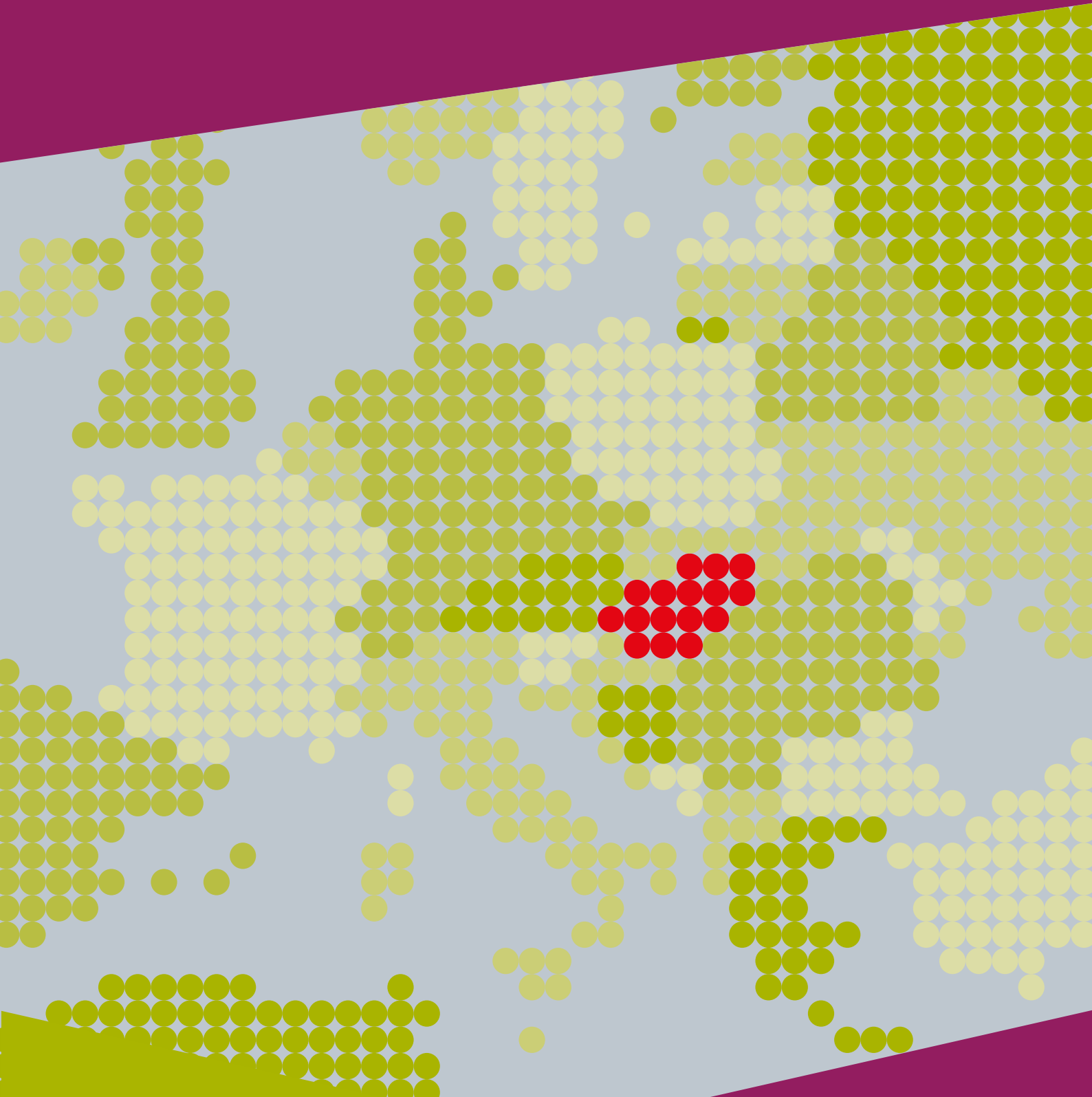




Digitalisation and mobile sector taxation in Europe. The experience in Hungary



Deloitte.

MARCH 2016

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Executive Summary

Gaps in digitalisation act as a barrier to realising the full potential of mobile in Hungary

Since the introduction of mobile services in 1994, the mobile market grew rapidly in Hungary, although it has shown signs of slowing down since the 2009 financial crisis. Between 2009 and 2014, the annual average subscriber growth was just 0.1%, compared to the European Union (EU) average of 1.8%.

Currently, there are a number of gaps in digitalisation in Hungary:

- **A large share of the population does not have a mobile connection.** Hungary has the lowest unique subscriber penetration rate in the EU, at around 60% with 5.9 million unique subscribers, compared to an EU penetration rate of 77%.
- **Few Hungarians access mobile internet services.** Hungary's mobile internet penetration rate stands at 26% in terms of unique subscribers, which is the lowest level in the EU. The limited uptake of mobile internet services is not due to infrastructure issues or lack of coverage: 3G networks cover 95% of the population, while 4G networks already cover 82% of the population.

- **Hungary is lagging behind the EU in terms of the development of the digital economy and society.** According to the European Commission's Digital Economy and Society Index (DESI) 2015, Hungary ranks 21 out of the 28 EU countries when considering a set of measures of digital development. Hungary's weakest areas relative to other EU countries relate in particular to a limited use of digital public services and to poor integration of digital technology by businesses, e.g. online commerce, social media and cloud-based applications.

There are a number of barriers to digital inclusion that may lead to low levels of mobile penetration in Hungary. These may include consumer barriers in terms of digital literacy, lack of local content to promote the adoption of mobile services, and affordability. Affordability and incentives for investment in mobile infrastructure and services are affected by taxation policy.

The mobile sector in Hungary is subject to one of the highest consumer taxes in Europe

Following the 2009 financial crisis, the government has made several changes to general taxation and, in particular, to the taxation regime of the mobile sector in Hungary. General VAT rates have been raised twice, increasing from 20% to 25% in 2009 and to 27% in 2012. Additionally, sector-specific taxation has been introduced to the telecommunications sector: the 'Crisis tax' was introduced in 2010 and later abolished at the beginning of 2013; a Telecommunications tax on telephone service usage was implemented in 2012; and

finally a utility tax was introduced in 2013. An Internet tax was proposed in 2014, but ultimately was not implemented.

While standard goods and services are only subject to VAT, there is also a special tax on the usage of telephone services. Calls, SMS and MMS are subject to the Telecommunication tax in addition to VAT. Hungary is one of only three countries in the EU that levy a special tax on mobile consumers, along with

Greece and Malta. As a result of both VAT and the Telecommunication tax, a recent international study on mobile taxation found that taxation accounts for 30% of the Total Cost of Mobile Usage (TCMU) in Hungary.¹ TCMU is a measure of the annual cost of mobile usage (e.g. calls and SMS) for the average user. This compares to the European sample average of 22%. Based on a review of 110 countries, the tax burden as a share of TCMU is in the top 15 worldwide and the second highest in Europe, after Greece².

In addition to mobile-specific consumer taxes, Hungarian mobile operators are also subject to sector-specific taxation, including the market surveillance fee and the utility tax, alongside other taxes such as the local business tax. Like in other European countries, mobile operators pay a number of different regulatory fees to the industry regulator, which include both recurring and non-recurring spectrum licence fees. Overall, in 2014, it is estimated that mobile operators

paid around HUF 160 billion in total recurring tax and payments, representing around 29% of market revenues.

By raising the final prices of mobile services, these taxes may create affordability barriers to mobile services. This in particular may be an issue for the lowest income households and constitute a significant barrier to the uptake of mobile services. When considering ownership of mobile devices, in Hungary the cost of an average basic device accounts for 7% of annual household income for the poorest 10% of households and 4% for the second poorest 10%.

Recently the government has indicated that the VAT rate on internet services could potentially be lowered from 27% to 18%. This would represent a positive change and would demonstrate the willingness of the government to promote digitalisation in Hungary.

The potential impacts of industry taxation on Foreign Direct Investment

The potential impacts of the current tax structure, which appears misaligned compared to the rest of Europe, extend beyond affordability of services to sector investment and foreign direct investment (FDI). FDI is critical to Hungary's economic performance as FDI has the potential to support savings and investment, technology transfers, employment and skills, which may boost productivity and innovation and higher aggregate GDP in Hungary.

Both total FDI and telecommunications FDI fell following the financial crisis in 2009, and started to increase again in 2011. However, while total FDI recovered and increased by 4% over the period 2009 to 2012, telecommunications FDI decreased by 35% over this period, after the introduction of the sector-specific 'Crisis tax' in 2009.

Mobile-specific taxation in Hungary could negatively impact the investment attractiveness of Hungary. International organisations have noted the negative impact government interventions and sector-specific taxation has had on the investment attractiveness of

Hungary, with the EC stating that investment to the telecommunication sector may be *"...extremely difficult to attract, given the extraordinary sectoral tax currently levied on telecommunications operators"*.³

In addition to taxation levels, a number of other tax-related factors can affect investment attractiveness. Tax compliance costs are an important factor that investors consider. According to a study by The European Free Trade Association, the burden of tax compliance is significantly higher in Hungary compared to other European countries. The overall tax compliance burden and the multiple unexpected tax changes contribute to increasing the cost of doing business in Hungary. According to the World Bank *Doing Business 2015* study, Hungary ranked below the EU average in terms of the overall ease of doing business. Hungary ranked poorly in several sub-indexes, including in terms of paying taxes, for which it ranked 88th, compared to ranking 54th on the overall Ease of Doing Business index.

1. GSMA/Deloitte (2015) Digital inclusion and mobile sector taxation.

2. Please refer to 2 for full results and methodology.

3. European Commission, 2015. Country Report Hungary 2015: Including an In-depth Review on the prevention and correction of macroeconomic imbalances.

An alternative approach to mobile sector taxation could extend the benefit of mobile and support the governments and the EU's digital agendas

Mobile plays a crucial role in supporting digitalisation in Hungary. Socioeconomic contributions of mobile include:

- **Improved digitalisation and the growth of a knowledge-based economy.** Digitalisation means that the benefits of Information and Communications Technology (ICT) should be available to all, regardless of location or socioeconomic status. Mobile services provide the most cost-effective way of achieving digitalisation, and thus facilitating the exchange of ideas and information, which supports the transition towards a knowledge-based economy.
- **Enhanced productivity, innovation and social development.** By improving productivity and reducing transaction costs, mobile can support the expansion of businesses and enterprises as while creating opportunities for increased investment, innovation and employment in the mobile sector as well as within the wider mobile-ecosystem. This could have a positive impact on the living standards and international competitiveness of Hungary.
- **Increased long-run economic growth.** Empirical evidence has shown that increased mobile penetration rates may significantly impact the growth rate of GDP: a 1% increase in mobile penetration could lead to a 0.077% increase in the GDP growth rate in high-income countries, a 10% increase in broadband subscriber penetration accelerates economic growth by 1.21% in developed countries, while a 10% substitution from 2G to 3G

technology could increase GDP per capita growth by 0.15 percentage points.

In the light of Hungary's low mobile and mobile internet penetration compared to other European countries and higher level of industry-specific taxation, the government could consider whether the existing level of consumer mobile-specific taxation is consistent with national and EU ICT policy objectives:

- Persistent industry-specific taxation increases may raise affordability barriers, and the government has noted that the ICT sector in Hungary can only perform well if the barriers to the growth of the industry are "*considerately and consistently dismantled*"; and
- Mobile-specific taxation in Hungary discriminates against communication services by taxing them more than standard goods and services, which may negatively impact the EU Digital Single Market (DSM) agenda that aims to deliver better access for consumers and businesses to online goods and services across Europe.

Furthermore, higher taxation on goods and services is typically applied by governments on goods such as alcohol and tobacco, where governments often seek to discourage consumption. By taxing telecommunication services in a similar fashion, the Hungarian government may discourage consumption of telecommunication services, and thereby reduce those services' positive impacts on economic growth and productivity.

Transitioning to a more equitable taxation structure in support of digitalisation, ICT investment and economic growth in Hungary

To design a taxation structure that is more conducive to enhanced digitalisation, investment and economic growth, a number of best practice taxation principles are typically followed. These principles are generally recognised as contributing to an effective tax system by minimising inefficiencies associated with taxes and regulatory fees and the distortive impacts that they may have on the wider economy.

By transitioning to a taxation system where mobile is treated equally to other goods and services, the Hungarian government can increase digitalisation and enhance the sector's contribution to the economic and social development of Hungary, while increasing tax revenues through more efficient and broad-based taxation. A more balanced taxation structure and consistent tax policy could boost the investment attractiveness of Hungary and potentially increase FDI inflows.

A number of areas for tax reform have been identified, based on international taxation best practice and in consultation with the GSMA and mobile operators. These could support the uptake of mobile and enable the sector to further contribute to economic growth and government revenues over and above its current impact:

- **Apply phased reductions of taxes on established services:** Phased reduction of mobile-specific taxes on usage, such as the telecommunication tax, and on mobile operators' revenues offers governments the opportunity to benefit from the economic contribution from mobile in the medium term whilst limiting short-term fiscal costs.
- **Reduce complexity and uncertainty of mobile taxation:** Taxation on mobile operators has varied rapidly and unexpectedly in Hungary. Any unpredicted tax change that occurs after investment in spectrum licence is made may negatively impact a mobile operator's business plan. The risk of future tax rises is priced into investment decisions and can therefore be expected to reduce both FDI and domestic investment in the medium-term.
- **Reduce sector-specific taxation on mobile:** Higher than standard taxation on mobile operators and consumers distorts production and consumption behaviour. It may also limit usage of digital services, reduce the ability of mobile operators to finance investment in digital infrastructure, and can in the long term reduce government revenues. Reducing specific taxation on mobile would remove these distortions, making mobile services more affordable and incentivising operator investment.

1. The mobile sector in Hungary: benefits and gaps in connectivity

Currently 5.9 million unique subscribers⁴, or 60% of the population, have access to the benefits of mobile services in Hungary⁵. The penetration rate in terms of mobile connections⁶ is 116%, or over 11.4 million connections. The market is led by three operators: T-Mobile⁷, Telenor and Vodafone with market shares of 48%, 28% and 24% respectively⁸. These networks are also utilised by a small number of Mobile Virtual Network Operators (MVNOs)⁹.

T-Mobile and Telenor first launched 2G mobile services in 1994 followed by the entry of Vodafone in 1999. 3G licenses were awarded to the three operators in 2004, and commercial 3G networks were launched in the second half of 2005¹⁰. 4G services were introduced in early 2012 and in 2014 there was a multi-spectrum auction that expanded the amount of spectrum available to operators¹¹.

1.1 Mobile services support the visions of the national and EU digital agenda

The EU and the Hungarian government have set out a number of ambitious goals in relation to ICT:

- The **EU DSM agenda** sets out the EU's agenda to ensure that Europe maintains its role as a world leader in the digital economy. The agenda constitutes one of the seven pillars of the Europe 2020 strategy. The agenda is based on three goals:
 - i) better access for consumers and businesses to online goods and services across Europe;
 - ii) creating the right conditions for digital networks

and services to flourish; and
 iii) maximising the growth potential of the European Digital Economy. This involves policy and regulatory changes to promote cross-border online trade, consumer rights and competition, defining standards and overhaul of telecommunication rules and supporting an inclusive digital society¹². In May 2015, the European Commission presented 16 initiatives to be implemented by the end of 2016 to support the digital single market¹³.

4. Unique subscribers refer to the number of individuals who have subscribed to a mobile service. This is distinct from the number of mobile connections.

5. GSMA Intelligence database.

6. Penetration rate in terms of mobile connections refers to the number of connections as a proportion of the population. This is distinct from the number of unique subscribers, which refers to individuals with subscriptions to mobile services.

7. T-Mobile is part of the operator Magyar Telekom, which is a subsidiary of Deutsche Telekom.

8. GSMA Intelligence database.

9. Buddecomm, 2014. Hungary – Mobile market insights and statistics. Mobile Virtual Network Operators refers to mobile services providers that do not own network infrastructure but obtain bulk access to other operators' networks.

10. Buddecomm, 2014. Hungary – Mobile market insights and statistics and GSMA Intelligence database.

11. GSMA Intelligence database and Buddecomm, 2014. Hungary – Mobile market insights and statistics.

12. European Commission, 2015 - A Digital Single Market Strategy for Europe and <http://ec.europa.eu/digital-agenda/en/digital-single-market>

13. European Commission press release, 2015. A digital Single Market for Europe: Commission sets out 16 initiatives to make it happen.

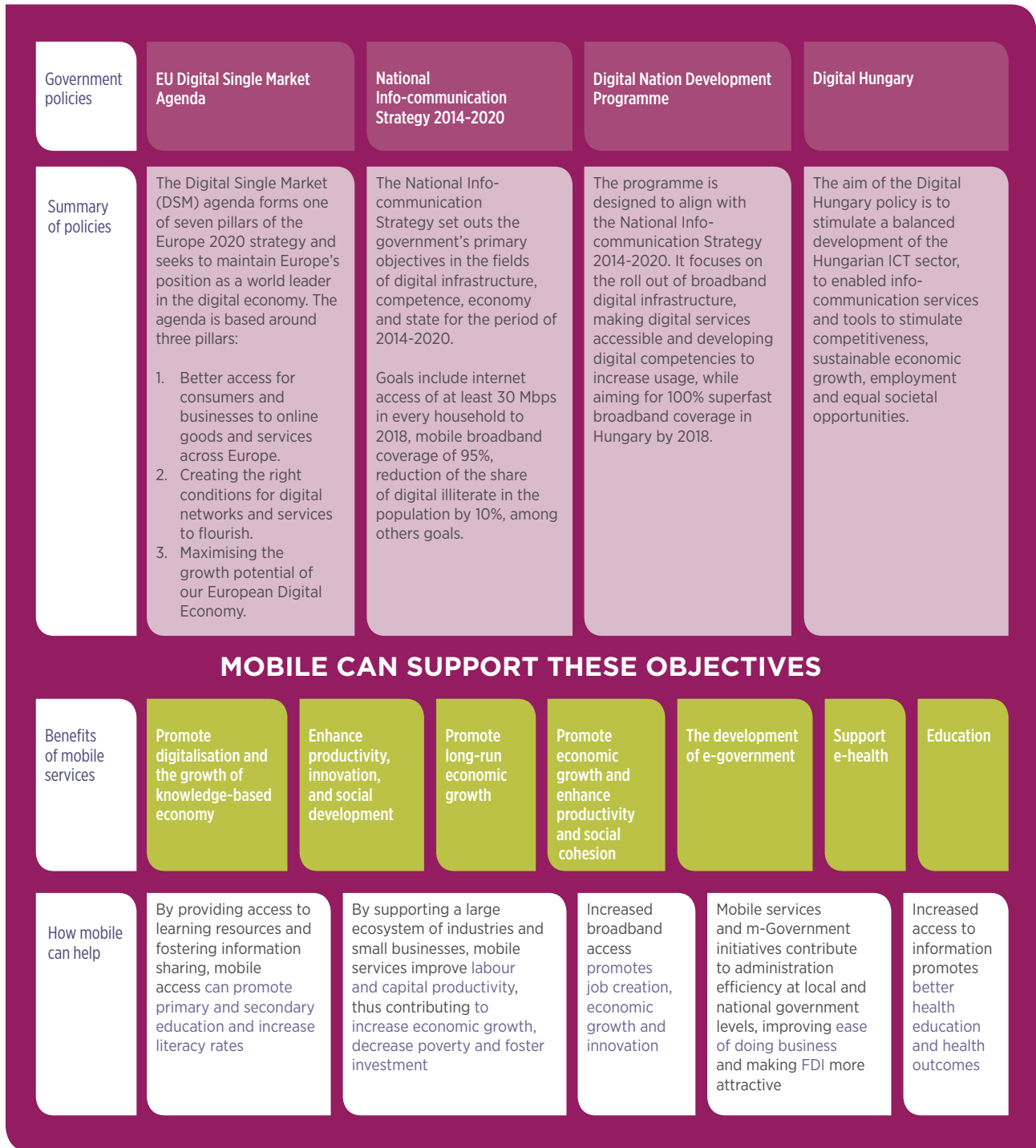
- The **Hungarian National Info-communication Strategy 2014-2020** sets out the primary objectives of the government in the areas of digital infrastructure, competence, economy and state for the period leading up to 2020. The plan recognises that the ICT sector in Hungary can only perform well in the EU and globally if the barriers to growth of the industry are “*considerately and consistently dismantled*”¹⁴. The plan aims to increase high-speed internet access, expand mobile internet coverage to 95% by 2016, develop the digital skills of citizens, enterprises and public administration employees, and stimulate R&D and innovation activities¹⁵.
- The Digital Nation Development Programme is designed to align with the National Info-communication Strategy 2014-2020 and focuses on the roll out of broadband infrastructure and increasing digital usage by making digital services accessible and developing digital competencies, and aims to provide 100% superfast broadband coverage across Hungary by 2018, two years earlier than the EU target.
- The objective of the Digital Hungary programme is to deliver a more balanced development of the ICT sector through government development programmes coordinated with private sector partners, aimed at promoting competitiveness, sustainable economic growth, employment and equal societal opportunities. It should be noted however, that the programme focuses on fixed broadband specifically, rather than broader mobile technologies, which may offer a more sustainable solution than fibre, for example, in connecting rural populations.

Figure 1 summarises how mobile can support these objectives in Hungary.

14. <http://2010-2014.kormany.hu/en/ministry-of-national-development/news/national-info-communication-strategy-fully-electronic-services-in-public-administration-within-four-years>

15. Ibid.

How mobile can help the Hungarian government achieve its policy goals



Source: Deloitte analysis based on a review of the EU Digital Single Market agenda, National Infocommunication Strategy 2014-2020, and Digital Hungary

Figure 1

1.2 Mobile can support digitalisation and economic growth

Mobile makes an important contribution to socioeconomic development and to the achievement of the government's growth targets in Hungary. Socioeconomic contributions include:

- Improved digitalisation and the growth of a knowledge-based economy.** Digitalisation means that the benefits of ICT should be available to all, regardless of location or socioeconomic status. Mobile services provide the most cost-effective way of achieving digitalisation and, by facilitating the exchange of ideas and information, they can support a move towards a knowledge-based economy. The World Bank¹⁶ has stated that the movement towards a knowledge-based economy should be the aim of all governments, as knowledge becomes increasingly crucial to preserving international competitiveness.
- Enhanced productivity, innovation and social development.** By enabling businesses and government to deliver their services faster, and at a lower cost, mobile services can increase productivity across the Hungarian economy. Mobile services can reduce transaction costs, making communication and the conduct of everyday business less costly while supporting the expansion of businesses and enterprises. Mobile services also create opportunities for investment, innovation and employment in the mobile sector, as well as within the wider mobile-ecosystem, and have a positive impact on the living standards and international competitiveness for Hungary.
- Increased long-run economic growth.** Empirical evidence has shown that increased mobile penetration rates may significantly impact the growth rate of GDP. Studies by the GSMA and the World Bank have estimated that a 1% increase in mobile penetration could lead to an increase in the GDP growth rate of up to 0.077% in high-income countries¹⁷. In addition, the World Bank has found that in developed countries, such as Hungary, every 10% increase in broadband subscriber penetration accelerates economic growth by 1.21%¹⁸. Further, a GSMA/Deloitte/Cisco study has found considerable economic benefits of mobile technology substitution; for a given level of mobile penetration, a 10% substitution from 2G to 3G was found to increase GDP per capita growth by 0.15 percentage points¹⁹. The latter study also found larger impacts at higher levels of usage, implying that countries with low usage have considerable capacity for accelerating growth through increased mobile internet usage.

16. World Bank, The four pillars of a knowledge-based economy, 2009.

17. This is based on a study of 40 economies over the period 1996-2011; for full details of the methodology, see <http://www.gsma.com/publicpolicy/wp-content/uploads/2012/11/gsma-deloitte-impact-mobile-telephony-economic-growth.pdf>; Qiang, C. Z. W., Rossotto, C.M., 2009. Economic Impacts of Broadband, in Information and Communications for Development 2009: Extending Reach and Increasing Impact, World Bank, Washington D.C., 35-50.

18. Qiang, C. Z. W., Rossotto, C.M., 2009.

19. GSMA/Deloitte/Cisco (2012): "What is the impact of mobile telephony on economic growth?"

1.3 Current gaps in digitalisation and mobile access

Currently, there are a number of barriers that constrain access to mobile services in Hungary and that can prevent the realisation of the benefits of digitalisation supported by mobile.

A large share of the population does not have a mobile connection. 40% of the population does not have a mobile subscription. Taking into account the “market population”, i.e. the population that is potentially active in the mobile market, there are more than 3.3 million people²⁰ in Hungary with limited or no access to the benefits of even basic mobile telephony.

Hungary has the lowest unique subscriber penetration rate in the EU at 60%, compared to an EU average of 80%. Not only is this considerably lower than regional leaders such as Finland and Denmark, where penetration stands at 90%, but is also lower than other eastern European economies such as Bulgaria and Romania.

Unique subscriber penetration and GDP per capita in the EU, Q2 2015



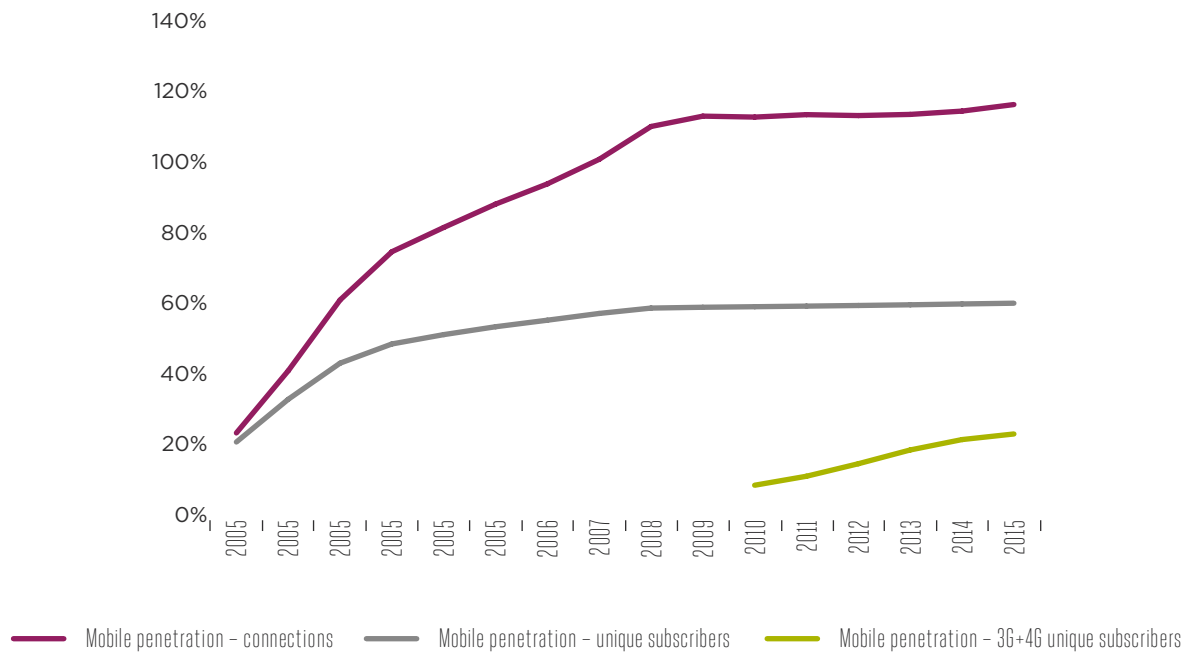
Source: GSMA Intelligence database and World Bank²¹.

Figure 2

²⁰. Assuming all subscribers are 15 years of age or older. Based on data on population by age group from the World Bank.
²¹. GDP per capita numbers were drawn from the World Bank and refer to financial year 2014 data. For Luxembourg and Malta 2014 data was not available; 2013 data is used instead.

Growth in penetration has stalled. Mobile connectivity grew rapidly in the early 2000's, at an average annual growth rate of 23% between 2000 and 2005²². In late 2005 the minutes of traffic carried by mobile networks surpassed the fixed-line network for the first time²³. Since then, however, the mobile market has shown signs of slowing down. After the 2009 financial crisis, growth in unique subscribers stalled, with an average growth rate of just 0.1% between 2009 and 2014²⁴, compared to the EU average of 1.8%²⁵.

Mobile penetration rates in Hungary



Source: GSMA Intelligence database

Figure 3

Few Hungarians access mobile internet services. Hungary's mobile internet penetration rate²⁶ is only 26% in terms of unique subscribers, which is the lowest level in the EU and well behind regional leaders Denmark and Estonia, where 69% of unique subscribers access mobile internet. Despite having lower GDP per capita levels, countries like Bulgaria and Romania also have higher penetration rates than Hungary. The limited uptake of mobile internet services is not due to infrastructure issues or lack of coverage: 3G networks cover 95% of the population, while 4G networks already cover 82% of the population.

22. GSMA Intelligence database.

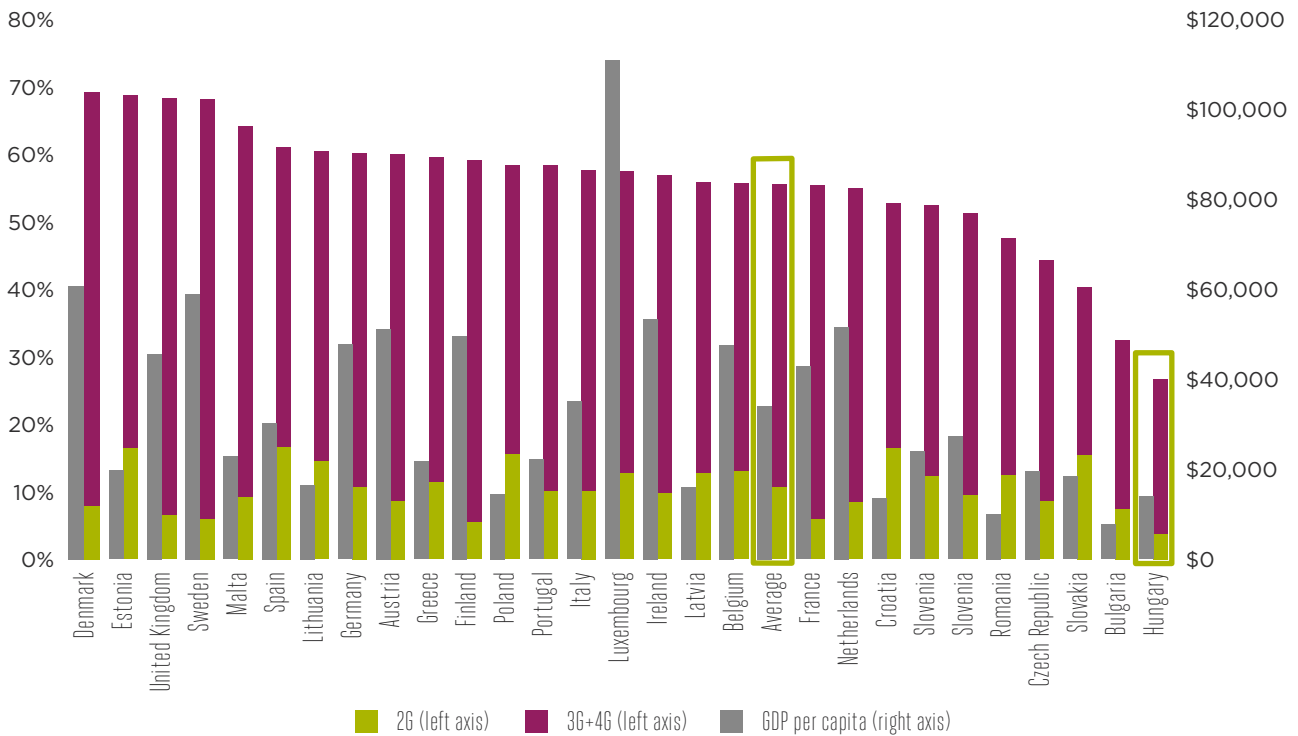
23. Buddecomm, 2014. Hungary - Mobile market insights and statistics.

24. GSMA Intelligence database. Growth in mobile connections displayed a similar pattern with an average growth of 0.14%.

25. GSMA Intelligence database.

26. The mobile internet penetration rate refers to the total subscribers of mobile services at the end of the period, expressed as a share of the total population.

Mobile internet penetration in the EU, Q2 2015



Source: GSMA Intelligence database²⁷

Figure 4

Hungary is lagging behind the EU in terms of the development of the digital economy and society.

According to the European Commission’s Digital Economy and Society Index (DESI) 2015, Hungary ranks 21 out of the 28 EU countries when considering a set of measures of digital development. Hungary’s weakest areas relative to other EU-countries relate in particular to a limited use of digital public services and to poor integration of digital technology by businesses, e.g. online commerce, social media and cloud-based applications²⁸.

There are a number of barriers to digital inclusion that could potentially explain the low levels of mobile penetration in Hungary. These may include consumer barriers in terms of digital literacy, lack of local content to promote the adoption of mobile services, and affordability. Affordability and incentives for investment in mobile infrastructure and services are affected by taxation policy.

27. GDP per capita numbers were drawn from the World Bank and refer to financial year 2014 data. For Luxembourg and Malta 2014 data was not available; 2013 data is used instead.
 28. EC - Digital Economy and Society Index 2015, Country Profile Hungary.

1.4 Assessing the impact of taxation on digitalisation in Hungary

The rest of this report focuses on taxation on the mobile sector in Hungary and how reforming mobile-specific taxation may be complementary to the digital agendas, support affordability and investment, and ultimately allow Hungary to increase digitalisation and catch up with other EU countries:

- Section 2 describes the taxes levied on the mobile sector in Hungary, comparing taxation with other EU countries, and analysing the impacts of mobile-specific taxation on affordability and usage.
- Section 3 discusses the relationship between industry taxation and FDI, and other tax-related barriers to sector FDI inflows to Hungary.
- Section 4 concludes, by suggesting options for a transition to a tax structure that can support digitalisation and ICT investment.

2. Taxation and affordability in the mobile sector in Hungary

In recent years following the 2009 financial crisis, a number of tax policy changes have occurred in Hungary, which have affected several sectors of the economy.

This section reviews the current taxes applied to mobile consumers and operators in Hungary, focusing on those that are mobile-specific, i.e. those which do not apply to other services. It also compares taxation with other EU countries, and analyses the impacts of mobile-specific taxation on affordability and usage.

2.1 Taxation on mobile consumers and operators

The mobile sector in Hungary is subject to: i) general taxation, i.e. taxation that applies across all companies and services; ii) taxation that applies to telecommunications services; and iii) mobile-specific taxation.

General taxation on companies and consumers:

- The standard VAT rate is 27% and is levied on calls, SMS and data services, as well on imported network equipment, SIM cards, vouchers and devices, and mobile internet. A customs duty is also levied on imports from non-EU countries at the rate set by the EU.
- A corporation tax is levied on companies resident in Hungary. The standard corporation tax rate is 19%, while the first HUF 500 million of income is taxed at a reduced rate of 10%²⁹.
- Municipalities levy a local business tax of up to 2% of net revenues on businesses located in their locality, with municipalities applying the maximum rate in most cases.

29. E&Y – Worldwide Corporate Tax guide 2015



Total recurring payments
paid by Hungarian operators
in 2014 represented 29% of
market revenues

Taxation specific to the mobile sector:

- While standard goods and services are only subject to VAT, there is also a special tax on the usage of telephone services. Calls, SMS and MMS are subject to the Telecommunication tax in addition to VAT. It is a flat rate tax at HUF 2 per minute of calls, per SMS and MMS for private users, and is capped at 700 HUF. A rate of HUF 3 per minute applies to calls, SMS and MMS for business users, and is capped at HUF 5,000. This cap for business users was doubled from HUF 2,500 in August 2013.

Estimates based on average usage levels indicate that this tax amounted to 15% of the final effective price per minute for calls in 2014³⁰.

- Mobile operators pay a number of different regulatory fees to Nemzeti Média-és Hírközlési Hatóság (NMHH), Hungary's National Media and Infocommunications Authority. These fees include both recurring and non-recurring spectrum licence fees: operators pay an annual flat fee which is predetermined in their licence agreements and depends on the amount of MHz and the band. In 2014, operators are estimated to have paid around HUF 12 billion in yearly recurring spectrum fees, which accounted for 7% of total operator taxes.
- In addition to annual regulatory payments, operators paid non-recurring fees to acquire spectrum. Multi-spectrum auctions were held in 2014 for spectrum in the 800MHz, 900MHz, 1800MHz, and 2600MHz bands through which the government raised HUF 130.6 billion³¹.

Taxation specific to all telecommunications services:

- A copyright levy is levied on mobile devices, tablets and computers, USB cards, and other storage units. The size of the levy depends on the storage capacity of the mobile device. The lowest amount for mobile phones and tablets, for storage units with capacity for 128 MB up to 256 MB is HUF 319 per piece, while for storage units with capacity above 80 GB is charged with the highest rate of HUF 4788 per piece³². The rate exceeds that of other European countries.
- Further, a market surveillance fee is levied on telecommunications operators to cover the expenses of the regulator NMHH's activities³³. In 2014, the fee was set at 0.212% of net service revenues. At the beginning of 2013, a utility tax was introduced on the telecommunications sector at a rate of HUF125 per metre of the wireline track³⁴.

Overall, the total recurring payments paid by Hungarian operators in 2014 represented 29% of market revenues, i.e. around HUF 160 billion. This excludes the one-off fees that mobile operators paid for spectrum and licences in order to provide services; if these were included the total tax and fee payment would be higher.

30. Deloitte analysis based on GSMA Intelligence database. The number was calculated as the share of the telecommunication tax of the price of monthly average usage of mobile services on calls and SMS.
 31. Buddecomm, 2014. Hungary – Mobile market insights and statistics.
 32. ARTISJUS – Official Gazette, vol. 60, 2013.
 33. http://english.nmhh.hu/dokumentum/150285/f_46_mss_summary2009_12.pdf
 34. KPMG, 2013. Investment in Hungary.

Summary of taxes and fees applying to mobile consumers and operators in Hungary

Consumer taxes		
Payment base	Type	Tax rate
Devices	VAT	27%
	Copyright levy	Per storage size: HUF319-HUF4788 per piece
Calls, SMS and MMS	VAT	27%
	★ Telecommunications tax	HUF2 per minute/SMS/MMS for individuals and HUF3 per minute/SMS/MMS for businesses
Mobile broadband	VAT	27%
SIM cards	VAT	27%
Operator taxes		
Payment base	Type	Tax rate
Imported network equipment, SIM cards and vouchers	VAT	27%
	★ Customs duty	EU-level
Profits / revenues	Corporation tax	19%
	Local business tax	Between 0% and 2% depending on municipality
	★ Market surveillance fee	0.212%
Regulatory fees	★ Annual spectrum fee	HUF16 billion in 2015
	★ One-time licence fee	HUF92 billion in 2014
	★ Utility tax	HUF125 per meter of cable

★ Mobile specific tax ☆ Telecom-specific tax

Source: IBFD and operator data. Note: The average rate of the local business tax is 1.9%

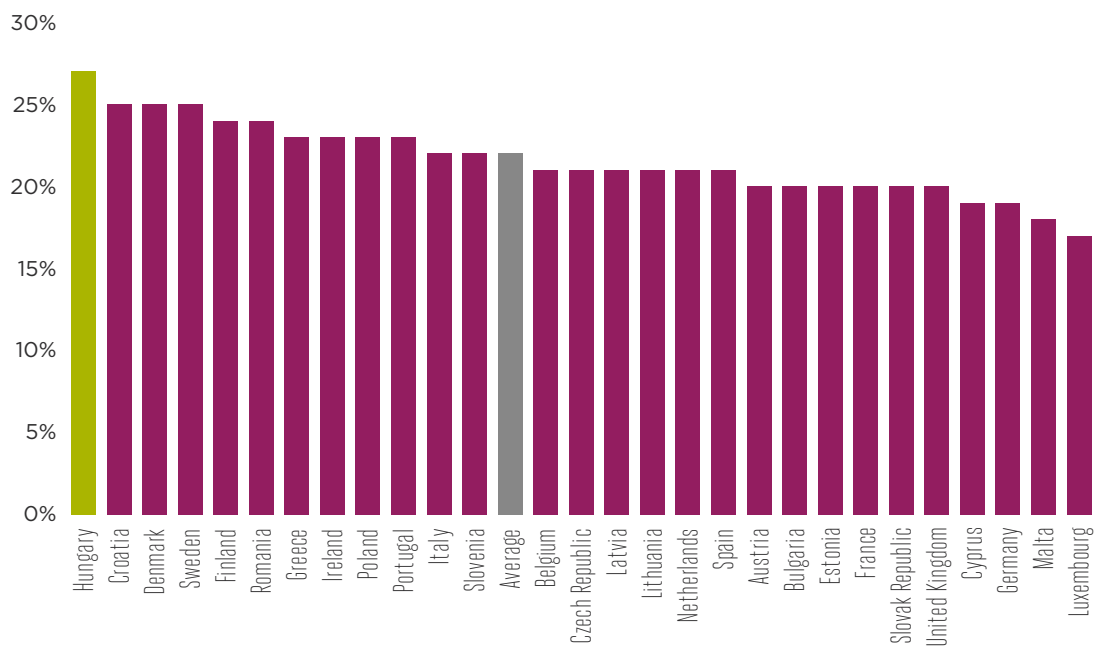
Table 1

2.2 Mobile-specific taxation and affordability

The extent to which these mobile-specific taxes ultimately fall on operators or consumers depends on the type of tax and market conditions. Some taxes and fees may be absorbed by operators in the form of lower profits, whilst others may be passed through to consumers in the form of higher prices, or there may be a combination of the two. Mobile-specific consumer taxation in Hungary affects prices more than in European countries due to a number of factors.

Firstly, Hungary has the highest VAT-rate in the EU. The standard rate of VAT increased from 20% to 25% in 2009 and further increased to 27% in 2012³⁵.

VAT rates in the EU, 2015



Source: Deloitte analysis based on IBFD data

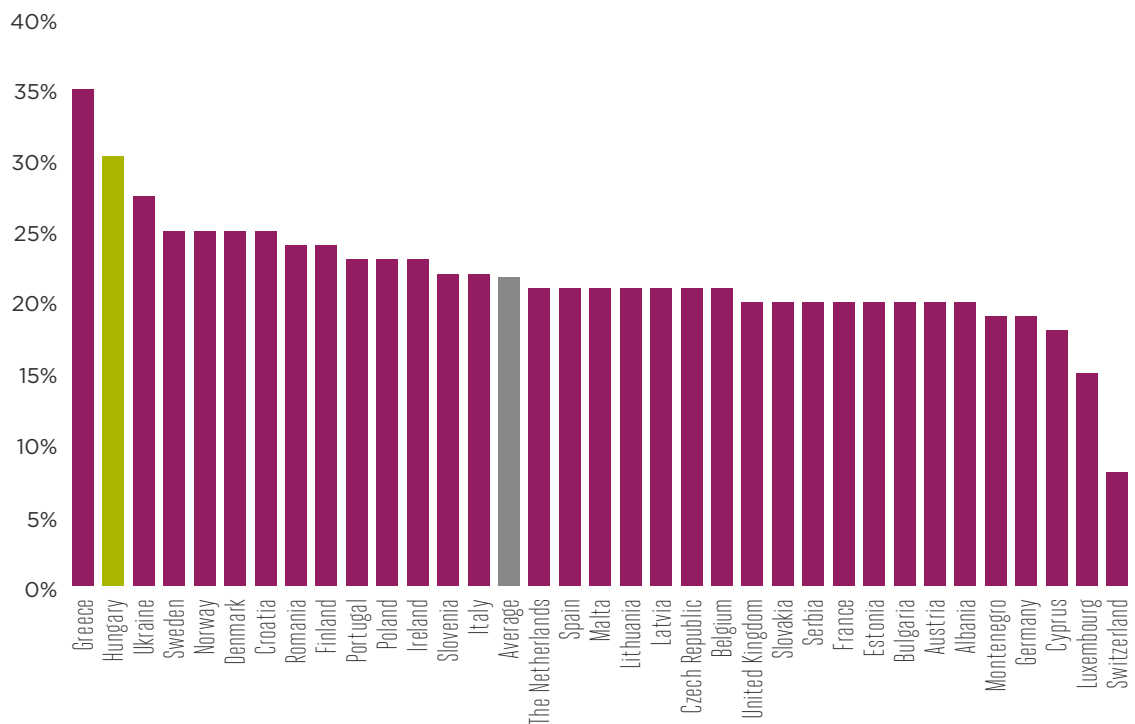
Figure 5

35. OECD Revenue Statistics 2014 - Hungary

Adding to the VAT-rate, Hungary is one of only three countries in the EU that impose mobile-specific taxation through the special Telecommunication Tax, with Greece and Malta also imposing mobile-specific taxes. Special taxes on mobile consumers such as Hungary's Telecommunication tax are seen in developing markets in Africa and Asia, but are not common in Europe, where typically VAT is much lower than in Hungary.

As a result of both VAT and the Telecommunication tax, a recent international study on mobile taxation found that taxation accounts for 30% of the TCMU³⁶ in Hungary, compared to the sample European average of 22%. The tax burden as a share of TCMU is in the top 15 worldwide and the second highest in Europe, after Greece. The TCMU includes spend on calls, SMS and data.

Tax as a proportion of TCMU in European countries, 2014



Source: Deloitte analysis based on GSMA/Deloitte (2015) "Digital inclusion and mobile sector taxation".

Figure 6

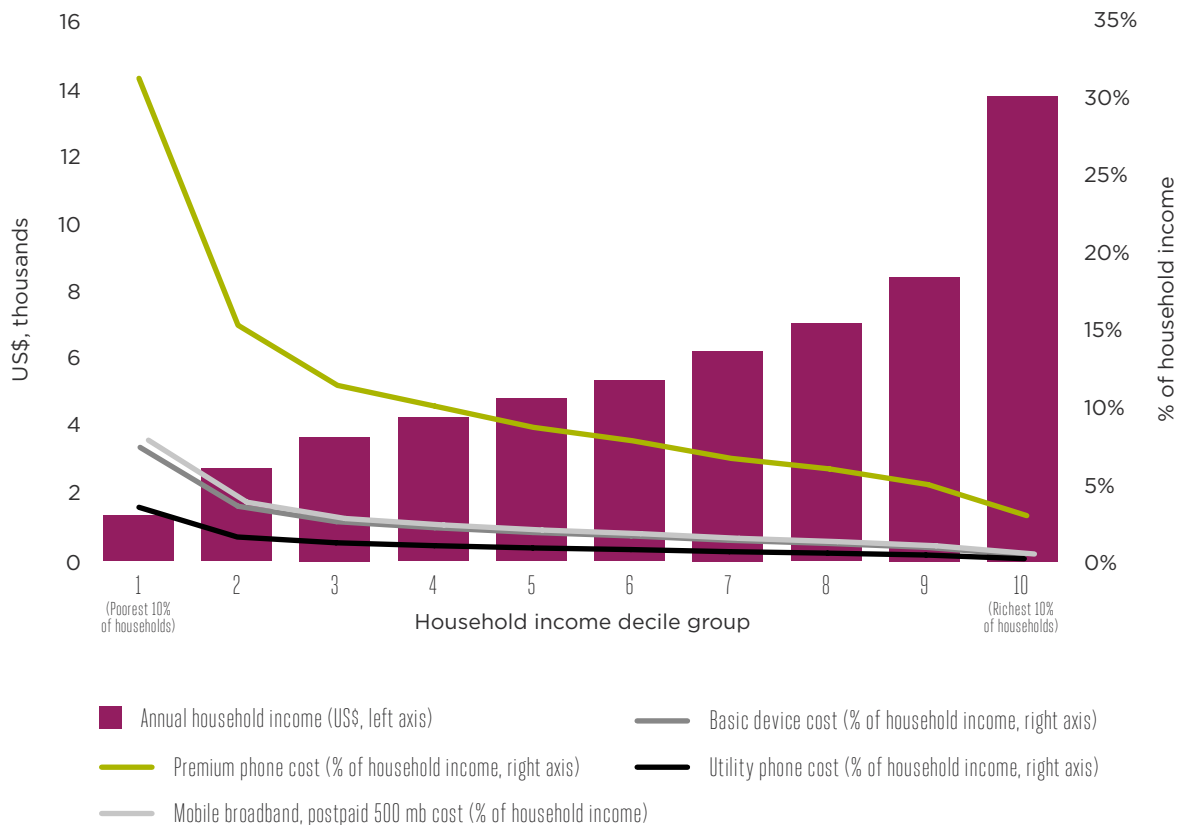
36. TCMU is a measure of average annual cost of mobile usage. The cost includes spend on rental, calls, SMS, and data. Data on average rental, calls, SMS, and data costs for both pre-pay and post-pay costumers were used to calculate the TCMU. The taxation as a share of TCMU figure measures the share that direct consumer taxation accounts for in the final prices of mobile service usage for consumers. The figure was calculated by compiling tax rates applicable on mobile telephony. The taxes included in Hungary were VAT on calls, SMS, MMS, data and the telecommunication tax on calls, SMS and MMS. Consumer taxes as a percentage of TCMU was then estimated by dividing the applicable amount by the TCMU.

By raising the final prices of mobile services, these taxes may create affordability barriers to mobile services. When considering ownership of mobile devices, the cost of an average basic device³⁷ accounts for 7% of annual household income for the poorest 10% of households and 4% for the second-poorest 10%.

Premium devices such as smartphones account for a substantial fraction of annual income for all but the richest 10% households. The average price of a premium phone accounts for 31% of annual household income for the poorest 10% and accounts for more than 5% of household income for 80% of all households.

Mobile internet, as measured by the cost of 500 MB of data, also accounts for a significant share of the annual income, and is above the 2% affordability threshold³⁸ for mobile services for 50% of all households. As a result, for a large proportion of the population, access to enhanced mobile services is limited, preventing further digitalisation through mobile internet uptake, and taxation further adds to this burden for consumers.

Affordability of mobile devices by income group (2013)



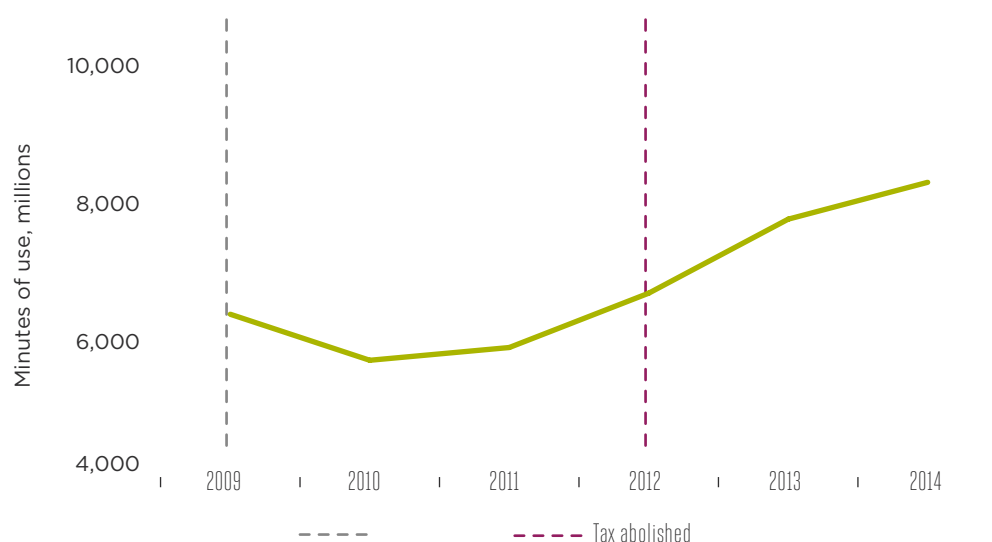
Source: Deloitte analysis based on data from the Hungarian Central Statistical Office (KSH), Gartner and ITU Measuring the Information Society 2014

Figure 7

37. The average cost of a mobile device is defined as the average selling price of that particular type of mobile device (utility, basic, and premium).
 38. See GSMA, 2013, Mobile Broadband at the Bottom of the Pyramid in Latin America.

Mobile-specific taxation can negatively impact demand for mobile services. For example, in Croatia, following the introduction in 2009 of a 6% tax on mobile operators' gross revenue from mobile calls and SMS, the tax pressure on mobile increased to 28% of Total Cost of Mobile Ownership (TCMO)³⁹, while the volumes of mobile calls and SMS decreased in 2010 by 4% and 14% respectively⁴⁰. This tax was since removed in 2012, following which minutes of calls and SMS increased at a greater rate.

Minutes of use in Croatia



Source: GSMAi database. Note the data only covers that reported by Vipnet and Hrvatski Telekom, who have over 80% of market share.

Figure 8

In the light of Hungary's low mobile and mobile internet penetration compared to other European countries and higher level of industry-specific taxation, the government could consider whether the existing level of consumer mobile-specific taxation is consistent with other national and EU ICT policy objectives:

- Persistent industry-specific taxation increases are raising affordability barriers, and the Hungarian government has noted that the ICT sector in Hungary can only perform well if the barriers to the growth of the industry are *"considerately and consistently dismantled"*.⁴¹
- Mobile-specific taxation in Hungary discriminates against communication services by taxing them more than standard goods and services, which may negatively impact the EU DSM agenda, which aims to deliver better access for consumers and businesses to online goods and services across Europe.

Furthermore, higher taxation on goods and services is typically applied by governments on goods such as alcohol and tobacco, where governments often seek to discourage consumption. By taxing telecommunication services in a similar fashion, the Hungarian government may discourage consumption of telecommunication services, and thereby reduce those services' positive impacts on economic growth and productivity.

Recently the government has indicated that the VAT rate on internet services could potentially be lowered from 27% to 18%. This would represent a positive change and would demonstrate the willingness of the government to promote digitalisation in Hungary.

39. TCMO is a similar measure to TCMU, but it also includes handset and connection costs.

40. Deloitte/GSMA, Mobile Taxes and Fees: A toolkit of principles and evidence, 2014, and GSMA Intelligence database.

41. <http://2010-2014.kormany.hu/en/ministry-of-national-development/news/national-info-communication-strategy-fully-electronic-services-in-public-administration-within-four-years>

3. Mobile sector taxation and impacts on investment

3.1 The importance of FDI to the Hungarian economy

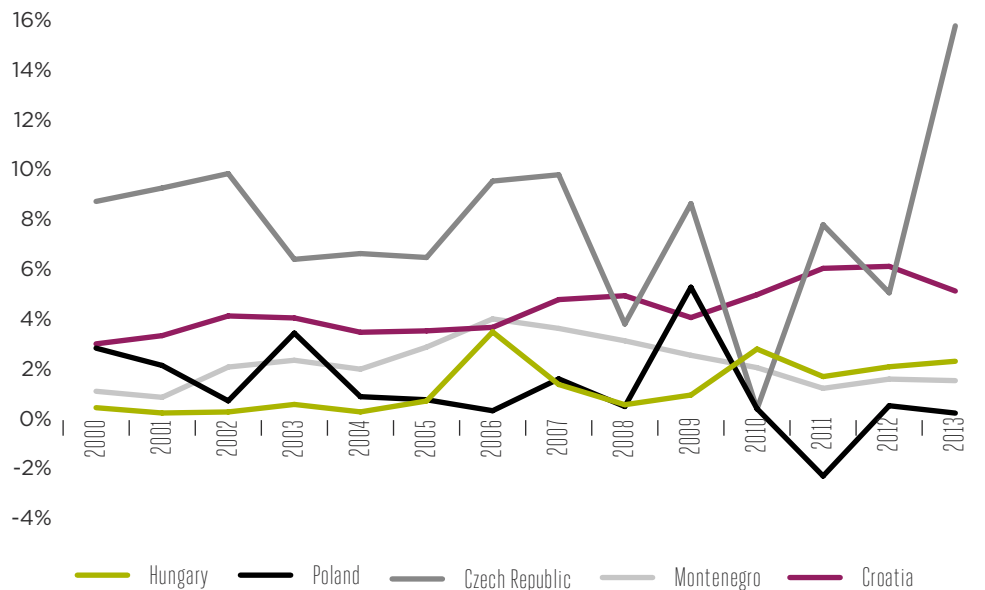
Following the transition from a planned to market economy structure in the early 1990s, Hungary experienced a rapid expansion of FDI inflows. In the first half of the 1990s, Hungary enjoyed the largest FDI inflows of the former Soviet Union and Central and Eastern European (CEE) transitional economies; of those 25 countries, it is estimated that 45% of total FDI inflows went to Hungary between 1990 and 1993⁴².

Since the early 2000s, however, FDI inflows have slowed and Hungary's position as a leading receiver of FDI has been eroded as other countries have caught up. Between 2000 and 2013, Hungary has received a lower level of FDI inflows as a percentage of GDP, relative to comparable countries. Hungary received an average annual inflow of 1% between 2000 and 2013 compared to a combined average of 4% for Poland, Czech Republic, Montenegro, and Croatia⁴³.

42. Sass, M., 2004. FDI in Hungary: The first mover's advantage and disadvantage, EIB papers, Vol. 9: 2, pp. 62-90, and Kaminski, B., Riboud, M., 2000. Foreign investment and restructuring: the evidence from Hungary, World Bank technical paper no. 453.

43. The comparison countries were chosen on basis being former transition countries with similar market structures and GDP per capita in the early 1990's with available data.

FDI net inflows as a proportion of GDP in selected CEE countries



Source: World Bank

Figure 9

The tax burden in different countries may influence investment and location decisions. The relative importance of taxation is expected to be larger when non-tax barriers, such as regulatory requirements, investment restrictions, risk, less developed institutions, are removed and national economies are more integrated⁴⁴, as is the case within the single market of the EU. Thus, on the margin, tax levels may be more important for intra-EU investment decisions than in less integrated economic regions. The taxation regime has the potential to play an important role in attracting investment to Hungary, in competition from neighbouring CEE-countries.

Empirical evidence suggests a negative relationship between taxation and FDI flows – as taxation increases, FDI inflows diminish. For example, a literature review undertaken by the OECD on this topic found that FDI flows are sensitive to taxation levels and that FDI has become more sensitive to taxation as a reduction of non-tax barriers has made capital more mobile⁴⁵. There is also evidence that investment in physical capital, as is the majority of telecommunication investment, is more sensitive to tax changes⁴⁶.

44. OECD, 2008. Tax effects on Foreign Direct Investment. Policy Brief.

45. OECD, 2008. Tax effects on Foreign Direct Investment. Policy Brief.

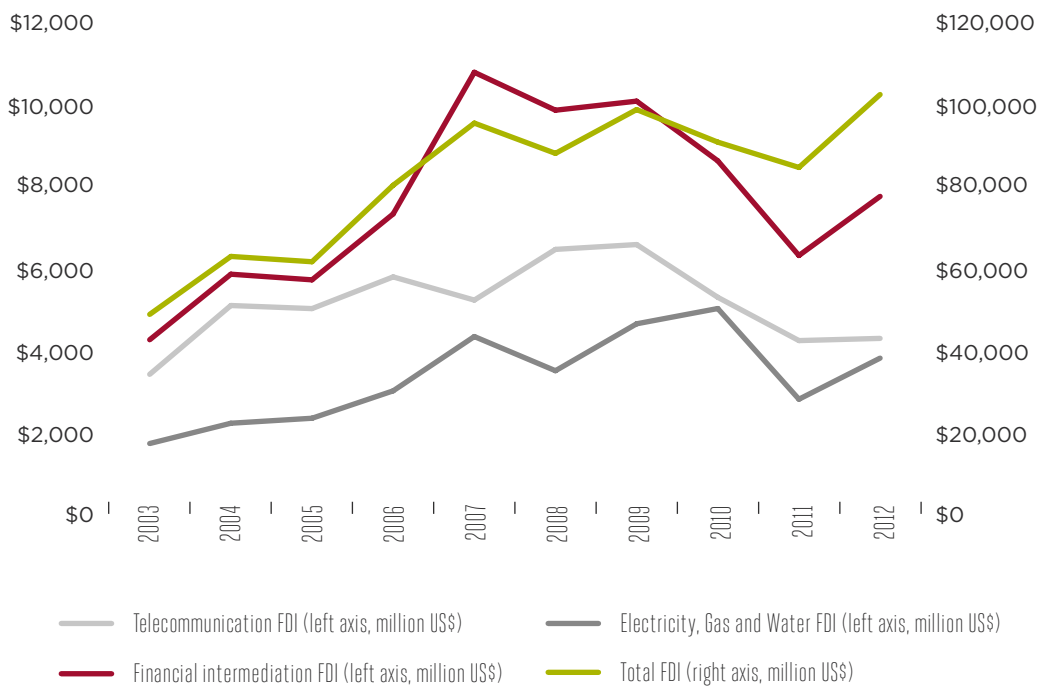
46. OECD, 2007. Tax effects on Foreign Direct Investment: Recent Evidence and Policy Analysis

3.2 Hungary’s mobile-specific taxation can potentially impact FDI attractiveness in the sector

Between 2009 and 2014, the level of taxation on the telecommunications sector increased by 7%, while the overall tax level on the economy increased by just 0.5% annually⁴⁷. The European Commission notes that the attractiveness of the Hungarian economy has been reduced by new barriers introduced in previously open markets and sector-specific taxation. Investment to the telecommunication sector may be “...extremely difficult to attract, given the extraordinary sectoral tax currently levied on telecommunications operators”⁴⁸.

Both total FDI and telecommunications FDI fell following the financial crisis in 2009, and started to increase again in 2011. However, while total FDI recovered and increased by 4% over the period 2009 to 2012, telecommunications FDI decreased by 35% over this period, after the introduction of the sector-specific ‘Crisis tax’ in 2009. This trend can also be seen in the electricity, gas, and water sector and the financial services sector, which were also subject to the Crisis tax; in those sectors FDI fell 18% and 23% over the 2009-2012 period, respectively.

Net FDI inward positions in Hungary



Source: Deloitte analysis based on OECD data

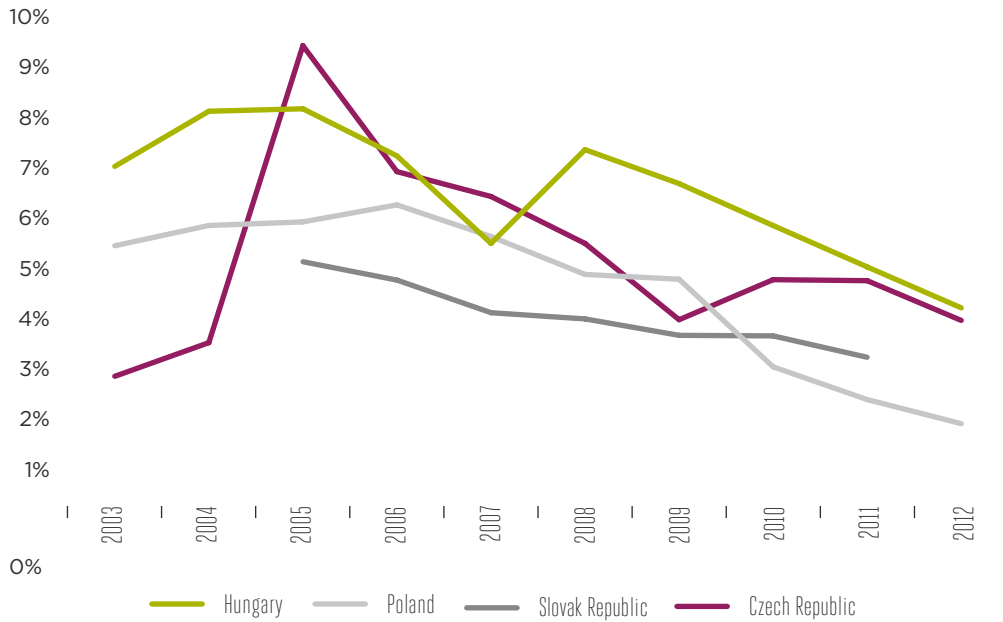
Figure 10

At the same time, telecommunications FDI as a share of total FDI continuously dropped, from 7% in 2008 to 4% in 2012. While the share also fell in other CEE-countries, the percentage point decrease was greatest in Hungary and Poland.

47. GSMA – Digital Inclusion report 2014. The level of taxation refers to the percentage which industries/person are taxed.
 48. European Commission, 2015. Country Report Hungary 2015: Including an In-depth Review on the prevention and correction of macroeconomic imbalances.



Net telecommunication FDI inward position as a proportion of total FDI inward position in selected CEE countries

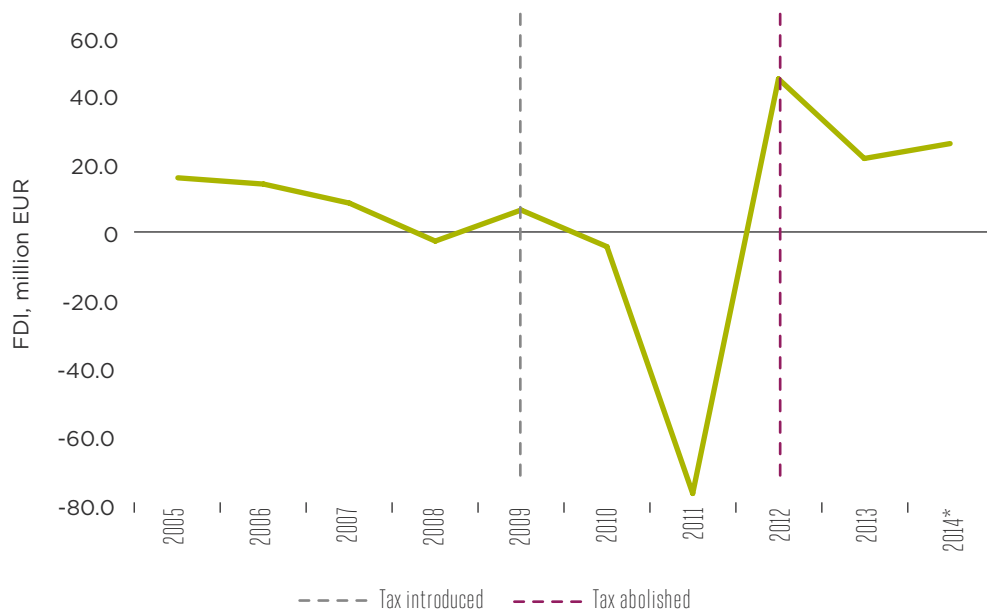


Source: Deloitte analysis based on OECD data.

Figure 11

A similar trend was experienced in Croatia. Following the introduction in mid-2009 of an industry-specific tax on mobile operators' gross revenues from mobile calls and SMS, FDI inflows to the sector sharply contracted, but rebounded after announcements that the tax would be abolished.

FDI (net acquisition of financial assets) in the post and telecommunication sector in Croatia



Source: Deloitte analysis based on data from the Croatian National Bank (CNB).

Figure 12

3.3 Tax compliance and uncertainty in Hungary

In addition to taxation levels, a number of other tax-related factors can affect investment attractiveness. In Hungary, the overall tax compliance burden and unexpected tax changes may contribute to reducing investment attractiveness.

TAX COMPLIANCE

Tax compliance includes factors such as the time and the number of payments required to comply with tax regulations. Tax compliance costs are important factors that international investors consider, as they affect profitability and investment return.

The *Paying Taxes* international study is designed to evaluate the burden of taxation on a representative medium-sized firm, in terms of the total tax rates (measured as the amount of taxes and mandatory contributions borne by the firm as a share of profits), time to comply (measured as the time taken to prepare, file and pay corporate income tax, value added or sales tax, and labour taxes), and the number of payments (measured as the total number of taxes and contributions paid) required to comply with tax regulations. This study found that Hungary performed significantly worse than other EU & EFTA⁴⁹ countries in the amount of time required for tax compliance.

The study found that in Hungary, for a medium-sized company, the total tax rate stood at 48%, the average time to comply was 277 hours and the number of payments was 11. While the total tax rate and number of payments in Hungary is comparable to the average for the EU & EFTA countries, the number of hours required for tax compliance, is significantly higher than the EU & EFTA average (277 hours compared to 176). The time to comply is also higher in Hungary than in all other global regions with the exception of South America and Africa. Further, the study refers to the average company, and the burden on companies in the mobile industry are potentially higher as they have further mobile-specific taxes.

Measures on ease of paying taxes in Hungary and regional averages, 2015

Country	Total tax rate (%)	Time to comply (hours)	Number of payments
Hungary	48%	277	11.0
South America	55%	620	23.7
Africa	47%	317	36.2
Central Asia & Eastern Europe	35%	245	23.3
Asia Pacific	36%	229	25.4
North America	39%	213	8.2
Central America & the Caribbean	43%	211	33.8
E U & EFTA	41%	176	12.3
Middle East	24%	160	16.8

Source: PWC/World Bank, *Paying Taxes 2015*.

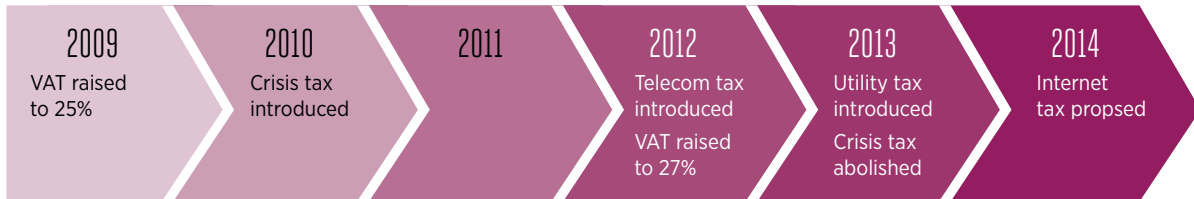
Figure 13

49. The European Free Trade Association (EFTA) is an intergovernmental organisation promoting free trade and economic integration to the benefit of its four member states: Iceland, Liechtenstein, Norway and Switzerland. See <http://www.efta.int/about-efta/european-free-trade-association>

TAX UNCERTAINTY

In recent years, numerous unexpected tax changes have occurred that have significantly increased tax uncertainty for both investors and consumers. A number of these changes have affected the mobile sector and the market participants' investors.

Timeline of mobile tax regime changes in Hungary



Source: Deloitte analysis

Figure 14

Key changes have included:

- Following the 2009 financial crisis, a 'Crisis tax' was introduced on a few select sectors, including the telecommunications sector. The 'Crisis tax' garnered criticism since it was levied on revenues rather than profits and the EU launched proceedings against Hungary, arguing that the tax was levied to help the government balance the state budget instead of financing the costs of regulating the sector⁵⁰.
- The 'Crisis tax' was abolished at the beginning of 2013 and replaced by a special 'Telecommunication tax' on usage of telephone services. For large operators, like Magyar Telekom⁵¹, the tax payments from the new tax were estimated to increase by 20% compared to the 'Crisis tax'⁵². The tax was also challenged by the EU⁵³.
- In 2013, a utility tax on providers of public utility lines, including telecommunication infrastructure, specifically the wireline track, was introduced⁵⁴.
- Further, the VAT rates have changed twice since 2009, first increasing from 20% to 25% in 2009 and increasing further to 27% in 2012.
- In addition, the government proposed an Internet tax in 2014 to be levied on the consumption of internet services. The proposal was met with protest and criticism from both the general public and the EU⁵⁵.

As a result, in a recent study the EU noted that *"the frequent and unpredictable interventions by the government have led to greater uncertainty for investors"*.

50. Economist Intelligence Unit, 2014. Hungary: Telecommunications report.

51. Magyar Telekom is the parent company of T-Mobile.

52. <https://technology.ihf.com/418527/new-utility-tax-imposed-in-hungary>

53. <http://www.reuters.com/article/2013/01/24/eu-hungary-telecom-idUSL6N0ATA8J20130124>

54. KPMG, 2013. Investment in Hungary.

55. BMI Research – Hungary Telecommunications Report Q3 2015 and European Commission – Implementation of the EU regulatory framework for electronic communications, 2015.

IMPACTS OF THESE FACTORS ON THE EASE OF DOING BUSINESS IN HUNGARY

In Hungary, there is a risk that uncertainty over taxation treatments and policies combined with the high level of taxation and tax compliance could constrain investment and new business activity.

According to the World Bank *Doing Business 2015* study, Hungary ranked below the EU & EFTA average in terms of the overall ease of doing business. Hungary ranked poorly in several sub-indexes, including in terms of paying taxes, for which it ranked 88th, compared to a ranking of 54th on the overall Ease of Doing Business index.

Rankings on ease of doing business for Hungary and EU & EFTA average, 2015

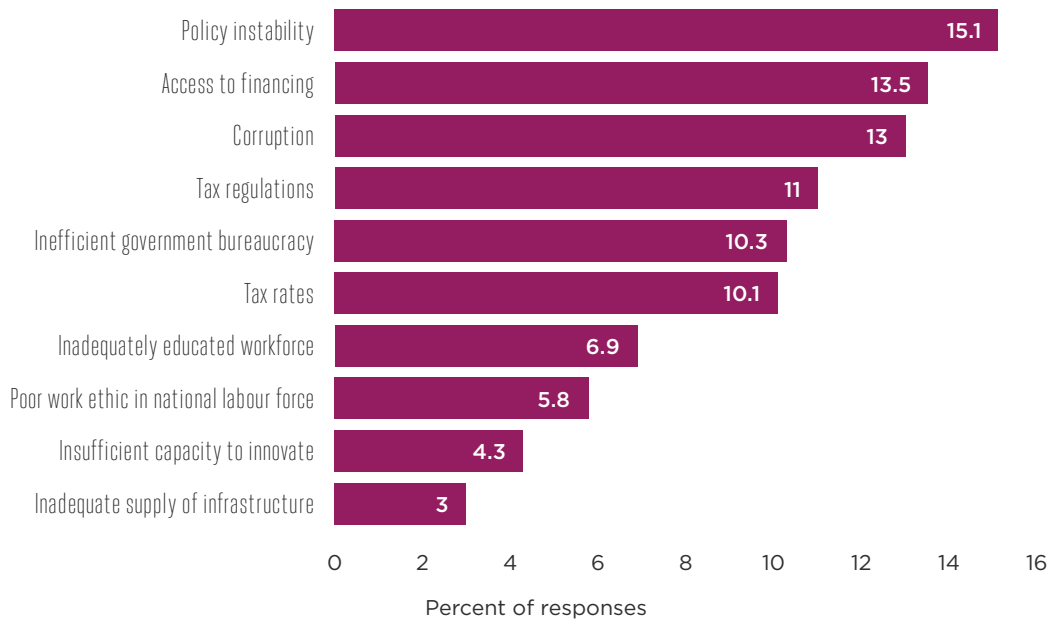
	Ease of Doing Business Rank	Starting a Business	Dealing with Construction Permits	Getting Electricity	Registering Property	Getting Credit	Protecting Minority Investors	Paying Taxes	Trading Across Borders	Enforcing Contracts	Resolving Insolvency
Hungary	54	57	103	162	52	17	110	88	72	20	64
EU & EFTA average	34	52	79	71	57	55	48	53	33	44	31

Source: Deloitte analysis based on World Bank, 2015. *Doing Business*

Figure 15

Furthermore, the negative impacts of policy instability and tax regulations are reflected in the World Economic Forum’s *Global Competitiveness Report* review of Hungary. On a questionnaire on the most problematic factors for doing business in Hungary, policy instability, tax regulations, and inefficient government bureaucracy are listed in the top five, while tax rates are ranked as the 6th most problematic factor.

Top 10 most problematic factors for doing business in Hungary



Source: Deloitte analysis based on World Economic Forum Global Competitiveness Report 2014-2015

Figure 16

Lower investment attractiveness can have significant impacts on Hungary as FDI has the potential to support savings and investment, technology transfers, employment and skills, which may boost productivity and innovation and higher aggregate GDP in Hungary⁵⁶. Taxation can potentially be a barrier, both in terms of rates and the compliance burden. Addressing mobile-specific taxation could potentially improve investment attractiveness for the sector, which could in turn support greater digital inclusion.

56. See United Nations Conference on Trade and Development (UNCTAD) (1999). Foreign Direct Investment and Development, (New York and Geneva: United Nations), United Nations publication.

4. Transitioning to a more equitable taxation structure in support of digitalisation and ICT investment in Hungary

Mobile is key to delivering increased digitalisation in Hungary. Mobile's full potential, however, has not yet been fully realised in Hungary and there are significant gaps in digitalisation. Despite early progress in extending mobile services to more people, since 2005 the mobile market has shown signs it is slowing down. Hungary has one of the lowest mobile subscriber and mobile internet penetration rates in Europe, and the growth in subscriber penetration rates has stalled. Penetration gaps are exacerbated by affordability gaps. The cost of mobile devices is a barrier for mobile uptake especially for the least well-off members of society, and the problem of affordability can be exacerbated by further taxation. Furthermore, existing taxation could have a negative impact on investment attractiveness and FDI flows.

To address these issues, alternative taxation structures that could promote sector growth and digitalisation, as well as protect fiscal revenues for government should be considered.

To design a taxation structure that can be more conducive to enhanced digitalisation, investment and economic growth, a number of best practice taxation principles are typically followed. These principles, advocated by international organisations⁵⁷, are generally recognised as contributing to an effective tax system⁵⁸ by minimising inefficiencies associated with taxes and regulatory fees, and therefore minimising the distortive impacts that they may have on the wider economy. The table below outlines these principles of best practice and how current mobile taxation in Hungary aligns with them.

57. See e.g. OECD, *Addressing the tax challenges of the digital economy*, 2014.
58. See IMF, *Tax policy for developing countries*, 2001.

Alignment of taxation in Hungary to principles of best practice

1. In general, taxation should be broad based	<p>Mobile-specific taxes such as the telecommunication tax and other taxes such as the utility tax and market surveillance fee that are specific to the telecommunication sector may lead to inefficiently low consumption and investment in the mobile sector.</p> <ul style="list-style-type: none">• The telecommunication tax levied on the usage of mobile services may create distortions in consumers' purchasing decisions.
2. Taxes should account for sector and product externalities	<p>All mobile-specific taxes and fees fail to account for positive externalities, and they discourage consumption.</p> <ul style="list-style-type: none">• In addition to the telecommunication tax, mobile is subject to a number of sector-specific regulatory fees even though the sector generates positive impacts in the wider economy through spillover effects. Taxing mobile in a disproportionate manner could be taken as a signal that the government wishes to discourage rather than encourage consumption.
3. The tax system should be simple, understandable and enforceable:	<p>Uncertainty and lack of transparency over taxation systems may discourage investment and increase enforcement costs for the government.</p> <ul style="list-style-type: none">• Taxes on the mobile sector has been marked by frequent and unpredictable changes to the tax regime. The taxation burden on the sector has increased in recent years due to the imposition of the crisis tax, the telecommunication tax, the utility tax and the increases in the VAT-rate.
4. Incentives for competition and investment should be unaffected	<p>Higher taxes on a given industry compared to other sectors reduce the incentives for investment in the industry, both domestically and internationally and could reduce investment in infrastructure and quality of service improvements.</p> <ul style="list-style-type: none">• Telecommunication FDI fell following the introduction of mobile-specific taxation in 2010, while overall FDI increased.
5. Taxes should not be regressive:	<p>Mobile-specific taxes such as the telecommunication tax increase barriers to access and hit the poorest consumers hardest.</p> <ul style="list-style-type: none">• Mobile-specific taxation such as the telecommunication tax on mobile calls, SMS and MMS increase the final price of mobile services and risk creating a barrier to affordability and mobile access. The barrier is greater for low income consumers and therefore risk excluding them from the benefits of mobile and internet.

Source: Deloitte analysis

Figure 17

Interviews with the mobile sector highlighted its role in supporting the Hungarian government's revenues and contribution to public services. However, while higher than standard taxation on the mobile sector may potentially deliver short-term benefits to the government, it needs to be balanced with the impacts on the cost of long-run socio-economic development and higher long-term government revenues.

By transitioning to a taxation system where mobile is treated equally to other goods and services, the Hungarian government can increase digitalisation and enhance the sector's contribution to the economic and social development of Hungary, while increasing tax revenues through more efficient and broad-based taxation. A more balanced taxation structure and consistent tax policy could boost the investment attractiveness of Hungary and potentially increase FDI inflows.

A number of areas for tax reform have been identified, based on international taxation best practice and in consultation with the GSMA and mobile operators. These would support the uptake of mobile and enable the sector to further contribute to economic growth and government revenues over and above its current impact:

- **Apply phased reductions of taxes on established services:** Phased reduction of mobile-specific taxes on mobile operators' revenues and on usage offers governments the opportunity to benefit from the economic contribution from mobile whilst limiting short-term fiscal costs.
- **Reduce complexity and uncertainty of mobile taxation:** Taxation on mobile operators has varied rapidly and unexpectedly. Any unpredicted tax change that occurs after investment in spectrum licence is made may negatively impact a mobile operator's business plan. The risk of future tax rises is priced into investment decisions and can therefore be expected to reduce both FDI and domestic investment in the medium-term.
- **Reduce taxation of the mobile sector:** Higher than normal taxation on mobile operators and consumers distorts production and consumption behaviour. It may also limit usage of digital services, reduce the ability of mobile operators to finance investment in digital infrastructure, and can in the long term reduce government revenues. Reducing specific taxation on mobile would remove these distortions, making mobile services more affordable and incentivising operator investment.



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