax reform in the mobile sector





About the GSMA

The GSMA represents the interests of mobile operators worldwide, uniting more than 750 operators with over 350 companies in the broader mobile ecosystem, including handset and device makers, software companies, equipment providers and internet companies, as well as organisations in adjacent industry sectors. The GSMA also produces industry-leading events such as Mobile World Congress, Mobile World Congress Shanghai, Mobile World Congress Americas and the Mobile 360 Series of conferences.

For more information, please visit the GSMA corporate website at www.gsma.com

Follow the GSMA on Twitter: [@GSMA](https://twitter.com/GSMA) and [@GSMAPolicy](https://twitter.com/GSMAPolicy)

Report published September 2018

EY | Assurance | Tax | Transactions | Advisory

About EY

EY is a global leader in assurance, tax, transaction and advisory services. The insights and quality services we deliver help build trust and confidence in the capital markets and in economies the world over. We develop outstanding leaders who team to deliver on our promises to all of our stakeholders. In so doing, we play a critical role in building a better working world for our people, for our clients and for our communities.

EY refers to the global organization, and may refer to one or more, of the member firms of Ernst & Young Global Limited, each of which is a separate legal entity. Ernst & Young Global Limited, a UK company limited by guarantee, does not provide services to clients. For more information about our organization, please visit ey.com

Disclaimer

This report (Report) was prepared by Ernst & Young LLP for the GSM Association using information provided by the GSM Association and data from publicly available sources.

Ernst & Young LLP does not accept or assume any responsibility in respect of the Report to any readers of the Report (Third Parties), other than GSM Association. To the fullest extent permitted by law, Ernst & Young LLP will accept no liability in respect of the Report to any Third Parties. Should any Third Parties choose to rely on the Report, then they do so at their own risk.

Ernst & Young LLP has not been instructed by its client, GSM Association, to respond to queries or requests for information from any Third Party and Ernst & Young LLP shall not respond to such queries or requests for information. Further Ernst & Young LLP is not instructed by GSM Association to update the Report for subsequent events or additional work (if any) performed by Ernst & Young LLP. Accordingly, without prejudice to the generality of the foregoing, Ernst & Young LLP accepts no responsibility to any Third Party to update the Report for such matters.

Ernst & Young LLP reserves all rights in the Report.

Contents

Executive summary	5
1. The Uzbek economy, the role of the mobile sector and opportunities for growth	9
1.1 Country overview	9
1.2 Market overview	11
1.3 The socio-economic contribution of the mobile sector	18
2. Tax contribution of the mobile sector in Uzbekistan	21
2.1 Taxation of mobile consumers and operators	21
2.2 Tax contribution of the mobile sector	23
2.3 Mobile sector taxation compared to other sectors	27
3. Designing a more efficient tax framework for the mobile sector	28
3.1 Principles of taxation applying to the mobile sector	29
3.2 An assessment of the mobile sector taxation in Uzbekistan	31
3.3 Options for tax reform in the mobile sector in Uzbekistan	32
3.4 Digital opportunities for a more efficient tax system	34
4. Economic impacts of tax reform on the mobile sector in Uzbekistan	36
4.1 Recommended options for tax reform	36
4.2 Approach to assessing the quantitative impacts of tax reform on the mobile market and the wider economy	36
4.3 Phased reduction in corporation tax	38
4.4 Reducing the monthly subscriber fee	40
4.5 Eliminating SIM card fees	42
5. Conclusion: Reforming mobile sector taxation in Uzbekistan	45
Appendix A Methodology	47
Appendix B Scenario estimations	57



Executive summary

Mobile telephone services are playing an increasingly important role in supporting economic growth and social inclusion across the world. Mobile penetration, and specifically 3G and 4G penetration, enhances digital connectivity by expanding internet and broadband access, which in turn facilitates the reduction of barriers for trade, commerce, communication, service delivery, and human development. Examples of these benefits are seen in the form of financial inclusion via mobile payment platforms, digitally enabled local entrepreneurship, innovative health and education delivery systems, and growing numbers of e-government initiatives.

Conducive regulatory conditions offer the mobile industry the support it needs in order to thrive and maximise the opportunities available to consumers, businesses and governments. Within this, taxation is an important factor, and there is a need to achieve the right balance between tax revenue maximisation, and incentivising investment and economic growth.

In order to assess the potential benefits of a more efficient tax structure in the mobile sector, one which focuses on facilitating investment and unlocking digital inclusion, the GSMA¹ has commissioned EY to undertake a study of the economic impact of potential tax reforms on the Uzbek mobile sector.

This report analyses recent developments and the tax structure in the mobile market of Uzbekistan, sets out potential options for tax policy reform, and estimates the impacts of these policy options on: the mobile sector, the wider economy and the Government's fiscal position.

The Uzbek mobile market has expanded rapidly, but there is scope for further growth in penetration and migration of subscribers to modern technologies

In Uzbekistan, the mobile industry is playing a significant role in driving economic growth and digital inclusion across the country. The number of mobile

subscribers has grown from 6.4 million in 2008 to 19.2 million in 2018, representing 59% unique subscriber penetration.² Mobile sector expansion in Uzbekistan has been enabled by significant investment by mobile operators over the last decade, which has seen the network develop such that, in 2017, 90% of the population were covered with 3G networks and 80% by 4G networks.³

Total mobile sector revenues were \$1.2 billion in 2017, equivalent to 2.5% of Uzbek gross domestic product (GDP), while the sector contributed approximately \$868 million of direct economic value to Uzbekistan in 2017 (1.9% of GDP).⁴ The sector also supports a much wider mobile ecosystem that includes mobile content developers, mobile distribution providers and retail companies.

As a significant part of the population (around 34% of the addressable market)⁵ is not connected to the mobile network and about half of existing subscribers are not connected to mobile broadband services, despite the high levels of network coverage, there exists considerable room for expansion in the mobile sector in Uzbekistan.

There is also scope to improve network quality in Uzbekistan. Whilst population coverage is high, download speeds are low relative to regional peers in Central Asia⁶ and Eastern Europe. Improving download speeds would improve the user experience, and enable the use of new, higher bandwidth services, which in turn would incentivise take-up of mobile broadband.

Given a relatively low level of fixed broadband penetration in Uzbekistan (8.8% in 2016),⁷ incentivising further investment to improve the quality of 3G and 4G networks, as well as improving the affordability of mobile services should become a policy priority for the Government. Facilitating the growth of the mobile sector aligns with the Government's broader economic and social objectives for the Uzbek economy, which

1. GSMA, <https://www.gsma.com/aboutus/>.

2. There is an important difference between the number of mobile connections – the metric traditionally used by the industry to measure market size and penetration – and the term 'unique mobile subscribers'. The latter refers to a single individual that has subscribed to a mobile service and that person can hold multiple mobile connections (i.e. SIM cards).

3. GSMA Intelligence database.

4. *ibid.*

5. *ibid.*

6. Central Asian region includes Uzbekistan, Kazakhstan, Kyrgyzstan, Tajikistan and Turkmenistan.

7. This is calculated as the total number of fixed telephone lines divided by the population. Source: World Bank databank.

are set out in *National Development Strategy for 2017-21*. This includes maintaining high growth rates, increasing investment, improving the role of services in the economy and modernising key industries. It would also contribute towards achieving the ambition expressed by the President of Uzbekistan to significantly increase the internet speed while reducing the cost of access.⁸

As it currently stands, for a low consumption basket (500MB of data), the poorest 20% of the population in Uzbekistan spend approximately 11.7% of their monthly income on mobile ownership, while a medium consumption basket costs them as much as 13.7% of monthly income.⁹ Significant improvements in affordability are therefore required to achieve the United Nations (UN) current 5% affordability target¹⁰ and make progress towards achieving the UN “1 for 2” (1 GB of data costing less than 2% of monthly income) target set for 2025.¹¹

At present, Uzbekistan lags behind a number of regional peers in Central Asia and Eastern Europe in terms of unique subscriber penetration and download speeds. By facilitating investment in the mobile sector and improving the affordability of mobile services, the Government can help to expand the mobile sector and wider economy in Uzbekistan.

Taxes on the mobile sector are high compared to levels in other countries in Europe and Asia. Historically this may have increased competitive pressures on the industry, thereby limiting the growth potential of the mobile sector in Uzbekistan

The mobile sector makes a large contribution in taxes and fees relative to its economic footprint. In 2017, the total tax contribution was estimated at \$430m. This represents 37% of the total market revenue. This is higher than the mobile tax burden in Pakistan (31%), Jordan (31%), Sri Lanka (28%), the UK (25%), Italy (24%) and Spain (23%).

Uzbekistan has a high proportion of operator’s payments (21% as a share of the total market revenue). This exceeds the levels seen in Sri Lanka (9%), Jordan (9%), Pakistan (8%), Italy (5%), Spain (4%) and the UK (1%).

Uzbekistan also has a large share of mobile-specific taxes (16% of the total market revenue). This exceeds the levels seen in Pakistan (12%), Italy (4%), Spain (3%)

and UK (0%). The main source of the mobile-specific burden are the regulatory fees, which constitute 38% of the total tax payments made by the industry. This is mainly due to the high subscriber fees paid by the operators. Such a high tax burden can place constraints on the capacity of mobile operators to invest and expand the mobile network.

Through policy reform, the Government of Uzbekistan has the opportunity to simplify and rebalance the taxation of the mobile sector, supporting job creation and a better business climate

The Uzbek economy has expanded at an average rate of 7.4% per annum between 2012 and 2017. Recently, this growth has slowed down (5.3% in 2017) as a consequence of adverse external shocks, such as reduced commodity prices and exports and a decline in remittances from migrant workers. However, the economic outlook is expected to be more positive driven by the reforms initiated by the Government, with the rate of economic growth forecast to increase, reaching 6.0% in 2021.¹²

The reform agenda is supported by the *National Development Strategy for 2017-21* and includes liberalisation of prices and exchange rates, structural reforms of state-owned enterprises and granting greater independence to the Central Bank of Uzbekistan. These reforms are aimed at supporting high rates of economic growth to meet Uzbekistan’s goal of becoming an upper-middle income country by 2030.¹³

Promoting greater investment in the mobile industry aligns with this strategy and, due to the links between the telecoms sector and the wider economy, can be used as a vehicle to achieve the underlying objectives of modernising key economic sectors, facilitating foreign investment and improving Uzbekistan’s telecommunications infrastructure.

Tax reform in the sector should unlock investment in Uzbekistan’s mobile network and improve affordability, promoting greater adoption of mobile services. The growth in the sector should also generate higher GDP and taxation revenue for the Government in the medium-term

Uzbekistan has recently announced reforms with the aim of simplifying the tax system, balancing the tax burden, and making it more conducive to investment.¹⁴

8. Ferghana.news, <http://enews.ferghananews.com/news.php?id=3700&mode=snews>.

9. GSMA Intelligence database, Tarifica.

10. This threshold has been set by the UN Broadband Commission for Sustainable Development. According to it, mobile expenditure (based on prepaid handset-based 500MB) above 5% of GNI per capita is considered unaffordable. Source: http://broadbandcommission.org/Documents/ITU_discussion-paper_Davos2017.pdf.

11. Alliance for Affordable Internet, 2017, 2017 Affordability Report, <https://a4ai.org/affordability-report/report/2017/>.

12. International Monetary Fund, 2018, Republic of Uzbekistan: 2018 Article IV Consultation--Press Release; Staff Report; and Statement by the Executive Director for the Republic of Uzbekistan, <https://www.imf.org/en/Publications/CR/Issues/2018/05/11/Republic-of-Uzbekistan-2018-Article-IV-Consultation-Press-Release-Staff-Report-and-Statement-45873>.

13. With GNI per capita of \$1,980 in 2017, Uzbekistan is currently classified as a lower-middle income economy by the World Bank. Source: World Bank, <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>.

14. *On the Concept of Improving the Tax Policy of the Republic of Uzbekistan. Decree of the President of the Republic of Uzbekistan.* <http://uza.uz/ru/documents/o-kontseptsijsovershenstvovaniya-nalogovoy-politiki-respubl-30-06-2018>.

Aligned with these objectives, this report identifies three additional options for tax reform on the mobile sector, in order to unlock further investment and to continue to promote growth in the sector and the wider economy. These reforms are forecast to lead to increased penetration, an acceleration in the rate of technology migration to smartphones and 3G/4G connections, and generate higher GDP and taxation revenue in the medium-term:¹⁵

- **Phased reduction in corporation tax:** A phased reduction in corporation tax is modelled to take place in three stages, with the first stage being the planned elimination of the excess profits tax in 2019. In addition, further reductions in corporation tax to 16% and 12% have been modelled in the following two years. This reform should allow mobile operators to increase their investment to enhance network coverage and network quality, improving the user experience of mobile services and incentivising customer migration to modern technologies. This should also increase mobile penetration overall through lower prices for consumers. The expected impacts of this tax reform on the mobile sector and wider economy¹⁶ are as follows:
 - Mobile broadband penetration (unique subscribers) would increase by 1.0% by 2023, and mobile data usage per connection would grow by 1.1%. Sector revenues would be \$20 million higher per annum (1.5%); and
 - GDP would grow by \$76 million (0.16%), and annual tax receipts would be \$8 million higher per annum by 2023, with cumulative tax receipts becoming positive by 2024.
- **Reducing the monthly subscriber fee:** Reducing the monthly subscriber fee by 50% from UZS 4,000 to UZS 2,000.¹⁷ A significant proportion of the fee saving has been modelled to pass on to mobile subscribers in the form of lower prices, improving the affordability of mobile services and increasing levels of mobile penetration. This reform is forecast to have the following impacts:
 - Mobile broadband penetration (unique subscribers) would increase by 3.1% by 2023, and mobile data usage per connection would grow by 5.7%. Sector revenues would be \$67 million higher per annum (4.9%); and
 - GDP would grow by \$248 million (0.53%), and

annual tax receipts would be \$47 million higher per annum by 2023, a cumulative fiscal gain of \$72 million over five years.

- **Eliminating SIM card fees:** The elimination of SIM card fees on both new SIM cards and SIM cards currently in use would make mobile services cheaper and should stimulate the expansion in the mobile sector and in the wider economy. This reform is forecast to have the following impacts:
 - Mobile broadband penetration (unique subscribers) would increase by 0.7% by 2023, and mobile data usage per connection would grow by 1.2%. Sector revenues would be \$15 million higher per annum (1.1%); and
 - GDP would grow by \$49 million (0.11%), and annual tax receipts would be \$8 million higher per annum by 2023, a cumulative fiscal gain of \$9 million over five years.

The growth in the sector, under all scenarios, should also lead to wider societal benefits, through increased access to mobile data and broadband services, particularly among lower income communities, as more than 60% of new subscribers come from low-income groups in all scenarios.

Short-term revenue benefits from excessive or distortive taxation of the mobile sector could come at the expense of longer-term gains of increased connectivity, higher economic efficiency and growth. The boost to mobile broadband penetration should lead to growth in productivity across the economy, and hence an increase in GDP, household incomes, employment and investment. All scenarios should aid the Uzbek Government in meeting the goals of the *National Development Strategy for 2017-21*, due to the positive impact that the mobile sector has on other sectors, and the economy as a whole.

Moreover, the reforms are shown to be self-financing in terms of their impact on government revenues in the medium-term, and should generate significant tax revenues by 2023. In addition, a more conducive tax system for the investment and development of the mobile sector should enable further modernisation of tax administration and make tax collection more efficient. This would help to broaden the tax base and raise additional revenue for the Government, thanks to innovative solutions, such as person to government (P2G) payments and e-government initiatives.

15. The forecasts provided in this report estimate the isolated impacts of tax reform on the Uzbek mobile industry relative to a baseline forecast for the development of the sector sourced from GSMAi. They do not capture other market developments and/or external market shocks, and as such should not be seen as comprehensive forecasts for the sector.

16. A model of the Uzbek mobile sector has been developed in order to calculate the changes in the mobile sector resulting from each of the tax policy scenarios, while the wider economic impacts of each scenario are assessed via a 'Computable General Equilibrium' (CGE) model, namely the standard version of the Global Trade Analysis Project (GTAP) model and its associated dataset.

17. This is a fee paid monthly by Uzbek operators per each mobile phone number.





1. The Uzbek economy, the role of the mobile sector and opportunities for growth

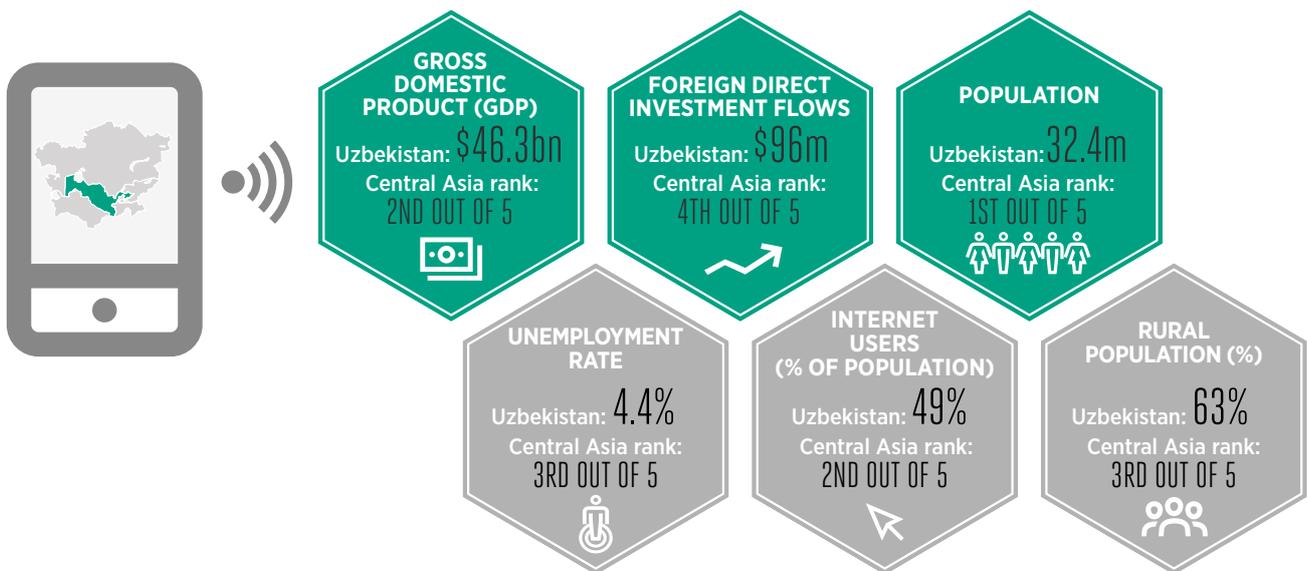
1.1 Country overview

Figure 1 provides an overview of key economic and demographic statistics for Uzbekistan. Uzbekistan is the most populous country in Central Asia¹⁸, with a population of 32.4 million individuals, 63% of whom reside in rural areas.¹⁹ It has the 2nd largest economy in Central Asia, behind Kazakhstan, with gross

domestic product (GDP) estimated at \$46.3 billion in 2017.²⁰ Compared to regional peers, Uzbekistan performs favourably in terms of internet usage and unemployment. However, it lags behind others with regards to foreign direct investment.

Figure 1

Country overview



Source: Oxford Economics database, World Bank databank, United Nations Conference on Trade and Development (UNCTAD), EY analysis

18. Central Asian region includes Uzbekistan, Kazakhstan, Kyrgyzstan, Tajikistan and Turkmenistan.

19. World Bank databank.

20. Oxford Economics database.

1.1.1 The Uzbek economy

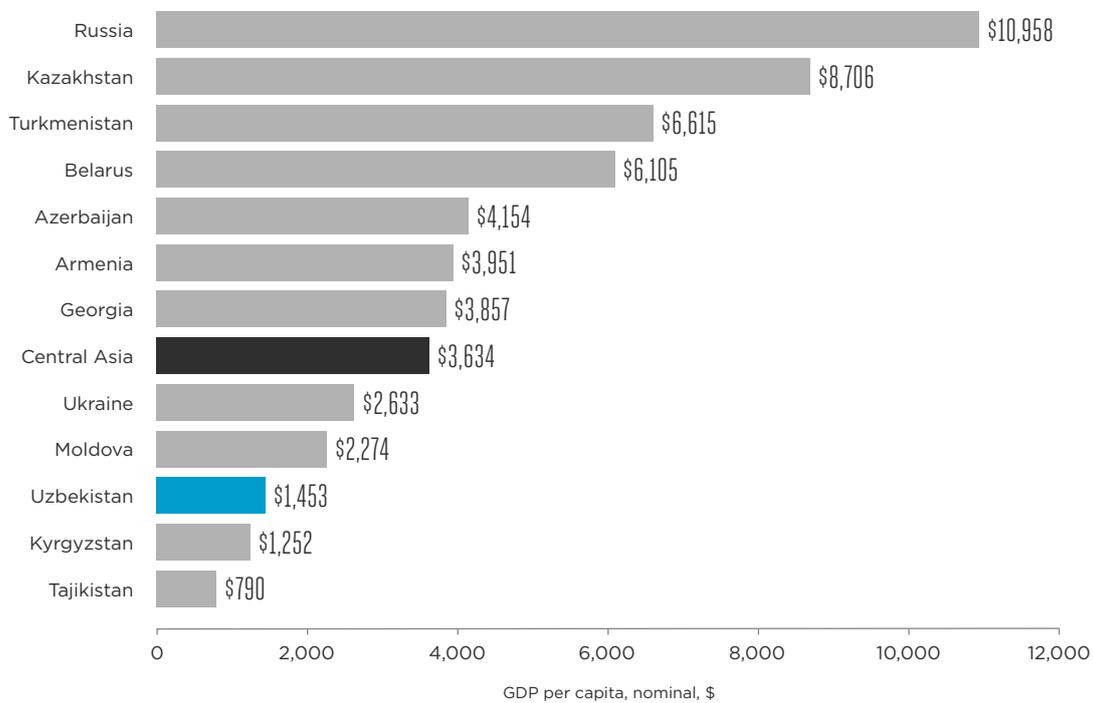
The Uzbek economy is experiencing a period of transformation, with growth expected to pick up on the back of recent economic reforms

This is significantly below the average for Central Asia and the levels observed in Eastern European countries, and ranks Uzbekistan as a lower middle-income country.²¹

As shown in Figure 2, GDP per capita is below the average for the region, at approximately \$1,453 in 2017.

Figure 2

GDP per capita (nominal \$) in comparator countries, 2017



Source: Oxford Economics database

Uzbekistan has demonstrated a high average rate of economic growth of 7.4% between 2012 and 2017, though growth slowed to 5.3% in 2017 and is forecast to be 5.1% in 2018.²² The recent slowdown in growth is primarily explained by a series of external shocks beginning in 2014, most notably lower commodity prices and exports and a sharp decline in remittances from migrant workers.²³ However, the rate of economic growth is forecast to pick up again and reach 6.0% in 2021²⁴, supported by a series of economic and social

reforms enacted by the Government during 2017 with the adoption of the *National Development Strategy for 2017-21*.²⁵

The reforms included liberalising prices, cutting tariffs, initiating structural reforms of state enterprises, granting the Central Bank of Uzbekistan greater independence, enhancing social safety, and improving the availability of economic statistics. In addition, the Uzbek Government decided to unify the official

21. World Bank, 2018, <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>.

22. Oxford Economics database.

23. Asian Development Bank, 2017, *Responding to External Shocks Hitting the Economy of Uzbekistan*.

24. International Monetary Fund, 2018, *Republic of Uzbekistan: 2018 Article IV Consultation--Press Release; Staff Report; and Statement by the Executive Director for the Republic of Uzbekistan*, <https://www.imf.org/en/Publications/CR/Issues/2018/05/11/Republic-of-Uzbekistan-2018-Article-IV-Consultation-Press-Release-Staff-Report-and-Statement-45873>.

25. Uzbekistan Government, 2017, *National Development Strategy for 2017-21*, <http://strategy.gov.uz/en>.

and parallel market foreign exchange (FX) rates in September 2017, which led to a depreciation of the official exchange rate by around 50%.²⁶

In the short-term, FX and trade liberalisation is expected to result in increased inflation and imports, which are forecast to rise by 19.5% and 5.5% respectively, while the exchange rate depreciation may support the country's exports.²⁷ However, in the medium-term, the International Monetary Fund (IMF) and World Bank both expect the reforms to generate economic benefits, improving the business climate and supporting private investment (both domestic and foreign).²⁸ The reforms are also intended to boost job creation, especially in the private sector, meeting the needs of a growing Uzbekistan population.²⁹

By promoting an improved business climate, increasing productivity and developing infrastructure, the mobile sector can play a key role in achieving Uzbekistan's goal of reaching upper-middle income status by 2030.

1.1.2 Fiscal outlook

Despite the challenges of reform, the Uzbek Government's fiscal policy is expected to be less expansionary in order to contain inflationary pressures

The liberalisation of exchange rates in September 2017 has led to growth in the budget deficit, as the

Government drew on fiscal buffers to cover the debts of large banks and public enterprises which were affected. Expansionary fiscal and monetary policies, along with price liberalisation and exchange rate devaluation, led to a significant increase in inflation, reaching almost 20% at the beginning of 2018.³⁰

The Government has made efforts through tightening fiscal and monetary policy to reduce high inflation and prevent it from becoming "hard-wired" into medium-term inflation expectations. This has been achieved by cutting lending operations to reduce credit growth and increasing the refinancing rate. Less expansionary fiscal and monetary policies are forecast to bring inflation levels down to single-digit levels by 2021.³¹

Apart from fiscal tightening, the Government has also launched a more comprehensive tax reform aimed at improving the tax system, improving tax administration and increasing tax transparency. The reform includes plans to simplify the tax system, significantly reduce the tax burden, distribute the tax burden more equally between enterprises and restructure state enterprises. Mobile sector taxation should be an integral part of this reform, as this would improve tax equity and fairness and contribute to the improvement of the investment climate in the country.

1.2 Market overview

The mobile market in Uzbekistan has expanded rapidly over the past decade, with unique subscriber penetration increasing from 23% in 2008 to over 59% in 2018. However, as demonstrated in Figure 3, which provides an overview of the Uzbek mobile market,

there is significant potential to further develop the sector (e.g. to increase the level of 4G penetration and smartphone usage) and to contribute towards medium-term economic and social reforms enacted by the Uzbek Government.

26. International Monetary Fund, 2018, *Republic of Uzbekistan: 2018 Article IV Consultation--Press Release; Staff Report; and Statement by the Executive Director for the Republic of Uzbekistan*, <https://www.imf.org/en/Publications/CR/Issues/2018/05/11/Republic-of-Uzbekistan-2018-Article-IV-Consultation-Press-Release-Staff-Report-and-Statement-45873>.

27. Oxford Economics database.

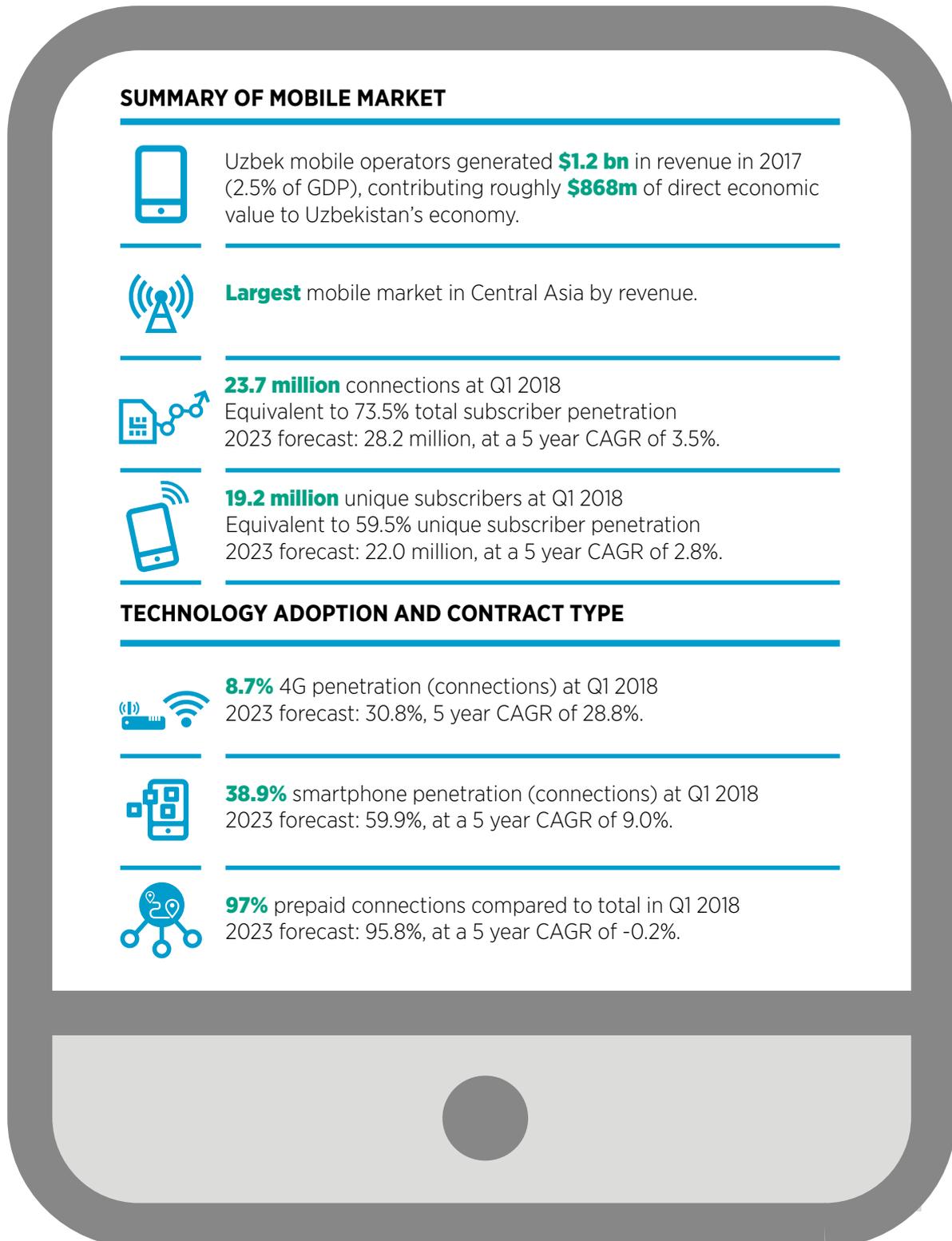
28. International Monetary Fund, 2018, *Republic of Uzbekistan: 2018 Article IV Consultation--Press Release; Staff Report; and Statement by the Executive Director for the Republic of Uzbekistan*, <https://www.imf.org/en/Publications/CR/Issues/2018/05/11/Republic-of-Uzbekistan-2018-Article-IV-Consultation-Press-Release-Staff-Report-and-Statement-45873> and World Bank, 2018, *Uzbekistan Overview*, <https://www.worldbank.org/en/country/uzbekistan/overview#2>.

29. World Bank, 2016, *FY16-20 Country Partnership Framework for Uzbekistan*, https://consultations.worldbank.org/Data/hub/files/consultation-template/uzbekistan-country-partnership-framework-fy2016-20openconsultationtemplate/materials/uzbek_cpf_consultations_eng_0.pdf.

30. International Monetary Fund, 2018, *Republic of Uzbekistan: 2018 Article IV Consultation--Press Release; Staff Report; and Statement by the Executive Director for the Republic of Uzbekistan*, <https://www.imf.org/en/Publications/CR/Issues/2018/05/11/Republic-of-Uzbekistan-2018-Article-IV-Consultation-Press-Release-Staff-Report-and-Statement-45873>.

31. *ibid.*

Figure 3

Uzbek mobile market in figures³²

Source: GSMA Intelligence database, EY analysis

32. Compound annual growth rate (CAGR) is the mean annual growth rate for the period.



1.2.1 Market penetration and technology migration

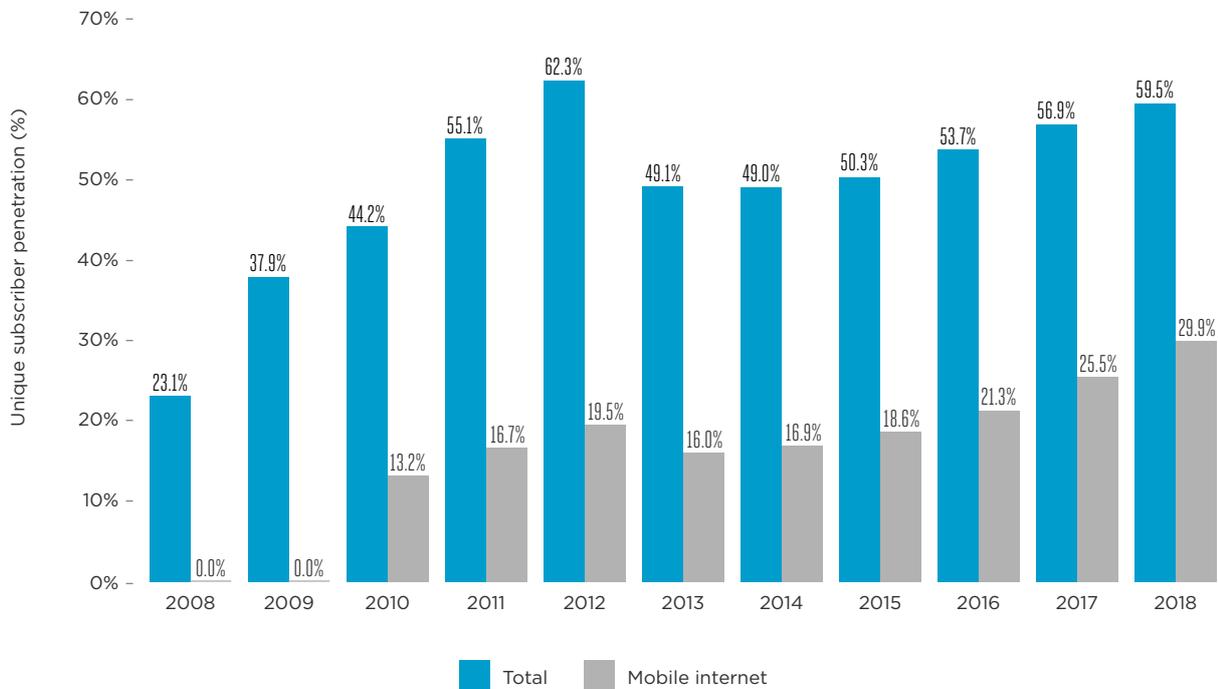
The mobile market has expanded rapidly in the past decade but despite widespread network coverage, there still exists a significant opportunity to migrate customers to 3G and 4G mobile technologies

As shown in Figure 4, unique subscriber penetration has increased considerably since the

start of 2008, despite a decline in growth following the departure of MTS (Sistema) from the market in 2012.³³ Unique subscriber penetration was approximately 59.5% by Q1 2018 (equivalent to 73.5% penetration in total connections). However, only about a half of unique subscribers have access to mobile broadband (unique subscriber mobile internet penetration standing at 29.9% in Q1 2018).

Figure 4

Unique mobile subscriber penetration in Uzbekistan, 2008-2018



Source: GSMA Intelligence database

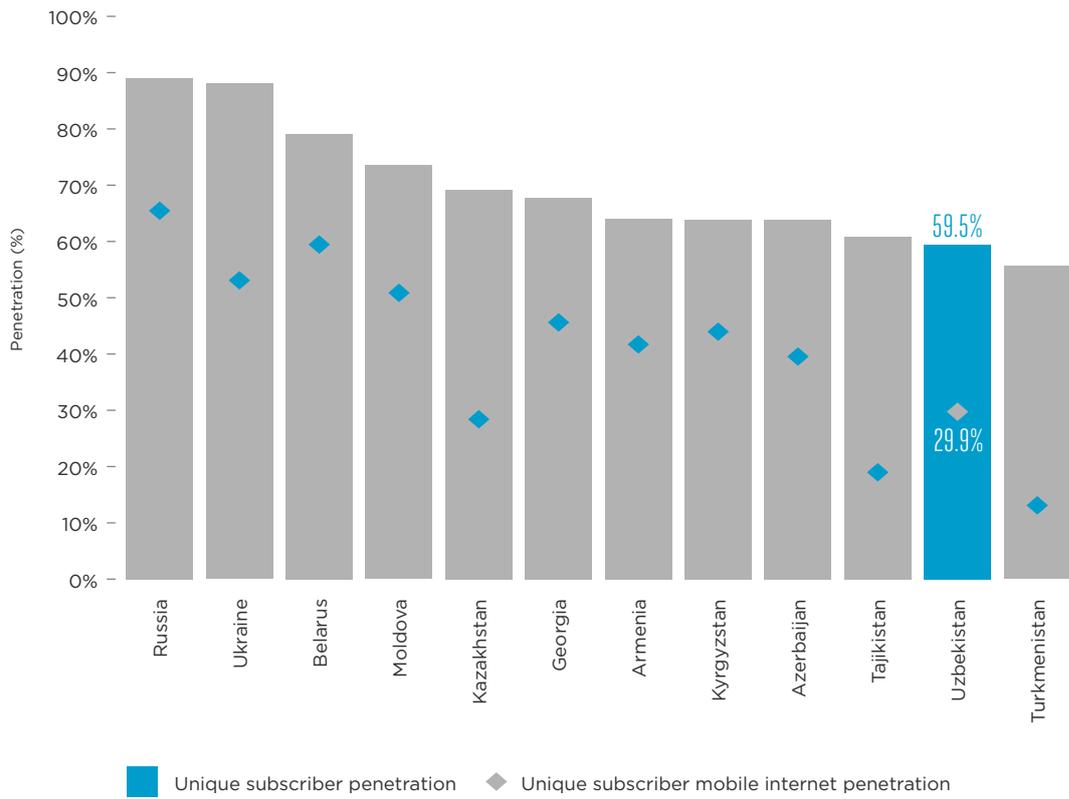
33. After MTS's licence was revoked in 2012, its assets were not utilised for several years until the creation of a new operator (UMS). This resulted in a temporary decline in quality and coverage of the mobile network in Uzbekistan.

As shown in Figure 5, there is considerable scope to increase unique subscriber penetration, as Uzbekistan ranks 4th in Central Asia, and considerably behind

Eastern European nations. Mobile internet penetration is also low in Uzbekistan relative to regional peers.

Figure 5

Mobile penetration (unique subscribers – all and with mobile internet) in selected comparator countries, 2018



Source: GSMA Intelligence database

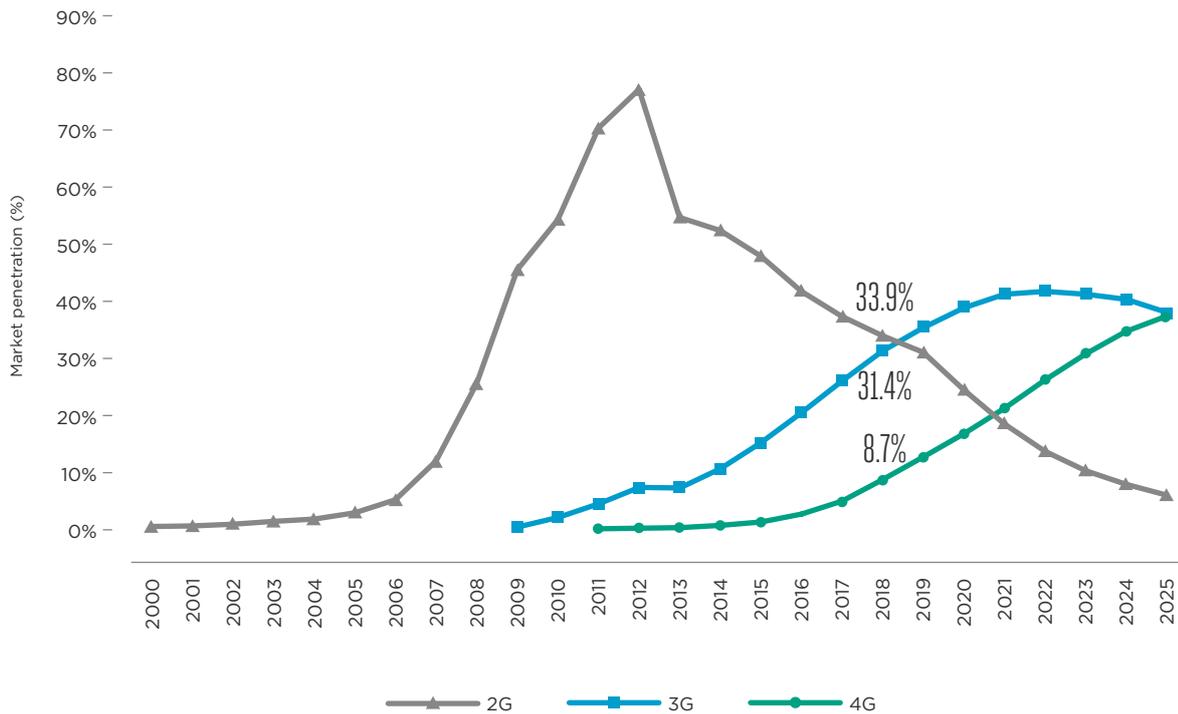


As shown in Figure 6, 2G is still the dominant technology in the Uzbek mobile market, with a penetration rate (total connections) of 33.9% in 2018. However, market penetration is expanding for 3G and

4G services, with 3G penetration expected to overtake 2G in 2019, and 4G penetration projected to be equal to that of 3G by 2025.

Figure 6

Market penetration rate (total connections), by technology



Source: GSMA Intelligence database

Given the relatively low level of fixed broadband subscriptions in Uzbekistan (8.8% in 2016),³⁴ the expansion of mobile broadband enabled (3G and 4G) technologies will be vital for increasing access to online services and supporting the growth of the digital economy. Such expansion would allow for the creation

of digital jobs and thereby progress the Government’s reform agenda. Given the importance of mobile connectivity to economic development, the tax policy reform agenda should include measures to stimulate customers in Uzbekistan to embrace mobile services and mobile broadband.

34. World Bank databank.

1.2.2 Affordability of smartphones and mobile services in Uzbekistan

The affordability of mobile services and devices in Uzbekistan is a challenge for the industry, particularly in respect of low-income individuals

The affordability can represent a significant connectivity barrier, particularly so for the low-income population. Analysis conducted by the GSMA highlights that countries with a high cost of mobile ownership (including both device and airtime/data) as a share of income per capita³⁵ typically have lower penetration rates.³⁶ A lack of affordability has been cited by up to 80% of people in developing countries as the main barrier to mobile access and usage.³⁷

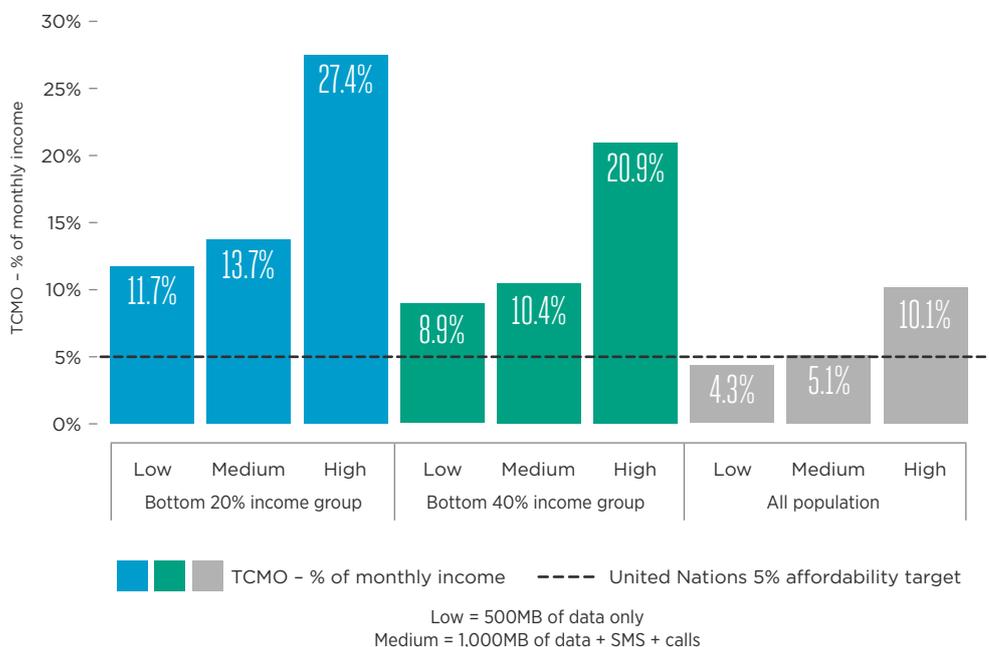
A basic measure of affordability of mobile services is the proportion of monthly income which is spent on mobile services and devices. To identify the affordability challenges associated with mobile services and devices, the GSMA estimates the total cost of mobile ownership (TCMO) for a range of countries, income groups and consumption baskets.³⁸

Figure 7 shows the TCMO as a proportion of monthly income for the two lowest income quintiles in Uzbekistan, compared to the entire population. For a low consumption basket (500MB of data), the poorest 20% of the population in Uzbekistan spend approximately 11.7% of their monthly income on mobile ownership, while a medium consumption basket (1GB of data) would represent approximately 13.7% of their monthly earnings.

Improving the affordability of mobile ownership in Uzbekistan is directly supportive of the Government’s reform agenda and the e-governance Master Plan,³⁹ which aim to increase individuals’ economic opportunities and participation in the formal economy. At present, basic packages represent an affordability challenge for Uzbekistan’s lowest income groups, and are below the current 5% UN affordability threshold.⁴⁰ More effort is needed to progress toward achieving the “1 for 2” UN target (1 GB of data costing less than 2% of monthly income) set for 2025.⁴¹ As the market develops, it will be important that these affordability issues are addressed to ensure that a broad spectrum of the population have access to mobile data services.

Figure 7

TCMO as a proportion of monthly income in Uzbekistan, 2017



Source: GSMA Intelligence database, Tarifica

35. Defined as Gross National Income (GNI) per capita.

36. GSMA, 2016, *Digital Inclusion and Mobile Sector Taxation*, <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/07/Digital-Inclusion-and-Mobile-Sector-Taxation-2016.pdf>.

37. GSMA, 2015, *Connected Women 2015 – Bridging the Gender Gap: Mobile Access and Usage in Low- and Middle-Income Countries*, https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/03/GSM0001_03232015_GSMAReport_Executive-Summary_NEWGRAYS-web.pdf.

38. TCMO consists of the cost of a handset, activation and usage costs. It is typically calculated as a cost per month, and assumes a life expectancy of a device of 36 months for medium and low-income countries, and 24 months for high and very high income countries.

39. E-government website, <https://egovernment.uz/en/>.

40. This threshold has been set by the UN Broadband Commission for Sustainable Development. According to it, mobile expenditure (based on prepaid handset-based 500MB) above 5% of GNI per capita is considered unaffordable. Source: http://broadbandcommission.org/Documents/ITU_discussion-paper_Davos2017.pdf.

41. Alliance for Affordable Internet, 2017 Affordability Report, <https://a4ai.org/affordability-report/report/2017/>.



1.2.3 Investment environment and opportunities for development

Growth to date in the Uzbek mobile market has been facilitated by significant investment by mobile operators, however further investment is required to support the transition to 3G and 4G technologies

In order to improve the availability and quality of mobile services and to manage a significant increase in network traffic, significant levels of capital expenditure are required to finance investment in network infrastructure, operational costs and one-off licence fees. A lack of investment will hold up further development of the industry to ensure full population coverage of 3G and 4G networks, and the improvements in the quality of mobile services required to enhance user experience and encourage subscribers to migrate to 3G and 4G technologies.

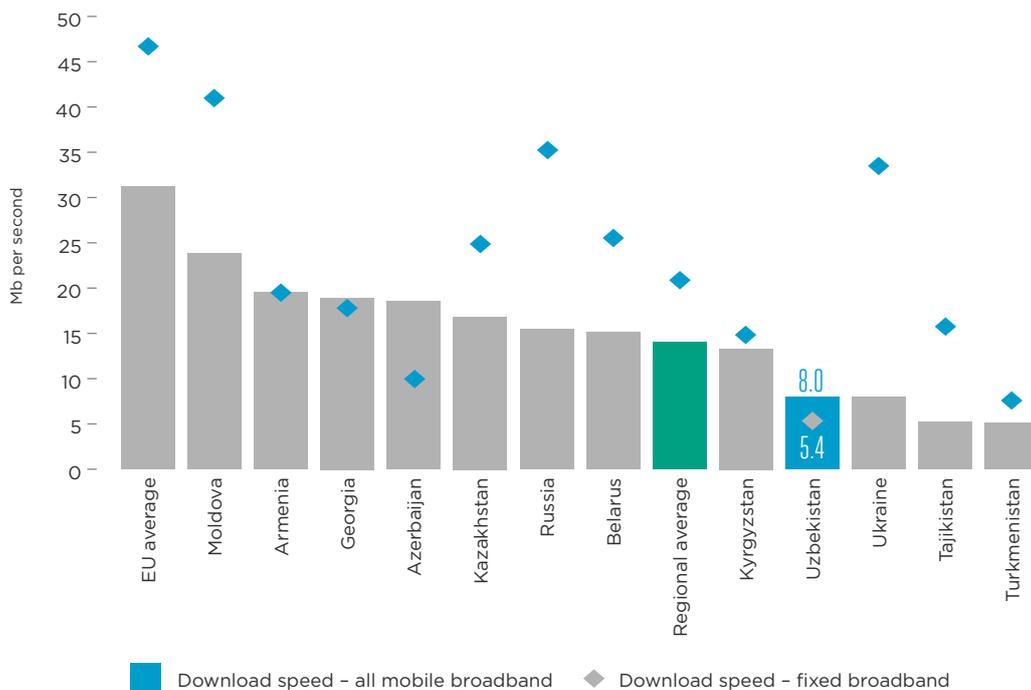
Network coverage for mobile broadband-enabled services has expanded significantly during the past decade, with 3G and 4G population coverage reaching 90% and 80% respectively in 2017. Network expansion has been fuelled by significant investment by Uzbekistan’s mobile operators, with capital expenditure averaging 37% of revenue between 2007 and 2017, reaching a peak of 72% in 2009.⁴²

The investment made by Uzbek mobile operators to improve the availability of 3G and 4G services is an important enabler of increased mobile internet penetration in Uzbekistan. However, beyond increasing the availability of 3G and 4G services in Uzbekistan, further improvements in network quality are required to improve the reliability and speed of data services, thereby improving user experience and incentivising the take-up of mobile broadband services.

As shown in Figure 8, Uzbekistan lags behind a number of neighbouring countries when it comes to mobile download speeds. Analysis of Speedtest Intelligence® data from Ookla® demonstrates that, at approximately 8Mb per second, the average download speed across 3G and 4G technologies in Uzbekistan is below the regional average (14Mb per second). However, while the download speed of mobile broadband ranks below the regional average, it nonetheless considerably outperforms fixed broadband (see Figure 8), further highlighting the potential of mobile broadband to enable greater online access and digital inclusion within Uzbekistan.

Figure 8

Download speed (Mb per second) – Uzbekistan and comparator countries, 2017



Source: Speedtest Intelligence® data from Ookla®

42. GSMA Intelligence database.

1.3 The socio-economic contribution of the mobile sector

Mobile operators directly contributed \$868 million in direct value added to the economy in 2017

Total mobile sector revenues were \$1.2 billion in 2017,⁴³ equivalent to 2.5% of Uzbek GDP. Mobile operators contributed approximately \$868 million of direct economic value to Uzbekistan in 2017 (1.9% of GDP),⁴⁴ while also supporting a much wider mobile ecosystem, including mobile distribution providers and retail companies. These companies create further economic activity in Uzbekistan by buying products and services from firms in their supply chain (indirect effects) and by generating employee income which leads to increased consumer spending, generating demand in consumer goods markets (induced effects).

Mobile connectivity promotes productivity improvements in the economy

Greater access to mobile services has transformed economies, accelerating economic growth and development in countries worldwide. The effects of mobile connectivity on an economy are largely delivered through its impact on productivity. Improvements in mobile connectivity can improve communication and trade within an economy, while also making a country more attractive for foreign investment. Improved connectivity can also boost tourism, and allow firms to access a broader pool of labour.⁴⁵ The benefits of mobile connectivity – and how it translates to the wider economy – have been widely studied. For example, a literature review by the International Telecommunication Union (ITU) finds that a 10% increase in mobile broadband penetration leads to a 0.25% to 1.38% increase in GDP.⁴⁶ Further, a number of studies have shown a strong relationship between mobile penetration and productivity; these show that a 10% increase in mobile penetration increases productivity by between 1.0% and 1.3%.⁴⁷

Mobile networks promote digital inclusion and can bridge the digital divide

Where fixed broadband coverage is low (as is the case in Uzbekistan, where just 8.8% of the population have fixed subscriptions),⁴⁸ mobile networks are central to promoting digital inclusion, due to the lower cost of network rollout. This is particularly true for Uzbekistan's large rural population, which represents 64% of the total population, as it will need to rely

on mobile services to gain an improved access to knowledge and digital economy.

CASE STUDY

Best Software Challenge⁴⁹

Since 2013, Uzbekistan has been organising the annual 'Best Software Challenge' competition, aimed at encouraging young people to become more innovative and interested in the advancement of technology. Participants compete in teams of three and create a project for the category of their choice.

The 2017 competition ran in four categories: "Smart City", computer and mobile games, the best project in the area of trade and services, and innovative idea in the field of ICT. Many winning applications were based on mobile technologies. Winning projects featured mobile applications in the areas of bicycle rental services, mobile e-library, education, testing for schoolchildren and virtual reality technologies, among others.

Mobile technology also removes other barriers to access broadband services including the affordability of ownership of a PC or laptop, and access to a bank account. As of 2016, less than half of Uzbek individuals were internet users (fixed and mobile internet), and hence increased rollout of mobile broadband services will be key to addressing relatively low levels of access to internet services.

Mobile money can expand access to financial services, providing low-income citizens with a secure, accessible and convenient method to manage their finances

Mobile money services have the power to transform financial systems and promote a move away from cash based economies. They provide affordable financial services to low-income subscribers and enable safety, security and convenience for financial transactions for those who do not have access to traditional financial services.

There are several advantages to electronic payments when compared to cash payments, including contributing to higher transparency of transactions. Cash transactions are often unregistered which allows for the development

43. GSMA Intelligence database.

44. *ibid.*

45. Oxford Economics, 2013, *The Economic Value of International Connectivity*.

46. ITU, 2012, *The Impact of Broadband on the Economy: Research to Date and Policy Issues*, https://www.itu.int/ITU-D/treg/broadband/ITU-BB-Reports_Impact-of-Broadband-on-the-Economy.pdf.

47. ITU, 2012, *The Impact of Broadband on the Economy: Research to Date and Policy Issues*, https://www.itu.int/ITU-D/treg/broadband/ITU-BB-Reports_Impact-of-Broadband-on-the-Economy.pdf and LECG, 2009, *Economic Impact of Broadband: An Empirical Study*, http://www.itu.int/net/wsis/stocktaking/docs/activities/1286203195/Report_BroadbandStudy_LECG_March6%5B1%5D.pdf.

48. World Development Indicators, World Bank databank.

49. Uztelecom, 2017, <http://archive.uztelecom.uz/en/press/news/2017/3691/>.

of a shadow economy, and the evasion of tax payments.

With 36 branches of commercial banks per 100,000 adults in 2016, Uzbekistan has the highest density of banking infrastructure in Central Asia.⁵⁰ However, the degree of inclusion of people into the formal financial system is relatively low, with only 37% of people aged 15+ having an account with a financial institution (5th out of 5 in Central Asia) and 24% only owning a debit bank card (3rd out of 5 in Central Asia).⁵¹

In Uzbekistan, a significant proportion of transactions is performed using cash. For example, 61% of utility bills in Uzbekistan are paid using cash only. Cash is also a preferred method of sending and receiving remittances, used in 68% of cases. There exists therefore the potential to increase the role of electronic payments in the economy, by further promoting the mobile payment platforms.

Furthermore, the digitalisation of person-to-government (P2G) and business-to-government (B2G) payments can generate significant efficiencies, while encouraging greater financial inclusion within the economy. The Uzbek Government has embraced the potential of these technologies through its e-governance Master Plan, which links all ministries through the MyGovUz portal.⁵²

It has been estimated that the five-year positive impact of adoption of digital payments in the public sector on government tax revenue may range from \$0.9 billion in Russia to \$18.1 billion in India and \$28.8 billion in China.⁵³ Research from Tanzania has shown that shifting to digital P2G and B2G payments in certain cash-heavy industries can reduce leakage by up to 40%, and increase annual tax revenue in the country by \$0.5 billion per annum.⁵⁴ In Kenya, public sector digitalisation saved the Government an estimated \$0.3 billion over four years, as P2G payments improved the efficiency of public services.⁵⁵ Similarly, it has been estimated that a successful digitisation of P2G payments in Ghana has the potential to increase non-tax revenues of the Government by about 40%, equivalent to \$0.6 billion.⁵⁶

Mobile health

Mobile health (m-Health) applications can improve health systems through reducing the cost of service delivery, providing distribution channels for public health information, streamlining health administration and data management, and even aiding real-time supply chain management.⁵⁷

Mobile connectivity can form part of the solution for improving Uzbekistan's healthcare sector. M-Health can be used in education, disease prevention, disease treatment, health care, and health support applications. Furthermore, mobile services can be used to overcome traditional barriers⁵⁸ to accessing essential information and services, such as geographic isolation, gender disparities⁵⁹ and social stigmas.⁶⁰

Mobile learning

Mobile learning (m-Learning) has the ability to reduce inequalities in educational systems by widening access to learning materials, improving literacy and reducing drop-out rates.

CASE STUDY

Case study – Ziyonet

In June 2017, UZMOBILE launched a preferential mobile access to the knowledge database Ziyonet, featuring thousands of educational resources in a wide range of areas, including science, IT, culture and art, sports, foreign languages, business, e-government, society, medicine etc. The massive electronic library consists of books, textbooks, manuals, scientific journals and abstracts in several languages.

This new mobile service aims at increasing access to a wide knowledge base and education for the population of Uzbekistan. Making access to information easier via modern technology is expected to increase convenience for the public and will ultimately contribute towards a more educated and productive economy.

Gender equality

Mobile technologies can empower women in developing countries, making them more connected, safer and better able to access information. Mobile connectivity also provides women with access to services and life-enhancing opportunities, such as health information and guidance, financial services and employment opportunities.⁶¹

50. IMF, *Financial Access Survey 2017*, <http://data.imf.org/?sk=E5DCAB7E-A5CA-4892-A6EA-598B5463A34C>.

51. World Bank, Global Findex Database.

52. E-government website, <https://egovernment.uz/en/>.

53. Visa Inc., A.T. Kearney, 2018, *Digital Payments and the Global Informal Economy*, <http://www.schoolofpublicpolicy.visa.com/media/1850/global-informal-economy-report.pdf>.

54. Better than Cash Alliance, 2016, *Person-to-Government Payments: Lessons from Tanzania's Digitization Efforts*.

55. GSMA, 2017, *Person-to-Government (P2G) Payment Digitisation: Lessons from Kenya*.

56. GSMA, 2018, *P2G Payments via Mobile Money: Unlocking Opportunity for Consumers, Governments and Providers*.

57. University of Cambridge, 2011, *Mobile Communications for Medical Care*, <http://www.csap.cam.ac.uk/media/uploads/files/1/mobile-communications-for-medical-care.pdf>.

58. N., McKee et al., 2004, "Strategic Communication in the HIV/AIDS Epidemic".

59. T. A., Gurman et al., 2012, "Effectiveness of mHealth Behavior Change Communication Interventions in Developing Countries: A Systematic Review of the Literature".

60. J.G., Khan et al., 2010, "Mobile Health Needs and Opportunities in Developing Countries".

61. GSMA, 2015, *Connected Women 2015 – Bridging the Gender Gap: Mobile Access and Usage in Low- and Middle-Income Countries*, https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/03/GSM0001_03232015_GSMAReport_Executive-Summary_NEWGRAYS-web.pdf.



2. Tax contribution of the mobile sector in Uzbekistan

As set out in Section 1, the mobile sector plays a key role in the Uzbekistan economy. In addition to its socio-economic impact, the mobile sector makes an important contribution to the public finances of Uzbekistan through tax payments. This section covers the tax regime applicable to the mobile sector and its contribution to the tax revenue of Uzbekistan.⁶²

2.1 Taxation of mobile consumers and operators

The main tax on mobile consumers is Value Added Tax (VAT). The supply of mobile goods and services is taxed at the general rate of 20%.⁶³

Furthermore Table 1 below outlines the different taxes paid by mobile operators.

Table 1

Key taxes paid by mobile operators, 2018

Corporate income tax	<ul style="list-style-type: none"> ▶ On profits up to 20%: 14% ▶ On profits exceeding 20%: 50%
Unified social payment	25%
Property tax	5%
Mandatory contributions to State Special Funds	3.2%
Land tax	Variable
Water tax	Variable

Source: EY 2018 Worldwide Corporate Tax Guide and IBFD

62. This section of the report describes the current tax system in Uzbekistan as at August 2018. It is acknowledged that the Uzbekistan Government has announced plans for tax reform which is planned to take effect from 1 January 2019. The planned corporate tax changes are discussed in section 3.

63. No customs duties apply on mobile handsets, parts, network equipment or SIM cards.



- **Corporate income tax.** Companies resident in Uzbekistan are subject to tax on their worldwide income. Foreign companies that are deemed by the tax authorities to have a permanent establishment (PE) in Uzbekistan are taxable on profits derived from business activities of the PE.

The standard rate of corporate income tax is 14%. However, for mobile operators, the rate rises with the level of profitability (calculated as the ratio between profit before tax and the cost of sales):

- If the profitability is below 20%, the rate remains at 14%; and
- A rate of 50% applies on the amount of profits exceeding the profitability threshold of 20%.
- **Unified social payment.** Employers are subject to the unified social tax. This is assessed on the payroll cost of foreign and local employees. The tax is equal to 25% of such costs.
- **Property tax.** The property tax is imposed by municipalities on legal persons owning immovable property excluding land. The tax rate is 5%.

- **Mandatory contributions.** These contributions are based on net revenue and payable monthly. The rate is 3.2% on net revenue.

- **Land tax.** The land tax is a municipal tax imposed on land. The tax is determined by several factors, including the land value, land usage, the region where the land is located, and the qualitative characteristics of land. For instance, land rates on companies in Tashkent range from UZS 26 million per hectare of land to UZS 131 million per hectare depending on the company's location.

- **Water tax.** The water tax is based on the amount of water consumed for production purposes. The tax rate varies depending on the region and location.

On top of the taxes applying to mobile operators, there are also a number of different licences and fees required in order to be able to supply telecommunication services. The details of these licences and the applicable fees can be seen in Table 2 below.

Table 2

Key regulatory fees paid by mobile operators, 2018

SIM card payment ⁶⁴	<ul style="list-style-type: none"> • UZS 990.83 for each new SIM card issued; and • UZS 208.30 for each existing SIM card.
Numbering fee	<ul style="list-style-type: none"> • UZS 4,000 monthly fee for each mobile services subscriber.
License fees	<ul style="list-style-type: none"> • Various fees set by the regulator.
Spectrum fees	<ul style="list-style-type: none"> • Various fees set by the regulator.

Source: GSMA Intelligence, operator data

64. The payment is made to the Centre of Electromagnetic Compatibility (CEMC). Source: operators' data.

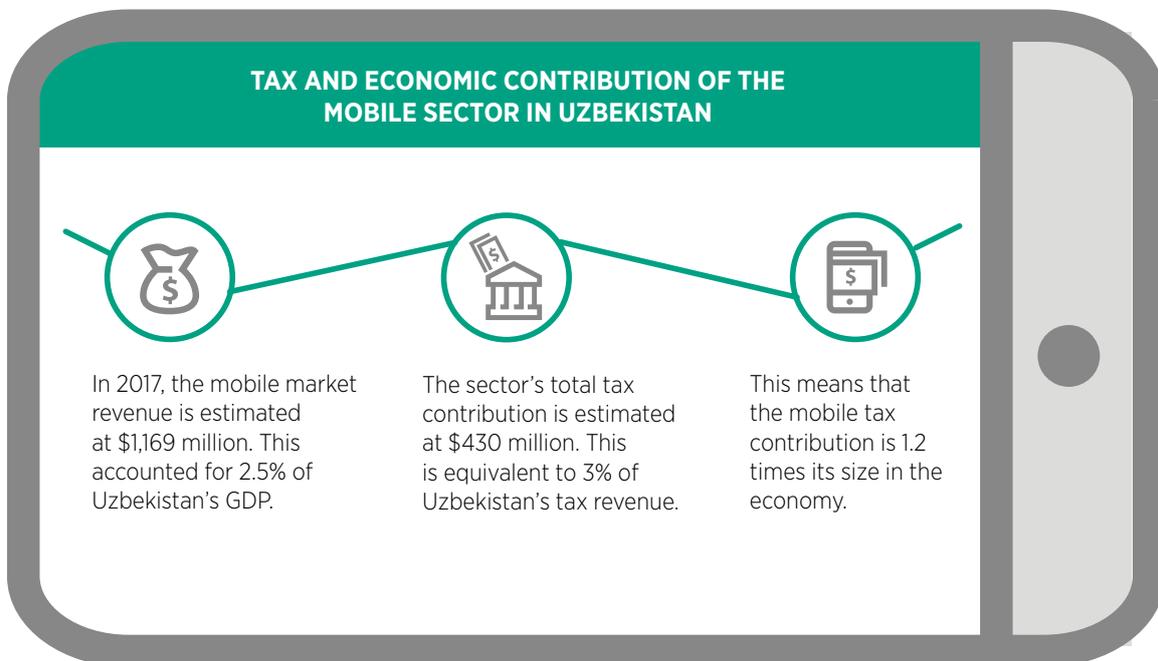
2.2 Tax contribution of the mobile sector

The mobile sector makes a significant contribution in taxes and fees relative to its economic footprint. In 2017, the total tax contribution was estimated at \$430 million. This represents 37% of the total market revenue.

While the mobile market revenue accounted for 2.5% of Uzbekistan's GDP⁶⁵, the sector's tax and fee payments accounted for around 3% of government total tax revenue.⁶⁶

Figure 9

Tax and economic contribution of the mobile sector in Uzbekistan in 2017



Source: GSMA Intelligence database, EY analysis and operator data

65. Uzbekistan's GDP was of \$46.31 billion in 2017. Source: Oxford Economics.

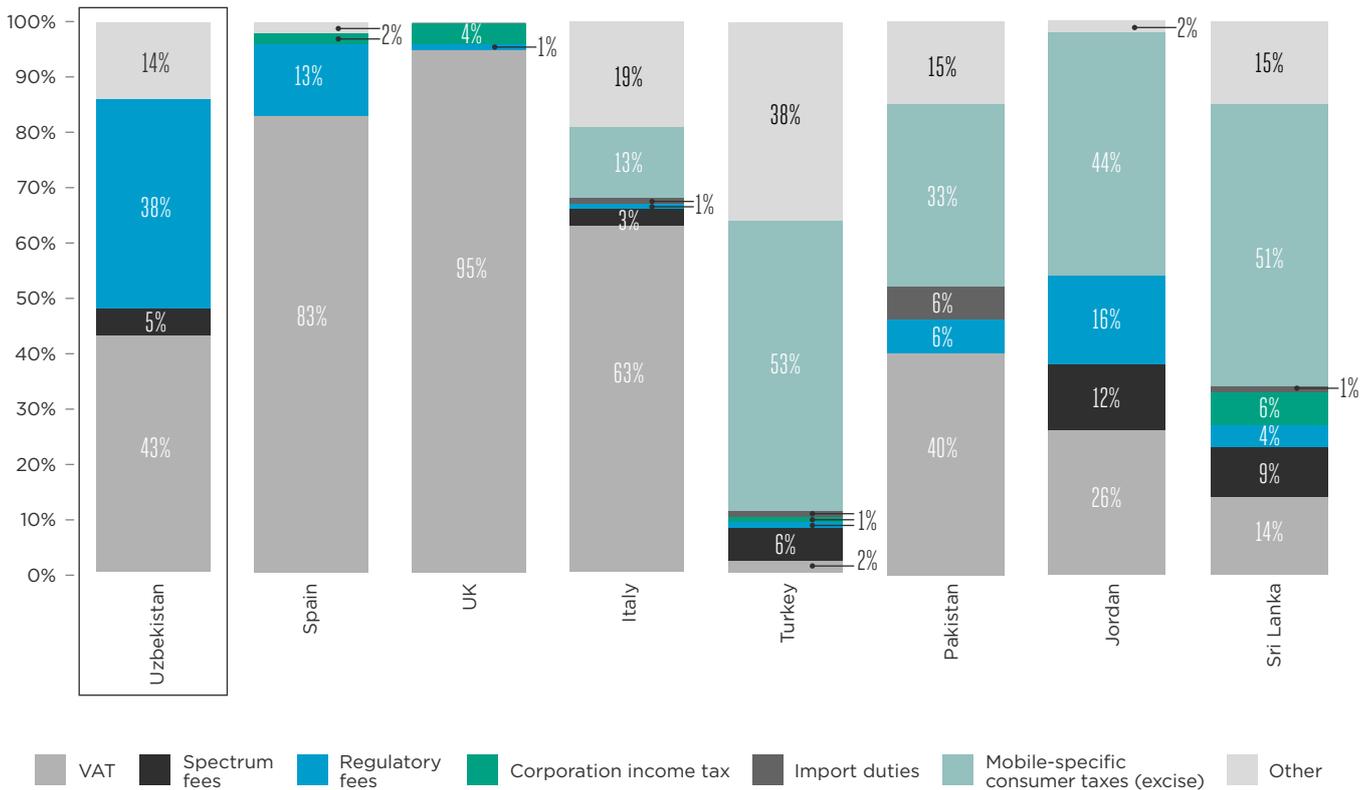
66. The total tax revenue was estimated at UZS 73,852 billion in 2017. This is approximately \$14,420 million at an average exchange rate of UZS 5,121 per dollar. Source: IMF, *Uzbekistan: Review of the Tax System. Technical Assistance Report*, April 2018. https://it.mf.uz/media/file/state-budget/obzori/review_tax_system.pdf.

In Uzbekistan, VAT is the largest source of tax payments (43%) from the mobile sector, followed by regulatory fees (38%). As Figure 10 shows, Uzbekistan had the highest

proportion of regulatory fees compared to a sample of European and Asian countries.

Figure 10

Different taxes as a percentage of overall tax revenues in the mobile sector⁶⁷



Source: GSMA Intelligence database, EY analysis and operator data

67. Other taxes include personal income tax, unified social payment, individual pension fund contributions, pension fund contribution, property tax, land tax, water tax, and turnover taxes.

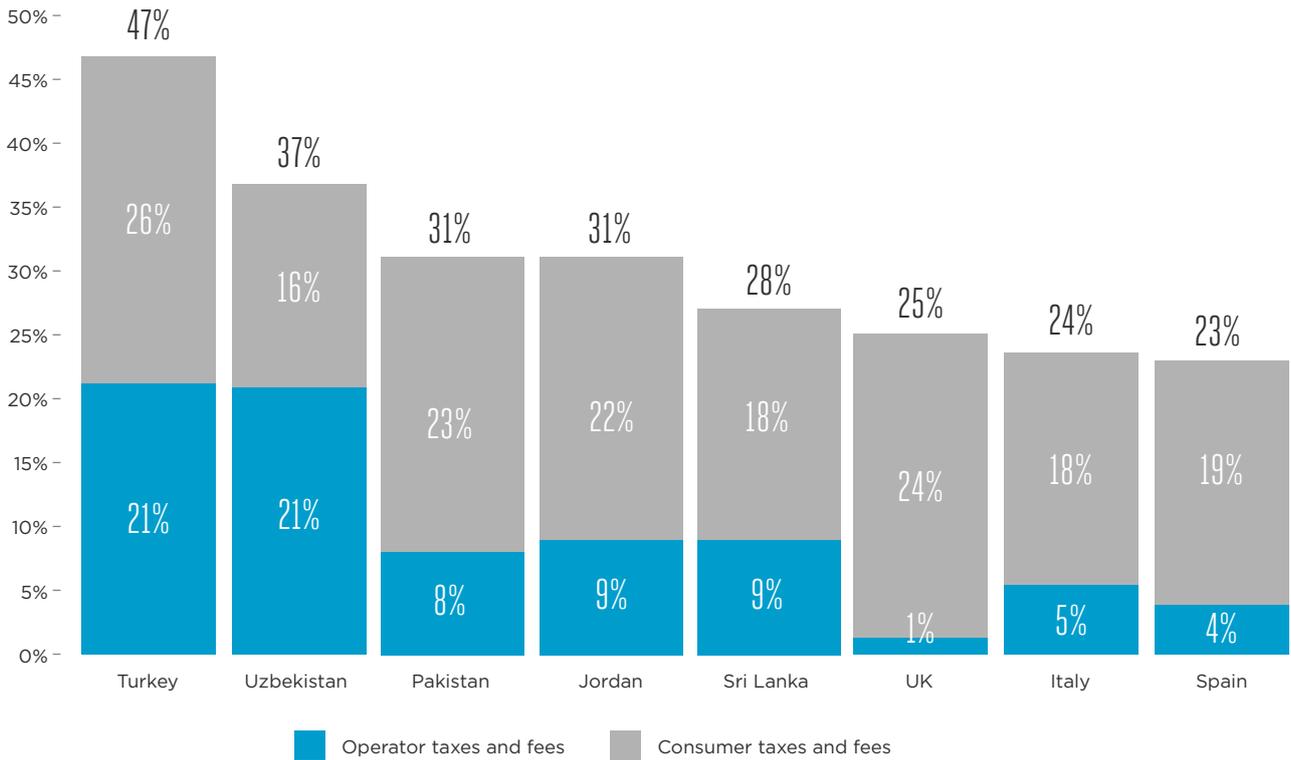


As shown in Figure 11, Uzbekistan has the second highest tax burden in the sample (37% of the total market revenue). Consumers pay 43% of the total taxes, while operators pay the remaining 57%.

Uzbekistan and Turkey have the largest proportion of operator's payments in the sample (both at 21% of the total market revenue).

Figure 11

Operator vs consumer taxes (as a share of total mobile revenue)



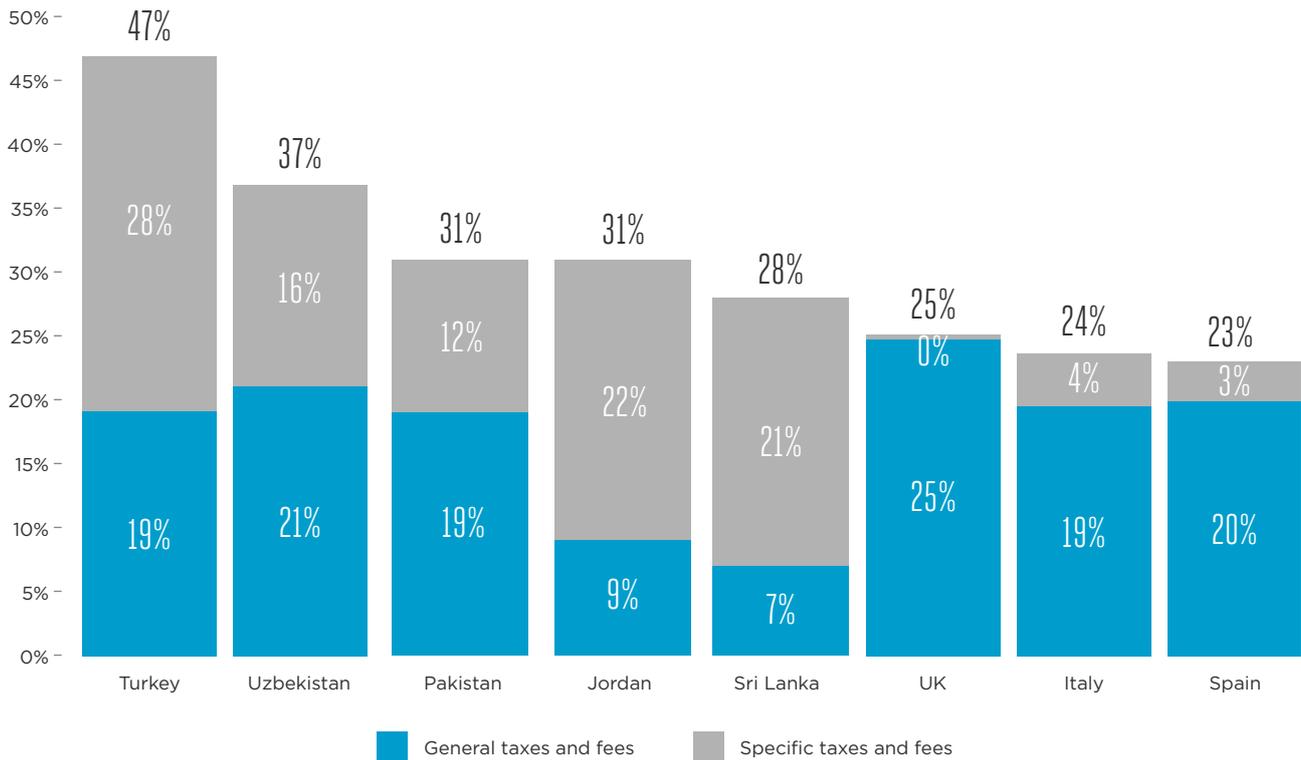
Source: GSMA Intelligence database, EY analysis and operator data

General taxes are equivalent to around 21% of total mobile sector revenue in Uzbekistan. Furthermore, Uzbekistan has a large share of mobile-specific taxes⁶⁸

(16% of the total market revenue), in comparison to the European countries in the sample.

Figure 12

General taxes and fees vs mobile sector-specific taxes and fees (as percentage of mobile sector revenue)



Source: GSMA Intelligence database, EY analysis and operator data

68. In the case of Uzbekistan, the mobile-specific burden includes annual spectrum fees, annual licence fees, numbering fee and SIM cards payments.



2.3 Mobile sector taxation compared to other sectors

Mobile operators are subject to a higher corporate income tax burden compared to other sectors in

Uzbekistan. Table 3 summarises the main corporate tax rates applying to different sectors.

Table 3

Standard rate	14%
Commercial banks	22%
Mobile services for profits below 20%	14%
Mobile services for profits above 20%	50%

Corporate tax rates in Uzbekistan, 2018

Source: 2018 EY Worldwide Corporate Tax Guide, IBFD

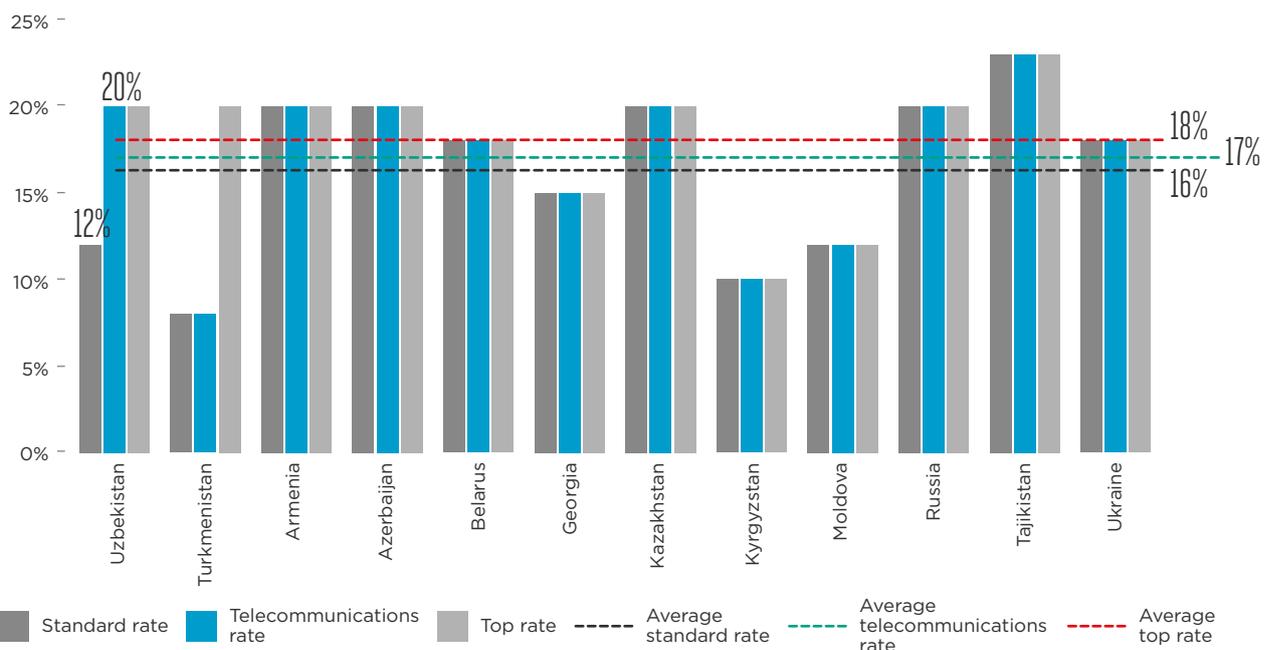
The Government of Uzbekistan has recently announced a number of proposals for tax reform. This includes an intention to reduce the standard corporate tax rate from 14% to 12%. Specifically for mobile operators, the current rates of 14% and 50% are proposed to be replaced with a single 20% rate.⁶⁹

of the most competitive standard rates in Central Asia from 2019, the corporate income tax rate applying to mobile operators in Uzbekistan (20%) will still exceed the average standard rate in Central Asia (16%). This will still leave Uzbekistan at a competitive disadvantage when competing for investment in Uzbekistan in comparison to other countries in the region.

As shown in Figure 13, while Uzbekistan will have one

Figure 13

Corporate tax rates across relevant countries



Source: EY 2018 Worldwide Corporate Tax Guide

69. Presidential Decree on the Concept of the Tax Policy Development of Uzbekistan. <http://uza.uz/ru/documents/o-kontseptsii-sovershenstvovaniya-nalogovoy-politiki-respubl-30-06-2018>.

3. Designing a more efficient tax framework for the mobile sector

Governments raise tax revenues to fund the provision of public goods and services. However, the tax system can lead to unintended consequences for both the Government and the taxpayers in terms of the incidence of the tax burden, distributional effects, efficiency and costs of collection.

In order to prevent such unintended consequences, certain principles of tax policy design have been consistently recommended by international

organisations such as the International Monetary Fund (IMF), the Organisation for Economic Cooperation and Development (OECD), the United Nations (UN) and the World Bank (WB).⁷⁰

By applying these principles, this section identifies three additional policy options that could enhance further the tax environment in Uzbekistan in addition to the positive tax reforms recently announced by the Government of Uzbekistan.⁷¹



70. IMF, OECD, UN and WBG, 2011, *Supporting the Development of More Effective Tax Systems. A Report to the G-20 Development Working Group by the IMF, OECD, UN, and World Bank*, <https://www.oecd.org/ctp/48993634.pdf>.

71. *On the Concept of Improving the Tax Policy of the Republic of Uzbekistan. Decree of the President of the Republic of Uzbekistan*. <http://uza.uz/ru/documents/o-kontseptsijsovershenstvovaniya-nalogovoy-politiki-respubl-30-06-2018>.

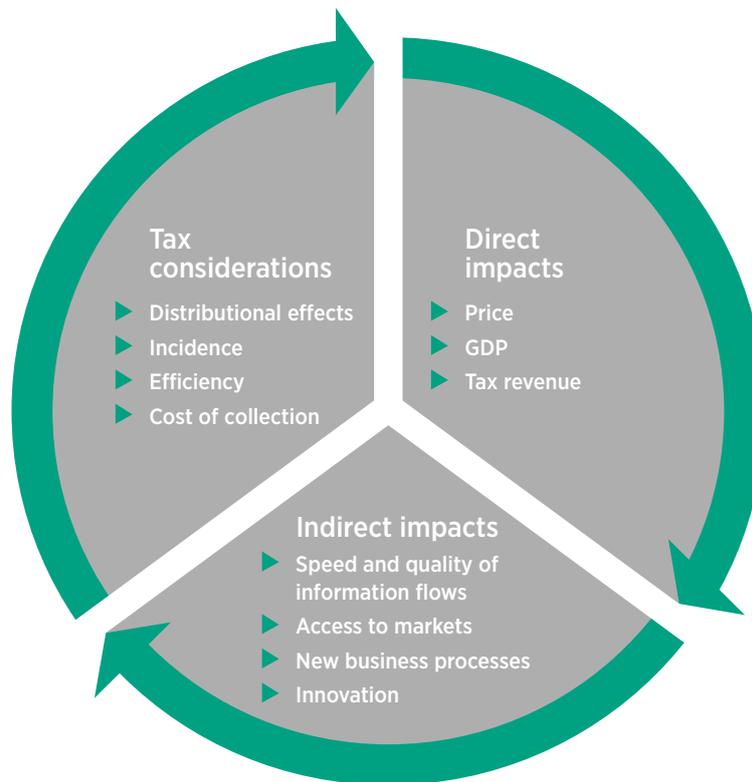
3.1 Principles of taxation applying to the mobile sector

As laid out in Figure 14 below, the tax system on the mobile sector is likely to have wider impacts in terms of prices, tax revenue and productivity. Indirectly, the taxation of the mobile sector will also impact

information flows, access to markets, business processes and innovation. This will ultimately affect the economic growth and development of a country.

Figure 14

Factors shaping tax policy choices



In order to make sure these impacts are positive, the principles of taxation identified below should be appropriately balanced.

Principles of taxation applying to the mobile sector

- **Taxation should be as broad based as possible.** Broad-based taxes with single and low rates should be favoured over specific-taxes. This should allow the maximisation of revenue with minimal distortions to the consumption and provision of mobile services.
- **Specific taxes should be limited and be based on a clear rationale of externalities.** Specific taxes should be narrowly targeting a few goods mainly on the grounds that their consumption entails negative externalities on society. Given positive externalities, mobile phones and services would not generally be included in a list of goods and services singled out for exceptionally harsh tax treatment.⁷²
- **The tax system should be equitable.** Mobile operators and consumers should be treated equally to others in equal circumstances (“horizontal equity”). In addition, the tax system should also preserve “vertical equity”⁷³ by avoiding the imposition of regressive taxes which has a larger impact on consumers of mobile services in the lower income groups.⁷⁴
- **Taxes should not discourage investment.** A stable and transparent tax system in line with international standards is a strategy that would deliver sustained investment.⁷⁵
- **Taxes should not undermine the affordability** of mobile services, as excessive taxation can increase the cost of handsets and mobile services.⁷⁶
- **The tax system should be simple.** Tax rules should be clear and no more complex than necessary to achieve the policy aim, facilitating mobile businesses and consumers to make optimal decisions and respond to intended policy incentives.⁷⁷
- **Taxes should be easy to collect.** The collection of taxes should be as efficient as possible, i.e. low tax administration costs and minimisation of evasion and avoidance costs.⁷⁸



72. ITU, 2013, *Taxing Telecommunication/ICT services: an overview*. <https://www.itu.int/en/ITU-D/Regulatory-Market/Documents/Taxation%20Study-final-en.pdf>.

73. *Ibid.*

74. R.M. Bird and E.M Zolt, 2003, *Introduction to Tax Policy Design and Development*, <https://www.internationalbudget.org/wp-content/uploads/Introduction-to-Tax-Policy-Design-and-Development.pdf>.

75. *Ibid.*

76. V. Tanzi and H. Zee, 2001, *Tax Policy for Developing Countries*, <https://www.imf.org/external/pubs/ft/issues/issues27/>.

77. IMF, OECD, UN, and WBG, 2016, *Enhancing the Effectiveness of External Support in Building Tax Capacity in Developing Countries*. Prepared for Submission to G20 Finance Ministers, <http://www.oecd.org/ctp/enhancing-the-effectiveness-of-external-support-in-building-tax-capacity-in-developing-countries.pdf>.

78. IMF, 2011, *Revenue Mobilization in Developing Countries*, <https://www.imf.org/external/np/pp/eng/2011/030811.pdf>.

3.2 An assessment of the mobile sector taxation in Uzbekistan

An assessment of the current mobile tax regime in Uzbekistan against the principles identified in section 3.1, identifies the following characteristics:

- **The tax system of Uzbekistan is relatively broad-based, but the use of specific tax rates is not clearly limited.** Mobile services have positive externalities for the wider economy in terms of connectivity and digital inclusion. Therefore, it is not clear why they should have been penalised in the past, for example, with a higher corporate tax rate.
- **Mobile operators have been subject to a higher level of taxation than other sectors.** Mobile operators are currently taxed at a rate of 50% on profits above 20%. Even after the reform planned for 2019, mobile operators will still be subject to a higher rate (20%) than other sectors (12%). On top of this, they pay a number of regulatory fees, including monthly subscriber fees and monthly SIM card fees.
- **The tax system could be more conducive to investment and more equitable.** Mobile operators should be treated equally to other sectors, especially in terms of corporate taxation. The high tax burden puts margin pressure on operators, which may impact investment and innovation.
- **There is an opportunity to improve the tax and regulatory burden.** The World Bank Doing Business 2018 report places Uzbekistan 78 out of 190 global countries and 14 out of 24 Europe and Central Asian countries when it comes to the ease of paying taxes. As shown in Table 4 below, the time spent to prepare, file and pay taxes, the total tax and contribution rate and the post filing time, make Uzbekistan's system relatively competitive in comparison to its region. This position could be improved by reforms to develop a more conducive tax system.

Table 4

Uzbekistan tax index, 2018

Indicator	Uzbekistan	Europe and Central Asia	OECD high income	Overall best performer
Tax payments (number per year)	10	16.5	10.9	3 (Hong Kong SAR, China)
Time (hours per year)	181	218.4	160.7	50 (Estonia)
Total tax and contribution (% of profit)	38.3	33.1	40.1	18.47 (32 economies)
Post filing index (0-100)	48.39	65.20	83.45	99.38 (Estonia)

Source: World Bank, Doing Business 2018

3.3 Options for reform in the mobile sector in Uzbekistan

Uzbekistan has recently announced reforms with the aim of simplifying the tax system, balancing the tax burden, and making it more conducive to investment.⁷⁹ Aligned with these objectives and the foregoing assessment, this report identifies three additional options for tax reform on the mobile sector, in order to unlock further investment and to continue to promote growth in the sector and the wider economy:

- **Option 1** – A phased reduction in corporate income tax on mobile services to 12%;
- **Option 2** – Reducing the monthly subscriber fee for the mobile sector from UZS 4,000 to 2,000; and
- **Option 3** – Elimination of monthly fees on new SIM cards fees (UZS 990.83) and on SIM cards already in use (UZS 208.3).

In addition, these reforms should also further help Uzbekistan achieve the following objectives of the Strategy for Actions on Further Development of Uzbekistan in 2017-2021:

- Further strengthening of the macroeconomic stability and the maintenance of high rates of economic growth;
- Improving the competitiveness of the national economy through deepening of structural reforms, modernisation and diversification of its leading industries; and
- Continuing the institutional and structural reforms aimed at reducing the state's presence in the economy, further strengthening the protection of rights and priority role for private property, encouraging the development of small business and private entrepreneurship.⁸⁰

3.3.1 A phased reduction in corporate income tax on mobile services to 12%

Currently, the mobile sector faces a higher rate of corporate income tax than any other sector of the Uzbekistan economy, with a higher rate of 50% on profits over the 20% level of profitability. This extra tax burden is unique to the mobile sector as the standard rate of corporation tax is 14%.

As noted above, the Government of Uzbekistan has recently announced a number of proposals for tax reform. This includes an intention to reduce the standard corporate tax rate from 14% to 12%. Specifically for mobile operators, the current rates of 14% and 50% are proposed to be replaced with a 20% single rate.⁸¹ This would still be significantly higher than the standard corporate tax rate of 12%.

An alternative approach could be for the corporate income tax rate for the mobile sector to be reduced in a phased way to the proposed standard corporate income tax: from 20% to 16% in 2020, and then a further reduction to 12% in 2021. While this proposal would be self-sustaining in terms of revenue in the medium term, a gradual implementation would also allow to minimise the revenue impact in the short term.

The rationale for change

- A higher rate of taxation on the mobile sector reduces the sector's ability to invest in mobile infrastructure, and weakens the attractiveness of the sector for foreign investment against other countries in the region.
- Despite the positive externalities generated by the industry, mobile operators will continue to be subject to a higher corporate tax rate than other sectors, even after the tax reform planned for 2019. The high and uneven tax burden on telecommunications companies could discourage investment relative to other sectors. A reduction to 12% would fully harmonise the corporation tax rate with other sectors, and create a level-playing field.
- A reduction in the tax rate would create an improved investment environment for mobile operators, allowing for:
 - Increased 3G and 4G coverage, enhancing digital inclusion;
 - Greater mobile penetration, particularly for mobile broadband enabled technologies; and
 - Increased economic activity, driving improved tax receipts for the Government in the medium term.

79. On the Concept of Improving the Tax Policy of the Republic of Uzbekistan. Decree of the President of the Republic of Uzbekistan. <http://uza.uz/ru/documents/o-kontseptsii-sovershenstvovaniya-nalogovoy-politiki-respubl-30-06-2018>.

80. Development Strategy Center. *Uzbekistan's Action Strategy on Five Development Areas 2017-2021*. <http://www.strategy.uz/about-strategy>.

81. On the Concept of Improving the Tax Policy of the Republic of Uzbekistan. Decree of the President of the Republic of Uzbekistan. <http://uza.uz/ru/documents/o-kontseptsii-sovershenstvovaniya-nalogovoy-politiki-respubl-30-06-2018>.

3.3.2 Reducing the monthly subscription fee for the mobile sector from UZS 4,000 to UZS 2,000

Currently mobile operators pay a monthly subscription fee for each connection. This was previously UZS 2,000, and was increased to UZS 4,000 in January 2018. This could be reduced to the earlier UZS 2,000 per month.

The rationale for change

- High regulatory fees have a detrimental effect on investment. In particular, the monthly subscription fee has continued to increase since its introduction, from UZS 400 in 2012 to UZS 4,000 in 2018; this represents a tenfold increase. A reduction in fees would allow operators to reinvest in enhancing mobile coverage in Uzbekistan. The reinvestment could be towards increasing 3G and 4G coverage. This would promote mobile internet usage, which is currently low.
- High regulatory fees negatively impact investment, market development and digital inclusion. A reduction in fees should increase penetration and usage of mobile services.
- A greater penetration and usage of mobile services should in turn have further economic and socio-economic benefits for Uzbekistan.
 - There should be increased revenue for mobile operators, leading to greater levels of investment in infrastructure for the future;
 - There should be increased tax receipts in the medium term resulting from an increase in the use of mobile services;
 - There should be increased digital inclusion and more Uzbekistanis would have greater access to services; and
 - There should be increased productivity across the economy leading to increases in GDP.

3.3.3 Elimination of monthly fees on new SIM cards and SIM cards already in use

At present, mobile operators in Uzbekistan pay monthly fees on new SIM cards and SIM cards already in use. These fees are currently UZS 990.83 for new SIM cards, and UZS 208.3 for SIM cards already in use. An option for reform would be to eliminate these fees altogether.

The rationale for change

- Regulatory fees are a significant part (38%) of the tax burden on mobile operators in Uzbekistan. Eliminating monthly fees would reduce the regulatory fee burden on the mobile industry, and at the same time, it would simplify the tax system.
- The elimination of monthly fees would increase the funds available for investment into mobile networks that are necessary to enhance quality and coverage.
- The elimination of monthly fees should enable mobile operators to pass a proportion of the tax saving to consumers in the form of lower prices. This would reduce the total cost of mobile ownership and improve affordability.

3.4 Digital opportunities for a more efficient tax system

The three options for reform identified above would be self-sustaining in the medium term for Uzbekistan and would lead to revenue gains for the Government. Section 4 presents detailed economic modelling to show the expected impacts delivered by these three options.

In addition, a more conducive tax system for the investment and development of the mobile sector should enable further modernisation of tax administration and make tax collection more efficient. This would help to broaden the tax base and raise additional revenue for the Government, offsetting any potential loss of revenue in the short-term, thanks to innovative solutions, such as person to government (P2G) payments and e-government initiatives.

As the OECD notes in its latest interim report on tax digitalisation, the increasing use of digital platforms facilitates the integration into the formal economy. Previously unreported transactions are now carried out through those platforms, delivering an enhanced electronic audit trail and greater reporting of income. In this way, multi-sided online platforms can drive growth and increase revenues, by providing new

opportunities for economic activity and encouraging movement into the formal economy. This information can be integrated into data matching analysis to enhance tax compliance, for example, to cross-match VAT transactions.⁸² In this regard, a technology of interest to tax administrations for its potential to reduce taxpayer burdens is blockchain. Blockchain is a distributed ledger technology that can store data or information without the need for a centralised verification authority. By recording transactions without the necessity of a centralised verification authority, blockchain offers some useful applications for tax authorities; for example, a secure method for registration and authentication of taxpayers and the recording of transactions.⁸³

Technology is expanding the capabilities of tax administrations in a wide range of ways, to enhance the effectiveness of compliance activities, improve taxpayer services and reduce compliance burdens.⁸⁴ Some examples of experiences on how digitalisation and the use of technology could open up further opportunities for the tax administration are identified below:



82. *ibid.*

83. *ibid.*

84. *ibid.*

Successful experiences in the field of digital tax administration

- In Russia, the Federal Tax Service has implemented a system allowing the monitoring of VAT compliance on a nationwide basis mostly in real time, drastically reducing opportunities for fraud. The approach is based on an automatic cross-matching of all VAT paid against all VAT claimed across all transacting parties. This led to an increase in VAT collection by 8.5% in 2015.⁸⁵
- Over €500 million in risky VAT was identified over a two-year period in the Slovak Republic following the introduction of electronic invoice data matching processes.⁸⁶
- In Hungary, the introduction of electronic cash registers saw an increase of VAT revenue by 15% in the targeted sectors, exceeding the costs of introducing the new system.⁸⁷
- In Rwanda, in the two years since the introduction of electronic cash registers in March 2013, VAT collected on sales increased by 20%.⁸⁸
- In Mexico, an additional 4.2 million micro-businesses were brought into the formal economy after Mexico introduced mandatory electronic invoicing.⁸⁹
- Peru's tax administration (SUNAT) launched its first mobile app in February 2015. This provides constant tablet and mobile phone access to a range of services, including tax registration, invoices, a virtual tax guide and the ability to report tax evaders.⁹⁰
- The Australian Tax Office has incorporated a tool in its mobile app allowing to record tax deductions on the go. Using the camera on their device, taxpayers can capture receipts and use location services to record work-related car trips for vehicle deductions, eliminating the need for paper records.⁹¹
- Countries including Brazil, Côte d'Ivoire, Guinea, Kenya, Mauritius, Pakistan, Rwanda, Tanzania, and Uganda have done well in driving digital P2G payments. Of these, Kenya stands out in terms of the number of P2G use cases. The central e-government platform (eCitizen) reports that over 90% of digital payments are made via mobile money, while 85% of Nairobi City County payment wallet re-loads (eJijiPay) are made via mobile money.⁹²
- Ghana has an existing e-government portal that offers services by government ministries, departments and agencies (MDAs) and an e-Payments portal that accepts digital payments through payment processing partners such as mobile money (through MTN, Vodafone and Airtel-Tigo), card payments (via Visa and MasterCard), payment switch (eTranzact) and bank transfers (through banks such as Zenith Bank and Ghana Commercial Bank).⁹³
- In Côte d'Ivoire 99% of secondary school students (1.5 million) pay their annual school registration fee payment via mobile money which has resulted in driving cost efficiencies, increased operational efficiency, and transparency for all the beneficiaries – students and their parents, secondary schools, and the government (Ministry of National and Technical Education – MENET). Prior to this initiative, schools and local government departments reported that a significant proportion of school fee payments were lost, and that armed robberies at payment locations were commonplace. Mobile money has helped to reduce both cash handling costs and the associated risks.⁹⁴

Some of the successful experiences identified above could be replicated in Uzbekistan. In addition to the positive impact in terms of tax collection, this would also be in line with the objectives of Uzbekistan's Action Strategy on Five Priority Development Areas

2017-2021.⁹⁵ One of the stated objectives of the strategy is to reform the government system by improvement of e-government system, increasing efficiency, quality of and access to public services for the population and businesses.

85. *ibid.*

86. *ibid.*

87. *ibid.*

88. *ibid.*

89. *ibid.*

90. *ibid.*

91. *ibid.*

92. GSMA, 2017. Person-to-government (P2G) payment digitisation: Lessons from Kenya. https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2017/09/P2G_Report_Final.pdf

93. GSMA, 2018. The opportunity for mobile money person-to-government payments in Ghana. <https://www.gsma.com/mobilefordevelopment/tag/p2g-payments/>.

94. GSMA, 2015. *Paying school fees with mobile money in Côte d'Ivoire: A public-private partnership to achieve greater efficiency.* https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/10/2015_GSMA_Paying-school-fees-with-mobile-money-in-Cote-dIvoire.pdf.

95. Development Strategy Center. *Uzbekistan's Action Strategy on Five Priority Development Areas 2017 – 2021*, <http://www.strategy.uz/about-strategy>.

4. Economic impacts of tax reform on the mobile sector in Uzbekistan

4.1 Recommended options for tax reform

Based on the framework and analysis outlined in the previous section, the following three options for further tax reform have been assessed quantitatively by modelling their impacts on the mobile sector and the wider economy:

1. Phased reduction in corporation tax. The Government of Uzbekistan has already announced its intention to eliminate the excess profits tax in 2019. This has been reflected in our baseline. The proposed reform scenario covers two additional reductions in the corporation tax rate applied to mobile companies to 16% in 2020, and then a further reduction so that it is aligned with the standard rate of 12% in 2021. This reform should allow mobile operators to increase their investment to enhance network coverage and network quality, improving the user experience of mobile services and incentivising customer migration to modern technologies. This should also increase mobile penetration overall through lower prices for consumers;

2. Reducing the monthly subscriber fee from UZS 4,000 to UZS 2,000. A significant proportion of the tax saving should be passed on to mobile subscribers in the form of lower prices, improving the affordability of mobile services and increasing levels of mobile penetration; and
3. Eliminating SIM card fees on both new SIM cards and SIM cards currently in use. This reform should make mobile services cheaper and stimulate the expansion in the mobile sector and in the wider economy.

These options for further tax reform have been modelled separately in order to isolate the effects of each option on the mobile sector and the wider economy. While the implications of these specific tax reforms have been modelled, alternative scenarios and combinations of these reforms are also possible.⁹⁶

4.2 Approach to assessing the quantitative impacts of tax reform on the mobile market and the wider economy

The potential quantitative impacts of each of the tax options have been analysed using a set of modelling tools representing both the Uzbek mobile sector and the Uzbek economy as a whole. While a combination of these tax reforms would

be likely to lead to beneficial economic impacts for Uzbekistan, the assessment considers the options as separate 'scenarios', where each tax is reformed and compared to a status quo scenario with no change in taxation (the baseline scenario).

96. The economic impacts of each option for tax reform have been modelled separately, and therefore cannot be simply aggregated to determine the benefits of combined reductions in various taxes.



A model of the Uzbek mobile sector has been created to calculate changes in the mobile sector resulting from each of the tax policy scenarios. This includes the change in subscribers, usage, technology, revenues, profits, reinvestment and increased network capacity in the sector.

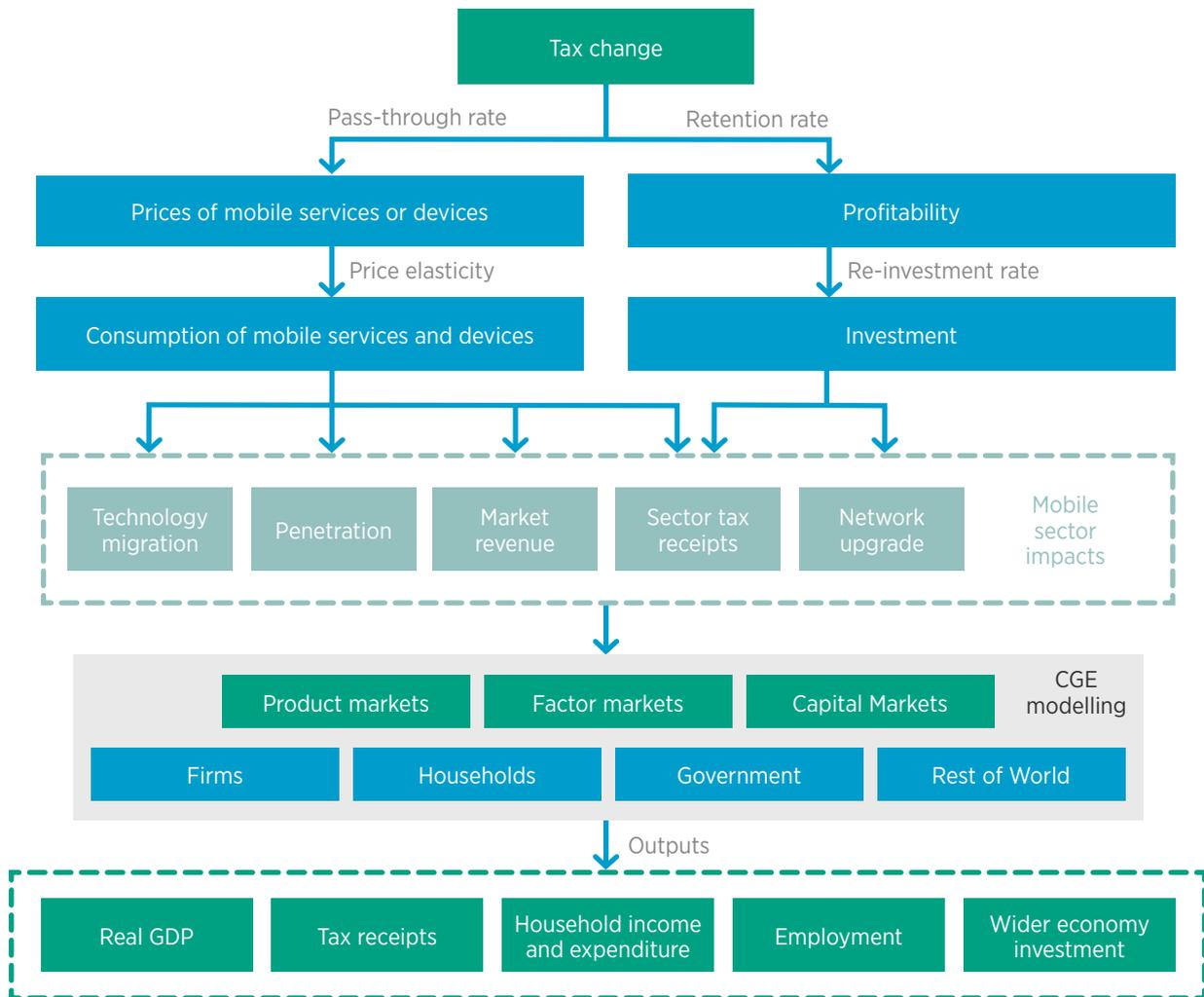
The wider economic impacts of each tax policy scenario are assessed via a 'Computable General Equilibrium' (CGE) model, namely the standard version of the Global Trade Analysis Project (GTAP) model and its associated dataset.⁹⁷ The GTAP model

is contributed to, and widely used, by government agencies, international institutions, the private sector and academia to model policy changes within countries and cross-border effects of trade policies. Some examples include the World Bank, the World Trade Organization (WTO), the Directorate General for Trade of the European Commission, the Asian Development Bank and the Organisation for Economic Co-operation and Development (OECD).⁹⁸

A schematic of the modelling approach used in this study is shown in Figure 15 below.⁹⁹

Figure 15

Overview of the modelling approach



Source: EY analysis

97. Global Trade Analysis Project, <https://www.gtap.agecon.purdue.edu/>.

98. GTAP Consortium, <https://www.gtap.agecon.purdue.edu/about/consortium.asp>.

99. Please see Appendix A for more detail on the methodology approach used in this study to construct the scenario forecasts.

4.3 Phased reduction in corporation tax

A phased reduction in corporation tax for mobile operators to 12% in 2021 would bring this tax to the level applicable to most other sectors in the economy. This would make the mobile sector more attractive for investment. This should also reduce prices, and therefore increase the affordability of mobile services. As shown in Section 1, a significant amount of additional capital expenditure by mobile operators is required in order to further expand network coverage of 3G and 4G technologies and increase network capacity to offer higher quality services.

Improved accessibility and quality of mobile services will support the implementation of objectives set out by the Government in the *National Development Strategy for 2017-21*.

This tax scenario is forecast to have the following impacts compared to the baseline scenario:¹⁰⁰

- **Mobile market revenue:** total mobile sector revenue would increase by \$20 million (1.5%) by 2023. This would be driven by additional revenues from the increased number of connections, and higher overall usage, which offset the reduction in pricing from the tax reform;
- **Investment by operators:** as a result of the tax saving, Uzbek mobile operators would increase investment by a total of around \$5 million per annum. This should enable them to further expand the network and would support the migration to modern technologies by upgrading the existing network infrastructure;
- **New connections:** an additional 358,000 unique subscribers, or 458,000 mobile connections by 2023. This is equivalent to an increase of around 1% in unique subscriber penetration (1.3% in total connections). Of these new connections, 65% would be classified as low-income. As a result of network investment and lower effective prices, unique mobile broadband penetration would increase by 1%;
- **Usage:** the reduction in the effective price of mobile services would lead to a 1.1% increase in average data usage per connection compared to the baseline;

- **Productivity gain:** the increase in unique subscriber penetration of 1% would lead to a 0.16% gain in productivity across the economy, leading in turn to further increases in output, incomes and expenditure;
- **GDP increase:** total GDP would increase by \$76 million (0.16%) compared to the baseline, as the price and productivity effects lead to a chain reaction of expansion across the economy;
- **Employment increase:** as a result of the increased economic activity in the economy, employment would increase by approximately 1,000 jobs;
- **Wider investment in the economy:** as a result of the decrease in intermediate costs for businesses that use mobile, additional resources are made available for investment across the economy. By 2023, this scenario would lead to an annual gain in investment of \$57 million (0.52%); and
- **Tax revenue impact:** this scenario would have an initial net cost to the Uzbek Government of \$10 million in 2020. However, the subsequent expansion of the mobile sector, and significant growth in the wider economy, mean that, by 2022, the annual impact becomes positive. The gain in tax revenue is about \$8 million per annum by 2023. The cumulative tax receipts will become positive in 2024, which is due to the fact that the full tax cut is implemented in 2021 only, compared to implementation of tax reductions in 2019 in scenarios 2 and 3.

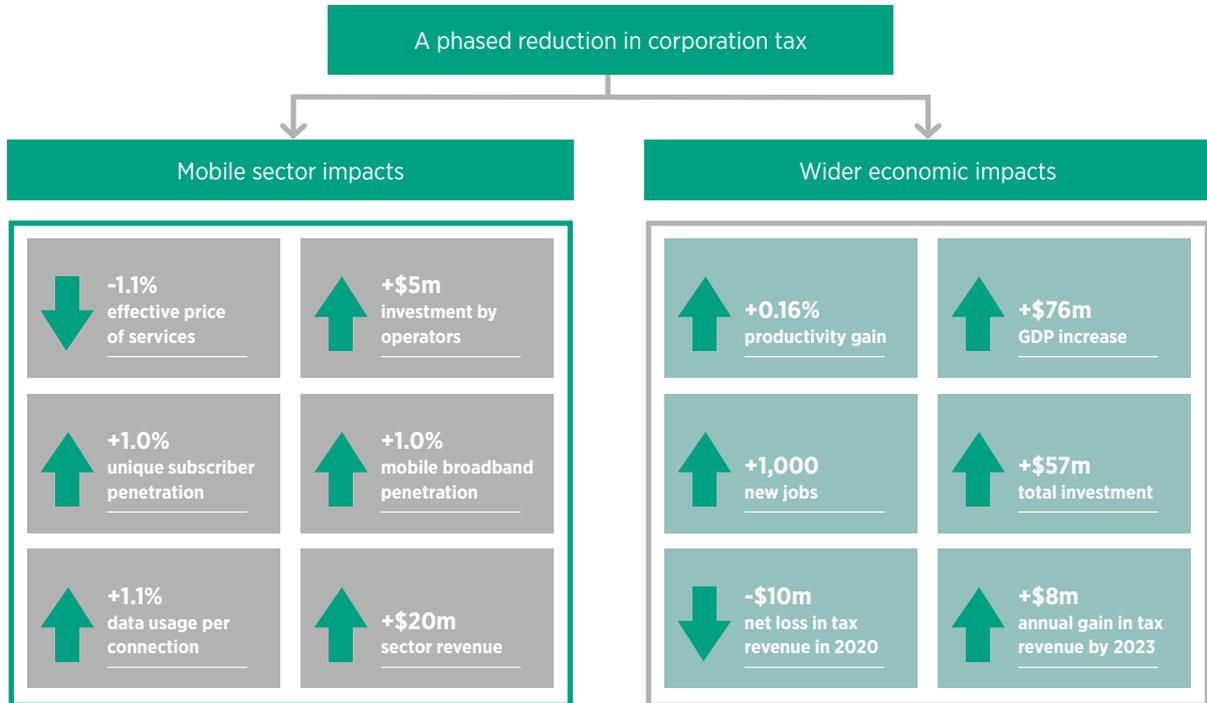
The summary of the sector-specific and economic impacts in 2023 is shown in Figure 16.¹⁰¹

100. Please see Appendix A for more detail on the modelling assumptions used in this study and see Appendix B for detailed estimated impacts.

101. All figures represent the annual variance between the baseline scenario and the tax reform scenario at 2023. These results are not cumulative.

Figure 16

Annual impacts of phased reduction in corporation tax, 2023



Source: EY analysis

4.4 Reducing the monthly subscriber fee

Reducing the mobile-specific monthly subscriber fee by 50% would lower the cost of mobile ownership for both households and businesses. For households, this reform should result in increased affordability of mobile services, especially for those at the bottom of the income pyramid. This would lead to more people joining a mobile network, more existing subscribers starting using mobile broadband, and higher levels of usage per connection, for mobile data services in particular.

For businesses using mobile services, lower prices should lead to a reduction in operational costs, freeing up resources, which could be invested elsewhere. This should result in a higher level of overall investment in the Uzbek economy and increased demand for mobile services, further contributing to the expansion of the mobile sector and overall economy.

This tax scenario is forecast to have the following impacts compared to a “baseline” scenario of no change in current levels of taxation:

- **Mobile market revenue:** total mobile sector revenue would increase by \$67 million (4.9%) by 2023. This would be driven by incremental mobile penetration and usage levels generated from reduced prices;
- **Investment by operators:** as a result of the tax saving, Uzbek mobile operators would increase investment by a total of \$2 million per annum by 2023. This should enable them to further extend and improve the network infrastructure;
- **New connections:** an additional 1.2 million unique subscribers, or 1.5 million mobile connections by 2023. This is equivalent to an increase of around 3.4% in unique subscriber penetration (4.4% in total connections). Of these new connections, 61% would be classified as low-income. As a result of network investment and lower effective prices, unique mobile broadband penetration would increase by 3.1%;
- **Usage:** the technology migration enabled by investment in the sector would lead to a 5.7% increase in average data usage per connection compared to the baseline;
- **Productivity gain:** the increase in unique subscriber penetration of 3.4% would lead to a 0.5% gain in productivity across the economy, leading in turn to further increases in output, incomes and expenditure;

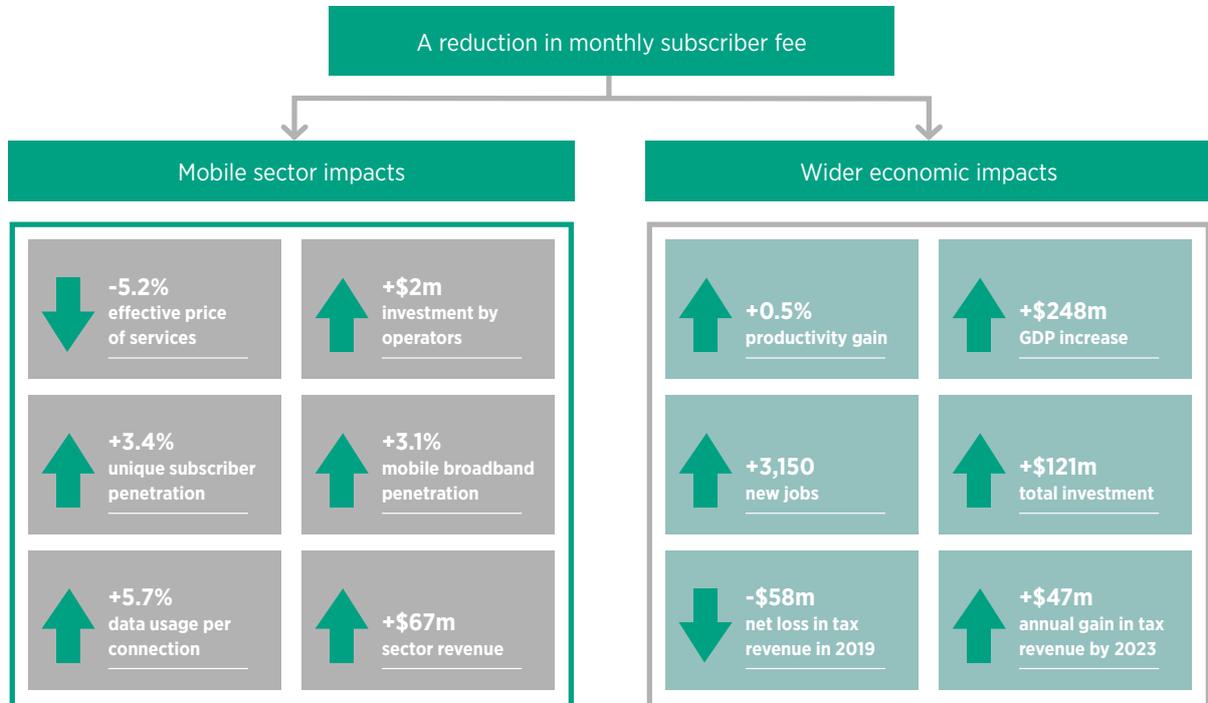
- **GDP increase:** total GDP would increase by \$248 million (0.53%) by 2023 as the price and productivity effects lead to a chain reaction of expansion across the economy;
- **Employment increase:** as a result of the increased economic activity in the economy, employment would increase by approximately 3,150 jobs by 2023;
- **Wider investment in the economy:** as a result of the increased level of output in the mobile sector, additional resources are made available for investment across the economy. By 2023, this scenario would lead to an annual gain in investment of \$121 million (1.1%); and
- **Tax revenue impact:** this scenario would have an initial net cost to the Uzbek Government of \$58 million in 2019. However, the subsequent expansion of the mobile sector, and significant growth in the wider economy, mean that, by year 2, the annual impact is positive, while the cumulative tax impact gets positive in year 4. The gain in tax revenue is approximately \$47 million per annum by 2023.

The summary of the sector-specific and economic impacts in 2023 is shown in Figure 17.



Figure 17

Annual impacts of reduction in monthly subscriber fee, 2023¹⁰²



Source: EY analysis

102. Please see Appendix B for further detail on the results of this analysis, including annual impacts between 2019 and 2023.

4.5 Eliminating SIM card fees

Mobile subscribers in Uzbekistan are currently charged fees on both new SIM cards and SIM cards in use. These fees add to the cost of mobile ownership, limiting the affordability of services and acting as a barrier to uptake, especially for low income people. The fees also increase operating costs for businesses. As shown in Section 1, Uzbekistan lags behind many other countries in Central Asia and Eastern Europe in terms of mobile penetration. Removal of these sector-specific fees would therefore contribute towards the goals of the *National Development Strategy for 2017-21*.

This tax reform would have a positive impact on the Uzbek mobile market and the overall economy, driven by increase in demand for mobile services, higher level of subscriber penetration and related productivity gains.

This tax scenario is forecast to have the following impacts compared to a “baseline” scenario of no change in current levels of taxation:

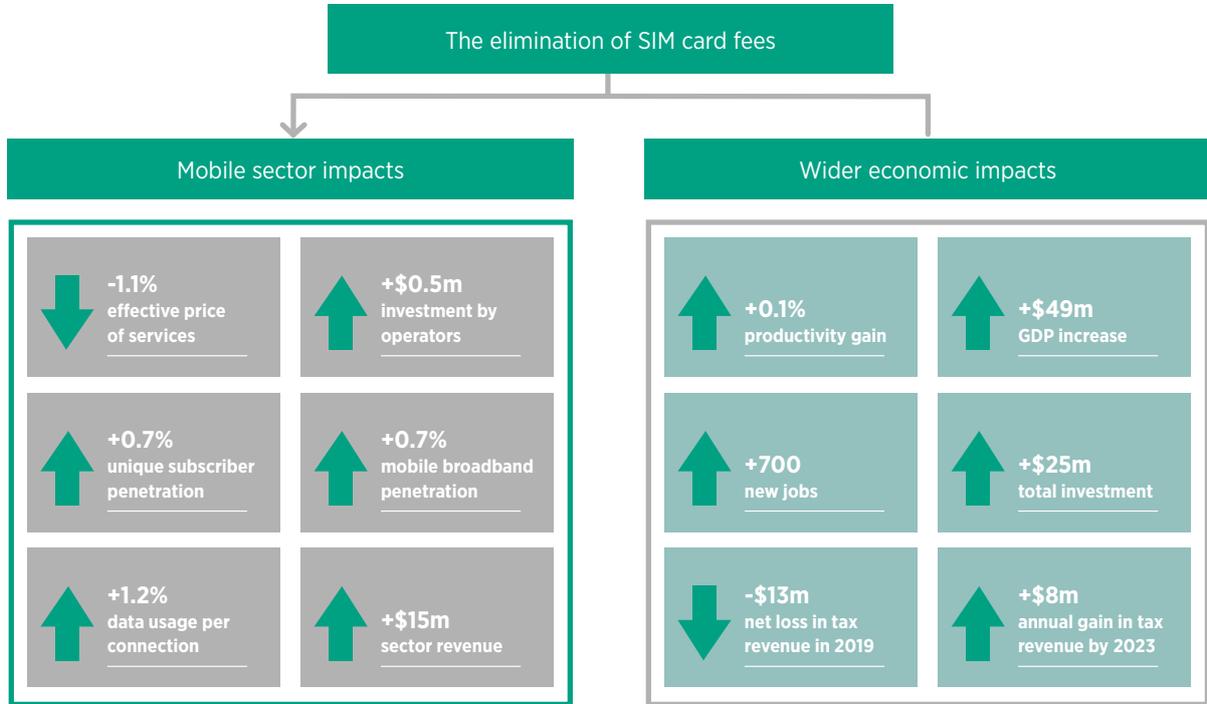
- **Mobile market revenue:** total mobile sector revenue would increase by \$15 million (1.1%) by 2023. This would be driven by an improvement in subscriber penetration and usage of mobile services per connection;
- **Investment:** as a result of the tax saving, Uzbek mobile operators would increase investment by a total of \$0.5 million per annum, what would allow them to further improve the mobile network in Uzbekistan;
- **New connections:** an additional 253,000 unique subscribers, or 324,000 mobile connections by 2023. This is equivalent to an increase of around 0.7% in unique subscriber penetration (0.9% in total connections). Of these new connections, 61% would be classified as low-income. As a result of network investment and lower effective prices, unique mobile broadband penetration would increase by 0.7%;
- **Usage:** lower data prices and technology migration enabled by investment in the sector would lead to a 1.2% increase in average data usage per connection compared to the baseline;
- **Productivity gain:** the increase in unique subscriber penetration of 0.7% would lead to a 0.1% gain in productivity across the economy, leading in turn to further increases in output, incomes and expenditure;
- **GDP increase:** total GDP would increase by \$49 million (0.11%) by 2023 as the price and productivity effects lead to a chain reaction of expansion across the economy;
- **Employment increase:** as a result of the increased economic activity in the economy, employment would increase by approximately 700 jobs by 2023;
- **Wider investment in the economy:** as a result of the increased level of output in the mobile sector, additional resources are made available for investment across the economy. By 2023, this scenario would lead to an annual gain in investment of \$25 million (0.23%); and
- **Tax revenue impact:** this scenario would have an initial net cost to the Uzbek Government of \$13 million in 2019. However, the subsequent expansion of the mobile sector, and significant growth in the wider economy, mean that, by year 2, the annual impact is positive, while the cumulative impact gets positive by year 4. The gain in tax revenue is approximately \$8 million per annum by 2023.

The summary of the sector-specific and economic impacts in 2023 is shown in Figure 18.



Figure 18

Annual impacts of eliminating SIM card fees, 2023¹⁰³



Source: EY analysis

103. Please see Appendix B for further detail on the results of this analysis, including annual impacts between 2019 and 2023.



5. Conclusion: Reforming mobile sector taxation in Uzbekistan

The mobile industry has the potential to play an increasingly important role in achieving Uzbekistan's objectives set out in the *National Development Strategy for 2017-21*, specifically by modernising the network infrastructure, improving access to modern technologies by households and businesses, encouraging FDI and driving productivity improvements across the economy. The mobile market in Uzbekistan has expanded rapidly over the past decade, with unique subscriber penetration increasing from 23% in 2008 to over 59% in 2018. The sector now generates approximately \$1.2 billion in revenue, equivalent to 2.5% of GDP.

There is still significant scope to further develop the sector, specifically through increased

penetration and incentivising customer migration to 3G and 4G technologies. Accelerating progress in these areas requires improvements in the affordability of mobile services for households, as well as further investment by operators to increase network coverage and network quality.

By promoting investment, reducing the cost of mobile services and incentivising usage, the tax reforms outlined in this report should help to connect individuals to mobile services. A more balanced and efficient taxation structure, which addresses some of the most distortive taxes in the mobile economy in Uzbekistan would generate considerable socio-economic benefits in the country. A summary of the impacts is provided in Table 5.

Table 5

Summary of socio-economic benefits of the proposed tax reforms, by 2023

Indicator	Phased reduction in corporation tax	Reducing the monthly subscriber fee	Eliminating SIM card fees
New unique subscribers	+0.4m	+1.2m	+0.3m
Sector revenue	+\$20m	+\$67m	+\$15m
GDP increase	+\$76m	+\$248m	+\$49m
Wider investment	+\$57m	+\$121m	+\$25m
Annual gain in tax revenue	+\$8m	+\$47m	+\$8m

The policy options for reform outlined in this report would contribute to achieving a number of key objectives for the mobile sector, and wider Uzbek economy. This includes supporting the *National Development Strategy* objectives of sustaining high rates of economic growth, increasing the share of services in the economy, modernising key industries and increasing investment. Furthermore, these tax reforms will be aligned with the principles of taxation which have been developed by the IMF, World Bank, OECD and UN, by:

- Reducing the level of specific taxation;
- Favouring the use of broad-based forms of taxation, such as VAT; and
- Making the tax system more equitable, recognising the positive externalities of mobile services.

These reforms should be self-sustainable in terms of revenue, and, at the same time, make the tax regime more attractive for investment in the mobile sector.



Appendix A

Methodology

This Appendix sets out the methodology applied in this study to calculate the potential economic impacts of tax policy scenarios. As described in Section 4, the economic modelling is undertaken in two stages, using two models:

- A model of the Uzbek mobile sector, the ‘telecoms market model’ has been created to calculate changes in the mobile sector resulting from each of the tax policy scenarios. This includes the change in subscribers, usage, technology, revenues, profits, reinvestment and expanded capacity in the sector; and
- The wider economic impacts of each tax policy scenario are assessed via a Computable General Equilibrium (CGE) model, namely the standard version of the Global Trade Analysis Project (GTAP) model and its associated dataset.

Mobile sector modelling

Design of the telecoms market model

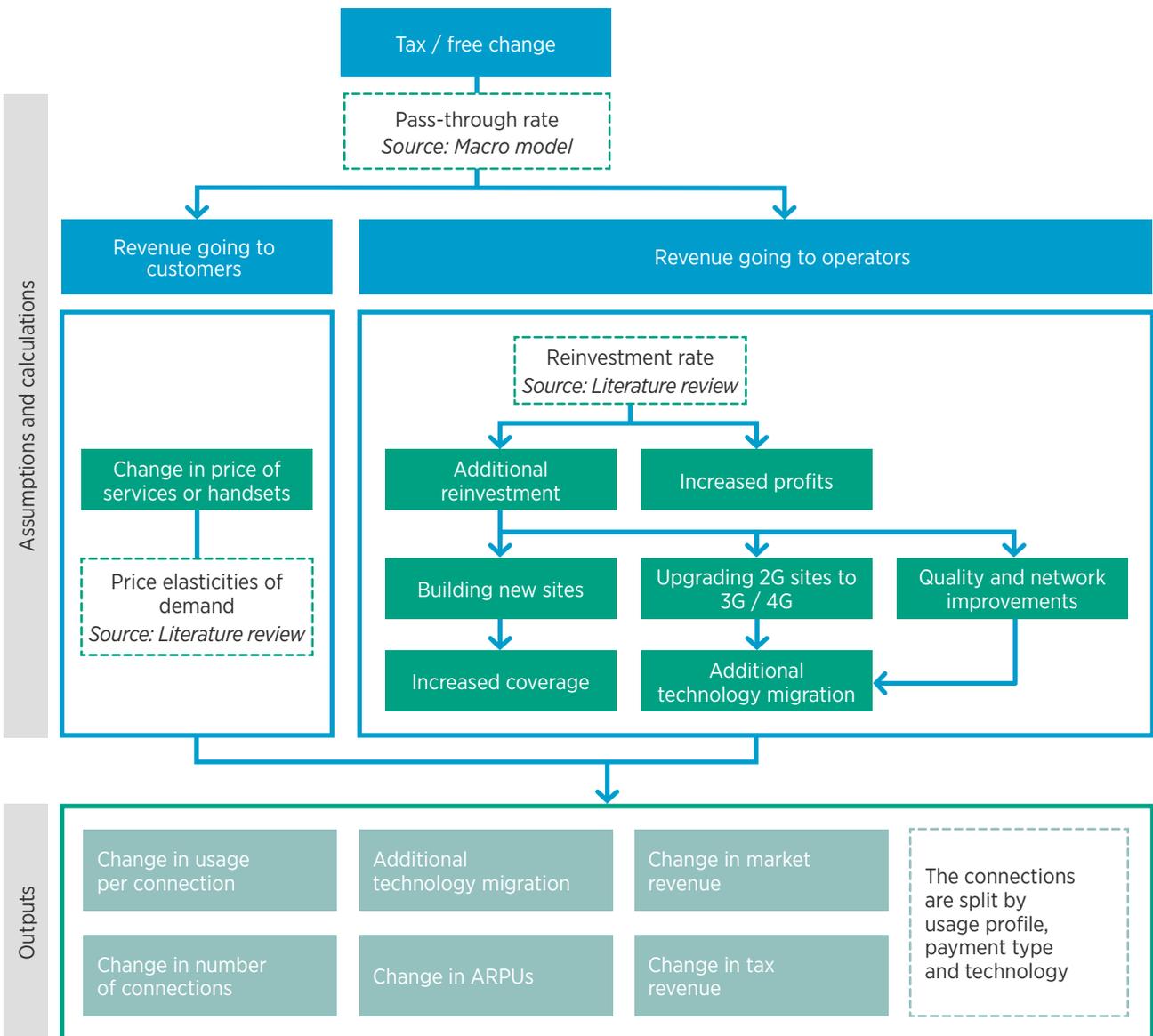
The telecoms market model covers the period 2017–2023, and uses data from local mobile operators and the GSMA Intelligence database. For modelling the scenarios, it has been assumed that the first phase of tax changes becomes

effective in 2019. The telecoms market model then calculates separate forecasts for each tax policy scenario. The difference between the scenario forecasts and the baseline is effectively the additional impact resulting from the tax policy reform.¹⁰⁴

A schematic of this model is presented in Figure 19 below.

Figure 19

Overview of mobile sector modelling approach



Source: EY analysis

104. The baseline forecast is the counterfactual scenario for which results are compared against. It is based on market forecasts by operators and GSMAi over the period 2018-2023.

As illustrated in Figure 19, the telecoms market model captures the impact on consumer demand and operators' profits and investment as a consequence of a mobile taxation reform. The model allows for the estimation of the additional connections, technology migration and mobile penetration generated across different usage profiles (categorised by low, medium and high-income groups), and across 2G, 3G and 4G services.

Mobile market impacts

For consumers, a reduction in the tax rate leads to a decrease in the effective price of mobile services or handsets. The relationship between the size of the tax reduction and the related decrease in prices is dependent on the level of "pass-through".¹⁰⁵ The resulting reduction in the effective price of mobile services is modelled to have the following impacts:

- An increase in usage per connection, as lower prices lead to increased demand for services;
- An increase in the number of connections, as lower prices reduce the relative cost of mobile ownership which attracts new subscribers; and
- Additional technology migration, as lower prices for smartphones and / or cheaper data services accelerates the migration of existing subscribers from 2G services to 3G / 4G services.

For operators the proportion of the tax reduction that is not passed through in the form of lower prices would either be retained as increased profit or reinvested. The decision between these two options depends on an assumption made on the reinvestment rate.¹⁰⁶ The following effects of additional investment are estimated using the telecoms market model:

- An increase in the number of subscribers, as the investment enables the building of new mobile sites and, hence, increased network coverage;
- Additional technology migration, as the investment enables upgrade of 2G sites to 3G / 4G and, therefore, existing subscribers have the opportunity to upgrade from 2G to 3G / 4G services; and
- A decrease in the effective price of data driven by investment made by operators to improve the capacity of existing mobile sites. As this improves the quality and speed of mobile broadband connections, subscribers are able to download more content. This further incentivises 2G customers to migrate to 3G and 4G technologies.

Key outputs

The key outputs of the telecoms market model include changes to the baseline forecast in respect of:

- the number of connections;
- the number of unique subscribers;
- mobile market penetration;
- total market revenue; and
- sector taxation receipts.

For connections and subscribers the model specifies market segments by usage profile (high, medium and low), technology (2G, 3G and 4G) and payment type (prepay and postpay). Therefore the telecoms market model is run for a total of 18 categories of subscribers.

Macro-economic modelling

Macro-economic modelling approach

The macro-economic model builds upon the mobile sector analysis to estimate how lower taxes and prices feed through to the wider economy. This takes into account forward and backward linkages in the supply chain (i.e. supply chain for mobile service providers, and where mobile services are used in other sectors of the economy), the interaction between expanding businesses and a rise in household incomes and employment, and an assumed productivity gain across the economy as mobile penetration rises. This model gives an estimate of the dynamic impact on total tax receipts, allowing for all these indirect effects to work through the economy.

The macro-economic impacts are modelled in two stages:

- The impact of the tax change on the sector itself and the interaction with the wider economy; and
- A boost to economy-wide productivity resulting from the increase in penetration.

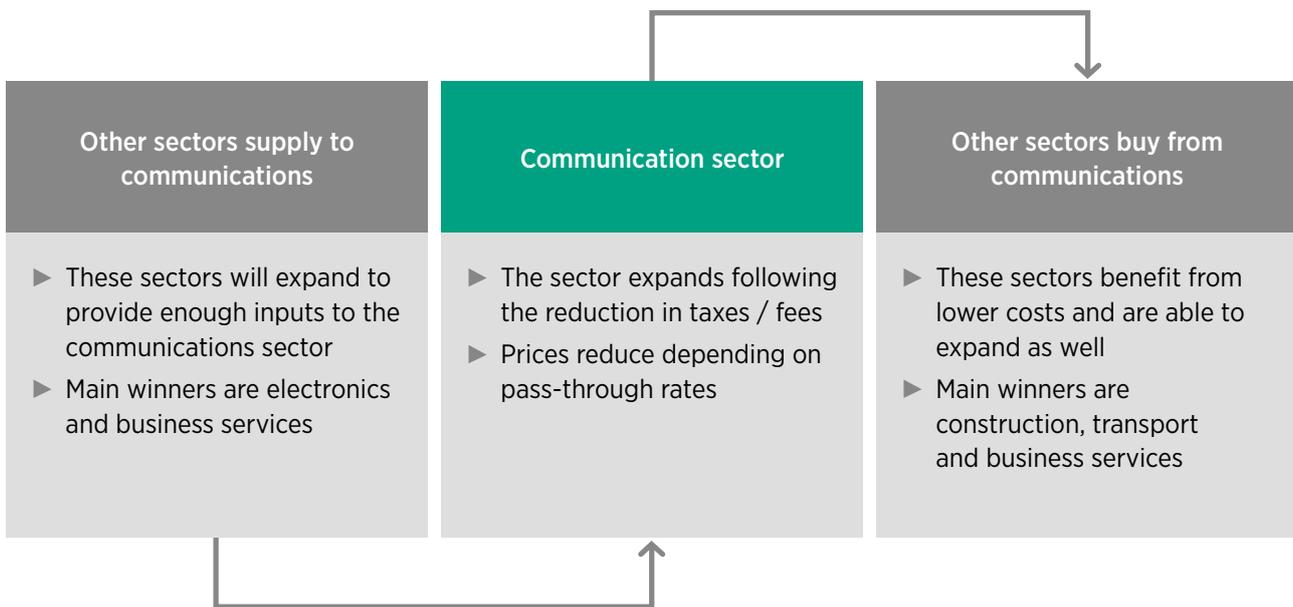
The impact of the mobile sector on the wider economy starts from its supply chain linkages. In particular, telecommunications is an important input to businesses right across the Uzbek economy. As lower taxes and consequent lower prices are passed on, many businesses would benefit and be able to expand their own outputs. Businesses that supply the mobile sector would also benefit from its expansion (see Figure 20).

105. The percentage of the tax / fee change which is passed through to subscribers in the form of lower prices. This is calculated based on the relative slope of the supply and demand curves for mobile services.

106. The percentage of the tax / fee change not passed through to subscribers which is reinvested by operators.

Figure 20

Supply chain linkages



Source: EY analysis

The wider interactions in the economy lead to a virtuous circle of economic expansion:

- The forward and backward linkages from the mobile sector lead to expansion in a number of related sectors, and this in turn creates more expenditure circulating in the economy;
- The mobile communications sector would see increased investment, as it is now relatively more profitable than in the baseline;
- Overall household incomes would expand, leading to more spending in the wider economy and an increase in aggregate savings to fund investment;
- Higher real wages attract more people into the workforce, expanding employment and in turn further boosting spending in the economy;

- A larger economy requires more investment to complement the expansion in employment and to support the larger capital stock, which would see growth in construction and in sectors making investment goods; and
- The economy is modelled to be constrained by available resources (workers, capital), so some sectors must contract to make way for the expanding sectors.

These linkage and interaction effects would be reinforced by an increase in productivity in the Uzbek economy, due to the rise in penetration of the mobile sector. This in turn leads to a further expansion in output, incomes and expenditure in the economy.

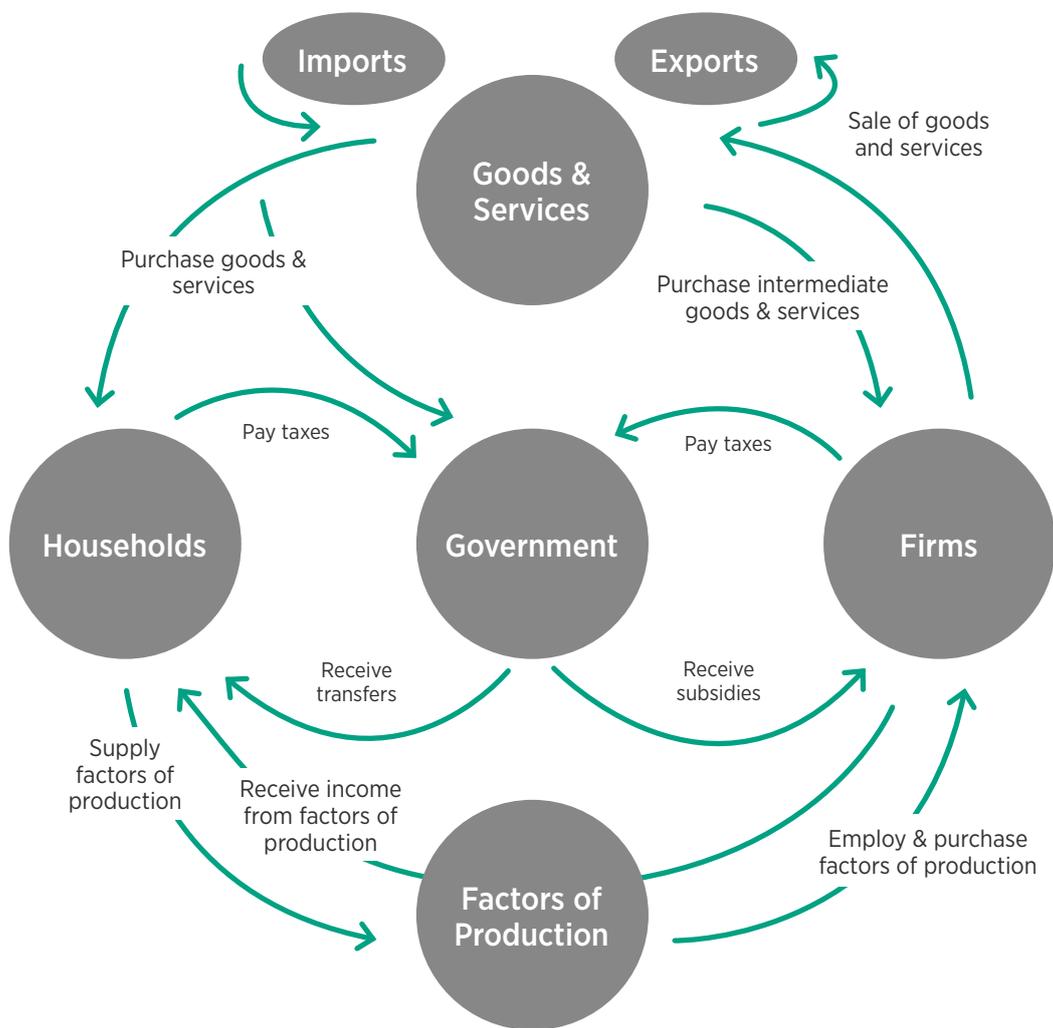
The CGE model

CGE models reproduce the structure of the whole economy by mapping all existing economic transactions among diverse economic agents (e.g. households, firms). They are large-scale numerical models that simulate the core economic interactions in the economy, and replicate the circular flow of the economy (see Figure 21). They are based on the economic theory of general equilibrium; i.e. that

supply and demand for goods, services and factors of production in the economy must be balanced. Economic relationships in CGE models are based on theory and empirical evidence from the academic literature. The prices of goods, services and factors of production adjust until all markets clear, that is, until they are simultaneously in equilibrium.

Figure 21

Circular flow of the economy



Source: Adapted from M. Burfisher, 2011, *Introduction to Computable General Equilibrium Models*

Central in CGE modelling is the choice of closure rules. This relates to the specification of endogenous (those determined by the model) and exogenous (those determined externally) variables. In the standard GTAP model prices, quantities of all non-endowment commodities (e.g. produced and

traded commodities) and regional incomes are endogenous variables, while policy variables, technical change variables and population are exogenous to the model.¹⁰⁷ This standard closure is amendable with a wide range of alternative options available depending on modelling assumptions adopted.

107. T.W. Hertel, 1997, *Global Trade Analysis: Modelling and Applications*.

Scenario modelling

The CGE model is used to conduct a number of tax policy simulations and hence assess the impacts of detailed policy scenarios on the wider economy. The approach is as follows:

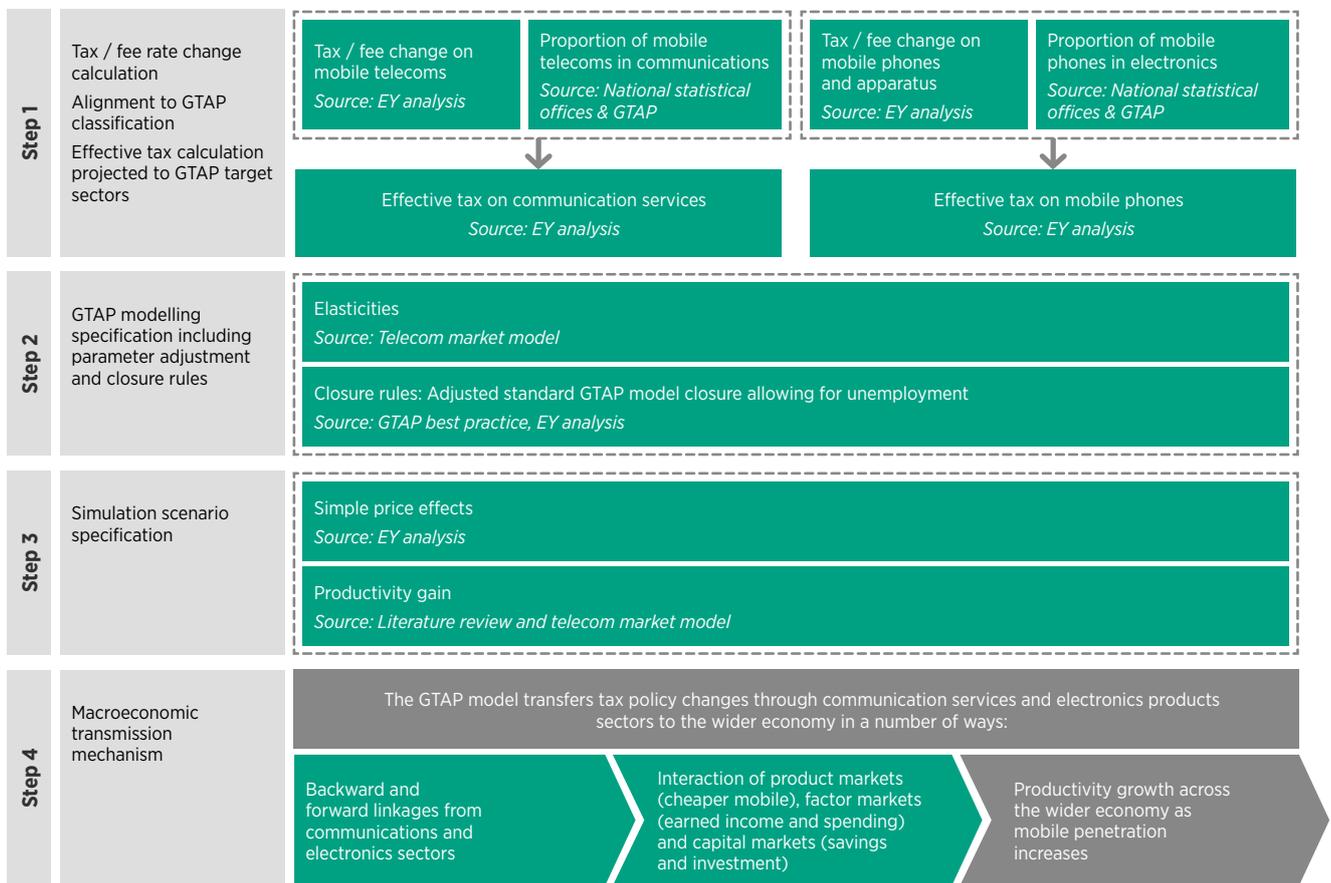
- First, the effective tax on communication services (which includes mobile services) is calculated;¹⁰⁸
- Second, GTAP model parameters (e.g. own-price and cross-price elasticities) and closure rules (e.g. related to employment

assumptions) are adjusted to ensure better alignment with the mobile telecoms market and broader characteristics of Uzbekistan;

- Third, simulation scenarios are run that account for the direct effect of taxes and tariffs on prices and a productivity improvement from any increase in mobile penetration (see Figure 22); and
- Finally, simulations are performed estimating the new equilibrium following the policy shocks introduced.

Figure 22

Overview of macro-economic modelling approach



Source: EY analysis

108. All taxes affecting the production and consumption of mobile services and mobile phones in Uzbekistan (e.g. turnover, excise, VAT) are combined to estimate the effective (compound) tax rates on final and intermediate consumption of goods and services.

The impact of changes in tax policy on pricing

Mobile taxation policy changes may be fully or partially passed through to consumer prices for mobile goods and services. The extent of pass-through depends on specific market factors (e.g. the extent of competition in the specific market) and is likely to vary by sector and country.

In this study, the extent to which tax changes are passed onto consumers, is derived from the macro-economic modelling in GTAP and specifically for Uzbekistan. The GTAP model calculates the communication sector-specific short-to-medium-run change in relative prices of intermediate and final goods after a change in taxation. This calculation is based on relationships derived for Uzbekistan that are incorporated in the GTAP model, and which are based on input-output tables from national statistics and other empirical data on the Uzbek economy. In the GTAP model, tax reform scenarios are modelled as a percentage change in the overall taxation burden on

consumption and/or production in the sector.

Therefore, the change in price in any country is determined by the specific market conditions in the communications sector and the relationships in the wider economy of that country, as these are reflected in the underlying data (demand and supply flows) and parameters (elasticities and other estimated coefficients) of the economy under analysis. Specifically, the extent of pass-through is determined by the assumed elasticity of both demand and supply in the market.¹⁰⁹ The elasticity of supply depends on the competitive environment and degree of market power within the industry, and reflects the profitability, input costs and usage of natural resources in production. The elasticity of demand is determined by consumer preferences, and varies depending on the underlying behavioural relationships in the Uzbek economy.

Table 6 provides the pass-through rates derived in the GTAP model for each scenario.

Table 6

Pass-through rates derived for each scenario

Indicator	Phased reduction in corporation tax	Reducing the monthly subscriber fee	Eliminating SIM card fees
Pass-through rate	61%	96%	96%

In scenario 1, the derived pass-through rate for the corporation tax cut is 61%, which refers to the proportion of the tax savings passed on to subscribers through reduction in prices of mobile services. This relatively low pass-through rate is driven by the nature of the tax¹¹⁰, in particular, that corporation tax is levied on profits rather than sales. Therefore, mobile operators are able to retain a higher share of the tax saving, which is then channelled into increased investment, or retained as higher profits.

Higher pass-through rates have been derived in scenarios 2 and 3. These are driven by competitive market dynamics in Uzbekistan, and the consumption nature of the tax, which makes them more “visible” to subscribers, and hence more likely to be passed on. The competitive intensity may be explained by a significant potential for subscriber and penetration growth in the market, which incentivises operators to maintain share through price competitiveness.

109. For instance, if we assume that supply is perfectly elastic, then consumers would absorb the full tax reduction in the form of lower prices.

110. Consumption taxes are more visible to end-customers than some other business taxes, as they have a more direct and immediate impact on price.

Key assumptions for Uzbekistan

The assumptions underlying the mobile sector and macro-economic modelling for this study are based on an extensive literature review and are presented in more detail below.

Price elasticity of demand

The impact of price changes on the consumption of mobile services is captured via estimates of the price elasticity of demand (PED), which measures the change in quantity demanded following a change in price.

A literature review has been conducted (covering 30 studies), as a basis for establishing a set of assumptions on the PED.

For purposes of this study, we define three sets of PEDs:

- Mobile usage elasticities which relate to the change in usage per connection following a change in price;
- Mobile ownership elasticities which relate to the change in the number of connections following a change in the price of services and handsets; and
- Technology migration elasticities which relate to the migration from 2G to 3G / 4G services following a change in the price of data, and a change in the price of handsets

All elasticities in this study are further varied by income groups of subscribers (low, middle and high).

To establish relevant price elasticities for Uzbekistan, we have used a set of studies pertaining to low-income countries (Uzbekistan is defined as a lower middle income economy by the World Bank).¹¹¹

The following price elasticities of demand have been assumed in this study:

- Usage elasticities: from -0.65 to -0.83 for voice and from -1.04 to -1.32 for data;
- Ownership elasticities: from -0.78 to -1.00 for mobile services; and
- Technology migration elasticities: from -0.25 to -0.32 for data.

Reinvestment rate

The exact reinvestment rate depends on a range of factors, including the cash flow of a specific company. In the modelling, it is assumed that operators re-invest 60% of the portion of the tax reduction that they retain (i.e. the proportion that is not passed onto subscribers). The remaining 40% is retained as increased profit. This assumption is based on a review of previous studies of the economic impacts of mobile taxation reforms.¹¹²

GSMAi data suggests that 3G/4G covered around 90% of people at the end of 2017. Further investment is therefore required to both extend the 3G and 4G networks and upgrade the existing sites. The modelling assumes that reinvestment will be allocated with 50% going to build new 3G sites, 30% to build new 4G sites, and the remainder split equally between upgrading existing 2G and 3G sites.

Total factor productivity impact

The benefits of mobile connectivity – and how they translate to the macro economy – have been widely studied in the literature. The effects of mobile connectivity on the economy are largely delivered through their impact on productivity, one of the main measures being total factor productivity (TFP).¹¹³

It has been assumed that a 1% increase in unique subscriber penetration leads to a 0.15% increase in total factor productivity. This value is based on a review of the literature, and with reference to previous studies conducted by the GSMA. This relatively significant impact reflects limited fixed infrastructure and low mobile penetration in Uzbekistan.¹¹⁴

In this study, the shock to TFP is modelled as a change in the productivity of all primary factors (of equal proportions) in the Uzbek economy. This productivity change enters as a variable into the constant elasticity of substitution (CES) value-added production function.¹¹⁵ The TFP shock works in the Uzbek model as the sum of two effects:

- by reducing production costs which are passed on to consumers through lower prices, which in turn leads to higher demand and production levels (the output effect); and
- by reducing the demand for primary factors, for a given output level (productivity effect).

111. World Bank, <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>.

112. See, for example, S. Gilchrist and C. Himmelberg, 1995, "Evidence on the role of cash flow for investment" and R. Katz, 2012, "Assessment of the economic impact of taxation on communications investment in the United States".

113. TFP is a measure for how efficiently an economy uses inputs during its production process.

114. This calculation is based on previous GSMA analysis which outlines the relationship between mobile penetration rates, infrastructure and productivity.

115. The factor substitution effect is zero, as the productivity of all factors changes in the same proportions.

Timing of macro-economic impacts

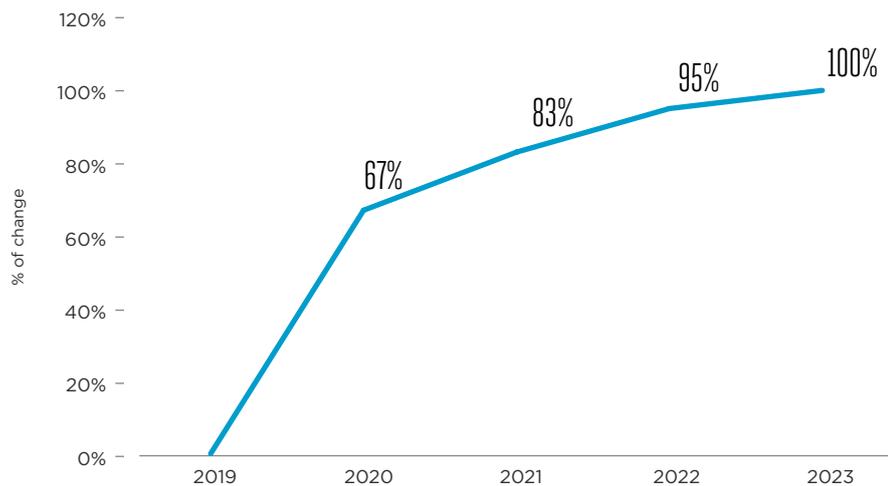
The standard GTAP model seeks to calculate differences in key economic variables between different possible states of the economy – a baseline case and a policy scenario – at a fixed point in time. This means that the standard model is a comparative static model and does not model year-by-year changes to the new equilibrium.

The CGE literature on the dynamic impacts of tax policy on a country's GDP suggests that the transition to a new equilibrium takes on average 5-10 years with the annual impact on GDP increasing at a diminishing rate.¹¹⁶

Using this evidence from the literature, we have formed assumptions on the transition path between the baseline case and the policy change. Where the tax change is implemented in 2019, 67% of the steady state impact is felt in 2020 (the next year following the policy is implemented), 83% in 2021, 95% in 2022 and 100% in 2023 (five years after the policy implementation). The productivity effects are assumed to come into effect from 2020. The assumed path is illustrated in Figure 23 below.

Figure 23

Time path for the transition to the new equilibrium



Source: EY analysis

116. See, for example, HMRC, 2014, *The Dynamic Effects of Fuel Duty Reductions*; HMRC, 2013, *The Dynamic Effects of Corporation Tax*; and J. Giesecke and N. Nhi, 2009, "Modelling Value-Added Tax in the Presence of Multiproduction and Differentiated Exemptions".

Closure rules in the macro-economic model

In order to account for specific labour market conditions in Uzbekistan, a specific closure rule has been applied in GTAP in relation to employment and wages. The standard approach in CGE models is to assume that the supply of labour is fixed, and hence an increase in the demand for labour results in an increase in wages and prices, rather than employment. However, data from the Uzbekistan labour force survey demonstrates that the highest rate of unemployment is among people with a low/basic skill set.

Therefore, the modelling approach allows for employment to increase among low-skilled labour in Uzbekistan, specifically in the “Service / shop workers” category. This means that an expansion of demand leads to both an increase in employment and an increase in wages in the economy.



Appendix B

Scenario estimations

This Appendix sets out the detailed estimated mobile market and economic impacts of each of the tax scenarios, compared to a baseline case of no tax reform.

Scenario 1: Phased reduction in corporation tax

This scenario models a phased reduction in corporation tax first by following the planned elimination of the excess profits tax in 2019, then two further reductions to 16% and 12% in the following two years. The initial elimination of the excess profits tax is also included in the baseline, meaning there is no change in the scenario relative to baseline until 2020.

Table 7

Annual impact of phased reduction in corporation tax on selected variables

Indicator	2019	2020	2021	2022	2023
MOBILE SECTOR IMPACTS					
Change in effective price of services ¹¹⁷ vs baseline	0.0%	-0.5%	-0.5%		
Cumulative price change vs baseline	0.0%	-0.5%	-1.1%		
Incremental connections (total)	0	82,000	266,000	398,000	458,000
Incremental unique subscribers (total)	0	64,000	207,000	310,000	358,000
Incremental connections (3G and 4G)	0	78,000	258,000	380,000	444,000
<i>of which technology migration</i>	0	19,000	51,000	50,000	47,000
Incremental connections by low-income subscribers	0	50,000	165,000	252,000	297,000
ARPU (total) vs baseline	0.0%	-0.3%	-0.3%	-0.1%	-0.1%
Increase in mobile penetration (connections)	0.0%	0.2%	0.8%	1.2%	1.3%
Increase in mobile penetration (unique subscribers)	0.0%	0.2%	0.6%	0.9%	1.0%
Increase in mobile penetration (unique MBB subscribers)	0.0%	0.2%	0.6%	0.9%	1.0%
Data usage vs baseline	0.0%	0.6%	1.9%	2.6%	2.7%
Data usage per connection vs baseline	0.0%	0.3%	0.9%	1.1%	1.1%
Increase in market revenue (total)	\$ 0m	\$ 0m	\$ 10m	\$ 19m	\$ 20m
Increase in market revenue (total) vs baseline	0.0%	0.0%	0.7%	1.3%	1.5%
Additional investment	\$ 0m	\$ 3m	\$ 6m	\$ 6m	\$ 5m
Static tax impact ¹¹⁸	\$ 0m	-\$ 13m	-\$ 26m	-\$ 25m	-\$ 24m
Impact on mobile sector taxation	\$ 0m	-\$ 12m	-\$ 22m	-\$ 19m	-\$ 17m
WIDER ECONOMIC IMPACTS¹¹⁹					
Full impact on communications sector taxation ¹²⁰	\$ 0m	-\$ 14m	-\$ 27m	-\$ 27m	-\$ 27m
Receipts from all other sectors	\$ 0m	\$ 4m	\$ 18m	\$ 31m	\$ 35m
Total tax receipts	\$ 0m	-\$ 10m	-\$ 9m	\$ 3m	\$ 8m
<i>Cumulative total receipts</i>	\$ 0m	-\$ 10m	-\$ 19m	-\$ 15m	-\$ 8m
Real GDP	\$ 0m	\$ 1m	\$ 29m	\$ 64m	\$ 76m (0.16%)
Employment		Impact estimated for 2023 only			991 (0.01%)
Household income		Impact estimated for 2023 only			\$ 52m (0.19%)
Household expenditure		Impact estimated for 2023 only			\$ 49m (0.17%)
Investment		Impact estimated for 2023 only			\$ 57m (0.52%)

117. The reported change in price refers to an effective price as opposed to a headline price. Therefore, any bonus airtime is treated as a decrease in effective price.

118. This is the initial direct cost to the Exchequer, before behavioural change in the sector and the economy; overstates the true cost.

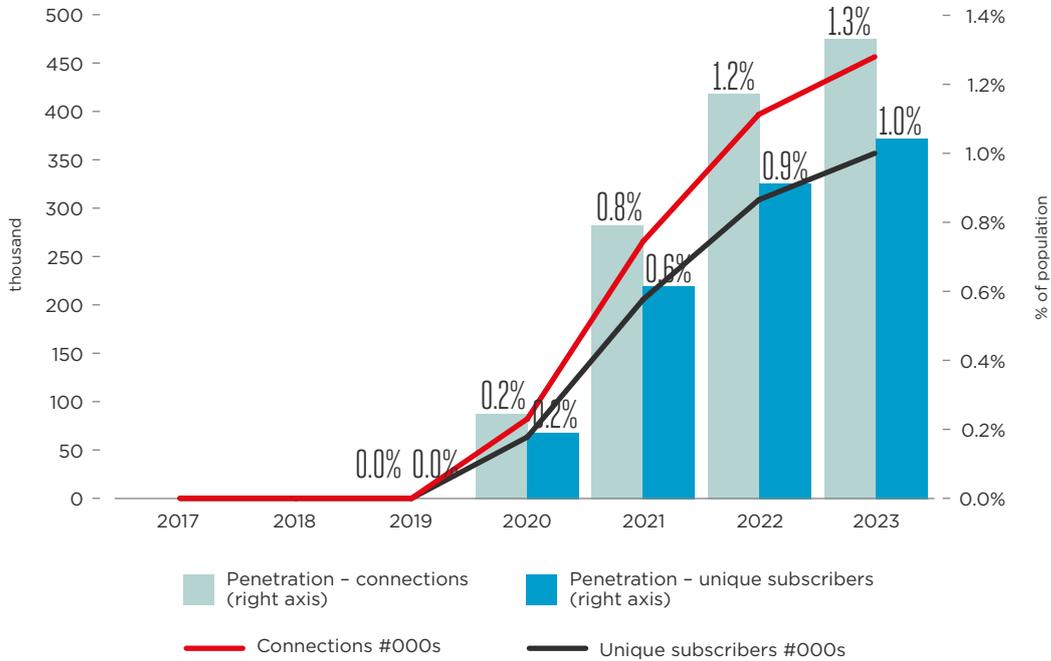
119. For some of the variables included below, the impact has been calculated as at 2023.

120. The productivity impact of the tax reform is assumed to take place in years 3 onwards, resulting in an increase in government tax receipts. The timing of the full impact on communications sector taxation is based on a combination of the phased implementation of the tax cuts, as well as the lagged manner in which the benefits will occur.



Figure 24

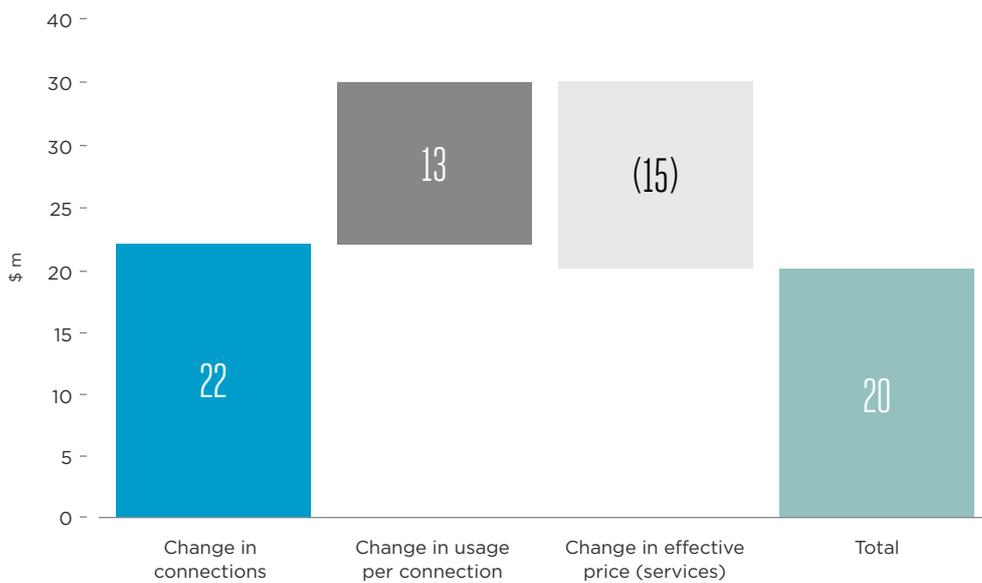
Connections and penetration impacts of phased reduction in corporation tax



Source: EY analysis

Figure 25¹²¹

Main drivers of the market revenue change following phased reduction in corporation tax

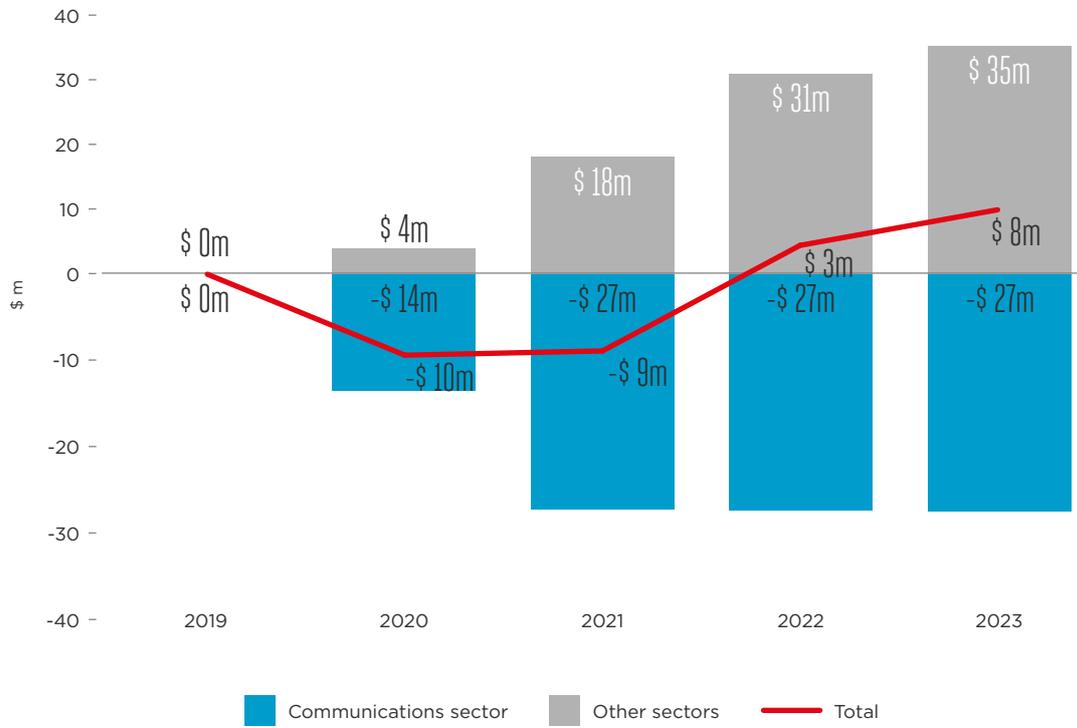


Source: EY analysis

121. This figure demonstrates the factors driving the change in mobile market revenue compared to the baseline case on no reform.

Figure 26

Phased reduction in corporation tax – annual impacts on tax receipts, \$ m



Source: EY analysis



Scenario 2: Reducing the monthly subscriber fee

This scenario would reduce the monthly subscriber fee of UZS 4,000 to UZS 2,000.

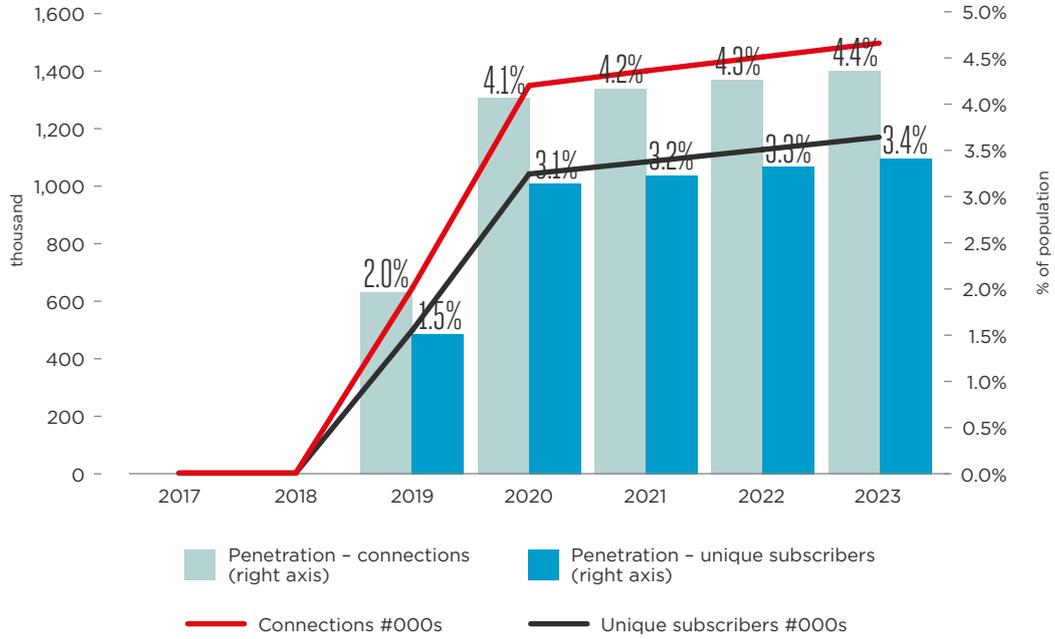
Table 8

Annual impact of reducing the monthly subscriber fee on selected variables

Indicator	2019	2020	2021	2022	2023
MOBILE SECTOR IMPACTS					
Change in effective price of services vs baseline	-5.2%				
Incremental connections (total)	646,000	1,351,000	1,402,000	1,450,000	1,499,000
Incremental unique subscribers (total)	499,000	1,045,000	1,087,000	1,130,000	1,173,000
Incremental connections (3G and 4G)	540,000	1,136,000	1,120,000	1,239,000	1,347,000
<i>of which technology migration</i>	131,000	158,000	11,000	17,000	23,000
Incremental connections by low-income users	382,000	799,000	838,000	881,000	922,000
ARPU (total) vs baseline	-2.7%	-0.3%	-0.4%	-0.4%	-0.4%
Increase in mobile penetration (connections)	2.0%	4.1%	4.2%	4.3%	4.4%
Increase in mobile penetration (unique subscribers)	1.5%	3.1%	3.2%	3.3%	3.4%
Increase in mobile penetration (unique MBB subscribers)	1.3%	2.6%	2.6%	2.8%	3.1%
Data usage vs baseline	5.8%	11.5%	11.1%	11.2%	11.3%
Data usage per connection vs baseline	3.2%	6.1%	5.6%	5.7%	5.7%
Increase in market revenue (total)	-\$ 4m	\$ 70m	\$ 69m	\$ 68m	\$ 67m
Increase in market revenue (total) vs baseline	-0.3%	4.8%	4.7%	4.8%	4.9%
Additional investment	\$ 2m	\$ 2m	\$ 2m	\$ 2m	\$ 2m
Static tax impact	-\$ 79m	-\$ 81m	-\$ 83m	-\$ 85m	-\$ 87m
Impact on mobile sector taxation	-\$ 78m	-\$ 61m	-\$ 63m	-\$ 65m	-\$ 67m
WIDER ECONOMIC IMPACTS					
Full impact on communications sector taxation	-\$ 66m	-\$ 64m	-\$ 64m	-\$ 64m	-\$ 63m
Receipts from all other sectors	\$ 8m	\$ 76m	\$ 93m	\$ 105m	\$ 110m
Total tax receipts	-\$ 58m	\$ 12m	\$ 29m	\$ 42m	\$ 47m
<i>Cumulative total receipts</i>	-\$ 58m	-\$ 46m	-\$ 17m	\$ 25m	\$ 72m
Real GDP	\$ 3m	\$ 166m	\$ 206m	\$ 235m	\$ 248m (0.53%)
Employment					Impact estimated for 2023 only 3,146 (0.02%)
Household income					Impact estimated for 2023 only \$ 167m (0.60%)
Household expenditure					Impact estimated for 2023 only \$ 161m (0.56%)
Investment					Impact estimated for 2023 only \$ 121m (1.10%)

Figure 27

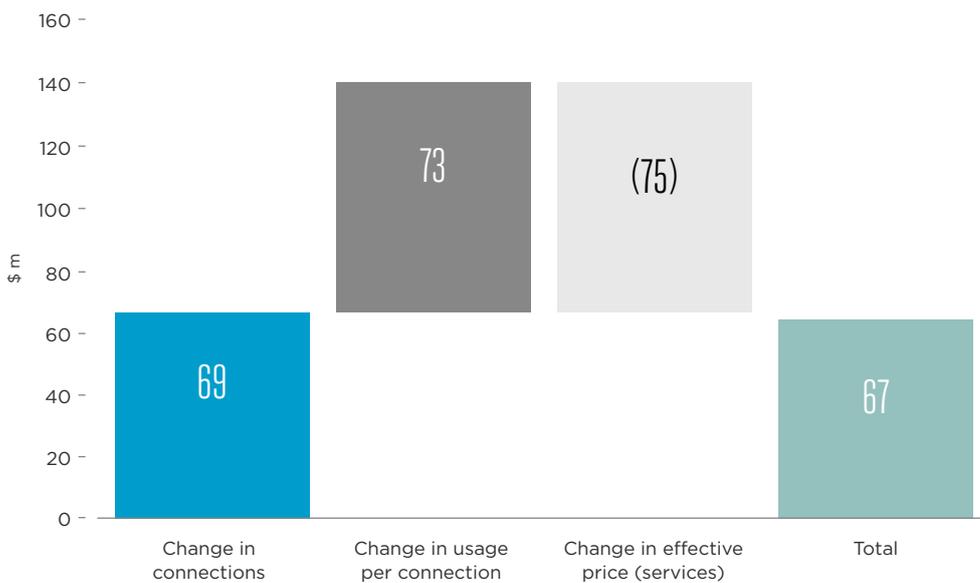
Connections and penetration impacts of reducing the monthly subscriber fee



Source: EY analysis

Figure 28

Main drivers of the market revenue change following reduction in monthly subscriber fee

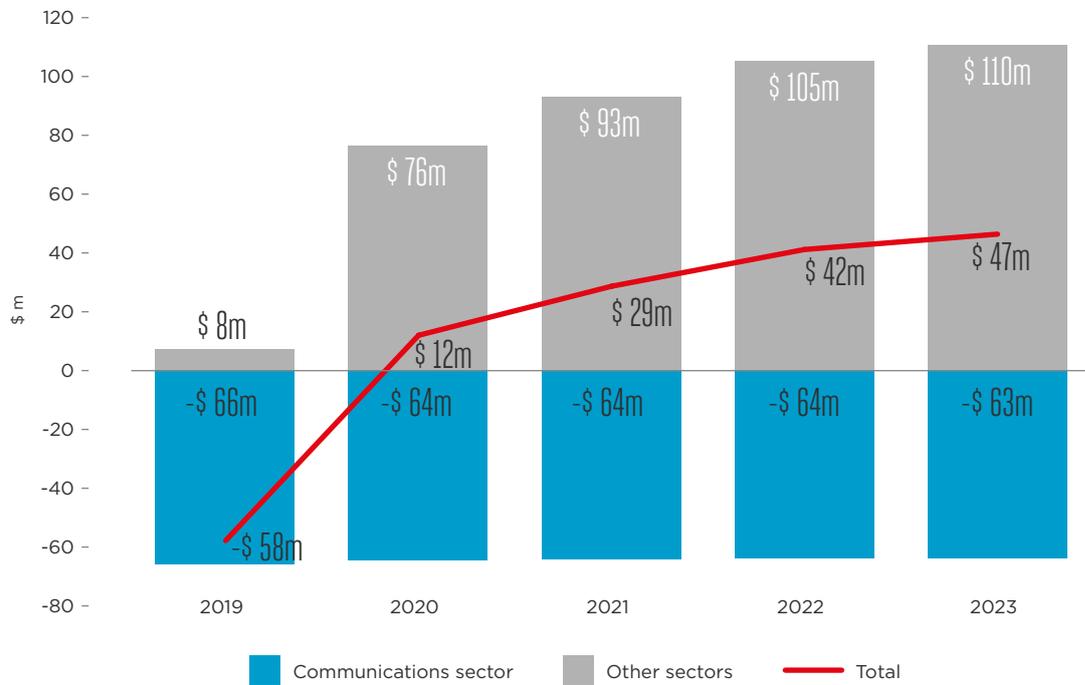


Source: EY analysis



Figure 29

Reducing the monthly subscriber fee - annual impacts on tax receipts, \$ m



Source: EY analysis



Scenario 3: Eliminating SIM card fees

In Uzbekistan there are currently fees on all new SIM cards, and SIM cards currently in use. This scenario eliminates these fees.

Table 9

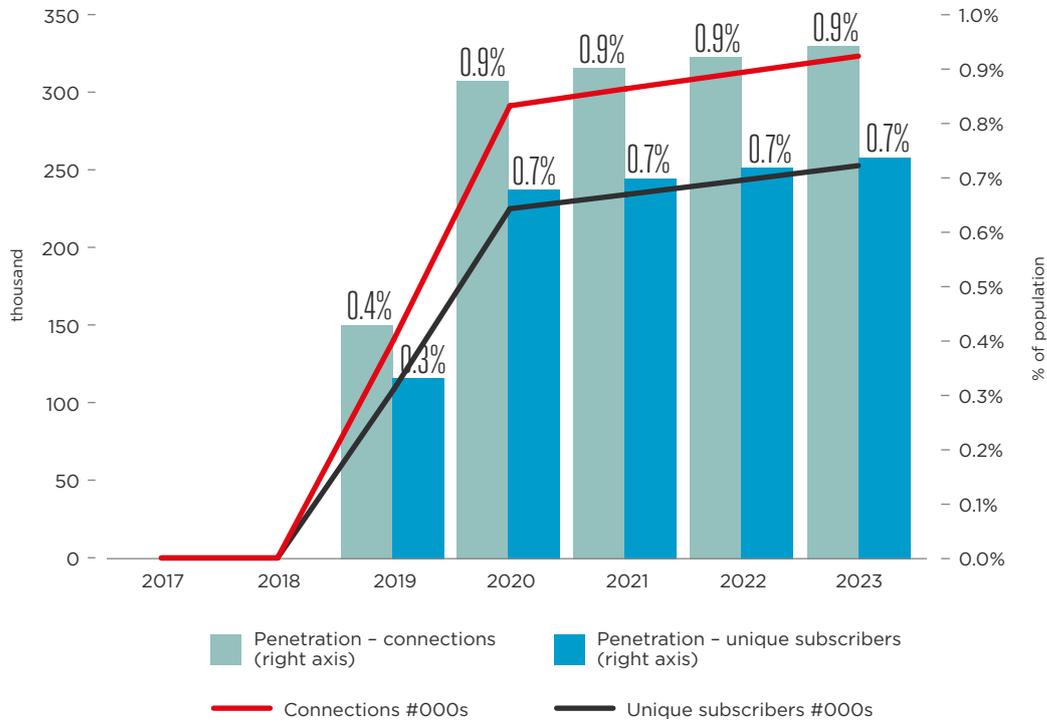
Annual impact of eliminating SIM card fees on selected variables

Indicator	2019	2020	2021	2022	2023
MOBILE SECTOR IMPACTS					
Change in effective price of services vs baseline	-1.1%				
Incremental connections (total)	141,000	292,000	303,000	313,000	324,000
Incremental unique subscribers (total)	109,000	225,000	235,000	244,000	253,000
Incremental connections (3G and 4G)	118,000	246,000	242,000	268,000	291,000
<i>of which technology migration</i>	29,000	34,000	2,000	4,000	5,000
Incremental connections by low-income users	83,000	172,000	181,000	190,000	199,000
ARPU (total) vs baseline	-0.6%	0.0%	-0.1%	-0.1%	0.0%
Increase in mobile penetration (connections)	0.4%	0.9%	0.9%	0.9%	0.9%
Increase in mobile penetration (unique subscribers)	0.3%	0.7%	0.7%	0.7%	0.7%
Increase in mobile penetration (unique MBB subscribers)	0.3%	0.6%	0.6%	0.6%	0.7%
Data usage vs baseline	1.2%	2.4%	2.3%	2.4%	2.4%
Data usage per connection vs baseline	0.7%	1.3%	1.2%	1.2%	1.2%
Increase in market revenue (total)	-\$ 0.4m	\$ 16m	\$ 15m	\$ 15m	\$ 15m
Increase in market revenue (total) vs baseline	0.0%	1.1%	1.1%	1.1%	1.1%
Additional investment	\$ 0.4m	\$ 0.4m	\$ 0.4m	\$ 0.4m	\$ 0.5m
Static tax impact	-\$ 17m	-\$ 18m	-\$ 18m	-\$ 18m	-\$ 19m
Impact on mobile sector taxation	-\$ 16m	-\$ 13m	-\$ 13m	-\$ 13m	-\$ 14m
WIDER ECONOMIC IMPACTS					
Full impact on communications sector taxation	-\$ 14m	-\$ 14m	-\$ 14m	-\$ 14m	-\$ 14m
Receipts from all other sectors	\$ 2m	\$ 15m	\$ 19m	\$ 21m	\$ 22m
Total tax receipts	-\$ 13m	\$ 1m	\$ 5m	\$ 7m	\$ 8m
<i>Cumulative total receipts</i>	<i>-\$ 13m</i>	<i>-\$ 11m</i>	<i>-\$ 7m</i>	<i>\$ 0.5m</i>	<i>\$ 9m</i>
Real GDP	\$ 1m	\$ 33m	\$ 40m	\$ 46m	\$ 49m (0.11%)
Employment		Impact estimated for 2023 only			663 (0.01%)
Household income		Impact estimated for 2023 only			\$ 33m (0.12%)
Household expenditure		Impact estimated for 2023 only			\$ 32m (0.11%)
Investment		Impact estimated for 2023 only			\$ 25m (0.23%)



Figure 30

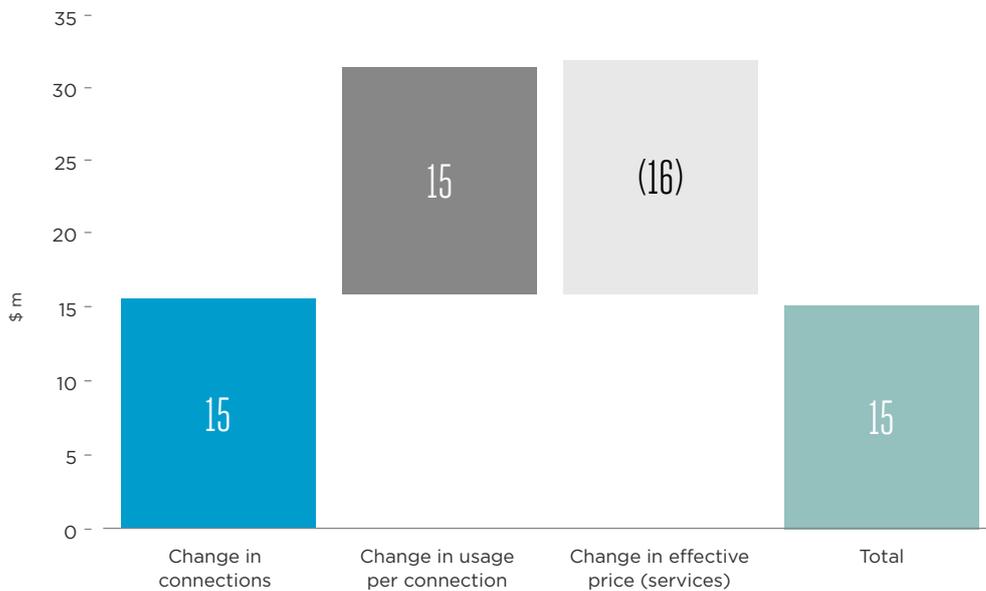
Connections and penetration impacts of eliminating SIM card fees



Source: EY analysis

Figure 31

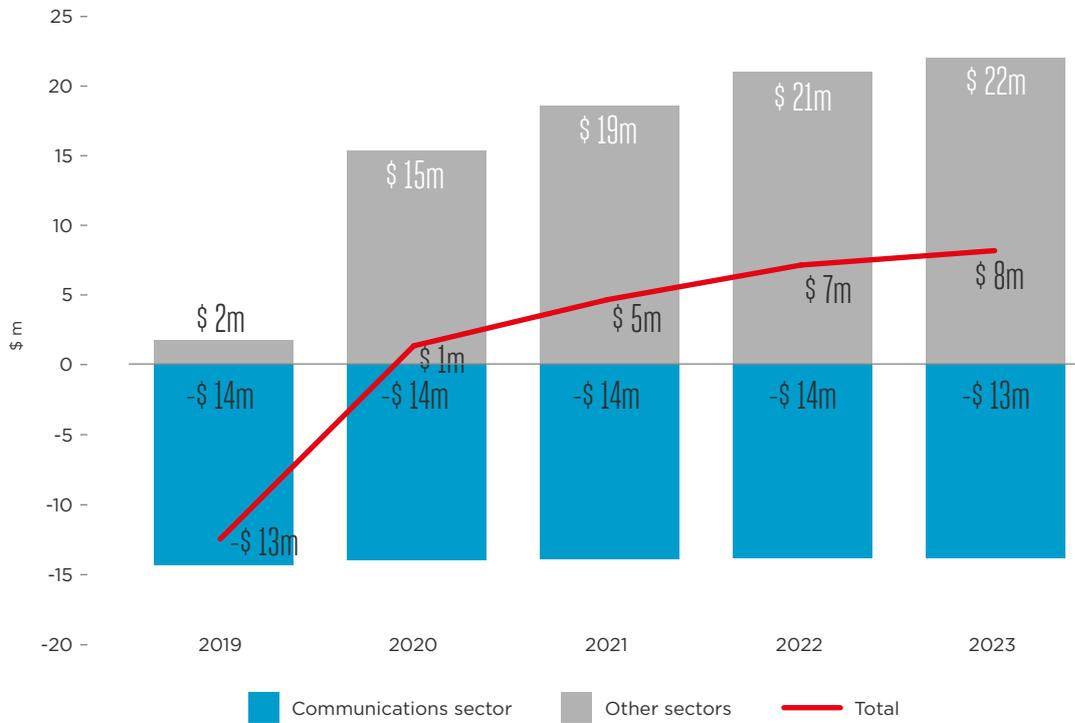
Main drivers of the market revenue change following elimination of SIM card fees



Source: EY analysis

Figure 29

Eliminating SIM card fees – annual impacts on tax receipts, \$ m



Source: EY analysis



For full report please visit the GSMA website at
www.gsma.com

GSMA HEAD OFFICE

Floor 2
The Walbrook Building
25 Walbrook
London EC4N 8AF
United Kingdom
Tel: +44 (0)20 7356 0600
Fax: +44 (0)20 7356 0601