Competitiveness in the Agribusiness Environment

(from analysis to cooperative strategy development - a South Africa case study)

1st Annual Lecture of the Cooperative Central Bank
University of Cyprus
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GREETINGS FROM STELLENBOSH UNIVERSITY, SOUTH AFRICA

My talk in a nut shell:

- Competitiveness is a necessary ingredient for agricultural existence in todays world……. If you want to manage it, you must measure & analyse it; otherwise it just remains a “good idea or theory”

The challenge:

- Designing a theoretically sound and systematic approach to measure and analyse competitive performance

Global Competitiveness measured and analysed

WORLD ECONOMIC FORUM

COMMITTED TO IMPROVING THE STATE OF THE WORLD

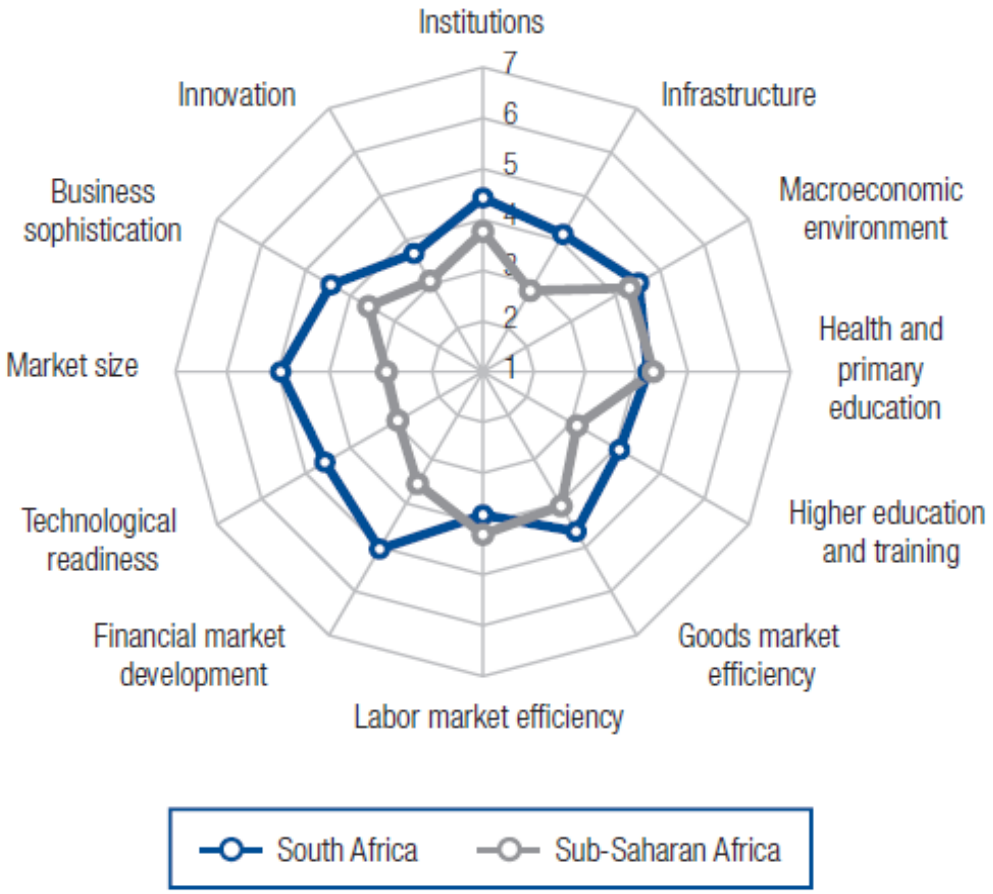
Insight Report

The Global Competitiveness Report

2015–2016

Global Competitiveness Index

	Rank (out of 140)	Score (1–7)
GCI 2015–2016	**49**	**4.4**
GCI 2014–2015 (out of 144)	56	4.4
GCI 2013–2014 (out of 148)	53	4.4
GCI 2012–2013 (out of 144)	52	4.4
Basic requirements (40.0%)	**85**	**4.3**
1st pillar: Institutions	38	4.4
2nd pillar: Infrastructure	68	4.1
3rd pillar: Macroeconomic environment	85	4.5
4th pillar: Health and primary education	126	4.2
Efficiency enhancers (50.0%)	**41**	**4.5**
5th pillar: Higher education and training	83	4.1
6th pillar: Goods market efficiency	38	4.6
7th pillar: Labor market efficiency	107	3.8
8th pillar: Financial market development	12	5.0
9th pillar: Technological readiness	50	4.6
10th pillar: Market size	29	4.9
Innovation and sophistication factors (10.0%)	**36**	**4.1**
11th pillar: Business sophistication	33	4.4
12th pillar: Innovation	38	3.7



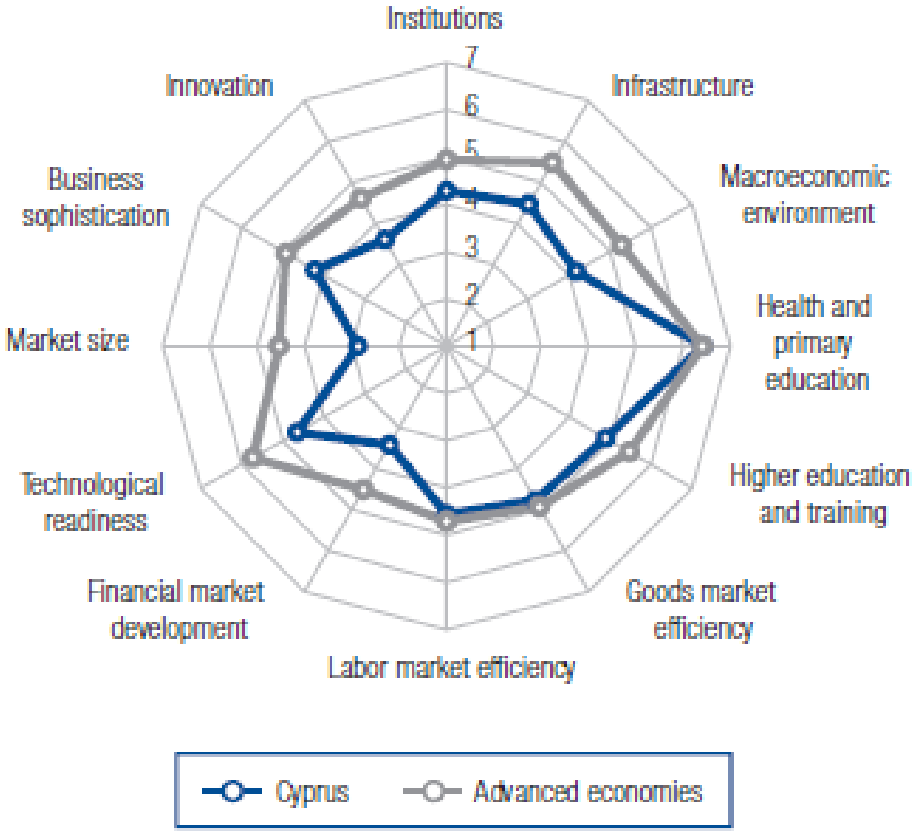
Stage of development

Cyprus Competitive Performance

Global Competitiveness Index

	Rank (out of 140)	Score (1–7)
GCI 2015–2016	**65**	**4.2**
GCI 2014–2015 (out of 144)	58	4.3
GCI 2013–2014 (out of 148)	58	4.3
GCI 2012–2013 (out of 144)	58	4.3
Basic requirements (20.0%)	**51**	**4.8**
1st pillar: Institutions	43	4.3
2nd pillar: Infrastructure	50	4.5
3rd pillar: Macroeconomic environment	109	4.2
4th pillar: Health and primary education	17	6.4
Efficiency enhancers (50.0%)	**59**	**4.2**
5th pillar: Higher education and training	41	4.9
6th pillar: Goods market efficiency	28	4.8
7th pillar: Labor market efficiency	34	4.5
8th pillar: Financial market development	108	3.4
9th pillar: Technological readiness	45	4.6
10th pillar: Market size	112	2.9
Innovation and sophistication factors (30.0%)	**45**	**3.9**
11th pillar: Business sophistication	47	4.2
12th pillar: Innovation	44	3.6

Cyprus Competitiveness Index



Stage of development

Content & Scope

Theme: To translate COMPETITIVENESS THEORY in to a useful tool for STRATEGIC AGRIBUSINESS ANALYSIS and PLANNING:

- Establish a theoretical framework of analyses
- Consider and define the business context of an industry and measure competitive performance
- Application to the SA Agricultural sector - 1961, 2005, 2008, 2016; ….some analysis on Cyprus too
- Reference a number of Fruit Industry case studies; and
- Propose future research and enquiry

Enquiry in to sector/industry/firm level competitiveness?

Comprehensive economy wide views available but not much industry level enquiry:

- IMD – WORLD COMPETITIVENESS YEARBOOK
- WEF - GLOBAL COMPETITIVENESS REPORT

Agri-focussed analysis? rather constrained views

- Agri-benchmarking in fruit industry – O'Rourke, production cost based.
- Marketing Decision Support Models (DSM) & Market Attractiveness Index (MAI)?
- Profits; productivity; ROI; ROR, etc. ?

THE AGRI-COMPETITIVENESS ANALYSIS PROGRAMME (ACAP)

Stellenbosch University

1. **Approach and process:**
   - New competitiveness theory framework
   - Participative analysis & planning - stakeholders/client inputs
2. **Funding (in whose interest?):**

   Project based: Industry, banking sector (Standard Bank AgriBusiness), government (Western Cape Dept of Agriculture), agribusiness/commodity groupings
3. **Dissemination:**

   Annual Agri-Competitiveness Seminar, publications, papers
4. **Selected commodities:**

   30 value chain groupings; 1600 observations: Deciduous- citrus-stone fruit, wine, dates, grains, dairy, sugar, forestry, meat and game…


AGRI SA
Home of the South African farmer
Ikhaya lomlimi waseNingizimu Afrika
Tuiste van die Suid-Afrikaanse boer
Lehae la balimi ba Afrika Borwa

The theory of competitiveness: From Absolute Advantage (Adam Smith, 1776) to Competitive Advantage (Porter, 1998)

- Mercantilism; “strengthening the country” (1500-1800)
- Classical Trade Theory:

- Absolute Advantage – wealth is created by natural endowments (Adam Smith, 1776)

- Comparative Advantage - specialisation theory (David Riccardo, 1817)

- Politics of Protection (J.S. Mill, 1873)

- Neoclassical models:

- Factor Proportions Theory – TFP (Heckscher-Ohlin, 1919,1933)

- Factor Price Equalisation Theorem – (Samuelson, 1948)

Theoretical framework:

- Challenges to Comparative Advantage:

- Leontief Paradox – opposing the H-O Theory (V. Leontief, 1953)

- Wealth through Economies of Scale (Krugman, 1979; Lancaster, 1979)

- New Competitiveness Theory:

- Competitive Advantages – **wealth through strategic choices (Michael Porter, 1990;1998);** and applications:

- Nine Factor Model (Cho, 1994)

- Double Diamond Models (Rugman & Cruz,1993; Moon, Rugman &Verbeke,1995)

- WEF (Global Competitiveness Report); IMD (WCR)

National industry or sector researched	Authors or researchers	Proxies for measurements and/or models/frameworks applied	Verdicts or conclusions
The European agro-food system	ISMEA (1999)	RTA & Porter diamond model	Scope for European Commission/Union integration
Hungarian agricultural-food sectors	Fertő and Hubbard (2002)	RCA and RTA	Hungary has a comparative advantage for 11 of the 22 aggregated product groups.
Namibian table grape production	Thomas (2007)	Porter diamond model	The Namibian table grape chain is relatively competitive in the international arena. Primary production in becoming more competitive.
Livestock product exports from India	Kumar (2010)	Export and import analysis – nominal protection coefficient (NPC)	India is competitive in the export of meat products, except poultry.
China's agricultural products	Qiang, Yong-Sheng and Xiao-Yuan (2011)	RCA and trade coefficient specialisation (TCS)	Ability of direct factors is strong in terms of transformation from cost advantage and price advantage into competition advantage.
Poultry production in the Czech Republic	Belová et al. (2012)	Trade-related comparisons – Lafay Index (LFI)	The comparative disadvantage deepens in relation to European Union countries.
Global Pear Market	Valenciano, Giancinti and Uribe (2012)	RCA	Geography plays a main role in competitiveness with nearby markets, as happens in markets with free trade.
Tobacco sub-sector in the Republic of Macedonia	Tuna, Georgiev and Nacka (2013)	RCA and Porter diamond model	The republic of Macedonia has favourable conditions and a competitive advantage for producing tobacco.
Canadian wheat, beef and pork sectors	Sarker and Ratnasena (2014)	RCA and normalised revealed comparative advantage (NRCA)	Canada has enjoyed international competitiveness in the wheat sector, but not in the pork sector, whilst the beef sector has grown rapidly since 1992.

ACAP approach to COMPETITIVE PERFORMANCE ANALYSIS: A Five Step analytical framework

1. DEFINITION	Contextualise and define agri-competitiveness
2. MEASUREMENT	Empirically measure competitive performance - IF YOU MEASURE YOU CAN MANAGE
3. IDENTIFY FACTORS AND CLUSTER INTO DETERMINANTS	Identify, through interviews with industry experts and knowledgeable stakeholders (Executive Survey), trends and major factors impacting on competitive performance
4. ANALYSE	Establish the major Determinants of Competitiveness through the application of the "new" competitiveness theory (Porter, 1990)
5. STRATEGY PLANNING	Develop strategies to enhance the competitiveness of Agricultural Industries in SA -Participative planning (Log Frames…)

Step 1:DEFINING COMPETITIVE PERFORMANCE

"The ability of an industry/firm/sector to attract investment and other scares resources by trading products in the global market, whilst striving to earn at least the opportunity cost of resources engaged" (Freebairn, 1987)

Notions of:

- Sustained international trade
- Scarcity; opportunity cost;
- Trends – "understand the trends and you know what is happening"

STEP 2: MEASUREMENT AND ANALYSES:

TRADE BASED MEASURES

- RCA and RTA
- Other Indices; EMS, NEI,

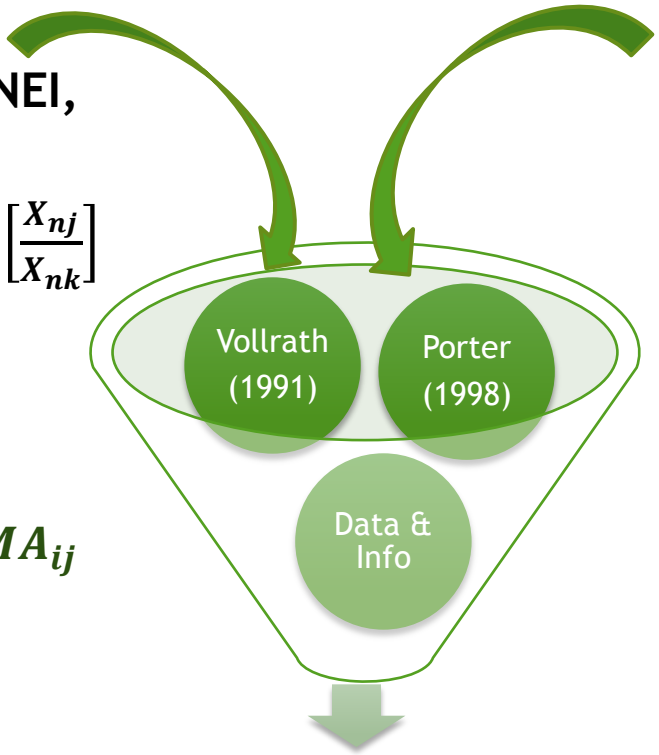
$$RCA_{ij} = RXA_{ij} = \left[\frac{X_{ij}}{X_{ik}}\right] / \left[\frac{X_{nj}}{X_{nk}}\right]$$

$$RMA_{ij} = \left[\frac{M_{ij}}{M_{ik}}\right] / \left[\frac{M_{nj}}{M_{nk}}\right]$$

$$RTA_{ij} = RXA_{ij} - RMA_{ij}$$

(Balassa 1966, Vollrath 1991)

Data:
FAO STATS -1961;
TRADEMAP -2001

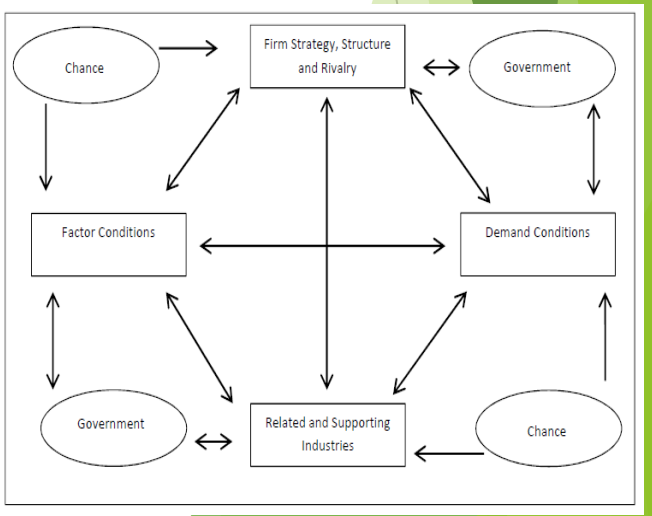


COMPREHENSIVE ASSEMENTS

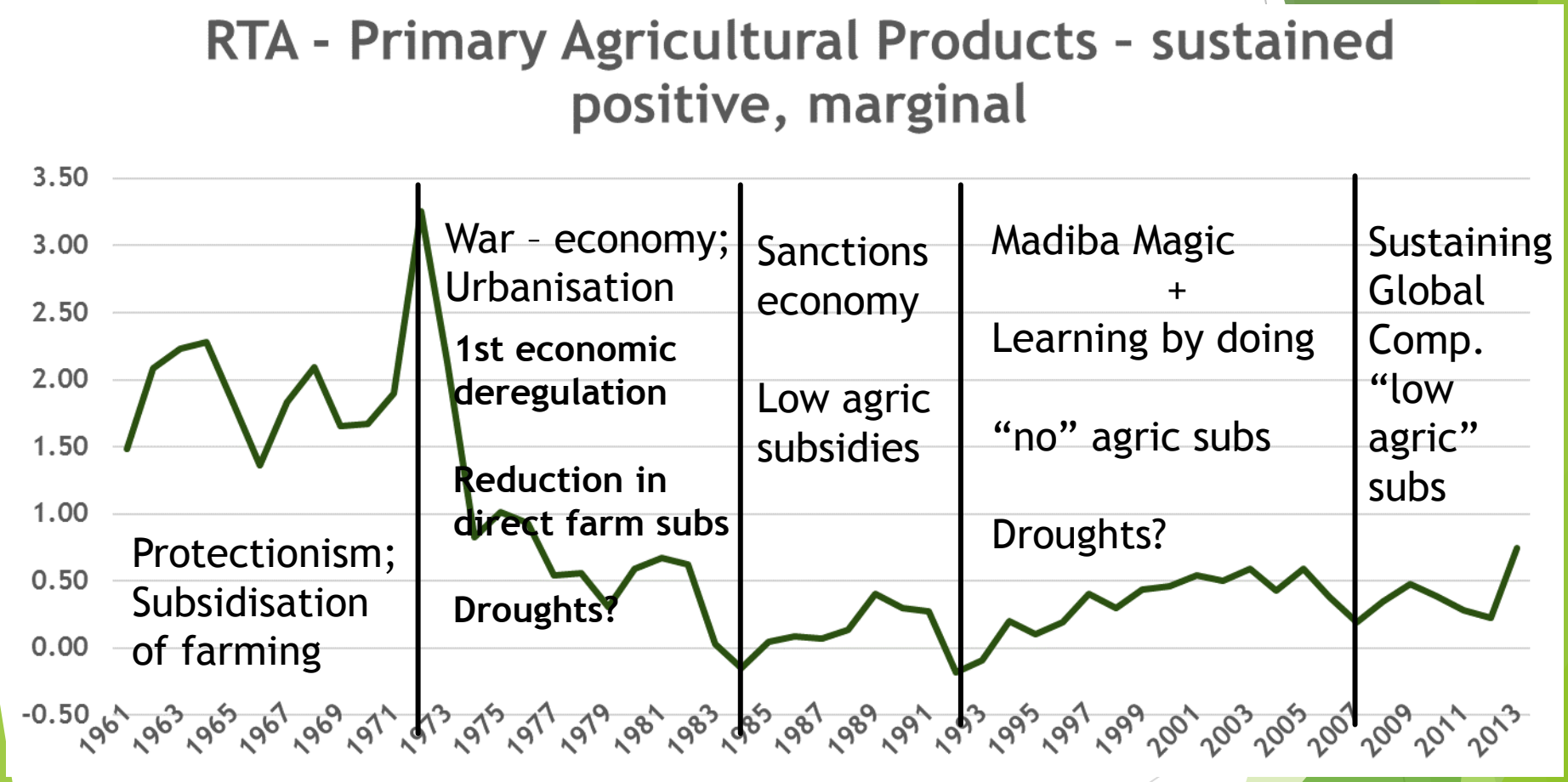
STRATEGIC ANALYSIS & PLANNING

- Cost Measures
- Profitability
- Productivity and Efficiency measures

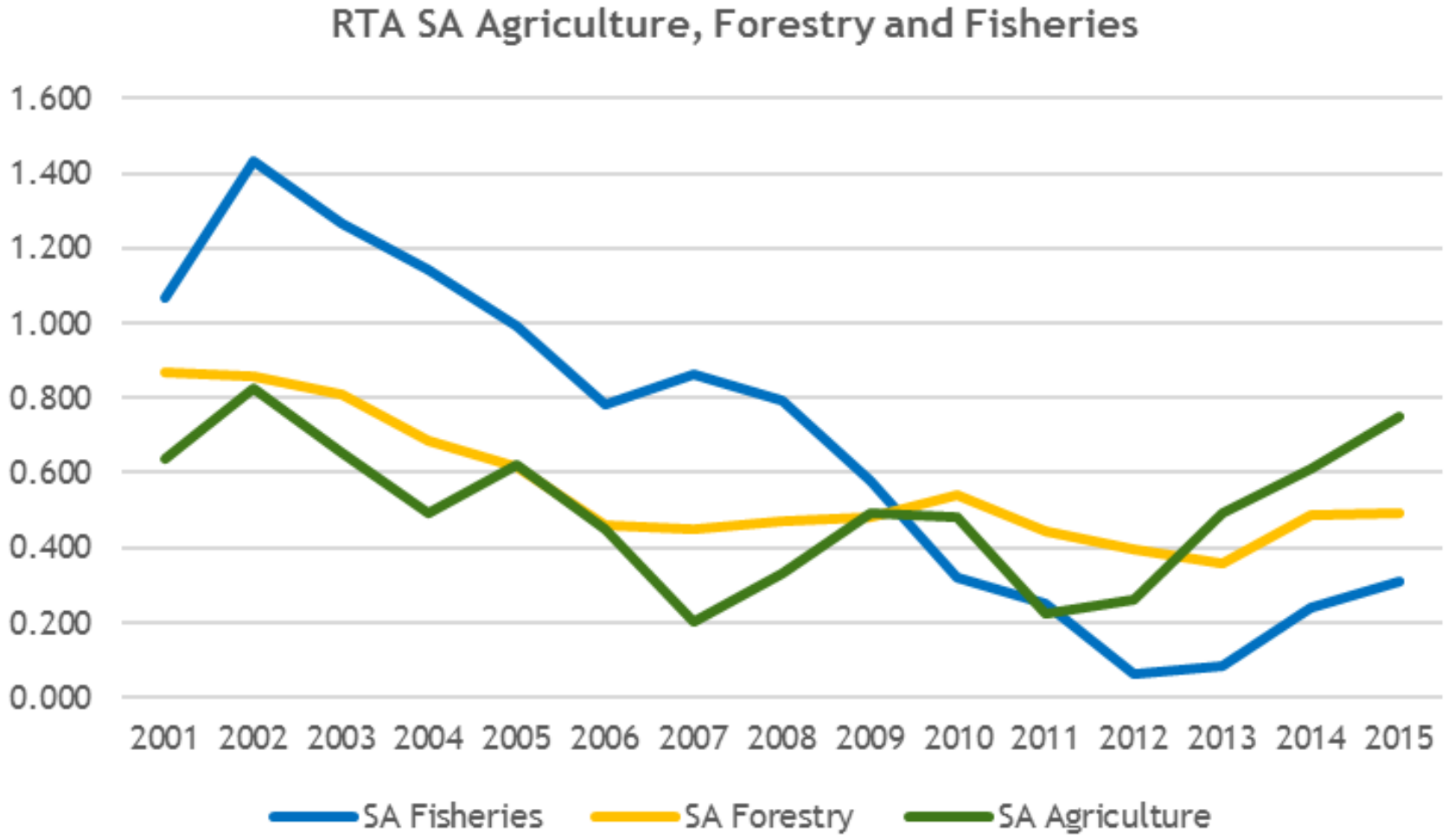
- PORTER DIAMOND;EXEC SURVEYS; FOCUS GROUPS



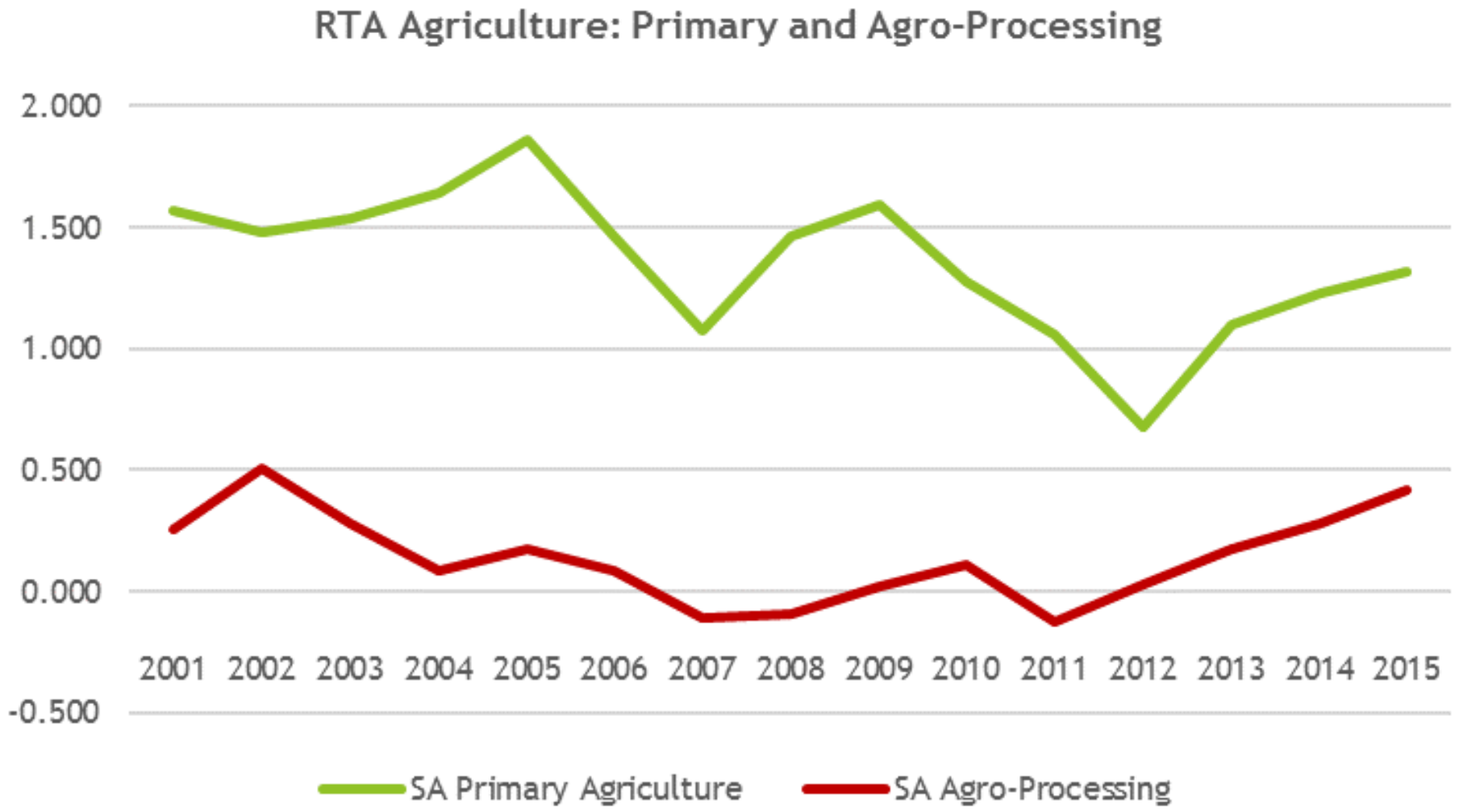
SA Agricultural competitiveness: long term trends (FAO Data)



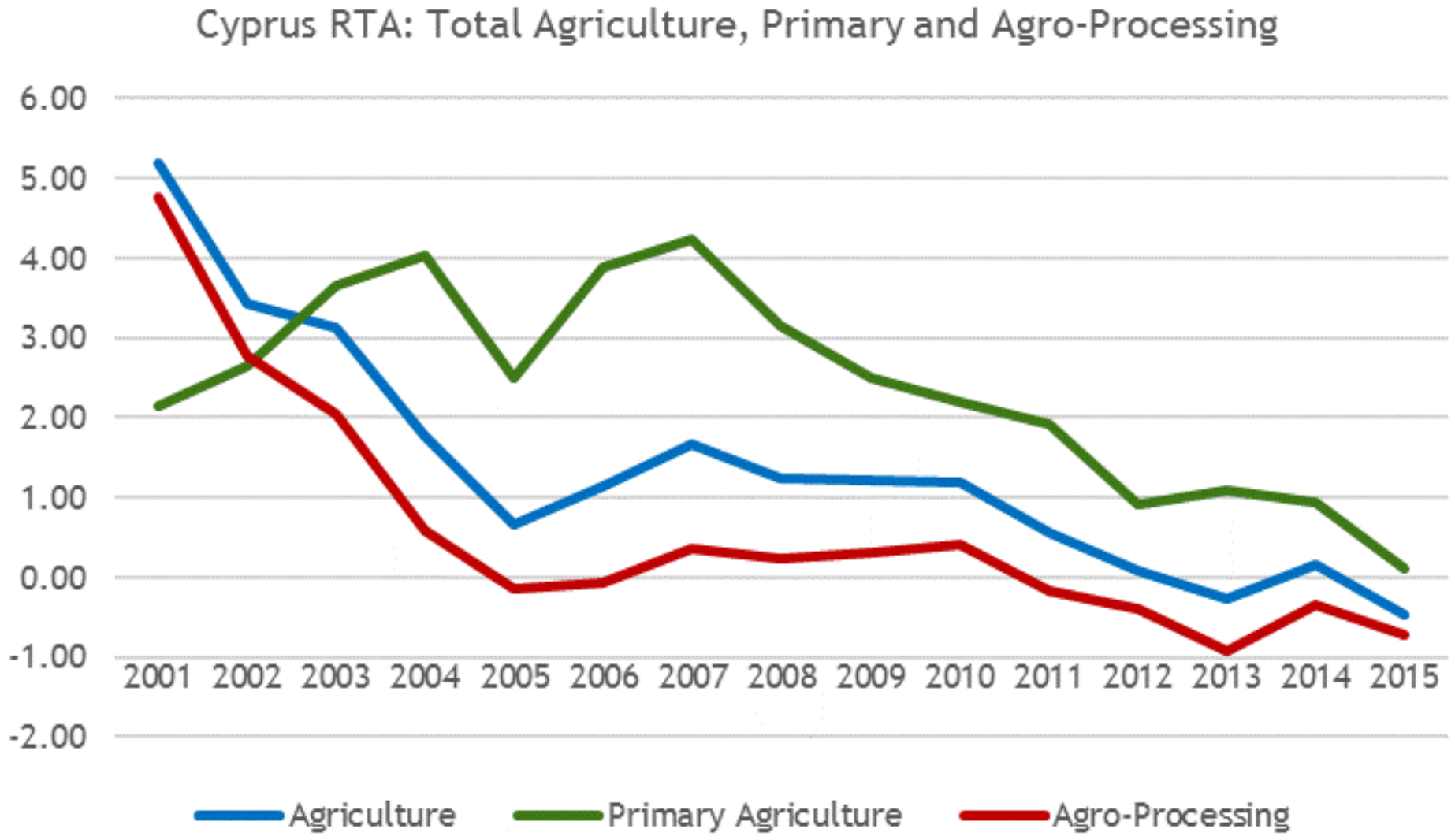
Industry RTA's 2001 -2015 : Agriculture, Forestry and Fisheries (ITC Data)



Industry RTA's : Primary Agriculture vs Agro-Processing (ITC Data)



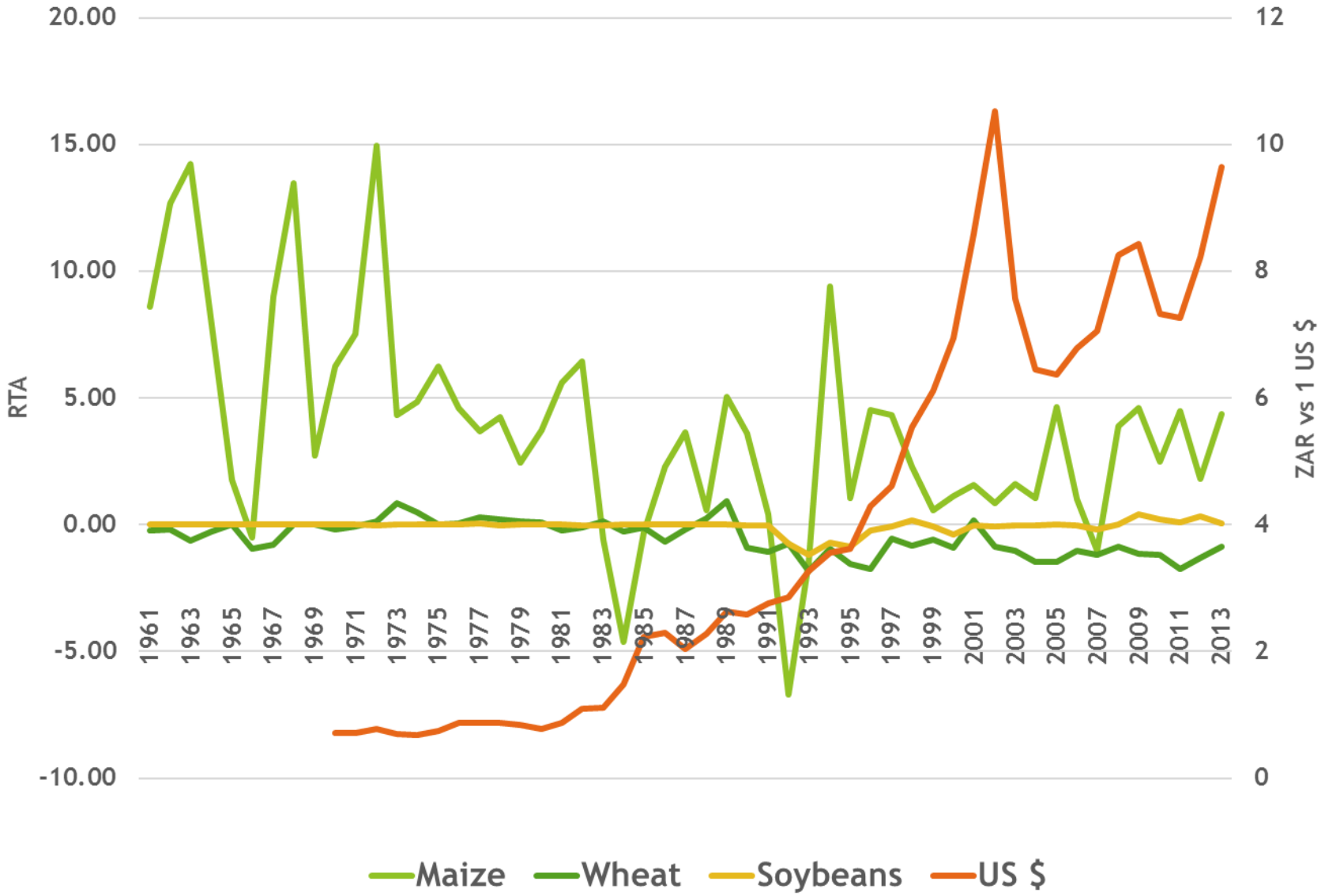
Cyprus Agricultural Industry RTA, Primary and Agro-processing RTA's (ITC Data)



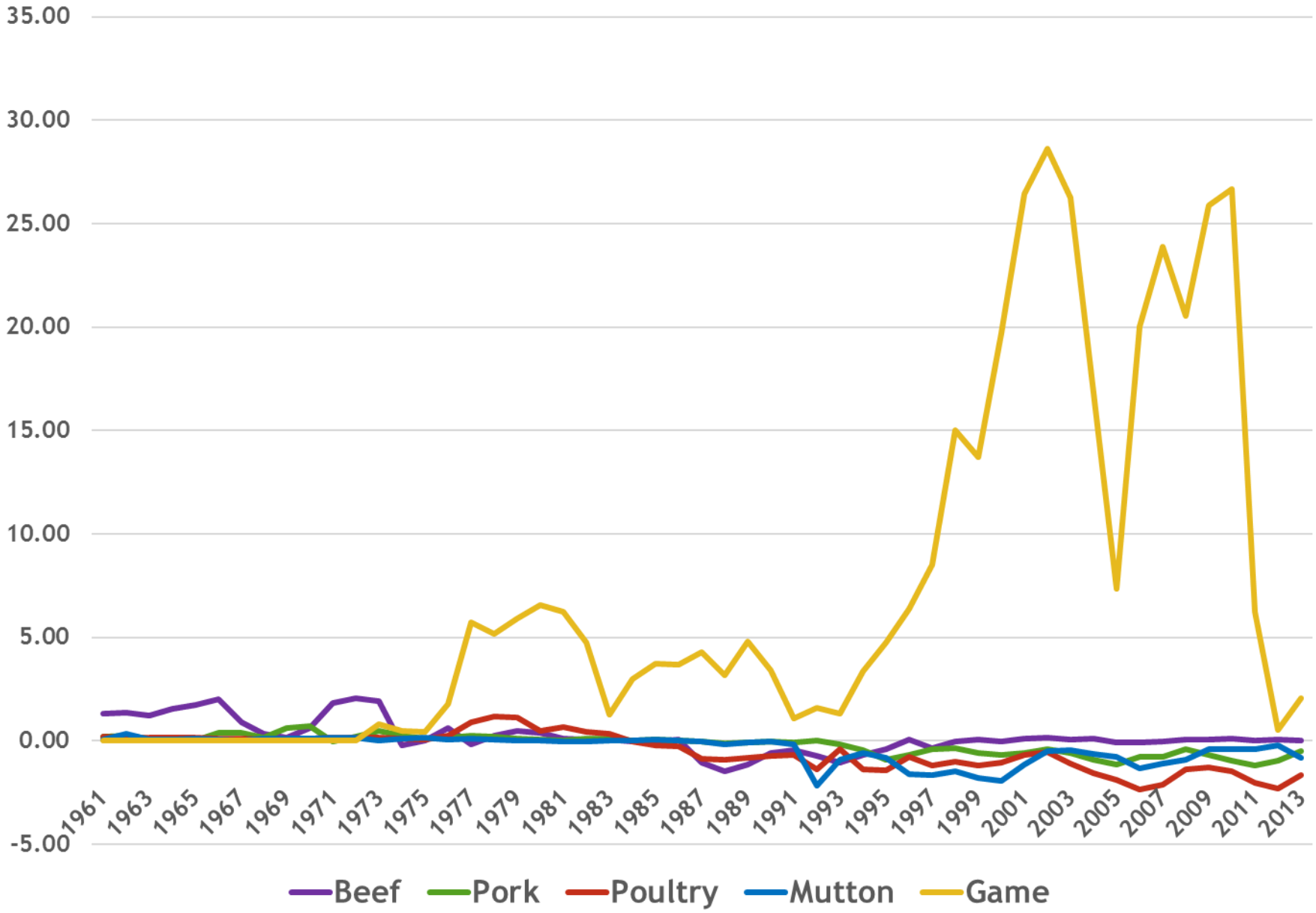
RSA industry RTA's : SA Grain value chains Codes: Blue + yellow- marginal; red - negative

HS Code	Product Description	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
110313	Maize (corn) groats and meal	5.19	23.95	13.00	4.09	121.22	6.79	1.44	23.66	34.19	30.17	24.54	36.94	47.89	48.78	62.91
110220	Maize (corn) flour	6.56	24.36	6.01	2.82	15.86	2.59	4.31	11.83	10.18	13.69	11.20	8.61	11.48	14.20	10.81
110419	Cereals, rolled or flaked grains nes	0.56	0.29	0.23	-0.57	-0.02	0.40	0.88	0.86	0.07	0.57	1.15	2.89	1.92	1.55	4.13
110812	Maize (corn) starch	10.83	13.66	10.85	7.28	6.46	2.27	1.96	3.26	4.00	3.83	3.55	2.40	3.49	3.48	2.79
110320	Pellets	0.00	0.45	5.24	0.06	4.69	6.72	4.66	5.14	9.46	8.56	4.17	6.00	2.50	1.59	2.64
110319	Cereal groats and meal nes	36.39	1.83	-2.97	-4.47	-9.50	0.10	0.17	0.27	0.53	6.12	4.55	5.69	5.00	1.18	2.29
110100	Wheat or meslin flour	2.39	3.32	1.57	0.96	0.47	0.43	0.12	0.36	1.28	2.11	1.62	2.22	2.35	1.62	2.11
110610	Flour and meal of the dried leguminous vegetables of heading	0.22	-1.02	-0.21	-0.10	0.19	1.50	-0.27	-0.48	-0.55	4.98	2.36	6.77	0.08	1.08	0.97
110819	Starches nes	-0.15	0.13	0.37	0.16	-0.04	-0.05	-0.06	-0.60	-0.11	1.76	0.80	1.16	0.94	0.60	0.54
110290	Cereal flour nes	6.13	1.34	0.40	0.53	0.99	0.64	0.18	0.46	0.77	1.87	3.03	2.66	0.85	0.94	0.46
110422	Oats, hulled,pearled,sliced or kibbled	0.04	0.11	0.10	-0.21	-2.07	-1.60	-0.08	1.73	-3.40	0.05	-0.06	-0.26	1.16	0.17	0.43
110510	Potato flour and meal	2.02	1.27	0.57	0.42	0.80	0.32	1.72	0.23	2.09	0.47	-12.45	-16.70	-17.23	0.32	0.30
110811	Wheat, starch	-0.45	-0.61	-0.23	-0.38	-0.23	4.76	0.04	-0.17	-0.14	2.91	0.62	0.29	0.27	0.50	0.23
110429	Cereals, hulled, pearled, sliced or kibbled nes	0.02	0.19	0.09	0.05	0.03	-0.89	-2.30	0.14	0.40	1.92	0.51	0.27	0.39	0.11	0.14
110520	Potato flakes	-0.85	-0.82	-0.64	-0.85	-0.79	-0.68	-1.10	-0.52	0.13	-0.06	-0.05	-0.46	0.29	-0.17	0.02
110430	Germ of cereals, whole, rolled, flaked or ground	0.03	0.03	0.01	0.01	0.07	0.07	0.02	-0.06	-0.01	-0.12	0.46	0.14	0.42	0.27	0.02
110210	Rye flour	-0.61	2.60	-2.07	-4.18	-4.74	-4.28	-1.71	-1.76	-2.72	-1.12	-1.03	0.00	0.00	0.00	0.00
110230	Rice flour	-0.02	0.02	-0.01	-0.01	0.01	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

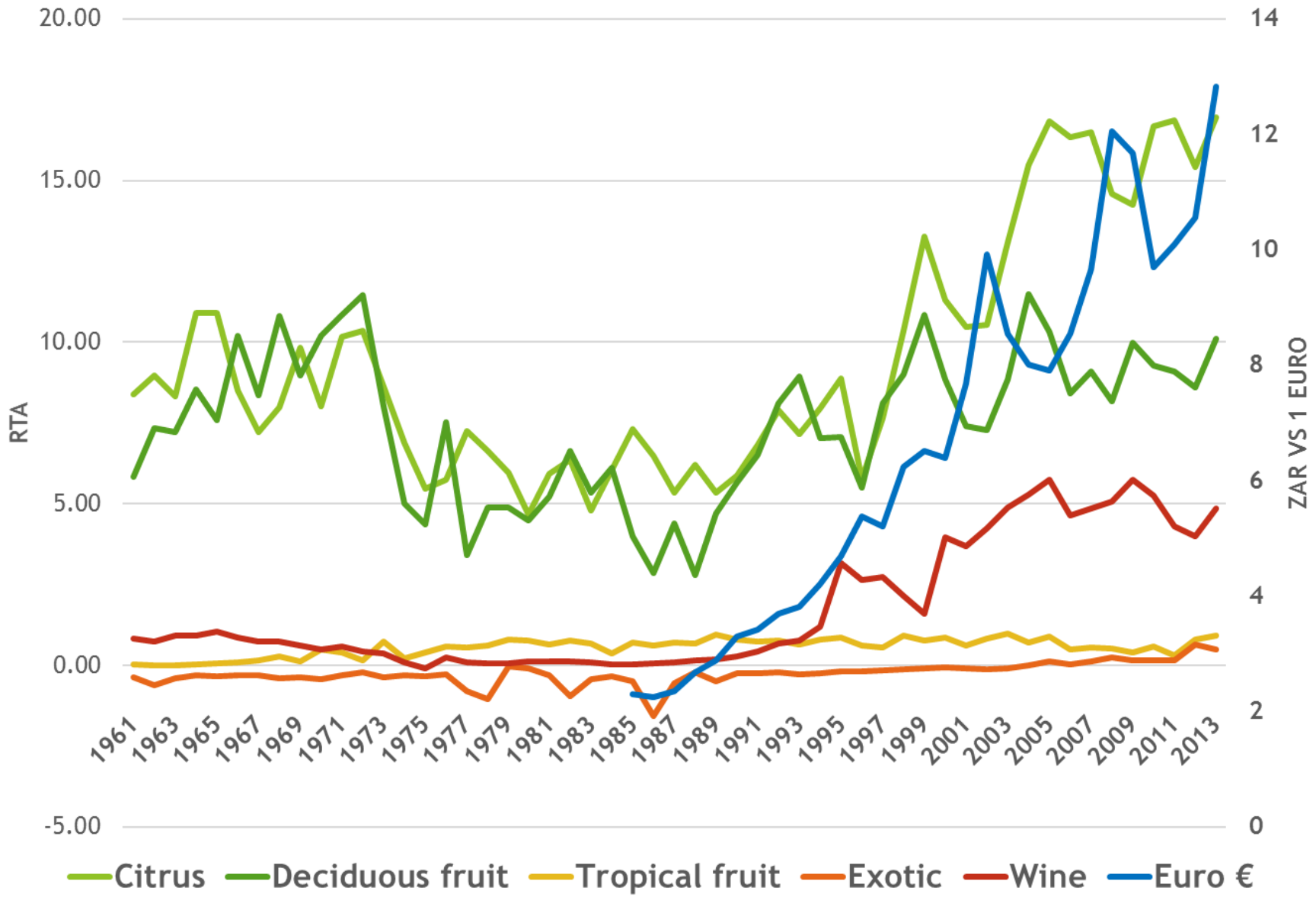
RTA SA Grain & Oilseed compared with US $



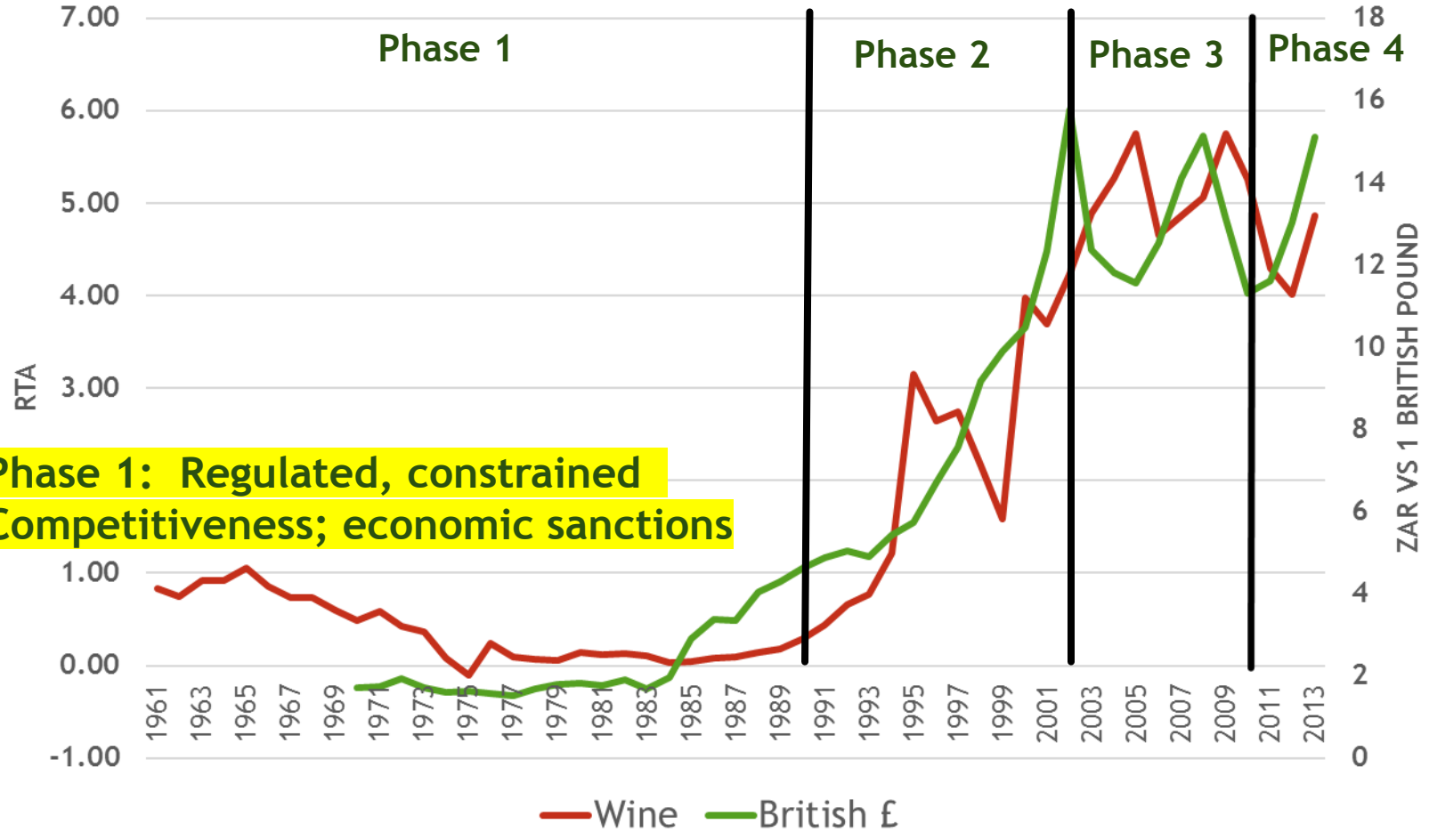
RTA SA Meat Types



RTA SA FRUIT GROUPINGS COMPARED TO EURO



RTA SA WINE COMPARED TO BRITISH POUND



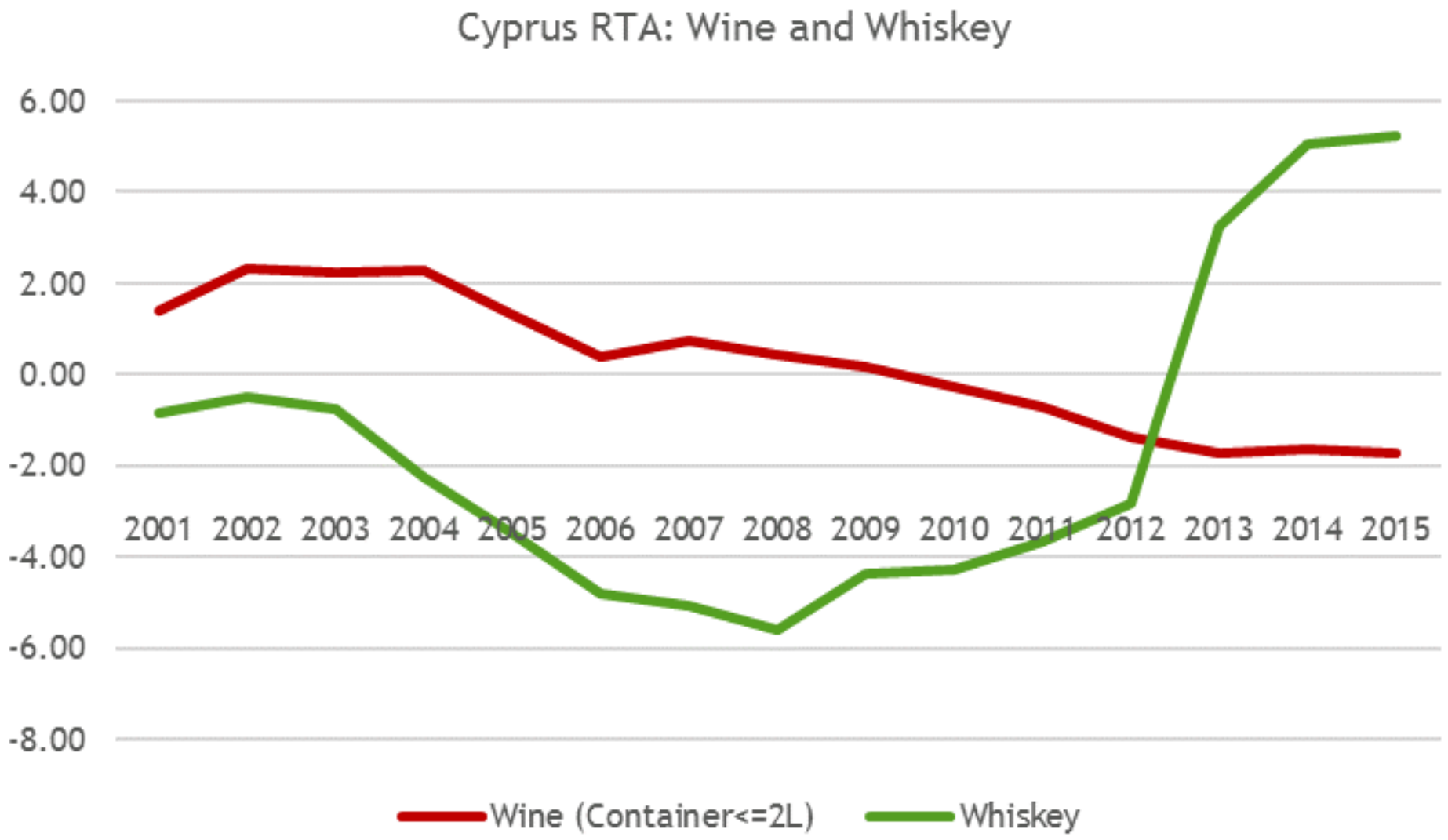
Phase 1: Regulated, constrained Competitiveness; economic sanctions

Phase 2: The Madiba Magic Period - learning the trade (1990-2001)

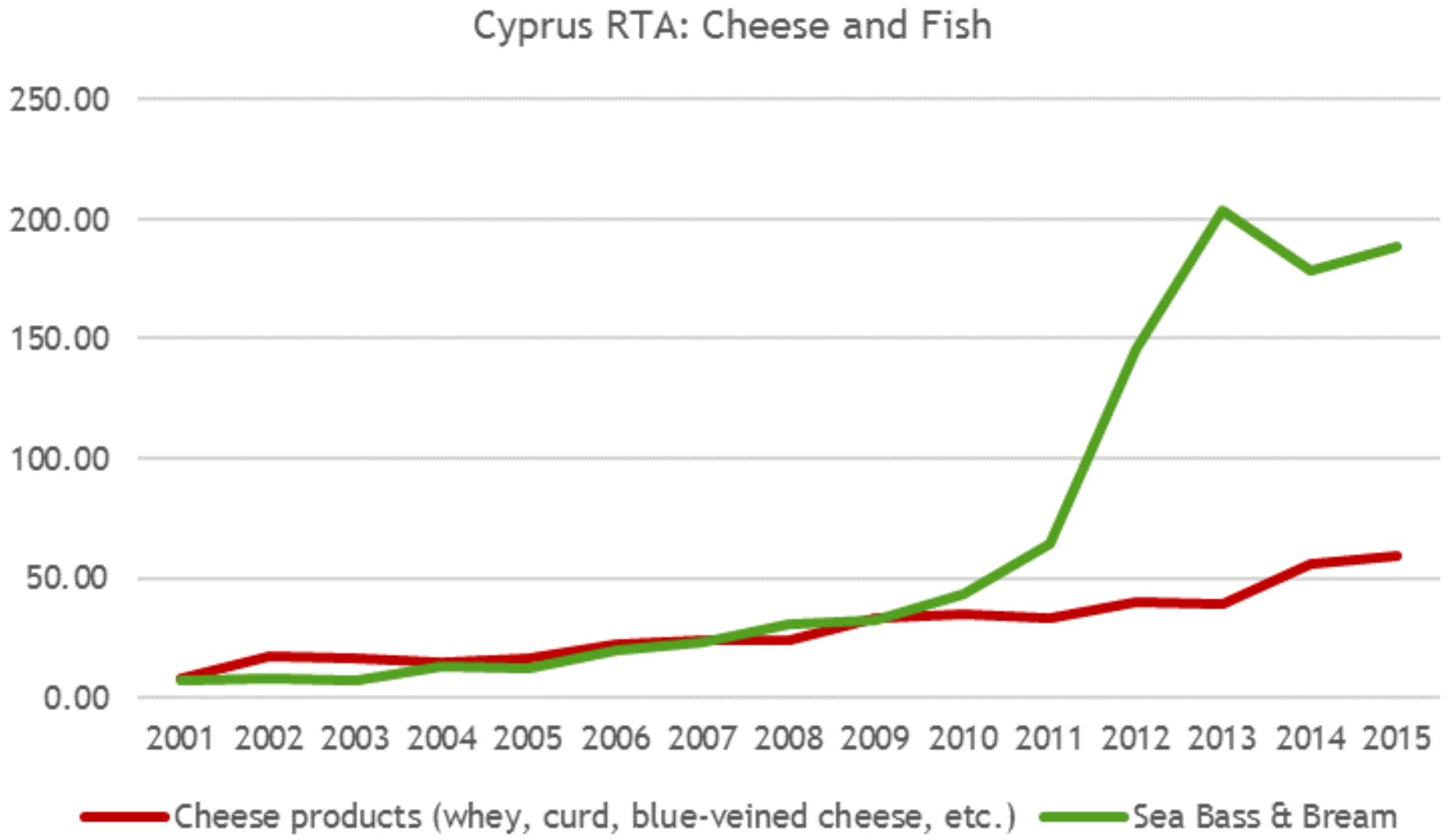
Phase 3: Towards becoming a global player (2001 -2010)

Phase 4: Operating in a constrained competitive environment (2010 -)

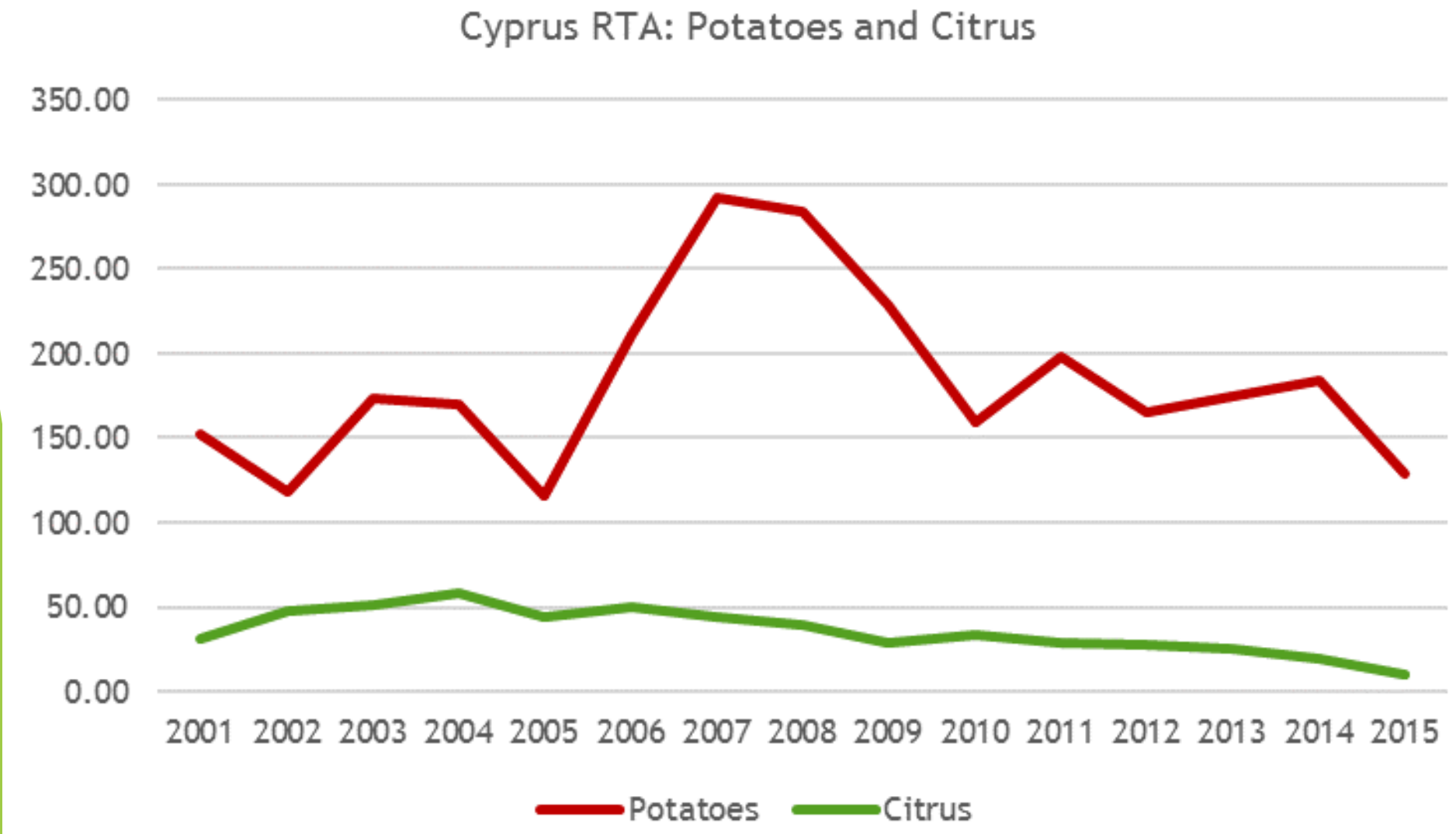
Cyprus Agricultural Industry
RTA's: Wine and Whiskey (ITC Data)



Cyprus Agricultural Industry RTA's: Cheese and Fish (ITC Data)



Cyprus Agricultural Industry
RTA's: Potatoes and Citrus (ITC Data)

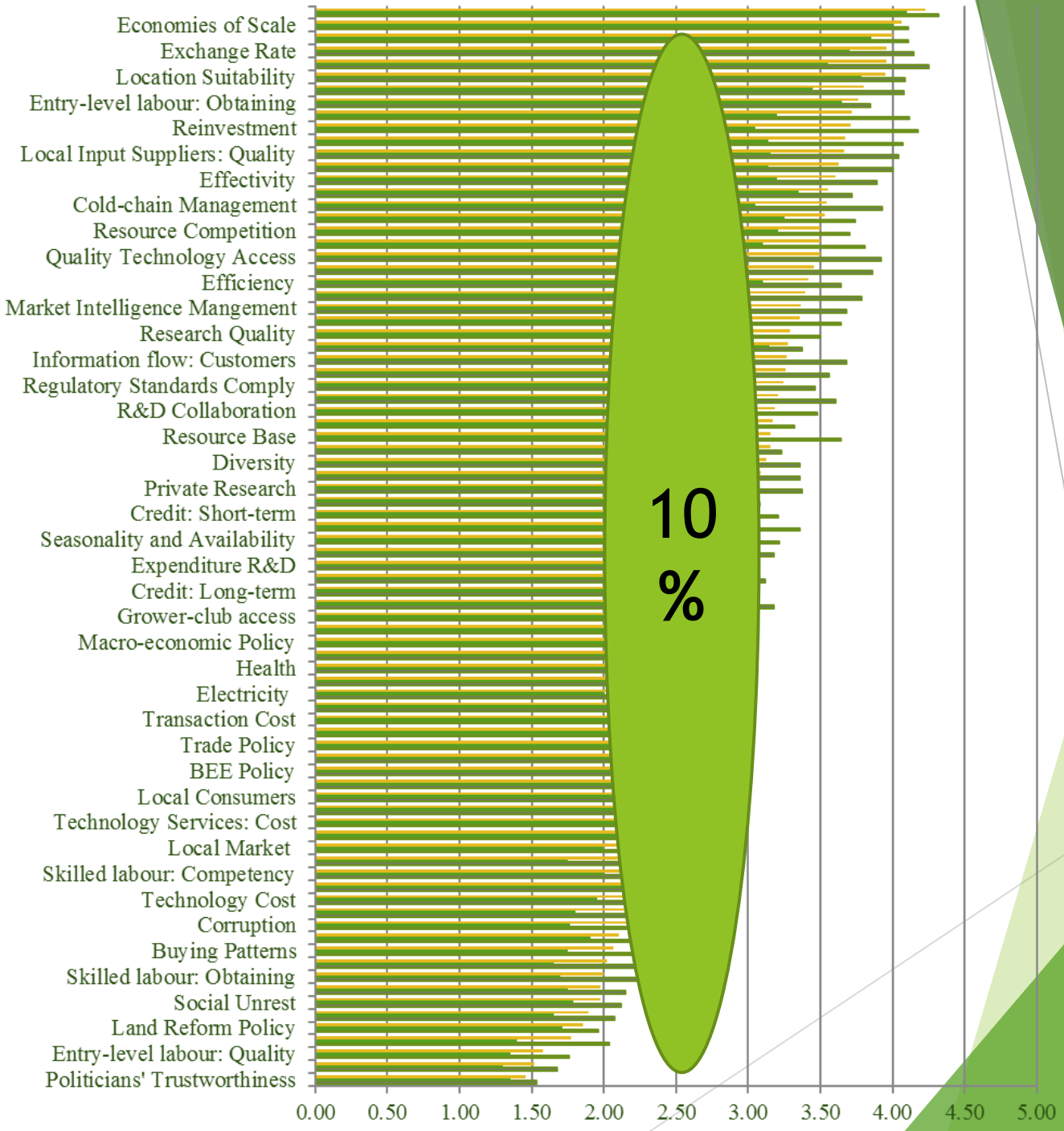


Step 3: Which factors determine industry level competitive performance?

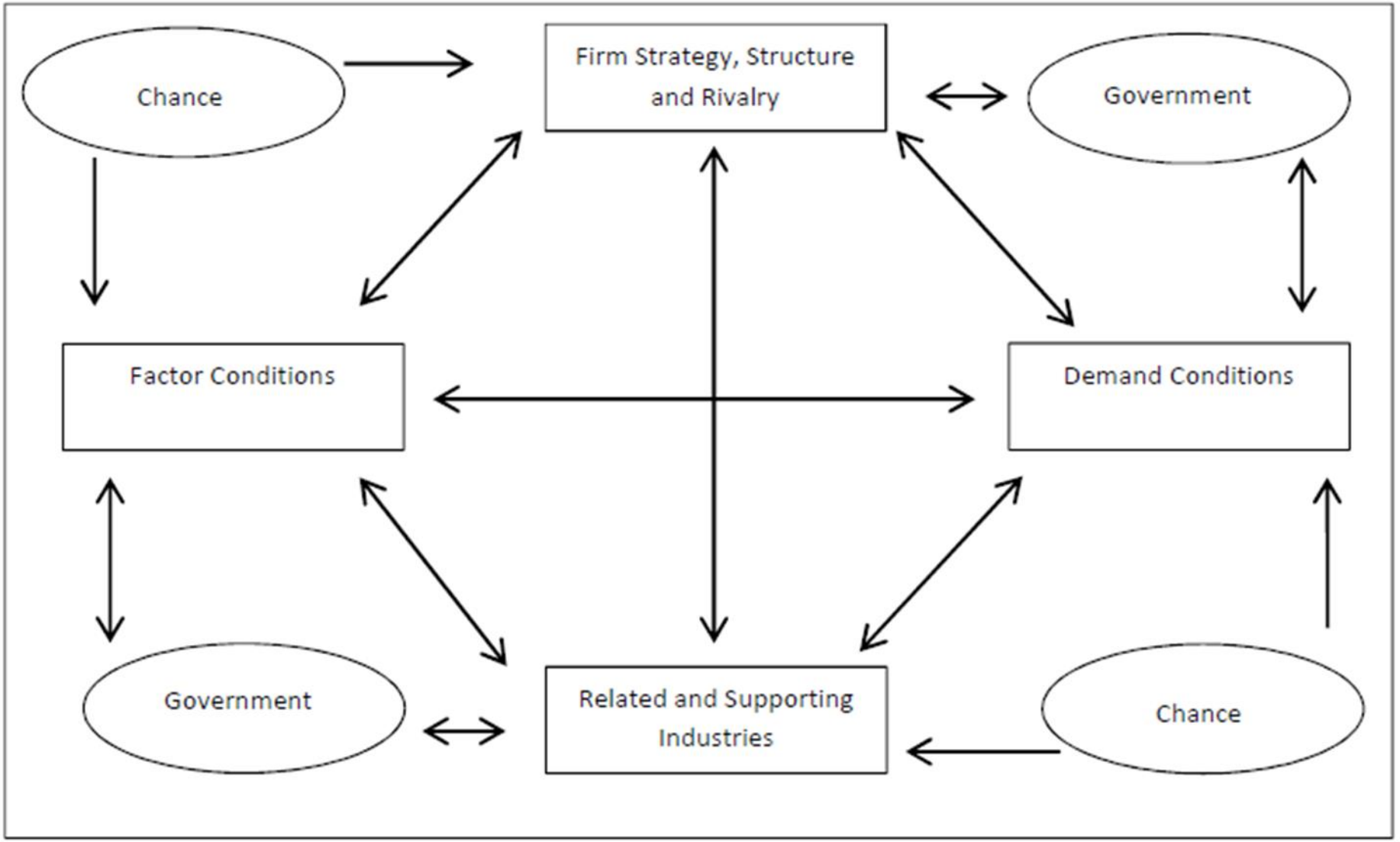
- **Executive Survey (views industry leaders, investors, producers, ceo's):**

  - Identify the **major operational factors** affecting competitive performance (2015 Deciduous Fruit Industry Exec Survey; Wine Exec Survey, etc)

- **Determine views in value chain clusters:**
  - "Trade" respondents in export, trade and marketing
  - "Agribusiness" respondents in primary production, input supply, storage, winemaking,


Economies of Scale
Exchange Rate
Location Suitability
Entry-level labour: Obtaining
Reinvestment
Local Input Suppliers: Quality
Effectivity
Cold-chain Management
Resource Competition
Quality Technology Access
Efficiency
Market Intelligence Mangement
Research Quality
Information flow: Customers
Regulatory Standards Comply
R&D Collaboration
Resource Base
Diversity
Private Research
Credit: Short-term
Seasonality and Availability
Expenditure R&D
Credit: Long-term
Grower-club access
Macro-economic Policy
Health
Electricity
Transaction Cost
Trade Policy
BEE Policy
Local Consumers
Technology Services: Cost
Local Market
Skilled labour: Competency
Technology Cost
Corruption
Buying Patterns
Skilled labour: Obtaining
Social Unrest
Land Reform Policy
Entry-level labour: Quality
Politicians' Trustworthiness
10 %
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
General Industry
Cluster 2
Cluster 1

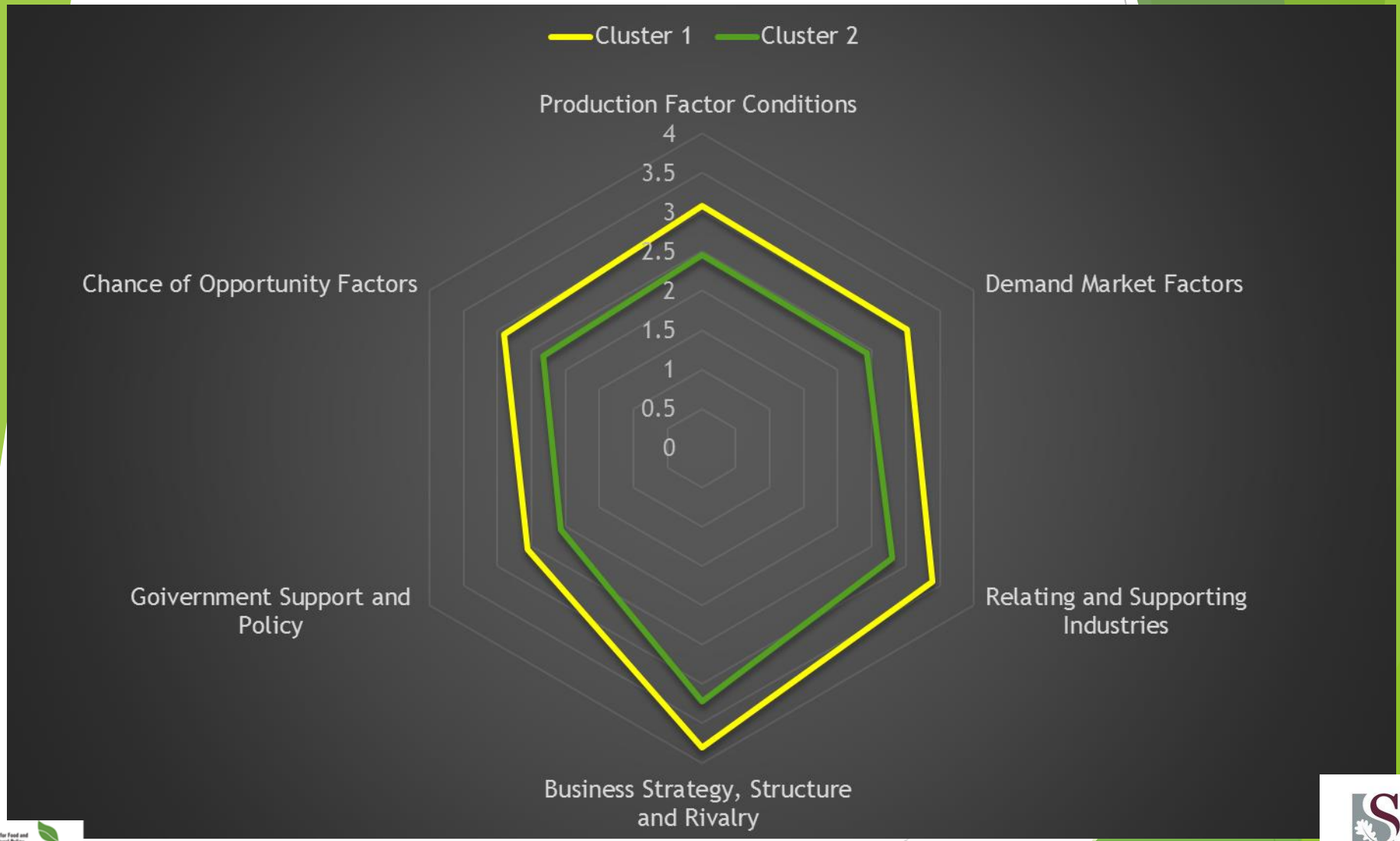
Step 4:Determinants of Competitive Industry Performance(The Porter Diamond)



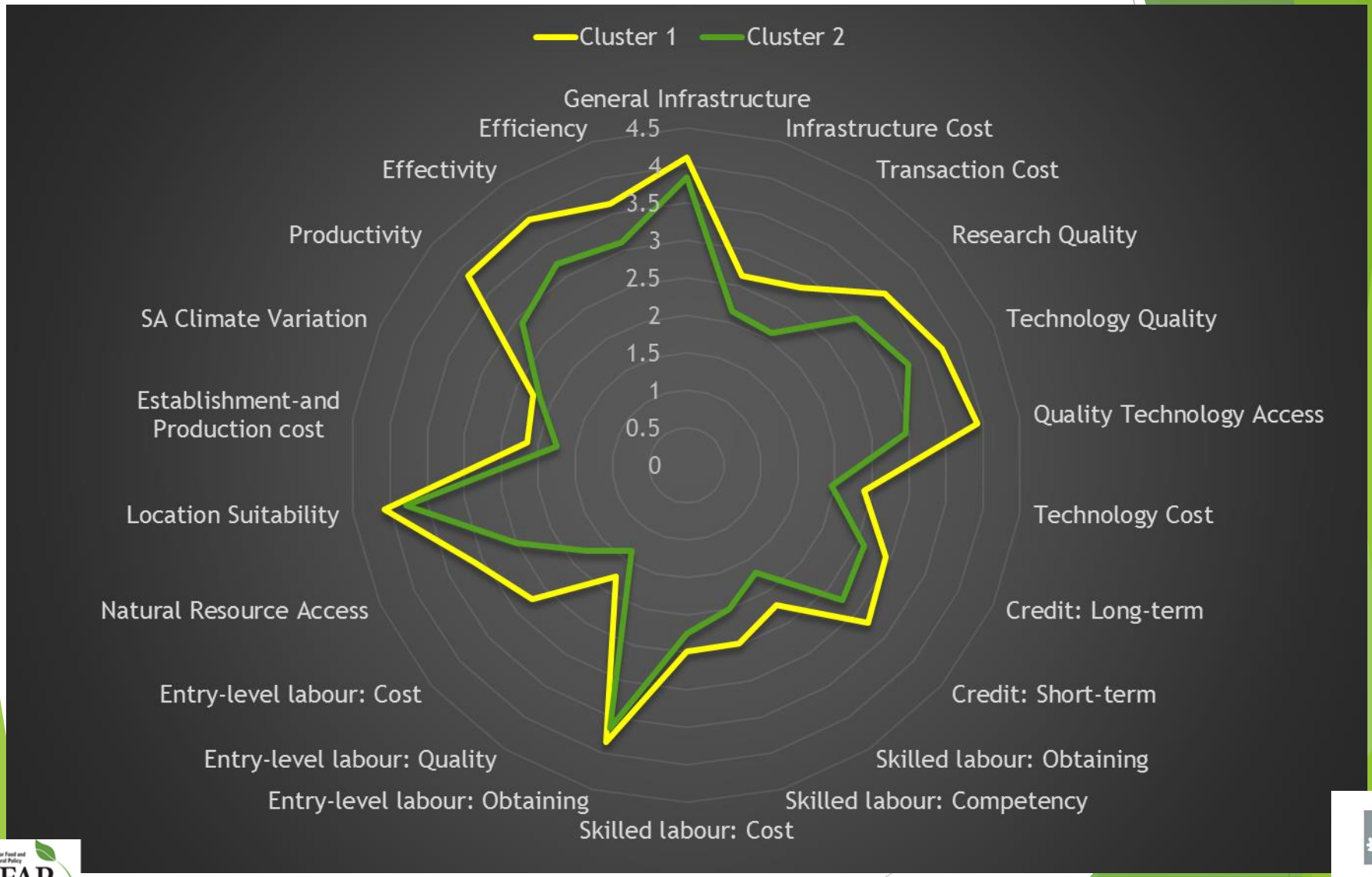
Step 4: The major determinants of competitiveness - Porter Diamond Analysis, 2015

Porter determinants of Competitiveness:	Trade & Value - adding (Cluster 1)	Agbusiness & Primary production (Cluster 2)	Industry (overall)
Business Strategy, Structure and Rivalry	3.81	3.22	3.55
Relating and Supporting Industries	3.39	2.80	3.14
Production Factor Conditions	3.08	2.45	2.81
Demand Market Factors	3.01	2.42	2.76
Chance of Opportunity Factors	2.90	2.33	2.66
Government Support and Policy	2.56	2.07	2.35

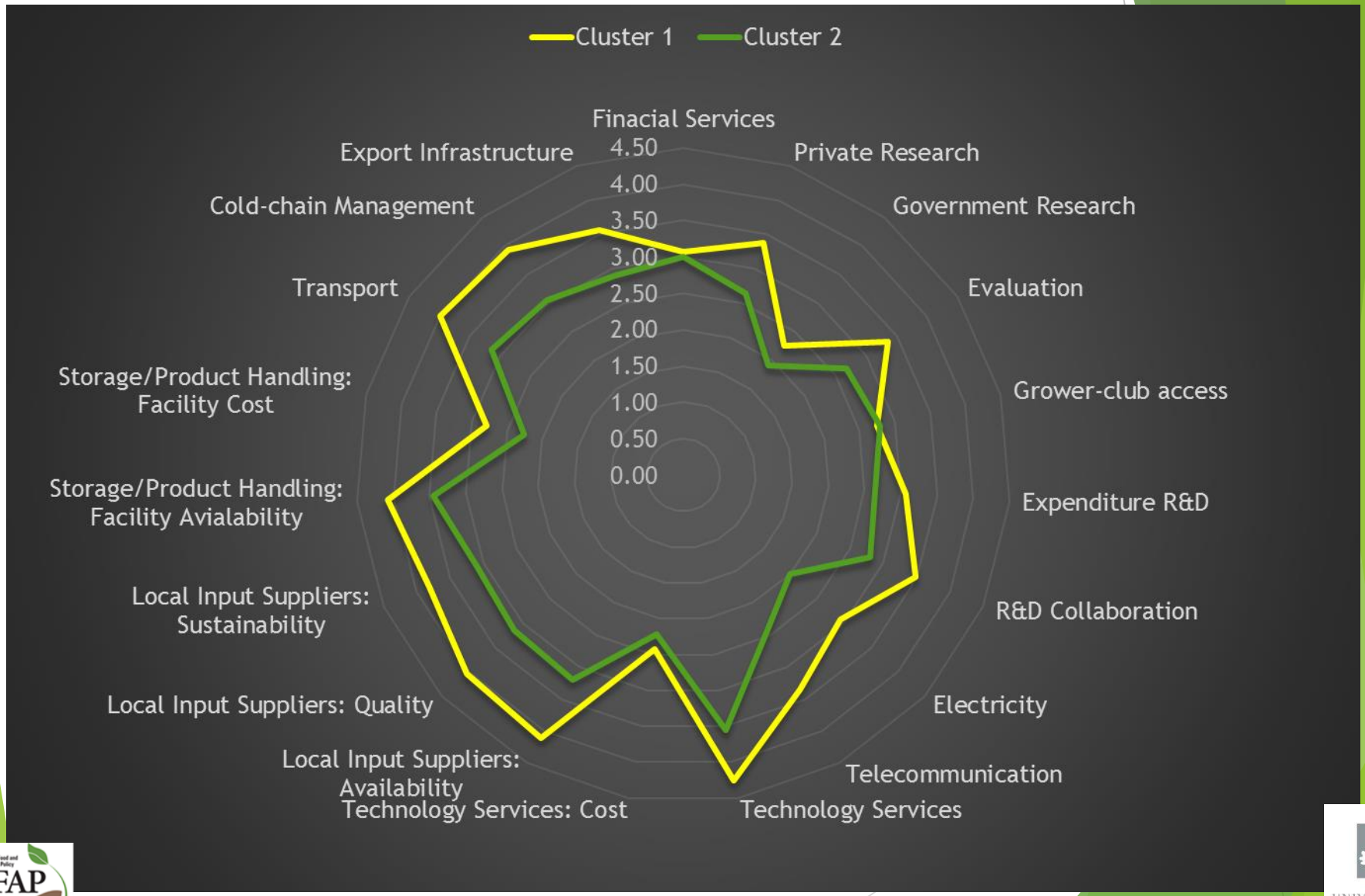
Porter Diamond 2015



Production factor conditions



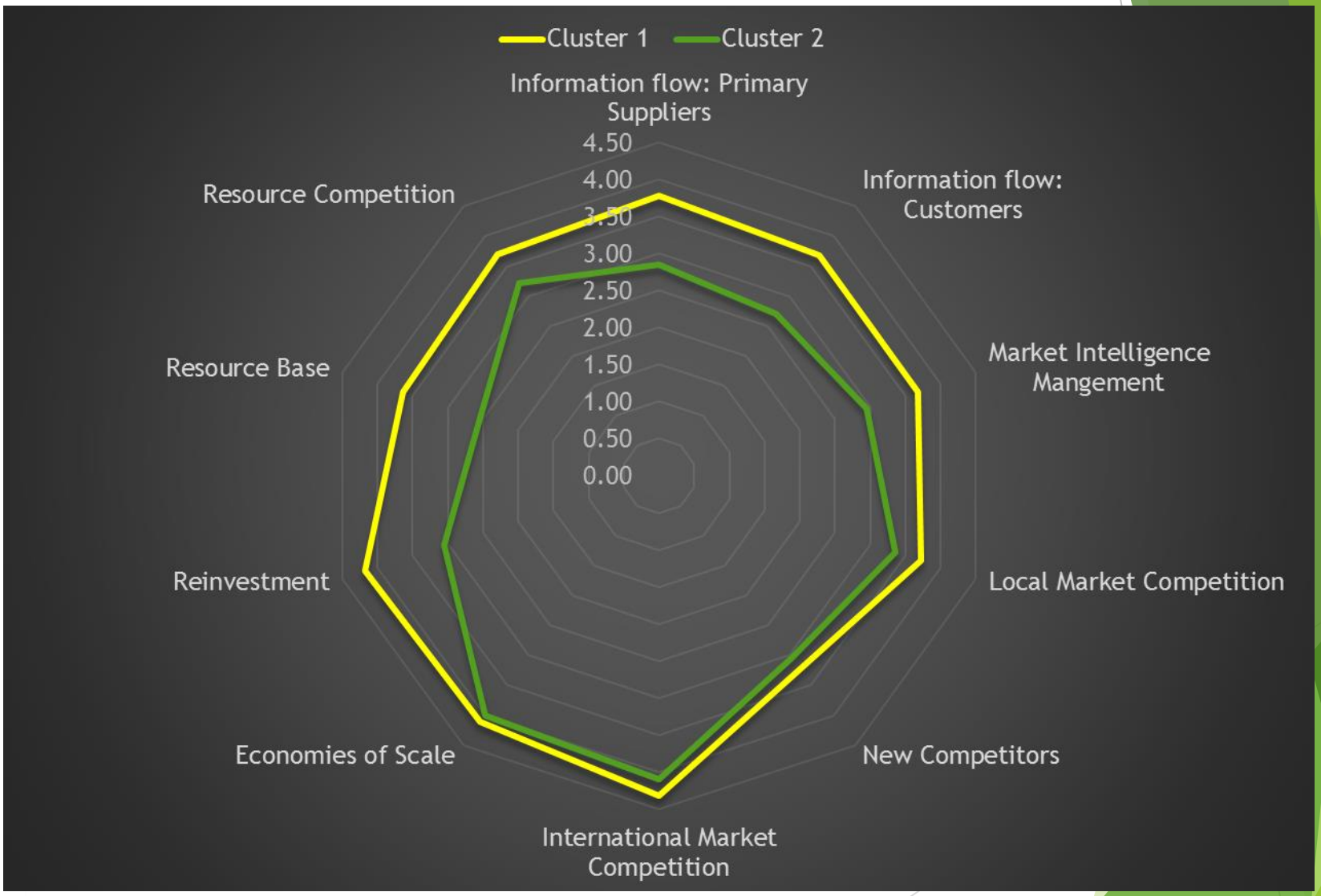
Relating and supporting industries



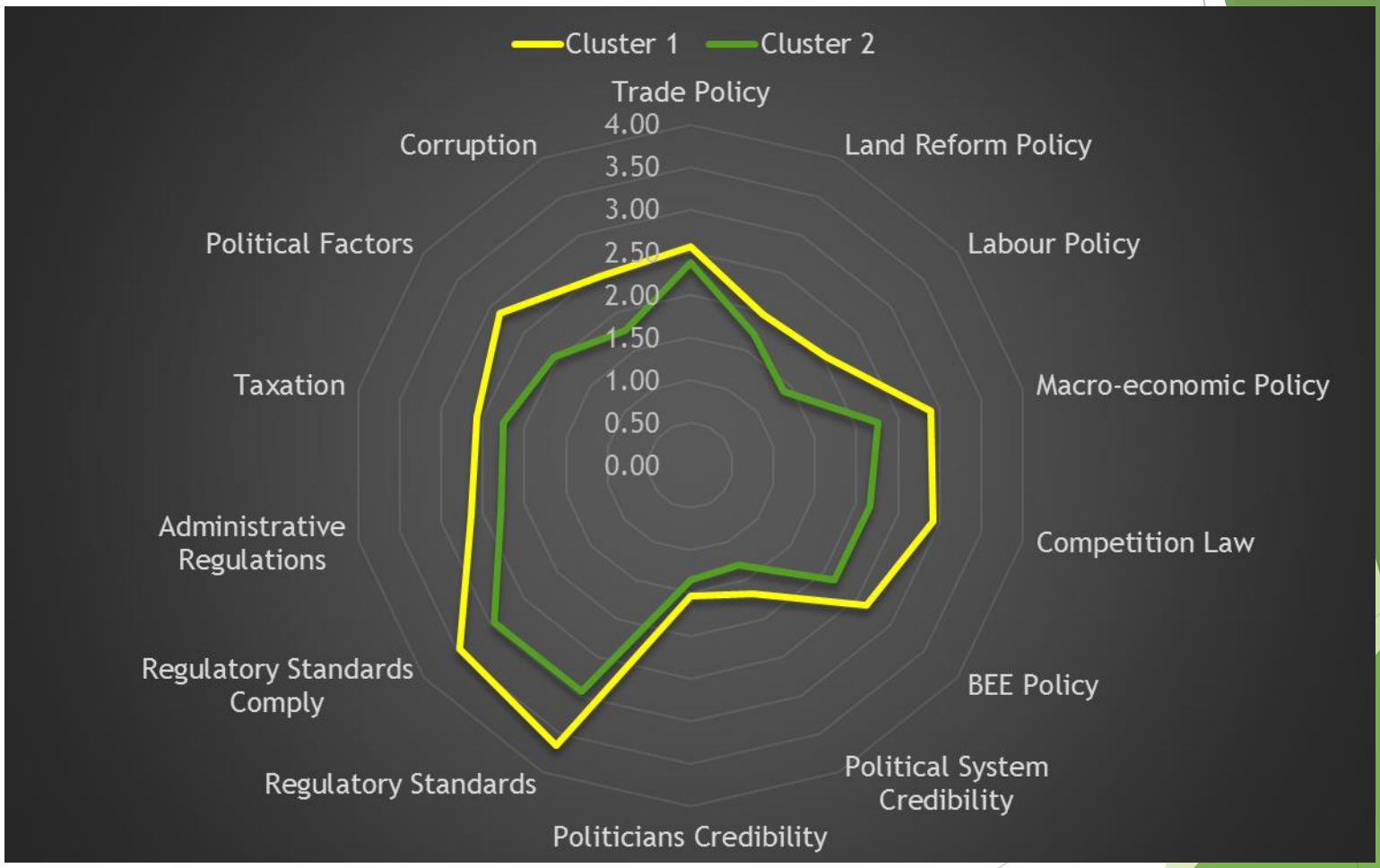
BFAP

UNIVERSITEIT STELLENBOSCH UNIVERSITY

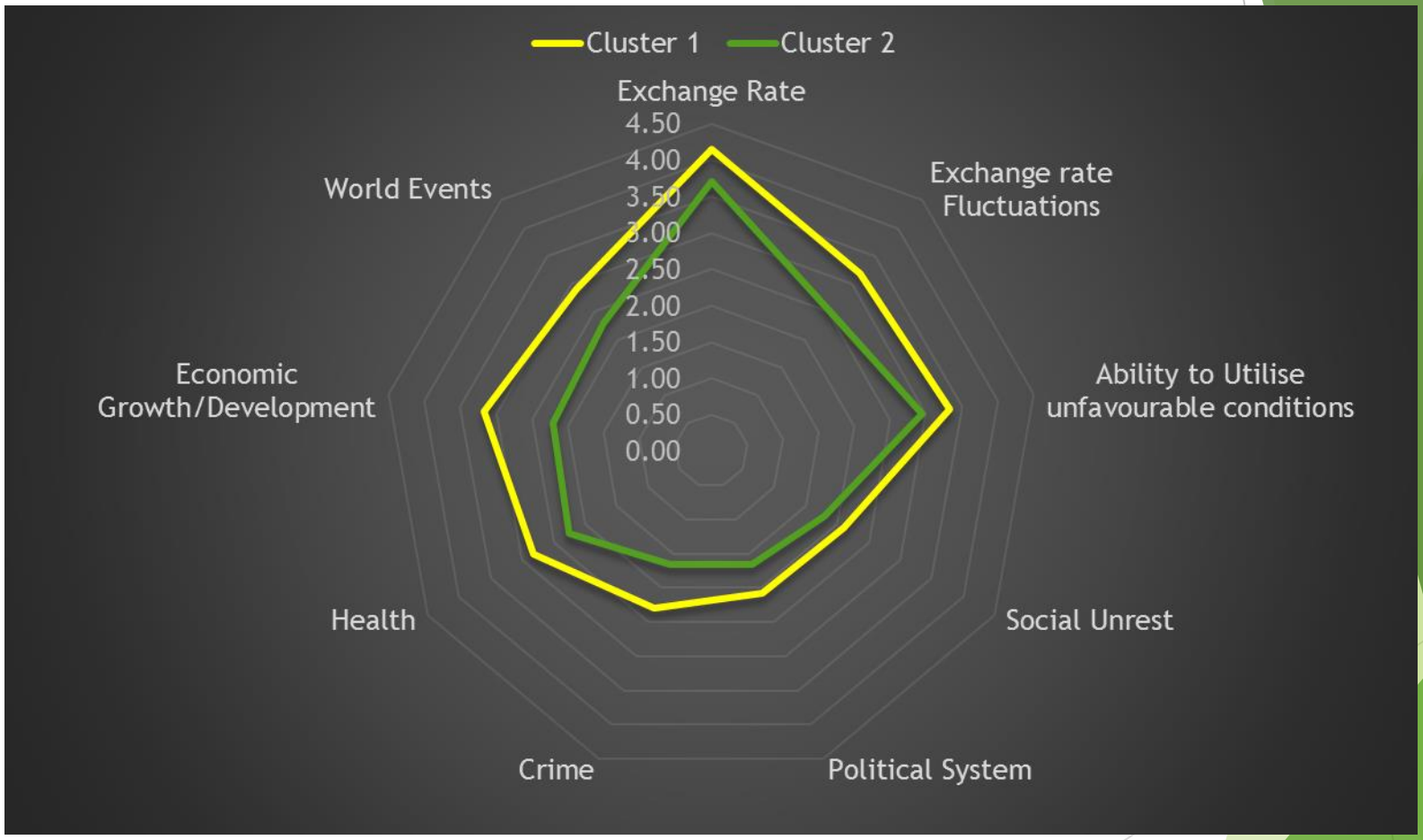
Firm strategy, structure and rivalry



Government support and policies



Chance factors



STEP 5 - COOPERATIVE AGENDA SETTING: SA DECIDIOUS FRUIT INDUSTRY

Porter determinants	Relevant and constraining competitive factors	Strategic proposals
Production factors conditions	High technology cost	• Technological innovation through value chain collaboration • "Anticipating climate change"; water scarcity
Demand/ market factors	Inconsistent quality and availability of SA stone fruit varieties in markets	• Improved consistency in supply to exports markets, standardisation and certification • Extended supply in export markets • Market intelligence to achieve preferred supplier status - what where when
	The influence of adverse weather conditions on buying patterns of consumers (export markets)	• Redirecting market supply mechanisms

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Porter determinants	Relevant and constraining competitive factors	Strategic proposals
Related and supporting industries	Electricity supply (including renewable energy and fossil fuels)	• Consistency of power supply; economising; green energy:
	Industry's expenditure on Research & Development and innovation	• Institutional arrangements to create innovation through collaborative partnerships:
Government support and policy	Trade policy	• Trade promotion support:
	Dealing with the political economy	• A "Stone Fruit Industry Plan (SFIP) and compact: • Improved industry intelligence systems:

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New research directions

- **Move from general to specifics:** Focus on **form, place and time utilities in different markets.** Market analysis - "Decision Support Models" "Market Attractiveness Index" - to identify and analyse new, lucrative markets for competitive products
- **Expand into value chain benchmarking:**

- ID production factors constraining competitiveness at particular levels/functions in the value chain - on-farm level, processing, retail - local level comparisons and global through **"benchmarking" & "double and triple" Porter diamonds.**

- **and conduct intra-value chain competitiveness:** Give effect to differing views of different functional groups in the chain – intra-value chain investigation; weighting of Porter factors **(Kothandaraman & Wilson, 2001; Lia, & Whalleby, 2002, Angala 2015 and Boonzaaier 2015)**

New research directions

- **"Future-based Enquiry":**

- "In the business world the rear-view mirror is always clearer than the windshield" (Warren Buffet). Only historical trends analysed by RTA; Porter models.

- Move towards prognostic analysis; not only diagnostic evaluation. **Scenario development and "Agri- industry Business Confidence Indexes"** (Esterhuizen, 2006) to predict expected variations be explored

- **Agri-sector analysis:**

- Focus on **"winning and losing"** industries to direct policy support systems

- and investment decision-making

CONCLUDING REMARKS:

1. THE AGRICULTURE SECTOR IS NOT A UNITARY SYSTEM; RATHER A SECTOR WITH COMPLEXITY & DIVERSITY WITH MANY COMPLEMENTARY, COMPETITIVE AND SUPPLEMENTARY RELATIONSHIPS; A BIT "NON SENSICAL TO TALK ABOUT AGRI-COMPETITIVENESS per se

2. CONTEXUALISE COMPETITIVENESS PERFORMANCE IN TERMS OF THE PREDOMINANT FOCUS OF A PARTICULAR INDUSTRY AND ITS RELATIONSHIPS – COMMODITY GROUPS, TRADE ORIENTATION, MARKETS, RIVALRY, STRUCTURE, ETC – NO ONE MODEL FITS ALL

3. ENGAGE INDUSTRY VALUE CHAIN PLAYERS (GLOBAL WHERE REQUIRED)- INPUT, PRODUCER, MANUFACTURER, RETAIL – IN COMPETITIVENESS ANALYSIS AND STRATEGY DEV – SOLVE THE WEAKEST LINKS; BUILD ON STRONG POINTS.

CONCLUDING REMARKS:

4. USE TREND ANALYSIS TO DESIGN CONSISTENCY AND RELIABILITY IN STRATEGY/ LOBBY EFFORTS

- **REFRAIN FROM OPPORTUNISTIC BEHAVIOUR FOCUSING ON "QUICK FIXES".**
- **TRENDS REFLECT "SPILL-INN" DYNAMICS. i.e. Chance factors such as Westerns Europe low wine crop + SA bumper crop in 2008 = positive impact over next few years for SA wines.**

6. BUILT TRUSTFUL AND TRANSPARENT INDUSTRY STRUCTURES AND

RELATIONSHIPS – AVOID OPPORTUNISTIC BEHAVIOUR; SHARE INTELLEGENCE AND DATA SETS; MONITOR, MEASURE , ANALYSE.

CONCLUDING REMARKS:

7. **FARM LEVEL STRATEGIES:**

- Be careful for long term investments in marginally competitive industries

- Consider size and scale:

 # Large scale mega farmers - similar to industry type of considerations

 # Medium scale farmers –take a "small business" focus re cash flows and risks; link into competitive value chains; serve niche markets – GI's; S & C

 # Smallholders – remember "efficient but poor " hypothesis: seek niche markets; link into competitive value chains- out grower schemes; onsider part-time farming (divert time to activities that secure income such as off farm employment, rural tourism); rent land to larger farming firms, etc.

SOME WORDS OF WISDOM

"In today's (agri) business, the competition will bite you if you keep running; if you stand still they will swallow you!"
(William Knutsen, Jr. Chairman, Ford Motor Company)

THANK YOU – COOPERATIVE CENTRAL BANK & UNIVERSITY OF CYPRU