A study on trend analysis of selected home appliances in India (2005 – 2022)

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Abstract

In that paper we try to develop a concept of business trend analysis with the help of secondary data collected from DION report, CEAMA reports, JP Morgan, Tech Navio, Spark Capital estimates, etc. In that particular part of our research we used Ms-excel as well as used statistical software tools to generate a business forecasting model of home appliances production trend for chalk out the development of business and economy of our country in near future .

Key words-

Business forecasting ,upward trend, employability

Introduction

There is an enormous opportunity for manufacturing in India, as demonstrated by spreading out undertaken by majors –

1. **Growing industry**

The demand for flat T.Vs, refrigerators, washing machines and air conditioners is on a rise with reduced penetration of products vis-a-vis global levels, rising disposable income and urbanization of consumers.

Market for white goods and televisions has been growing and high trend of probable production in the coming years.

2. Rising imports to meet demand

There has been an upsurge in imports from low-cost regions such as China and SE Asia due to various free trade agreements and readiness of products at a lower cost as associated to costs incurred in local manufacturing.

3. Production expansion to meet local and export demand

To meet the rising home-grown demand and export demand to neighbouring regions and MEA, companies are planning to expand their local manufacturing in India and make the country an export hub.

Major Indian and global consumer durables companies have declared investments of around US$1.4 billion over the coming years in India.

The main three drivers boost up Indian home appliance product market

- *SALES REPLACEMENT* techniques.

- **MARKET PENETRATION** policy.

- **LOW COST** mechanisms.
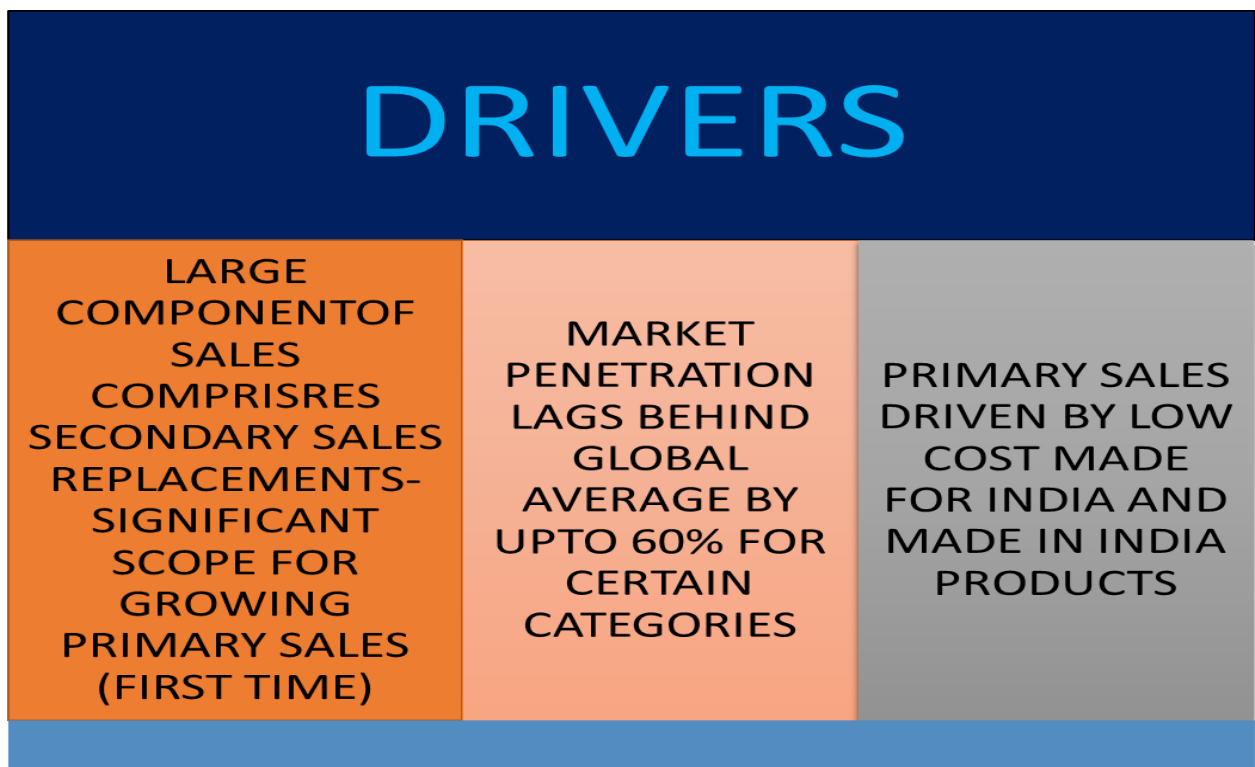
Source: DION report, EY analysis

How manufacturer face certain specific challenges

1. Overturned duty structure due to FTAs makes Indian manufacturing uncompetitive for white goods such as washing machines, refrigerators and air conditioners.

2. Altered special Incentive Package Scheme (MSIPS) is currently not applicable to consumer durables such as washing machines, refrigerators and air conditioner.

3. In adequate and under-developed local supplier base.

4. High cost of capital and other manufacturing costs due to frequently revised

Energy efficiency necessities.

India can emerge as the future manufacturing hub for the region, provided there is tolerable focus and support from the Government for this sector
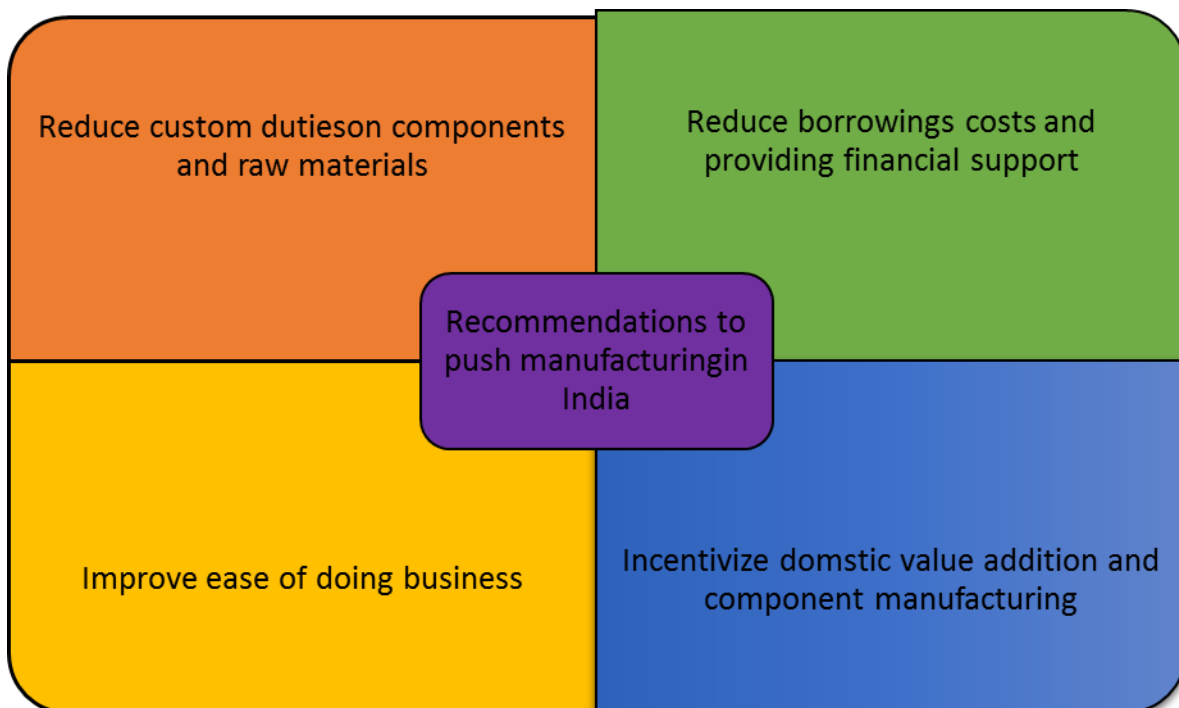
- ➢ The Indian consumer durables market has usually been a high employ, priority sector

- ➢ Consumer durables account for more than 40% of end consumer outlay in India.

- ➢ Annual turnover of more than INR500 billion and contributes more than INR150 billion to revenue of Centre and State governments

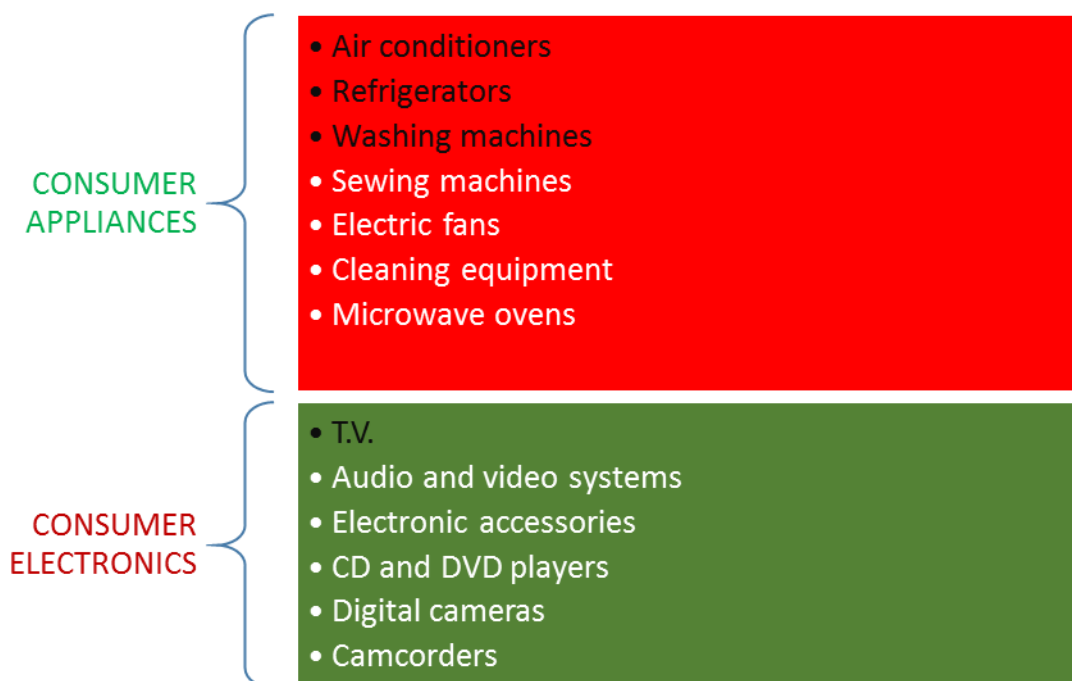- ➢ The sector pays to more than 5.5% of IIP.

It has been an employment originator — for every direct job.

Import concentrated sector and second top contributor to the current account deficit.

Urban markets justification for the majority share (65% of total revenues) in the consumer durables sector in India…

… However, upcoming jet growth will come in from the rural markets (69% rural population).

(Source: CEAMA reports, EY analysis)

CONSUMER APPLIANCES
- Air conditioners
- Refrigerators
- Washing machines
- Sewing machines
- Electric fans
- Cleaning equipment
- Microwave ovens

CONSUMER ELECTRONICS
- T.V.
- Audio and video systems
- Electronic accessories
- CD and DVD players
- Digital cameras
- Camcorders

Objective of the study-

- The increasing electronics and consumer durables market in India presents a striking opportunity to manufacturers.

- Government of India's recently declared **Make in India** initiative has provided different stimulus to this sector

BUSINESS TREND OF HOME APPLIANCES IN INDIA

The Indian consumer durables market has traditionally been a high employ, priority sector. Consumer durables account for more than 40% of end consumer costs in India. Annual turnover of more than INR500 billion and pays more than INR150 billion to revenue of Centre and State governments the sector pays to more than 5.5% of IIP. It has been an employment originator — for every direct job, 3 in-direct jobs are shaped. Import demanding sector and second top supplier Urban markets reason for the mainstream share (65% of total revenues) in the consumer durables segment in India…however, upcoming jet growth will originate subsequently in the rural markets (69% rural population).

Table -1 Growth of turnover in Indian market (INR Billon)

| component	2009	2013	2014	2015	2016
WASHING MACHINE	37	87	101	122	140
REFRIGERATOR	41	74	81	87	93
A.C.	68	77	86	96	108
T.V.	257	435	514	618	735

Source: JP Morgan, Tech Navio, Spark Capital estimates, EY analysis
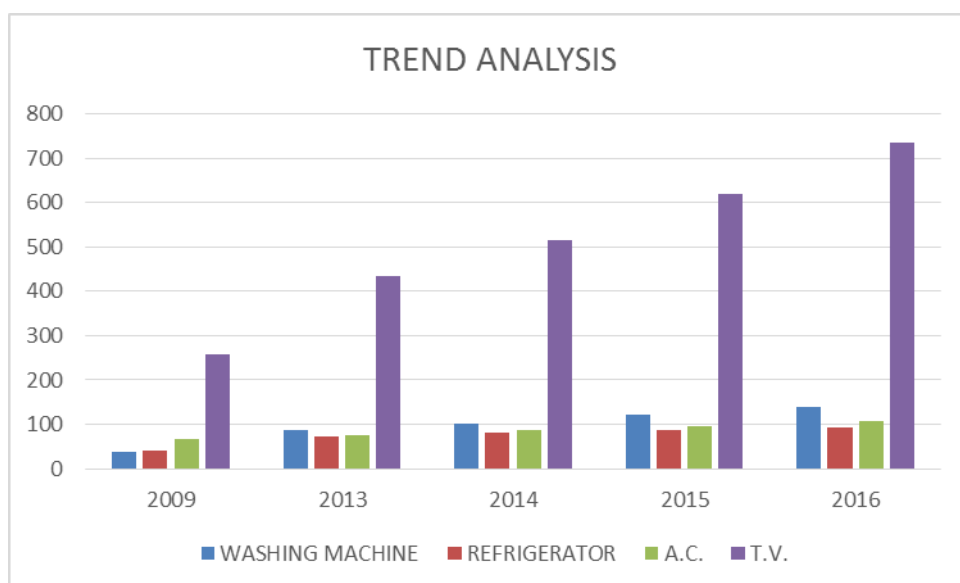
In that bar diagram there was a tremendous growth in turnover in respect of revenue generation from 2009 to 2016 for selling of home appliances washing machine ,refrigerator ,A..C...and T.V.

Table -2 TREND ANALYSIS OF HOME APPLIANCES PRODUCTION CATEGORYWISE ('000s)

| YEAR	A.C. PRODUCTION	WACHING MACHINE	REFRIGERATOR	T.V.
2010	1458	3049	8001	650
2011	2346	3080	8715	1170
2012	1666	2995	7738	1930
2013	1890	3225	8686	3090
2014	1948	3429	8421	4940

HOME APPLIANCE PRODUCTION
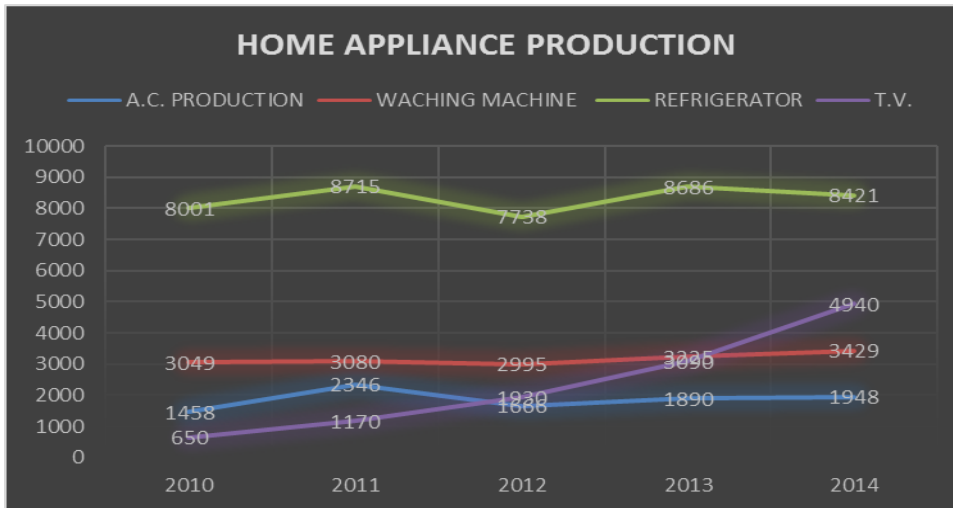
Overall, growth in manufacturing over the 5 year period of FY10–FY14 has continued fairly reasonable, except for FPD TVs. Manufacturers put their plans on hold for growing capacity and investments that had been declared in 2008–10 period, due to demand slowdown given the weedy macroeconomic circumstances.

Business forecasting models-

BUSINESS FORECASTING MODEL OF AIR-CONDITIONER PRODUCTION 2015-2022

Trend Analysis Plot for Air-conditioner production
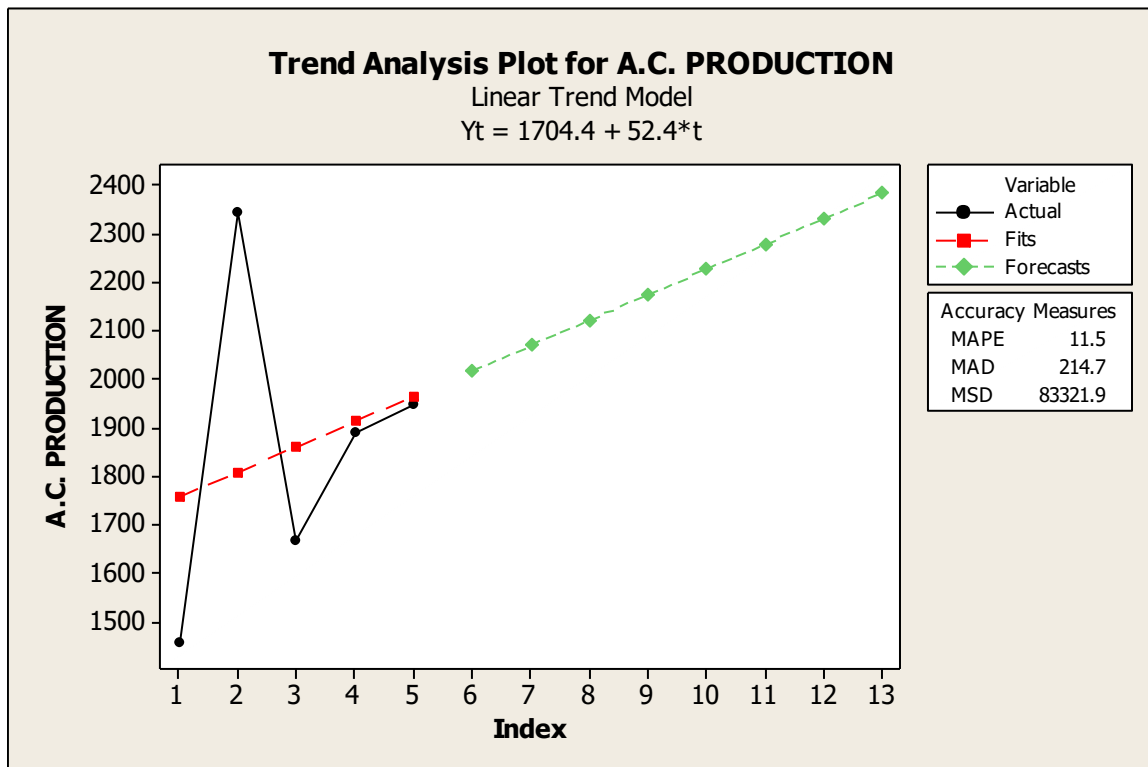
Trend Analysis for A.C. PRODUCTION

Data   A.C. PRODUCTION

Length   5

N Missing 0

Fitted Trend Equation

Yt = 1704.4 + 52.4*t

Accuracy Measures

MAPE   11.5

MAD   214.7

MSD   83321.9

Forecasts

year	Forecast of A.C. production
2015	2018.8
2016	2071.2
2017	2123.6
2018	2176.0
2019	2228.4
2020	2280.8
2021	2333.2
2022	2385.6

The trend plot of Air-conditioner production that shows the original data, the fitted trend line, and forecasts. The Session window output also displays the fitted trend equation and three measures to help us determine the accuracy of the fitted values: MAPE, MAD, and MSD. The data of Air-conditioner production show a general upward trend, though with an evident seasonal component. The trend model appears to fit well to the overall trend.

BUSINESS FORECATING MODEL OF WASHING MACHINE PRODUCTION FROM 2015-2022

Trend Analysis Plot for WACHING MACHINE
Linear Trend Model
$Y_t = 2884.1 + 90.5*t$
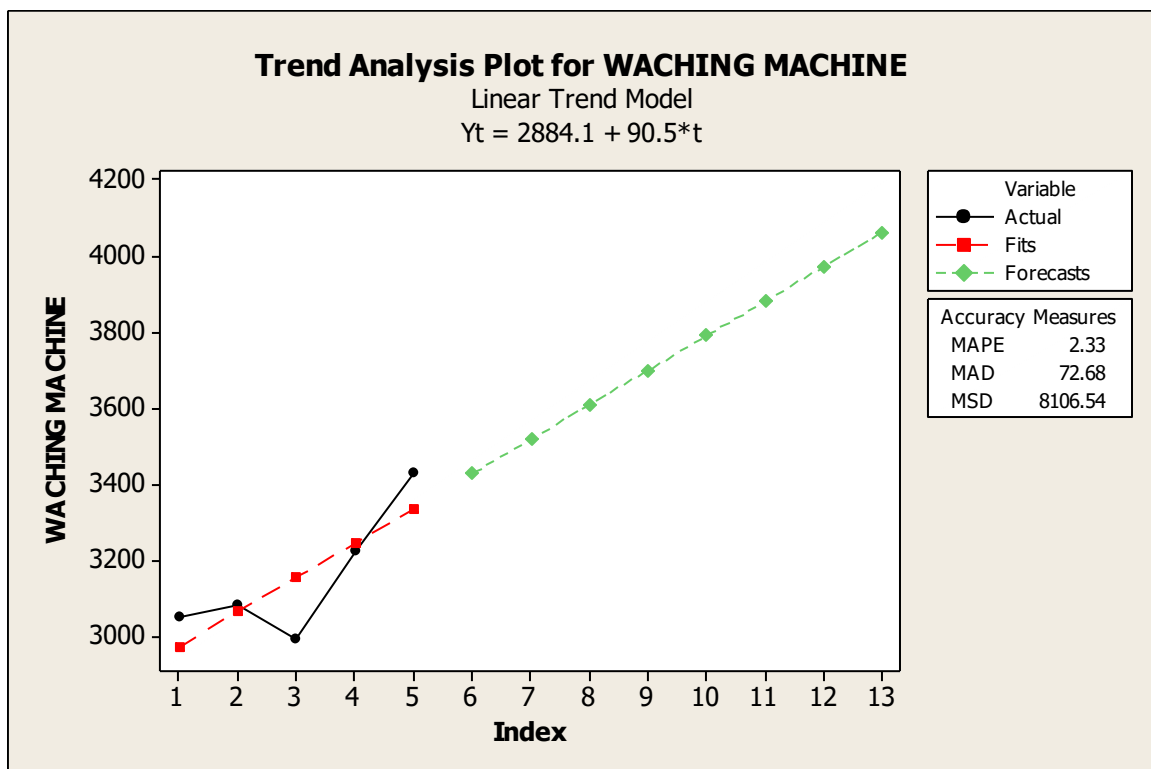
Trend Analysis for WACHING MACHINE

Data   WACHING MACHINE

Length   5

N Missing 0

Fitted Trend Equation

$Y_t = 2884.1 + 90.5*t$

Accuracy Measures

MAPE   2.33

MAD   72.68

MSD   8106.54

Forecasts of Refrigerator production

year	Forecast of washing machine production
2015	3427.1
2016	3517.6
2017	3608.1
2018	3698.6
2019	3789.1
2020	3879.6
2021	3970.1
2022	4060.6

The Washing Machine production data shows a general upward trend, though with an evident seasonal component. The trend model appears to fit well to the overall trend.The Session window output also displays the fitted trend equation and three measures to help us determine the accuracy of the fitted values based on MAPE, MAD, and MSD.

BUSINESS FORECASTING MODEL OF REFRIGERATOR FROM 2015-2022
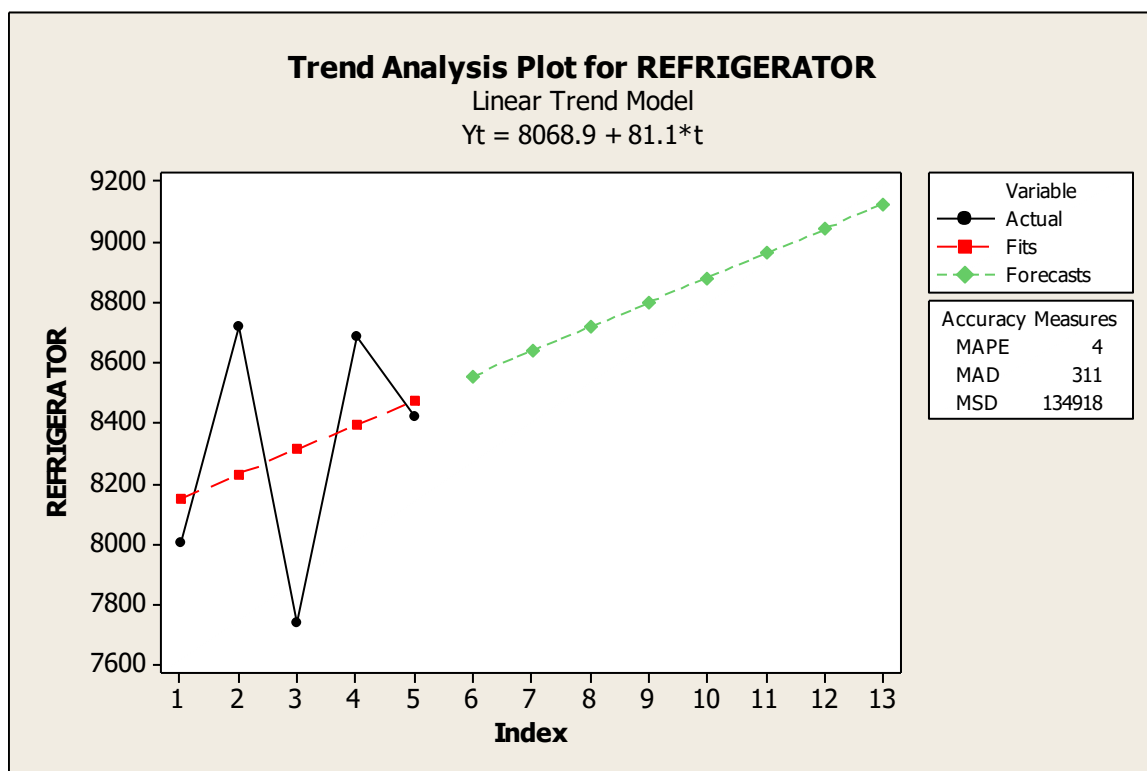
Trend Analysis for REFRIGERATOR

Data   REFRIGERATOR

Length   5

N Missing 0

Fitted Trend Equation

$Yt = 8068.9 + 81.1*t$
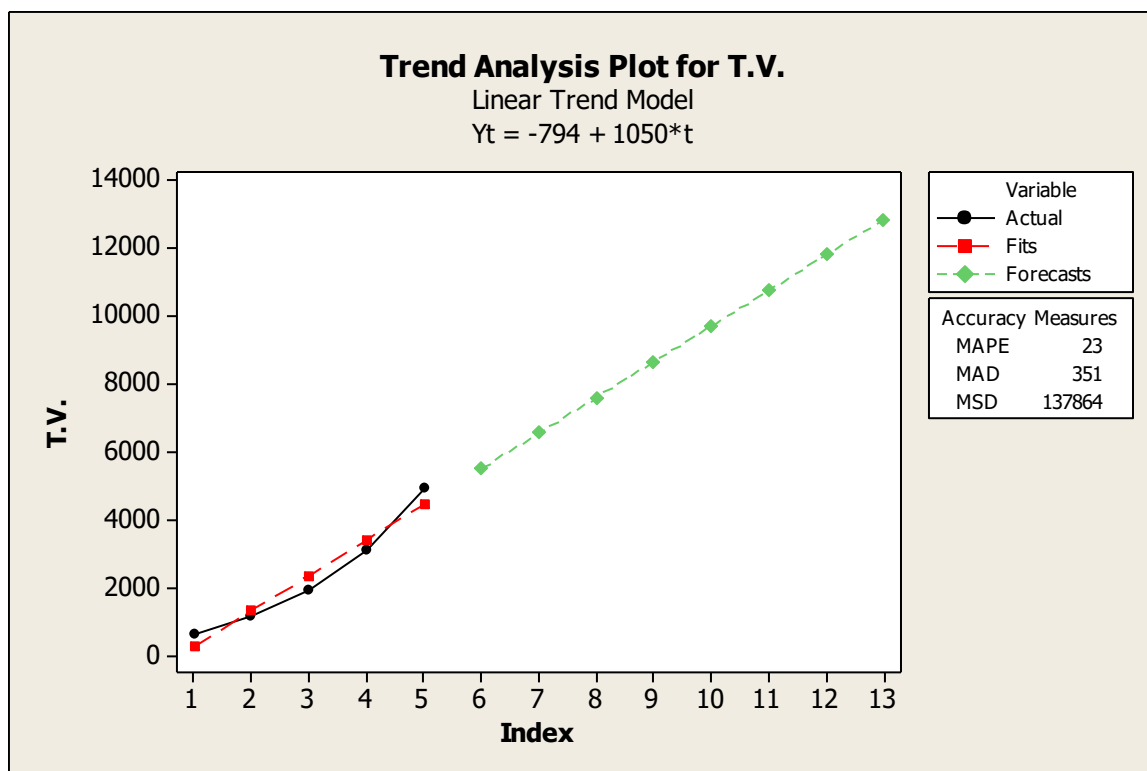
Accuracy Measures

MAPE   4

MAD   311

MSD   134918

Forecast of refrigerator production

year	Forecast of refrigerator production
2015	8555.5
2016	8636.6
2017	8717.7
2018	8798.8
2019	8879.9
2020	8961.0
2021	9042.1
2022	9123.2

Interpreting the results

The refrigerator production data shows a general upward trend, though with an evident seasonal component. The trend model appears to fit well to the overall trend. The Session window output also displays the fitted trend equation and three measures to help us determine the accuracy of the fitted values based on MAPE, MAD, and MSD

BUSINESS FORECASTING MODEL OF TELEVISION PRODUCTION FROM 2015-2022

Trend Analysis Plot for T.V.
Linear Trend Model
$Y_t = -794 + 1050 \times t$

Trend Analysis for T.V.

Data   T.V.

Length   5

N Missing 0

Fitted Trend Equation

$Y_t = -794 + 1050 \times t$

Accuracy Measures

MAPE   23

MAD   351

MSD   137864

Forecasts of T.V. production

year	Forecast of T.V. production
2015	5506
2016	6556
2017	7606
2018	8656
2019	9706
2020	10756
2021	11806
2022	12856

The Television set production data shows a general upward trend, though with an evident seasonal component. The trend model appears to fit well to the overall trend. The Session window output also displays the fitted trend equation and three measures to help us determine the accuracy of the fitted values based on MAPE, MAD, and MSD.

Conclusion

According to the trend analysis we found that, Indian consumer durables market has traditionally been a high employ, priority sector. In every trend model provide us high chances of boosting up production trend and new horizon of increasing turnover which leads to sufficient employability and new trend of business.

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