

# 27<sup>TH</sup> INFORUM WORLD CONFERENCE 2019 SOCHI, RUSSIA FEDERATION

## DETAILED PROJECTION OF THE SOUTH AFRICAN ECONOMY - TWO STAGE APPROACH BASED ON THE SOUTH AFRICAN INFORUM MODEL (SAFRIM)

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TRADING AS

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## TWO STAGE APPROACH:

- A. Standard Projections of the Economy with SAFRIM
- B. Disaggregation of SAFRIM Projections through an Input - Output Approach

# UPDATE OF SAFRIM MODEL

## ▶ New Base Year:

- Original Model 2005 Constant prices
- New Model 2010 Constant Prices

## ▶ Reduction of Sectors:

- Original Model 46 sectors in Total
- New Model 26 sectors in Total

## ▶ Reduction in Manufacturing sectors

## ▶ Reason for Reduction in sectors

- Stabilising forecasts
- Import intensity of certain commodities is too high (exploding of model, when production becomes negative)

# Step 1: Disaggregation of SAFRIM Projections through an Input - Output Approach

- A. Construction of an Input - Output table
- B. Constructing a NAM (Control total, Supply and Demand figures)
- C. Calculating commodity detail for the various final domestic demand components, using the supply and Use (S&U) tables from Stats SA (base Year 2017)
- D. Calculate imports and exports for the various commodities from the South African Reserve bank (SARB) and Calculating Value Added for the Various sectors
- E. Use a RAS to calculate intermediate demand

## STEP 2: Calculation detailed Exports, Imports and Production for Base year

		VALUE RAND MILLIONS		
2018 (BASE YEAR)		EXPORTS OF GOODS AND SERVICES	IMPORTS OF GOODS AND SERVICES	PRODUCTION
<b>AGRICULTURE</b>	Barley	3	54	1 446
26 COMMODITIES	Grain Sorghum	19	79	505
	Grapes	8 805	232	16 521
<b>MINING</b>	Coal Mining Exports	68 306	-	68 306
32 COMMODITIES	Coal Mining Domestic	-	1 401	12 804
	Iron Ore Exports	46 782	-	46 782
	Magnetite	7 697	-	9 088

## Step 2 Continued...

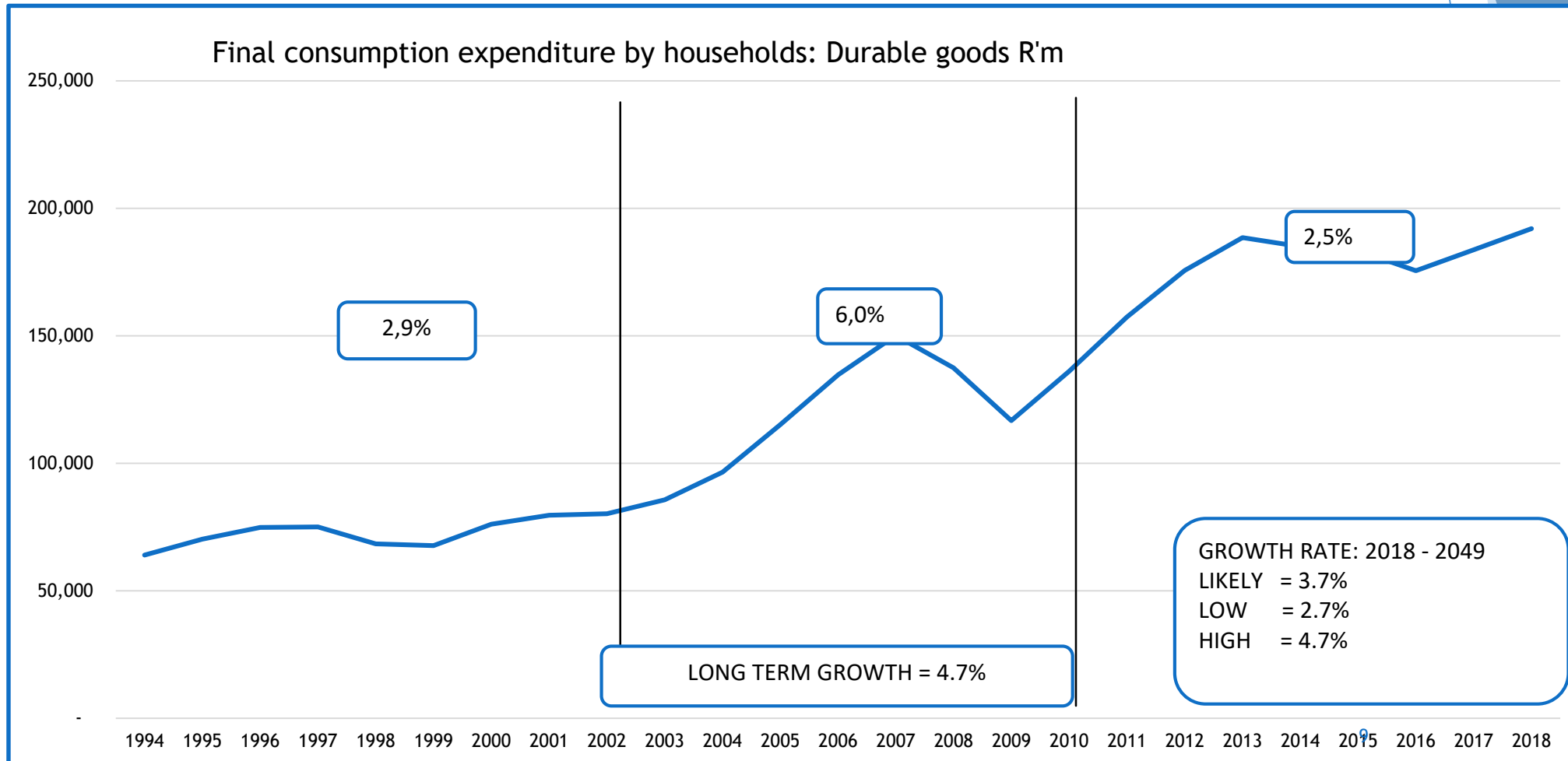
<b>MANUFACTURING</b>	Processed food	26 303	16 300	256 269
40 COMMODITIES	Petrol	9 170	15 222	75 427
	Slaughtered animal meat (incl. broilers)	10 103	10 578	87 426
	Chemicals	58 354	54 483	118 806
<b>SERVICES</b>	Electricity Distribution	3 058	7	94 567
11 SECTORS	Building Construction	1 354	381	306 910
	Business services	15 486	38 979	530 962

# STEP 3: FORECASTING OF FINAL DEMAND COMPONENTS

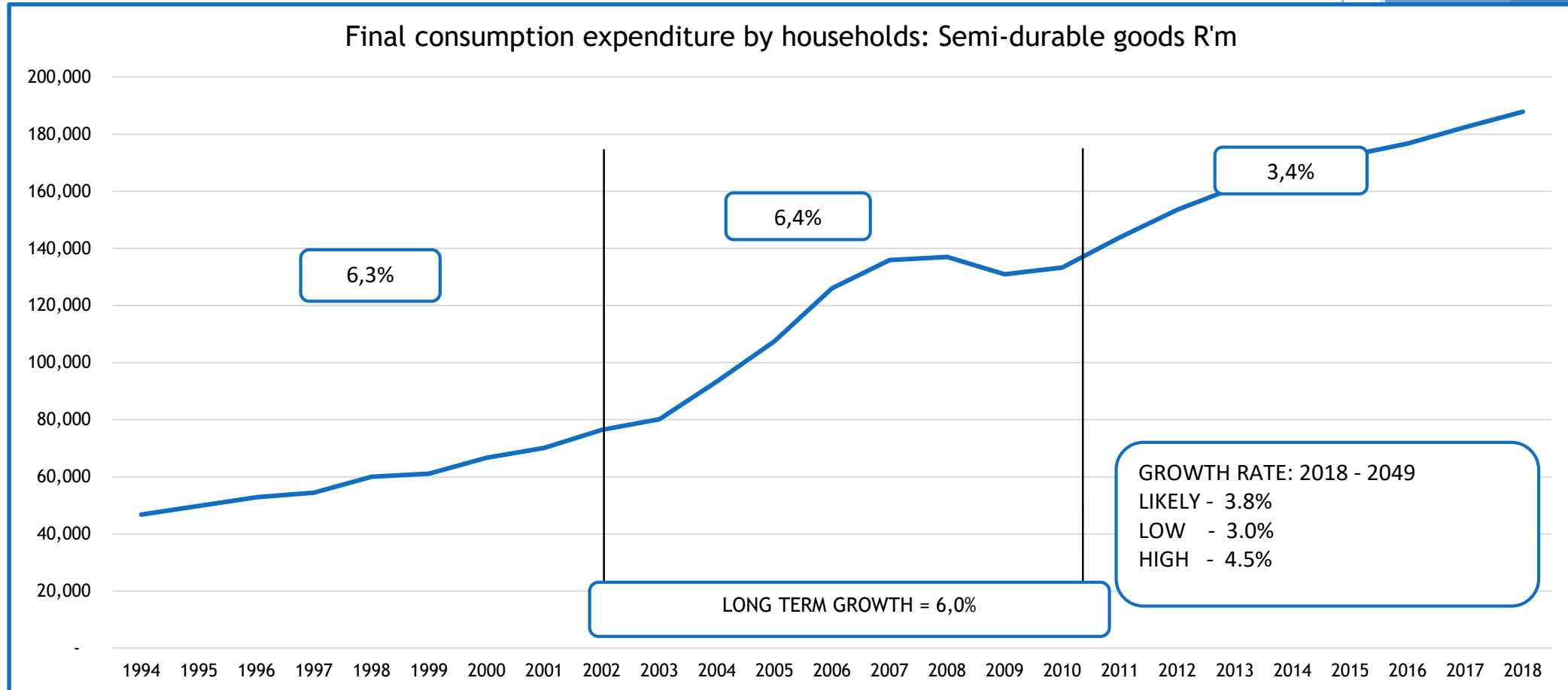
## BASIS: INFORUM MODEL



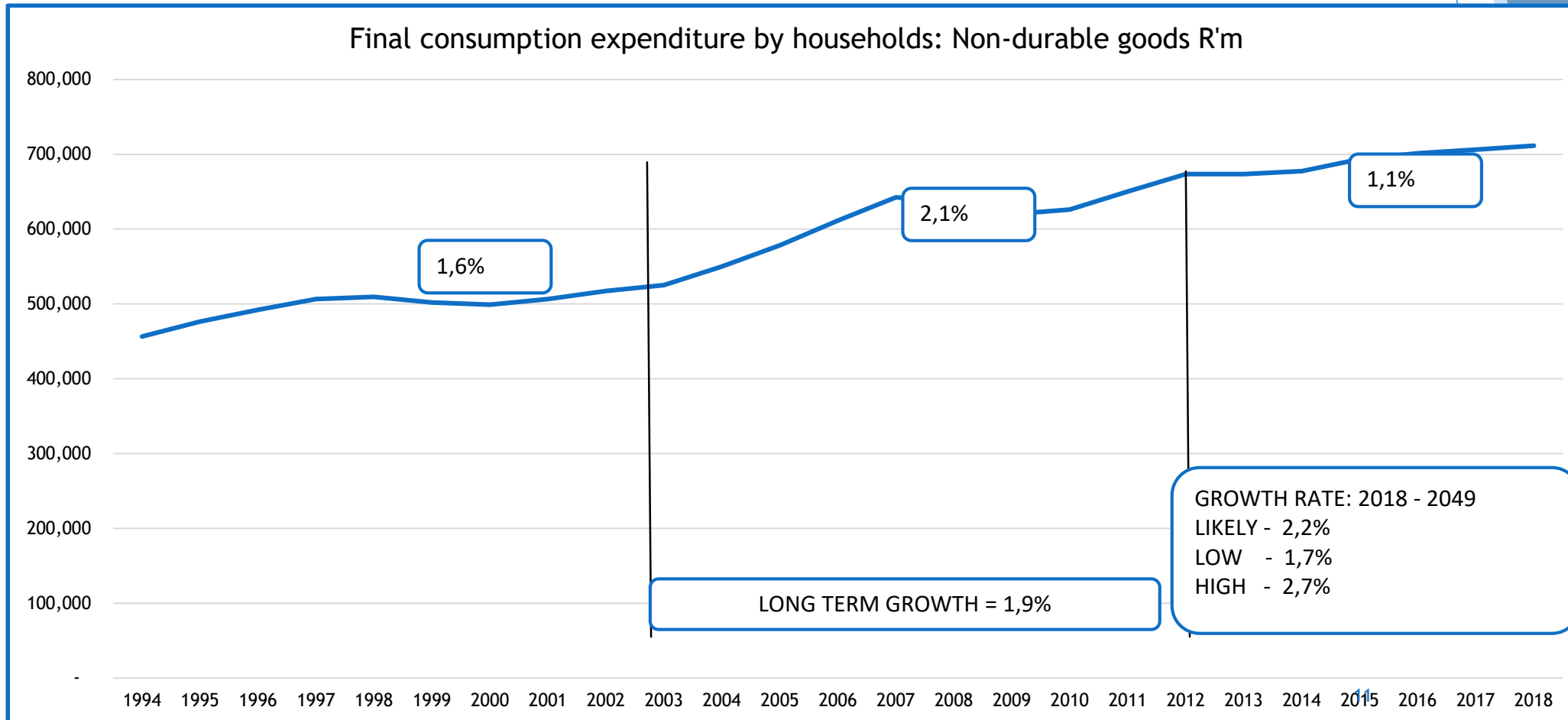
# Final Consumption Expenditure by Households: Durable Goods R 'm (long – term)



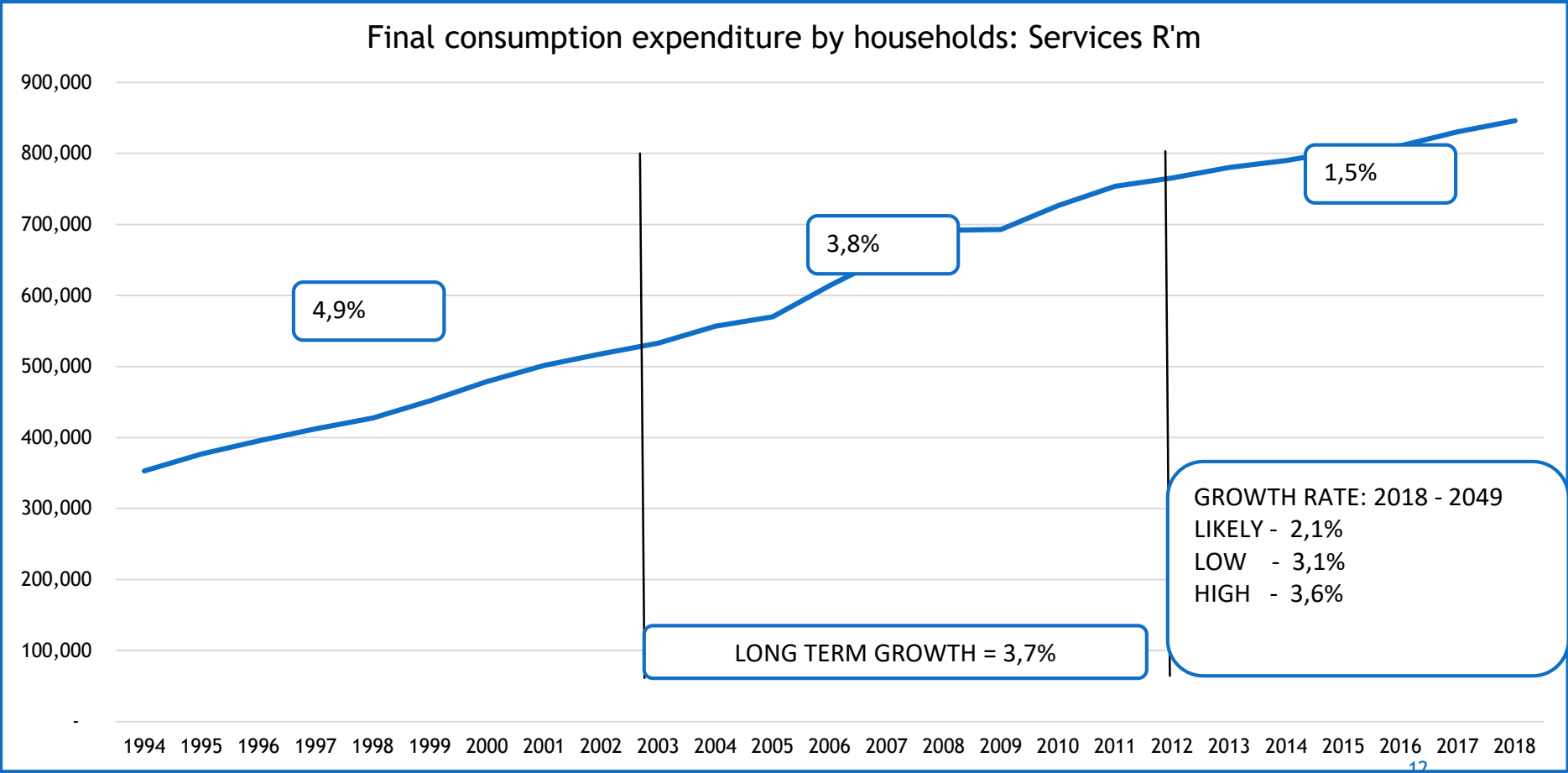
# Final Consumption Expenditure by Households: Semi-Durable Goods R'm



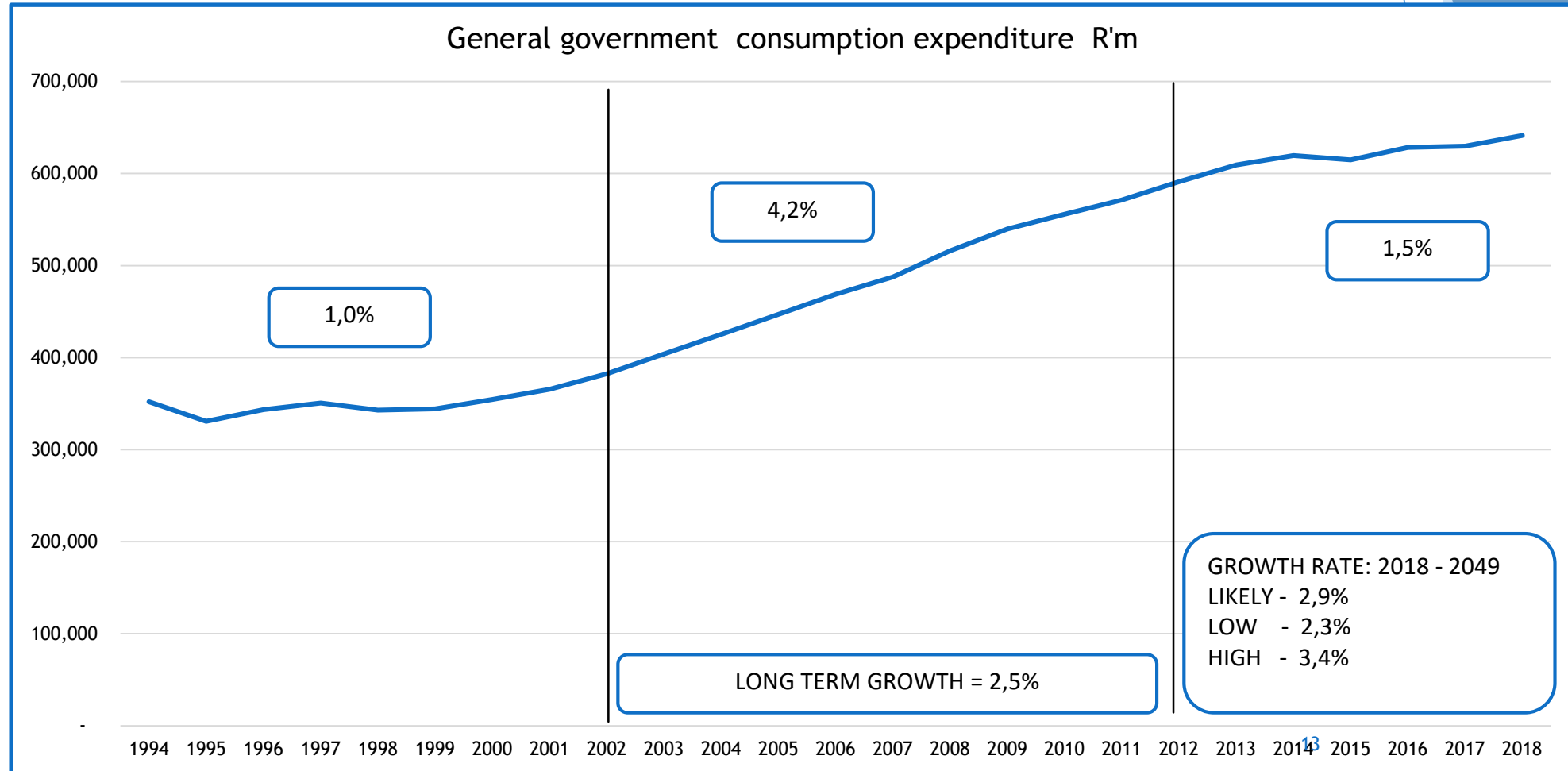
# Final Consumption Expenditure by Households: Non-Durable Goods R'm



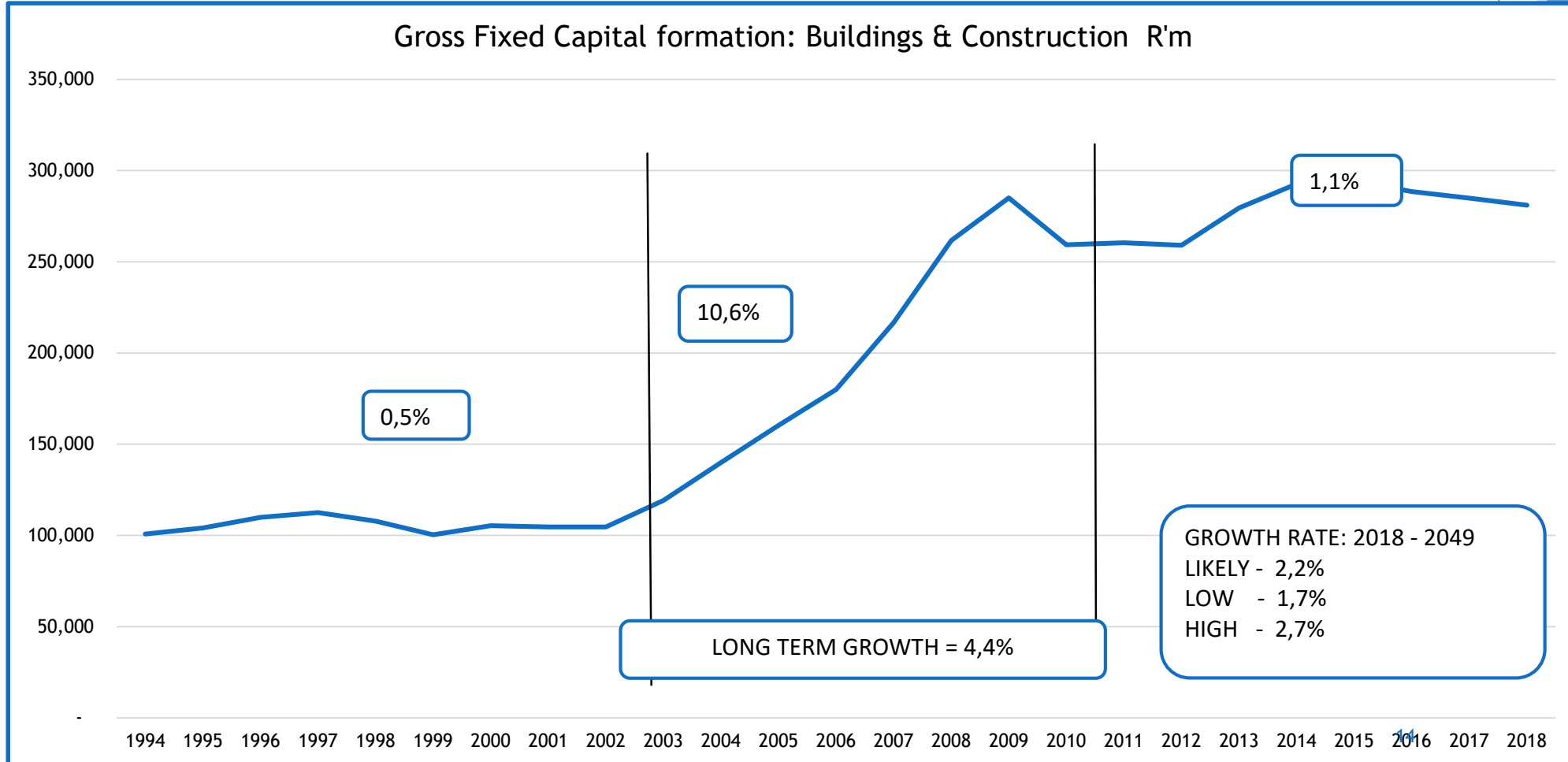
# Final Consumption Expenditure by Households: Services R'm



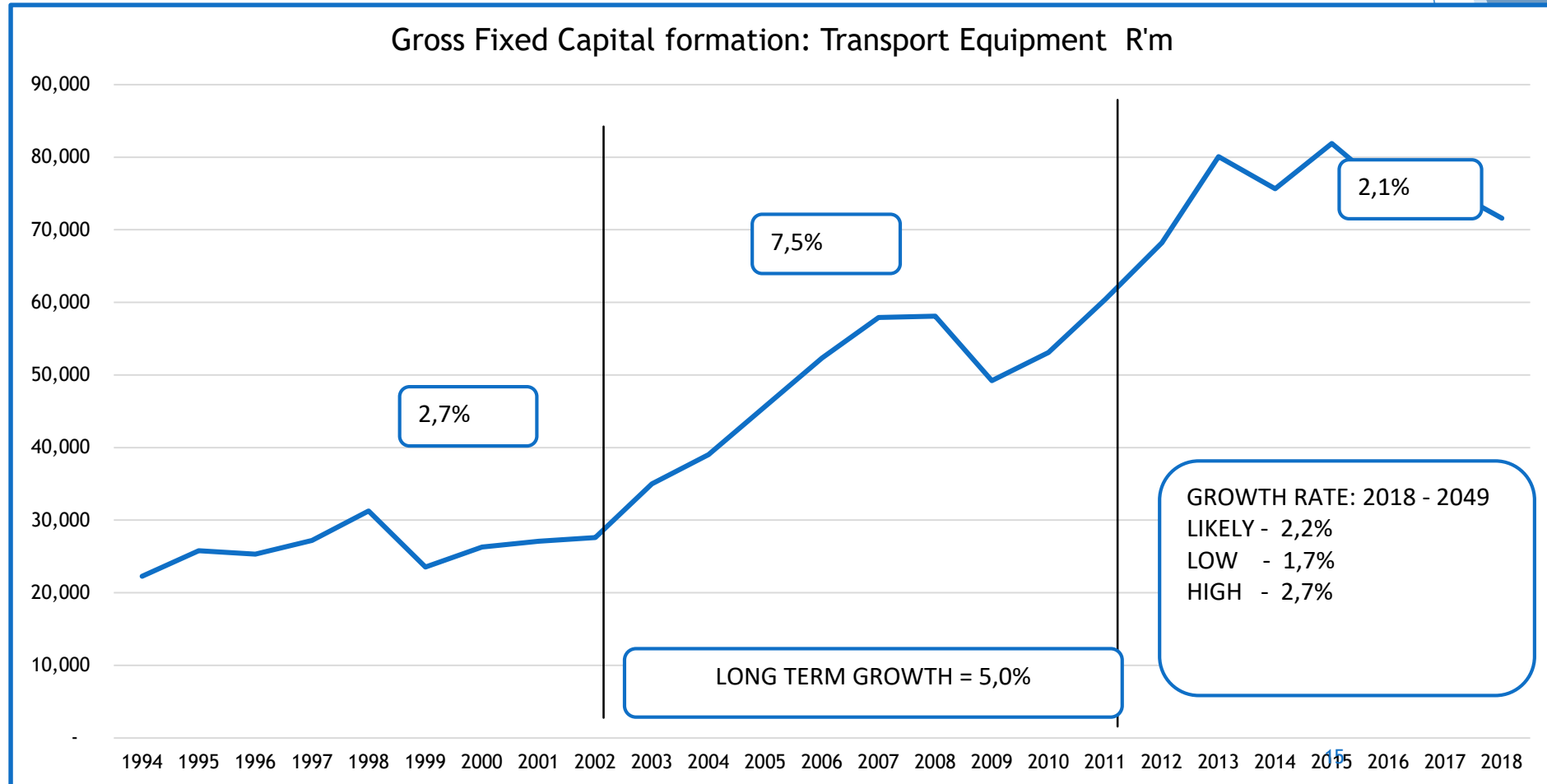
# General Government Consumption Expenditure R'm



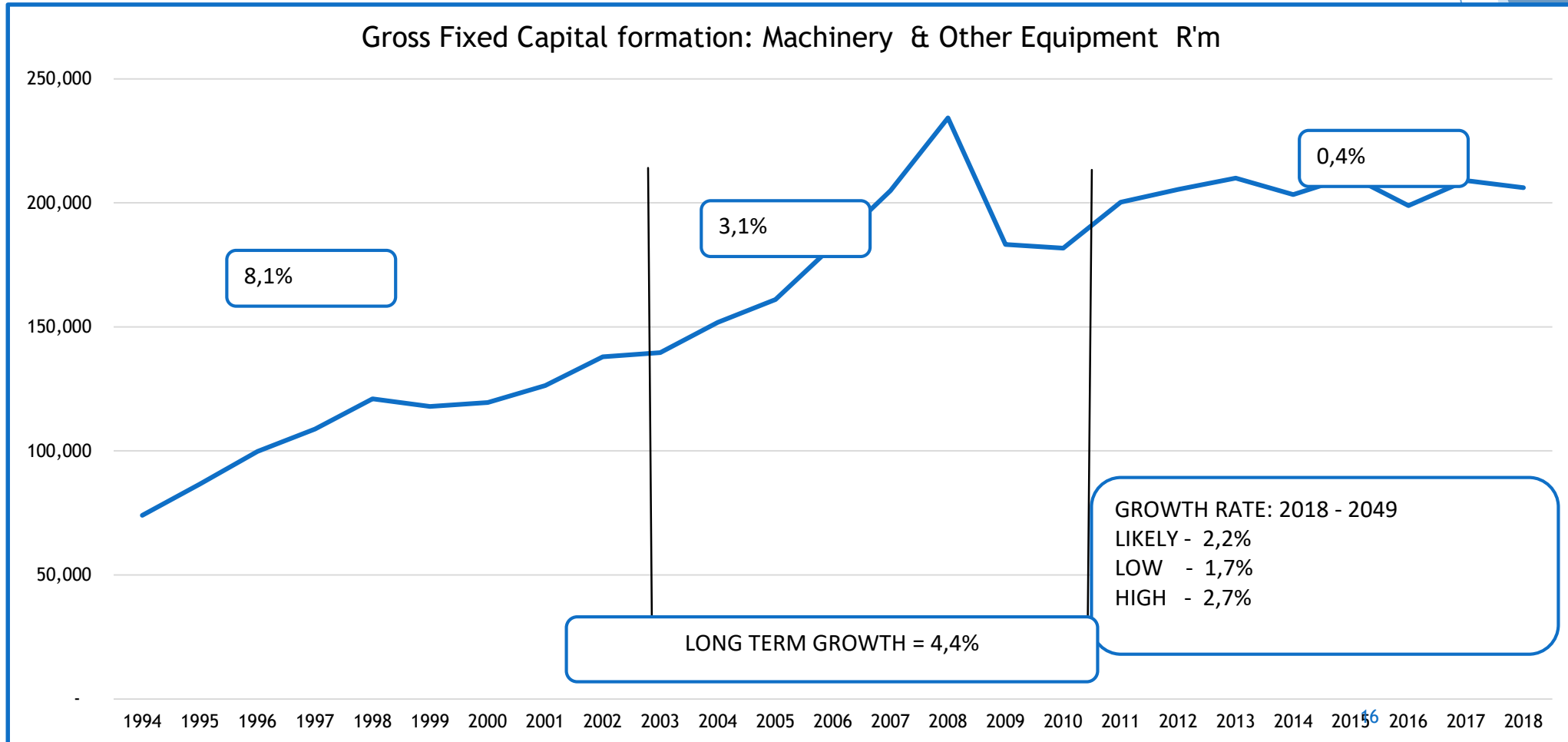
# Gross Fixed Capital Formation: Buildings & Construction R'm



# Gross Fixed Capital Formation: Transport Equipment R'm



# Gross Fixed Capital Formation: Machinery & Other Equipment R'm

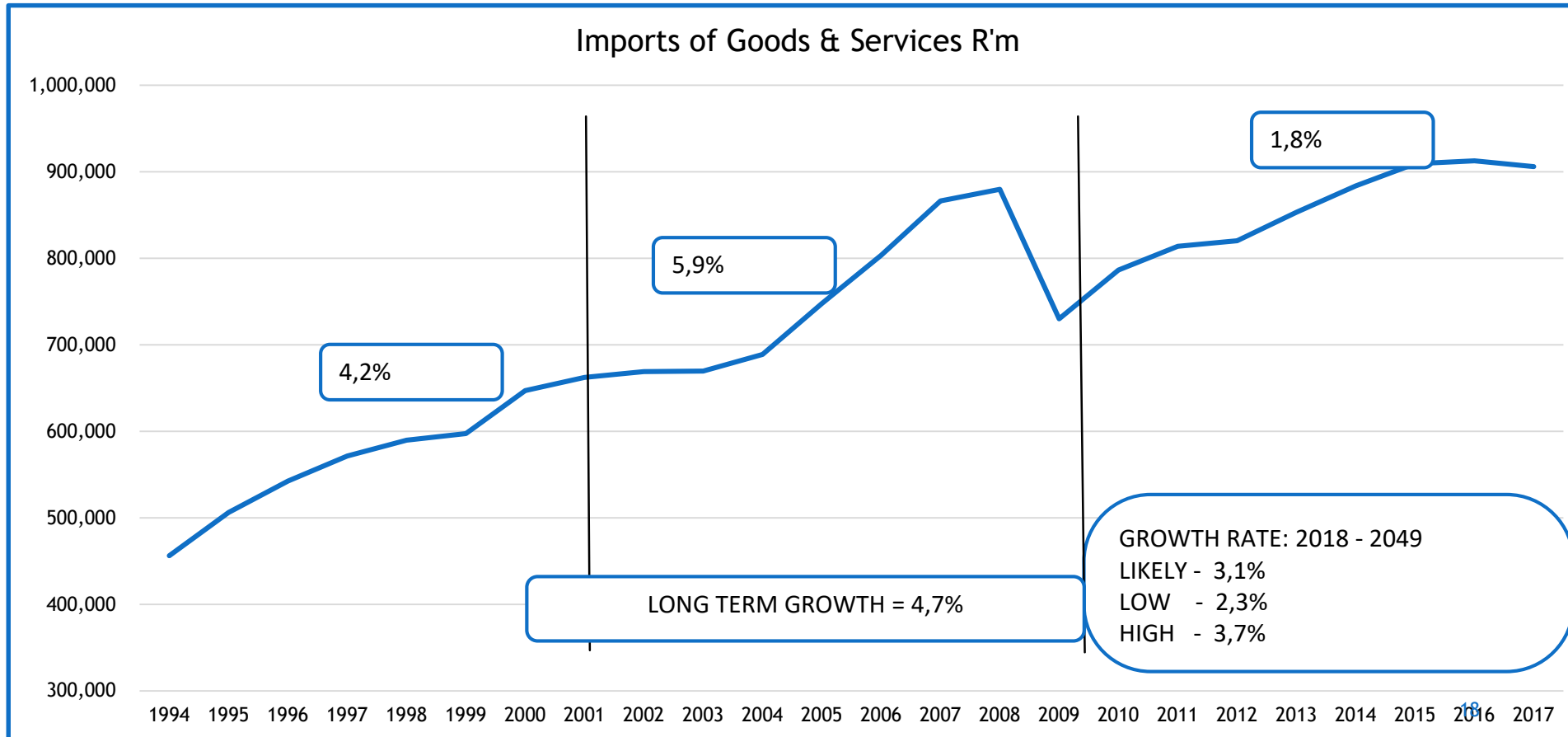




# Exports of Goods and Services R'm

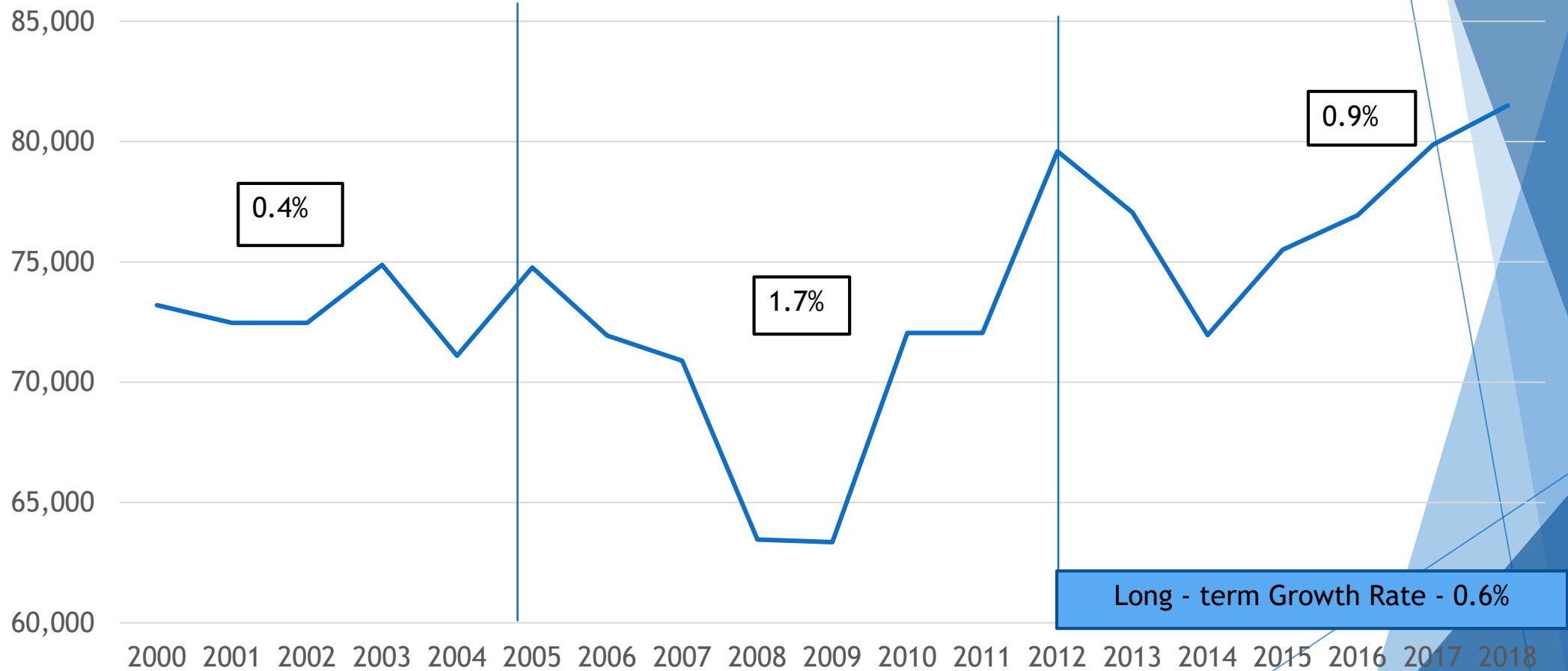


# Imports of Goods and Services



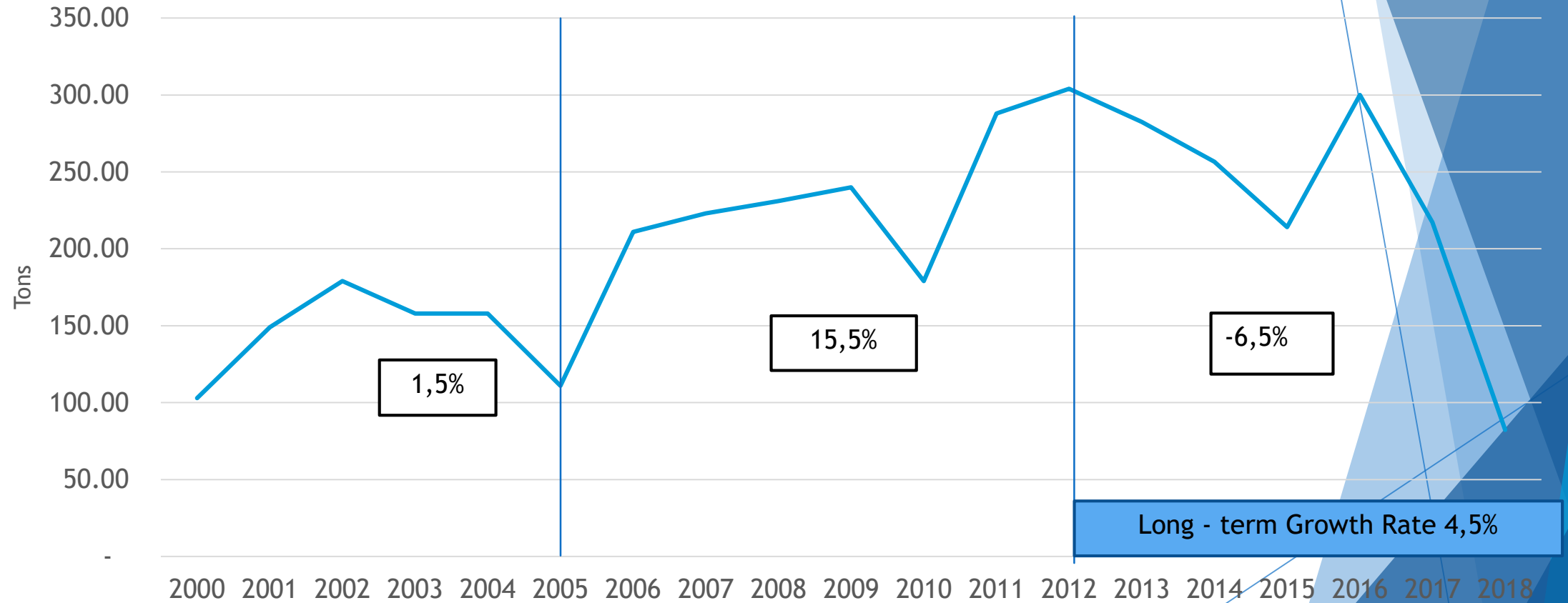
# Step 4: Forecasting of individual commodities: Exports

## Coal Mining Exports



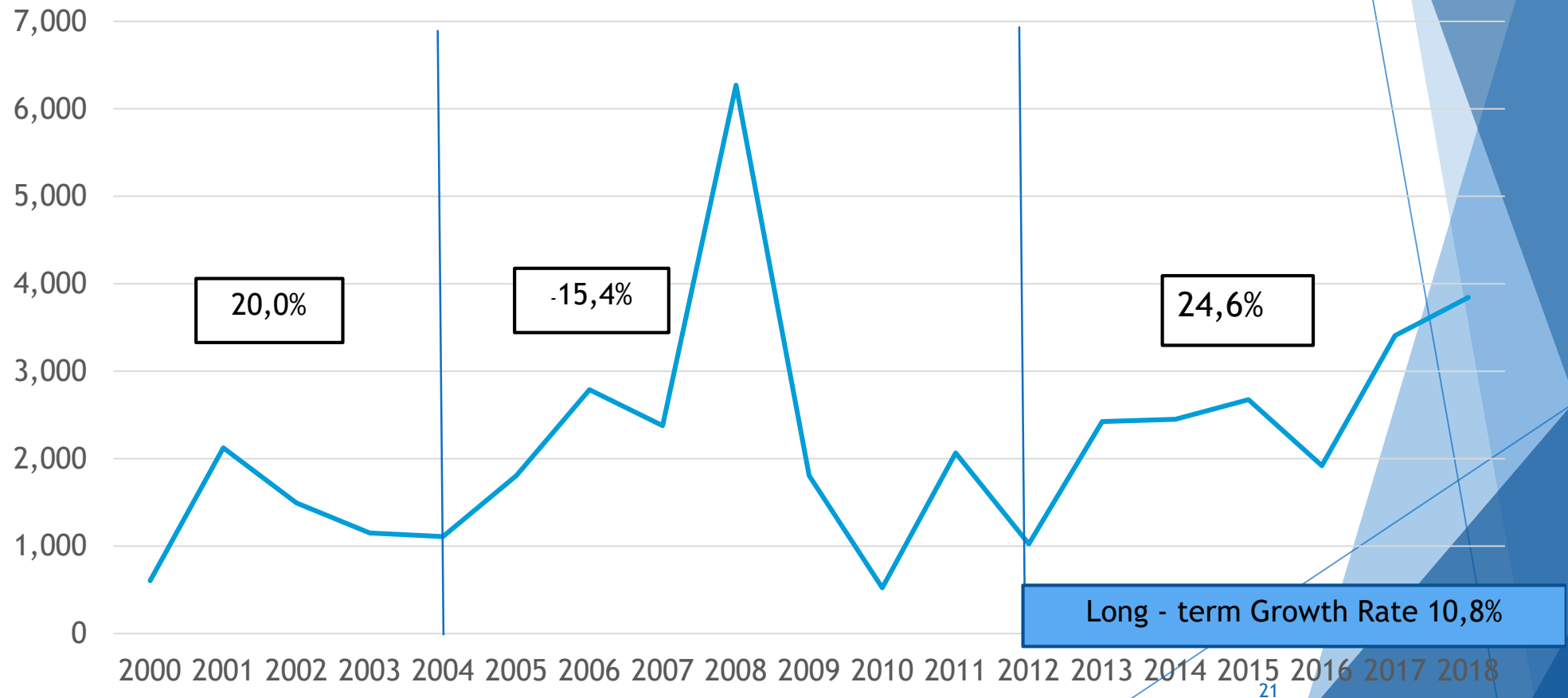
# Step 4: Continued.....

## Wheat Exports



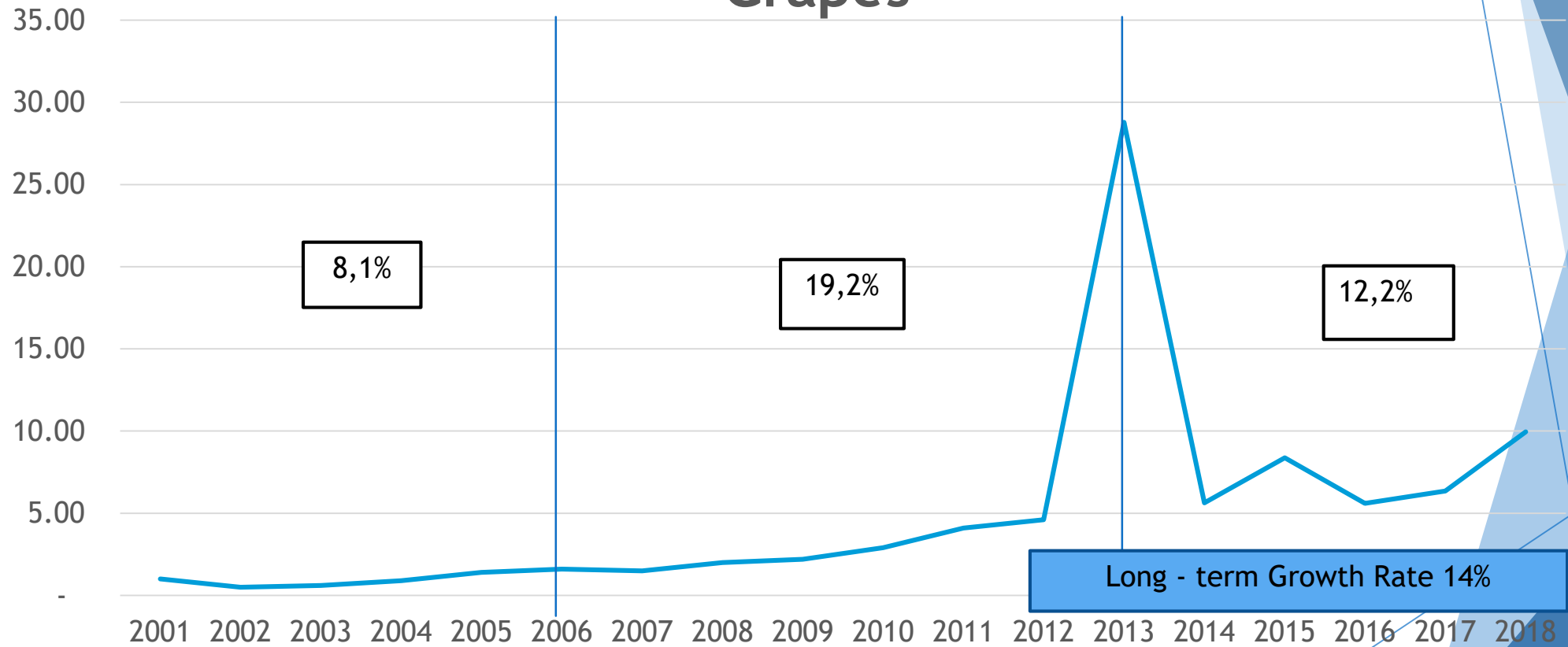
# Step 5: Forecasting of Individual Commodities: Imports

## Coal Mining Imports



# Step 5: Continued...

## Grapes



## Step 6: Assumptions on Exogenous Variables

# Assumptions for the baseline projection (Likely Growth Scenario)

	Input Variable	Parameter Value	Source and Explanation
1	South African population	1.7%	Conningarth's Long Term Forecast
	Current (2019)	1.55%	StatsSA Mid-Year Population Estimates, 2019
	Long-term projection by NDP, declining to 0.5% by 2030	1% p.a on short and medium term, declining to 0.5% by 2030.	National Development Plan 2030. Due to the significant improvement in mortality rates attributed to HIV/Aids and TB treatment programmes, the population projections of the NDP are too pessimistic.
2	South African inflation targets (SARB objectives between 3.0% and 6.0%)	6.0%	Conningarth Economists. Applies to the short to medium term.



# Continued.....

3	World prices/inflation: (2019 - 2023)	3.5%	Overview of the world economic outlook projections. World Economic outlook (IMF) July 2018
	Major Advanced Economies (2018 - 2023)	2.0%	Overview of the world economic outlook projections. World Economic outlook (IMF) July 2018
	Emerging market development economies (2018 - 2023)	4.6%	Overview of the world economic outlook projections. World Economic outlook (IMF) July 2018

# Continued...

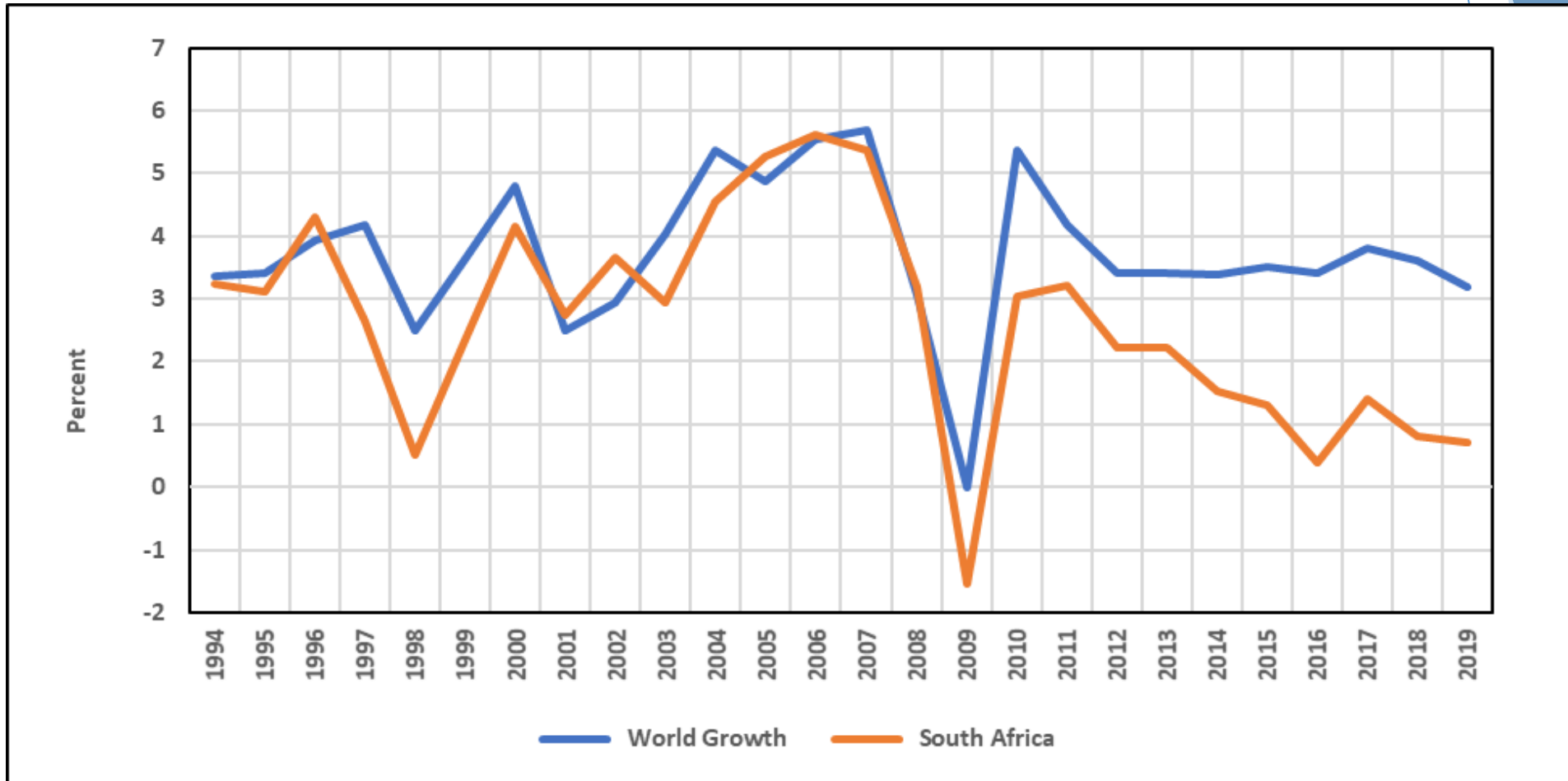
4	Final consumption expenditure by government	3.0%	Conningarth Economists: The role of government in the South African economy should be in line with economic growth. This applies to the full 31 years. The NDP is slightly higher.
5	Growth cycle deviation from the Mean	2.5%	Conningarth Economists
	2018 to 2019	below average	
	2020 to 2026	above average	
	all other years	standard	

# Assumptions for the baseline projection (Likely growth scenario) Continued

6	Exchange rate per annum (depreciation of the real effective Rand exchange rate for the weighted basket)	-0.9% p.a.	A Manual for Cost Benefit Analysis in South Africa with Specific Reference to Water Resource Development (WRC Report Number: TT598/14). This real 0.9% is over and above the purchasing power parity theory which means that the Rand will depreciate against its trading partners with this real percentage plus the difference between South African inflation and the inflation of its main trading partners. Applies to the full 31 years.
7	World economic growth		
	2018 to 2023	3.6%	Overview of the world economic outlook projections. World Economic outlook (IMF). (July 2018)
	2024 to 2034	3.5%	Conningarth Economists
	2035 to 2045	3.0%	Conningarth Economists
8	Current account of balance of payments as percentage of GDP	4.0%	Conningarth Economists. Assumption is based on 18 years average of SARB bulletin. As a rule of thumb, this ratio should be in the order of Net Capital Formation as percentage of GDP, which has been 6.1 <sup>27</sup> % on average over the last 18 years. Applies to the full 31 years Projection.

# Step 7: Results

# South African and Global Economic Growth



# Final Demand & GDP Projections (2018 Base Year, constant 2010 prices)

GDP and Final Demand Components	Compound Annual Growth Rate per annum over Period								
	2019-2049			2019			2020		
	Likely	High	Low	Likely	High	Low	Likely	High	Low
Final Consumption Expenditure by Households:	2,9%	3,5%	2,3%	1,4%	1,5%	1,0%	1,9%	2,1%	1,4%
Final Consumption Expenditure by Government:	2,9%	3,4%	2,3%	1,6%	1,7%	1,1%	2,0%	2,3%	1,5%
Gross Capital Formation (Investment):	4,0%	5,4%	2,6%	-0,4%	-0,2%	-0,7%	1,3%	1,9%	0,5%
Exports of Goods and Services	2,3%	2,7%	2,0%	1,2%	1,6%	1,0%	1,6%	1,9%	1,3%
Imports of Goods and Services	3,1%	3,5%	2,3%	1,7%	2,2%	1,4%	2,3%	2,7%	1,8%
Gross Domestic Product	2,9%	3,8%	2,3%	0,7%	0,9%	0,4%	1,5%	1,8%	1,0%

# STEP 7: Continued...

## Local Production Growths

<b>MAIZE</b>				
<b>Forecasted CAGR for Local Production</b>				
<b>Scenarios</b>	<b>2019-2049</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
<b>Likely</b>	2,1	1,2	1,4	1,9
<b>High</b>	2,6	1,3	1,7	2,2
<b>Low</b>	1,6	0,8	1,1	1,4
<b>Forecasted Index Levels for Local Production</b>				
<b>Scenarios</b>	<b>2018 (Base Year)</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
<b>Likely</b>	100	101	103	105
<b>High</b>	100	101	103	105
<b>Low</b>	100	101	102	103

# Local Production Growths

## MOTOR VEHICLES AND TRUCKS

### Forecasted CAGR for Local Production

Scenarios	2019 - 2049	2019	2020	2021
Likely	4,0	0,2	3,5	3,2
High	5,2	1,0	4,3	3,9
Low	2,9	0,2	1,9	1,7

### Forecasted Index Levels for Local Production

Scenarios	2018 (Base Year)	2019	2020	2021
Likely	100	100	104	107
High	100	101	105	110
Low	100	100,2	102	104



**THE END**

**THANK YOU!!!**