

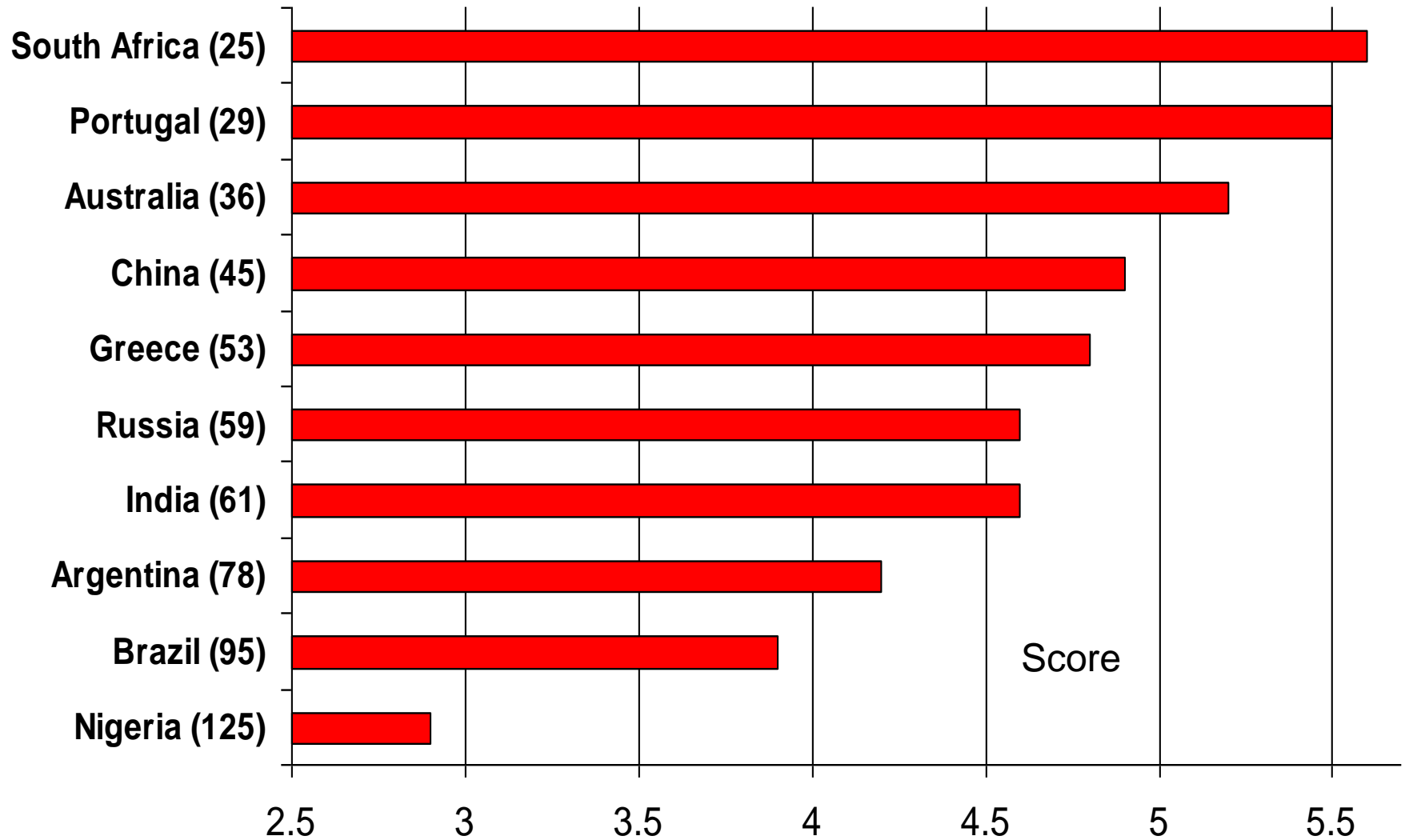


# Economic Impact of the SA drone industry

Dr Roelof Botha

# Global rankings for the quality of air transport infrastructure – selected countries & BRICS

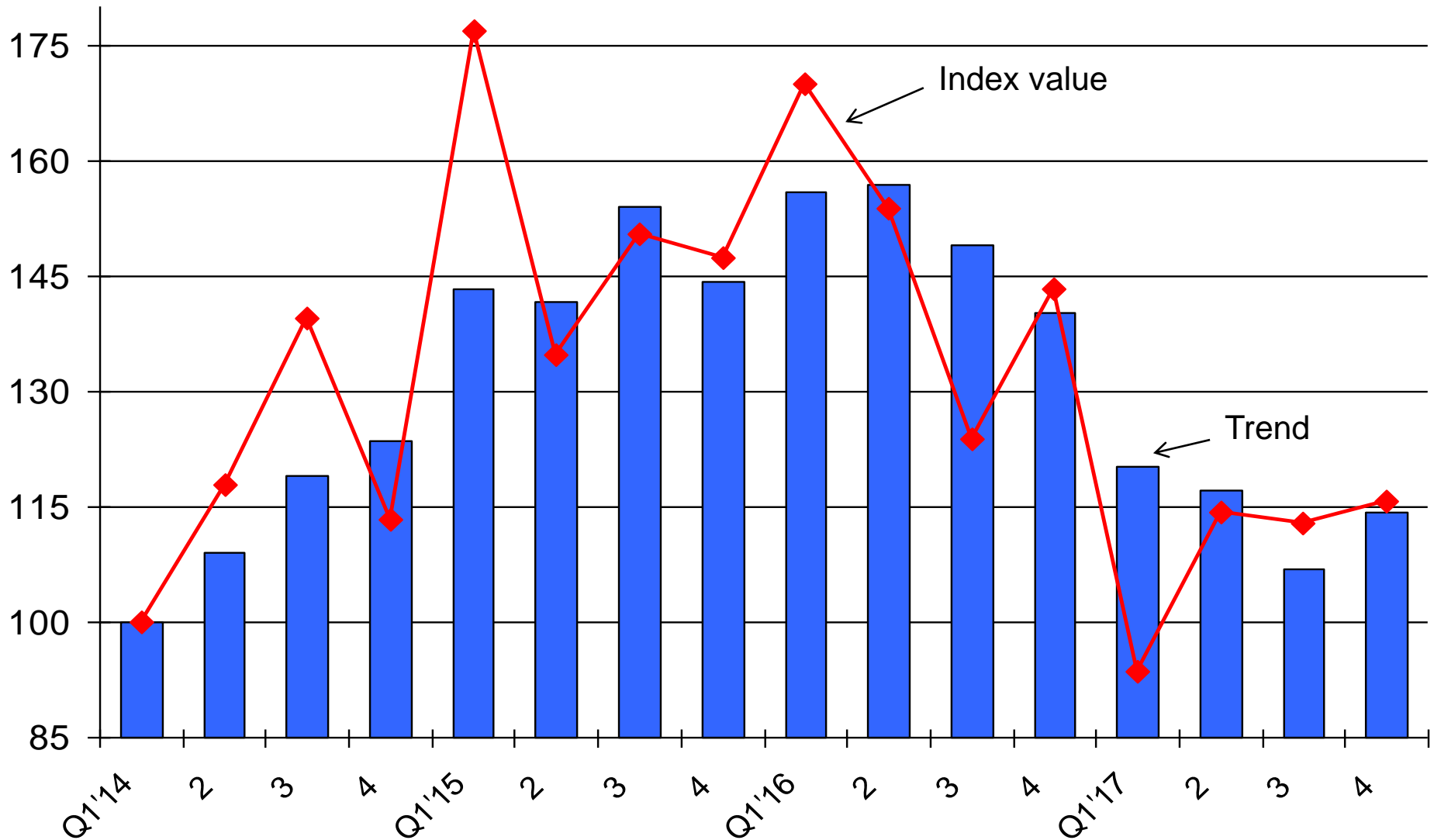
(Source: WEF)



# CAASA Aviation Activity Index (CAAI) for South Africa

*(Trend = 3-quarter moving average)*

Index; Q1 2014=100



# Key sectors for the application of UA services (selection)

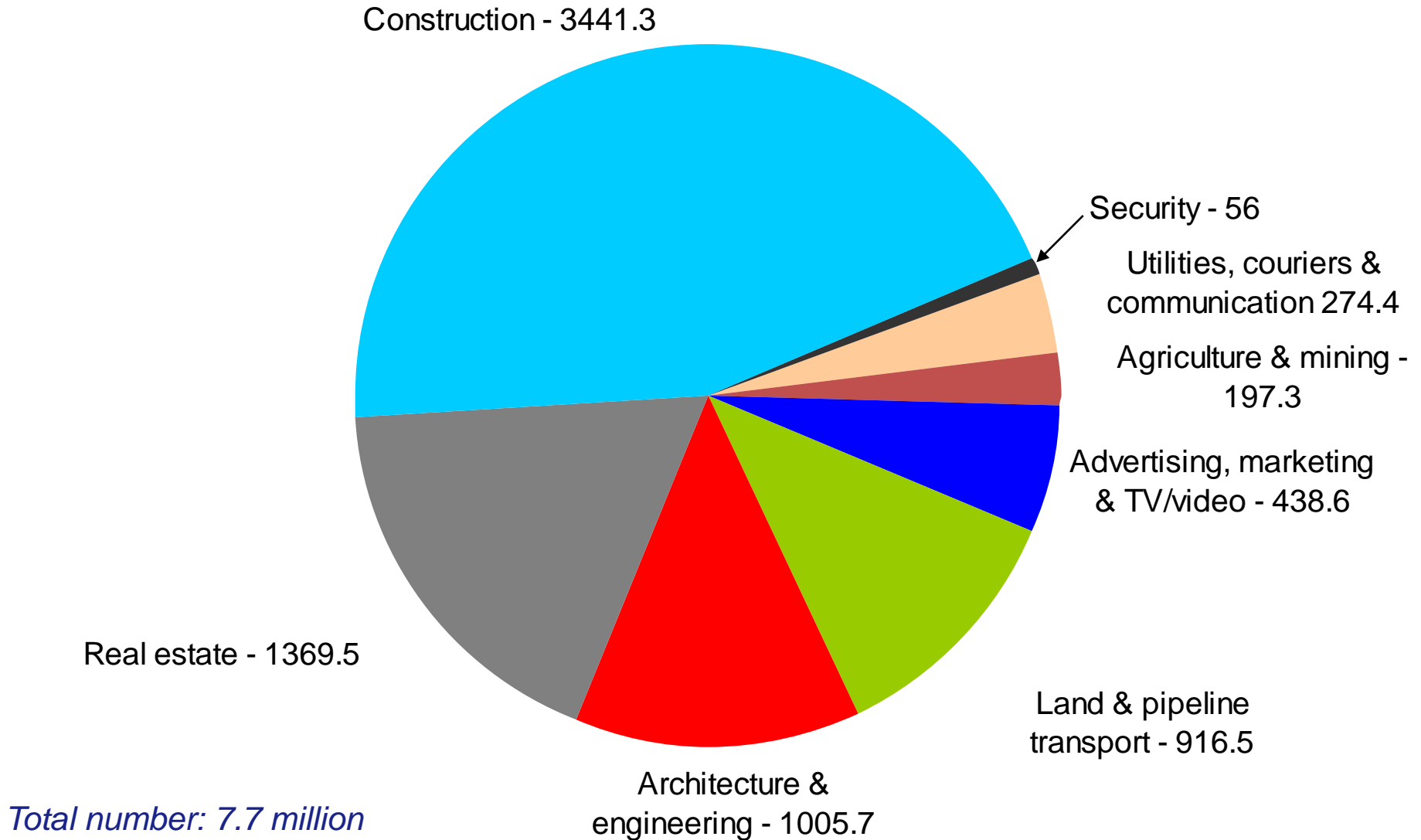
Agriculture	Filming
Real estate	Private security
➤ Purchases of homes	Public safety
➤ Home rentals	National defence systems
➤ Property development	Road & railway inspections
Mining & quarrying	Water reservoir inspections
Energy grid	Border control
Industrial infrastructure	Sea rescue operations
Shipping	Emergency medical services
Postage & courier services	Fire fighting

## Impact of global UA industry – some facts

Number of global drone sales in 2018 (est.)	3 million
Value of global drone sales in 2017	R 12 billion
Number of UAs (for leisure) in the US in 2021 (est.)	3.5 million
Number of UAs (commercial) in the US in 2021 (est.)	1 million
Remote pilots in the US in 2012 (est.)	281,000
Value of European demand for UAS services (p.a.)	Euro 10 bn
Timing of launch of one-ton capacity drone	1 year
Cost saving on delivering by drone in rural Asia (vs. truck)	70%
Number of firms in Europe that can utilise drones	7.7 million
Est. Drone industry contribution to US GDP until 2025	\$82 bn

# Number of firms in Europe (by sector) that can use drones ('000)

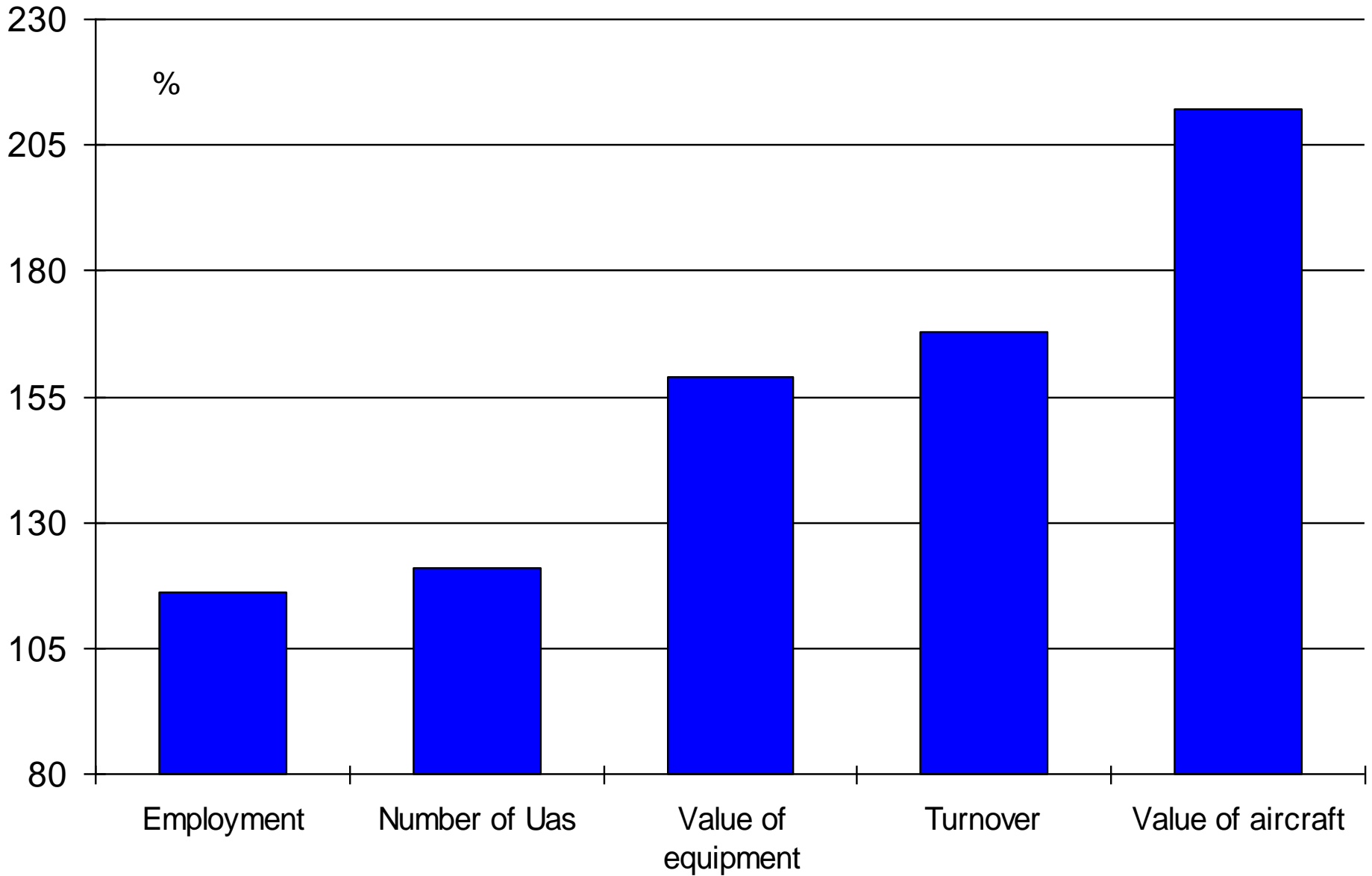
(Source: Eurostat)



# Methodology for determining the economic impact of the Unmanned Aircraft (UA) Industry

Step	Method
1	Sample survey conducted amongst members of CUAASA
2	Extrapolation of results into total estimated turnover
3	Determination of average multiplier effects for relevant sectors
4	Classification of multiplier effects into direct, indirect & induced
5	Calculation of impact on output, jobs & tax revenues
6	Comparison of results with SA/EU and SA/US GDP ratios
Sources (selection)	(i) CUAASA (iii) Quantec Data (iv) Stats SA (v) Association for Unmanned Vehicle Systems International (vi) Single European Sky ATM Research/EU

# Anticipated % increase in key UA indicators 2018 to 2019

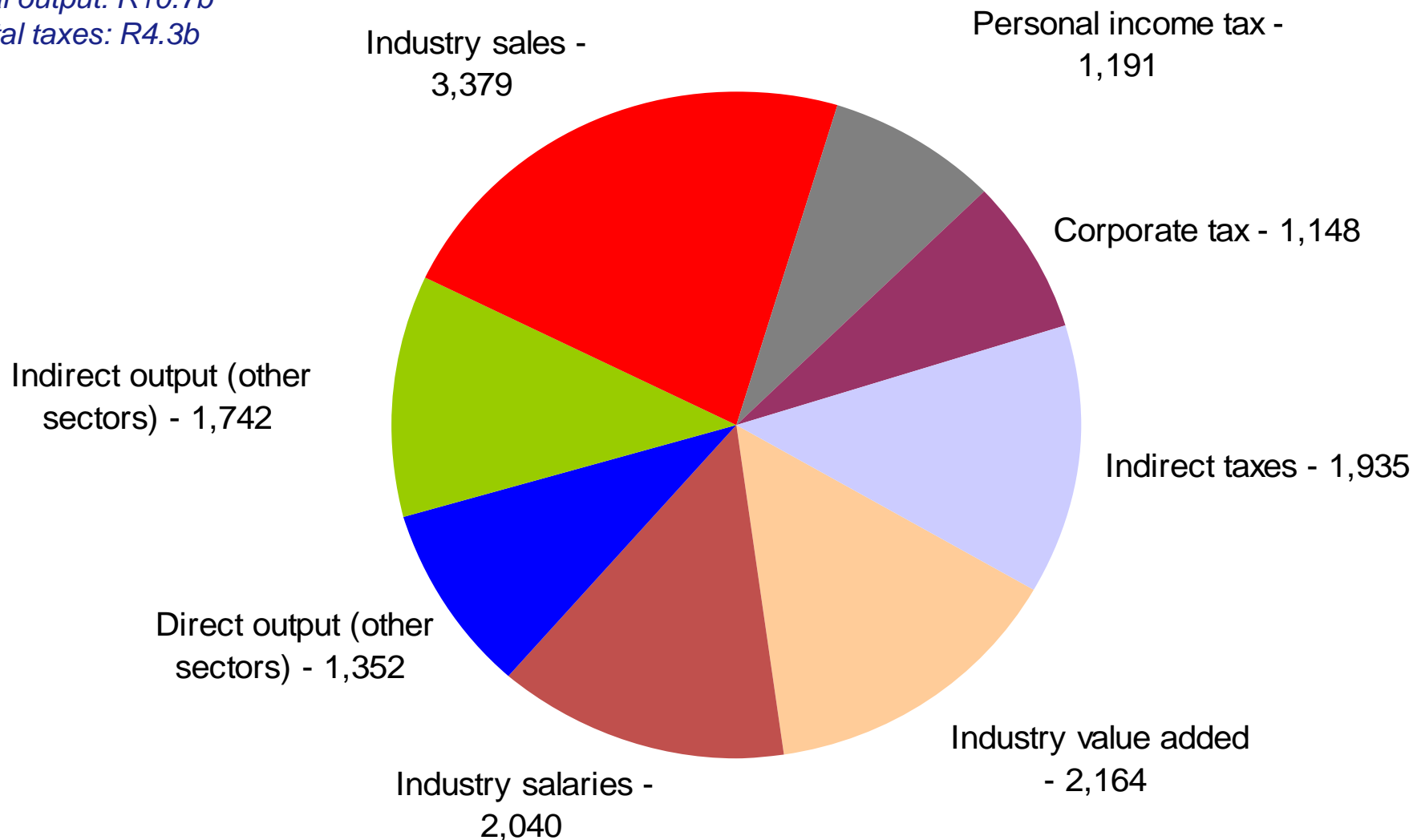


# Summary of macro-economic impact of the South African drone industry in 2018

<b>Economic output</b>	<b>R million</b>
Industry turnover	3 379
Contribution to total SA output	10 702
<b>Broadening of tax base</b>	<b>R million</b>
Personal income tax	1 193
Corporate tax	1 151
Indirect taxes	1 939
<b>Employment creation</b>	<b>Number</b>
Formal employment	40 627
Informal employment	16 079

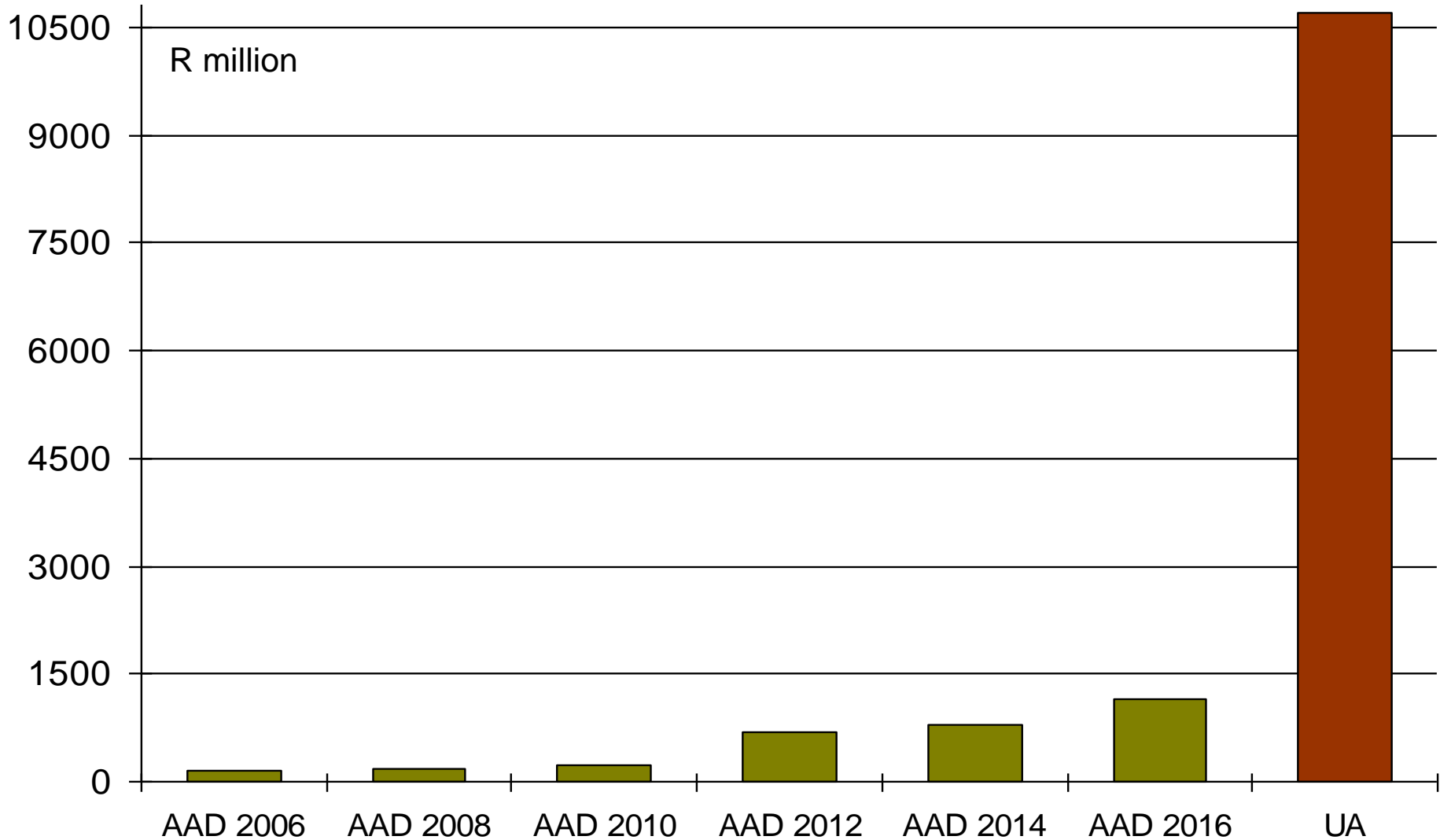
# Composition of the economic impact of the UA industry in 2018 (Rm)

*Total output: R10.7b*  
*Total taxes: R4.3b*

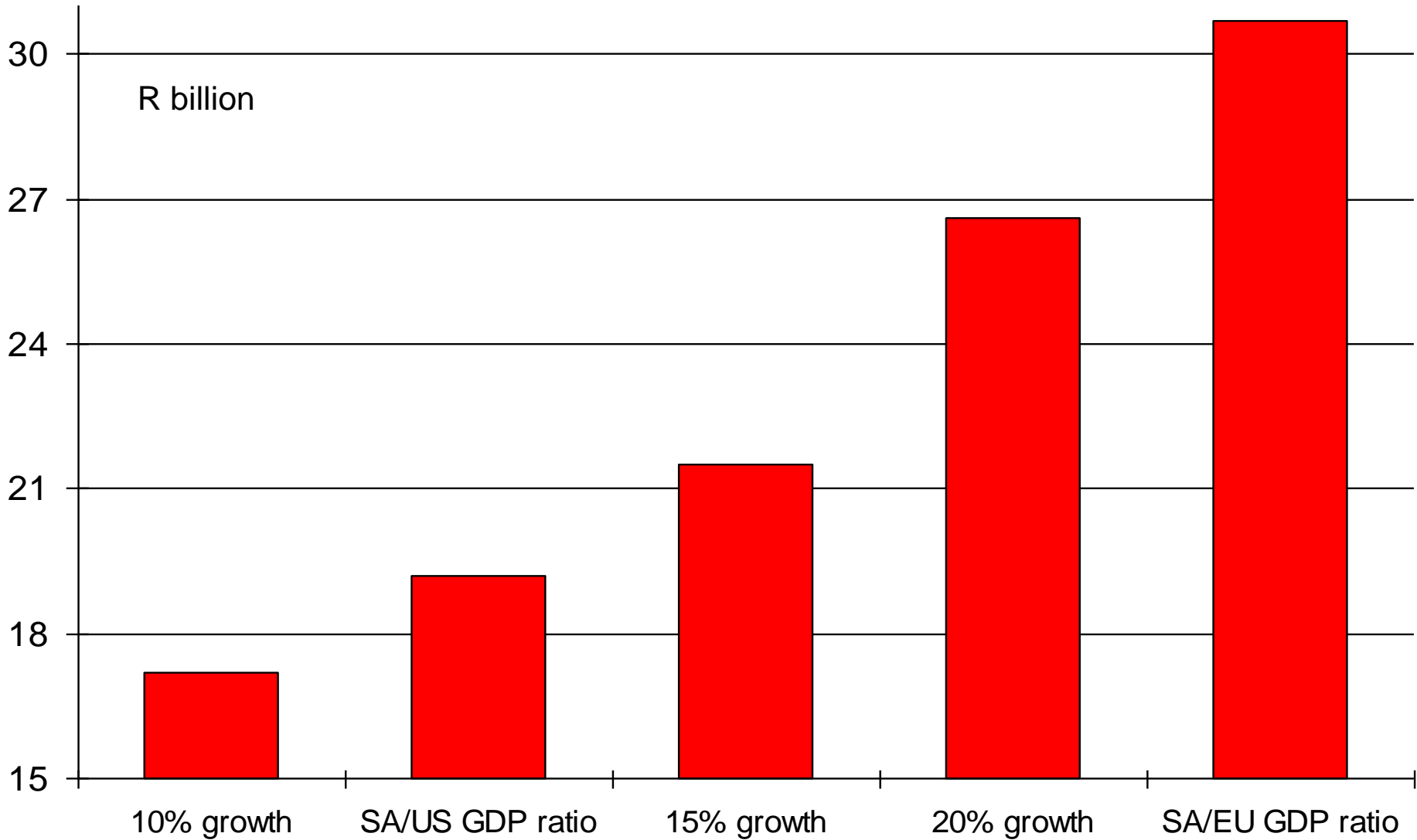


# Comparison of Economic Impact of the UA industry with past six AAD Exhibitions

*(Sources: AAD Organisers' Office; Botha RF)*



# 5-year GDP impact of UA industry in SA based on different scenarios



# Macroeconomic advantages of the expansion of the UA industry

Higher level of efficiency due to automation

Higher level of customer satisfaction

Cost savings to a wide range of businesses

Shareholders receive higher dividends

Broadening of the taxation base

Positive effect on GDP

Diffusion of technological advancement

More emphasis on appropriate skills development

More accurate data collection

Mapping of inaccessible locations

# Macroeconomic advantages of the expansion of the UA industry (continued)

Preventative maintenance inspections in energy sector

Enabling of precision agriculture

Assistance with humanitarian assistance

More effective policing via identification of endangered citizens & hazards

More effective maritime surveillance

Enhanced border security

Combating of poaching

More accurate topographic surveying

More efficient stock-pile management

Transfer of real time data from fire & emergency scenes

# Researched & prepared by Dr Roelof Botha

*Sources of basic data include the SA Reserve Bank, Stats SA, The Economist Intelligence Unit, the IMF & the World Bank Group*

## **Biographical notes:**

- ✓ Dr Roelof Botha received his early schooling in Sweden, Germany, the Netherlands and three different provinces in South Africa
- ✓ A diversified career has been followed in management accounting; financial journalism; lecturing; consulting; and economic research
- ✓ He is a regular commentator & columnist in the national media and has authored more than 500 articles, books and research publications
- ✓ Honours and Masters degrees, both obtained *cum laude* at the University of Pretoria, Doctorate completed at the University of Johannesburg
- ✓ In 2005, he received the prestigious *Finmedia Economist of the Year* award, based on the accuracy of forecasts of key economic indicators
- ✓ Economic advisor to PricewaterhouseCoopers for 28 years
- ✓ Current activities include Senior Adjunct Faculty member of the Gordon Institute of Business Science (GIBS) & Economic Advisor to the Optimum Financial Services Group

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