Appendix I. Survey Responses

Survey Responses

An on-line survey instrument was designed to gather various views from revenue administrations that were believed to be using some form of fiscal device as part of their overall compliance program. Thirty-seven administrations were invited to participate. Two administrations advised that they did not currently use any form of fiscal device, nor did they have any plans in the immediate future to use these devices. Eighteen revenue administrations participated in the survey completed over the period January 4, 2013 through to June 11, 2013. Another one completed the survey later, bringing the total to 19, 18 of which were at the national level.

Details of the questions and aggregated summaries of the responses are shown below. It should be noted that the survey has not been fully completed by all administrations. In particular, Malawi is still in the planning stages of implementation and was unable to provide germane responses beyond question 7. Sweden, due to time constraints, was unable to proceed beyond question 16, while Montenegro completed the survey to question 23. Paraguay did complete the survey, stating that responses referred to a pilot program. Thus the survey population to question 7 is 19 administrations, and from question 8 to 16 the population is 18 administrations; beyond question 23 the population is 16 respondents.

The full survey included 53 questions, which for procedural reasons were not organized in any particular order. To better analyze the responses, the questions can be grouped in the following categories:

- *Scope of the survey* (Q1 through Q5)
- *Specific issues pertaining to the EFDs* (Q6 through Q16, Q26 to Q28, Q32 & Q33, Q38 & Q39, Q53)
- *Identification of the risks to be addressed with the implementation of the EFDs* (Q20 through Q25, Q40 to Q43, Q45, Q48)
- *Measures that could have incidence on the decision to comply by the taxpayers* (Q17 to Q19, Q46 & Q47, Q50 to Q52)
- *Issues conditioning the implementation of EFDs* (Q29 to Q31, Q34 to Q37, Q49)

A Survey on the use and impact of Electronic Fiscal Devices

Q1 Your country's name? (Please name your country below)

Respondents were:

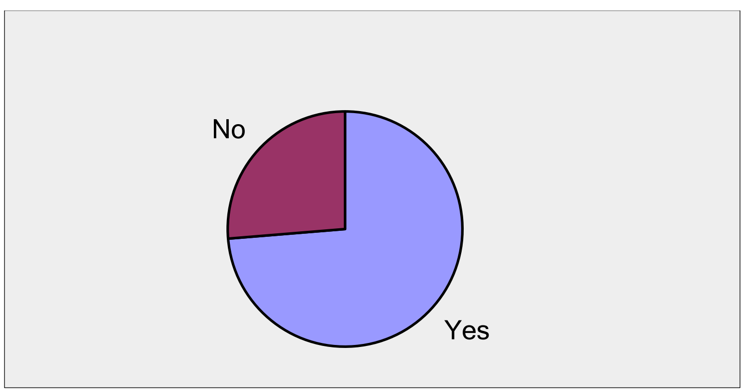
Country Name	Partial or Full Survey Response
Argentina	Full
Bulgaria	Full
Chile	Full
Dominica	Full
Greece	Full
Hungary	Full
Kenya	Full
Kosovo	Full
Malawi	Partial
Mexico	Full
Moldova	Full
Montenegro	Full
Panama	Full
Paraguay	Full (pilot)
Romania	Full
Rwanda	Full
Santa Catarina State (Brazil)	Full
Sweden	Partial
Tanzania	Full (planned)

Q2. Please provide the contact name and details of the person completing this survey

Contact Name:	Revenue Administration:
Abeid Kasaizi	Tanzania Revenue Authority
Humphrey Mugambi	Kenya Revenue Authority
Vasil Panov	National Revenue Agency (Bulgaria)
Sergio Dias Pinetti	Santa Catarina State (Brazil)
Katinka Hort	STA (Sweden)
Lidija Šećković	Tax Administration (Montenegro)
Burunciuc Mihai	The Main State Tax Inspectorate (Moldova)
Cristian Panea	National Agency For Fiscal Administration (Romania)
Ms. Andrea Némethné Székely	National Tax And Customs Administration (Hungary)
Ricardo Pizarro Alfaro	Servicio De Impuestos Internos (SII) (Chile)
Michael Mytilineos	Head Of The Department Of Electronic Fiscal Devices (Greece)
Fernando Martínez Coss	Servicio De Administración Tributaria (Mexico)
Steve Elisa	Malawi Revenue Authority
Clara Amelia Yaryura Paulino	Direccion General De Impuestos Internos – DGII (Dominican Republic)
Irene Carrizo	Direccion General De Ingresos (Panama)
Kalisoliso	KRA (Kenya)
Placide Kibogo	Rwanda Revenue Authority
Office of Public Relations	Administración Federal de Ingresos Públicos-AFIP (Argentina)
Rifat Hyseni	Tax Administration Of Kosovo

Q3. Did you consult with other organisations on the use of EFD, choice of EFD and implementation of EFD or any other relevant aspects to do with EFDs?

Only five of the respondents did not consult with any other organization to assist in the implementation of fiscal devices.

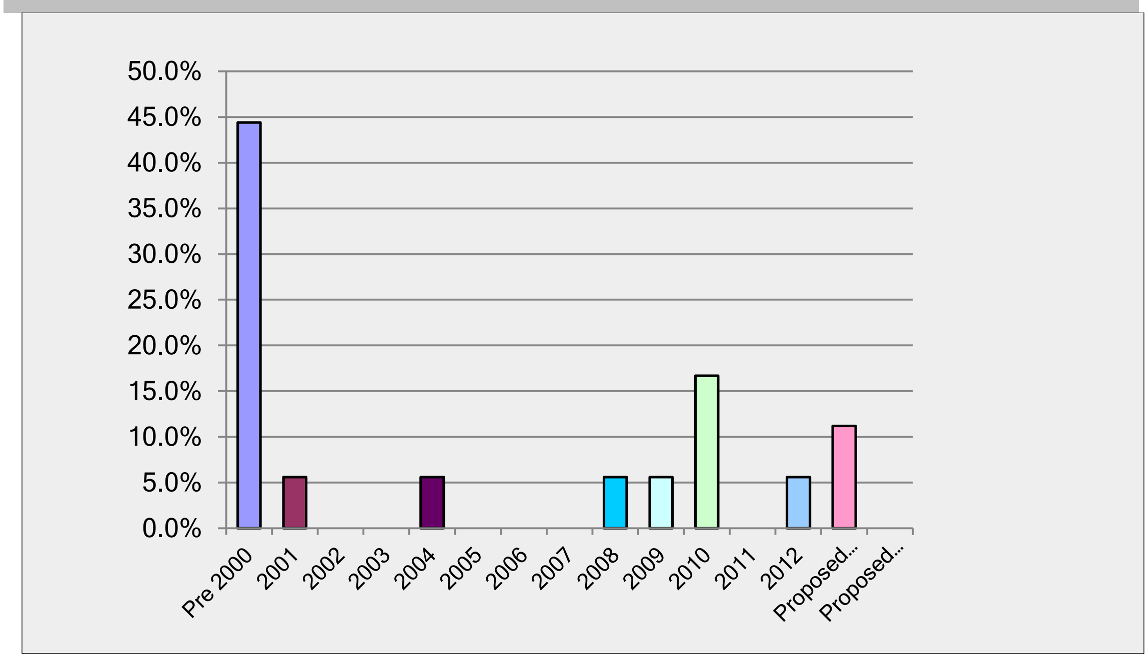


Q4 & Q5. Please provide details of organizations contacted

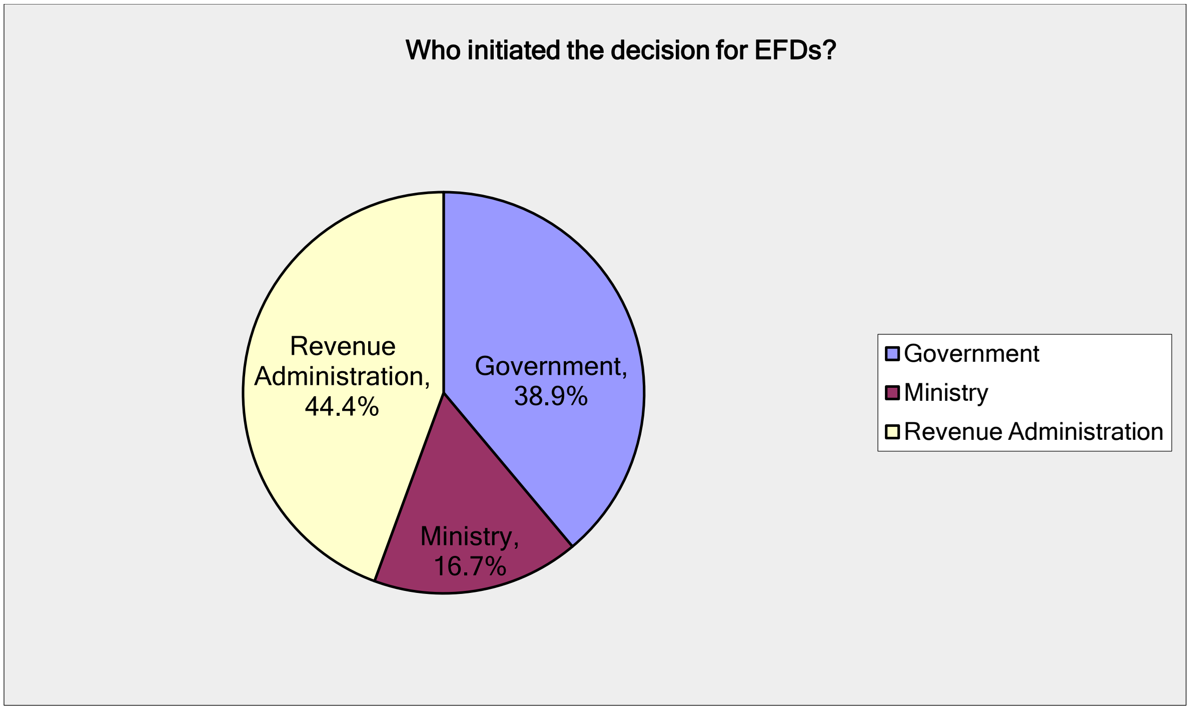
Survey Respondent	Other administrations consulted
Argentina	Italy and Mexico
Brazil	Other states in Brazil
Bulgaria	Serbia
Greece	National Technical University of Athens
Kenya	Greece, Italy
Kosovo	Albania, Macedonia
Mexico	Brazil, Italy
Malawi	Tanzania, Kenya
Panama	Chile, Dominican Republic
Rwanda	Tanzania
Tanzania	Kenya

Three other countries (Dominican Republic, Hungary and Romania) responded positively that they had contacted other administrations but did not indicate additional details.

Q6. In what year did you commence using an Electronic Fiscal Device (EFD)?



Q7. Who initiated the decision for EFDs?



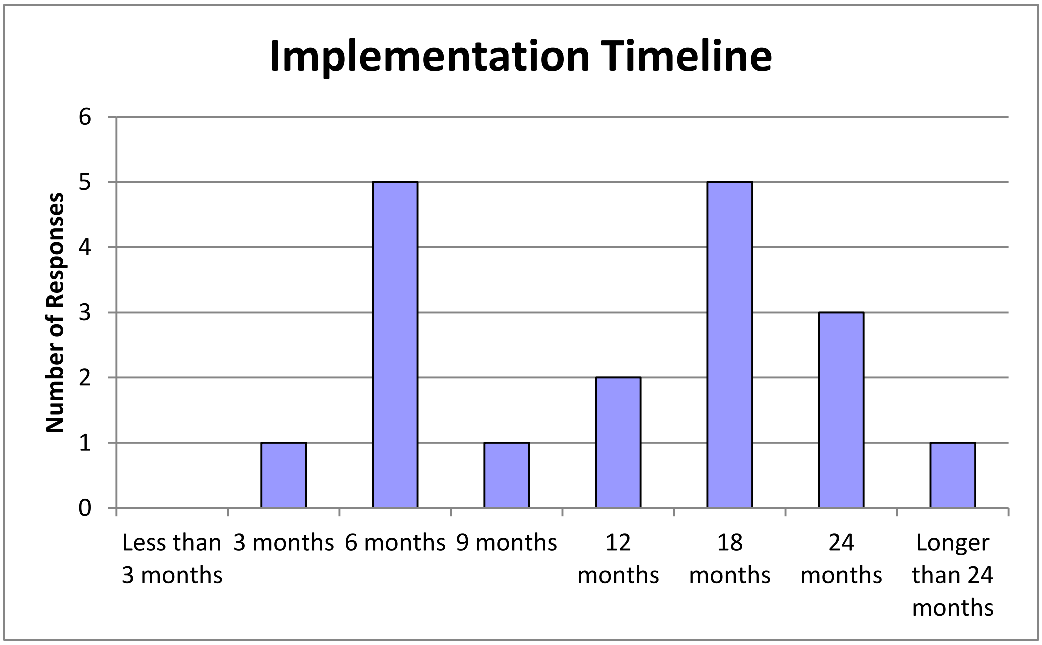
The responses did not identify specific areas when mentioning initiatives at the government level, and it is presumed this represents policy measures by other areas beyond the Ministry of Finance and the Revenue Administration itself, probably including initiatives by Parliament/Congress. It is interesting to note that the initiative for implementing fiscal devices is about equally balanced between policy initiatives at the government level, and administrative initiatives through the revenue administration, with the Ministry of Finance as the initiator.

Q8. Is the use of EFDs mandated (required by law?)

	Response Percent	Response Count
Yes	94.4	17
No	5.6	1

Chile does not mandate the use of fiscal devices. Argentina qualified the answer indicating that it does mandate its usage only for specific activities/businesses, but once a business sector has been designated usage of the EFDs is mandatory for all registered taxpayers in that sector.

Q9. What period of time was provided in the lead up to implementation (that is from the time the decision to implement EFDs was made to the first operation of EFDs)	Response Percent	Response Count
Less than 3 months	0.0	0
3 months	5.9	1
6 months	23.5	5
9 months	5.9	1
12 months	11.8	2
18 months	29.4	5
24 months	17.6	3
Longer than 24 months	5.9	1



Argentina responded “6 months”, adding that in their case, implementation has been gradual by activities since 1995; each time a new activity is added to the list, there is a 6 month period allowed for implementation.

Q10. Are taxpayers required to register to use EFDs?

	Response Percent	Response Count
Yes	94.4	17
No	5.6	1

The administration that responded "No" to this question is the Dominican Republic. A subsequent check on this answer indicated that this means that there is no requirement for a different registration other than the usual taxpayers' registry, and all users are registered taxpayers, as is the case with all other countries.

Q11. How many taxpayers (or others) are currently registered users of EFDs in your country? (If actual numbers are not known, please enter an approximate number)

Country	Number of Taxpayers	Number of Others
Argentina	400.000	
Bulgaria	255,000	
Chile	755,824	
Dominican Republic	300	
Greece	1,618,413	0
Hungary	250,000	
Kenya	80,000	
Kosovo	17,000	0
Mexico	700,000	
Moldova	60,000	
Montenegro	28,000	
Panama	15,000	
Paraguay	25	3
Romania	10	
Rwanda	500	
Santa Catarina State, Brazil	50,000	
Sweden	34,562	34,624
Tanzania	13,869	

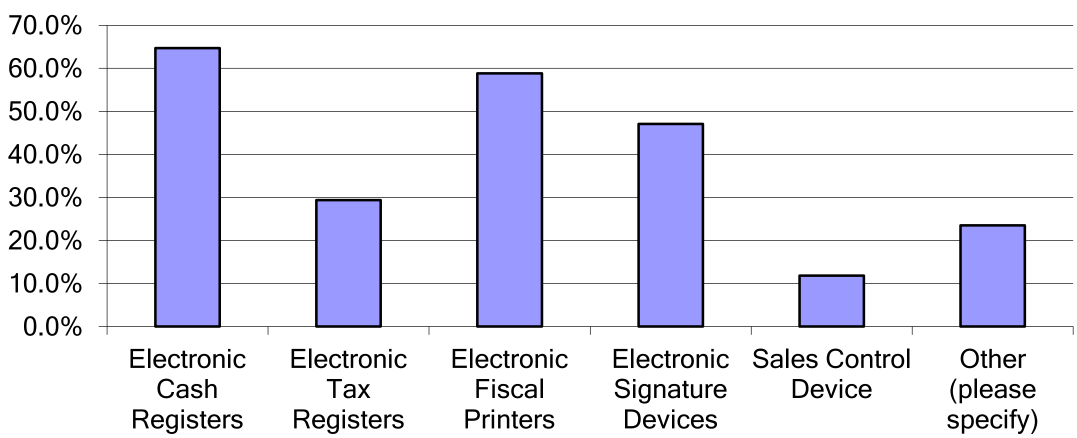
The small number for Paraguay is consistent with it being a pilot project; the data for Romania appears low and would point to an error that could not be clarified/confirmed.

Q12. Are EFDs registered by the revenue administration?		
	Response Percent	**Response Count**
Yes	94.4	17
No	5.6	1

Chile is the only administration that does not register fiscal devices. This is consistent with the response to question 8, whereby Chile does not mandate the use of fiscal devices.

Q13. Are EFDs registered to users/taxpayers?		
	Response Percent	**Response Count**
Yes	100.0	18
No	0.0	0

Q14. What type of EFD do you use?



Note: Administrations may employ more than one device type, for example, electronic cash registers by themselves will not necessarily combat fraudulent invoices or provide protection against tampering, and may be used in conjunction with fiscal printers.

Other devices identified are:

I. Electronic systems with fiscal memory (only in petrol stations); Integrated Automated Systems for Business Activity Management; Fiscal Devises Inbuilt in Self-Service Machines

II. Electronic VAT Register, Exchange Transaction Operations Electronic Register, Electronic Fiscal Printers are included in the Electronic Cash Register according to the legislation of the Republic of Moldova

III. Cash registers capable of online connection and equipped with tax control unit

IV. A. Portable Fiscal Electronic Devices (PFED).

B. Advanced Fiscal Electronic Devices (AFED) with operational features which fall into one or more of the following cases:

i) The application software is not stored in the program memory (firmware), but is stored in an appropriate medium (e.g. a PC).

ii) The AFED is connected with other computers or generally with some network capable for transferring fiscal data.

iii) Instead of the system of double paper roll printing mechanism, the FED uses a special electronic journal for keeping of copies of the issued record slips.

C. Fiscal Electronic Cash Registers (FECR). They hold a keyboard as the unique unit for data entry, as well as for slip and receipt issuing operations.

D. Advanced Fiscal Electronic Cash Registers (AFECR). They hold a keyboard as the main unit for data entry (they can also import data from a connected PC) and slip and receipt issuing operations.

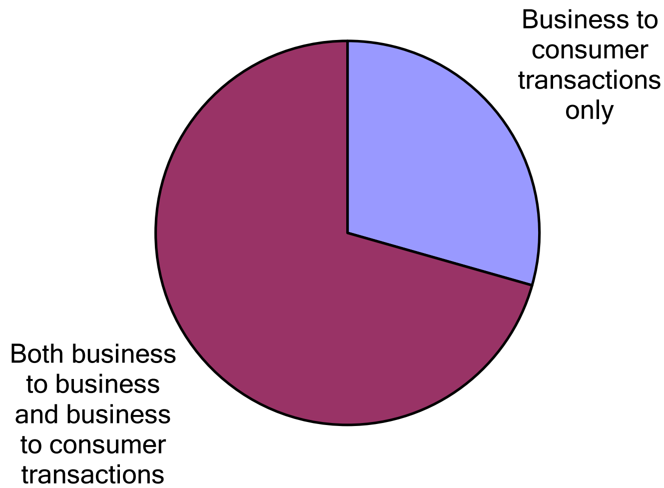
E. Fiscal Electronic Cash Registers (FECR) with Electronic Journal (EJ) i.e. electronic storage of issued slips.

While some of these devices are described specifically by some administrations, they share common features with the base fiscal devices described in the report body.

Q15. What is the number of EFDs in use in your country? If the number is unknown, please put 0 in the Unknown box. If the number of individual types are not known, please put the total number in the total box, otherwise please list the number of devices in the relevant boxes

Country	Unknown	Total	Electronic Cash Registers	Electronic Tax Registers	Electronic Fiscal Printers	Electronic Signature devices	Sales Control Devices	Other devices
Argentina		0						
Bulgaria		384,000						
Chile					39,000	60,000		1,100,660
Dominican Republic					3,000			
Greece		500,000						
Hungary	0							
Kenya		108,000						
Kosovo		21,622	15,600		6,000		22	
Mexico						755,824		
Moldova			83,000			51,000		2
Montenegro			5,000	12,000	11,000			
Panama		20,000						
Paraguay	0							
Romania	0							
Rwanda	0							
Santa Catarina, BR					80,000			
Sweden	0							
Tanzania				16,990	3,594	3,950		

Q16. What types of transactions do you use the EFD to capture?



No administrations use fiscal devices solely for business-to-business transactions.

Q17. Implementing EFDs is one solution to addressing compliance risks such as under-reporting or non-reporting of business sales. Did your revenue administration consider other options (other than use of EFD)?

Q18. What other options were considered?

Q19. Describe the reason(s) for excluding the above options.

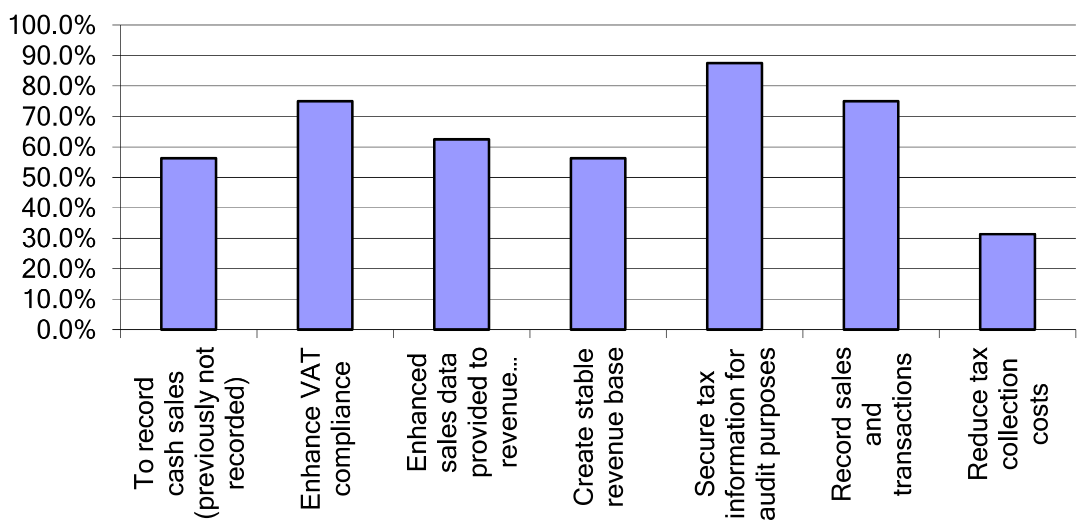
Nine administrations identified that alternatives to fiscal devices had been consider, while eight administrations did not consider alternatives.
Alternatives considered were listed as follows together with the reasons for excluding these options:

Alternatives considered	Reason for exclusion
Taxpayer Education, Surveillance and use of penalty, Risk based tax audit.	Introduction of EFDs was taken to supplement the then existing compliance tools.
Different audit approaches.	Insufficient resources - cost/benefit considerations
Taxpayer's education and assistance. Different audit approaches (tax audits and tax visits). The cooperation with business association and the involvement of civil society in the decision-making processes.	Above mentioned options were not excluded and are still used along with the use of EFDs for reducing the risk which are results of tax evasion and tax frauds.
Fiscal Lotteries and similar	These measures do not promote a change in taxpayer behaviour sustainable beyond the duration of the fiscal lotteries series.
The tax authority was not taking part in the analyses	The tax authority was not taking part in the

Alternatives considered	Reason for exclusion
conducted before the introduction of EFDs.	analyses conducted before the introduction of EFDs.
Taxpayers' education	Was considered a high cost, low impact solution by itself, but a complement of the plan for implementing the EFDs.
It considered the option of electronic billing	Because in the era in which it was assessed was not feasible to implement it
Education, compliance visits, audits, call centre, investigation, etc.	TAK has strategic plan, compliance strategy and operation plan when are present implementation policy and all activities which has to be taken in order to achieve objectives.

Q20. What are the reasons why your country adopted the use of EFD?

Administrations could choose multiple reasons for adopting fiscal devices, however the most common stated reasons were to secure sales information, followed by enhancing VAT compliance and recording sales information.



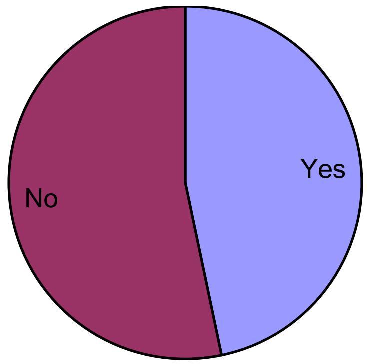
Two additional comments were provided regarding reasons for adopting fiscal devices as follows:

- Reduce invoice fraud
- A. Issuing a receipt or invoice for each retail or B2B transaction accordingly.
  B. The issuer is obligated to give a receipt or invoice to the client.
  C. Retail clients are obligated to ask and take receipts for goods, purchases or services provided. This can be avoided by performing [un]announced on-site audits.

D. Retail clients are prompted for asking and taking receipts on the grounds that collected receipts can be used for reduction of the annual income tax.

Q21. Was an estimate calculated of the possible VAT (or other tax) revenue that was lost because of under/non-reporting of sales or other compliance risk (revenue at risk)?

Mexico skipped this question, however did provide evidence of the revenue at risk. Eight administrations indicated that no estimate of the risk had been undertaken.



Country	If Yes, please describe and quantify the risk
Argentina	About a 35 percent estimated non compliance in reporting sales by retail businesses.
Chile	There was an estimated loss of more than 50 percent of ICMS (tax) revenue on retail sales.
Moldova	In last 3 years the Tax Service is implementing yearly compliance programs based on the compliance risk model. Through this program the lost revenues are estimated due to under/non-reporting. These programs are based on 3 categories of risk: a) general risks; b) special risks; c) VAT risks. For 2013, we identified 24 types of risks.
Hungary	Probably the answer is "yes" although the tax authority did not take part in preliminary impact assessments
Mexico	In the study of tax evasion on invoicing schemes, the fraud detected from 2007 to 2009 was: for income tax 31,769 million pesos and for VAT 14,085 million pesos.
Chile	20 percent of VAT evasion in 2011
Rwanda	Risk was high in terms of VAT loss

Q22. If specific sectors or industries were targeted, please list them below

Country	Sector targeted
Argentina	General retail sales, sales of goods and services to final consumers, specific retail business sectors (e.g., pharmacies, supermarkets, food retailers, etc.)
Kenya	Retail outlets Motor vehicle spares Superstores
Tanzania	Initially, to start with VAT registration traders and later on roll out to the rest of the traders.
Bulgaria	All traders are obligated to have EFD, but indeed during the implementation process some sectors were targeted as riskier: In 1993 - traders in goods and services In 2011 - traders in fuels, pharmacies
Santa Catarina, BR	Fuel retail sales. General retail sales.
Moldova	According to the compliance program, for 2013,there were determined 4 sectors of the national economy with high risk compliance: 1.Trading (wholesale and retail); 2.Manufacturing industry; 3.Constructions; 4.Transport and Communications.
Montengro	Sales
Hungary	Pharmacies, certain retailers, catering, accommodation services, renting, repair industry
Mexico	Taxpayers with incomes over 4 million pesos.
Dominican Republic	Supermarkets Clothing stores Retail Restaurants Fast food Shoes stores Hardware stores Toy stores Ice cream shops Accessories stores
Paraguay	None
Rwanda	General commerce Hotel and restaurant Manufacturer Service Construction
Kosovo	Retail, Services, All other cash transactions

Q23. Revenue initiatives: Through the introduction of EFD, it was envisaged there would be an increase in:

Response Option	Response Count	Percentage of responses
None	1	6.3
VAT revenue	15	88.2
Income Tax revenue	11	68.8
VAT Filing compliance (that is an improvement in the number filed on time)	8	50.0
Income Tax Filing compliance	5	31.3
Other	2	

Other outcomes that were identified are:

- Fair commercial competition. [Santa Catarina, Brazil]
- Fight against false invoice fraud, which accounted for up to 46 billion pesos for the years 2007 to 2009 according to the study conducted by the "Colegio de Mexico", titled "Tax Evasion Derived from Different Invoicing Schemes". [Mexico]

Q24. Revenue initiatives: Through the introduction of EFD, the following revenue gains were estimated for the first 12 months post implementation: (Please specify values in local currency; please do not shorten numbers - please use the full number e.g. Kwacha 100,000,000)

Q25. What percentage increase did this represent over the previous/baseline year?

Country	Currency	VAT		Income Tax		Other		Please specify "Other" revenue type(s)
		Value[2]	% Inc	Value[2]	% Inc	Value[2]	% Inc	
Kenya	KES	10,000,000,000	10					
Tanzania	TZS	798,677,900,000	23					
Bulgaria	BGN	-						
Brasil	BRL					2,160,000,000	40	ICMS
Moldova	MLD	95,000,000	12	15,000,000	6			
Romania	RON	-		-				
Hungary	HUF							There is no numerical data about the expectations of the amount of tax revenue increase
Chile	CLP	-		-		-		
Greece	GRD[1]							There is no information for 1990
Mexico	MXN	-		-		-		
Dominican Republic	DOP	2,000,000,000	19.6					
Panama	PAB	55,000,000	10					
Paraguay	PYG	500,000,000	15	125,000,000	11	-		
Rwanda	RWF							Not yet
Kosovo	EUR	29,000,000	10	No estimation	10	No estimation	0	

Notes:

[1]The implementation of fiscal devices preceded the adoption of the Euro. Any revenue estimates would have been in Drachma.

[2]All values are represented in local currency and original amounts. No attempt has been made to convert to a uniform value given the variations in time in implementation dates.

Q25. What percentage increase did this represent over the previous/baseline year?

Country	Currency	VAT		Income Tax		Other		Please specify "Other" revenue type(s)
		Value[2]	% Inc	Value[2]	% Inc	Value[2]	% Inc	
Kenya	KES	10,000,000,000	10					
Tanzania	TZS	798,677,900,000	23					
Bulgaria	BGN	-						
Brasil	BRL					2,160,000,000	40	ICMS
Moldova	MLD	95,000,000	12	15,000,000	6			
Romania	RON	-		-				
Hungary	HUF							There is no numerical data about the expectations of the amount of tax revenue increase
Chile	CLP	-		-		-		
Greece	GRD[1]							There is no information for 1990
Mexico	MXN	-		-		-		
Dominican Republic	DOP	2,000,000,000	19.6					
Panama	PAB	55,000,000	10					
Paraguay	PYG	500,000,000	15	125,000,000	11	-		
Rwanda	RWF							Not yet
Kosovo	EUR	29,000,000	10	No estimation	10	No estimation	0	

Notes:

[1]The implementation of fiscal devices preceded the adoption of the Euro. Any revenue estimates would have been in Drachma.

[2]All values are represented in local currency and original amounts. No attempt has been made to convert to a uniform value given the variations in time in implementation dates.

Q26. Please identify the number of staff working full time or part time on the implementation of EFDs (that is project staff)

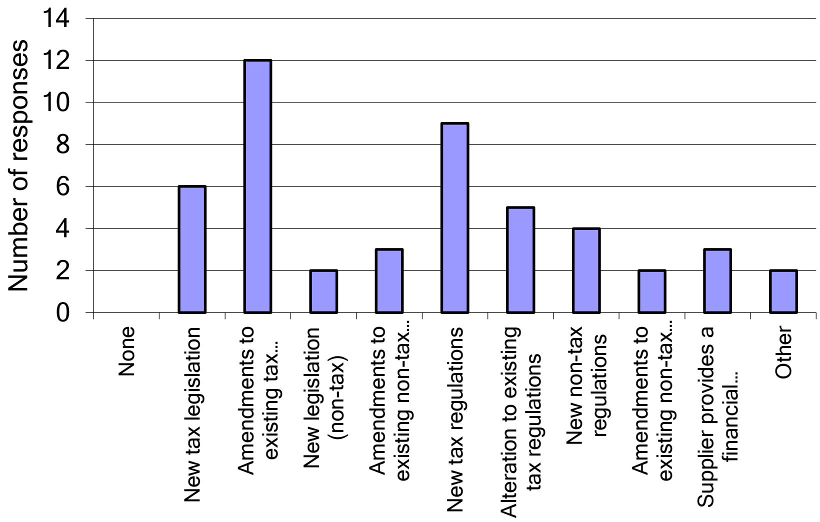
Country	Full time staff	Part time staff
Argentina	7	50
Kenya	16	
Tanzania	0	
Bulgaria	4	
Santa Catarina, Brazil	12	50
Moldova	51	
Romania	0	
Hungary	0	0
Mexico	8	36
Chile	0	5
Greece	0	0
Dominican Republic	14	
Panama	4	2
Paraguay	12	33
Rwanda	3	5
Kosovo	12	100

Q27. What staffing levels were identified to manage EFDs ongoing during the implementation process? The staff required to ensure effective use of EFDs in an ongoing basis should have been identified as part of the EFD project scope. If no staff were considered, or were not considered necessary, then please answer 0.

Q28. If additional staff were identified, were these staff new (that is funded as extra to the administration) or were they to be staffed by transfers from other areas within the administration

Country	Audit staff	Taxpayer services staff	Device management/ certification	Other (please specify role and numbers)	Source
Argentina	100				Transferred(partial assignment)
Kenya		3	3	10 - Compliance	Transferred
Tanzania	0	0	0		
Bulgaria	230				Transferred
Brazil	62				
Moldova	45	6	45		
Romania	0	0			
Hungary	0	0	0	0	
Mexico				46 Full time Staff Technical staff: 1 Lead Architect 2 Junior Architects Project Management Staff: 1 PM Leader 2 PM Junior part time staff: Internal Staff (Security, Business Solutions and Operations): 29 Engineers Third Party Provider: 1 PM, 2 Architects, 2 Developer Leads, 4 Developers, 2 operators	
Chile	0	0	5	0	
Greece		There is no information for 1990			
Dominican Republic		8	6		Mix of new and transferred
Panama	70	3	2		Mix of new and transferred
Paraguay	8	5	6	0	New Staff
Rwanda	0		3		Transferred
Kosovo	100	9	3	0	Transferred

Q29. What legislative and policy changes were required to support the use of EFDs?



Options	Response Count
None	0
New tax legislation	6
Amendments to existing tax legislation	12
New legislation (non-tax)	2
Amendments to existing non-tax legislation	3
New tax regulations	9
Alteration to existing tax regulations	5
New non-tax regulations	4
Amendments to existing non-tax regulations	2
Supplier provides a financial guarantees for good business conduct	3
Other	2

Note: More than one option could be selected.

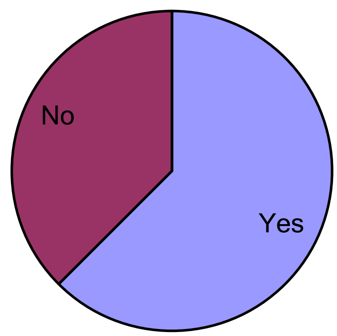
As would be expected, most administrations sought to amend existing legislation to provide the policy and administrative framework surrounding the use of fiscal devices. This was typically supported with appropriate regulations.

Other mechanisms that were used were stated as:

- Technical training for Tax Inspectors.
- According to the Law, Act 1809/88 confers power on the Minister to legislate technical specifications for EFDS. The technical specifications are drawn up by groups of experts in the respective fields.

Q30.Did you advertise for suppliers of your EFD by open tender?

Q31. If no, please describe the process of selecting your supplier of EFD.



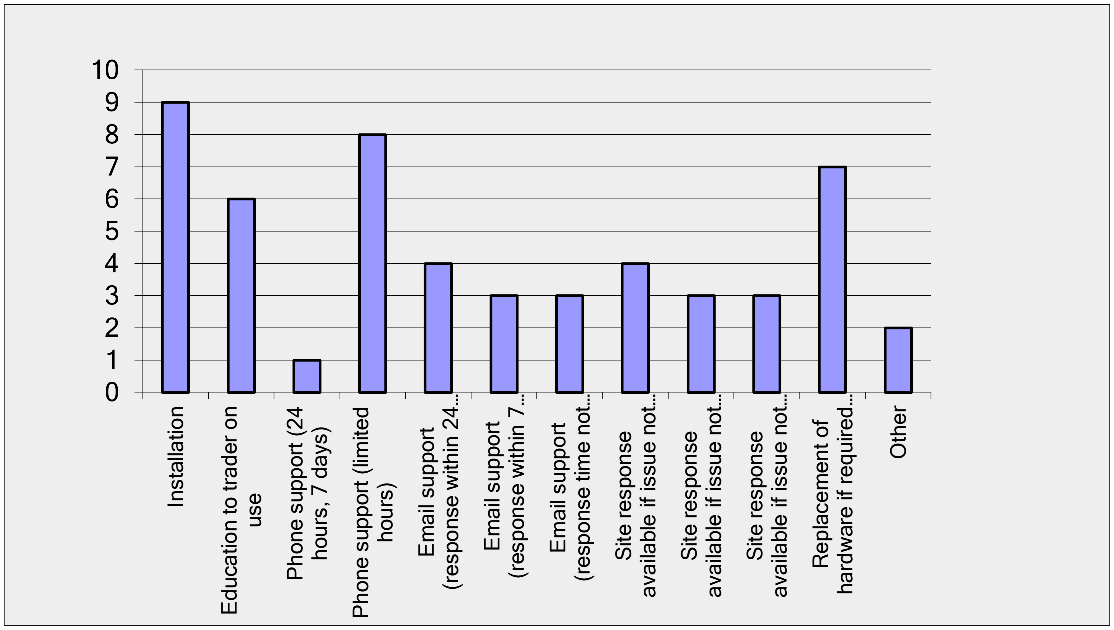
Country	Approach to selection
Argentina	Companies interested is supplying EFDs present their models to be approved as compliant by the AFIP. Once approved these may be used by taxpayers. Taxpayers can choose the supplier of the devices from the list of approved models.
Kenya	Direct application by businesses to supply for approval of EFD devices that meet KRA device specifications
Bulgaria	In Bulgaria there are many producers of EFD, which is a premise for not having a tender. All the producers offer their products at the market and clients choose which EFD to buy. Only EFDs, which have passed testing and have been approved by the inter-institutional commission (the National Revenue Agency and the Bulgarian Institute of Metrology), and are given by BIM a certificate for type approval, can be offered at the market.
Moldova	A special government commission establish only the list of EFDs authorised for being used on the territory of the Republic of Moldova. Taxpayers which are obliged to use these EFDs buys these devices according to the free commercial transactions.
Hungary	The tax authority takes no part in the acquisition of EFDs or selecting suppliers
Chile	Companies providing technologies present their models to be licenses are approved by the IRS, if these models are approved may be used by taxpayers. Taxpayers based on the approved models, choose the supplier of the devices
Greece	Every supplier (manufacturer or importer) of EFDs can ask for approval of one or more models. To this end, they must apply for permission to an authorized committee under the Division of Books & Elements. Along with that application, the suppliers have to provide a real working sample of the EFD model(s), so as to be evaluated. That committee is authorized (by the act 1809/88) to ask the suppliers any additional information considered as necessary. The committee can also recall or cancel an existed licence if it judges so.
Panama	Multiple suppliers were certified as they complied with specific requirements and their EFD´s passed the tests. Certified suppliers sold the EFD directly to users, reporting periodically to the tax administration.

Q32. Do you have an all-inclusive contract for supply and maintenance of your EFDs? (This means service, support, training, spare parts, consumables, etc.)		
Answer Options	**Responses**	**Response Percent**
Yes	9	56.3
No	7	43.7

For those administrations that do not have an inclusive contract, the following arrangements were said to be in place:

Country	Arrangement
Kenya	ETR suppliers sign contracts with their customers on purchase of approved devices whose terms included a 1year warranty for free service, support training and service at cost after first year.
Bulgaria	Upon purchasing an EFD the owner is obligated to conclude a service contract with a service company registered by the Bulgarian Institute of Metrology. Each service company is only issued a permit to carry out support and maintenance after passing training with the producer of the respective type of EFD.
Santa Catarina, BR	The purchase and maintenance of EFD are taxpayers' responsibility.
Hungary	The tax authority takes no part in the acquisition of EFDs or selecting suppliers
Mexico	The Mexican model covers authorization of external providers for digital sealing of the invoices. These providers are hired by the taxpayers.
Chile	Only taxpayers are signing contracts with suppliers, the tax administration has no contractual ties with suppliers
Panama	EFD purchase and maintenance agreements are bilateral between user (taxpayer) and supplier. However, among other obligations suppliers are required to inspect every EFD sold at least once yearly.

Q33. Please describe the maintenance support you receive through this contract?



All respondents to this question have installation support, with limited phone support and replacement of equipment also being common features of the support agreements with vendors.

Comments provided in response to “Other” options were:

Country	Comments
Argentina	Contracted items include installation of the device, initialization of the fiscal memory, repair, update/replacement of fiscal memory.
Bulgaria	The content of the written contract is not standard, but it usually includes most of the listed items.
Tanzania	Site response available if issue not resolved on phone (within 48 hours)
Mexico	We have a PMC contract (Mission Critical Support), that covers support and maintenance of the whole platform the solution is running on, with high availability. This contract includes on-demand consumption of cloud based services. We have multiple administrated IT infrastructure service contracts to allow the implementation and support of physical processing storage and communications components.

Q34. Who were your key stakeholders in the implementation communication process?

Answer Options	Response Count	Response Percent
VAT traders	8	53.3
NON registered traders	2	13.3
Revenue Authority staff	12	80.0
Other government authorities	10	66.7
Local Government	3	19.9
Business associations	10	66.7
Other (please specify)	4	

Other stakeholders identified include:

- Secretariat of the Federal Revenue of Brazil - RFB
- Private entrepreneurs
- Technology suppliers
- Certified EFD suppliers.

Q35. How much did it cost to implement EFD in your country? (Please include all costs in the total if known, otherwise please enter known costs in the relevant boxes. Please use your currency, and do not abbreviate the values) (Where costs other than just the EFD cost are included, please only include the first year costs of operation of EFDs that were budgeted for)

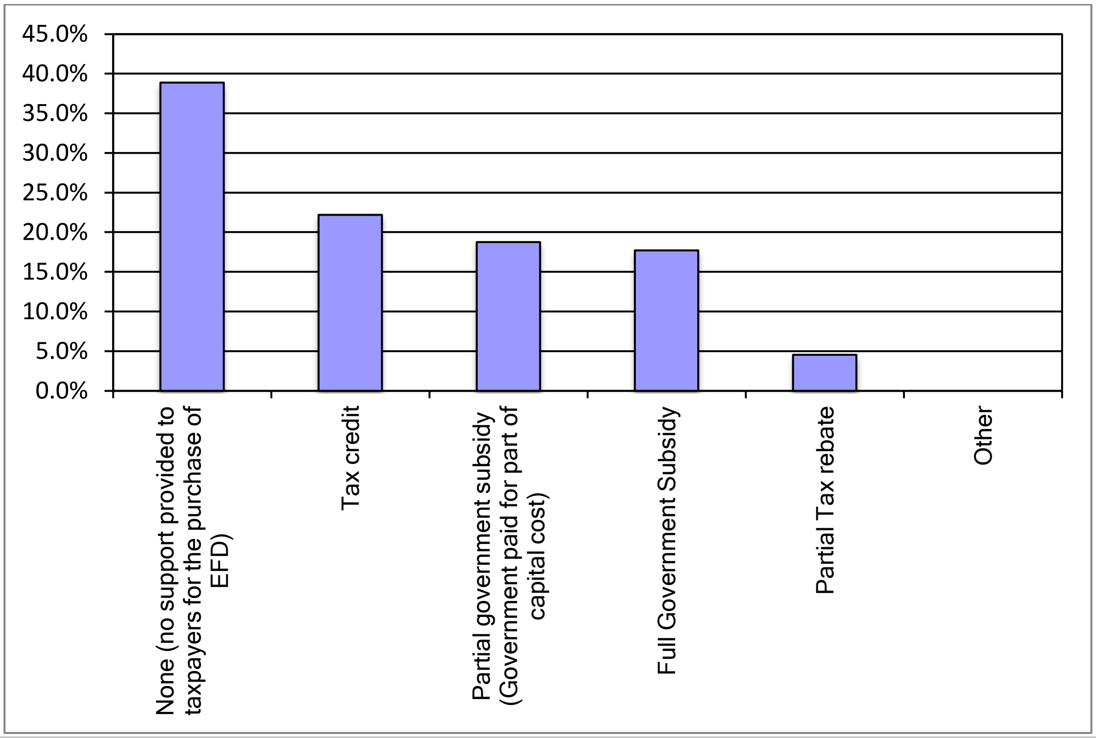
Q36. Does the amount of money quoted above include implementation costs or just capital acquisition cost?

Country	Currency	Cost to Government	Cost to Taxpayers	Other	Total	Capital Cost/ Capital & Imp.
Kenya	KES	-	-		-	Capital only
Bulgaria	BGN	100,000				Capital and implementation
Santa Catarina, Br	BRL	1,000,000	60,000,000		61,000,000	Capital and implementation
Moldova	MLD	1,606,400	2,000,000		3,606,400	Capital and implementation
Romania	RON				-	Capital only
Tanzania	TZS	37,664,271,186	-	1,320,485,765	38,984,756,951	Capital and implementation
Hungary	HUF	-	-	-	-	Capital only
Mexico	MXN	101,941,947				Capital and implementation
Chile	CLP	-	100	-	100	Capital only
Greece	GRD	-	-		-	Capital only
Dominican Republic	DOP	100,000,000				Capital only
Panama	PAB	107,800	13,000,000			Capital and implementation
Paraguay	PYG	600,000,000	700,000,000		1,300,000,000	Capital only
Rwanda	RWF	165,800,000			165,800,000	Capital only
Kosovo	EUR	300,000	2,800,000		3,100,000	Capital and implementation

Argentina indicated that implementation had no direct costs to the tax administration, and indirect costs we not estimated in detail as they were considered negligible in comparison with overall investments in technology and IT that were then underway. Comments with respect to these responses were received from the nine administrations that identified the costs as covering both capital and implementation costs. The following comments were provided in order to classify the costs according to major categories:

Country	Comment	
Bulgaria	BGN 100,000 – approximate price of the server, purchased by NRA for servicing the EFD registration	
Santa Catarina, BR	Direct cost to Government includes information technology investments and staff training. Direct cost to Taxpayers are for purchase of EFD and accessories	
Moldova	Project staff, communication/sensitisation; additional staff for the revenue administration; additional information technology costs.	
Tanzania	Tax credits for acquisition of the devices (capital) direct cost to government	37,664,271,186
	EFD Management System Capital	472,000,000
	Communication costs GPRS Link	480,000,000
	Staff training, Publicity and other administrative costs	368,485,765
Hungary	No precise data yet	
Chile	The cost is supported by taxpayers	
Greece	There is no information for 1990	
Panama	Direct cost to government represents the cost of developing a software to control the process of EFD certification, sales and installation and maintenance. (External contractor). Direct costs to taxpayers represents the estimated cost of the EFD. The tax cost to Government (tax credit) is effective 12 months after purchase of the EFD by user.	
Kosovo	Majority was cost of the equipment and information system (management system)	

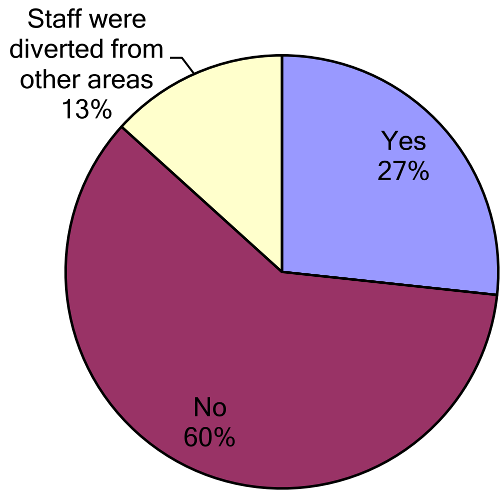
Q37. Please describe the mechanism of funding the EFD equipment



Answers	Response Percent	Responses
None (no support provided to taxpayers for the purchase of EFD other than normal amortization of capital goods)	38.9	7
Tax credit	22.2	4
Partial government subsidy (Government paid for part of capital cost)	18.8	3
Full Government Subsidy	18.8	3
Partial Tax rebate	4.6	1
Other	0.0	0

While some form of support was provided to offset the cost of the devices (61.1 percent of respondents), the most common approach was not to provide any support (38.9 percent of respondents).

Q38. Were more staff required than were identified in the implementation plan?



Six administrations found that more staff was required to implement and manage fiscal devices than was originally planned. In order to accommodate the additional staff needs, administrations undertook a mix of strategies to meet the need. Where staff was diverted from other areas, the following comments were made:

- Staff was diverted from other areas, such that EFD enforcement is done through Block Management System by use of the same staff.
- No new staff was required
- There is no information for 1990
- IT and Risk Management/ Domestic Tax

Three of the four administrations that answered "Yes" to this question provided more detail in the following question.

Q39. Please identify the areas where additional staff were required:

Audit (field staff)	Inspection (EFD device/ usage compliance)	Device evaluation staff	Technical staff	Information Technology staff	Other
	20		3		
50	12			6	
	4	1			1

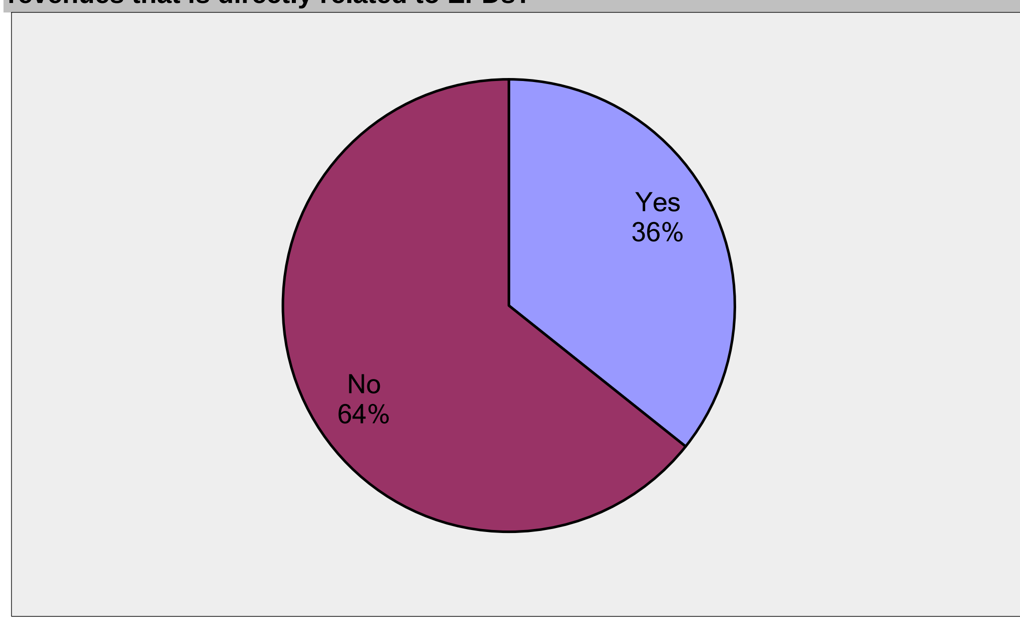
Q40. From the perspective of the revenue administration, what benefits were derived from improved compliance that were believed to be positively linked to the introduction of EFDs? Were these impacts measured?

Benefits	Responses	Impacts were measured
Increased reporting of sales	13	5
Improved filing rates	8	5
Increased registrations of those previously outside the system	6	2
Other	3	1

Comments made by the three respondents noting other benefits were:

- Easy verification of input tax and business expenses as they generate unique receipts/documents.
- Implementation is still in progress, we have no precise data yet
- Improve tax compliance through increased emission of tax documents.
- Availability of historic information on sales for cross-checking purposes

Q41. Does your administration measure the annual growth in VAT, Income Tax and other revenues that is directly related to EFDs?



Five administrations undertake measurement of revenue improvements arising from the implementation of fiscal devices.

Q42. Revenue initiatives: After the first 12 months, EFDs have helped generate increasing revenue gains each year:

Options	Yes	No
VAT	10	1
Income Tax	4	4
Other (please provide details below)	4	3

For the "Other" category, the following comments were provided.

Country	Comment
Argentina	Not measured, considered very difficult to identify EFD contribution
Bulgaria	Not measured
Santa Catarina, BR	ICMS.
Hungary	Implementation still in progress, no precise data yet
Greece	There is no information for 1991

Q43. Revenue initiatives: The following revenue gains were achieved over the first 12 months post implementation:

Country	Currency	VAT	Income Tax	Other
Kenya	KES	10,000,000,000		
Bulgaria	BGN	-	-	
Brazil	BRL			ICMS
Moldova	MLD	12%	6%	
Romania	RON	-	-	
Tanzania	TZS	70,237,640,000		
Hungary	HUF	Implementation still in progress, no precise data yet		
Mexico	MXN	-	-	
Chile	CLP	-	-	
Greece	GRD	There is no information for 1991		
Dominican Republic	DOP	3,000,000,000		
Panama	PAB	138,500,000		
Paraguay	PYG	360,000,000	115,000,000	
Rwanda	RWF			N/A
Kosovo	EUR	30,000,000	1,000,000	

Question 44 allowed respondents to provide more detail against the “Other” category. The comments received were as follows:

- Argentina, considered very difficult to identify EFD contribution, not measured.
- Santa Catarina, Brazil - Brazilian State Tax - ICMS
- Hungary - Implementation still in progress, no precise data yet
- Rwanda - N/A

Q45. What annual growth in VAT revenue do EFDs facilitate? Please enter a percentage increase that was actually achieved.

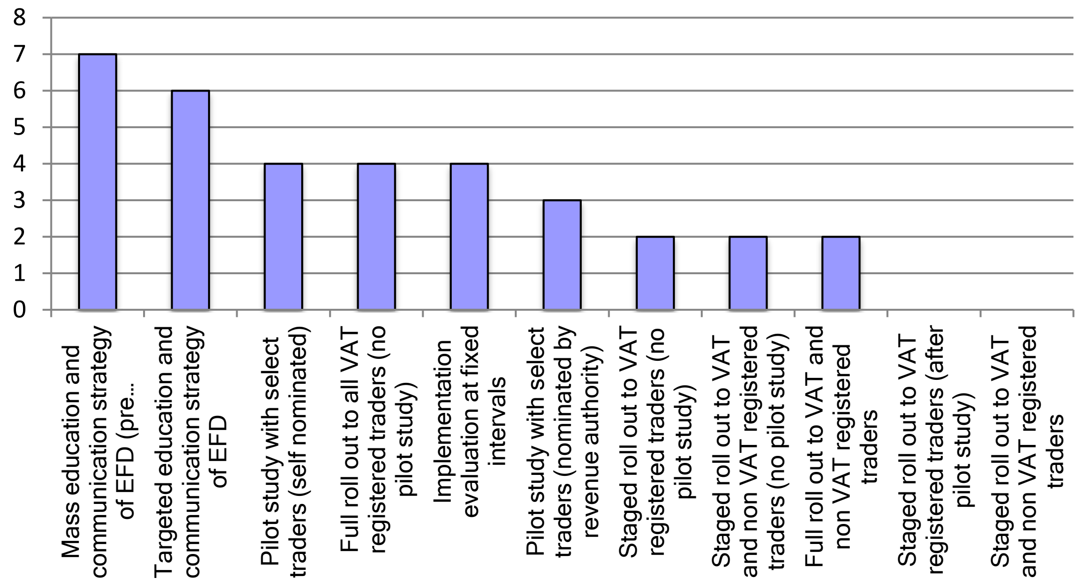
Country	VAT percentage increase	Income Tax percentage increase	Other percentage increase
Argentina	Not possible to measure		
Kenya	10		
Bulgaria	0	0	
Brazil			20% (total ICMS revenue)
Moldova	6	3	
Romania	0	0	
Tanzania	9.6		
Hungary	0	0	0
Mexico	0	0	
Chile	0	0	0
Greece	There is no information for 1991		
Dominican Republic	20		
Panama	5		
Paraguay	13	10	
Rwanda			N/A
Kosovo	12	1	

The data in respect of this question needs to be interpreted in conjunction with the response to Questions 40 and 41, where five administrations indicated that revenue improvements arising from the implementation of fiscal devices were measured.

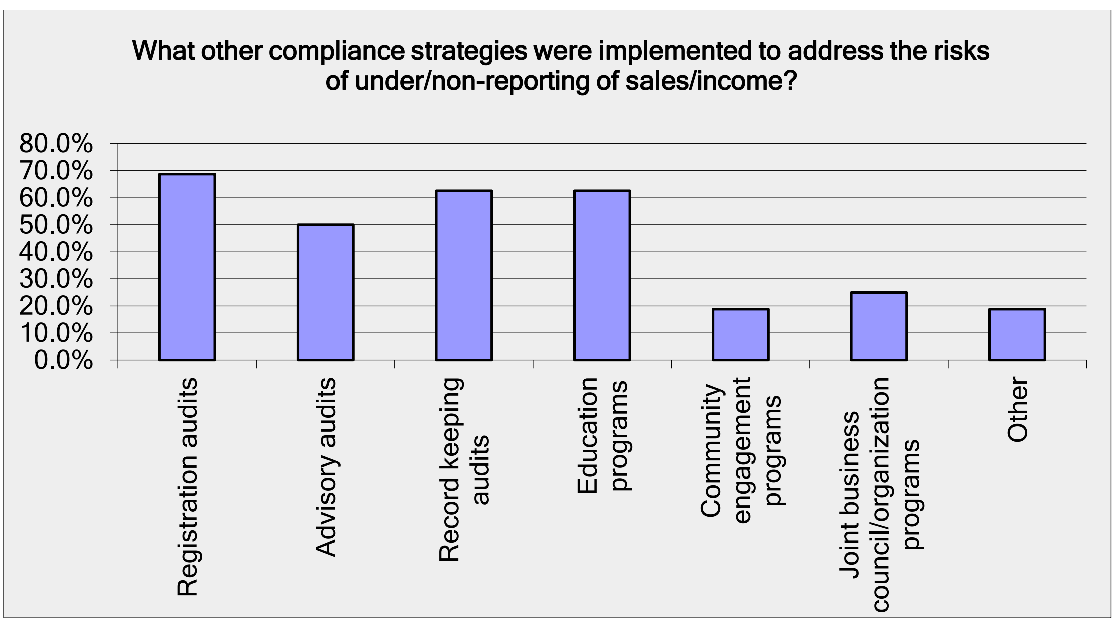
One administration (Hungary) provided additional comments:

- Providing regular information to operators affected by the implementation and answering questions concerning the application of legal provisions

Q46. What approach did your revenue administration use to implement EFDs?



Q47. What other compliance strategies were implemented to address the risks of under/non-reporting of sales/income?



Three administrations indicated that they undertook programs not listed in the questionnaire options. Four administrations provided descriptions of other programs delivered.

Country	Other Programs Description
Bulgaria	Programs for engaging the public, such as a campaign for popularization of the sanctions for clients who do not request their receipt.
Chile	Creation of FAQs and support material to taxpayers, sending mass e-mails promoting the use of the website of SII
Greece	A. The revision, improvement and generally the progress of the technical specifications for EFDs. B. The Upgrade of support software for secure document registration, device documentation of data filed and tax-data sent to General Secretariat of Information Systems (GSIS) in order to comply the clauses set by GSIS for effective tax monitoring.
Panama	Only "fiscal" invoices (issued by EFD) are eligible to support deductions of costs and expenses, except when the issuer is explicitly exempted from the use of EFD.

Q48. From a revenue authority's perspective, what are the challenges of using EFDs?

Q49. What strategies have you employed that ensure ongoing quality of the equipment (the EFDs)

All sixteen administrations still participating at this point of the survey provided a response to this question.

Country	**Approaches being used**
Argentina	Ongoing certification of devices and suppliers. Severe sanctions to suppliers who fail to meet contractual obligations or fail to provide adequate maintenance and support.
Kenya	Re-vetting of EFDs and suppliers Adoption of new technology (electronic journals)
Bulgaria	Control over the quality of EFDs is exercised mainly by the producers and the users of the equipment. When a user signals for a problem with a certain EFD, the inter-institutional commission carries out an expert examination of the specific EFD and issues instructions for elimination of the established problems (should any problems have been established).
Brazil	Technical and functional certification.
Moldova	1.Electronic Cash Register Management which are authorised for being used on the territory of the Republic of Moldova. 2.Sealing of cash registers. 3.Taxpayers audits with respect of using cash registers.
Romania	
Tanzania	Sign Contracts with Manufacturers and Suppliers Carry out comprehensive technical compliance tests for each of the model to be supplied in the country.
Hungary	The licensing of EFDs is done in the framework of authority procedures and the regulation prescribes compulsory annual supervision.
Mexico	There are approved providers to certify the structure and syntax of the message data which ensures that the information can be read later by the Tax Administration.
Chile	*sellar maquinas* [Machine seals]
Greece	A. A committee has the responsibility of checking the compliance of fiscal devices to the technical specifications in conjunction and cooperation with specialized laboratories of the National Technical University of Athens (NTUA). B. A unique license number for a specific model of EFDs is issued to the interested company by the committee. C. Ordinal-Periodical tests after the initial approval, so as to be ensured the regular and reliable operation of EFDs.
Dominican Republic	Site visiting to taxpayers installed
Panama	Certified suppliers have certain responsibilities and obligations (Cabinet's Decree)
Paraguay	Regional availability of supplier maintenance reps
Rwanda	GFVFDSA
Kosovo	Strict technical requirement and check, Close monitoring form field operation and compliance.

Q50. What strategies have you employed that ensure compliant use of the EFDs by businesses?

Options	Response Percent	Responses Percent
Data Audits (in revenue authority)	12	73.3
Site Audits	12	80.0
Other (please specify)	2	

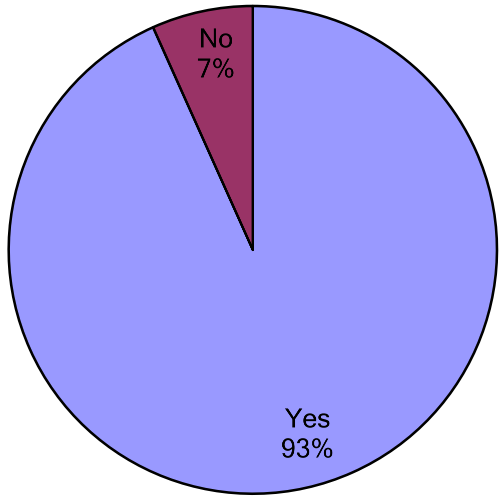
Multiple choices were possible.

The administrations that selected "Other", commented:

- Data cross-checking with information from third party sources
- Obligation by law for 100 percent of taxpayers. Certification of EFDs by digital seal on the internet portal of the Tax Administration Office and backup of the 100 percent of the taxpayer's transaction.

Q51. Given what you know now having implemented EFDs in your country, weighing up the cost and current and future revenue gains, was implementing EFDs the best solution to your problem?

Q52. What is the reason for EFDs not meeting expectations?



While it is evident that the clear majority would continue to support fiscal devices, it is interesting to note that the one administration that would choose an alternative approach is the administration purported to be the originator of the concept (Greece). The reason provided was:

- Cultural change

Comments provided in support of the response are as follows:

Country	Comments
Argentina	The implementation of EFDs was successful and met expectations, at a cost. But it was never considered the unique solution to compliance problems, and it has been successful only because it became a part of a comprehensive compliance-improvement program.
Kenya	Requires allocation of dedicated human resources for enforcement. Adopt a strategy that ensures prior communication of economic transaction data to the authorities by using technology-supported devices. Adoption of electronic invoicing for better management of business-to-business transactions.
Santa Catarina, BR	The implementation of EFD proved to be the best solution for retail tax revenue control, providing secure data for crossed audit methodology used in the State of Santa Catarina.
Tanzania	Given that one of the objectives to introduce EFD was to improve record keeping of the Taxpayer, which is the major problems to Taxpayers the scheme seem to be the best option.
Hungary	The implementation is still in progress, we have no data to rely on when answering this question
Chile	Facilitates compliance of tax obligations, and allows the user to keep track of their operations, so that helps a good way to fulfil their obligations to the tax administration
Greece	Although the use of EFDs is generally successful, in the case of taxis is absolutely failed, as every taxi driver constantly avoids issuing receipts to customers.
Panama	The project was implemented to combat a widespread culture of informality and evasion among taxpayers, unawareness and certain complicity among consumers, poor controls and insufficient audit capacity on the part of the tax administration. Within that scenario we believe that the massive implementation of EFD´s was the right solution. However the effort needs to be complemented by strengthening on-site inspection/auditing capabilities and developing information technology to capture, process and cross-reference invoicing data, among others.
Kosovo	This has been identified as one of the way to gain revenue and to prevent the fiscal evasion.

Q53. What are the future plans for EFDs by your revenue administration?

Answer Options	Responses	Response per cent
Extend to more businesses	10	71.4
Consider next generation EFD (for example moving to GPRS enabled devices)	10	71.4
Other	3	21.4

More than one response was permissible.

For the administrations that provide additional details, the future plans included:

Argentina	New regulation for GPRS enabled devices was passed in December 2013 with a 2-year period for implementation by taxpayers and suppliers.
Kenya	Application of control devices as an option
Bulgaria	The Bulgarian revenue administration already uses GPRS devices but considers further improvements of the existing EFDs in accordance with the technological developments.
Hungary	The implementation of EFDs is still in progress

At the conclusion the on-line survey, respondents were given the option to provide any other comments they saw were relevant. The following comments were received:

Country	Comments
Argentina	The implementation of EFDs has been reasonably successful, but it creates costs for both the taxpayers and the tax administration. Open competition of suppliers of the technology is possible but requires a determined effort at certifying the devices, overseeing quality of service provided, and sanctioning those who do not meet minimum requirements. It also requires the tax administration to keep abreast of new developments in the technological field. These devices are part of the solution to non-compliance, but only a small part of it. They will not work on a standalone basis as they are easy to circumvent if the tax administration does not enforce their usage. Only if they are used as part of a compliance improvement strategy they could be considered cost-effective.
Kenya	It is prudent for the Revenue Authority to allow market forces to drive the supply and maintenance of devices and only define standards to be complied with to enable access to the information resident in the devices.
Bulgaria	RECOMMENDATION: Our practice in terms of the process of implementation of the obligation to use EFDs has taught us that making a law about the implementation and usage of EFDs is better and more efficient than making regulations. This better practice is in place in countries such as Italy and Greece.
Santa Catarina, Brazil	The next generation of EFD, developed according to the requirements of Convenio ICMS 09/2009, will improve control on retail tax revenues, by enabling internet connection for immediate transmission of sales data.
Moldova	This survey is very difficult and it requires very old information which is archived already.
Tanzania	While the VAT revenue growth after one year of EFD implementation was 9.6%, after the second year of implementation VAT recorded the growth rate of 23%.

Country	Comments
Hungary	Section 178 (1a) – in force as of 1 January 2013 – of the Act on Value Added Tax stipulates that in case of mechanically issued receipts, the data of the receipts and invoices issued by the cash register and the data of the cash register itself must be regularly reported by the tax subject to the state taxation authority. The state taxation authority may only use these data for auditing taxpayers in accordance with the Act on the Order of Taxation within the terms of limitation for tax establishment. A legal provision may stipulate that the operation of the cash register – compulsorily used to perform the obligation of receipt issue – be supervised by the state taxation authority via a communication (data transfer) application and system. In this case – and in accordance with the law – the obligation to report may be complied with by way of the direct data queries by the taxation authority. The communication service provider – in charge for the data transfer interface used to carry out the provision of data – may not link the identifiers of the tax control unit of the cash register with the data of the operator of the cash register. The state taxation authority, upon request, may grant individual exemptions from the provision of data via direct data queries on account of the lack of a communication system. When such individual exemption requests are judged the National Media and Infocommunications Authority act as an expert authority in questions regarding the availability of an electronic communication network. The Act on Value Added Tax therefore does stipulate the obligation to provide regular data for the tax subjects who comply with their obligation to issue receipts with a cash register. The detailed rules can be found in the Regulation 3/2013. (II.15) of the Ministry of National Economy (henceforward: MNE Regulation) on the technical requirements of cash registers and taximeters, as well as the sale, use and repair of cash registers and fare meters applied for issuing receipts. On the basis of the rules of the MNE regulation, there would be stages in the process whereby the obligation of the tax subject to issue receipt will be complied with a cash register capable of online connection and equipped with a taxation control unit. Cash registers licensed before 20 March 2013 but not complying with the stipulations of the regulation (traditional cash registers with a control tape) can be operated until 30 June 2013. Cash registers licensed before 20 March 2013 but not complying with the stipulations of the regulation (cash registers with an electronic log book) can be operated until 31 December 2013. Tax subjects not obliged to use cash registers and regarding activities of the tax subjects which do not require the use of cash registers may operate cash registers licensed before 20 March 2013 until 1 January 2015. With regard to the above and before giving the replies to the survey we deem it necessary to point out that our replies concern cash registers capable of online connection and equipped with a tax control unit as electronic fiscal devices – the operation of which is initiated by the quoted provisions of law. We also wish to underline the fact that the answers are given by the tax authority; that is, the organization implementing government decisions; since there are several questions (e.g.: the business drivers behind the cash register) the answers to which – in our view – do not belong to the competence of the tax authority.
Mexico	Question 15 Electronic Cash Registers: We don’t have information available. Questions 24 and 25: No estimates Question 26: 11 of the 36 were from a third party provider Questions 39 and 41: not been measured

Country	Comments
Chile	The implementation of these systems was made before 2000 and they are operating normally. Taxpayers have business relationships or contracts with suppliers of technologies, and this tax administration is responsible for certifying and approving models that providers can offer the market, and also authorizes the taxpayer to use these models already approved.
Greece	Since the whole process of implementation of EFDs took place in 1990, no one of the existing staff worked at that time. Furthermore, there are no records to give us answers to the questions: 11, 20, 22, 23, 24, 25, 26, 33, 34, 36, 37, 38, 39, 40, 42.
Rwanda	FDA
Kosovo	No

Appendix II. Compliance Burden: Taxpayer Perspectives

Kenya

Introduction

In Kenya, electronic fiscal devices (EFDs) primarily consist of electronic tax registers (ETRs) that are now mandatory for all businesses registered for VAT purposes. These devices are also mandatory for all businesses, which, though exempt, can claim any VAT input tax paid as these businesses can only access the refund on submission of an ETR compliant VAT invoice. Consequently, they too must register and use ETRs. In order to assess the impact of these devices on business, three industry associations that represent businesses that are ETR registered were interviewed.

ETRs were introduced in Kenya in fiscal year 2004/5 when legislation was enacted to take effect January 1, 2005 (Legal Notice no. 110 of September 24th). However, as indicated by Kenya Association of Hotelkeepers and Caterers, (KAHC), The Kenya Revenue Authority (KRA) agreed to give more time where necessary.

Users of ETRs are required to record all business transactions including:

- ✓ Date and address of the user;
- ✓ VAT identification number (Personal identification or PIN);
- ✓ Total sales value;
- ✓ Quantity, unit price, tax rate and value of recorded sales; and
- ✓ Identification number of the register, etc.

It is an offence to omit the required details and subject to heavy financial penalties.

Selection of associations to interview

The research team called various trade associations including professional groups registered for VAT and selected those willing to participate. The three interviewed associations were:

a. Kenya Association of Manufacturers (KAM)
   KAM has been in operation since 1959, and represents 735 active members in the major manufacturers formal sector, especially the large industries and businesses that produce manufactured goods locally for the domestic market as well as for exports. Business size varies from small, medium, to large enterprises. The KAM actively represents its members in most of economic and social policy proposals and has well-established consultative mechanisms with the Government. The association has for many years been active in making submissions on tax policies and tax administration.
b. Kenya Flower Council (KFC)
   KFC was formed in 1996. It represents cut flower growers who are fairly well spread in the country. Current membership is 72 out of a possible 150, including some inactive members. Cut flower growers employ about 120,000 people who work in rural areas making substantial economic contribution both as a foreign exchange earner and employer, especially due to its location in rural areas. Most of the cut flowers, 97 percent are exported leaving only 3 percent for the domestic market.
c. Kenya Association of Hotelkeepers and Caterers (KAHC)
   KAHC represents tourist hotels and restaurants, with approximately 90 members. It has 80 percent of the major hotel chains in its membership base. KAHC has been in operation since 1944.

Introduction of ETRs

ETRs were legally introduced in the June 2004 Budget to take effect in the fiscal year 2004/05. The Value Added Tax (Electronics Tax Registers) Regulations, gazetted September 2004, which included “electronic tax printers”, were to be effective on 1st January 2005.

In the speech introducing the budget changes, the reasons advanced for ETR introduction were to enable businesses that use computerized business transactions to issue computer generated tax invoices that capture and keep full records required by the law, and to keep full records and do so at lower cost while complying with tax administration requirements. Besides keeping records, many people believed that use of electronic devices would help capture part of the fast growing informal sector that was largely not paying taxes and bring it into tax net.

Though the planned implementation of ETRs was expected to have a six-month grace period, effective June 2004, the late gazettal of the regulations meant that both businesses and KRA had only three months to prepare. Thus, by the time ETRs became mandatory, many of the players were not ready. As the KRA then rushed to implement use of the devices many problems gave rise to vigorous opposition to their introduction. Some of the industry representatives acknowledged that many businesses did not attend the training seminars organized by the KRA and therefore were unprepared and did not have full understanding of all the requirements.

The situation was made worse by resistance from businesses, especially retail traders who did not want to use ETRs, either because they did not understand their application or they simply did not want to collect the taxes. Increasing levels of public resistance attracted attention of the politicians, including members of Parliament who joined the demonstrators to campaign against implementation of ETRs, even though these same politicians had approved the ETRs in The Finance Act 2004. Despite the vocal opposition, no legal challenge emerged and implementation proceeded.

Types of devices used

Kenya originally gazetted the use of ETRs, but later included Electronic Tax Printers (ETPs). These devices are mandatory for all VAT registered businesses, including businesses that produce zero rated goods and services that are therefore eligible to claim VAT tax paid on inputs used to produce such goods and services. As part of the control process since the introduction of ETRs input tax can only be claimed on presentation of ETR compliant invoices. The same applies to all exported goods and services, which are also zero-rated for VAT purposes. The requirement to use only ETR compliant invoices to claim input taxes on zero-rated transactions makes it mandatory for producers and suppliers of such goods to buy their inputs only from businesses that have ETRs. If they buy their inputs from noncompliant suppliers, they will not be eligible to claim input tax.

Costs associated with the ETRs

According to the industry representatives, by the time ETRs became mandatory, the KRA had only approved a limited number of suppliers and devices. Consequently, as industry rushed to buy the devices the prices were very high, with initial costs ranging from KES30,000 to KES150,000 a device. Since one unit is required for each sales point, a business with multiple sales points, such as hotels, experienced heavy financial outlays.

The use of ETRs required technical training in order to manage the devices and to understand the new VAT regulations. Initially, the cost of implementing the devices was shared between the supplier and the business. Training on VAT regulations was provided by KRA as part of induction during the grace period. Thereafter, the respective businesses assumed the cost of training.

Other costs associated with the ETRs include cost of replacing, servicing and maintaining the devices as well as the costs of linking devices to any existing computerized systems within the business. The government allowed full deduction of the cost of the devices from the VAT payable, with this benefit ending December 31, 2006. Any replacement costs after this date and the expiration of the warranty period are met by the businesses. As part of the tender process to select ETRs, the KRA stipulated a requirement of device reliability. Despite the devices supposedly meeting reliability requirements, there were many breakdowns due to wrong handling. Rural areas incur higher costs particularly those associated with power outages as many rural businesses are forced to install standby generators as there is no reliable power supply. This is very expensive, both to purchase and for fuel.

The reporting and payment costs remain largely unchanged and are met by the businesses, and are ultimately passed on to the consumer as part of the businesses cost.

Impacts of ETRs on businesses

Discussions with industry associations indicate that smaller businesses bear a heavier burden than larger businesses, especially due to costs such as purchase of generators and fuel to run them. However, the biggest challenge associated with ETRs comes from restrictions limiting claims of input tax to those supported by ETR compliant invoices. This has excluded small and medium sized businesses from the supply chain, as they do not use ETRs. Therefore the restrictions provided by ETR regulations have serious negative effects on small businesses. This was confirmed by the discussions with the association of cut flowers as they have stopped buying from small-scale suppliers who are not registered for ETRs.

Effects of cost of ETRs on business environment

While direct ETR costs do not have any reported negative impacts to medium and large businesses, there are some beneficial and unintended implications on businesses environment:

- ✓ The use of ETRs has led to a perception of an even/fair business environment by bringing into tax net businesses that were previously not paying tax;
- ✓ Perceived reductions in tax avoidance and evasion, improving the business environment;
- ✓ Improved business revenues, especially in the hospitality industry where some of the employees were selling their own products;
- ✓ With more accurate transaction records, businesses find it easier to justify their claims of input taxes, reducing areas of dispute with KRA officers and making record keeping less burdensome;
- ✓ More reliable transaction records have led to lower compliance costs, and reduced contention between businesses and KRA. It has also reduced incidents of exorbitant estimated taxes;
- ✓ Some businesses have reported improved service delivery, especially in hospitality businesses, e.g. hotels;
- ✓ Added value to businesses and is user-friendly.

Access to tax deduction of costs

The treatment of ETR related costs and access to tax credit or benefits has changed significantly since their introduction and varies significantly:

- ✓ During the introductory period till December 31, 2006 registered businesses were allowed to deduct the cost of the device from any VAT payable either same month or the immediate following month;
- ✓ After December 31, 2006, businesses that acquired devices paid the cost without offset against the VAT payable;
- ✓ Input tax on ETRs, can be offset against taxes; and
- ✓ VAT refunds remain uncertain due to the long delays in refunding VAT. This is not an impact arising from fiscal devices.

Challenges of ETRs

No issues were raised with security of information. Reporting burdens remain unchanged. Among the challenges identified with ETRs are:

- ✓ It may discourage procurement or sourcing of goods and services from small businesses, a more pronounced issue in rural areas;
- ✓ Delayed VAT refunds which continue to hurt businesses despite availability of more accurate data due to use of ETRs;
- ✓ Lack of e-payments which reduces effectiveness of ETRs;
- ✓ Power outages and lack connectivity in many areas outside major towns, which forces businesses to incur heavy costs to install generators; and

- ✓ Use of many documents that are manually provided which necessitates travelling long distances to access such documents

While there were no discussions with associations dealing with retail level traders and service providers, information gathered on one-to-one interactions indicate there are some individuals who operate “brief-case” businesses. These traders buy normal ETRs using either copies of national identity cards of deceased persons or stolen identities. Once they purchase the ETRs, they move around with their devices in their brief cases issuing ETR compliant receipts for a fee. For example, if a business wishes to get a tax credit of KES500,000, the “brief-case” business ETR holder issues a compliant receipt at a fee ranging between 5 percent and 10 percent of the receipt face value. Such receipts are then used to fraudulently claim input tax. If questioned regarding the supplier, the business owners claim they purchased the supplies from mobile traders who go around major trading areas. This practice provides an important avenue for tax evasion that needs to be addressed.

Industry experience with supporting infrastructure

As noted, reliable access to electricity is a continuing challenge, forcing additional costs in remote areas. Similarly, internet services are not adequately available in many areas outside the main urban areas. Initially, device suppliers did not have adequate support services that affected their ability to service the businesses; however, the situation has since improved. Due to increased number of suppliers and devices, the costs have come down substantially.

One of the key challenges that affect the operating environment is lack of access to soft copies of key documents a situation that has created a difficult and expensive operating environment. All the associations indicated strong desire for measure to improve access to essential documents by making them available in soft copies.

In addition, the associations expressed serious concerns over the efficiency and effectiveness of the Simba Customs System, especially to exporters and importers. They reported that the system suffers from frequent downtime and it is difficult for exporters to access documents crucial to prove export of goods and consequently claim of VAT input tax on affected goods.

Dealings with KRA officers

To a large extent, relations and communication with KRA officers was reported to be good. The industry associations maintain regular and formal communications but can also call on officers at short notice. The hospitality industry was especially happy with support and overall relations with KRA, which they described as “business friendly”. The KAM has long established channels of communication and consultations with KRA which existed before introduction of ETRs which is still in place. This is not the experience of cut flower growers who export, who attribute their problems to a perception that farming is a primary activity with a lower level of attention to this subsector. The association was particularly concerned of poor access to many of the documents the flowers exporters need which are only available manually. As a result, its members are forced to travel long distances, to KRA offices, and they strongly advocate for availability of all documents electronically.

Conclusion

- ✓ The general impression that comes out clearly is that for the large businesses these devices have added value. ETRs appear to have brought into tax net some of the competitors who, previously did not pay.
- ✓ ETRs have also reduced the ability of dishonest tax officers to issue exorbitant tax estimates.
- ✓ The ETR reporting system, alone does not create adequate benefits if it excludes e-payments and also electronic access to tax related documents.

Ethiopia

Introduction

Representatives of three associations were contacted for discussion on the impact of fiscal devices in Ethiopia. The associations were:

a. Addis Ababa Chamber of Commerce and Sectoral Associations (AACCSA)
AACCSA is an association of private sector businesses established over 60 years ago. It has over 10,000 members representing all sectors of the Ethiopian economy. The association is organized into regional and sectorial associations, including: (i) manufacturing sector, (ii) export sector, (iii) imports sector, (iv) services sector, and (v) agencies which include travel agents, commercial agents etc.

b. Construction Contractors Association of Ethiopia (CCAE)
The CCAE is comprised of registered construction contractors and has a current membership of around 1500. It is one of the most active groups in Ethiopia and operates in all economic sectors.

c. Eco-Tourism Association of Ethiopia (ETAE)
ETAE has 15 members out of a possible 300. Its activities are widely spread in the country and face many challenges. The association notes Ethiopia has had a long history of tax evasion and emphasized the need for a balance between tax collection and better service delivery in order to improve compliance.

Introduction of Electronic Cash Registers

Electronic Cash Registers (ECRs) were introduced in 2009 when the law was changed to require all VAT registered businesses to buy, install and use them. This became mandatory for all taxable businesses with turnover of ETB500,000 or more or businesses eligible to claim input credits. In all cases, only ECR compliant invoices are acceptable to Ethiopia Customs and Revenue Agency (ERCA).

Once the law was approved, businesses were required to purchase and install the devices at their own cost; no tax benefits were provided. In addition, no prior training was undertaken.

Following ECRs implementation, there were instant problems which were caused by:

- ✓ Inadequate exposure and knowledge of how the devices operated as many businesses did not have any experience with this technology
- ✓ Language problems as many small and medium size business operators did not have competencies in reading and using English language, which is used in ECRs
- ✓ Devices were not readily available and were also very expensive which meant businesses could not get ECRs
- ✓ Lack of technical support due to limited outreach by both ERCA officers and device suppliers
- ✓ ERCA imposed heavy penalties that included imprisonment, which caused alarm to business operators.

All these factors led to disquiet forcing industry associations to engage ERCA to find solutions to problems their members faced. ERCA organized training for VAT registered businesses at no cost to businesses but it was not considered adequate due to language and technical challenges.

Costs Associated with ECRs

At introduction, businesses were exposed to:

- ✓ Very high costs of devices
- ✓ No cost relief through concessions
- ✓ Additional training costs on devices and regulations

Once the devices were installed the highest cost eventuated due to:

- ✓ Heavy reporting requirements required daily irrespective of whether the businesses transacted or not. The nil daily costs were reported to be costly and a nuisance to businesses;
- ✓ Monthly reports delivered physically to ERCA for acknowledgement;
- ✓ Communication costs, (there was repeated complaints of costly and unreliable communication, both internet and telephone);
- ✓ Hiring staff to operate devices and prepare daily and monthly reports;
- ✓ Costs of servicing devices, mainly due to improper handling as a result inadequate skills; and
- ✓ Devices replacement costs.

These costs were reported to be especially heavy on small and medium size businesses. Some categories of businesses were singled out as most affected by EFD costs, namely:

- ✓ Mobile transport businesses, using vehicles to, sell goods, shop to shop or town to town, or who hire vehicles out, including taxi operators; and
- ✓ Small-scale consultants.

Many of the operators in these two categories do not conduct business transactions on a daily basis, but must file nil reports to ERCA. Industry representatives complained that, forcing businesses to file nil reports leads unnecessary costs yet they get no benefits by collecting taxes. The other costs associated with EFDs include;

- ✓ Relocation costs when businesses, especially contractors change sites
- ✓ Relocating devices from one vehicle to another
- ✓ Associated downtime waiting for authority to relocate the device
- ✓ Awaiting approval to use manual system when devices breakdown

Impacts of ECRs on business size

All three associations reported that the ECRs have serious negative impacts on business environment for all operators or investors. However, their impacts are much more negative on small and medium size businesses. The following cases were cited to demonstrate negative effects:

- ✓ Before introduction of ECRs many small consultants operated from their homes where they paid no rent. Some have been forced to close down for fear of heavy penalties which include imprisonment, while others have opened offices and incur costs of paying rents
- ✓ Businesses are paying heavy reporting costs which discourage small and medium business, whose owners fear they could be imprisoned and therefore shy away from engaging in businesses
- ✓ The rigid requirements on ECR compliant invoices for input tax has forced large businesses cease trading with small and informal suppliers. The same was reported by construction industry and with rural suppliers. They all argued that these requirements hinder formalization of informal businesses and therefore hinders employment creation
- ✓ There is too much focus on control at expense of business interests. This was cited to be particularly inconveniencing to contractors who cannot move ECRs from one side of the site to another, in the same location. The same was reported with regard to mobile ECRs that are approved and fitted in specified vehicles. If the specific vehicle has a problem, the business cannot transfer the device to another until ERCA authority is received, sometimes taking as long as two days. No business operations take place in the intervening period.

The associations interviewed considered the ECRs as detrimental to businesses, particularly small and medium size businesses. The one-size-fit-all approach was described as unreasonable and penalizing to business.

The introduction of ECRs has not resulted in improvements from the ECRA. VAT refunds are still extremely slow to be paid. There has been no upside for business, despite the additional costs.

Coverage of ECRs

The Ethiopian ECRs are used for part of reporting on business transactions, but benefits of electronic filing are compromised by month-end manual reconciliation report requirements. This arrangement undermines the ECRA's attempts to reform administration through automation. The situation is worsened by manual payments through commercial banks that require businesses to deliver bank slips to ERCA and get official receipts.

Benefits of ECRs

There was a divergent view on EFD benefits with the CCAE reporting no benefits from ECRs. If anything they have added tax compliance costs to their members. The other two associations consider the ECRs to have had some benefits which include:

- ✓ More accurate transaction data for tax assessment and reduced areas of disputes
- ✓ More businesses into the tax net improving fairness
- ✓ Improved business receipts in businesses such as hotels/restaurants reducing the ability of employees to cheat or sell own goods and services
- ✓ Reduced the incident of unwarranted and discretionary tax estimates which was seen as a source of corruption and bad governance
- ✓ Potential to reduce costs if current inefficiencies are eliminated.

The association reported a general view that ECRs had led to increased government revenues but this was reported not be matched by provision of better services.

Challenges Facing ECRs

The following challenges were noted:

- ✓ All associations consider the ECR system as anti-businesses as it imposes heavy costs to businesses while there is no benefit
- ✓ The current regulations are too complicated and control oriented. Many small and medium business operators do not have adequate technical knowledge and many do not have enough competence in English
- ✓ The requirement for submission of zero reports that are unnecessary burden
- ✓ Delays getting ERCA approvals either to relocate ECRs, or use manual systems when they break, causing inconvenience and loss of business
- ✓ Poor internet services due to unreliable communication infrastructure
- ✓ Frequent power outages or disruptions, necessitating the use of manual systems, or forcing businesses to purchase standby generators
- ✓ Frequent breakdown of devices
- ✓ Inadequate capacity by ERCA and device suppliers to ensure ECRs operate without problems
- ✓ One size-fit-all approach that ERCA uses irrespective of the nature of business operations
- ✓ The impact on informal and small scale businesses, especially in rural areas

Availability of Support Services

All the three associations agree there is weak and unreliable communication services, which include:

- ✓ Internet and cell phone services;
- ✓ Electricity supply, which remains a problem with outages, despite improvements.
- ✓ Device suppliers. Though they have improved significantly, there still are times when it takes days to repair devices - this inconveniences businesses forcing them to use manual systems.
- ✓ ERCA Staff. There is lack of capacity to respond on a timely basis to requests to:
    - o Use manual system when ECRs breakdown;
    - o Relocation of ECRs from one place or vehicle to another; and

- Process refund claims. Businesses experience long delays when in receiving refunds for input credits.

Conclusion

All the three associations interviewed have emphasized on the cost aspects of the Ethiopian EFD system. Among the aspects they consider most unreasonable are:

- ✓ Mandatory daily reports, irrespective of nature of businesses and whether there are transactions or not
- ✓ Requirement for monthly manual reports which must be physically delivered and acknowledged
- ✓ Downtime as operators wait approval to use manual system when devices fail
- ✓ Delay getting approvals to relocate devices especially for contractors and transporters

Appendix III. Countries and Fiscal Devices

The following list of countries has been compiled from varying sources, as noted. The list should not be considered exhaustive or definitive.

Table 1. List of Possible Fiscalized Countries

Country	Source[1]	Status[2]
Albania	IMF	Unknown
Argentina	IMF, OECD, Ainsworth	Confirmend
Azerbaijan	IMF	Unknown
Belgium	OECD, Ainsworth	Unknown
Bosnia and Herzegovina	IMF	Confirmed
Brazil	IMF, Ainsworth	Confirmed
Bulgaria	IMF, OECD, Ainsworth	Probable
Chile	IMF	Confirmed
Croatia	IMF	Unknown
Dominican Republic	IMF	Confirmed
Ethiopia	IMF	Confirmed
Germany	Ainsworth	Unknown
Georgia	IMF	Confirmed
Ghana	IMF	Unknown
Greece	IMF, OECD	Confirmed
Hungary	IMF, OECD	Probable
Italy	OECD, Ainsworth	Unknown
Japan	Ainsworth	Unknown
Kenya	IMF	Confirmed
Kosovo	IMF	Confirmed
Kyrgyz	IMF	Unknown
Latvia	IMF, OECD, Ainsworth	Probable
Liberia	IMF	Unknown
Lithuania	OECD, Ainsworth	Probable
Macedonia	IMF	Unknown
Malawi	IMF	Confirmed
Malta	OECD	Probable
Mexico	IMF	Confirmed
Moldova, Republic of	IMF	Confirmed
Montenegro	IMF	Unknown
Netherlands	Ainsworth	Unknown
Panama, Republic of	IMF	Confirmed
Paraguay	IMF	Confirmed
Poland	OECD, Ainsworth	Probable
Portugal	IMF, OECD	Unknown
Quebec Province, Canada	Ainsworth	Unknown

Country	Source[1]	Status[2]
Romania	IMF	Confirmed
Russia	OECD, Ainsworth	Probable
Rwanda	IMF	Confirmed
Serbia	IMF	Unknown
Sierra Leone	IMF	Unknown
Srpska Republic	IMF	Unknown
Sweden	IMF, Ainsworth	Confirmed
Tanzania	IMF	Confirmed
Turkey	OECD, Ainsworth	Probable
Ukraine	IMF	Unknown
Venezuela	IMF, OECD, Ainsworth	Probable
Zimbabwe	IMF	Unknown

Notes:

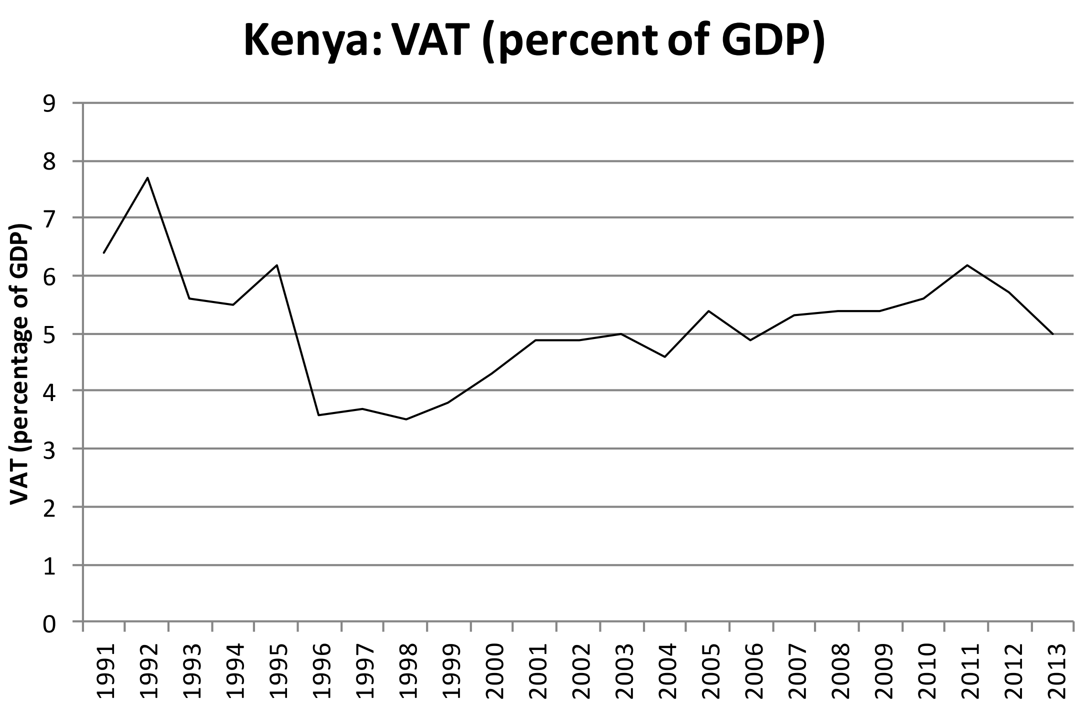
1 The sources for listing a specific country include internal IMF resources, OECD (2013) report on electronic sales suppression and Ainsworth et al (2008) on electronic tax fraud.
2 The status of the listed country is shown as confirmed where an administration has responded to confirm that fiscal devices are used by the revenue administration to record and monitor sales. Where the status is listed as "Unknown", this does not preclude the possibility of these devices being used to record and monitor sales, rather the circumstances in which the devices are used are not clear.
The OECD (2013) report, for example, lists Argentina, Brazil, Bulgaria, Greece, Hungary, Latvia, Lithuania, Malta, Poland, Russia, Turkey and Venezuela as countries that use certified fiscal tills (ETRs, EFPs). It also mentions later in the report that Quebec, Portugal and Sweden are also using fiscal tills (including SCMs). These countries are shown as "probable" given that the devices in use are most likely all fiscalized.

Case study 1 - Kenya

EFDs were introduced in Kenya in fiscal year 2004/5 when legislation was enacted to take effect January 1, 2005. EFDs currently used in Kenya primarily consist of electronic tax registers (ETRs) that are now mandatory for all businesses registered for VAT purposes. These devices are also mandatory for all businesses, which, though exempt, can claim any VAT input tax paid, since these businesses can only access the refund on submission of an ETR compliant VAT invoice and must, therefore, also register and use ETRs.

VAT revenue performance over the period preceding EFD adoption as well as the period afterward is shown in Figure 1 below.

Figure 1. Kenya: VAT as a percentage of GDP 1991–2013



Source: IMF data, author's elaboration.

The graph confirms that value-added taxation as a percentage of GDP in Kenya has shown significant variations from 1990 through to projected performance for 2013. Following a collapse in 1996 that brought revenue to less than half of the maximum value achieved in 1992, VAT revenue has been steadily raising since 1998. In the period from the introduction of EFDs (2005) until around 2012, when there was a marked drop off in VAT collections in GDP terms, a pervasive system of VAT withholding was in place that by all accounts boosted collections by almost 1 percent of GDP.[1] That is evident from the growth of collections from 2005 from about 5 percent of GDP to the peak in 2010 of around 6 percent of GDP, when VAT revenues dropped off when the withholding system began to be dismantled. In other words, the increase in VAT revenue that occurred over this period was most likely because of VAT withholding and non-payment of VAT refund claims, rather than the EFDs.

A related issue and perhaps a better measure of the compliance impact of this technology is to measure the VAT noncompliance gap over time consistently. However, even when countries have computed a VAT gap, this is not necessarily a robust indication of the underlying trends in VAT compliance, given measurement problems. For example, according to a recent KRA study, the VAT gap in Kenya fell from around 40 percent in 2002 to 26 percent in 2011. However, the estimate does not reflect the consistent growth in the stock of unrefunded VAT refund claims during this period (mentioned above), which would have the effect of boosting VAT collections and artificially reducing the gap between potential and actual VAT collections. [2]

In sum, what is significant is that ***the introduction of EFDs in 2005 has not generated a sustained revenue increase over what would be deemed a general trend of improvement since 2001***. Based on this longer-term view, it would be difficult to build a case arguing that EFDs have contributed to significant improvements in revenue performance in the case of Kenya.

[1] This was achieved both by over withholding and though a dysfunctional refund system that retained most of this revenue in the Treasury, never reimbursing credits to taxpayers.

[2] *Assessing Kenya's Value Added Tax Compliance*, Kenya Revenue Authority, Research and Corporate Planning Department, June 2012.

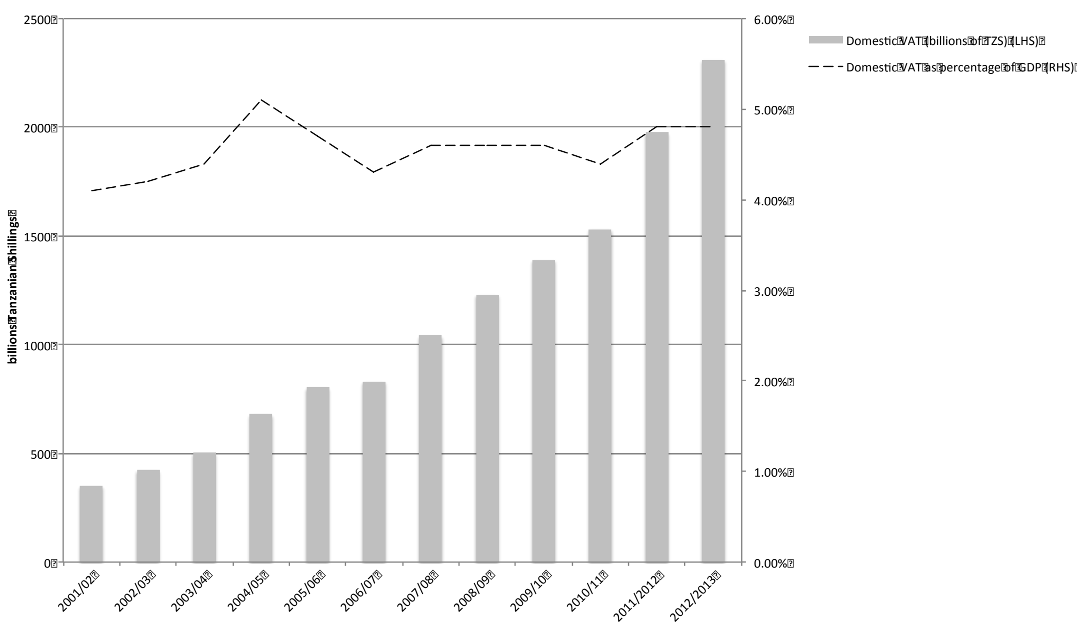
Case Study 2 – Tanzania

Background

The Value Added Tax (VAT) was introduced in Tanzania in 1998, replacing a sales tax and a number of other indirect taxes. While the approaches to the administration of VAT have varied over the period since implementation, the effectiveness of the tax has never reached the levels originally anticipated. As regards enforcement of the VAT, over the period to 2002 the Tanzania Revenue Authority (TRA) put in place what were considered strict enforcement measures, including comprehensive audit campaigns. Subsequently, and trying to align itself with modern tax administration practices, the TRA shifted the emphasis of its VAT campaigns to reflect the underlying compliance behaviours. This change in approach was viewed in some areas of the TRA as detrimental to overall compliance outcomes, with the new strategy resulting in a general fall in VAT collections. However, this view is not supported by collections data.

As Figure 2 below shows, total VAT collection has been increasing steadily in nominal terms, but has been relatively flat as a share of GDP. There are several possible explanations for the flat VAT revenue to GDP performance, including the compliance issues noted below (some of which are at least in part policy related), and policy changes (including the increase in the VAT threshold in 2004/2005 and the removal of domestic petroleum from the base in 2006/2007). The full examination of the overall performance of the VAT is outside the scope of this review; suffice to say that there are many possible factors.

Figure 2. Tanzania: VAT Collections (gross & percentage of total collections), 1998−2013



Source: TRA and author's elaboration.

Note: Data for 2011/2012 is preliminary; data for 2012/2013 is projected (Source IMF)

In response to what was perceived as a drop in overall VAT compliance, in 2002 the TRA mandated the use of non-fiscalized electronic cash registers (ECRs) as part of a compliance improvement process. There are several challenges to overall taxpayer compliance in Tanzania, including:

- High use of cash in the economy – the TRA indicated that less than 10 percent of the population use the banks to manage money;
- Lack of proper records;
- Failure of VAT registered businesses to issue VAT invoices;
- General policy weaknesses, such as ever increasing VAT exemptions and the incidence of "special relief".

Note that most of these issues are not unique to Tanzania. ***Figure 2 above suggests that the use of ECRs did not contribute to significant improvement in real VAT revenue performance over the period 2002 to 2008***. The Tanzanian authorities decided to eliminate the mandatory requirement for traders to use ECRs from 2008, while exploring other options that could contribute to improved compliance.

The Introduction of Electronic Fiscal Devices

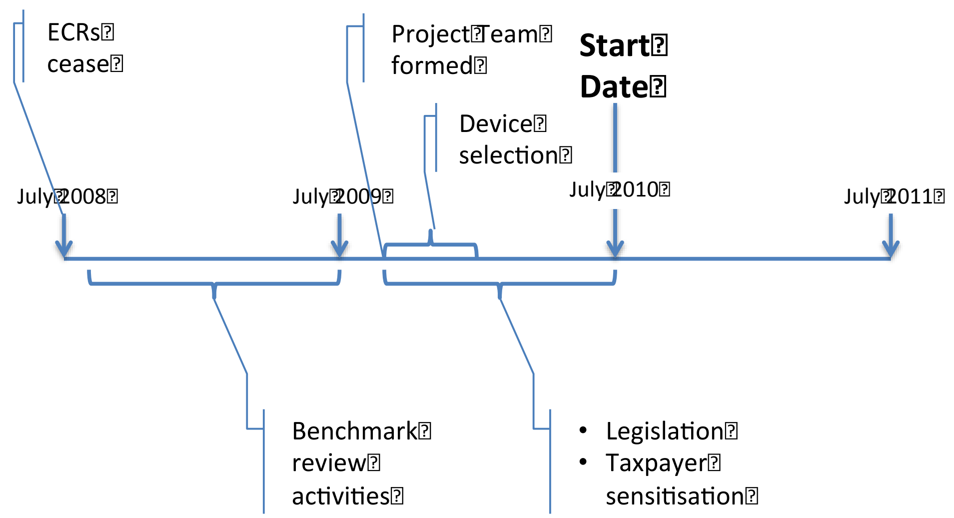
As part of its 2008 corporate plan, the TRA announced that the agency would explore the use of EFDs to improve overall VAT compliance and to arrest falling VAT revenue collections. An initial scoping and benchmark review was undertaken whereby representatives from the TRA visited other administrations that had implemented EFDs; the primary reference site chosen was the Kenya Revenue Authority (KRA). Other administrations consulted included the Italian and Serbian tax agencies. During this benchmarking process, the TRA determined that the initial scope for EFDs should be extended to include devices that communicate to the revenue authority through the mobile networks (using a protocol known as GPRS). Following a presentation by the KRA in early 2009, the decision was made to adopt mobile telephony-enabled EFDs starting the 2009/2010 fiscal year for all registered VAT payers.

Following the decision to implement EFDs, the TRA established a 9-month window to implement the devices across all sectors for all VAT taxpayers. The tax agency appointed dedicated staff to a project team with the broad mandate to address legislation, process, technology and taxpayer sensitization. Staffing for the project totaled twelve, with six staff for operational issues, two staff for technology issues, two staff for legislation and two staff for taxpayer services. Figure 3 outlines the overall timeline for implementing EFDs.

EFD Selection and Management Approach

The TRA developed the specifications for the various devices to be used under the umbrella of EFDs. Final device choices catered to the most common of business operations and the requirements included electronic fiscal printers, electronic tax registers and electronic signature devices. Requirements were defined from the benchmark studies, as well as specific requirements identified by TRA, the key amongst these being the requirement for the devices to communicate to the TRA over the mobile phone network.

Figure 3. Tanzania: EFD High-Level Implementation Timeline



Manufacturers, devices and suppliers were identified through an open tender process using the requirements' specification developed in the benchmark process. As part of the tender process, manufacturers and suppliers are to provide installation and on-site training, as well as maintenance and support over the life of the devices. The TRA retains the right to certify devices for use under the regulations. For this purpose, a technical committee has been established that reviews devices that suppliers and/or manufacturers are proposing to sell. The TRA therefore controls not only the manufacturers that can offer devices, but also the devices and the supplier networks that the manufacturers use to distribute, install and support the devices.

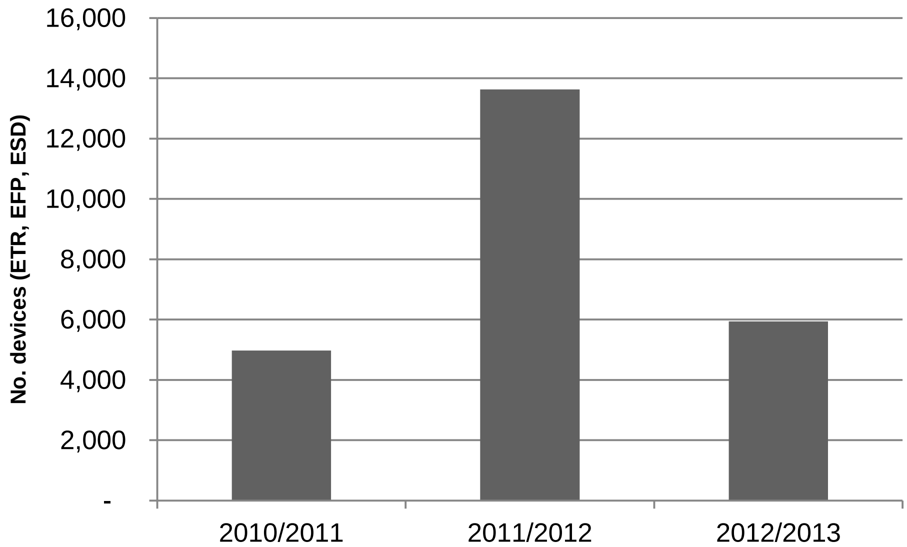
The TRA recognized the impacts of mandatory use of EFDs in remote areas where reliable power sources were not guaranteed. The requirements used to select the devices mandated that all devices must be able to run on internal battery back-up for 48 hours, while devices should also be capable of running on external battery power where no mains power was available.

Legislation

Specific legislation was enacted through regulation. The VAT law was seen as sufficiently broad to encompass the use of electronic recording devices. The regulations were designed to ensure that the use of approved EFDs was required by all VAT registered taxpayers, and to regulate the processes of purchasing, using and maintaining EFDs as well as administrative issues such as reporting. Details on the obligations of taxpayers, suppliers and other stakeholders are provided for under the regulations. These include elements such as requiring the use of a device at all times, the need to continue to keep proper records, the requirement to issue a receipt, and prohibitions on tampering with the device in any manner. Suppliers are also subject to penalties, particularly for matters such as the need to obtain certification of the devices before they are sold.

Under the regulations, and in a rather unusual approach to the deployment of these devices, the Government of Tanzania will reimburse to taxpayers for the costs of the first purchase of EFDs. The regulations do not stipulate any end date with regards to reimbursement, so that new registrants are still able to claim the full cost of the EFDs. The claims are processed as an offset credit against output VAT in the month following the purchase of the devices.[3] Figure 4 shows the number of devices for which traders received reimbursement from the TRA from 2010 to 2013.

Figure 4. Number of EFDs Reimbursed by Year of Credit



Source: TRA.

Implementation

As part of the implementation package, the TRA determined that EFD implementation should proceed according to a "big bang" approach, that is, all VAT taxpayers should start using EFDs at the same time. The TRA also noted that implementation of the EFDs would be affected by the national general election that took place over the proposed implementation period. Effective implementation did not begin until January 2011, and the data in Figure 4 reflects the slower than planned implementation pace.

No additional operational resources were provided to facilitate implementation, with only three staff provided for the technical committee that approves devices, and eight staff for audit of devices and technical support.

Outcomes

It is still relatively early in the implementation cycle to allow for a definitive assessment of the Tanzanian experience.

[3] Value Added Tax (Electronic Fiscal Devices) Regulations 2010, First Schedule.

Figure 2 above suggests that adoption of the requirement for VAT-registered traders to use ECRs coincided with a period of VAT revenue increases from 2002 to 2005, but that this increase did not prove to be sustainable from 2005 to 2011.

Unfortunately, there is no baseline information on the compliance gap, and impacts on compliance (in terms of improvements in participation, on time declaration or improvements in the quality of reported information) have not been tracked to specifically identify changes in these areas following the implementation of EFDs. Thus, VAT revenue to GDP performance seems to be the only proxy available to infer any compliance changes. As noted above, the indications are that there has been no significant or sustainable positive impact in the performance of VAT, implying that there has been no change in compliance behavior.

There is some anecdotal evidence of compliance challenges in Tanzania. At a discussion in a regional office as part of the research, it was established that of the 6,773 registered taxpayers under the competence of the regional office, only 4,285 or 63 percent of the total had registered for EFDs. The reason for the disparity was unknown, and no resources were available to undertake any detailed investigation into this issue. Despite penalties established in the regulations for taxpayers that fail to comply with their obligations, *EFDs appear to suffer from similar challenges as other regimes if there are no effective follow-up and enforcement measures. Absent effective compliance monitoring and enforcement, overall VAT compliance cannot be improved, with or without EFDs.*

Appendix V. Comparative Analysis of Survey Results

Table 1. Taxpayer Population, Devices and Staffing Levels

Country	Taxpayers Total[1]	Total devices[2]	Average devices per taxpayer[3]	Additional Staff[4]	Devices per Staff[5]	Taxpayers per Staff[6]
Brazil	50,000	80,000	1.6	130	615.4	384.6
Bulgaria	255,000	384,000	1.5	230	1,669.6	1,108.7
Chile	755,824	755,824	1.0	5	151,164.8	151,164.8
Dominican Republic	300	3,000	10.0	20	150.0	15.0
Greece	1,618,413	1,199,660	0.7	0		
Hungary	250,000			0		
Kenya	80,000	108,000	1.4	39	2,769.2	2,051.3
Kosovo	17,000	21,622	1.3	112	193.1	151.8
Mexico	700,000	500,000	0.7	46	10,869.6	15,217.4
Moldova	60,000	134,002	2.2	96	1,395.9	625.0
Montenegro	28,000	28,000	1.0			
Panama	15,000	20,000	1.3	75	266.7	200.0
Paraguay	28			19		1.5
Romania	10			0		
Rwanda	500			3		166.7
Sweden	69,186					
Tanzania	13,869	24,534	1.8	0		
Average			1.1		2,664.6	2,495.0

Source: IMF EFD Survey.

Notes: All data are extracted from the Survey at Appendix I.
[1]Appendix 1 Refer to Question 11 in the survey
[2] Refer to Question 15 in the survey
[3] Column 2/Column 1
[4] Refer to Question 27 and Question 39
[5] Column 2/Column 4
[6] Column 1/Column 4

Table 2. Estimated and Realized Revenue Gains

Country	Currency[1]	Estimated total revenue gains[2]	Recorded revenue gains[3]	Projected revenue growth[4]	Actual revenue growth[5]
Santa Catarina, Br	BRL	2,160,000,000	-	40%	20%
Bulgaria	BGN	-	-	-	-
Chile	CLP	-	-	-	-
Dominican Republic	DOP	2,000,000,000	3,000,000,000	19.6%	20%
Greece	GRD	-	-	-	-
Hungary	HUF	-	-	-	-
Kenya	KES	10,000,000,000	10,000,000,000	10%	10%
Kosovo	EUR	29,000,000	31,000,000	10%	12%
Mexico	MXN	-	-	-	-
Moldova	MLD	110,000,000	-	12%	6%
Montenegro	EUR	-	-	-	-
Panama	PAB	55,000,000	138,500,000	10%	5%
Paraguay	PYG	625,000,000	475,000,000	15%	13%
Romania	RON	-	-	-	-
Rwanda	RWF	-	-	-	-
Sweden	SEK	-	-	-	-
Tanzania	TZS	798,677,900,000	70,237,640,000	23%	9.6%

Source: IMF EFD Survey.

Notes: All data is extracted from the Survey at Appendix I.

[1] All currencies expressed in local units (relevant for the implementation time period. Greece had not adopted the Euro sat the time of implementing fiscal devices).

[2] Refer to Question 24 in the survey. This is the total of all revenue estimates, where survey respondents provided the information.

[3] Refer to Question 43 in the survey. Note, a number of administrations reported zero increases in revenue (Bulgaria, Chile, Hungary, Mexico and Romania). These administrations also reported that revenue gains from fiscal devices were not measured (Question 41). The responses to Question 43 have therefore been interpreted as “left blank”, rather than zero.

[4] Refer to Question 25 in the survey.

[5] Refer to Question 45 in the survey. As with column 3, a number of administrations answered “0” to this question (as opposed to leaving the answer blank). These administrations responses have been excluded (Bulgaria, Chile, Hungary, Mexico and Romania). These administrations also indicated that they did not measure revenue gains from EFD (Question 41), so these responses have been interpreted as “left blank”, rather than zero.

Table 3. Fiscal Device Implementation Costs

Country	Currency[1]	Total Implementation Costs[2]	Additional Staff[3]	Projected revenue return on cost[4]	Actual revenue return on cost[5]
Bulgaria	BGN	100,000	230	-	-
Chile	CLP	100	5	-	-
Dominican Republic	DOP	100,000,000	20	20.0	30.0
Greece	GRD	-	0		
Hungary	HUF	-	0		
Kenya	KES	-	39	-	-
Kosovo	EUR	3,100,000	112	9.4	10.0
Mexico	MXN	101,941,947	46	-	-
Moldova	MLD	3,606,400	96	30.5	-
Montenegro	EUR	-			
Panama	PAB	13,107,800	75	4.2	10.6
Paraguay	PYG	1,300,000,000	19	0.5	0.4
Romania	RON	-	0		
Rwanda	RWF	165,800,000	3	-	-
Santa Catarina, Br	BRL	61,000,000	130	35.4	-
Sweden	SEK	-			
Tanzania	TZS	38,984,756,951	0	20.5	1.8

Source: IMF EFD Survey

Notes: All data is extracted from the Survey at Appendix I.

[1] All currencies expressed in local units (relevant for the implementation time period. Greece had not adopted the Euro as at the time of implementing fiscal devices).

[2] Refer to Question 35 on the survey. The cost is the total of Cost to Government and Cost to Taxpayer amounts reported by the survey respondents. Of the countries reporting implementation costs, Dominican Republic, Paraguay and Rwanda have only included capital costs (devices). All other survey respondents included other costs such as training and education. Only Moldova included the staff costs for additional revenue administration staff (Questions 27 and 29).

[3] Refer to Questions 27 and 29. This column represents the total of projected staff numbers (Question 27) and the additional staff (Question 29) that were required post-implementation.

[4] Column 2 from Table divided by Column 2.

[5] Column 3 from Table divided by Column 2.

Appendix VI. Excerpts from "Fiscal Printers: The Dominican Experience"
by Marvin Cardoza

SUMMARY

This study provides a description and analysis of the results of application of the fiscal printers in the Dominican Republic, as mechanism for controlling sales to end consumers in the retail commercial sector, restaurants and the like. During the study period, the increase reported by taxpayers with fiscal printers in internal VAT collection was greater than that of the group which did not have printers; it was even greater than the total internal increase of VAT. In addition, the increase in collection exceeded the cost of implementation of the project.

INTRODUCTION

….fiscal printers arose as an initiative of the Anti-evasion Plan presented by the General Directorate of Internal taxes (DGII) in late 2004, intended to establish an effective tax compliance control mechanism to thus reduce evasion of the *Impuesto sobre la Transferencia de Bienes Industrializados* (ITBIS, the denomination of the VAT in Dominican republic) which represented 41.7% of potential collection that same year.

Empirical evidence has proven that the success of this technological resource depends on, at least, the following requirements: the tax administration (TA) must have the legal power to oblige taxpayers to use this equipment; there should be no possibility of interfering with the equipment in order to offer guarantees to the taxpayers as well as the TA; there should be a technological infrastructure to withstand the quantity and quality of information; in addition to well trained and specialized human resources for making use of said information.

….

There was a gradual implementation process in the Dominican Republic. It was initially installed to a group of selected taxpayers wherein the DGII assumed the cost of the equipment and thereafter, in a following stage, coverage was expanded to the rest of the taxpayers, who assumed the initial investment costs, with the guarantee of being able to apply them as credits for Income Tax (ISR) or Assets Tax.

….

By the end of 2010, a total of 1,447 fiscal printers had been installed in the points of sale of such commercial establishments as supermarkets, fast food, restaurants, stores and hardware stores. In the study period, the results show that benefits exceed the costs of implementation of the project; the increase in internal ITBIS collection reported by the taxpayer group with fiscal printers exceeded that of the group that had no printers; additionally, there was a decrease in ITBIS tax noncompliance of 14.7 percentage points in 2008 with respect to 2004.

…..

1. BACKGROUND

Fiscal printers arose in the DR as an initiative of the Anti-Evasion Plan submitted by the DGII in late 2004, whose purpose was to establish effective tax compliance control mechanisms and thus reduce ITBIS evasion, which represented 41.7% of potential collection that same year.

The plan covered, in general, two main control spheres:
1. Control of local sales intended for intermediate consumption: sales between companies or between taxpayers. To this end, the Fiscal Vouchers or Invoicing Control system was established in 2007.
2. Control of local sales intended for final consumption:
• Control of sales made through credit or debit card.…
• Control of cash sale transactions, mainly carried out by end consumers. The fiscal printers project thus responds to this scope.

….in late 2008, the DGII began implementing the fiscal printers in order to control mainly cash sales intended for final consumption. In this way, the sales transaction control process or cycle is closed, while at the same time effectively complementing the previous control mechanisms applied by the DGII.

….. the Anti-Evasion Plan also anticipated the investment in technological infrastructure and human capital. In this regard, in 2008 the DGII inaugurated a Data Center which complies with international standards, while at the same time it has been investing in Human Capital.

2. LEGAL CONSIDERATIONS

….it is essential to carefully review the scope of the TA's legal powers for establishing the obligation to use this equipment and additionally ensure that it be accepted and included as regular practice of the business. In the case of the Dominican Republic, the legal provisions in force grant the TAs extensive powers for the permanent review of economic activities with the fundamental objective that all taxpayers comply with their tax obligations….

In 2008, Presidential Decree No. 451-08 provided for the Regulations regarding the use of Fiscal Printers, with a view to clarifying and developing the general principles stated in the Tax Code and to render feasible the application of this technological resource.
…….

3. PROCESS FOR IMPLEMENTING FISCAL PRINTERS

….the implementation process in the
DR involved three phases:
• **Phase I (2008):** Examination of taxpayers selected for the installation of the Fiscal printers, in order to verify compliance with the tax obligations. Additionally, an inventory was undertaken of the software and printers used by the retail and fast food sectors for carrying out transactions and the invoicing process.
• **Phase II (2009):** The first Fiscal Printers are installed to a group of taxpayers selected according to their commercial activity, sales volume; which include hypermarkets, hardware stores, fast food store and large department stores. The DGII took on the cost of this first group.
• **Phase III (starting in 2010):** Coverage was expanded to the rest of potential taxpayers, who must take on the initial investment costs, with the guarantee of being able to apply them as Income Tax or Asset Tax credit in the fiscal period in which the investment was made.

For implementation in each phase, the following stages were completed:
• Certification and standardization of fiscal printers.
• Certification of applications (software) used by the commercial establishments for carrying out sales transactions and for the invoicing process.
• Installation of the Fiscal Printers in the taxpayers' establishments. The FPs have been provided and installed by suppliers certified by the DGII. To achieve certification, a series of tests were carried out to fully guarantee compliance with the Dominican Republic´s fiscal legislation.
The DGII determined a calendar of installations per taxpayer…

4. FISCAL PRINTERS CONTROL COVERAGE

4.1 Potential coverage of FPs

Of total sales reported by taxpayers in 2008, excluding exports and government purchases, 51% was for intermediate use or sales between companies and the remaining 49% were sales intended for final consumption...That same year, the DGII had mechanisms for controlling intermediate consumption sales, as well as sales made with credit or debit cards.

….it was necessary to follow up sales made to end consumers, most of which are made in cash. In this sense, the FP project comes to fill this gap to provide coverage to at least 22% of total sales to end consumer. This percentage corresponds to retail sales sectors, such as bars, restaurants and the like….

4.2 Coverage of project through December 31, 2010

……

At the end of 2010, there were 1,447 fiscal printers installed among taxpayers distributed in the Hypermarkets, Fast Food, Restaurants, Stores and Hardware Stores sectors. The main characteristics of these sectors are that they are retailers and their percentage of sales to end consumers represented 90.1% of their total sales reported in 2010.

…..

5. COSTS AND BENEFITS OF THE PROJECT

The reduction of tax noncompliance through the implementation of the FPs generates the following benefits:
• Increase in collection.
• Improves market operations, since it reduces unfair competition represented by evaders with respect to those that comply.
• Increases the horizontal equity of the system.
• Generates positive external results: greater transparency and internal control for the taxpayer; increase of productivity of the sector through the introduction of a more advanced technology; among others.
On the other hand, implementation involves the following costs:
• Increase in the Tax Administration's budget.
• Increase in the cost of compliance8, for example, if taxpayers are required to provide large amounts of information.

5.1 Quantification of the costs of the project

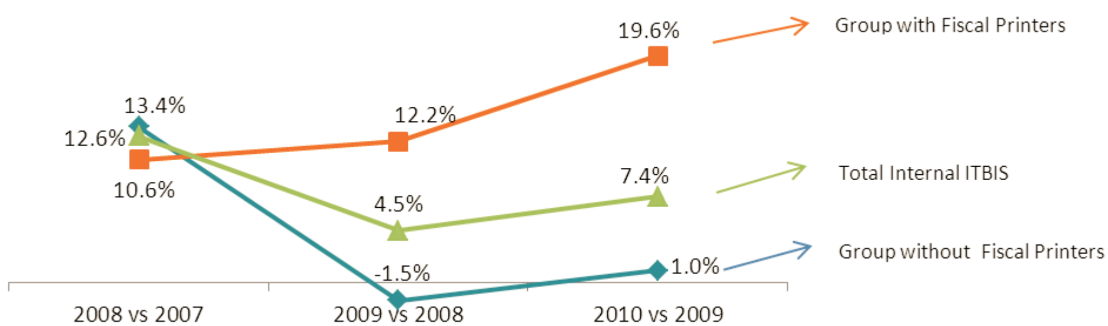
The initial investment of the project was financed by the Inter-American Development Bank (IDB) which mainly covered the acquisition of the fiscal printers. Additionally, a new area was created in the Large Taxpayers Management Office for the purpose of carrying out office and field controls of taxpayers who use fiscal printers, in order to verify the correct operation and compliance with the formal and substantive obligations.

The cost of the project which includes advertising costs, investment in the acquisition of equipment and the annual expenditures of the new created area created represented 0.20% of total ITBIS collected by the DGII in 2008. This amount has been decreasing to 0.14% in 2009 and 0.11% in 2010…

5.2 Quantification of the benefits of the project

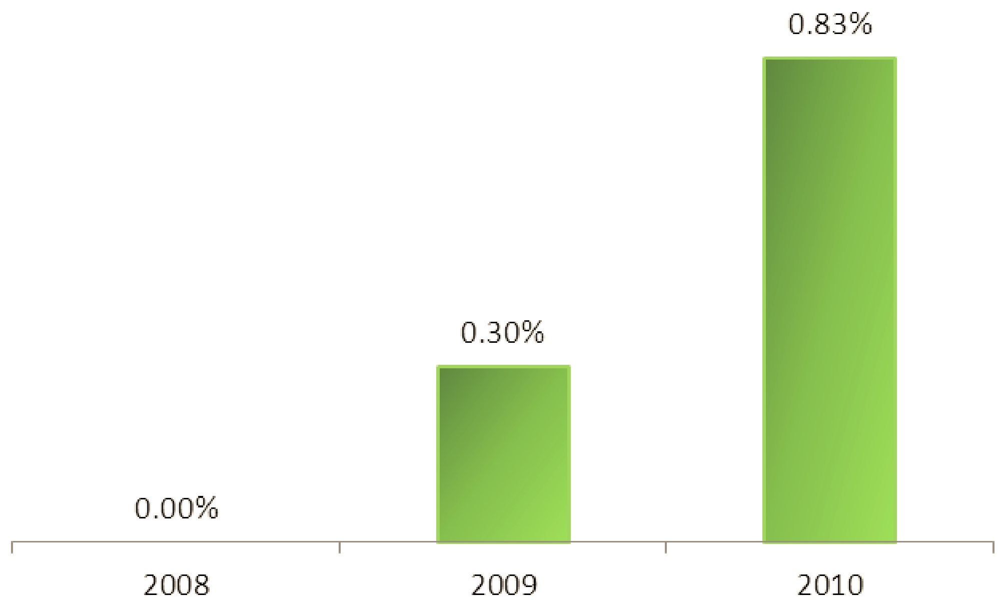
In the period being analyzed, the results show that the increase in Internal ITBIS collection reported by taxpayers with FPs was greater than that of the group without printers, and it was even greater than the total increase of the Internal ITBIS (See Graph 4). In addition, there was a 14.7 percentage point decrease in ITBIS noncompliance in 2008 with respect to 2004 (See Graph. 6).

Graph 4
Comparison of ITBIS increase: taxpayers with and without fiscal printers; and total DG II ITBIS



Source: Economic and Tax Studies Department, DGII.

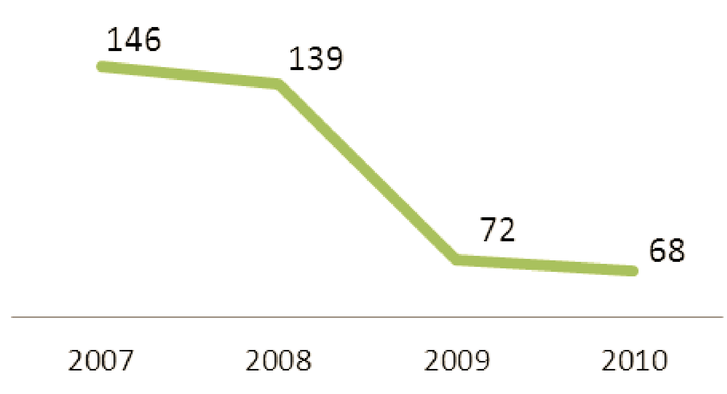
Graph 6
Benefits of the Project as percentage of Internal ITBIS collection



….In general, the DGII's achievements in Information Technology (ICT) based projects have had a favorable impact in the way of doing business in the Dominican Republic and it was thus recognized by the World Bank in its 2009 study called Doing Business. The study states the following:

"The Dominican Republic is the global and regional reform leader; it has speeded up formalities in several areas which may be carried out electronically. A system for filling out returns and paying taxes which began as a pilot project in 2006 is now fully operational. Businessmen may also complete formalities on-line, including the verification of the trade name …" In this way the country was moved from position 139 which it held in 2008 to 72 in 2009 with respect to the item on the payment of taxes. (See graph No.7)

Graph 7. Payment of taxes indicator according to Doing Business



7. CONCLUSIONS

….. One of the basic aspects in developing the project was the coordinated work with businessmen associations (ONEC, ADECOR, among others), for the purpose of obtaining support in generating a business environment of sound competition and avoiding the unfair competition that could originate from tax evasion….

Another important aspect of the project is that it counts on an appropriate legal and normative framework which facilitated the introduction of the printers. In turn, there has been strong support from the political and government authorities to face resistance to greater of sales operations; along with the IDB's support in projects for strengthening the TA and the high level of credibility of the DGII before the Dominican society…..

…In the period under analysis the results showed that the increase in Internal ITBIS collection reported by the taxpayers with FPs exceeded that of the group which had no printers, and was even greater than the increase of total Internal ITBIS. There was also a decrease in ITBIS tax noncompliance of 14.7 percentage points in 2008 with respect to 2004.

On the other hand, the experience acquired by the DGII on successfully developing within such a brief time frame the Fiscal Printers project is shared at international tax administration fora and is so positively valued that several countries have already requested the DGII's support for implementing their own projects. These results evidence the successful application of the FPs by the DGII and the latter's effort for achieving full compliance of tax obligations by the taxpayers.

……