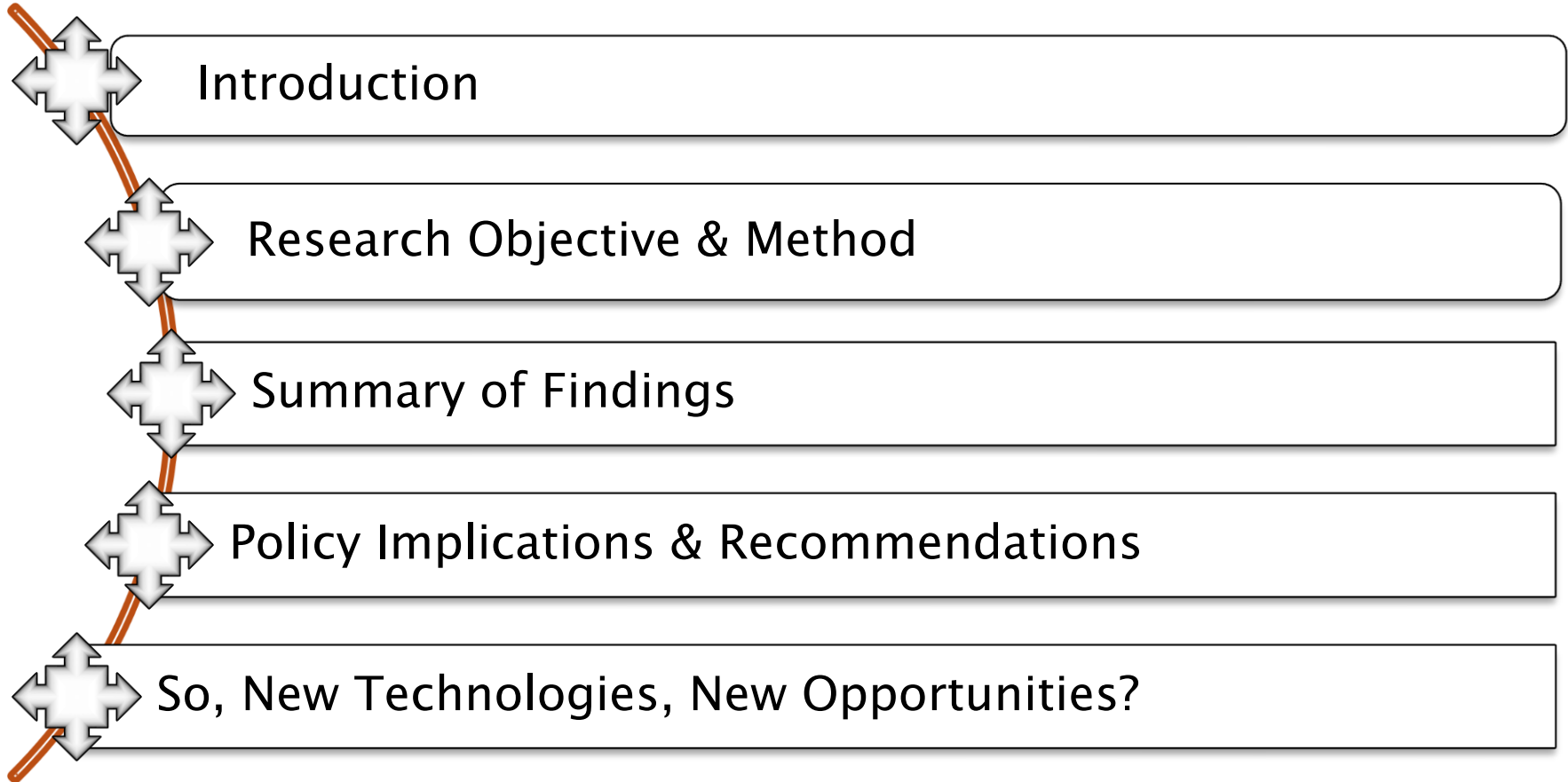


**Doing More with Less: Fighting Revenue Fraud  
through Mirror Analysis.  
*Experience of Malawi Customs***



**Frank Kalizinje**  
**Business Intelligence Analyst/Researcher – Customs**  
**Malawi Revenue Authority (MRA)**





## Malawi

- Customs revenue share of total-30%
- Tax to GDP Ratio-16.9 % in 2016/17
- Population (17.2 Million)
- Trade deficit in 2016 US\$ 267 Million (mirror)
- Predominantly Agrarian
- Budget Deficit 6.5% of GDP in 2014/15

- ▶ The role of Customs is fast expanding
- ▶ Historically, Revenue Collection has been key
- ▶ It remains crucial to LDCs like Malawi
- ▶ Integrity of the key function is at stake due to trade liberalization (inevitable) & Fraud (preventable)
- ▶ Can technology help in sustaining this key function?
- ▶ Can it help in detecting and preventing Customs revenue fraud? If yes, then Is it a panacea?

- ▶ The largely underutilized chunks of Customs data can be turned into insight and value & detect fraud without heavy investment in Technology and Innovation.

## *How?*

- ▶ Through, **Mirror Analysis**– with just a little wit, analytical and innovative intelligence, fraud can be fought
- ▶ Mirror Analysis involves comparing import data of a country A and the corresponding exports from country B by one or more countries (the opposite holds)

### ▶ Research Objectives

- To identify, classify & approximate revenue fraud in various products in Malawi using Mirror Analysis
- Done with top trading partners in WCO ESA Region

### ▶ Significance the study

- Risk assessment & targeting
- Post Clearance Audits and Enforcement
- Timely: IFFs, Terror financing (Customs is @ centre)
- Is in line with WCO **Goal 2** (Efficient Revenue Collection) & **Goal 7** (Research & Analysis)

- ▶ The study follows Cantens(2015), Raballand et al (2012) and Chalendard et al (2016) where Mirror Analysis was used to detect revenue fraud
- ▶ Theoretically, imports to Malawi from country X ought to be the same as exports to Malawi reported by country X at UNCOMTRADE
- ▶ The study started with South Africa (SA) because Malawi's 64% of imports are from SA
- ▶ 2015 SA export data from UNCOMTRADE was used

- ▶ 2015 imports data from Malawi's ASYCUDA was also extracted at both HS 4 & 6 digit
- ▶ HS 2012 Nomenclature was used
- ▶ Import data values (CIF) were converted into FOB by adjusting for freight & insurance costs
- ▶ Trade gap indicators (mirror gaps) were computed at FOB and ranked in descending (values & weight)
- ▶ The gaps provided an indication of fraud & trade mis-invoicing (but can also be due to other factors e.g. lags, errors in reporting, trading systems e.t.c)



- ▶ To classify the possible type of fraud, ratio indicators as defined by Chalendard et al (2016) were used

$$\text{Ratio of value} = \frac{\text{reported import value (US\$)}}{\text{reported export value (US\$)}} \dots\dots\dots (1)$$

$$\text{Ratio of weight} = \frac{\text{reported import weight (kg)}}{\text{reported export weight (kg)}} \dots\dots\dots (2)$$

$$\text{Ratio of density values} = \frac{\text{ratio of values}}{\text{ratio of weights}} \dots\dots\dots (3)$$

Value Ratio	<1	=1	>1	Density Value Ratio
<b>Weight Ratio</b>				
<1	M-, S & U			<1
=1	U			
>1	M+, U	M+	M+, SO & U	
<1	S, M-			=1
=1				
>1			M+, SO	
<1				>1
=1			O	
>1			M+, SO & O	

Source: Adapted from table 18 of Chalendard et al (2016)

HS CODE	Product Description	GAP INDICATORS						RATIO INDICATORS		
		Trade Value in 1000 USD			Net Weight 1000 kg			Value ratios	Weight ratios	Density value ratios
		Uncomtrd	Asycuda	Trade gap	Uncomtrd	Asycuda	Weight gap			
8704	Motor vehicles (goods)	15,030	9,679	5,350		1,785	(1,785)	0.64		
8708	Parts of the motor vehicles	4,700	2,240	2,460	608	450	158	0.48	0.74	0.64
8537	Boards, panels, consoles,	3,369	2,907	461	171	110	61	0.86	0.64	1.35
4901	Printed books, brochures	4,837	5,452	(614)	1,286	1,453	(167)	1.13	1.13	1.00
3808	Insecticides, rodenticides	10,848	12,318	(1,470)	2,529	2,708	(180)	1.14	1.07	1.06
3902	Polymers of propylene	7,125	13,072	(5,946)	5,580	8,577	(2,997)	1.83	1.54	1.19
3901	Polymers of ethylene	6,391	13,423	(7,032)	5,375	10,194	(4,819)	2.10	1.90	1.11
3102	Chemical fertilisers	5,390	8,582	(3,192)	15,092	18,494	(3,403)	1.59	1.23	1.30
8703	Motor vehicles (persons)	5,345	15,961	(10,617)	373	1,525	(1,151)	2.99	4.08	0.73
2106	Food preparations	3,925	5,420	(1,495)	1,757	3,191	(1,435)	1.38	1.82	0.76

- ▶ HS 8704 (goods carrying cars) revealed possible undervaluation
- ▶ HS 8708 (motor vehicle parts) shows that the sector is likely marred with misclassification and undervaluation

- ▶ HS 3901 & 3902 (polymers) revealed possible manipulation of transfer prices by related parties
- ▶ HS 2106 (food preparations) is likely affected by misclassification, undervaluation or smuggling
- ▶ In HS 3102 (fertilizers), misclassification and overvaluation are suspect. Low taxed items like these are also used by deceitful importers to evade duties – supports findings by Chalendard et al, (2016)

- ▶ Need for fraud control plan, better focused risk assessments
- ▶ Guides Retroactive audits, revenue can be recovered
- ▶ Enhance capacity of officers to detect trade mis-invoicing, transfer mispricing, illicit financial flows
- ▶ Need for routine mirror analyses & further scrutiny of irregularities
- ▶ Justifies importance of human analytical skills in coordinated border data consolidation & Single Window for bordering countries. Man can never be fully replaced

- ▶ Most importantly, the study shows that Customs can detect and classify fraud and greatly enhance risk management and revenue collection at minimum cost & without heavy investment in technology,
- ▶ Thus, Technology is not panacea, it has own challenges
- ▶ With such innovative intelligence, smarter and informed decisions can be made
- ▶ Customs ought to invest in Data Analysis skills of its human resource, the private sector and technological solutions should then complement such proactive skills

# Thank You