Macro-Economic Impact of Lifting Import Restriction on Broiler Imports on the South African Economy applying the South African INFORUM Model (SAFRIM) and Standard Input-Output Analysis

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CONTENTS

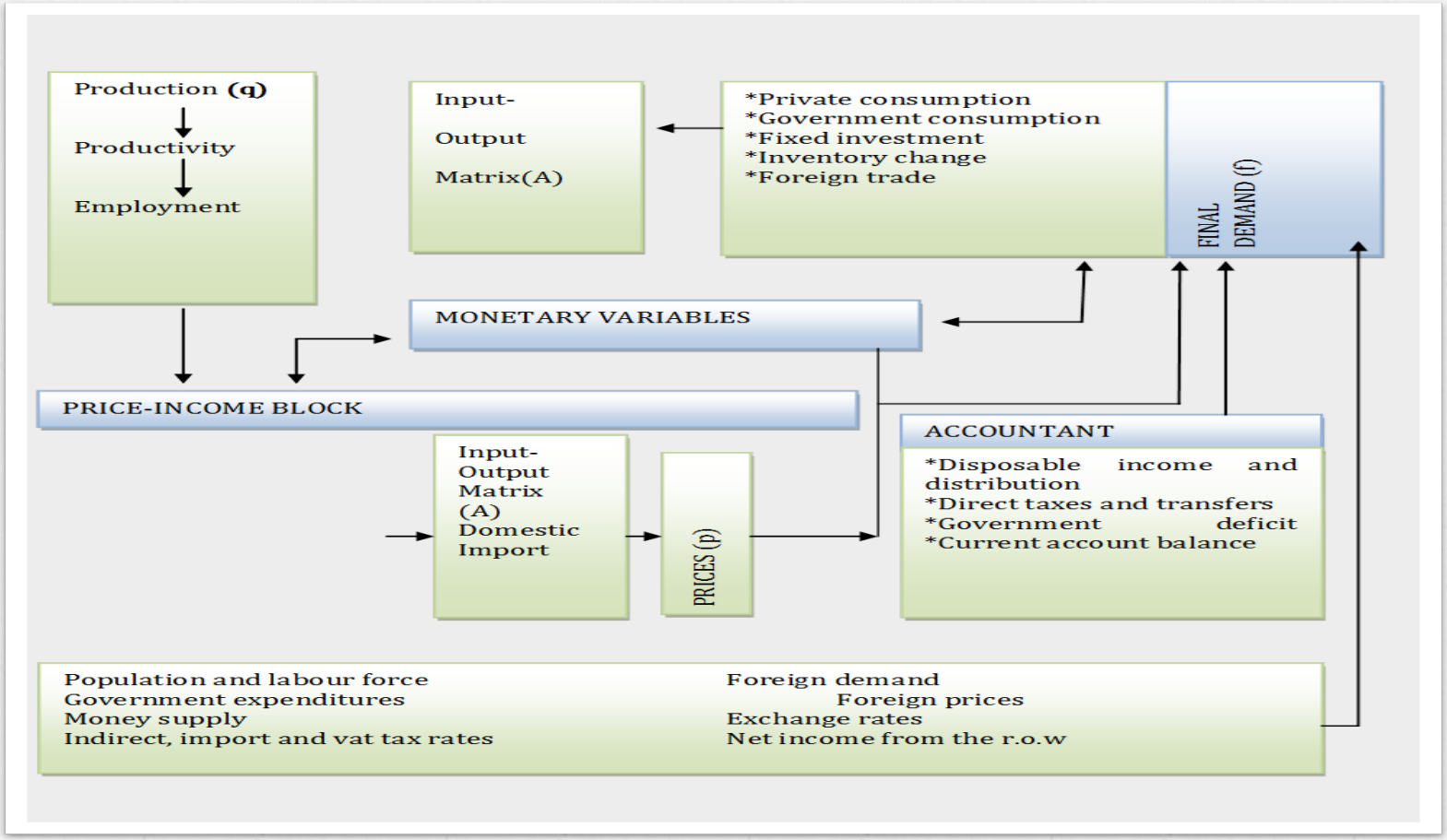
The structure of the presentation is as follows:

- Description of the Case Study – The impact of relaxing import restrictions
- Overview of the South African INFORUM(SAFRIM) model and Standard Input Output Analysis
- Activating the SAFRIM model
- Activating the Input-Output analysis model
- Comparing results of both of the analysis
- Conclusions

Description of the Case Study

- The production of broilers is a very important agricultural industry in South Africa.
- Phasing the tariff would have had an impact of 10% on the 2013 production.
- Meaning local production will decrease by about 166 700 tons and that imports will increase by the same amount.

Dynamic and inter-related workings of the SAFRIM Model



Schematic Representation of an Input-Output Table

Outputs / Inputs		Intermediate Demand/Outputs	Final Demand/Outputs					Total Gross Outputs
		1 . . . j . . . n	C	G	I	S	E	
Intermediate Inputs	1	x11 . . . x1j . . . x1n	C1	G1			I1	X1
	.	.		S1			E1	
	.	. QUADRANT I						
	.	.	QUADRANT II					
	i	xi1 xij xin						XI
	.	.	Ci	Gi			Ii	
	.	.		Si			Ei	
	.	.						
	n	xn1 xnj xnn						Xn
			Cn	Gn			In	
				Sn			En	
Primary Inputs	W	W1 Wj Wn	-					W
	T	T1 Tj Tn						T
	P	P1 Pj Pn	VC	VG		VI	VS	P
	M	M1 Mj Mn				VE		M
		QUADRANT III	QUADRANT IV					
Total gross Inputs		X1 Xj Xn	C	G			I	Z
				S			E	

Methodology to activate the SAFRIM model

- **Backward Linkages**
  - A. Construction phase (investment impact)
  - B. Operational impact
  - C. Changes in the production structure
- **Forward Linkages**
  - D. Price impact
- **Balancing constraints**

Methodology to Activate the Input Output Analysis

- The Input Output Model as stated above is used namely:

$$\Delta X = (I-A)\text{-}1\Delta F$$

- where:
  - ΔF = change in final demand; and
  - ΔX = change in output/production
- The change in ΔF constitute the model inputs for the various impacts such as the Construction phase, Government impact, Operational Impact and the User Price Cost Impact. It is fed into the model separately to be able to calculate the unique impact of each element or simultaneously to calculate the total impact. The impact constituted by the change in ΔX.

Summary of Results: Economic Impact on Gross Value Added (GDP, R Million 2013 constant prices) and employment (Numbers)

	Additional (Net) Investment Impact (Construction Impact)	Additional (Net) Operational Cost	Govern-ment Income Loss	Impact increase in personal disposable income (consumption expenditure)	Total Increme ntal Impact	Total Dynamic Impact
Multi-sectoral dynamic model (SAFRIM)						
GDP	-627	-1 567	-1 704	3 014	-884	16
Employment	-4 527	-22 349	-10 813	20 432	-17 257	-10 876
Standard Input Output Analysis						
GDP	-1 255	-3 361	-2 405	3 530	-3 491	N/A
Employment	-6 445	-23 622	-8 942	13 772	-25 237	N/A

Summary and conclusions

- The objective of the analysis was to compare the macro-economic impact of the relaxing of import restrictions on the broiler industry using the SAFRIM model and Input-Output analysis.
- The results of the impact scenario, according to both models show clearly that the positive effects that the consumers will receive due to cheaper broiler prices, will be outweighed by the negative effects, which will impact on the broiler industry.
- When the results of the two models are compared, its seems clear that both indicate developments moving in the same direction, although that of the Input-Output Model are somewhat larger than that of the SAFRIM model.
- The results of the SAFRIM model should be regarded as the more realistic, because of it being a more dynamic model which takes into account more interactive relationships between the various components of an economy.

- Thank You