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Taxation and the digital economy: alternative models and public policy considerations

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El impacto de la politica fiscal en el sector de las TIC en la Republica Dominicana
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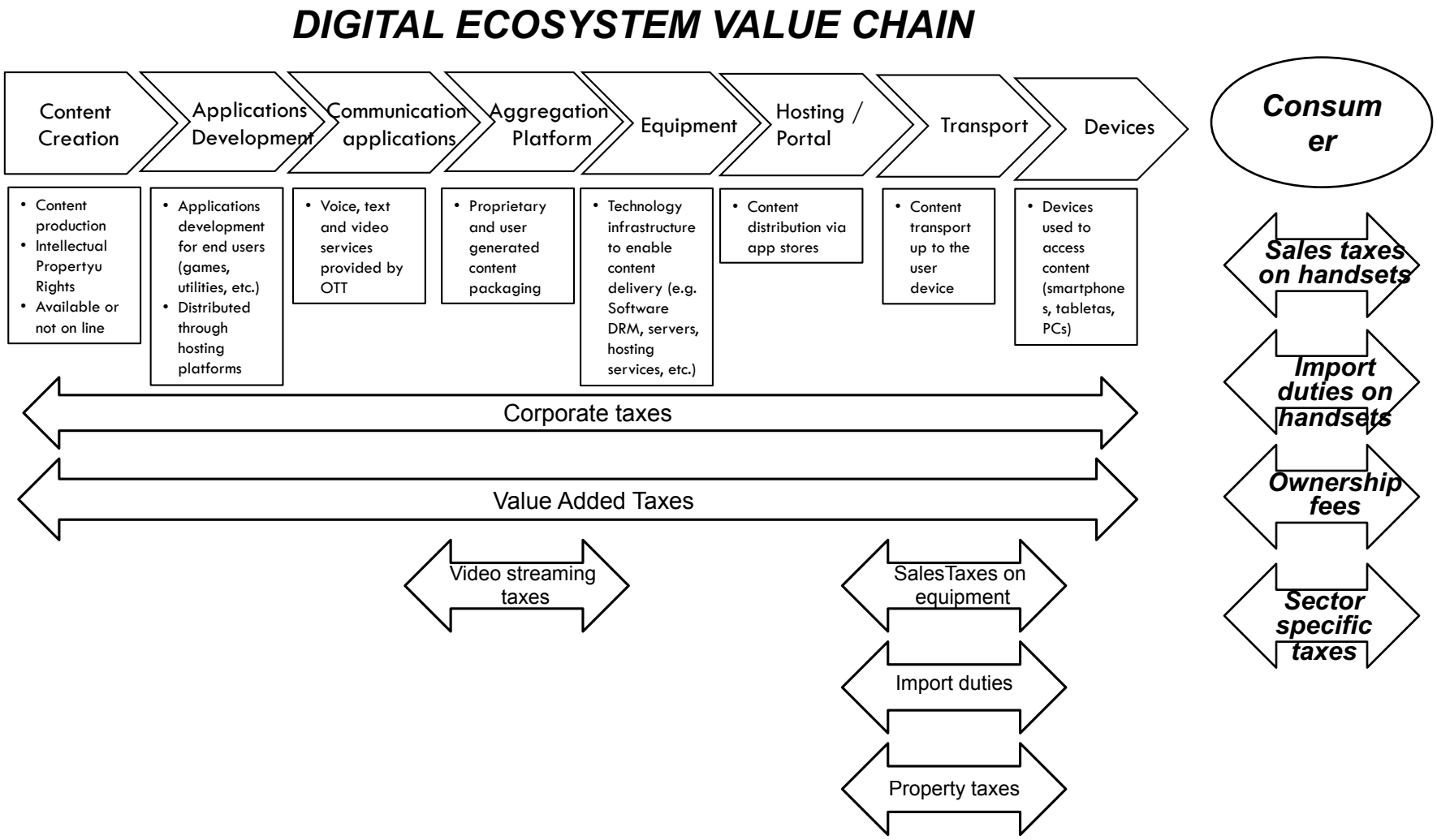
A diversity of taxes are collected from firms and consumers of the digital ecosystem



Digital sector firms are imposed a range of taxes which could have an impact on their level of investment

Digital Good or Service		Tax Examples
Telecommunications service providers		• Corporate taxes (average: 30%) • Indirect taxes on customer premise equipment (e.g. modems) • Sales tax and import duties on initial equipment purchase • Property taxes
Internet Service Providers		
Over-the-top	Content providers (music, films) (*)	• Tax on cloud services (some states in the US) • Value added tax on digital goods (European Union, Japan, South Africa) • Tax on video-streaming services (2% in France, Brazil based on catalog size, 3% on gross income in Buenos Aires)
	Digital advertisers	• Different approaches driven by cross-border taxation principles

(*) These are generally passed through to consumers; however, if demand is elastic, suppliers might opt to absorb a portion of the burden by reducing prices

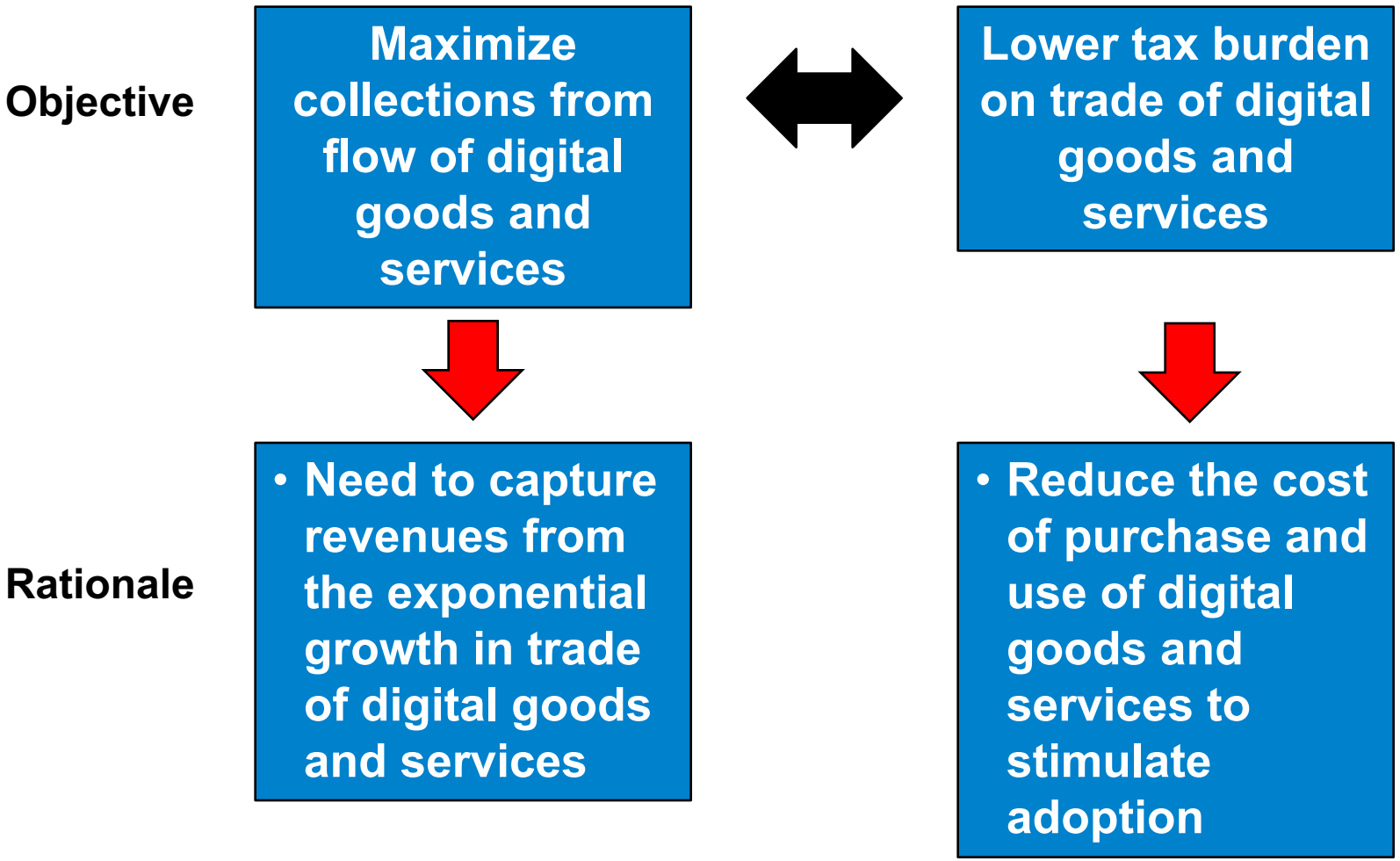
Consumers of digital goods and services can be imposed a range of taxes which ultimately impact their total cost of ownership and use

Digital Good or Service		Tax Examples
Wireless	Service	• Value added or sales tax on monthly bill • Value added tax on international roaming ("double taxation") • Telecom specific taxes (e.g. mobile broadband, m-Money) • Fixed taxes (e.g. 911 fees)
	Handsets	• Value added or sales tax • Import duty • Telecom specific taxes (e.g. SIM card, activation tax, discretionary spending) • Fixed taxes (e.g. ownership fees, recycling)
Broadband		• Internet access taxes • Value added tax on broadband subscriptions
International Long Distance		• Value added tax on long distance calls ("double taxation")
PCs, tablets		• Value added or sales tax on purchased equipment • Customs duty on imported equipment
Digital content		• Value added or sales tax on digital goods (e.g. music, movies)
Electronic commerce		• Value added or sales tax on physical products purchased through a digital channel

As a principle, taxation should attempt to be neutral and equitable across all sectors of the economy

- A distortion occurs when a change in the price of a good resulting from taxation triggers different changes in supply and demand from what would occur in the absence of taxes
  - Consumers, particularly those that are price sensitive, limit the adoption of the good
  - Firms reduce their rate of investment in infrastructure
  - Firms shift their deployment footprint to minimize their tax burden
  - Different tax regimes create asymmetries
- The deviation in supply/demand equilibrium is defined as the deadweight loss (cost of taxation over and above the taxes paid to the government)
- In this sense, taxation regimes should seek to minimize discrimination for any particular choice, while considering somewhat contradictory requirements
  - Ensure proper collection of taxes for income generated at source
  - Avoid over taxation of certain activities when compared to other industries
  - Selectively provide exemptions to facilitate investment in infrastructure and promote adoption by end-users

Two opposing positions can be identified in terms of digital taxation policy

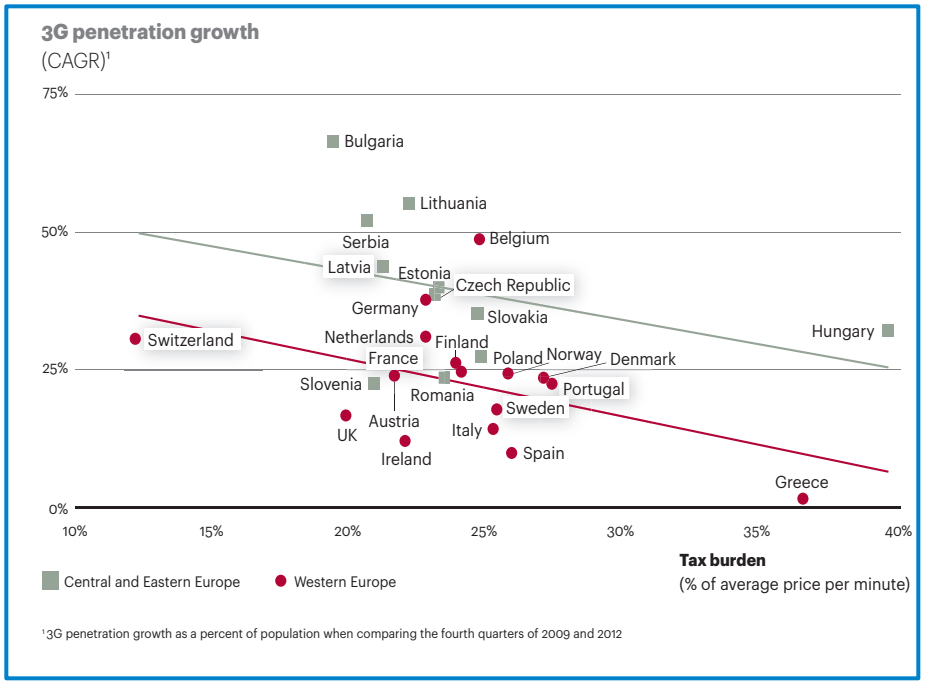


Distortive taxation regimes in the digital economy affect the choices made by market agents

Distortion dimensions	Impact on digital economy
Consumers, particularly those that are price sensitive, limit the adoption of the good	▪ Over-taxation of digital goods and services constraints consumer adoption by increasing affordability
Firms reduce their rate of investment in infrastructure	▪ Taxation of broadband equipment purchasing reduces deployment and coverage
Different tax regimes create asymmetries	▪ Global internet players have a lower effective tax rate than telecommunications operators ▪ The rates at which taxes are collected in the digital sector are higher than in other sectors ▪ The telecommunications sector is affected by a large number of specific taxes with the potential of greatly affecting agent behavior
Taxation of production and consumption of digital goods	• Undefined taxation regimes for digital goods leads to substantial revenue leakage

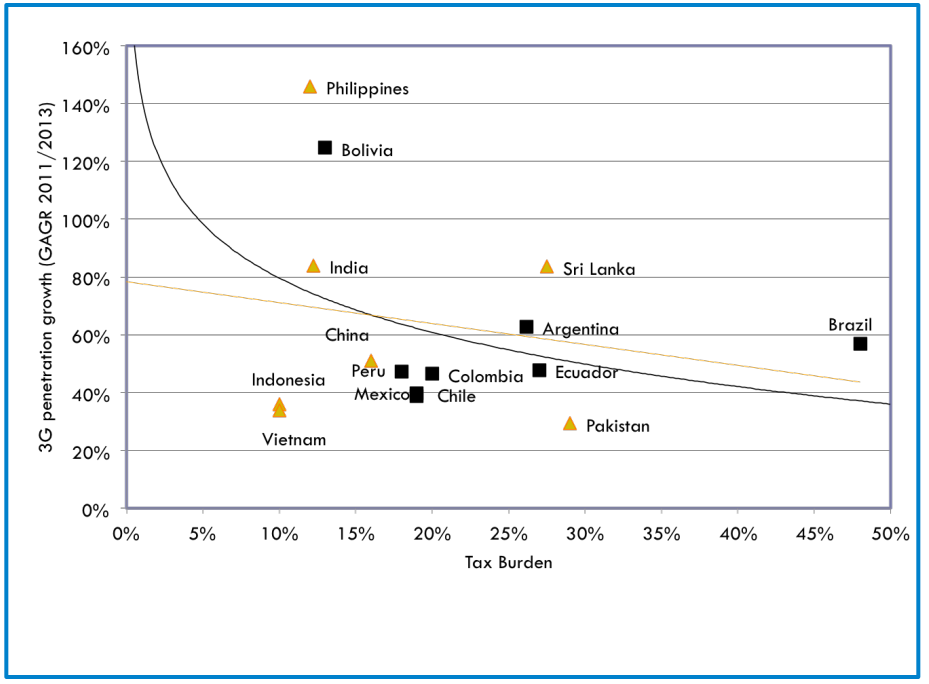
By increasing the total cost of ownership of wireless services, higher consumption taxes raise the affordability barrier and reduce adoption

TAX BURDEN AND 3G PENETRATION IN EUROPEAN COUNTRIES (2013)



Source: A.T. Kearney (2013)

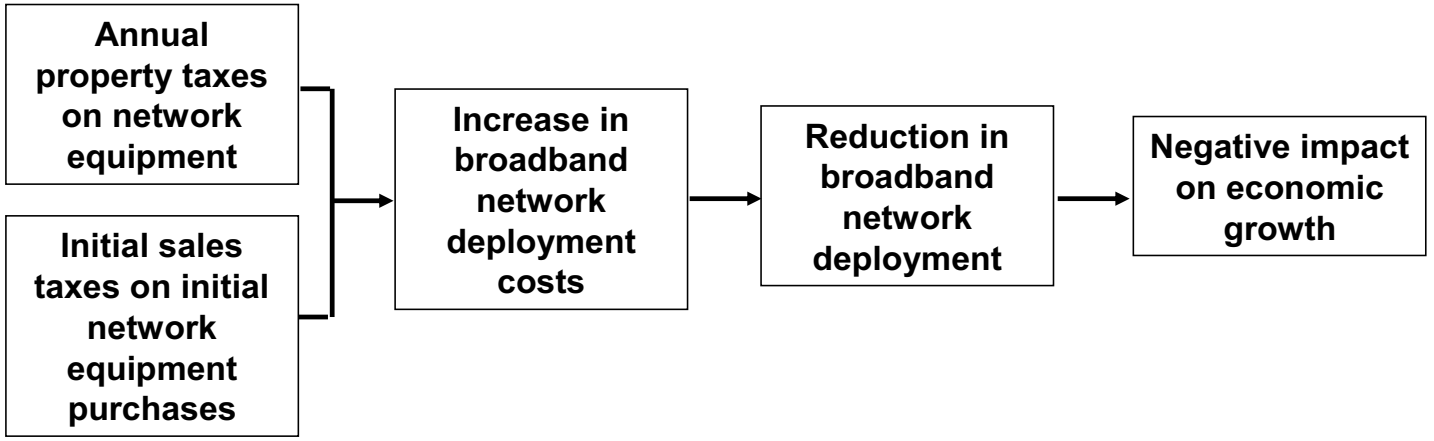
TAX BURDEN AND 3G PENETRATION IN SELECTED LATIN AMERICAN AND ASIA-PACIFIC COUNTRIES (2013)



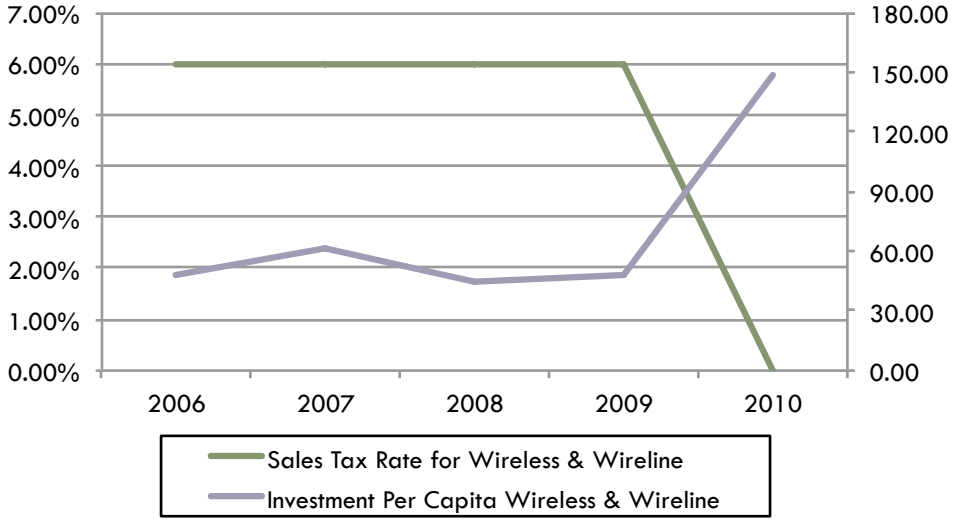
Sources: ITU; Katz

Direct taxes – Annual property levies and sales taxes on equipment purchasing – imposed on ISPs have a negative economic impact

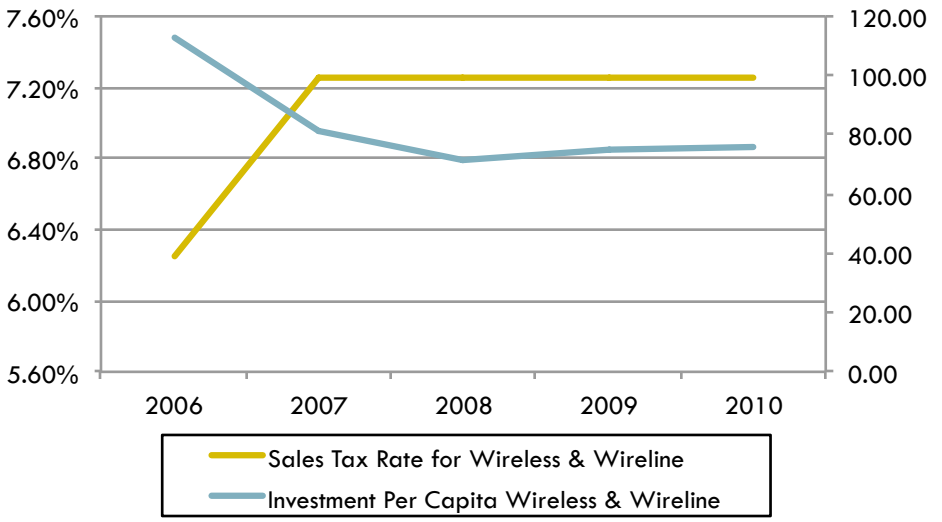
IMPACT OF TAXES ON BROADBAND NETWORK INVESTMENT



NORTH DAKOTA



SOUTH CAROLINA



Taxation asymmetry exists when there is a disparity in firm contribution across the digital ecosystem

TAX CONTRIBUTION (EFFECTIVE TAXATION RATE) (%) (2014)

Contribution	Digital Operators	Telecommunications Operators	Equipment Manufacturers	Terminal Manufacturers
WORLD	20.78 %	28.37 %	19.12 %	23.24 %
	• Facebook • Twitter • Google • Skype • Netflix	• Claro • Telefónica • Millicom	• Cisco • Ericsson • Alcatel-Lucent • Huawei	• Apple • Samsung
EMERGING MARKETS	11.78 %	33.24 %	14.14 %	15.19 %
	• Facebook • Twitter • Google • Skype • Netflix • Mercado Libre • Netshoes • Despegar • Taringa • B2W • Linio	• Claro • Telefónica • Entel Chile • Oi Brasil • TIM Brasil • Personal • Millicom • ICE • Antel • CNT • Entel Bolivia • Digicel • CANTV	• Cisco • Ericsson • Alcatel-Lucent • Huawei	• Apple • Samsung • Nokia

Sources: author

An elimination of tax on digital technology use could prove economically beneficial – Emerging Market case

- Assumptions:
  - Impact of fixed broadband on GDP growth in Senegal: 0.050% for each 1% increase in penetration (source: Katz and Callorda, 2015)
  - Fixed broadband monthly retail price in Senegal: US$ 36.41 (source: ITU)
  - Overall taxes to be added to the retail price in Senegal: 18% VAT on General Goods and Services (source: ITU)
  - Fixed broadband household penetration in Senegal: 6.23% (source: ITU)
  - Fixed Broadband price elasticity in Senegal: 2.66 (source: Telecom Advisory Services analysis from model in prior pages)
- Current situation:
  - Annual tax collection per subscription borne by consumers: US$ 78.65 (calculated: US$36.41*18%*12)
  - Total fixed broadband subscribers: 103,362 (source: ITU)
  - Total annual tax collection from fixed broadband: US$ 8,128,966 (calculated)
- Impact of eliminating taxes on broadband
  - Total taxes lost to the Treasury: US$ 8,128,966 yearly (US$ 162,579,320 in perpetuity value with a 5% discount rate)
  - Reduction of total cost of ownership: US$ 6.55 monthly per household
  - Increased household penetration: From 6.23% to 9.22%
  - Impact on GDP growth: 2.40% (US$ 354,960,000)

An elimination of taxes on purchasing of broadband equipment use could also prove to be economically beneficial – United States case

- Assumptions:
  - Impact of sales tax rate on network investment in US: every decrease of 1 % in the average sales tax rate on purchased equipment results in an increase in total telecommunications investment per capita of $ 0.85 (source: model in prior page)
  - Economic Impact of network investment in US: each 1% increase in penetration yields 0.014% in GDP growth, and -0.075 in unemployment growth (source: Katz, et al, 2015)
  - Annual telecommunications network investment in US: US$ 31.8 billion; US$ 20.97 billion subject to sales tax of an average of 4.02% (source: FCC)
- Current situation:
  - Total annual collection from sales taxes on purchased equipment in US: US$ 1.39 billion Impact of eliminating taxes on broadband equipment purchase
  - Total taxes lost to the States Treasuries: US$ 1.39 billion
  - Investment increase in network deployment: US$ 1.48 billion in the first year and $ 3.13 billion annually in subsequent years (“stimulus multiplier effect”)
  - Increased broadband deployment: 634,000 new broadband lines
  - Impact on US GDP growth: US$ 7.24 billion in the first year after the investment increase and US$ 33.13 billion of output over three years (direct and indirect)
  - Job creation: 53,000 new jobs in the first year after the investment increase and 243,000 over three years (direct and indirect)

A set of answers to the issue questions raised above can be formulated based on the evidence provided

Issue	Conclusion
What is the proper level of taxation for purchasing of wireless services?	▪ If the purpose is to maximize penetration, the lowest possible tax rate; tax exemptions generate more economic benefits and ultimately revenues than losses
What is the appropriate level of taxation on capital equipment purchased by telecommunication operators?	▪ Sales taxes on purchased equipment have a negative impact on network deployment and, therefore, on broadband economic impact ▪ Governments should carefully consider the enactment of tax exemptions similar to those considered for development of critical industries
How should Internet sales be taxed?	▪ No easy answers in this area ▪ Taxation of goods sold over the Internet should be considered in light of the benefits to consumers implied in a tax-free environment ▪ On the other hand, no taxes for goods purchased over the Internet have a potential distortion vis-à-vis physical distribution channels
How should consumption of digital goods be taxed?	▪ This is an evolving policy domain ▪ However, if the objective is to protect national digital industries, no taxation of global players offering digital goods has a potential distortionary effect
Should the consumer purchasing wireless devices and personal computers be taxed?	▪ If the objective is to maximize adoption of digital access devices, the evidence points out that tax minimization fosters increased adoption, which in turn results in large economic gains, which compensate for the foregone tax revenues.
Should the providers of digital platforms be taxed at the country where revenues are generated, or should they be allowed to take corporate tax exemptions in certain locations?	▪ Global platforms have been the preeminent drivers of Internet adoption throughout the world, with significant indirect contributions to the development of the digital economy ▪ While the current tax regime might be a source of asymmetry within the digital sector (particularly vis-à-vis telecommunication operators), governments in countries with emerging market economies need to carefully assess the convenience of moving into this domain, which might entail a risk in hampering growth of local demand and usage

Taxation of digital goods and services should be approached preventing any erosion of their economic impact

- Taxation can have a detrimental impact on digitization growth and ultimately on economic development
  - On consumption of digital goods
  - On equipment and other production inputs
- Balance short-term revenue generation and long term support of innovation and economic growth
  - Imposing “luxury taxes” on smartphones and tablets does not have any redistributive impact
  - Import duties have no clear impact in protecting domestic industries
  - Sector specific policies may be distortive
- The design of an efficient tax structure in the digital space needs to consider three requirements
  - Ensure proper collection of taxes for income generated at source
  - Avoid over taxation of digital activities when compared to other industries
  - Provide selective exemptions to facilitate investment in infrastructure and promote adoption by end-users