



# Surtaxes on International Incoming Traffic in Africa



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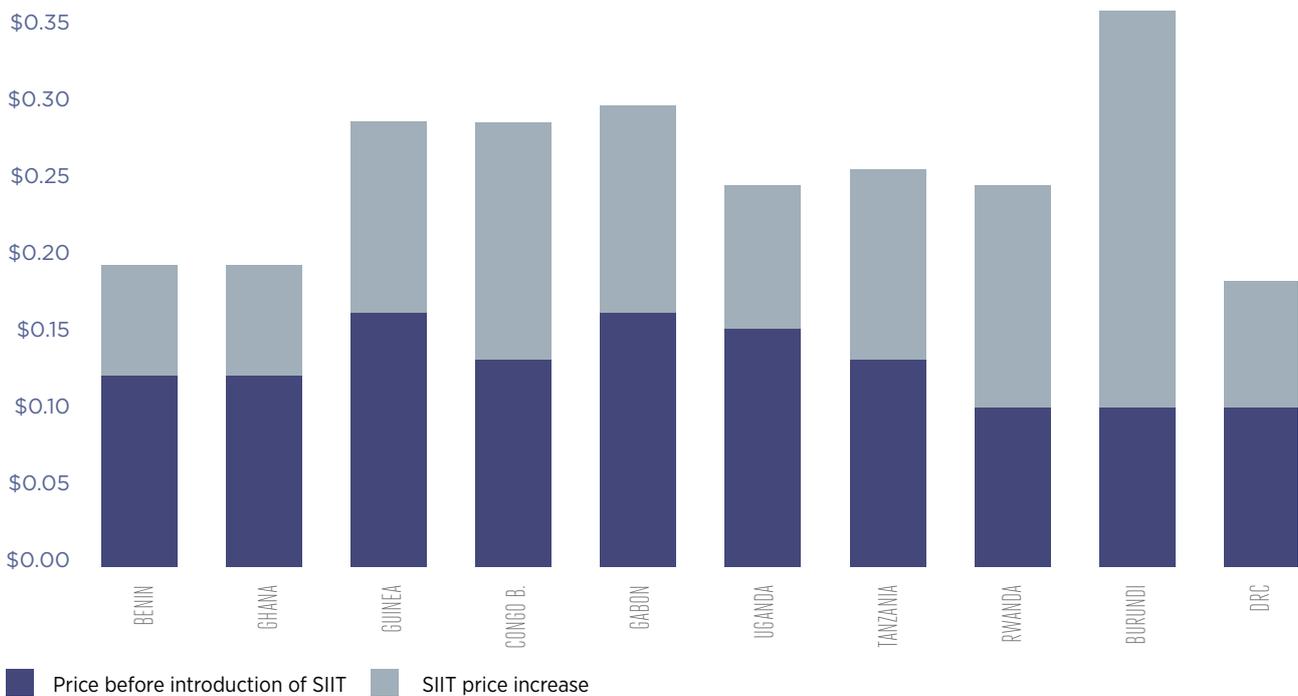
# Executive Summary

Over the last five years, 15 African countries have imposed a new additional telecommunication specific tax, in the form of a Surtax on International Inbound Call Termination (“SIIT”).

Based on the data received from mobile operators, this paper studies the effects of the SIIT in six of these countries and on regional integration. Data was not available for Central African Republic (“CAR”), Republic of Congo, Gambia, Guinea, Chad, Niger, Malawi and Rwanda. Therefore aggregated figures in this report refer to Benin, Democratic Republic of Congo (“DRC”), Gabon, Ghana, Tanzania, and Uganda (referred to as the ‘SIIT countries’).

The SIIT takes the form of an imposed fixed price that operators must charge for international inbound termination, of which the government takes a set amount. SIIT prices are different from the competitive market prices for termination which applied before the tax was introduced. In the countries where it is imposed, the SIIT has caused the price of terminating International Incoming Calls (“IICs”) to increase by an average 97%, with an increase of up to 247% in Burundi.

## IMPACT OF SIIT ON IIC TERMINATION PRICES



Source: Deloitte analysis based on data provided by local mobile operators

Figure 1

This price increase is being reflected in retail prices for consumers. Evidence from retail international tariffs suggests that the average price per minute to African countries that have implemented a SIIT is 28% higher than those countries that have not introduced one. For example, the cost of calling Ghana from the UK is now 200% higher than the cost of calling Nigeria. The difference in average price per minute between those that have implemented a SIIT and countries at a similar level of economic development is similar to the average price increase due to the SIIT.

Operators are concerned that governments have not considered fully the negative direct and indirect costs that the SIIT generates which could lead to losses for governments, local businesses and consumers, and negatively impact regional integration.

Additionally, governments often use a private party to measure the number of international inbound minutes terminated by each operator and bill the operators accordingly. The tax charges collected in this way are then shared with the private party that carries out the measuring function. The amount shared with the private party constitutes a significant proportion of the tax revenue, which can be as high as 50% and this should be considered against a background where such information could be collected from the operators directly using their own traffic recording systems.

This study analyses a range of negative effects of the SIIT that affect operators, businesses and consumers.<sup>1</sup> Firstly, it estimates what would have happened to volumes of IICs in the absence of the SIIT by considering the relationship between IICs before and after the introduction of the SIIT with a number of macroeconomic and industry variables. In addition, after analysing what might have happened to the volumes of IICs if the SIIT had not been introduced, the costs of the SIIT in terms of

lost corporate tax revenue for governments and lost remittances are estimated.

The SIIT also creates significant extra costs to African businesses that trade with (and hence call) businesses in countries in the region where the SIIT has been imposed, negatively affecting regional integration. Evidence from mobile operators indicates that nearly 40% of all international incoming traffic is from countries in the region. In some countries such as Tanzania this is over 50% and for the DRC and Uganda, 48% of calls originate within Africa. Negative regional impacts have also been estimated.

A summary of these potential effects is presented in Table 1. The analysis indicates that 1.2 billion minutes may have been lost and the direct costs to the economies and across the region from these taxes may amount to US\$78 million. These costs are discussed in more detail in the next section.



1. The analysis is based on operators' data and scaled to each market employing market shares.

## SUMMARY OF THE IMPACTS OF THE SIIT BY COUNTRY, US\$M UNLESS OTHERWISE STATED

			COSTS FROM THE SIIT			
COUNTRY	TIME PERIOD	ESTIMATED LOST IICS (MINUTES)	LOST CORPORATE TAX FROM REDUCED MOBILE OPERATOR REVENUE	LOST CORPORATE TAX FROM BUSINESSES TRADING WITH OTHER SIIT COUNTRIES	COST FOR AFRICAN BUSINESSES TRADING WITH THE COUNTRY	ECONOMIC LOSSES DUE TO REDUCED REMITTANCES
Benin	Feb 2011 to Sept 2013	147m	-0.8	1.8	10.0	3.7
DRC	June 2013 to March 2014	90m	0.9	1.7	2.4	0.2
Gabon	Aug 2011 to March 2014	161m	3.0	1.2	4.1	0.1
Ghana	June 2010 to Sept 2013	679m	2.9	0.3	21.4	4.1
Tanzania	Jan 2013 to March 2014	110m	1.3	1.4	5.9	0.8
Uganda	June 2013 to Sept 2013	9m	0.1	0.8	4.2	6.4
<b>Total</b>	<b>June 2010 to March 2014</b>	<b>1,195m</b>	<b>7.5</b>	<b>7.1</b>	<b>48.1</b>	<b>15.2</b>
<b>Aggregate total</b>	<b>June 2010 to March 2014</b>	<b>1,195m</b>	<b>78m</b>			

Source: Deloitte analysis based on data provided by local mobile operators recognising that the timeline in which these effects have occurred is different for each country

Table 1

# Negative impacts on call volumes and corporate tax revenue

The SIIT raises the price of international call termination to a level that is not based on the cost of terminating international calls and on market conditions. These large increases in price have a direct effect on the volumes of IICs by reducing the amount of calls that would have otherwise been made to the country using mobile networks. The price increases will also have an indirect effect by inducing the substitution of standard calls with VoIP calls; and by encouraging the development of illegal SIM boxes used to terminate international and also domestic calls. Although call substitution may mitigate some of the wider economic impacts, the SIIT results in significant losses for mobile operators and governments through reduced revenues and corporate tax receipts respectively.

Mobile operators have provided data on how volumes of calls on their networks have varied before and after the introduction of SIIT. This data suggests that:

- In Benin, call volumes fell by 1.6% during the year following the introduction of the SIIT, whereas they grew by 38% in the year before it was introduced.
- Call volumes in Ghana fell by 27% in the five months after the SIIT was introduced.
- In Gabon, call volumes fell by 57% in the month the SIIT was introduced.
- The volume of calls in Uganda began falling after being stable for the previous four years.
- Call volumes in Tanzania fell by 16% in the month the tax was introduced and 12% in the following month.

These trends are consistent with analysis recently undertaken by the Organisation for Economic Co-operation and Development (“OECD”), which found that call volumes have “dramatically decreased” in countries

where the SIIT has been introduced. For example, it was found that IICs in El Salvador dropped by 53% and by 30% in Rwanda.

IICs volumes before and after the introduction of the SIIT were compared with macroeconomic variables such as GDP and exports, and industry variables such as mobile penetration, incoming domestic calls and international outgoing calls. Against a background of economic growth and of significant growth in the volumes of mobile calls in nearly all SIIT countries, the volumes of IICs have grown at lower levels than before the introduction of the SIIT. Based on these trends, it is estimated that in the absence of the SIIT, mobile operators could have terminated an extra 1.2 billion international minutes and could have generated US\$86 million in revenues from 2010 to March 2014.

Considering average profitability of mobile operators in Africa, and the corporate tax levels charged by governments in these countries, this suggests that governments could have gained an extra US\$27.5 million in corporate taxes across the period had the SIIT not been introduced. It is likely that

the reduced growth in IICs may have been substituted partly by VoIP calls and by illegal SIM boxes. VoIP substitution carries a risk of being permanent and therefore foregoing a lifetime's revenues from these customers. Substitution may have occurred also for those using calling cards as they will use up the allowance faster.

One of the most concerning effects of the SIIT is that it encourages the development of illegal SIM boxes by increasing the difference between domestic and international

termination prices. An operator in Ghana reported that calls being terminated by illegal SIM boxes had risen over 279% between 2010 and 2013, which can result in large losses for operators and corporate tax revenue. In 2011 the Ghanaian government reported that they had lost US\$5.8 million due to SIM box fraud.

The SIIT also generates potential negative impacts on international roaming within the region and reduces the incentives for operators to extend good value on-network roaming across the region.

## Negative impacts on African businesses

The introduction of the SIIT has the potential to generate at least two significant types of economic losses to local economies: to regional businesses and to local consumers.

International benchmarks suggest that 40% of international traffic is generated by businesses. As such, on the basis of the data on the country of origin of international calls from operators in SIIT countries, it is estimated that African businesses incurred a direct economic loss of US\$48 million for the period 2010 to March 2014. In addition, they would have also incurred indirect losses as a result of any missed calls that were not undertaken due to price increases.

There is evidence that operators in African countries where the SIIT has not been introduced have reciprocated the tariff increases introduced by SIIT countries. As such, economic losses may underestimate the extent to which the introduction of SIIT in certain countries has inflated international termination prices across the region.

Taxation imposed on mobile telecommunications in African countries, of which the SIIT is just one example, contributes to increased telecommunications costs for local businesses. The resulting higher cost of doing business also carries a risk of decreasing the international competitiveness of the region and reducing regional integration. This could lead to a worsening of the terms of trade for local exporters and reduce local and Foreign Direct Investment ("FDI"), particularly in telecommunications related business.

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FOR THE PERIOD  
2010 TO MARCH  
2014

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# Negative impacts on consumers and remittances across the region

The SIIT also has the potential to create negative impacts for African consumers that have emigrated from their origin countries and frequently call friends and family back in the home country. As a result, they can respond by either cutting the amount of calls to their home country, reducing connections that result in negative social impacts, or absorb the price increase, which reduces their disposable income. On the basis of IICs data provided by mobile operators, these extra costs are estimated at US\$191 million from 2010 to March 2014.

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In addition to these impacts, the SIIT has significant effects on remittances. Increased costs of calling home reduce the income of emigrants. Employing evidence from studies on the sensitivity of remittances to income decreases, it is estimated that increases in the SIIT may have reduced remittances back to SIIT countries of up to US\$9 million from 2010 to March 2014. As remittances contribute to economic development in the country where these are received,

governments in SIIT countries may have lost this amount of economic activity as a result of these missed remittances. Including the multiplying effect that these extra resources could have generated in a local economy, the wider losses to local economies due to reduced remittances are estimated to be US\$15.2 million from 2010 to March 2014.

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# Concerns over the use of third party traffic monitoring companies

The operational implementation of the SIIT policy is also a source of concern for operators, as the third party intermediaries used to measure call volumes add an unnecessary layer of monitoring. Operators are concerned that some of the systems employed can violate privacy as the third party can access private information, some of which is unrelated to the monitoring of international calls. As a result, operators emphasised that the requirements of these systems be clear, transparent, and consistent with the laws and regulations, including privacy requirements.

In relation to the operator's own monitoring of call volumes, operators reported that adequate assurance and audit measures for international traffic accounts exist within national regulation or law and are upheld by operators using their own traffic recording systems. Operators are therefore concerned that it is an inefficient and unnecessary use of resources to divert tax revenue to pay a third party to calculate call volumes.

Operators are concerned that some of the systems employed can violate privacy as the third party can access private information, some of which is unrelated to the monitoring of international calls.



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The introduction of the SIIT can create economic losses to governments that impose it, in the form of losses from tax revenues from mobile operators and consumers and through the incentivisation of illegal SIM boxes, as well as causing a significant leakage from their local Sub-Saharan Africa region. African businesses will experience economic losses in addition to consumers from reduced remittances. Overall, these costs are material at approximately US\$78 million for the six countries from 2010 to March 2014.

Recognising the negative impacts of the SIIT on trade and regional integration, Kenya, Rwanda, Burundi, Uganda and South Sudan agreed in May 2014 to waive the SIIT for calls originating in these countries. In light of these negative consequences, other governments should reconsider the impact of the SIIT on the regional economic development in Africa and on their economies.

01.

# Introduction

This paper was commissioned by the GSM Association (“the GSMA”) to describe and review evidence of the impacts on governments, operators, African business and consumers of the imposition of a Surtax on International Inbound Call Termination (“SIIT”).

The paper is set out as follows: section 1 contains an introduction and background to the paper including a description of how the tax operates; section 2 outlines the impacts on governments and operators; section 3 describes the impacts of the SIIT on African business and consumers, and other indirect impacts on the African economies; section 4 concludes.

1.1.

## THE SIIT

Fifteen countries in Sub-Saharan Africa have introduced the SIIT in the last five years: Benin, Burundi, Central Africa Republic (“CAR”), Chad, Republic of Congo, Democratic Republic of Congo (“DRC”), Gabon, Gambia, Ghana, Guinea, Malawi, Niger, Rwanda, Tanzania, and Uganda. In Senegal, the SIIT was introduced and removed twice in the last five years and is no longer in place.

The SIIT takes the form of an imposed fixed price that operators must charge for international inbound termination, of which the government takes a set amount. This fixed price is set above the negotiated rates which were present prior to the policy implementation, and the difference (or a portion of the difference) is collected by the government. The governments use a private party to measure the number of international inbound minutes terminated by each operator and bill the operators according to the results. The tax charges collected in this way are then shared with the private party that

carries out the measuring function. This can be a significant leakage from the African economy. As illustrated in Figure 2, the SIIT is operated through the following steps:

- Telecommunications operators charge incoming international calls the centrally set termination charge.
- A third party is contracted to assess how many minutes of inbound international traffic surtax are charged to each operator and informs the Government. The operators are concerned that these monitoring systems raise privacy concerns over the information that is recorded.
- The government charges operators accordingly.
- The government pays the private intermediary an amount typically set at 50% of the revenue it raises with the surtax.

# STRUCTURE OF SURTAX ON INBOUND INTERNATIONAL CALL TERMINATION



Source: Deloitte analysis based on interviews with mobile operators

Figure 2

The price rise taken by government (this amount is shared with the external call monitoring body), the timing of implementation of the SIIT and the impact on charges for incoming international call termination in the affected countries are summarised in Table 2.

## SUMMARY OF SIIT BY COUNTRY

COUNTRY	DATE INTRODUCED	PRICE BEFORE SIIT	PRICE AFTER SIIT	VALUE OF THE SIIT	GOVERNMENT KEEPS	% CHANGE IN PRICE
Benin <sup>2</sup>	Feb-11	XAF 55.00	XAF 82.00	XAF 15.00	XAF 15.00	49%
Ghana <sup>3</sup>	Jun-10	GHS 0.27	GHS 0.43	GHS 0.13	GHS 0.07	58%
Guinea	Sep-09	GNF 761.90	GNF 1,333.33	GNF 571.43	GNF 238.10	75%
Republic of Congo	Jun-09	XAF 62.50	XAF 131.58	XAF 65.79	XAF 32.89	111%
Gabon	Aug-11	XAF 72.00	XAF 131.00	XAF 72.00	XAF 36.00	82%
Uganda	Jun-13	UGX 390.00	UGX 624.00	UGX 234.00	UGX 234.00	60%
Tanzania	Jan-13	TZS 211.5	TZS 402.83	TZS 191.33	TZS 112.8	90%
Rwanda	Aug-12	RWF 59	RWF 144.3	RWF 85.3	RWF 43	145%
Burundi	Feb-12	BIF 130.9	BIF 454.55	BIF 323.64	BIF 162	247%
DRC <sup>4</sup>	Jun-11	CDF 91.2	CDF 137.70	CDF 46.50	CDF 23.25	51%

Source: Deloitte analysis based on interviews with local mobile operators. Information on the other five countries is not available.

Table 1

Imposition of the SIIT sets compulsory prices for international termination and is thus akin to imposed price fixing. In addition, in all affected countries, the fixed prices are significantly above the market rates which were present prior to the policy implementation.

As described in Figure 3, the resulting increase in international termination charges has been significant in all countries in which the surtax has been implemented, ranging from a 49% increase in Benin to a 247% increase in Burundi, and representing an average 97% increase.

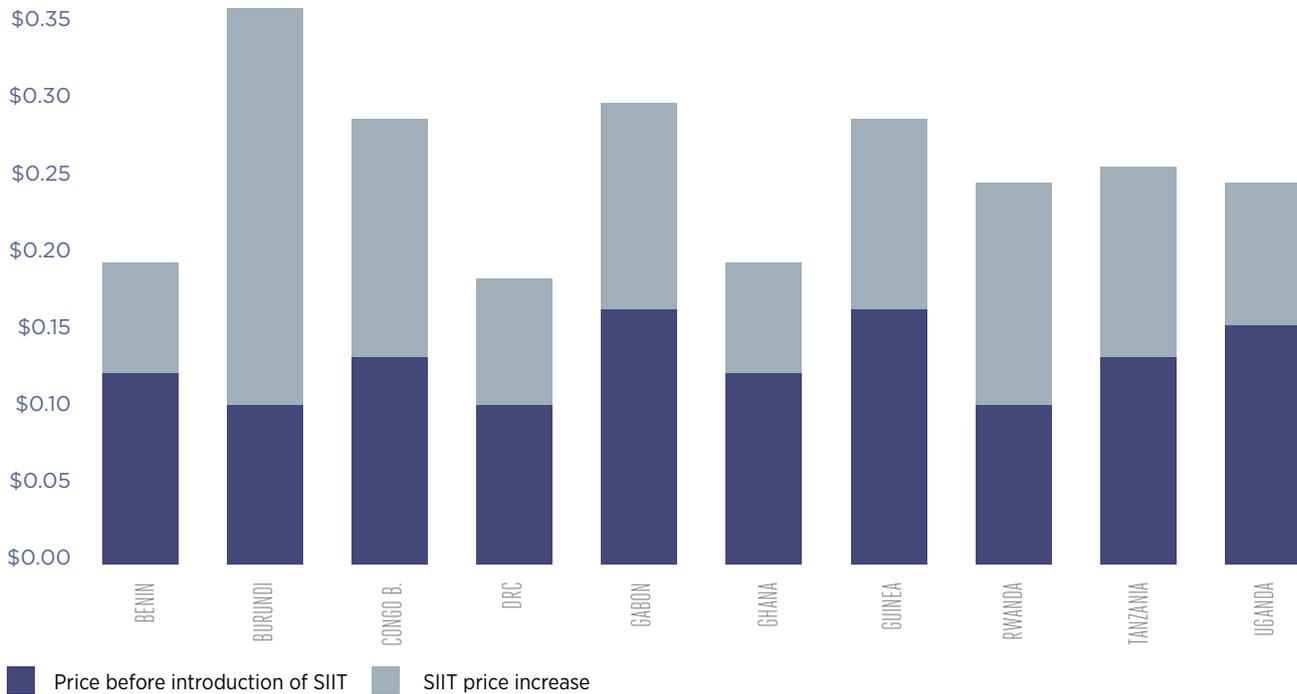
2. Increased to XAF90 in January 2013 with the government taking XAF23.

3. In August 2013, the Ghanaian government contracted a different monitoring company, Subah, and the amount the government retains may have changed.

4. Increased to 165.6CDF in June 2013, with the government taking 74.4CDF.



## IMPACT OF SIIT ON PRICES (\$)



Source: Deloitte analysis based on data provided by local mobile operators

Figure 3

### 1.2.

## THE IMPACTS OF THE SIIT

The introduction of the SIIT creates numerous direct impacts on governments' tax revenues, on mobile operators, on African businesses and on local consumers.

While the tax raises revenue for the government, a number of direct and indirect costs for governments, mobile operators, businesses, consumers across the region are also generated. The impacts, illustrated in Figure 4, include:

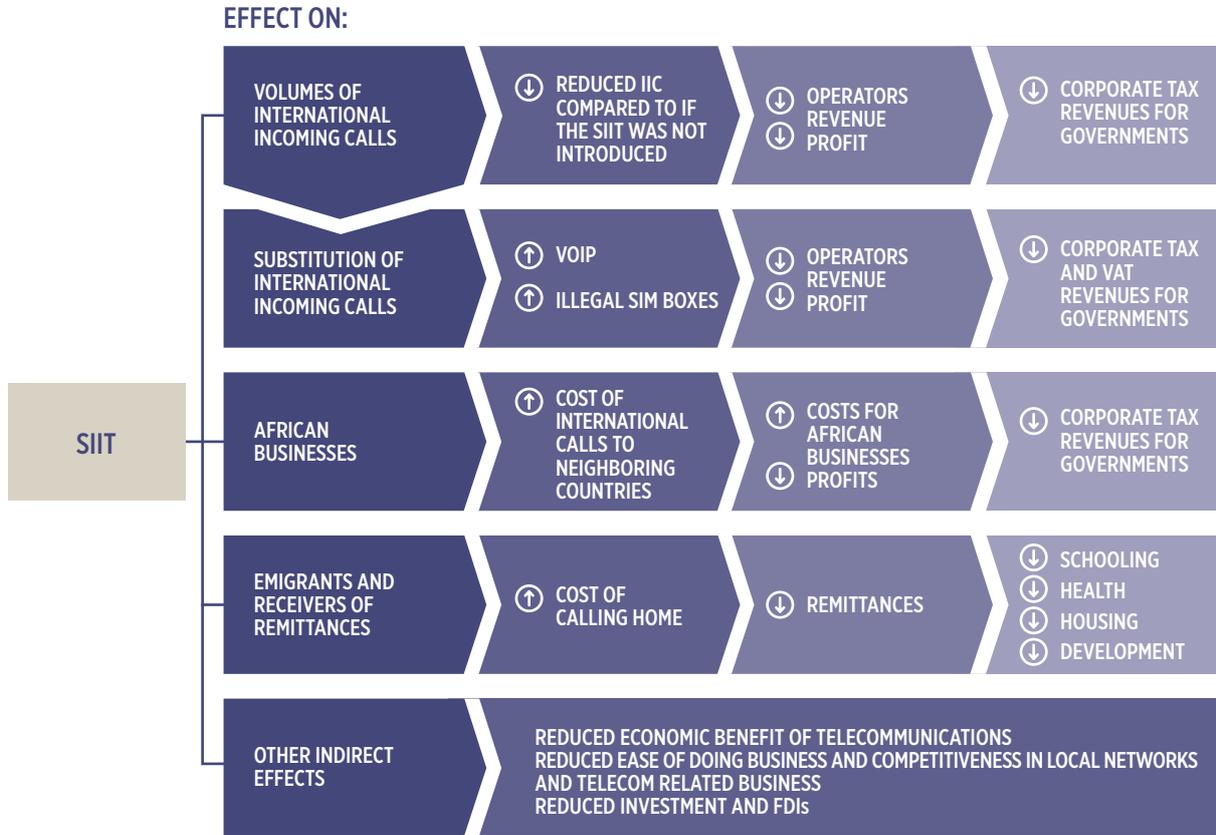
- Impacts on volumes of Incoming International Calls ("IICs"): the price increase impacts the growth of IICs, potentially reducing revenues and profits for mobile operators, and corporate tax receipts for governments. The SIIT also induces substitution of calls to VoIP, for which governments obtain no tax revenues, and substitution of calls routed via illegal SIM boxes. When a call is routed via an illegal SIM box, governments lose any tax revenues on these volumes, for both the

international and the domestic calls that are routed via illegal SIM boxes.

- Increases in the costs for African businesses that trade in the region, creating economic losses for them.
- Increases in the costs for emigrants of calling families at home. These extra costs are likely to impact the amount of remittances sent back home, with impacts on economic developments.
- Indirect impacts on business costs, general country competitiveness and investment.

These negative impacts which negatively affect the process of regional integration, which are estimated in the rest of the paper, should be accounted for explicitly when determining whether tax will generate net revenues for governments.

# IMPACTS OF SIIT



Source: Deloitte analysis

Figure 4

The analysis undertaken in this report is based on data provided by mobile operators in Benin, DRC<sup>5</sup>, Gabon, Ghana, Tanzania, and Uganda (“the SIIT countries”). When data on IICs and other call volumes was not provided by all mobile operators, country estimates have been obtained by considering the domestic market shares of the operators whose data was available, and adjusted for the whole market accordingly. Due to differences in the time periods covered by the data, when the period “2010 to March 2014” is referred to, this is the total for Benin, Ghana, and Uganda up to September 2013 and for DRC, Gabon and Tanzania up to March 2014.

Due to lack of data availability, the analysis does not include Burundi, Central African Republic, Chad, Republic of Congo, Gambia, Guinea, Malawi, Niger and Rwanda.

5. The data on IICs for the DRC is available only for a period after the introduction of the SIIT in June 2011; the second price increase in the SIIT in June 2013 is used to conduct the analysis.

## 02.

# Impacts of the SIIT on governments

This section describes the main effects associated with the introduction of the SIIT for governments and mobile operators.

In carrying out this analysis, it is recognised that taxation generally contributes to revenues for governments, which will then seek to invest tax revenue for a variety of economic and social purposes. However, imposing a tax can often lead to a reduction in government revenues from reduced economic activity resulting from the imposition of a tax, potentially leaving a government's tax balance in a worse position than if the tax was not imposed. As such, when evaluating the SIIT, governments should explicitly consider the economic losses directly and indirectly generated by this tax in addition to the leakages from the local African economy through the payments to the monitoring companies.

## 2.1.

## IMPACTS OF SIIT ON INCOMING CALLS

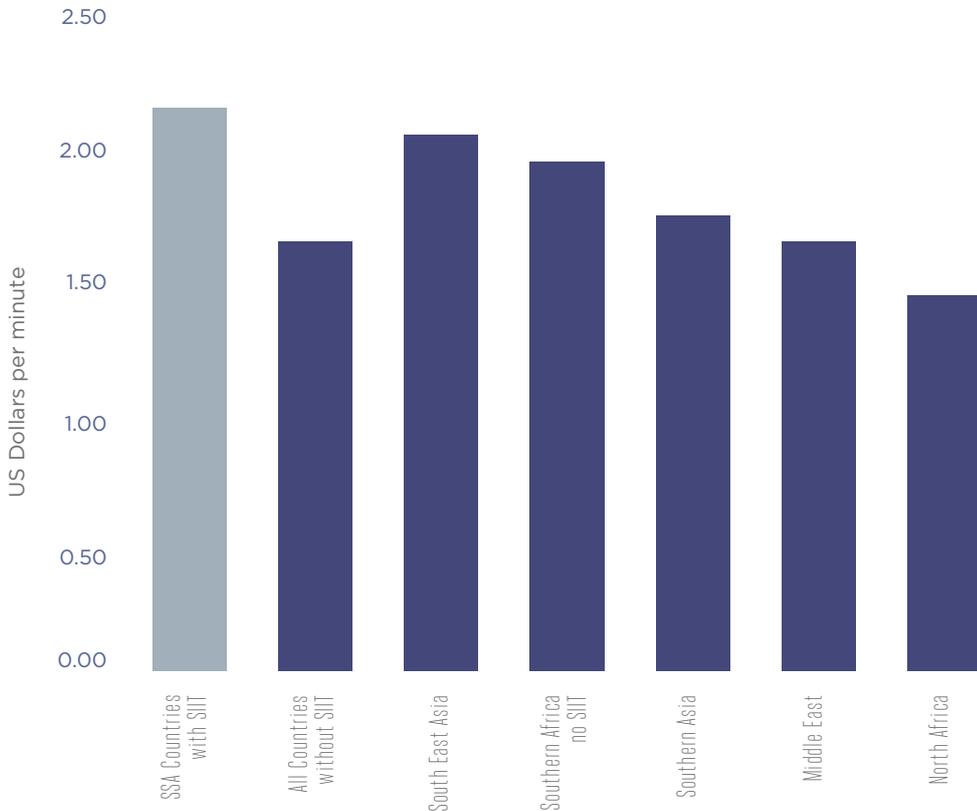
As described in Section 1.1, governments in SIIT countries have fixed the price of IICs at a higher level than the competitive prices that prevailed before the introduction of taxation. This has resulted in an increase in the retail prices paid by consumers and businesses in foreign countries for calls into the country where the SIIT has been imposed.

The impact of the SIIT on retail prices is apparent. Analysis of retail tariff using BT's 2013 'Basic International Call Charges'<sup>6</sup> shows that the average price per minute to Sub-Saharan African ("SSA") countries that have implemented a SIIT is 28% higher than countries that have not introduced a SIIT. The relative difference in price still is similar in the

'Friends and Family International'<sup>7</sup> tariff (an additional tariff option offered upon payment of a fixed fee), the tariff for the median SIIT country being 27% higher than those without. The difference between the average tariff for countries with SIIT and those in South East Asia and Southern Africa is 10¢ and 19¢ respectively. As the average value of the SIIT in the countries considered is 14¢, it is possible that in the absence of SIIT these tariffs would have been more comparable to these regions.

6. [http://www.bt.com/pricing/current/Call\\_Charges\\_boo/0017\\_d0e5.htm#0017-d0e5](http://www.bt.com/pricing/current/Call_Charges_boo/0017_d0e5.htm#0017-d0e5)  
 7. [http://www.bt.com/pricing/current/Cust\\_Opts\\_Res\\_boo/3225\\_d0e152.htm](http://www.bt.com/pricing/current/Cust_Opts_Res_boo/3225_d0e152.htm)

## AVERAGE PRICE OF BT INTERNATIONAL CALL TARIFFS, 2013<sup>8</sup>



Source: Deloitte analysis on BT Tariff data

Figure 5

Operators within Africa have also passed on the tax into their retail prices. In response to Rwanda introducing the SIIT in August 2012, UTL Uganda increased prices from UGX450 to UGX899 per minute and Safaricom Kenya increased prices from Ksh18 to Ksh30 per minute. Additionally Vodacom Tanzania increased their price from Tsh349.8 to Tsh700. The cost of the SIIT accounts for at least half the new price of calling Rwanda.<sup>9</sup> The SIIT has also been passed into retail prices from developed countries, for example the cost of calling Ghana from the UK is now 200% higher than the cost of calling Nigeria.<sup>10</sup>

The increase in retail prices faced by international callers generates a number of economic effects.

Firstly, economic theory indicates that an increase in the price of a service leads, under normal circumstances, to a decrease in the consumption of the service: in this case, the magnitude of the decrease depends on the elasticity of the demand of international calls to a country. While evidence on demand elasticity for international calls suggests that a 10% increase in the price of international calls might lead to a decrease in volumes lower than 10% in the short term, particularly for business customers, price is still likely to be a significant factor for poorer consumers such as emigrants. As such, impacts on overall call volumes, caused by the increased termination charges, may mask a larger impact on those who are most vulnerable, such as family members who have moved for employment calling into

8. Southern Asia comprises of: Afghanistan, Bangladesh, Bhutan, India, Iran, Maldives, Nepal, Pakistan and Sri Lanka. Middle East consists of: Bahrain, Cyprus, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Palestine, Qatar, Saudi Arabia, Syria, Turkey, UAE, Yemen.  
 9. <http://www.theestafrican.co.ke/business/Uganda-s-new-tax-will-raise-calling-rates--hurt-integration-/-/2560/1856160/-/7uno3m/-/index.html>  
 10. <http://ovum.com/2012/09/07/international-call-revenue-cash-cow-coming-to-an-end/>

SIIT countries or small businesses that source goods or services from these countries.

Secondly, as the price of a service increases, consumers will seek more affordable alternatives to perform the international calls. As such, the SIIT is likely to induce consumers to use services such as VoIP, which leads to lost revenues for mobile operators and

for governments. These operators lose out as these calls no longer incur a SIIT and on corporate tax paid by mobile operators on reduced profits. Importantly, substitution of international calls onto illegal SIM boxes is another effect induced by the SIIT.

The magnitude of these impacts is estimated below.

### 2.1.1.

## IMPACTS ON INTERNATIONAL CALLS TERMINATED BY OPERATORS

The analysis of mobile operators' data on IICs before and after the introduction of the SIIT indicates that the volumes of IICs may have been negatively impacted by the SIIT. To estimate what would have happened to IICs volumes if the SIIT had not been introduced, IICs volumes before and after the introduction of the SIIT were compared with macroeconomic variables such as GDP and exports, and industry variables such as mobile penetration, incoming domestic calls and international outgoing calls. Against a background of economic growth and of significant growth in the volumes of mobile calls in nearly all SIIT countries, the volumes of IICs have grown at lower levels than before the introduction of the SIIT. Based on these trends, for each country a scenario for the IICs volumes is estimated. The following provides a brief summary of this analysis for each country.

In Benin, before the SIIT was introduced in February 2011, IICs and Incoming Domestic Calls (“IDCs”) appeared to be correlated<sup>11</sup>: for example, IICs and IDCs grew by 38% and 46% respectively in the year before the SIIT was introduced. However, the year after the introduction of the SIIT, IICs fell by 1.6% whereas IDCs grew by 7.4%. Using the growth rates of IDCs for estimating what would have happened to volumes of IICs in the absence of SIIT appears in this case a suitable indicator.

Early evidence from Uganda, where the tax was only introduced in June 2013, suggests that the SIIT is having a negative impact on call volumes. Against a background of decreasing IICs before the SIIT was introduced, IICs fell over three times faster after the introduction of the SIIT: in the four months after the SIIT was implemented, IICs fell by a CAGR of 3.9% whereas in the year before the SIIT was introduced, IICs fell by a CAGR of 1.2%. Therefore, the growth rate for the past year may be a suitable indicator to estimate the volumes of IICs in the absence of the SIIT.

In Ghana, where the SIIT was introduced in June 2010, calls fell by 12% in June 2010 and by 27% over the five months from the introduction. As a result, taking this large fall into account may be suitable when constructing volumes in a scenario without the SIIT.

Evidence from Gabon suggests that in the month the SIIT was introduced, August 2011, IICs fell by 57%. Furthermore IICs grew by 88% between January 2009 and April 2011 (the last month before a large spike in the volumes) and post the introduction of the SIIT, IICs grew at 22% between August 2011 and September 2013 with IICs remaining broadly flat from January 2012 onwards.

11. Prior to the introduction of the SIIT, in 2009, the correlation between IICs and IDCs was 0.91 whereas in the year after the introduction of the SIIT it fell to -0.36.

Therefore, using the past growth rate may be suitable when estimating the volumes without the SIIT.

In Tanzania, during the nine months from January 2013, when the SIIT was introduced, IIC volumes per month averaged 23.9 million minutes. This compares to an average of 31.5 million minutes in 2012 and 31.4 million minutes in 2011. Furthermore after the introduction of the SIIT, IICs fell by 27% after remaining relatively stable in previous years. During the previous two years the volumes fell by a CAGR of 0.3% whereas in the nine months afterwards they fell by a CAGR of 3.8%. Therefore it may be suitable to use the growth rate for the previous two years to estimate the volumes in a scenario without the SIIT.

Due to the data available for DRC starting whilst the SIIT was already in place, the analysis focuses on a subsequent increase in the SIIT in June 2013. In this month IICs fell by 7.7 million, which represents 37% of IICs. Taking this fall in volumes into account when estimating the IICs without the SIIT, may therefore be a suitable approach to take.

The OECD also finds that call volumes have “dramatically decreased” after the introduction of the SIIT. The OECD raises concerns on the wider economic impact of reduced international telecommunications traffic through the positive impact that it may have on trade, development of a services industry and the overall competitiveness of the region. This suggests that the long run costs may be significantly larger than the short run costs.

## REDUCTION IN MINUTES FOLLOWING SIIT INTRODUCTION (OECD REPORT)<sup>12</sup>

COUNTRY	TRAFFIC REDUCTION FOLLOWING POLICY
El Salvador	53% (2008-2011)
Ghana	48% (2009-2011)
Rwanda	30% (Q3 2012-Q2 2013)
Tanzania	26% (Q2 2012- Q2 2013)
Pakistan	26% (2012-2013)

Source: “International Traffic Termination”, OECD Digital Economy Papers No. 238

Table 3

On the basis of the data above, for each country a scenario is constructed to estimate the volumes of IICs that could have taken place had the SIIT not been introduced. A summary of each approach and the estimated lost minutes by country is provided in Table 4.

12. Note: There are differences in the time periods analysed in this paper and the OECD paper. Additionally, the analysis in this paper is based on operator data whereas the OECD uses data from a variety of different sources such as the USTR and some regulators who provide data at a more aggregated level than the operator data.



## ESTIMATED LOST IICS (MINUTES)

COUNTRY	PERIOD	ESTIMATED LOST IICS (MINUTES)	BASIS FOR THE ESTIMATION
Benin	Feb 2011 to Sept 2013	147m	Based on growth of IDCs, which was strongly correlated to IICs in Benin before the introduction of SIIT.
DRC	June 2013 to March 2014	90m	Taking into account a large drop in minutes following the introduction of the SIIT.
Gabon	Aug 2011 to March 2014	161m	Based on continuing the growth rate from January 2009 to March 2011.
Ghana	Aug 2011 to March 2014	679m	Taking into account a large drop in minutes following the introduction of the SIIT.
Tanzania	Aug 2011 to March 2014	110m	Based on continuing the growth rate from January 2011 to December 2012.
Uganda	Aug 2011 to March 2014	9m	Based on continuing the growth rate from January 2013 to May 2013
<b>Total</b>	<b>Aug 2011 to March 2014</b>	<b>1,195m</b>	

Source: Deloitte analysis based on data provided by mobile operators

Table 4

This estimation indicates that overall, operators in SIIT countries could have terminated an extra 1.2 billion minutes of IICs from 2010 to 2013 had the SIIT not been imposed. Based on the tariff prevailing before the introduction of the SIIT, operators could have potentially generated up to an extra US\$86 million in revenues over the same period.

If the SIIT had not been introduced, governments would still obtain revenues for this service through corporate tax and other revenue taxation that governments obtain from mobile operators. To estimate what revenues governments would have gained through corporate tax from lost IICs, data was collected on Earnings Before Interest and Tax (“EBIT”), which provides a broad proxy of the amount upon which operators pay corporate tax; and corporate tax data for the SIIT countries.<sup>13</sup>

On the basis of the revenues operators would have gained as discussed above, average EBIT and national corporate taxes, the potential lost corporate tax revenue for governments are illustrated in Table 5. This suggests that governments could have gained an extra US\$2.8 million in corporate taxes in 2013 alone had the SIIT not been introduced.

13. EBIT margins have been collected for Sub-Saharan African operators' from the GSMA Intelligence database. An average value for Q1 2012 to Q3 2013 was considered. This provided an average EBIT margin of 29%.

## ESTIMATED LOST CORPORATE TAX REVENUES FOR GOVERNMENTS BY COUNTRY, US\$M

COUNTRY	PERIOD	ESTIMATED LOST CORPORATE TAX REVENUES FOR GOVERNMENT
Benin	Feb 2011 to Sept 2013	-0.8
DRC	June 2013 to March 2014	0.9
Gabon	Aug 2011 to March 2014	3.0
Ghana	June 2010 to Sept 2013	2.9
Tanzania	Jan 2013 to March 2014	1.3
Uganda	June 2013 to Sept 2013	0.1
<b>Total</b>	<b>June 2010 to March 2014</b>	<b>7.5</b>

Source: Deloitte analysis based on data provided by mobile operators, GSMA Intelligence and Deloitte data on corporate taxes

Table 5

### 2.1.2.

## IMPACTS ON CALL SUBSTITUTION AND ILLEGAL SIM BOXES

The implementation of the SIIT has caused a significant disconnect between the cost and price of international call termination. In particular, as regulators in African countries have sought to significantly reduce domestic mobile call termination rates (“MTRs”), the difference between termination rates for international and domestic calls has increased significantly in many countries. For example in Ghana, where the MTRs for international calls are set at 0.29GHS, MTRs for domestic calls were reduced from 0.05GHS in 2012 to a regulated rate of 0.04GHS in 2014.<sup>14</sup>

This presents an opportunity for arbitrage and substitution of services in the affected countries. Arbitrage refers to the situation where the same service (in this case call termination in a SIIT country) can be bought at one price in one market (in this case the local termination market) and sold at a higher price in another market (in this case the international incoming call termination market). This has led to a significant increase in the amount of

illegal SIM boxes which channel national or international calls away from mobile network operators and deliver them as local calls. In Bangladesh, where the numbers of legal and illegal international call volumes are almost the same, the government has recently reduced the call rate for international calls by 50% with the expectation that the incentives for arbitrage and the number of illegal calls should decrease.<sup>15</sup>

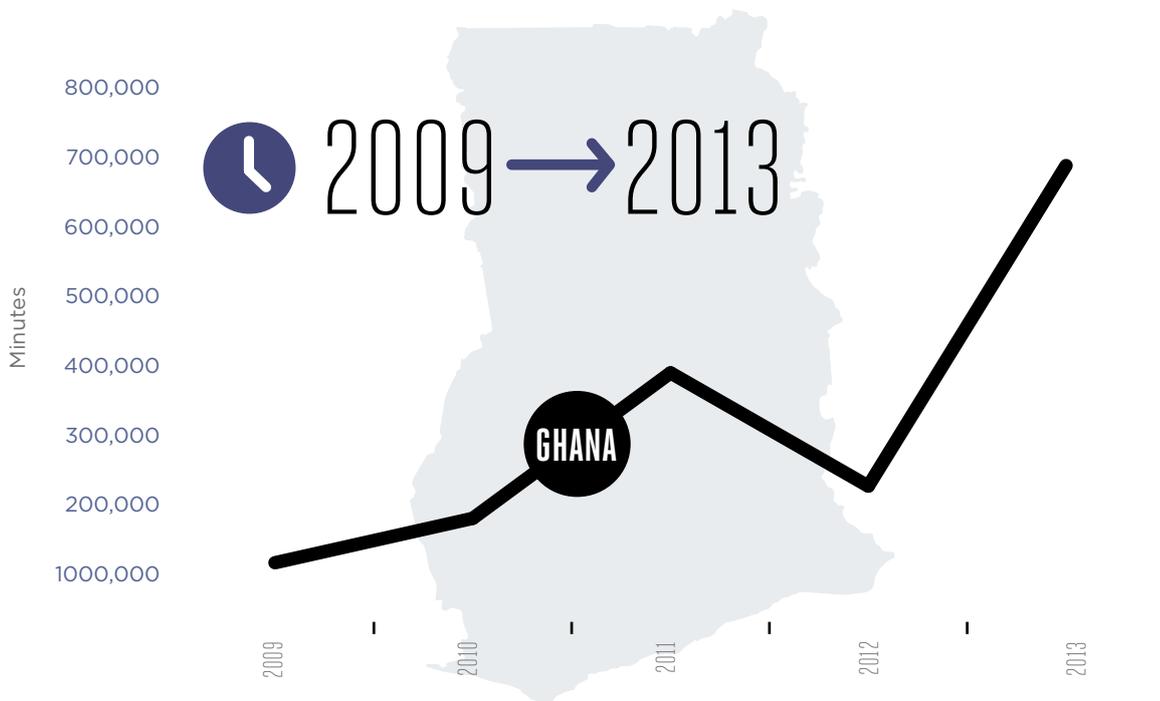
An operator in Ghana reported that the number of minutes diverted to illegal SIM boxes on its network has increased by 279% since the introduction of the SIIT. This is illustrated in Figure 6 below. The actual number of diverted minutes is likely to be far higher than this as it is estimated that 80% of the illegal SIM boxes in 2013 were on another network and that 10% of all calls to Ghana in 2011 were subject to SIM box fraud.<sup>16</sup>

14. [www.nca.org.gh/downloads/Interconnect\\_News.pdf](http://www.nca.org.gh/downloads/Interconnect_News.pdf)

15. <http://www.thedailystar.net/business/telecom-ministry-moves-to-tackle-illegal-calls-10224>

16. <http://www.cellular-news.com/story/62196.php>

## NUMBER OF MINUTES ROUTED VIA ILLEGAL SIM BOXES FOR AN OPERATOR IN GHANA



Source: Operator data

Figure 6

A concerning side effect of illegal SIM boxes is that they operate continuously, congesting a disproportional amount of spectrum. If this trend is not stopped, it may eventually lead to quality issues which may require increased levels of investment to overcome.

Mobile operators have also reported that monitoring call data to track illegal SIM boxes is unlikely to be sufficient to remove this problem in countries with significant disconnect between termination costs and prices. They noted that new technology is being developed to get around monitoring systems. For example, mobile operators in Senegal<sup>17</sup> discovered the use of a new type of call system named the 'Magic Jack'; this technology provides users with a US number and allows callers to be charged local rates when calling Senegal from the US and vice-versa.

The impacts of illegal SIM boxes on mobile operators' revenues and on governments' taxation revenues can be material and go beyond the lost revenues to mobile operators and governments as a result of lost international calls:

- Operators lose revenues for both domestic and international terminated minutes.
- Governments lose the amount of corporate tax they would have gained from operators. Importantly, every call routed via an illegal SIM box means that revenues from Value Added/General Sales taxes, from airtime excises, and from other revenue taxes are lost, in addition to the corporate tax paid by operators on their profits.

Conversations with mobile operators and market experts on the amount of illegal

17. Senegal introduced the SIIT twice in the last five years and withdrew it both times.

SIM boxes and on the average number of calls routed on each suggest that 10% of international calls in Ghana could be routed via illegal SIM boxes. It is estimated that in 2011 one operator was losing US\$500,000 per month due to calls being diverted to illegal SIMs.<sup>18</sup> Furthermore, in the same year the Ghanaian government reported it lost US\$5.8 million in tax revenue because of the use of illegal SIM boxes.<sup>19</sup>

Additionally, the increased price of calling the affected countries might force some consumers to switch to lower quality services such as VOIP services. For example, one operator in Ghana estimated that the number of incoming international calls being terminated via VOIP

increased by 300% from 2010 to 2013. This represents an increase in the proportion of calls being terminated by VoIP from 4% of the total to 18% in 2013. The combination of illegal calls and switching to lower quality services may reduce the average quality of the service and further reduce revenue for mobile operators, thus impacting tax revenue for governments.

In addition to the impact on revenues and the risks of diverted calls to illegal SIM boxes and VoIP, any impacts on the volumes of IICs may further affect mobile operators' profitability by impacting the unit costs incurred by mobile operators for this service, which in turn determine the prices mobile operators can charge.

## 2.2.

# THE WIDER ECONOMIC IMPACTS OF LOST COMMUNICATIONS

Mobile telephony is of essential importance to the economic and social development of Sub-Saharan Africa. The availability of mobile services in this region has not only transformed the way consumers and businesses communicate and exchange information but also brings significant productivity improvements to public governance, trade, health and education, therefore playing a key role in the socio-economic development of the region.

The economies of SSA have benefited considerably from the growth of the mobile sector. In 2011, it is estimated that mobile operators and their associated ecosystem had a direct economic impact of US\$32 billion, including paying US\$12 billion in taxes, and were associated with the creation of 4.4% of the region's GDP when adding the effects of mobile technology on workers' productivity.<sup>20</sup>

In this sense, any lost calls to this region as a result of the SIIT have the potential to create economic harm as some these benefits are lost. These wider impacts should be considered explicitly by governments when considering the SIIT.



18. <http://www.revector.com/index.php/mobile-phone-fraud-rampant-in-ghana/>

19. <http://www.shout-africa.com/business/african-mobile-operators-under-threat-from-sim-box-fraud/>

20. GSMA/Deloitte, Sub-Saharan Africa Mobile Observatory 2012

03.

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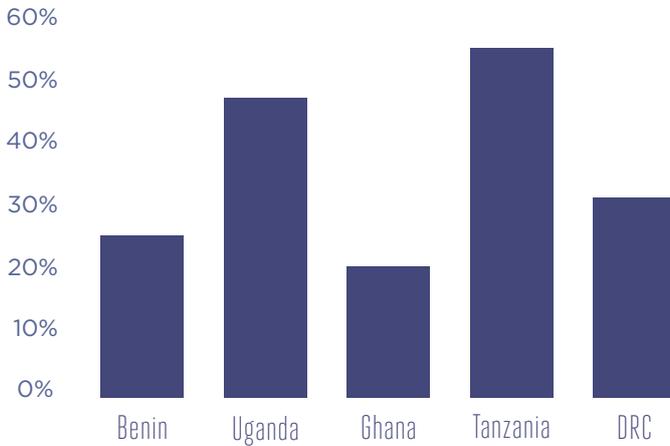
# Impacts of the SIIT on African businesses, consumers and regional integration

This section examines the impacts that the SIIT generates for local business and consumers as well as a host of indirect impacts on a country's economic performance and on regional integration.

The imposition of the SIIT generates significant extra costs to African businesses that trade with (and hence call) businesses in countries in the region where the SIIT has been imposed, and to consumers, including emigrants in neighbouring countries, calling their home countries.

This may represent a particular concern to policymakers in the region given that a large proportion of international calls are to other countries within Africa. Evidence from mobile operators suggests that on average across the five countries analysed nearly 40% of all international incoming traffic is from countries in the region. For example, the share of incoming calls in Tanzania that originate in other Sub-Saharan African countries in September 2013 is over 50% of the total calls and for DRC and Uganda it is 48%. As the process of regional integration in SSA progresses, the SIIT could present an obstacle to integration.

## PROPORTION OF IICS FROM OTHER SUB-SAHARAN COUNTRIES IN SEPTEMBER 2013



Source: Deloitte analysis based on data from mobile operators<sup>21</sup>

Figure 7

### 3.1.

## IMPACTS ON AFRICAN BUSINESSES

The imposition of SIIT is of particular concern to the African business community given that a large proportion of international calls are to other countries within Africa.

While evidence on the amount of international calls that originate from businesses is not available for the SIIT countries, a review of evidence on telecom markets indicates that the proportion of international VoIP calls originating from businesses is forecasted to be 30% in 2013<sup>22</sup>; according to Ofcom, the business share of international calls from UK landlines was on average 40% for the period 2004 to 2012; a study by the European Parliament into international roaming calls finds that “as much as 60% of group profits for the larger operators come from business customers.”<sup>23</sup>

On the basis of these indications, to estimate the extra costs generated by the SIIT to African

businesses, it is assumed that at least 40% of IICs originate from business customers.

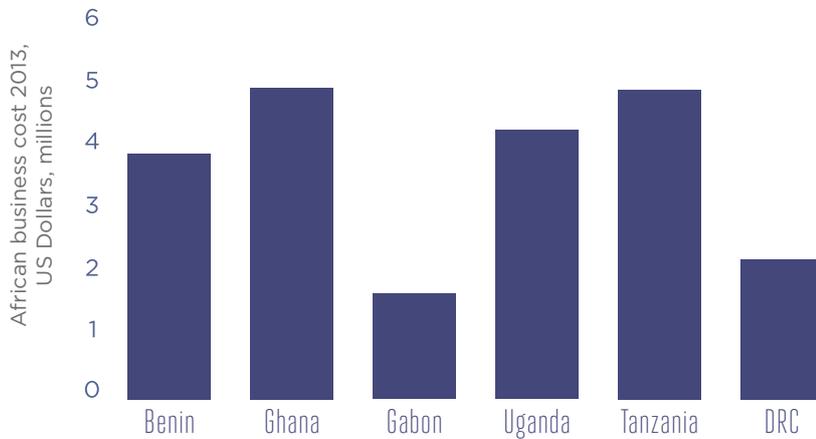
On the basis of the data on the country of origin of international calls from mobile operators in SIIT countries, and on the proportion of calls that originate from business customers, it is possible to estimate the economic loss incurred by African businesses. For the period 2009 to March 2014, it is estimated that African businesses generated 1.6 billion minutes of intra African calls to SIIT countries and incurred a direct economic loss of US\$48.1 million as a result of the SIIT.

21. Gabon is missing due to the data for the country of origin data being unavailable.

22. GSMA, Information Paper: Overview of International Mobile Roaming

23. European Parliament (2007), Technical issues on roaming. As a business person roaming is likely to face the same price to phone their home country whether or not it is a consumer or a business call, the margin is likely to be the same for consumer and business roaming, and it follows that 60% of the international roaming calls were undertaken by business people.

## ECONOMIC LOSS FOR AFRICAN BUSINESSES BY COUNTRY OF DESTINATION, US\$M, 2013<sup>24</sup>



Source: Deloitte analysis based on data from mobile operators<sup>25</sup>

Figure 8

### 3.1.1.

## IMPACTS ON BUSINESSES WITHIN A SIIT COUNTRY

The additional cost for African businesses will include calls made to other SIIT countries. It is estimated that the total cost for business calls to other SIIT countries was US\$30 million for the six countries from 2009 to March 2014.<sup>26</sup> This extra cost will reduce the profits made by businesses within countries implementing a SIIT. As the tax base for corporate tax is profits, this will reduce the corporate tax receipts of governments. In 2013, the lost corporate tax due to business calls to other SIIT countries is estimated to be US\$2.5 million. This foregone tax will increase if more countries decide to implement a SIIT.

**IN 2013**

**THE LOST CORPORATE TAX DUE TO BUSINESS CALLS TO OTHER SIIT COUNTRIES IS ESTIMATED TO BE**

**US\$2.5M**



24. These costs are incurred by businesses in Sub-Saharan countries that are calling these countries.  
 25. For Gabon, based on data from an operator, the share of African calls is 36% and this has been applied to create an indication of African business cost.  
 26. Based on data from an operator, the proportion of calls from each country for Gabon has been calculated and applied to give an indication of the loss.

## LOST CORPORATE TAX REVENUE FROM BUSINESS CALLS TO OTHER SIIT COUNTRIES, US\$M

COUNTRY	LOST CORPORATE TAX REVENUE FROM BUSINESS CALLS TO OTHER SIIT COUNTRIES
Benin	1.8
DRC	1.7
Gabon	1.2
Ghana	0.3
Tanzania	1.4
Uganda	0.8
<b>Total</b>	<b>7.1</b>

Source: Deloitte analysis based on data from mobile operators

Table 6

These impacts are however likely to underestimate the true magnitude of the losses.

Mobile operators have reported that mobile operators in other countries in the region have reciprocated by increasing their charges for termination of calls originating in SIIT countries. This means that calling other African countries from a country where the SIIT applies is now significantly more expensive. For example, an operator in Republic of Congo reported that a number of the mobile operators with which they have direct interconnection reacted by increasing the charges for termination for calls originating in Republic of Congo by approximately 30%. Likewise, an operator in Senegal reported that

nine operators in the region responded to their higher termination rates by increasing the rates of international termination for calls originated in Senegal to 21.5 euro cents, representing an increase of between 23-80% for mobile calls terminated by those operators. For this operator, the overall cost of interconnection with countries within Africa increased by 18% between August and December 2010 when the SIIT was first introduced.

These examples suggest that the economic losses estimated above to African businesses in a SIIT country may underestimate the extent to which the introduction of SIIT in certain countries has inflated international termination prices across the region.

### 3.2.

## IMPACTS ON AFRICAN EMIGRANTS AND LOCAL CONSUMERS

A social group that is very likely to have felt the negative impacts of the SIIT price increases the most is African consumers that have emigrated from their origin countries. These consumers have seen an increase in the cost to call families and friends at home.

As a result, they can respond by either cutting the amount of calls to their home country, reducing connections with negative social impacts, or absorb the price increase, which reduces their disposable income. As emigrants are often more income-constrained than businesses, this might mean that the impacts on IICs caused by the increased termination charges mask a larger impact on those who are most vulnerable.

Many operators reported that, due to the nature of calling behaviour of family members and friends calling African countries, any increase in call charges may lead directly to a reduced number of call minutes being made to the affected countries. This is because callers

from abroad calling family and friends are likely to buy a phone card of a specific value in a certain timeframe corresponding to their pay schedule, e.g. per week or month, and may stop calling until the next payday once this card runs out. Therefore, as the card may buy fewer minutes due to the surtax, the ability of family and friends to stay in touch is negatively impacted by the SIIT. For any family members living abroad who choose to maintain the same level of contact after the price rise, an increase in the cost of calling home might lead to a decrease in any money available to send back to family in their home country.

### 3.2.1.

## IMPACTS ON REMITTANCES

In addition to reducing connection between emigrants and family and friends at home, the SIIT may have significant impacts on remittances. Remittances are an important source of income for African countries: in many developing countries remittances are double the official aid received<sup>27</sup> and the value of remittances has recently become as large as FDI to developing countries<sup>28</sup> whilst being less volatile. Household survey data has also shown that remittances have reduced the number of people in poverty in Uganda by 11%.<sup>29</sup>

A World Bank report<sup>30</sup> estimates that remittances sent through informal channels to Sub-Saharan African Countries represent 49% of the official remittances. Table 8 summarises the estimated official and informal remittance flows to the countries where data is available. In the countries where SIIT has been imposed, remittances amounted to over US\$4.4 billion in 2012.

27. UNDP, 2011, Towards Human Resilience: Sustaining MDG Progress in an Age of Economic Uncertainty.  
 28. Barajas et al., 2009, Do Workers' Remittances Promote Economic Growth?, IMF Working Paper 09/153.  
 29. UNDP, 2011, Towards Human Resilience: Sustaining MDG Progress in an Age of Economic Uncertainty.  
 30. World Bank (2013), Migration and Remittances Brief 20.

## ESTIMATED OFFICIAL AND INFORMAL REMITTANCES IN 2012, US\$M

COUNTRY	OFFICIAL REMITTANCES	ESTIMATED REMITTANCES THROUGH INFORMAL CHANNELS	ESTIMATED TOTAL REMITTANCES
Burundi	\$42.10	\$20.70	\$62.80
Rwanda	\$156.20	\$76.50	\$232.70
Uganda	\$976.60	\$478.50	\$1,455.10
Benin	\$179.20	\$87.80	\$267.00
Gambia	\$89.30	\$43.70	\$133.00
Ghana	\$151.50	\$74.20	\$225.70
Guinea	\$74.80	\$36.60	\$111.40
Tanzania	\$75.30	\$36.90	\$112.30
Malawi	\$16.00	\$7.80	\$23.90
DRC <sup>31</sup>	\$114.60	\$56.20	\$170.80
Gabon <sup>32</sup>	\$10.00	\$4.90	\$14.90
<b>Total SIIT countries</b>	<b>\$2,988.60</b>	<b>\$1,464.40</b>	<b>\$4,453.10</b>

Source: World Bank Remittance data, World Bank (2013) and Deloitte analysis

Table 7

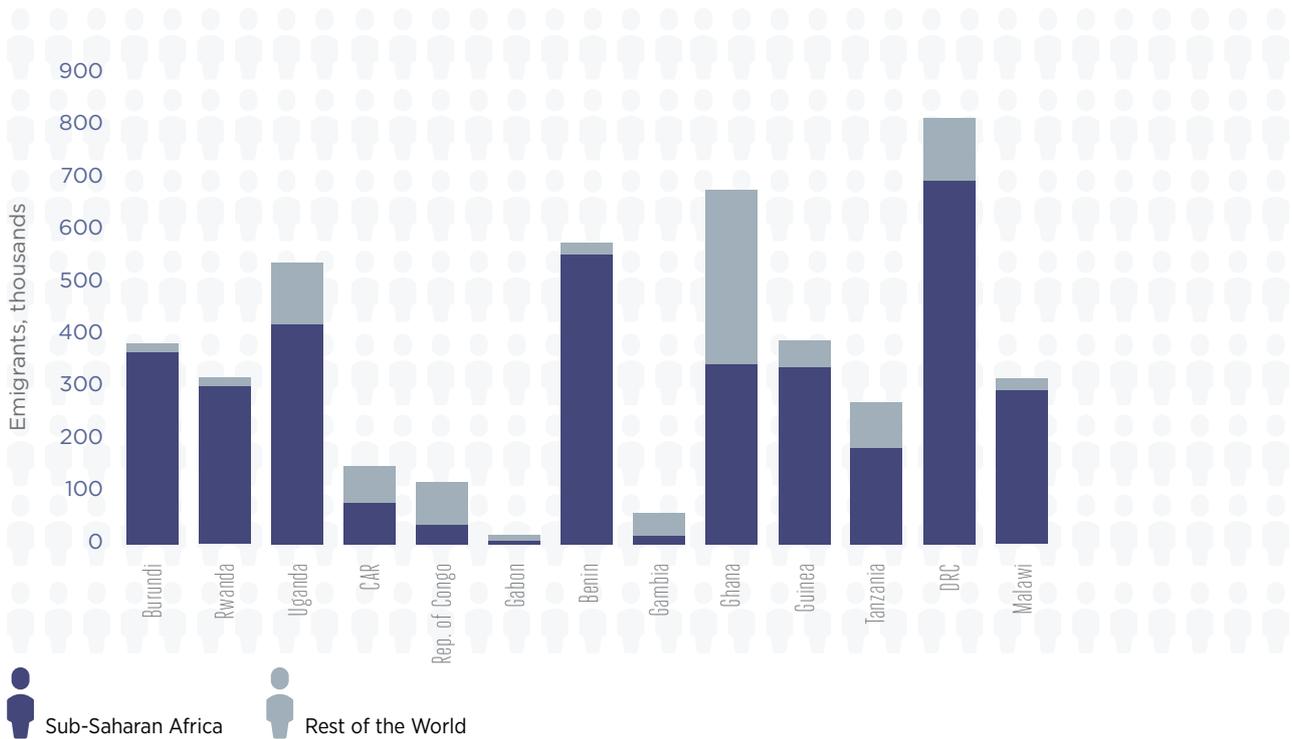
In addition, Figure 9 shows that the majority of emigrants (“diaspora”) from SIIT countries reside in other Sub-Saharan African countries. The diaspora within Sub-Saharan Africa send, on average, 50% of the official remittances to the SIIT countries, and as high as 78% in Benin. Any increases in costs to the diaspora is likely to affect their disposable income, creating negative consequences in other Sub-Saharan African countries without a SIIT as well as affecting remittances to those who have a SIIT.

**SIIT may have significant impacts on remittances, which are an important source of income for African countries.**

31. Due to data availability, the remittance value for 2012 is assumed to be the same as that for 2011. This is to provide an indication of the magnitude of the lost remittances.

32. Due to data availability issues the amount of remittances for 2009 has been applied to subsequent years. This is to provide an indication of the magnitude of lost remittances.

## DIASPORA IN AFRICAN COUNTRIES, NUMBER OF PEOPLE



Source: United Nations Diaspora Data

Figure 9

Any reductions in the income of emigrants are likely to have a significant impact on the amounts remitted to the origin country. A World Bank study<sup>33</sup> examines these impacts using microeconomic data on 33,000 immigrants from developing countries in 11 OECD destination countries, which accounted for 79% of all global migrants to the OECD in 2000. This for example includes migrants from Ghana, the Congo and other Sub-Saharan countries. This study indicates that a 10% reduction in the income of the emigrant decreases remittances by up to 3.64%.

Considering evidence described above that suggests that 60% of all international calls can be assumed to generate from consumers (as opposed to businesses), the extra costs borne as a result of SIIT by emigrants of SIIT countries calling their country of origin can be estimated. On the basis of IICs data provided by mobile operators these extra costs are estimated at US\$191 million from 2010 to March 2014.

These extra costs are likely to represent a direct reduction in the income of emigrants calling their origin country as a result of the SIIT. To calculate the impact the extra cost has on the income of the emigrants, the total income of emigrants was estimated by multiplying the number of emigrants in each country by the average income for an immigrant. Based on a review of international evidence, it is assumed that the average income for an immigrant represents 79% of the average income in the host country.<sup>34</sup> Using evidence described above on the impact of income reductions on remittances, it can be estimated that increases in SIIT may have reduced remittances back to SIIT countries by US\$9 million.

Similarly to the case of business losses, this amount may underestimate the true losses to consumers. As mobile operators have reported that operators in other countries in the region have reciprocated by increasing their charges

33. Bollard et al. (2011), "Remittances and the brain drain revisited: the microdata show that more educated migrants remit more", World Bank Econ Rev, 25 (1): 132-156.

34. A study by the Center for Immigration Studies, 'Immigrants in the United States: A Profile of America's Foreign-Born Population', uses the March 2011 Current Population Survey public-use file from the USA and finds incomes for immigrants from Sub-Saharan countries are 21% lower than the natives. This figure may have some bias due to only higher earners being able to afford to go to the USA. However, as most of the emigration is to other African countries with lower average incomes than the US, earning much less than 20% of the average wage may not provide enough incentive to migrate.

for termination of calls originating in SIIT countries, consumers in non SIIT countries may also have reduced remittances in line with the price increases.

As remittances contribute to economic development in the country where these are received, governments in SIIT countries may have lost this amount of economic activity as a result of these missed remittances. For example, a study on the impact of remittances on investment and poverty in Ghana finds that “households receiving remittances spend more at the margin on three investment goods: education, housing, and health” and that “the

receipt of remittances greatly reduces the likelihood of household poverty.”<sup>35</sup>

As such, the negative impact of SIIT on lost remittances may extend further in the local economy. Local consumers who received remittances generate further rounds of expenditure in the economy, and any reductions in this expenditure further reduce economic activity. This concept is captured by applying an economic multiplier to the initial round of value generated by the remittances. Based on multipliers in the literature, a multiplier of 1.7 is used; the wider losses to local economies due to reduced remittances may amount to US\$15.2 million in 2013.<sup>36</sup>

## ESTIMATED LOST REMITTANCES RESULTING FROM SIIT, US\$m

COUNTRY	PERIOD	ESTIMATED LOST REMITTANCES	WIDER ECONOMIC LOSSES INCLUDING THE MULTIPLIER EFFECT
Benin	February 2011-September 2013	\$2.2m	\$3.7m
DRC <sup>37</sup>	June 2013-March 2014	\$0.1m	\$0.2m
Gabon	August 2011 to March 2014	\$0.04m	\$0.1m
Ghana	June 2010 to September 2013	\$2.4m	\$4.1m
Tanzania	January 2013 to March 2014	\$0.5m	\$0.8m
Uganda	June 2013 to September 2013	\$3.8m	\$6.4m
<b>Total</b>	<b>June 2010 to March 2014</b>	<b>\$9.0m</b>	<b>\$15.2m</b>

Source: Deloitte analysis based on data provided by mobile operators

Table 8

### 3.3.

## IMPACTS ON INVESTMENT IN TELECOMS AND ON COST OF DOING BUSINESS

Taxation imposed on mobile telecommunications in African countries, of which the SIIT is just one example, contributes to signal a country’s attitude towards investment in the telecom sector. Given the nature of telecom services, it may also affect the cost of doing business and the investment opportunities in the country. These impacts are examined in the next section.

35. Adams and Cuecuecha (2013), “The Impact of Remittances on Investment and Poverty in Ghana”, World Development Vol. 50, pp. 24–40.

36. Topic 12 – Remittances and Multiplier Effects (Brooklyn, NY: Social Science Research Council, March 2009).

37. It is likely that the true figure would be higher than this due to the income of the diaspora being far lower than estimated as a lot of the diaspora are likely to be refugees especially as 71% of the diaspora within SSA are in countries to the east of the DRC which is an area where there has been fighting recently.

### 3.3.1.

## SIIT AND THE PROMOTION OF TELECOMMUNICATIONS

Governments generally apply taxation consistently across industries, goods and services, but reflect variations in citizens' ability to pay through progressive income taxation systems. Taxation is structured in this way in order to minimise the economic distortions caused by government revenue raising.

However, for consumer goods which are considered to have significant social or economic impacts, governments occasionally vary from this strategy in order to influence consumer behaviour through price signals. Governments sometimes increase the consumption tax on goods for which they wish to discourage consumption. For example, due to the negative health and social effects, governments often place a higher excise duty on alcohol and cigarette purchases. Conversely, governments sometimes lower or remove the tax to increase affordability of goods and services of which they wish to encourage consumption due to positive health or social effects, such as fresh food or education. The increase in mobile penetration which resulted from the Kenyan Government's removal of VAT on mobile handsets in 2009 is one successful example of such a policy.

Therefore, implementation of the SIIT may signal to international observers that the governments concerned are not considering the negative impacts and wider implications of this tax to their economies. This risks affecting the reputations of these governments as it is contrary to trends of globalisation as well as market liberalisation.

The SIIT will also reduce the incentive for operators to introduce good value on-network roaming, such as Airtel who charge no roaming fees for roaming in countries where Airtel is present. As the cost of each call has increased, this will worsen the trade-off between the lost

roaming profit and the competitive advantage gained from offering good value roaming. Finally, the operational implementation of the SIIT policy is a source of concern for operators, as the third party intermediaries used to measure call volumes add an unnecessary layer of monitoring. In relation to the operator's own calls, operators reported that adequate assurance and audit measures for international traffic accounts exist within national regulation or law and are upheld by operators using their own traffic recording systems. Operators have reported that their monitoring systems are within an error variance level of 1%, which is within the tolerance threshold indicated by ITU recommendations (D-171).<sup>38</sup> Operators are therefore concerned that it is an inefficient and unnecessary use of resources to divert tax revenue to pay a third party to calculate call volumes. Operators are also concerned that some of the systems employed can violate privacy as the third party can access private information, some of which is unrelated to the monitoring of international calls. As a result, operators indicated that the requirements of these systems be clear, transparent, and consistent with the laws and regulations, including privacy requirements.

Additionally, operators have reported that they are faster and more effective at recognising grey SIM boxes than the monitoring systems posed/employed by the third party intermediaries and have a stronger commercial incentive to do so. For example, operators in Ghana reported that they themselves have identified many SIM boxes not identified by the intermediary GVG as well as all those identified by GVG. The inefficiency of this situation is of particular concern given that these intermediaries receive a significant portion (generally 50%) of the additional tax revenue raised through the SIIT.

38. <http://www.catr.cn/radar/itut/201007/PO20100707500055412034.pdf>

### 3.3.2.

## INVESTMENT IN LOCAL NETWORKS AND TELECOMMUNICATIONS RELATED BUSINESSES

Excessive taxation on a sector could have negative impacts on investment in that sector. Where taxation on mobile services leads to higher prices, this is likely to reduce demand for services, and therefore could lower the expected return of investments. This in turn might result in lower investment incentives for the purchase of new licences and network roll outs, and ultimately more limited choices for consumers than would be available in the presence of less onerous taxation on mobile services.

The increased prices of calling into and out of SIIT countries could also disincentivise the development of 'regional telecommunications hubs' in these countries by making the cost of routing through them prohibitive. Therefore, countries or regions in which the SIIT has been imposed might be overlooked for investment in the infrastructure to create a 'regional hub'

in favour of countries or regions with similar labour costs but without the SIIT. Likewise, a multinational business is less likely to establish additional call centres or customer service centres in countries where international call termination is significantly more costly than the rest of the world, as these termination charges represent a non-trivial component of the cost of running such businesses. Where branches or outsourced functions involve a significant amount of international incoming calls, the SIIT might even lead some companies to close branches, and re-open in non-SIIT countries in the long term.

The loss of such investment opportunities could ultimately reduce economic growth and employment opportunities for African people. In turn, this would also have negative implications for local governments through reductions in tax receipts.

### 3.3.3.

## COST OF DOING BUSINESS AND INTERNATIONAL COMPETITIVENESS

In addition to discouraging investment, high taxes such as the SIIT could increase the cost of doing business or decrease business efficiency with and within the affected countries.

As telecommunications is a key enabling industry for the operation of businesses both locally and across borders, telecommunications represent a component of the cost of running a business. The SIIT could increase this cost. The World Bank regularly publishes an index

to measure cost of doing business in a country, the 'Cost of doing business' index, which is an indicator widely considered by companies when determining their investment flows.<sup>39</sup>

As can be seen in Table 9, 11 of the 15 countries in which the SIIT has been imposed are currently within the lowest 25 percentile in the index, and further taxes such as the SIIT can contribute to further deteriorate their position and lead to reductions in FDIs.

39. A high ranking on the ease of doing business index means the regulatory environment is more conducive to the starting and operation of a local firm. This index averages the country's percentile rankings on 9 topics, made up of a variety of indicators, giving equal weight to each topic. The rankings for all economies are benchmarked to June 2010.

## SIIT COUNTRIES' RANKINGS IN THE WORLD BANK ARE 'COST OF DOING BUSINESS' INDEX, 2014

COUNTRY	RANKING IN THE WORLD BANK'S 'COST OF DOING BUSINESS' TAX INDEX	PERCENTILE OF RANKING
Chad	189/189	Lowest
CAR	188/189	Lowest 1%
Guinea	186/189	Lowest 1%
Gambia	184/189	Lowest 3%
Republic of Congo	183/189	Lowest 3%
Benin	179/189	Lowest 5%
DRC	176/189	Lowest 7%
Niger	162/189	Lowest 15%
Gabon	152/189	Lowest 19%
Burundi	143/189	Lowest 24%
Tanzania	141/189	Lowest 25%
Uganda	98/189	Lowest 48%
Malawi	81/189	Lowest 57%
Ghana	68/189	Lowest 64%
Rwanda	22/189	Lowest 88%

Source: World Bank ease of doing business-taxes (<http://www.doingbusiness.org/rankings>) 2014 (based on 2013 data)

Table 9

## 3.4.

## CONSISTENCY OF SIIT WITH INTERNATIONALLY ACCEPTED TAXATION PRACTICES AND INTERNATIONAL GUIDELINES

Mobile operators have raised concerns that the introduction of SIIT policy may be contradictory to sentiment of various international and regional agreements:

- For example, the ITU 2009<sup>40</sup> guidelines state that taxes shall normally be collected only on international services billed to consumers in that country.
- Furthermore, Article 6 in 'Taxation and Accounting'<sup>41</sup> states that countries should try to avoid too great an asymmetry between international incoming and outgoing charges. Additionally, Annex 1.6 indicates that when "an administration has a duty or fiscal tax levied on its accounting rate shares or other remunerations, it shall not in turn impose any such duty or fiscal tax on other administrations."
- The General Agreement on Trade in Services ("GATS") contains a legally binding annex for all World Trade Organisation members that requires governments to ensure reasonable and nondiscriminatory conditions for all forms of access to networks and public telecommunications services including termination charges. This document also contains interconnection obligations that require governments to ensure major suppliers to interconnect with operators on a non-discriminatory and cost orientated basis.

Operators have also indicated that in their view the SIIT appears to be inconsistent with regional agreements such as that amongst the Economic Community of West African States ("ECOWAS") countries. For example 'The Supplementary Act A/ SA 03.01.07' states in article 16 that "Member States shall ensure that the charges and fees imposed on service providers and operators as part of the license and authorization procedures are for the sole purpose of covering the administrative costs incurred in the authorization, management, control and implementation of scarce resources and costs of regulating the telecommunication sector."

Additionally, mobile operators have noted that the World Trade Organisation's Annex on Telecommunication Services (1988) states that taxes should not be higher than local interconnection rates and recommendation D.140 of ITU (2002) requests that tariffs including termination rates should be cost-orientated.

Mobile operators are also concerned that the SIIT could lead to double taxation of consumers as incoming callers could be paying a charge which includes taxation for the terminating countries' government (i.e. the SIIT); and VAT and/or service charges which are calculated on the total price (including the SIIT), which will be gained by their respective government.

40. [http://www.itu.int/osg/csd/wtpf/wtpf2009/documents/ITU\\_ITRs\\_88.pdf](http://www.itu.int/osg/csd/wtpf/wtpf2009/documents/ITU_ITRs_88.pdf)

41. ITU, 1989.

# Conclusions

This analysis found that, while the introduction of the SIIT provides short term revenues for the government, it has numerous unintended negative impacts on local consumers, businesses, mobile network operators and governments, potentially with long term negative implications for the whole Sub-Saharan African region. It affects intra-African traffic and risks a domino effect in African countries. This, combined with an increased flow of illegal traffic, risks continued decreases in demand, reduced service quality as well as increasing prices and the cost of doing business in affected countries. In light of these negative consequences, governments could consider reopening the debate over the SIIT as there may be more efficient and less costly ways to raise tax revenue. Recognising the negative impacts of the SIIT on trade and regional integration, Kenya, Rwanda, Burundi, Uganda and South Sudan agreed in May 2014 to waive the SIIT for calls originating in these countries.<sup>42</sup>

The analysis found that, while the SIIT does contribute revenues for the government, half of the proceeds from the price increase are not retained locally but passed on to the call monitoring party, whose monitoring systems raise privacy concerns. It also found that the potential costs of this tax may outweigh the benefits for the region. A summary of these potential effects is presented in Table 10. This shows that IIC volumes fell by 1.2 billion minutes with direct costs to the economies from these taxes are US\$78 million.

42. Report of the EAC regulators' meeting on the implementation of one area network, 26th to 27th May 2014

**The analysis found that, while the SIIT does contribute revenues for the government,**

**half of the proceeds from the price increase are not retained locally but passed on to the call monitoring party, whose monitoring systems raise privacy concerns.**



## SUMMARY OF THE IMPACTS OF THE SIIT BY COUNTRY, US\$M UNLESS OTHERWISE STATED

			COSTS FROM THE SIIT			
COUNTRY	TIME PERIOD	ESTIMATED LOST IICS (MINUTES)	LOST CORPORATE TAX FROM REDUCED MOBILE OPERATOR REVENUE	LOST CORPORATE TAX FROM BUSINESSES TRADING WITH OTHER SIIT COUNTRIES	COST FOR AFRICAN BUSINESSES TRADING WITH THE COUNTRY	ECONOMIC LOSSES DUE TO REDUCED REMITTANCES
Benin	Feb 2011 to Sept 2013	147m	-0.8	1.8	10.0	3.7
DRC	June 2013 to March 2014	90m	0.9	1.7	2.4	0.2
Gabon	Aug 2011 to March 2014	161m	3.0	1.2	4.1	0.1
Ghana	June 2010 to Sept 2013	679m	2.9	0.3	21.4	4.1
Tanzania	Jan 2013 to March 2014	110m	1.3	1.4	5.9	0.8
Uganda	June 2013 to Sept 2013	9m	0.1	0.8	4.2	6.4
<b>Total</b>	<b>June 2010 to March 2014</b>	<b>1,195m</b>	<b>7.5</b>	<b>7.1</b>	<b>48.1</b>	<b>15.2</b>
<b>Aggregate total</b>	<b>June 2010 to March 2014</b>	<b>1,195m</b>	<b>78m</b>			

Source: Deloitte analysis based on data provided by local mobile operators recognising that the timeline in which these effects have occurred is different for each country

Table 10

The negative socio-economic costs to SSA economies appear are far larger in the long run. This is due to the negative impact that reduced investment might have on employment and profits, hence lower tax, as well as reduced expenditure on important factors for development such as education which will have a long run effect of lower wages and hence tax receipts. Additionally, as the elasticity between price and volumes in the long run is larger than in the short run, the difference between the IIC volumes with and without the SIIT is likely to increase as more calls are diverted to alternative means of communication. This will result in less revenue and profit for operators and therefore, less corporate tax revenue.



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