



DATA VISUALIZATION & FORECASTING
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Abbreviation:

eom –end of month(End of month of order date)

OVERVIEW OF COMPANY AHG

Adventure hardware group(AHG) is a global manufacturing organization with operations in America, Europe and Asia. AHG is online specific retailer and reseller of Bikes, Components, Accessories and clothing. Established in 2011,AHG has 4 years of history of dealing with all there products.

OVERVIEW AHG



- ▶ From 2011 to 2014 AHG had different kind of sales in each products. Each product availability and sales in online and offline channel is varied.
- ▶ From 2013 to 2014 sales data it is clear that most of the products are sold through the online channel.
- ▶ Profit and sales rate exponentially varying from 2013 onwards.
- ▶ Sales in Accessories and clothing through the online channel increased rapidly from 2013 onwards.
- ▶ Even though the transactions through offline sales are good the profit is negative but even though the transaction less in offline the profit is very high compared to offline sales profit.
- ▶ Profit gained from the accessories and clothing through online is more that offline which is in between 50% and 80%.
- ▶ Profit range of bike in 2014 through online the profits come into an increase not greater tan 50%.But the profit in reseller increased rapidly from 50% to 90% in between 2013 to 2014.
- ▶ Components are not at all came across 50% sale in online in between 2011 to 2014.
- ▶ The accessories and clothing made a different picture for online sales from 2013 onwards.
- ▶ US is the country from which company gets high profit i.e. 90% .It is acquired through the accessories and clothing's in online.
- ▶ Another countries have the sales profit between 50% and 80%,even though it is good sale comparing to the other product sales.

FINANCIAL INFO

Average of PROFIT	%GT total sales	ProductCategoryID	Name3
269.53	85.56%	1	Bikes
26.68	7.04%	2	Components
3.12	2.59%	3	Clothing
11.49	4.81%	4	Accessories
40.63	100.00%		

OnlineOrderFlag	%GT total sales	%GT PROFIT	%GT REVENUE
0	68.74%	-7.70%	68.74%
1	31.26%	107.70%	31.26%
Total	100.00%	100.00%	100.00%

%GT total sales	OnlineOrderFlag	CountryRegionCode	%GT PROFIT
1.78%	0	AU	-0.50%
12.15%	0	CA	-0.81%
2.26%	0	DE	-0.43%
5.02%	0	FR	-0.54%
4.83%	0	GB	-0.34%
42.71%	0	US	-5.07%
8.52%	1	AU	28.31%
2.18%	1	CA	8.00%
3.27%	1	DE	11.20%
3.03%	1	FR	10.36%
3.87%	1	GB	13.25%
10.40%	1	US	36.59%
100.00%			100.00%

Result captured:

- Reseller sale (online flag=0)= -7.70% profit.
- Online sale (online flag=1) = 107.70% profit.
- Concluding: The total sale is higher in online platform than reseller.
- Apart from the all products the Bike have more sale 85.56% and profit 296.53%.
- US have biggest sale and profit through online sale 36.59%.

TOTAL SALE AND PROFIT

Name3	Accessories		Bikes		Clothing		Components		Total	
ProductCategoryID	Average of PROFIT	%GT total sales	Average of PROFIT	%GT total sales	Average of PROFIT	%GT total sales	Average of PROFIT	%GT total sales	Average of PROFIT	%GT total sales
1			269.53	85.56%					269.53	85.56%
2							26.68	7.04%	26.68	7.04%
3					3.12	2.59%			3.12	2.59%
4	11.49	4.81%							11.49	4.81%
Total	11.49	4.81%	269.53	85.56%	3.12	2.59%	26.68	7.04%	40.63	100.00%

- Among all the products bike has more sale and improve profit.
- The interesting factor id even though the sale for components are only 7.04% the total sale is 26.68%
- From that it is clear if it possible to increase the sale in components it can lead to more profit and income to the company.

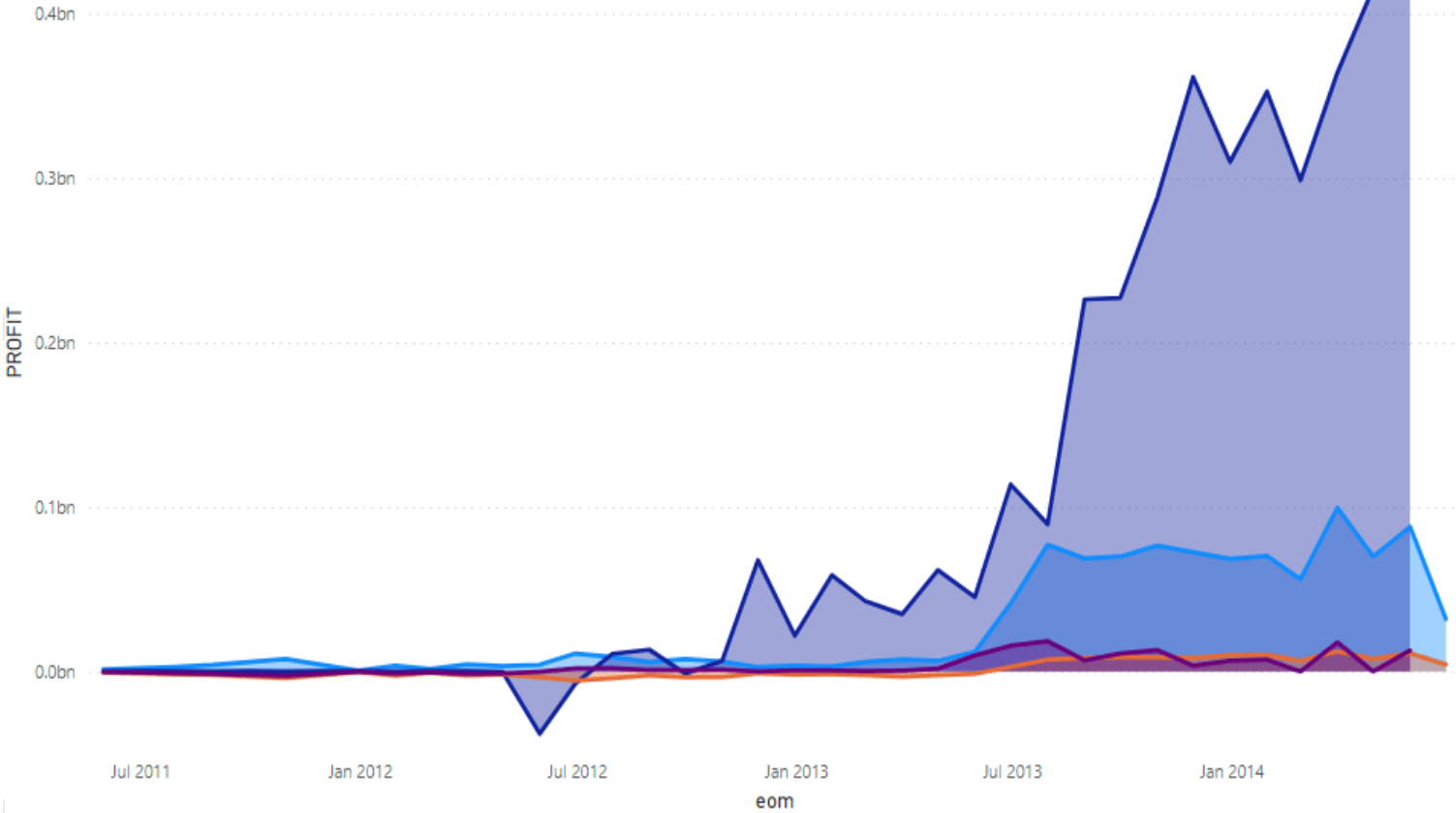
PROFIT TABLE OF EACH PRODUCT (YEARLY)

Name3	2011	2012	2013	2014	Total
Bikes	1,028,846.84	73,335,795.28	1,859,705,367.97	1,876,330,173.40	3,810,400,183.49
Accessories	16,318,926.92	61,734,465.61	508,955,467.53	415,641,755.89	1,002,650,615.95
Components	-5,695,026.35	2,405,644.13	87,400,735.06	37,682,547.37	121,793,900.21
Clothing	-9,110,337.61	-33,454,874.46	43,035,533.20	51,814,379.32	52,284,700.46
Total	2,542,409.80	104,021,030.57	2,499,097,103.76	2,381,468,855.98	4,987,129,400.11

Among the products the bike leading high in profit.
Even though there was a negative profit in 2012 ,it increased gradually.

PROFIT by eom and Name3

Name3 Accessories Bikes Clothing Components



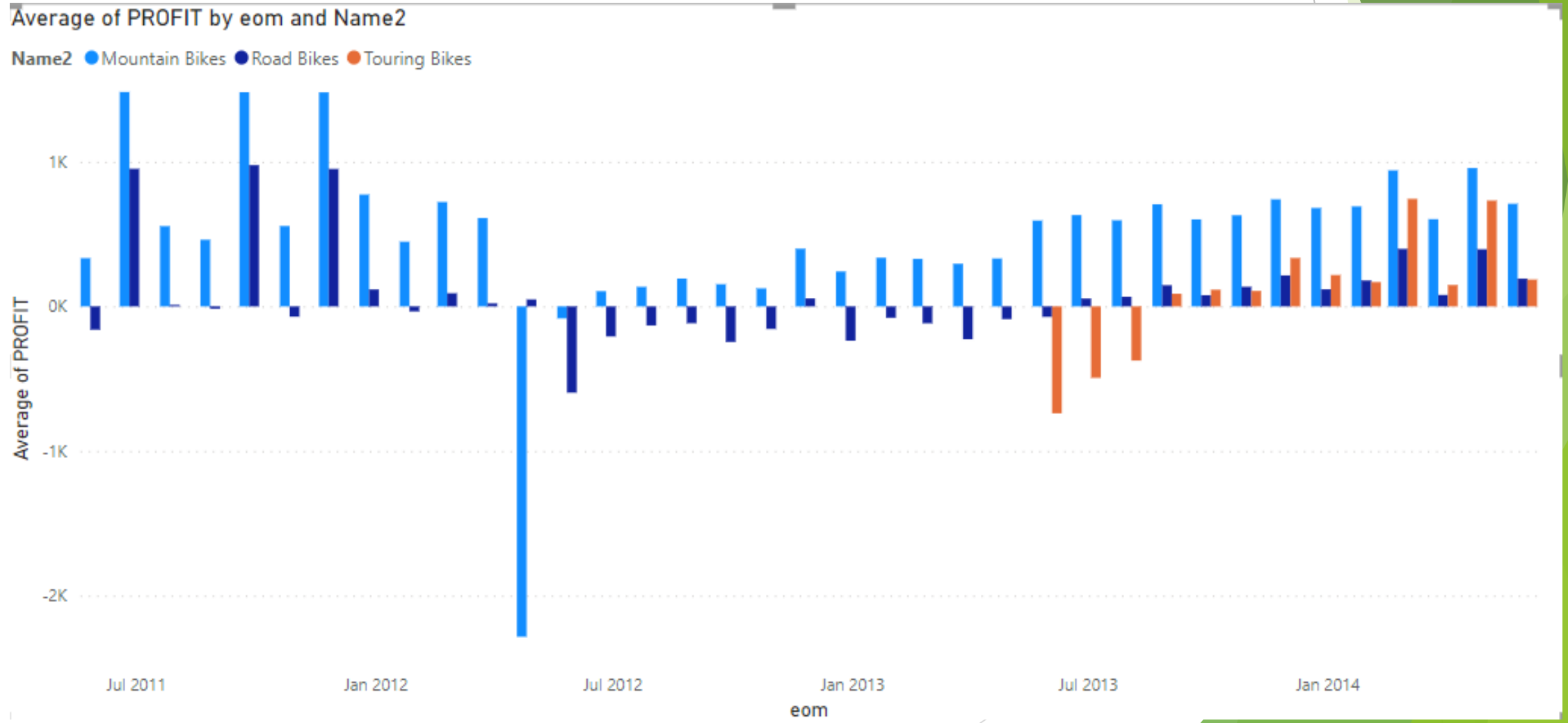
Name3	PROFIT
Accessories	1,002,650,615.95
Bikes	3,810,400,183.49
Clothing	52,284,700.46
Components	121,793,900.21
Total	4,987,129,400.11

Bike in online vs reseller:

Bike in online sale-have better profit but in reselling only mountain bike have +ve profit.

Both road and touring bike has negative profit.

In online mountain bikes have more profit than the other bikes.



IS THERE ANY SHIFT?



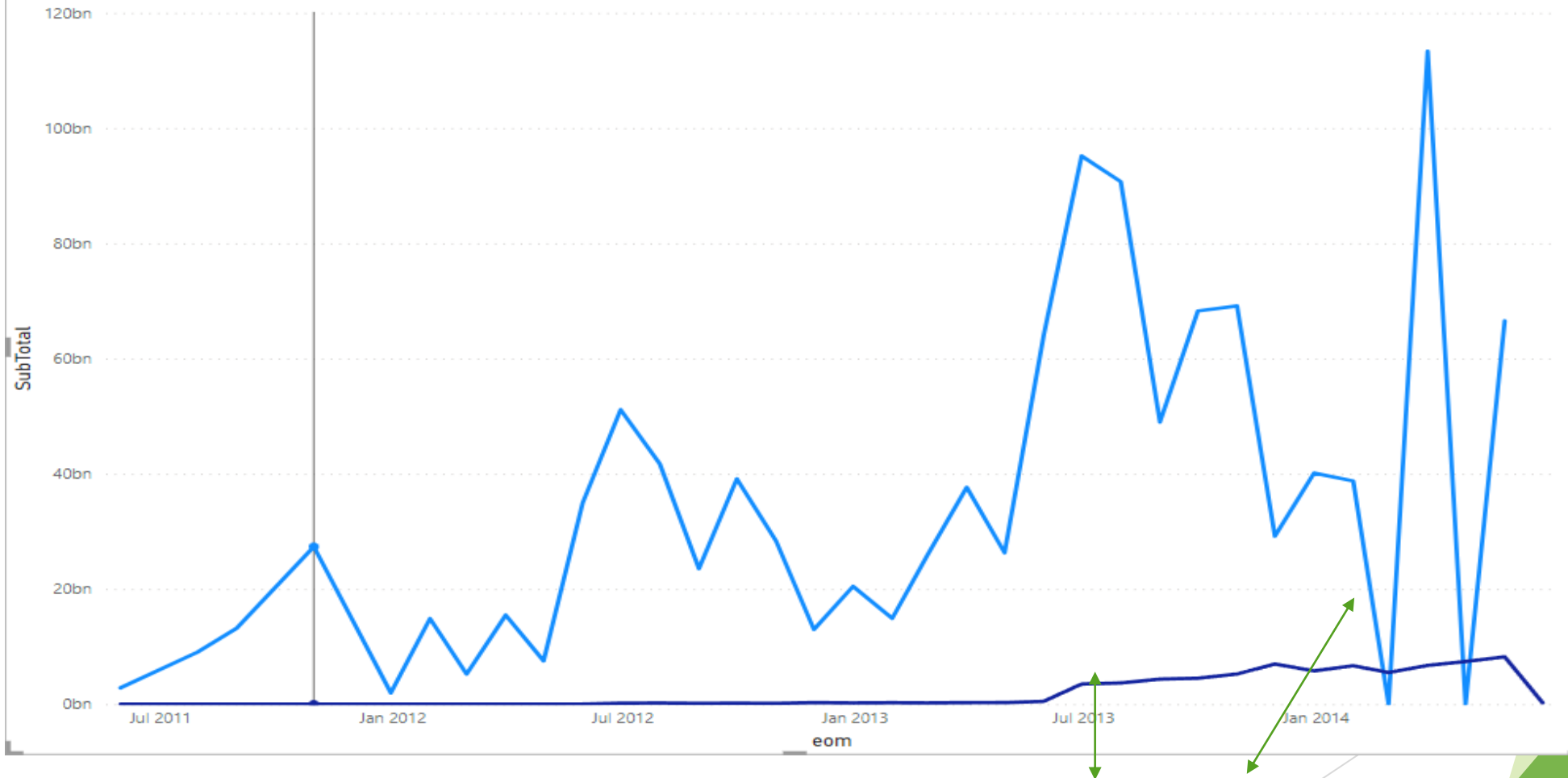
Yes!



SHIFT IN SALES

SubTotal by eom and OnlineOrderFlag

OnlineOrderFlag ● offline ● online

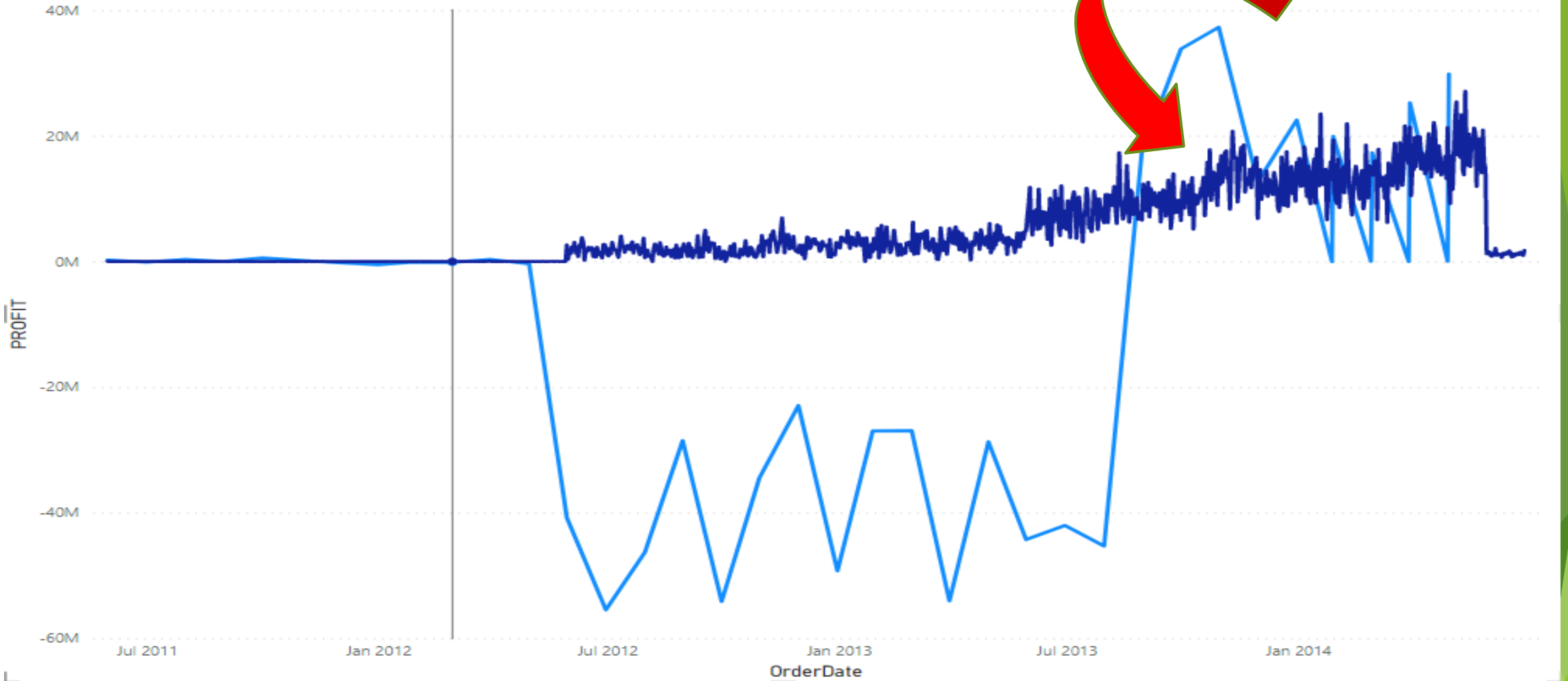


Insights 1:

- ▶ Shift from 2013 onwards: the chart reveals that the sale in online is low compared to reseller till 2013 but the from 2013 onwards the online sales increased and the reseller sales in the base from 2013.
- ▶ Even though the increasing rate is low still the profit is higher for online than reseller.
- ▶ The below chart revealing the profit shift from the 2013 onwards for online and reseller.
- ▶ The shift is very clear from the both charts, also the profit change for the company.

PROFIT by OrderDate and OnlineOrderFlag

OnlineOrderFlag ● offline ● online

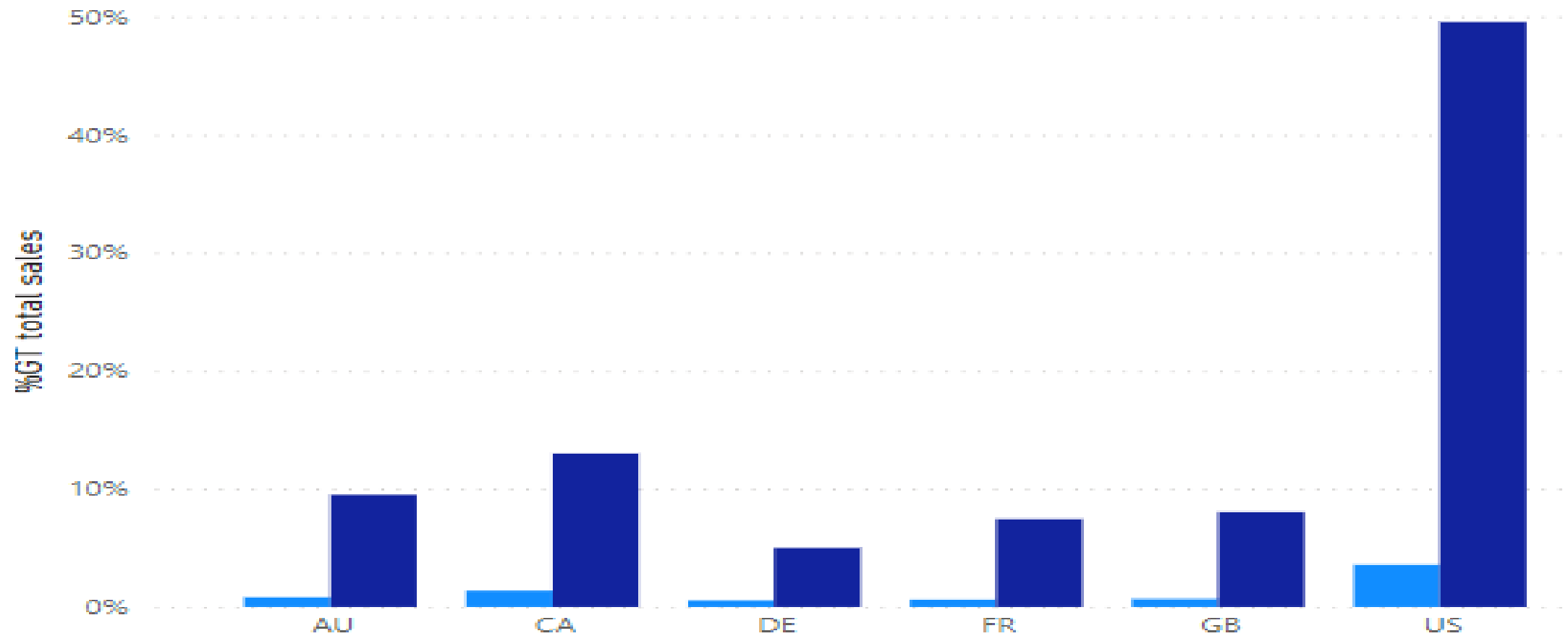


Insights 2:

- The chart revealing that the US has highest total sales compared to other country.
- The AHG company in US performing well through online than the reseller in US.
- From the chart it is clear all the country depends on online rather than the reseller.

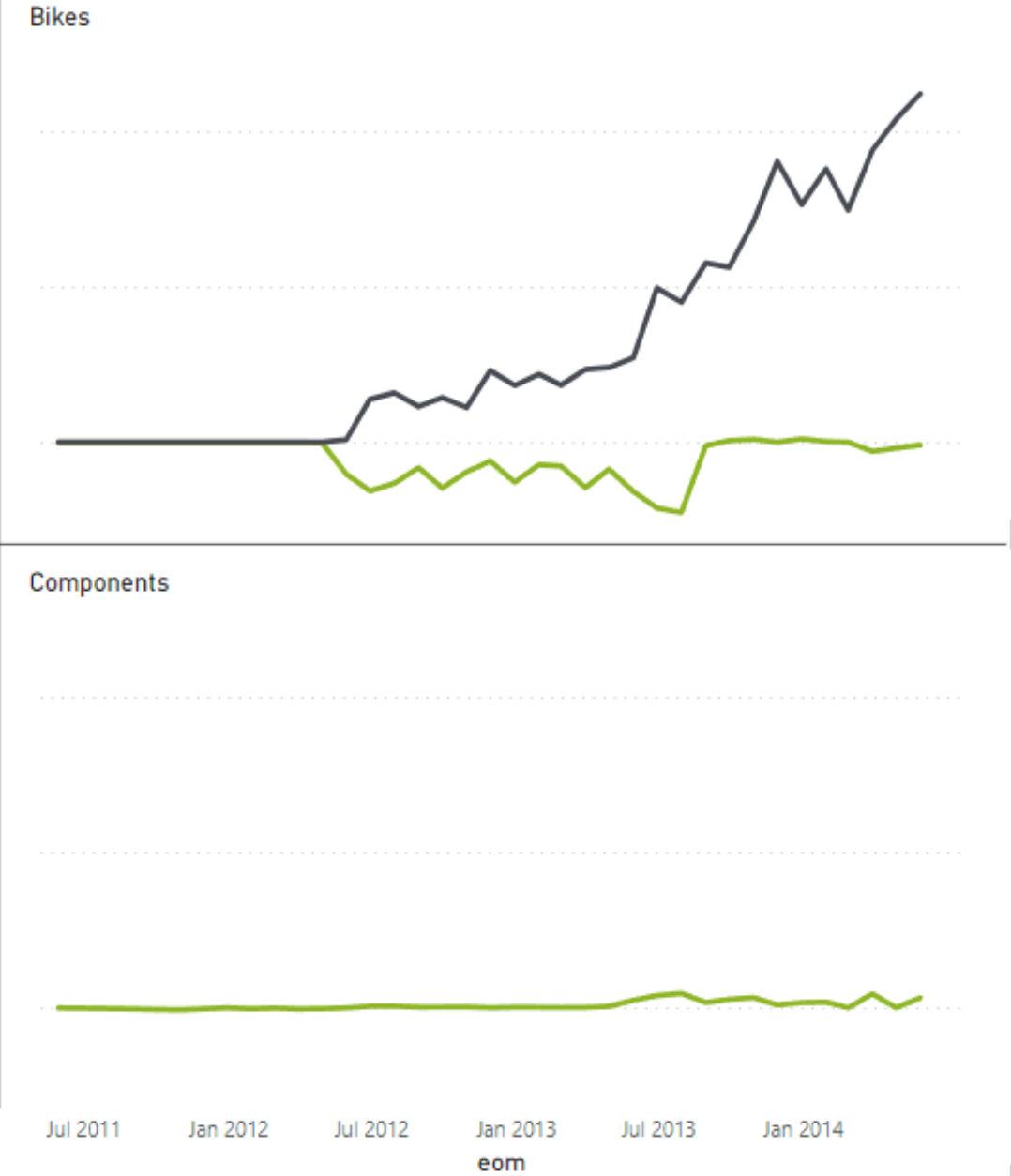
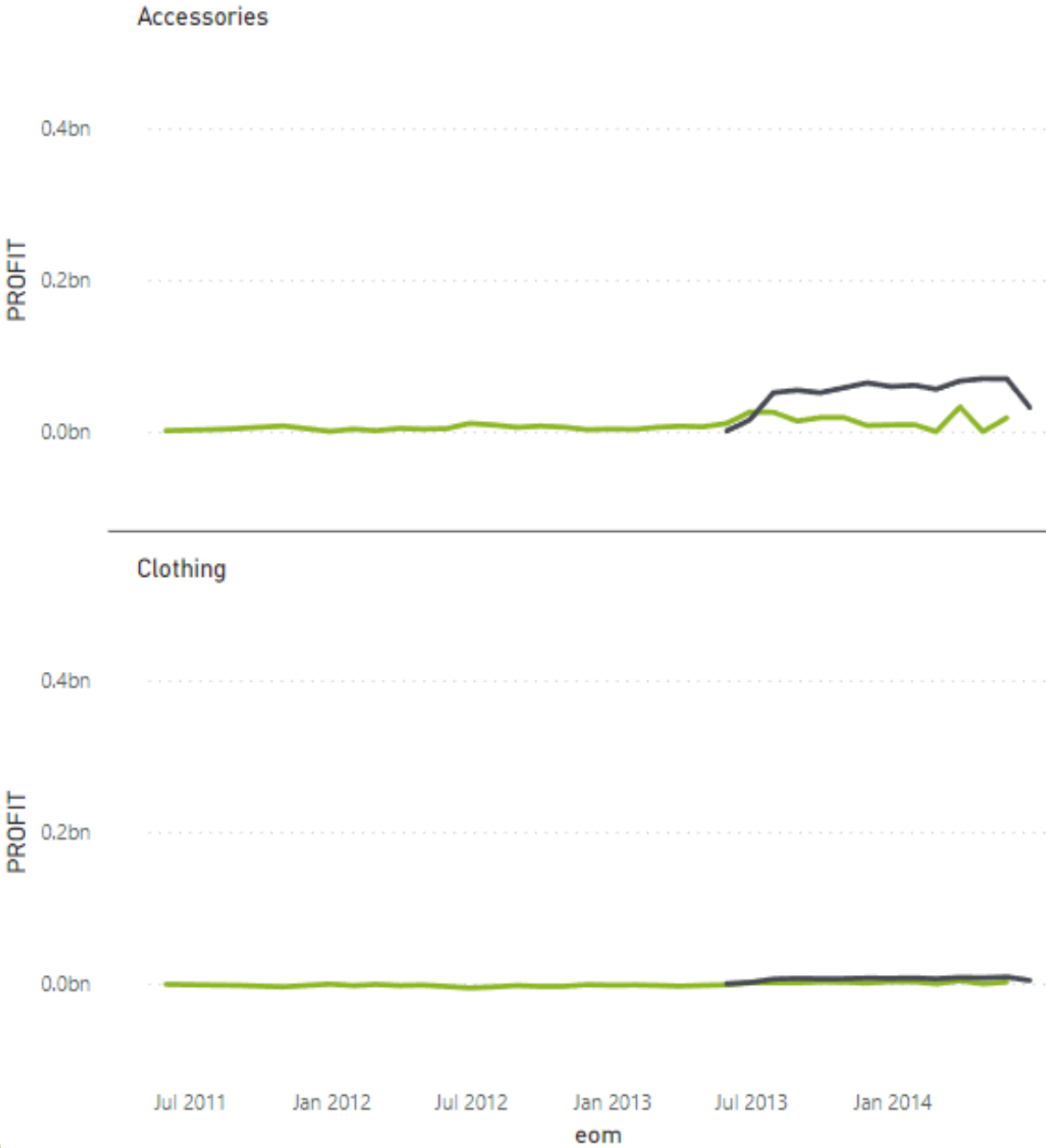
%GT total sales by CountryRegionCode and MakeFlag

MakeFlag ● False ● True



PROFIT by eom, OnlineOrderFlag and Name3

OnlineOrderFlag ●offline ●online



Remark:

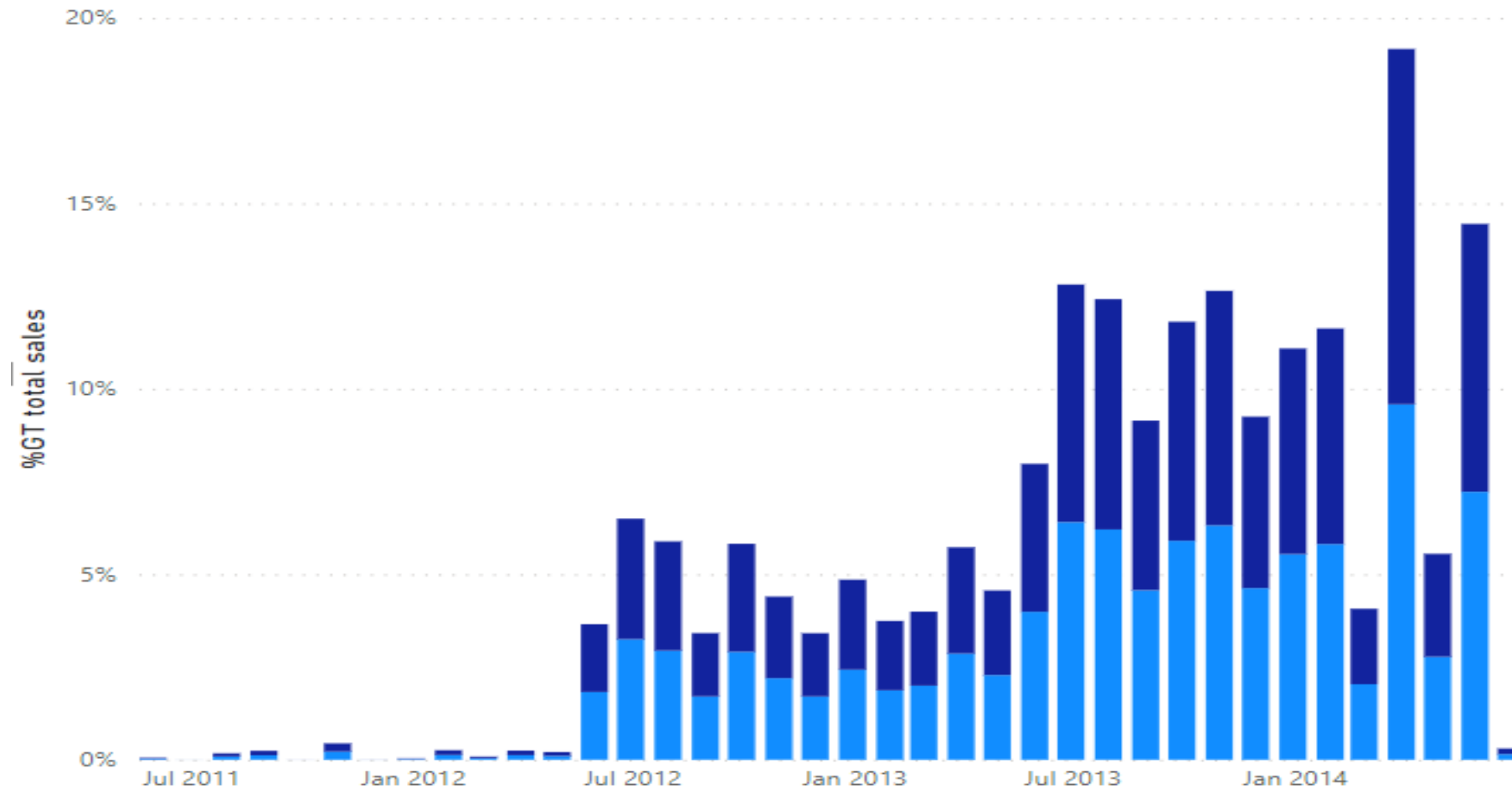
- Online platform introduced for Accessories on 2013.
- Accessories had a shift from 2013 and cross the profit the reseller profit
- From 2013 onwards it evident that bike sales in online increases and reseller sales profit comes to negative.
- From 2012 onwards the online sale only started to grab the positive sales in bike products.
- From 2013 January onwards clothing product introduces in online platform and profit gradually increased.
- From 2013 July onwards the online sale leads the profit than reseller profit.
- No online platform where introduced for components till 2014 January.
- The reseller profit is varying in a positive profit.
- There is opportunity to increase the profit by online sale.

SUMMARY:

- ▶ As per the charts it is clear that the all product got a fluctuation in the sales channel and also it is a big profit make change for the company.
- ▶ From the all charts we can come to a conclusion.
- ▶ There is a shift from reseller to online sale. The US AHG company had the biggest shift and profit from the products. Also we can add the sales of the products. Among the product the accessories and clothes had biggest sale. Even though the online channel introduced these two product on 2013 the sales rate is high. Customers accepted suddenly or adapted to online sale for these two products.

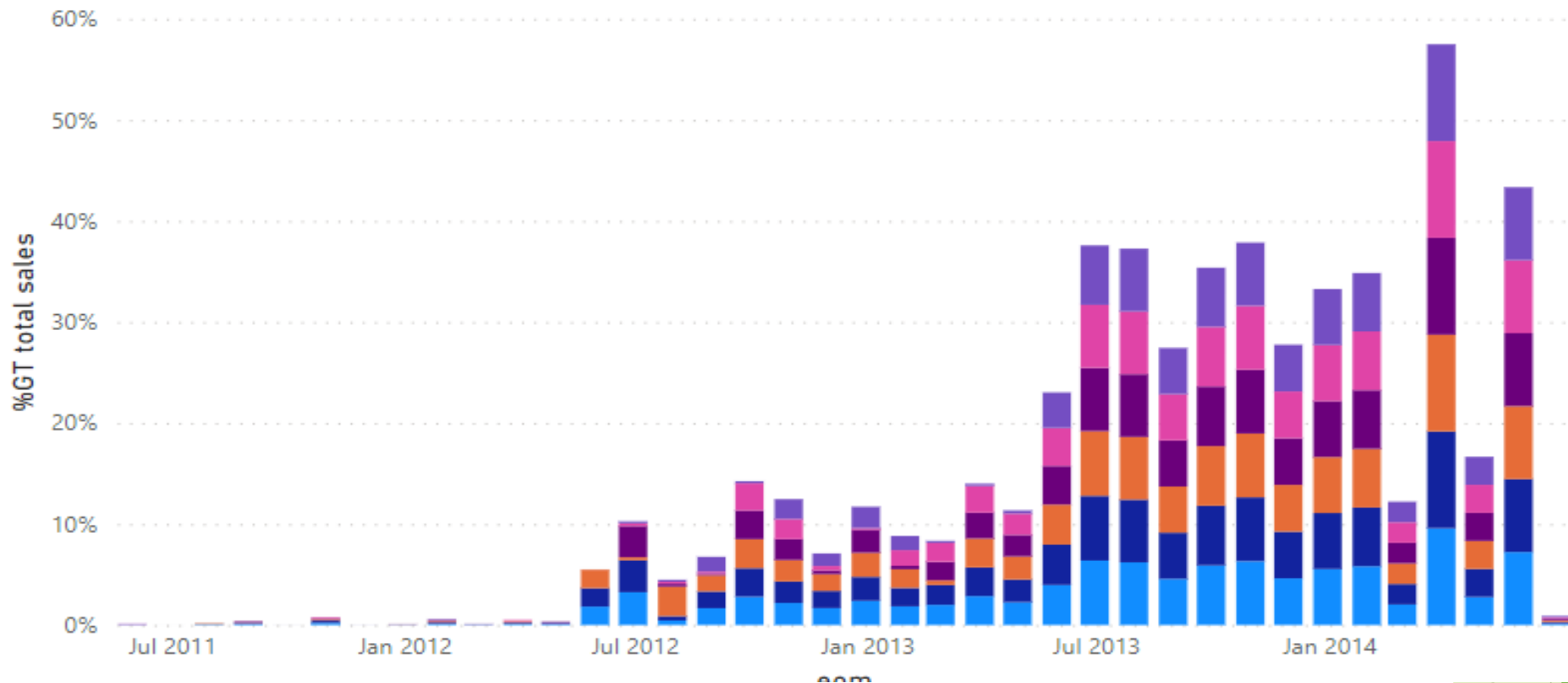
CUSTOMER DEMOGRAPHY

Gender ● F ● M



No effects showing in case of gender

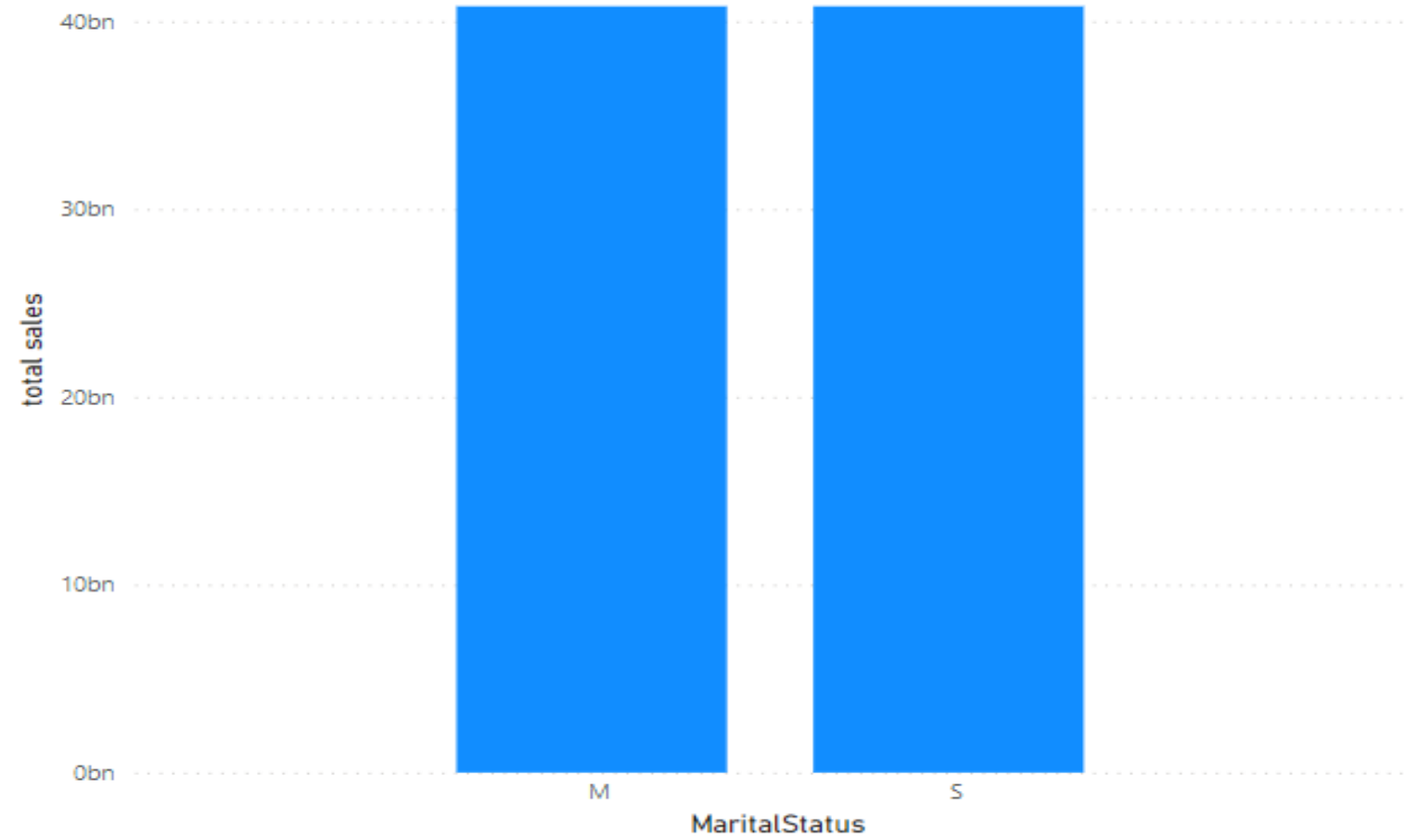
TotalChildren 0 1 2 3 4 5



Result:

Total number of children's : not showing any variations in sale

total sales by MaritalStatus



No effects by marital status



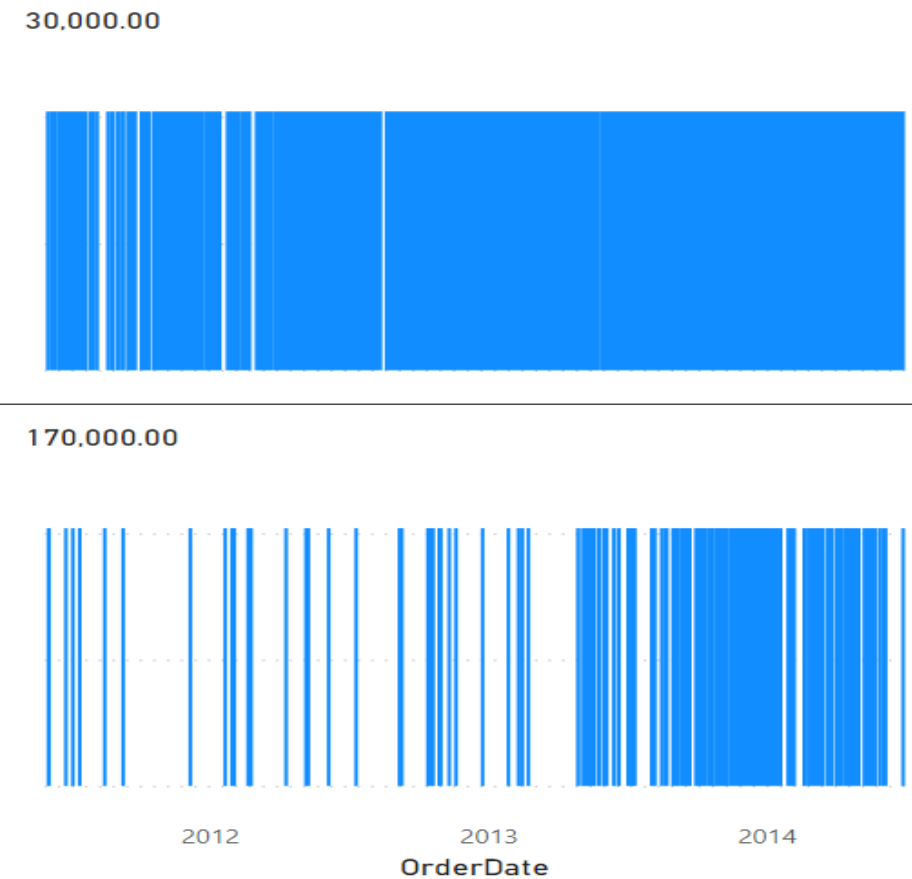
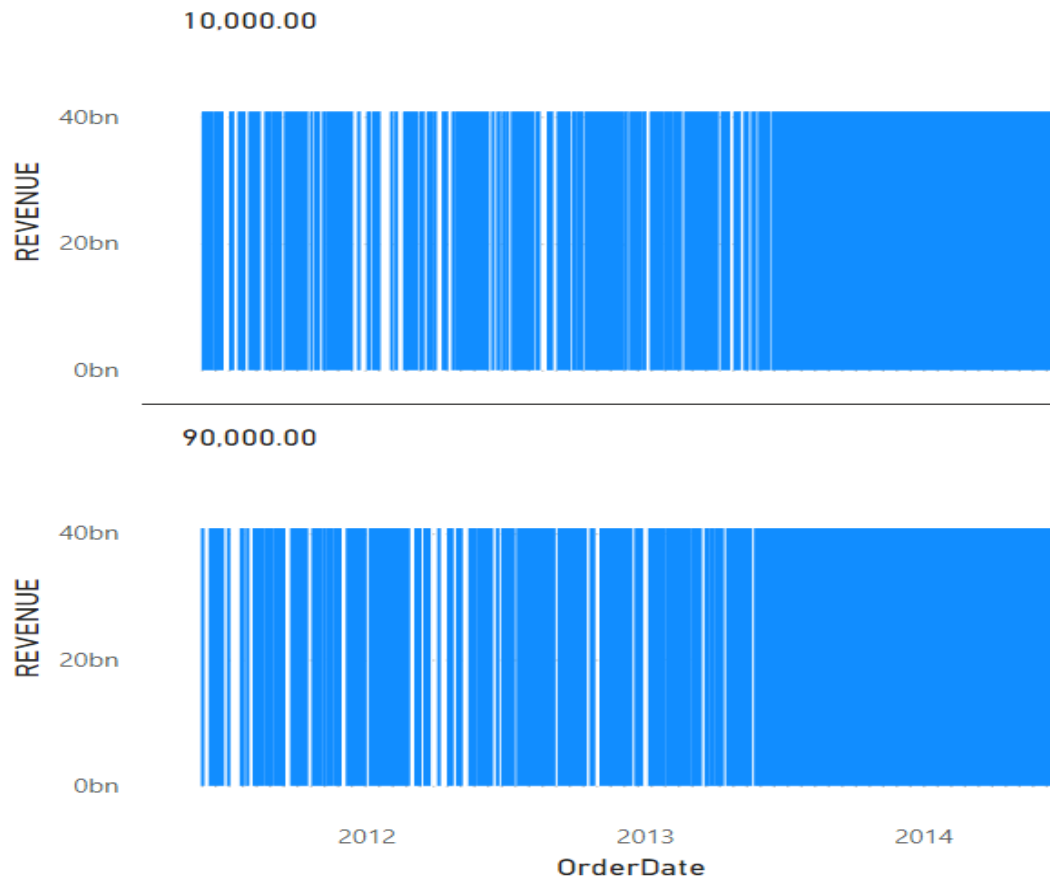
Comments:

There is a little variation by the reason of house owner flag at 2012.

The most of the customers on there own house and there percentage of purchasing rate/the total sales got from them are also increasing only on 2012 .

From 2013 onwards ,no variation showing in the sale whether customer own the house or not.

Comparing to the non house owner the house owner customer buying more products.



Judgements:

- Customer vs yearly income shows that the customer those who have the more income buying more product.
- Most of the customer in the online platform who buy more products have yearly income more that 110,000.
- Between 50% and 60% of clients have yearly income between 30,000 and 90,000.
- The average client purchase has increasing over time.
- With regard to Low that is below 30,000 income, the situation is inverted. The group with high income that is more than 90,000

Which aspects of AHG should be improved?

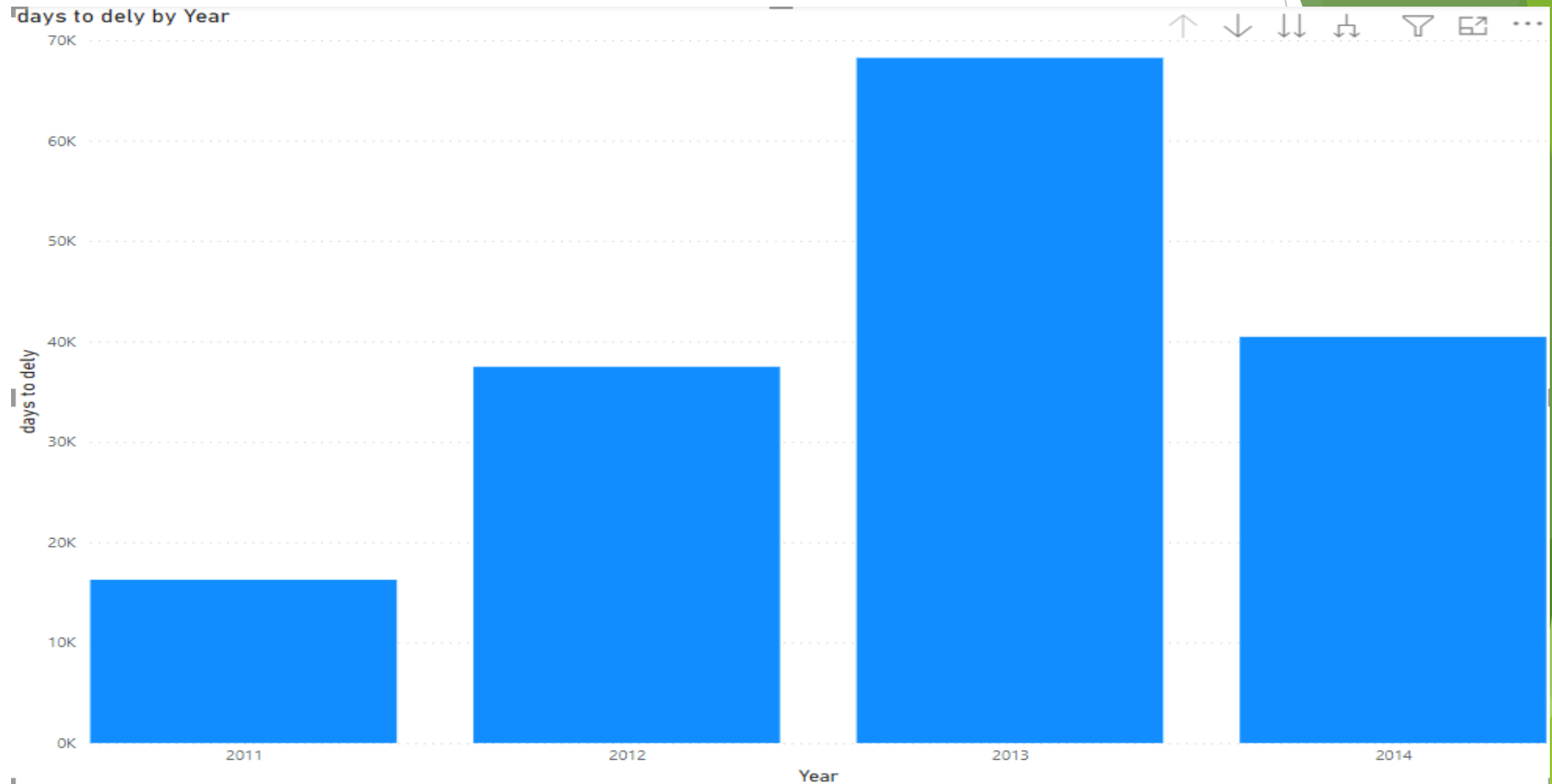


Reason for scrapping:
Most of the scrapping
reason is related to seat
assembly issue(ID:7).be
more conscious on the
seat products size.

Scrapping the orders
are high, reduce the
amount of scrapping

Actual cost vs planned
unchanged, Re-
examine the process.

Days
to
delay:
Late



Comments:

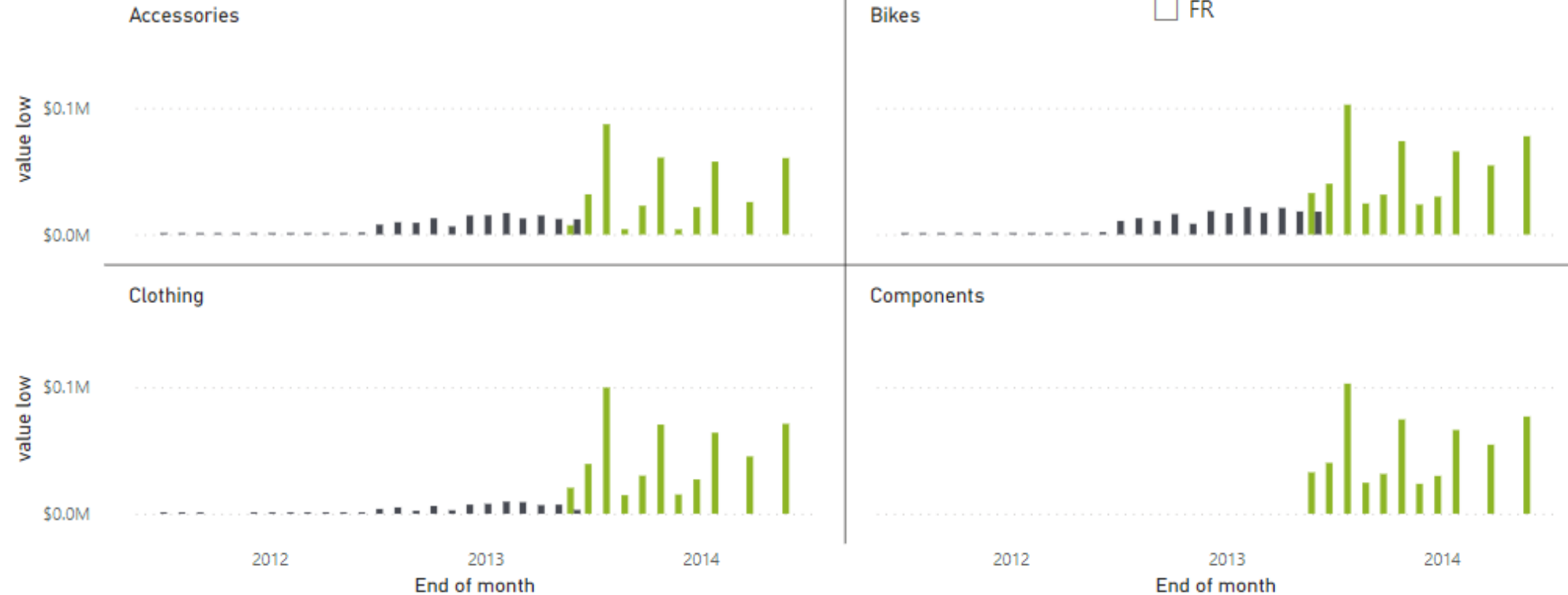
Days of delay by year shows that the delay in delivery is keep on increased in between 2011 and 2013.

Even though in 2014 the delay is reduced it is not a small delay.

Try to find out the reason and resolve, it can imProve the sale.

value low by End of month, OnlineOrderFlag and Name3

OnlineOrderFlag ● offline ● online

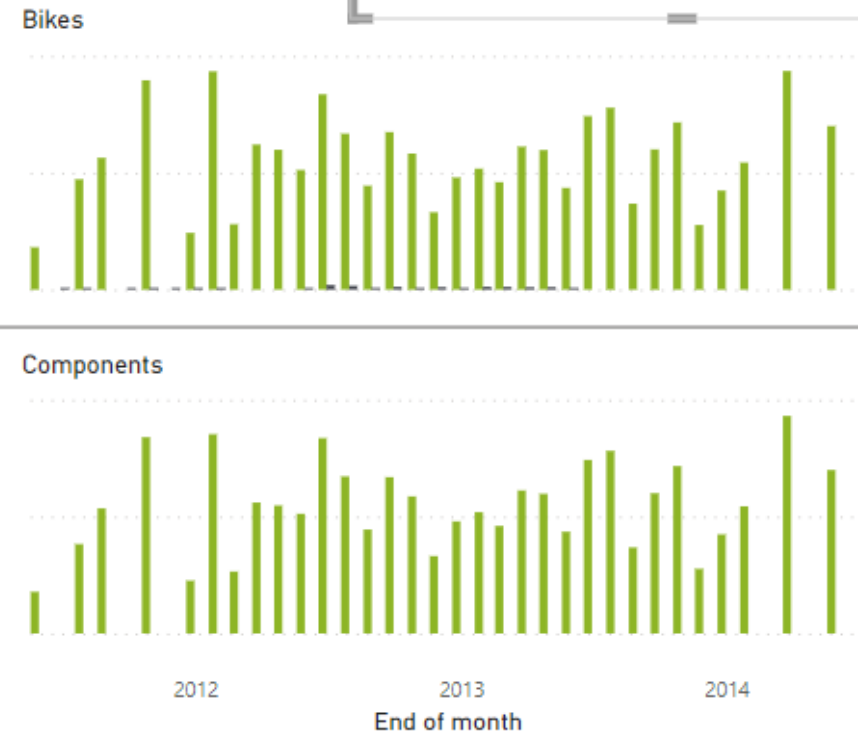


Comments:

- The value low price showing the drop in price in sale.
- In AU the accessories put a high price low for the product to get sailed in reselling.
- But in online the price value increased ie, the value low is low from 2013 onwards to sell the product.
- So in online from 2013 the price is not varied that much and the sales rate is increasing .
- But in reseller sales, the price reduced and sales rate is low.
- So the customer become more comfortable and start to love in purchasing accessories through online.

value low by End of month, OnlineOrderFlag and Name3

OnlineOrderFlag ● offline ● online



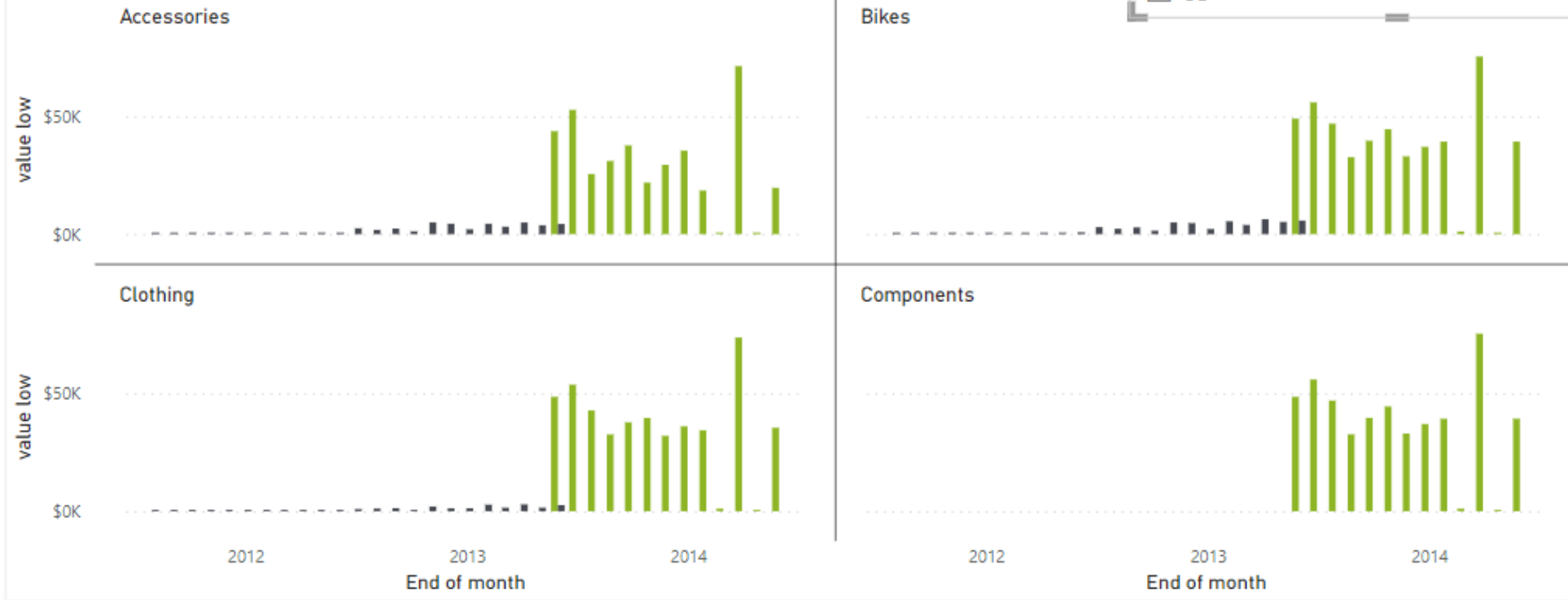
AU
CA
DE
FR

Comments:

- The value low price showing the drop in price in sale.
- In CA almost all products put a high price low for the product to get sold in reselling.
- But in online the price value increased ie, the value low is low from 2013 onwards to sell the product.
- So in online from 2013 the price is not varied that much and the sales rate is increasing .
- But in reseller sales,the price reduced and sales rate is low.

value low by End of month, OnlineOrderFlag and Name3

OnlineOrderFlag ● offline ● online

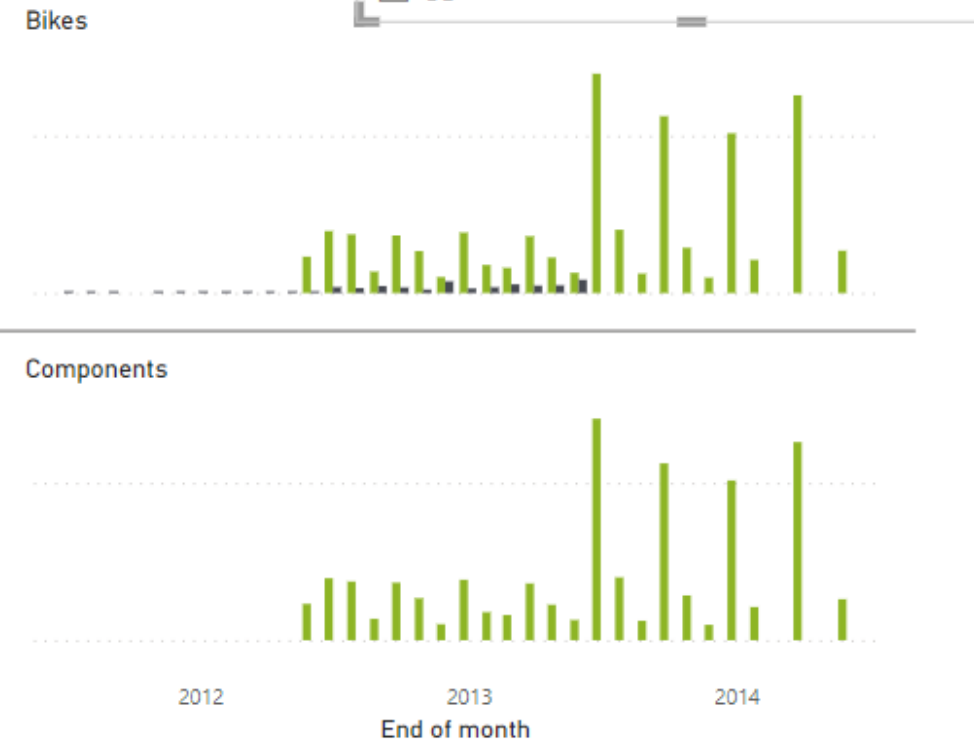


observations:

- The value low price showing the drop in price in sale.
- In DE the all products have a high price low from 2013 onwards to get sailed in offline.
- But in online the price value increased ie, the value low is low from 2013 onwards to sell the product.
- So in online from 2013 the price is not varied that much and the sales rate is increasing .
- But in reseller sales, the price reduced and sales rate is low.

value low by End of month, OnlineOrderFlag and Name3

OnlineOrderFlag ● offline ● online



Countryregioncode

DE

FR

GB

US

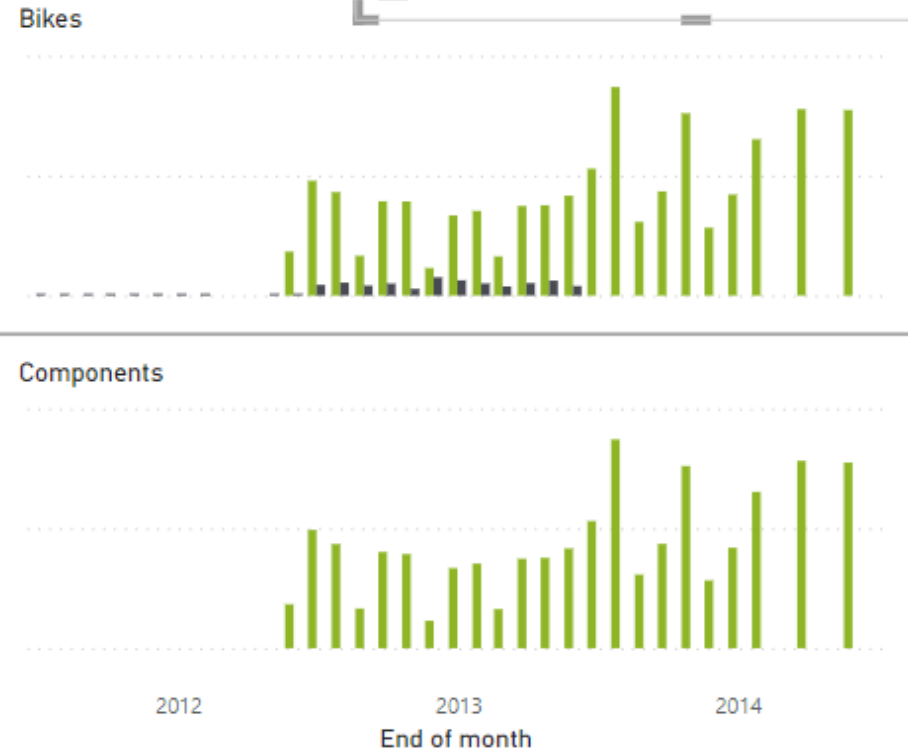
Comments:

- The value low price showing the drop in price in sale.
- In FR put a high price low for the products from 2013 onwards to get sailed in reselling.
- No big variation in price low for online, The product are getting sailed in online with out any making price low..

value low by End of month, OnlineOrderFlag and Name3

OnlineOrderFlag ● offline ● online

DE
FR
GB
US

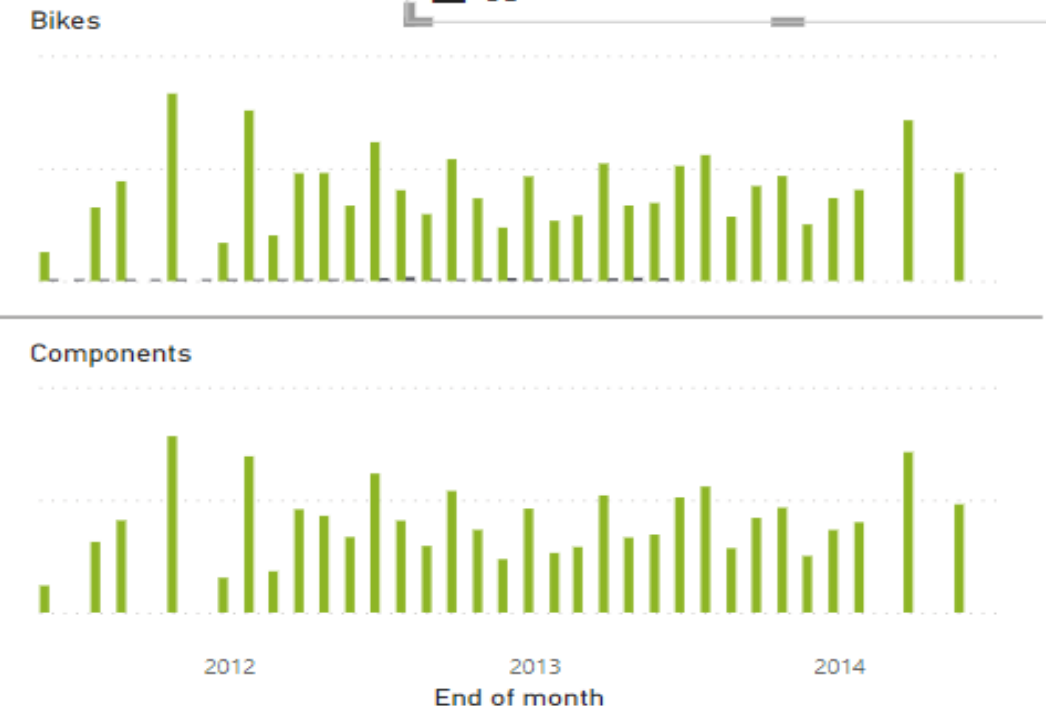
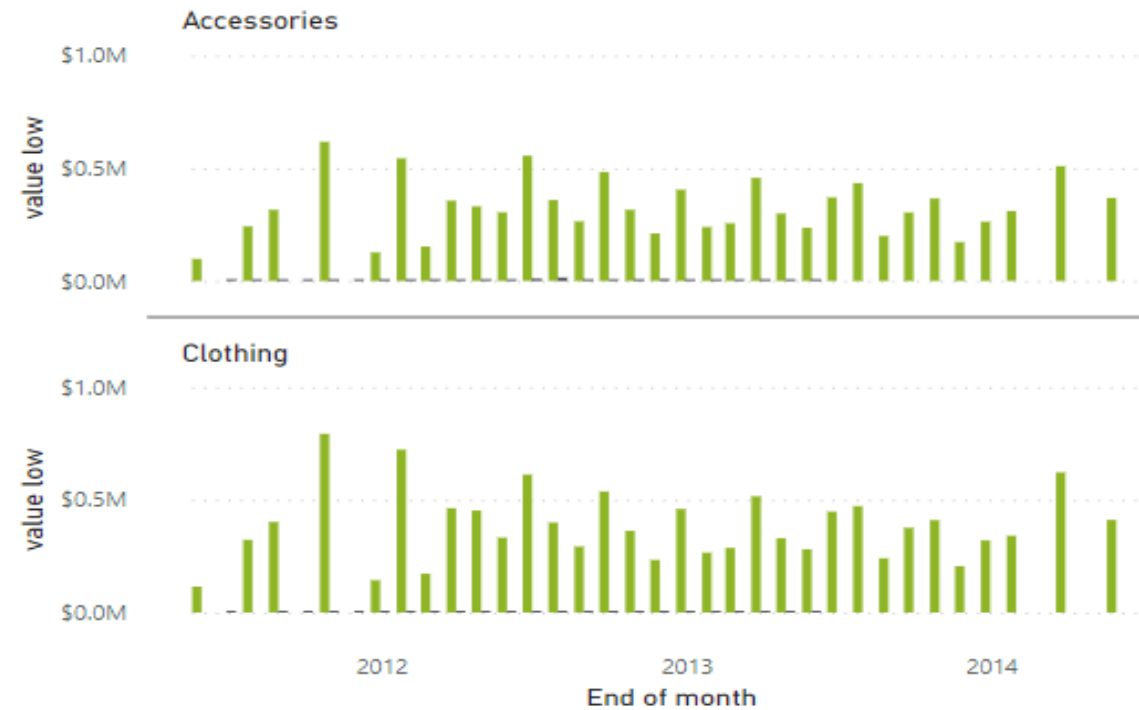


remark:

- The value low price showing the drop in price in sale.
- In GB ,put a high price low for the product from 2012 onwards to get sailed in reselling all the time.
- No big variation in price low for online, The product are getting sailed in online with out any making price low..

value low by End of month, OnlineOrderFlag and Name3

OnlineOrderFlag ● offline ● online



CountryRegionCode
 DE
 FR
 GB
 US

Comments:

- The value low price showing the drop in price in sale.
- In US all products put a high price low for the product to get sailed in reselling all the time.
- No big variation in price low for online, The product are getting sailed in online with out any making price low..

Improvements



MARKET SHARE AND COMPETITORS

TREK

 **RIBBLE**

 **CUBE**

 **SPECIALIZED.**

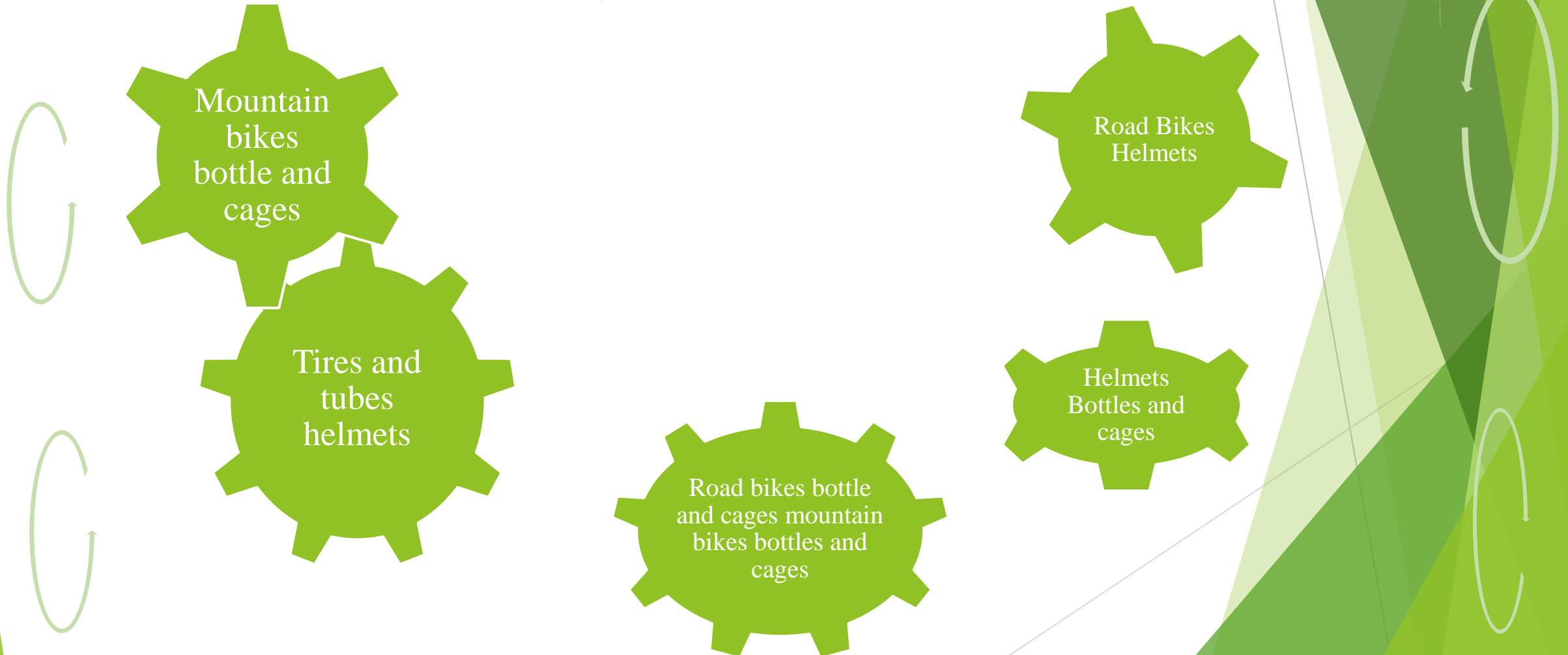
GIANT

- ▶ Following an examination of our competitors' distinguishing features.
- ▶ It should be noted that specialized is the competitor with the best features, which highlight Loyalty Offers and Strong Initial Offers.
- ▶ In this manner, it attracts new clients with attractive initial offers and then retains them by launching appealing promotions tailored to the profiles of each consumer.
- ▶ Finally, the specialized options allows customers more comfortable and secure .
- ▶ At 2018 , hybrid bicycles are expected to be the leading segment of the market, accounting for over 38% of market value, followed by
- ▶ The road and mountain segments going to make a difference in the bike sale.
- ▶ 20%of market value will increase to these category bikes.
- ▶ The bike sale in online market is expected to grow at a rate of 3%,

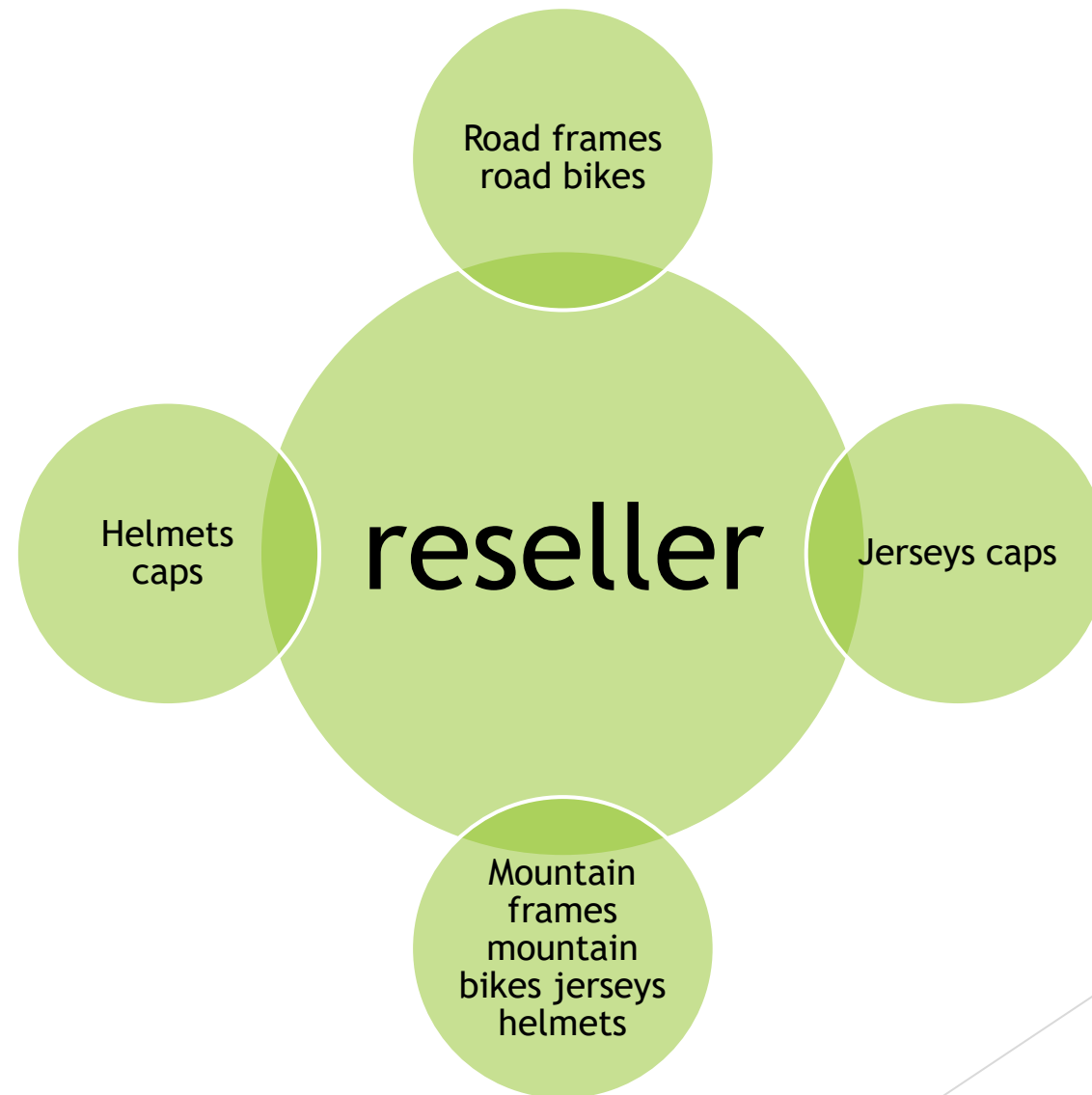
Market basket analysis



TOP 5 PRODUCT ASSOCIATED ONLINE:



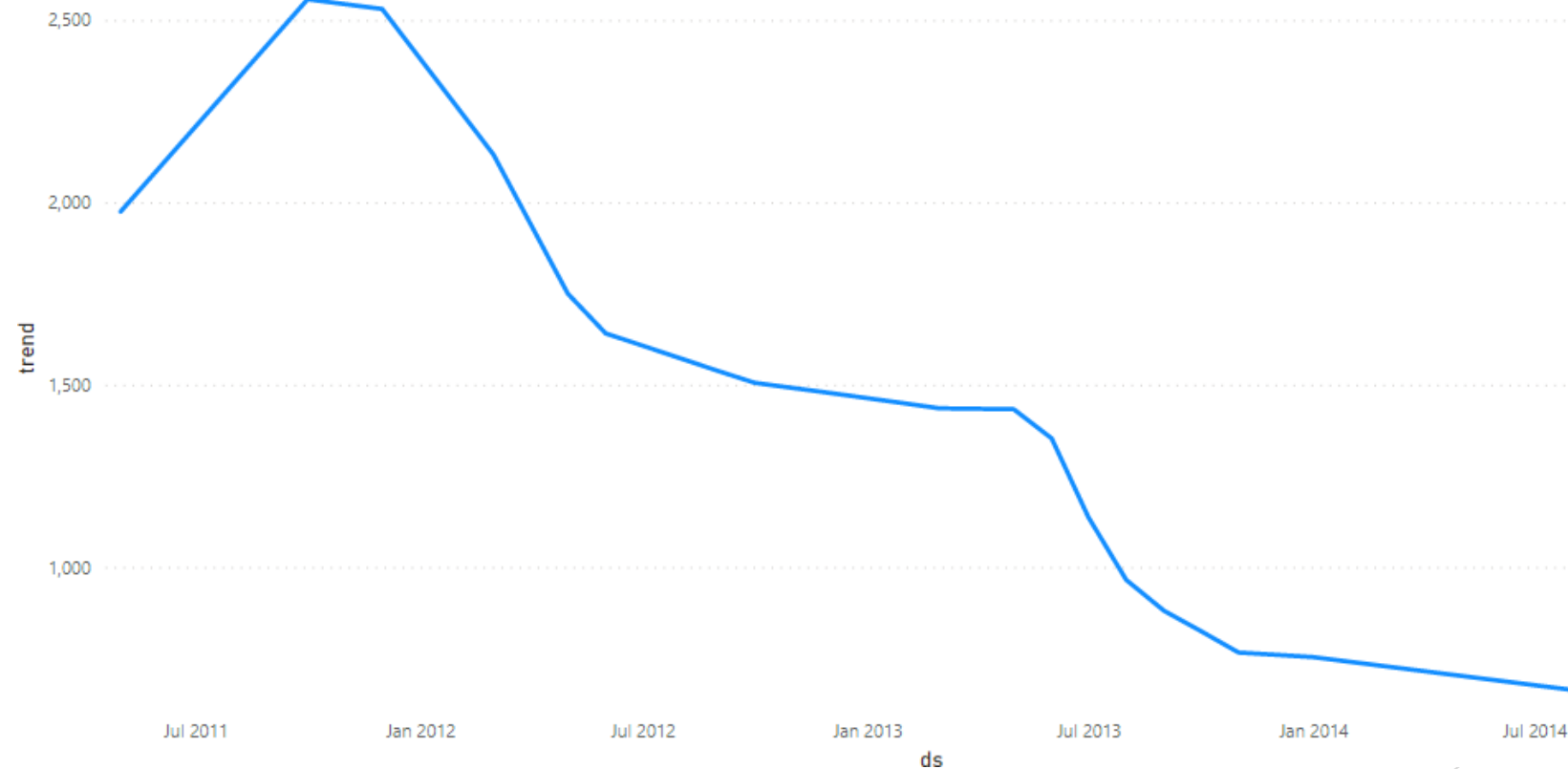
TOP 5 PRODUCTS ASSOCIATED RESELLER

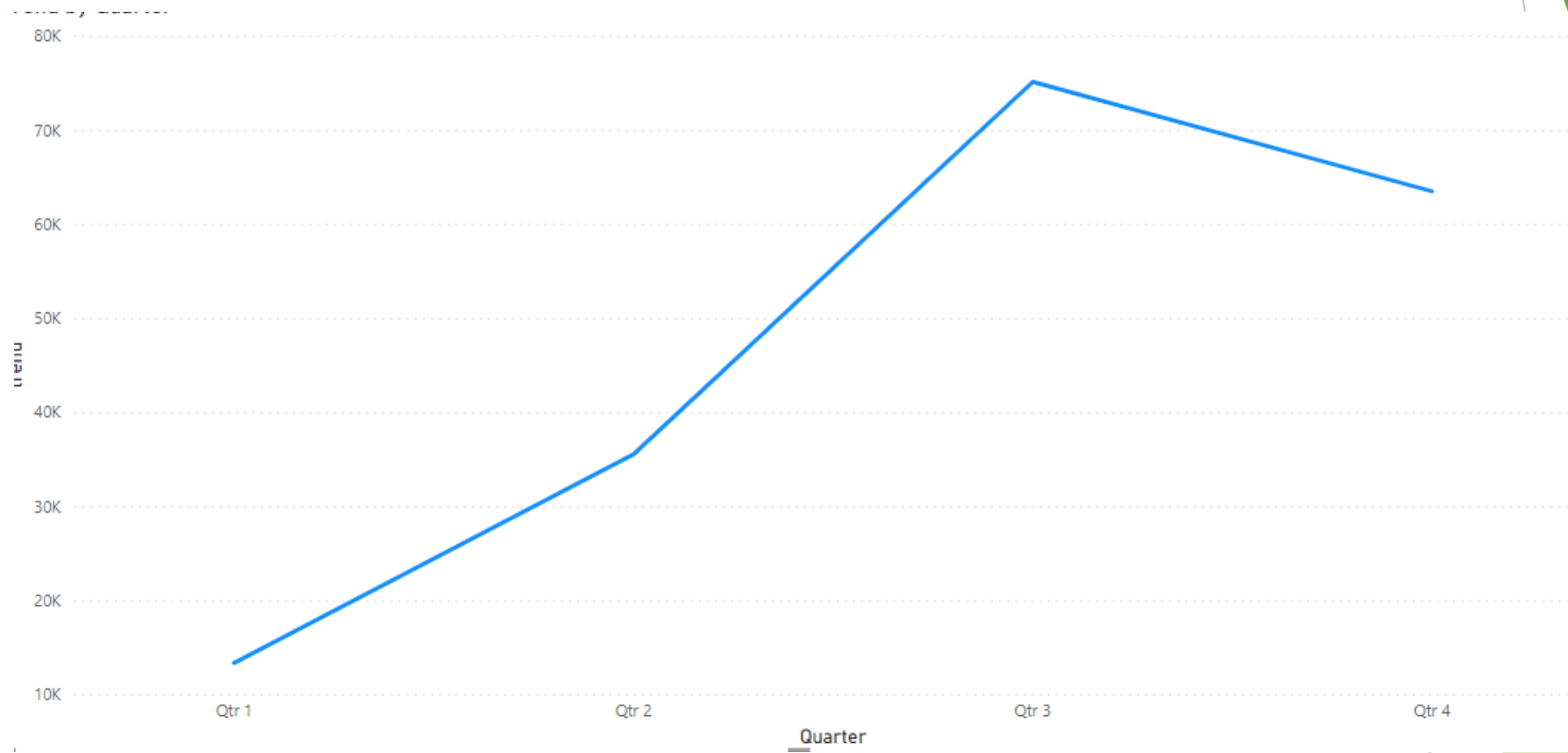


FORECASTING

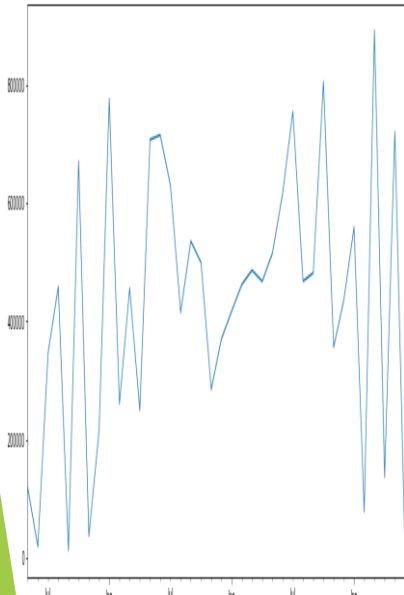
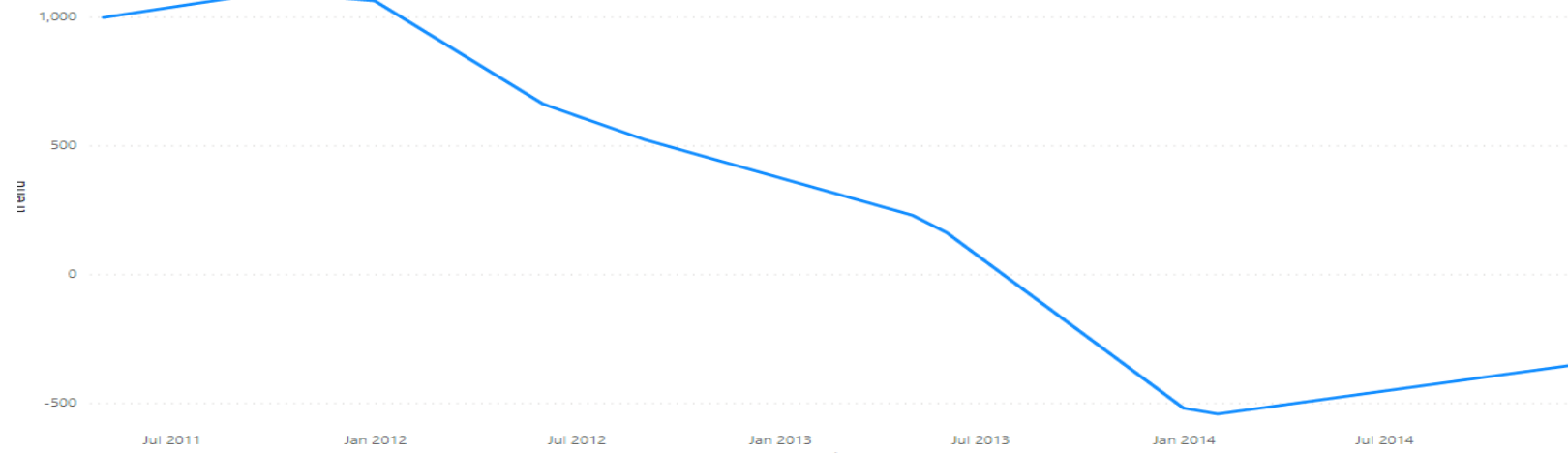
COUNTRY US YEAR WISE FORECASTING

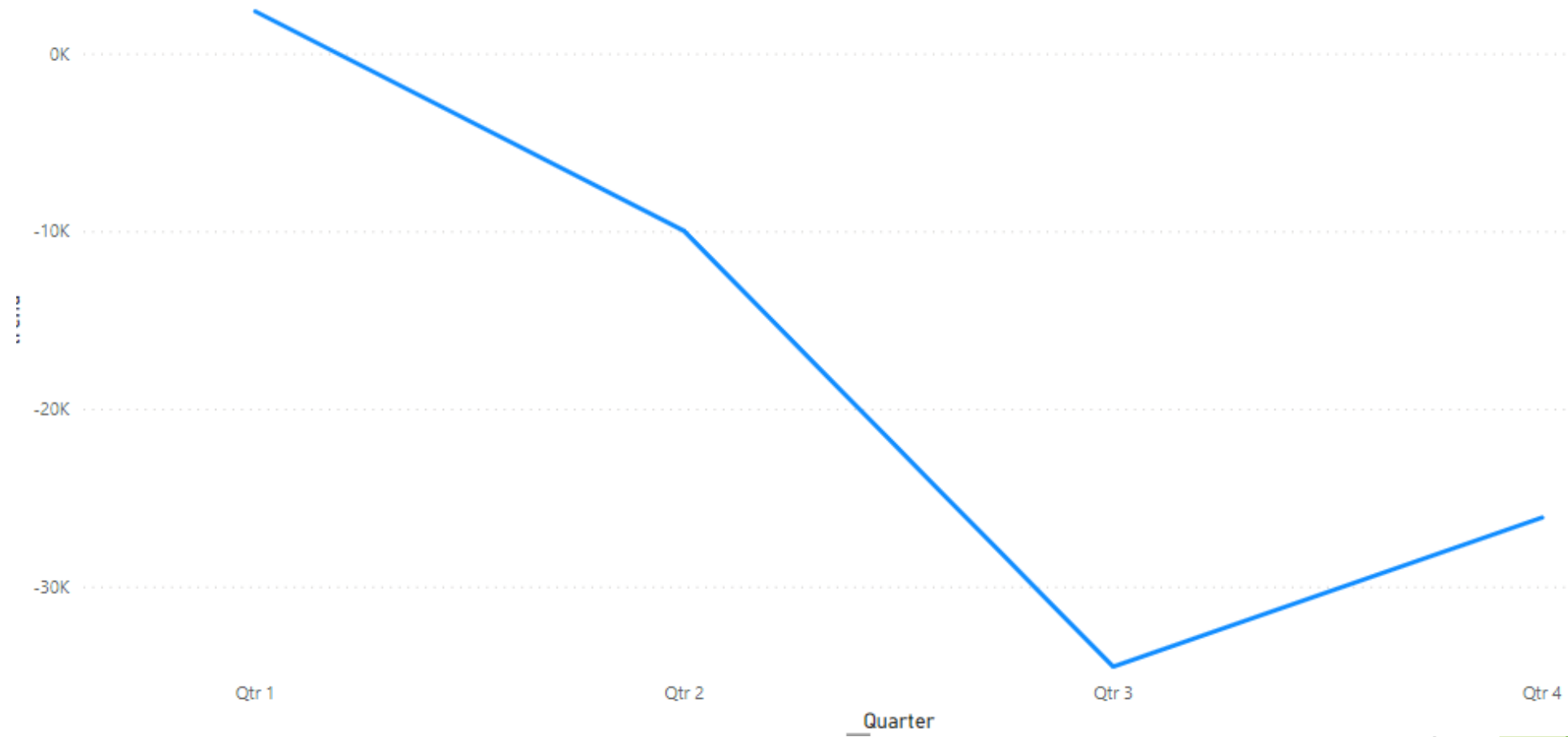
trend by ds



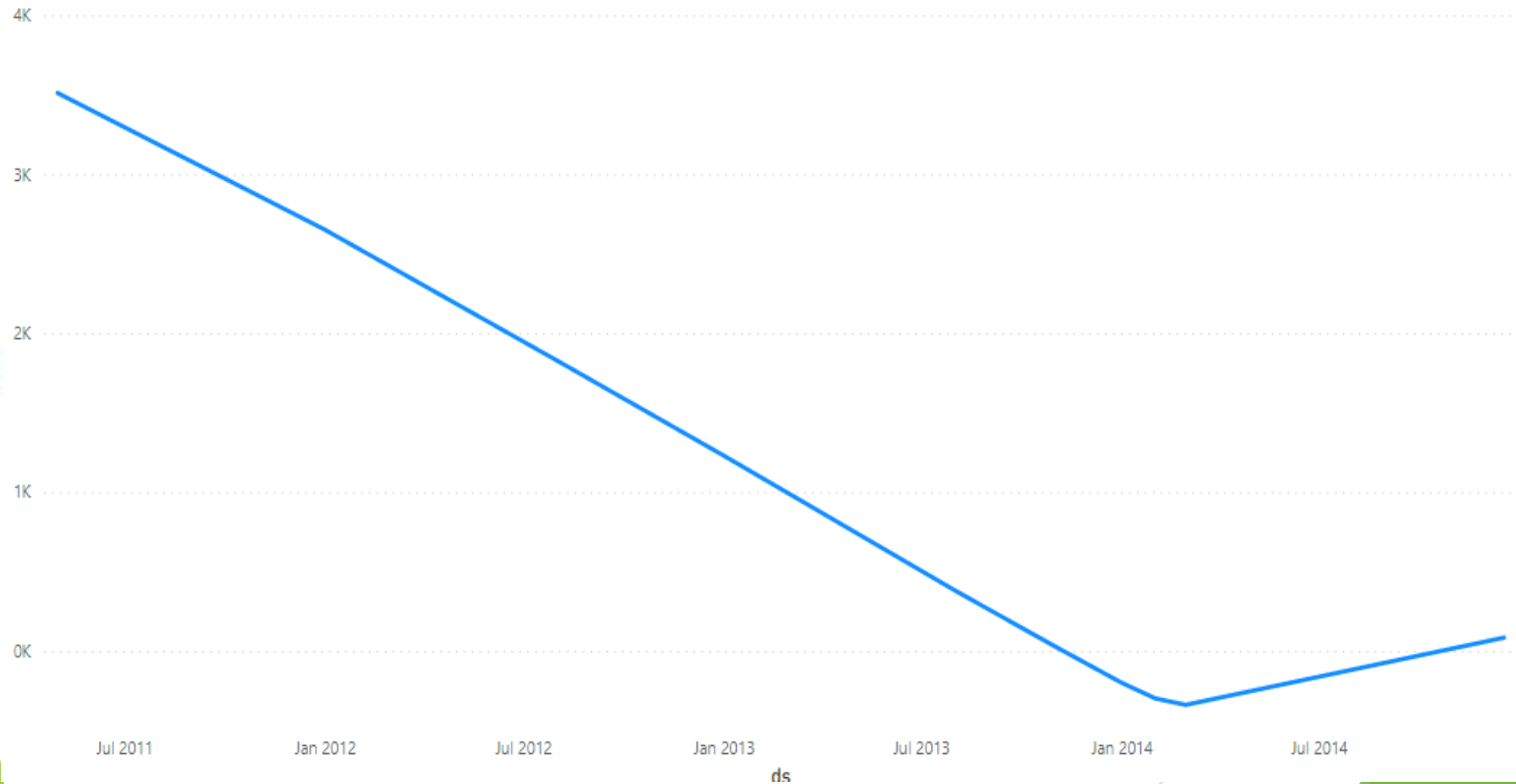


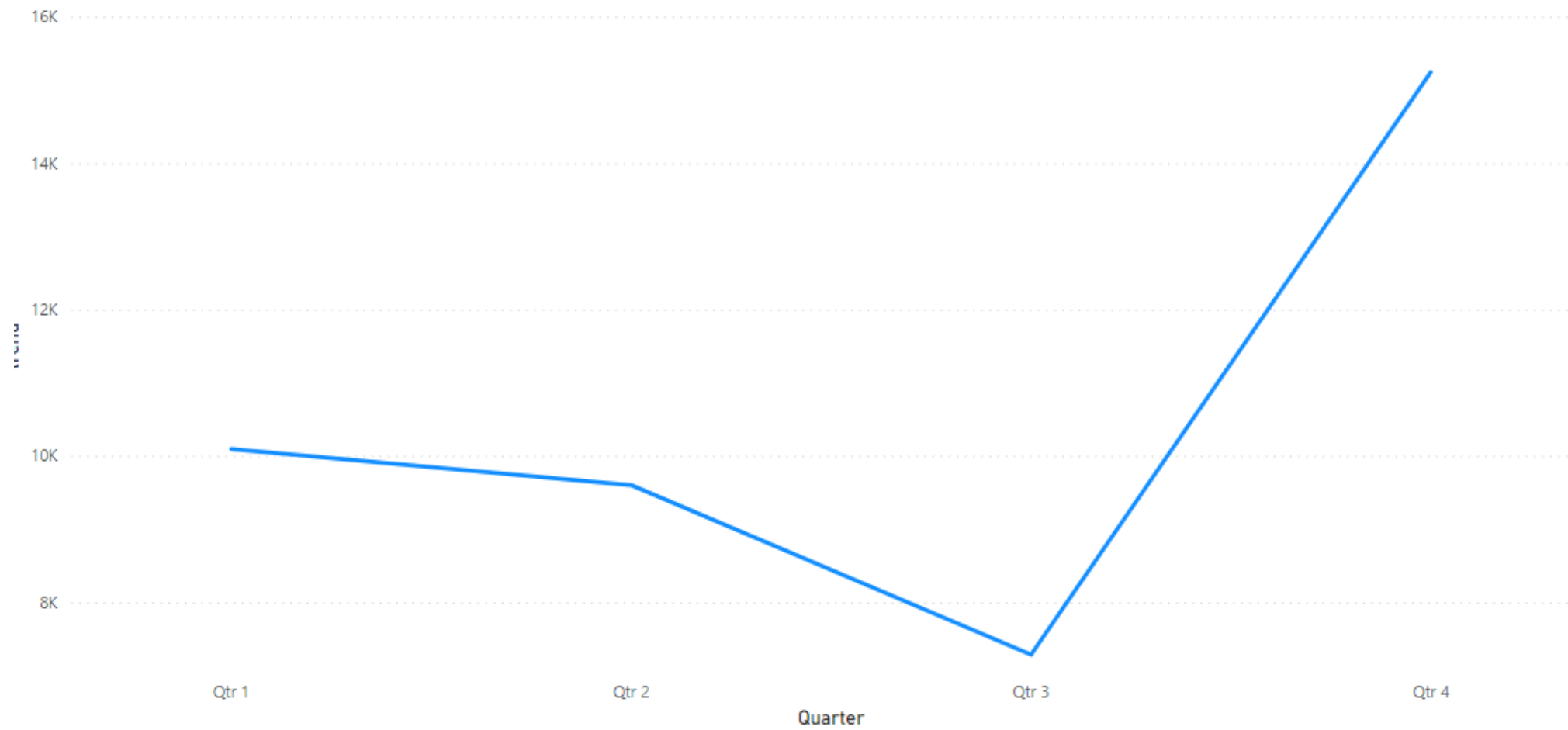
CA- FORECASTING





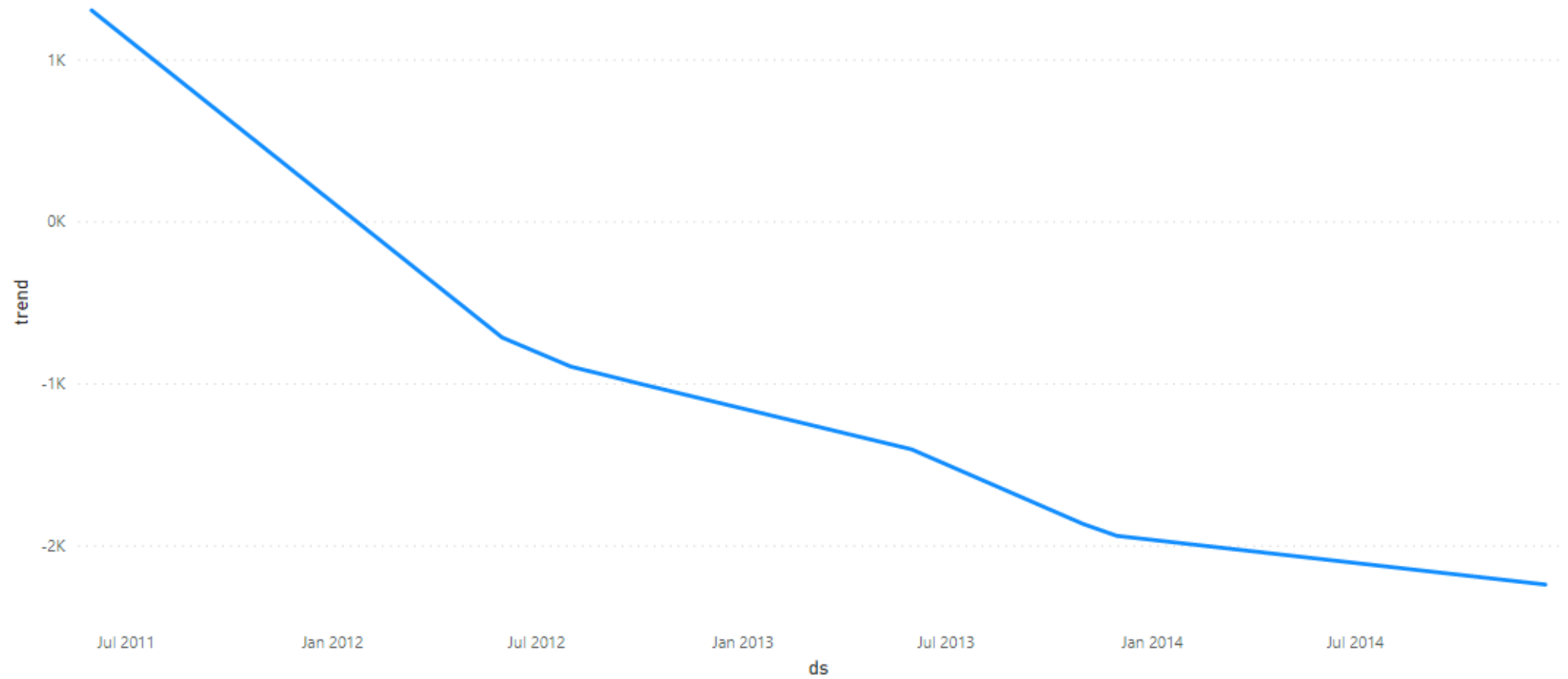
AU FORECAST - HIGHEST

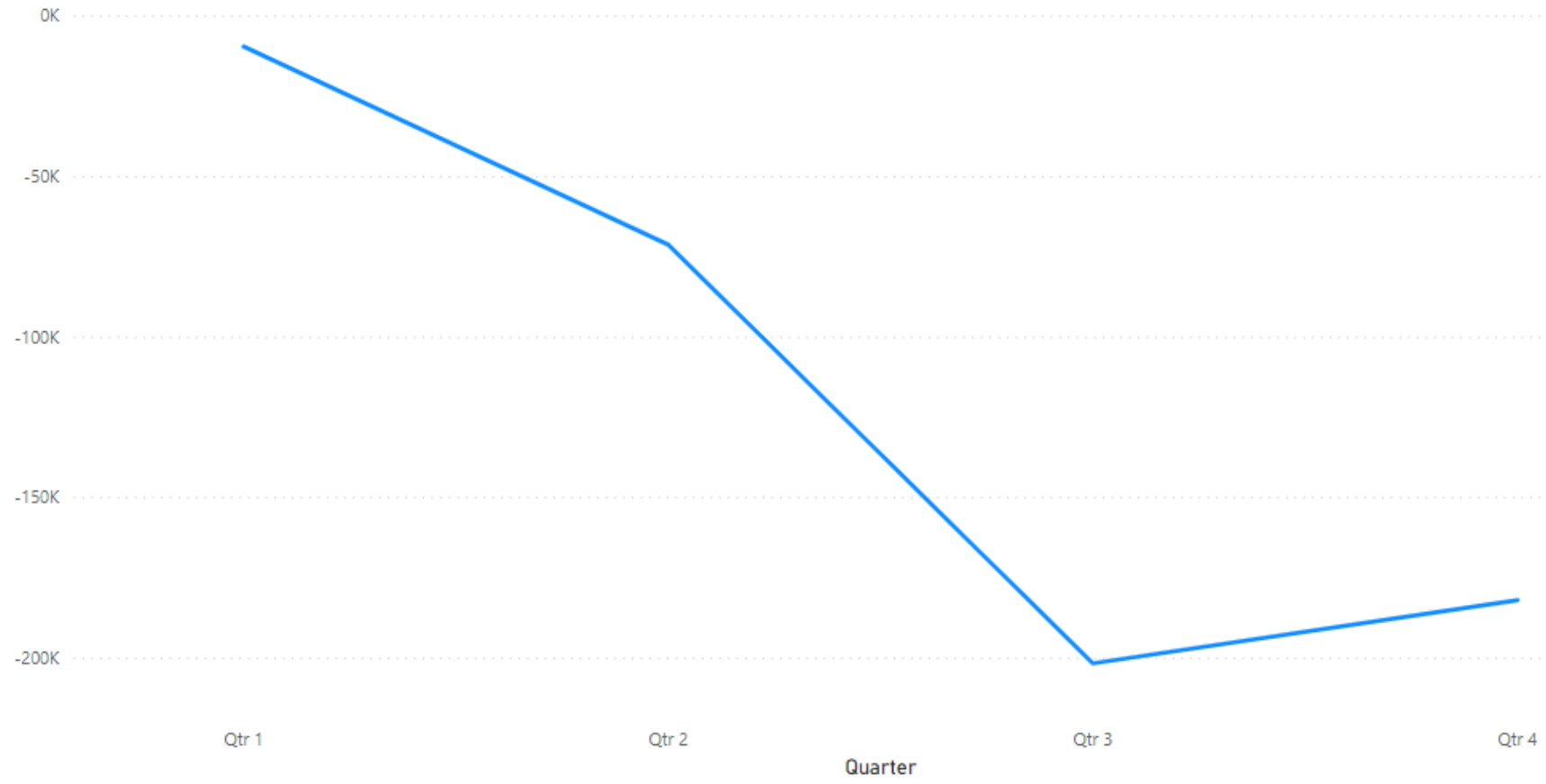




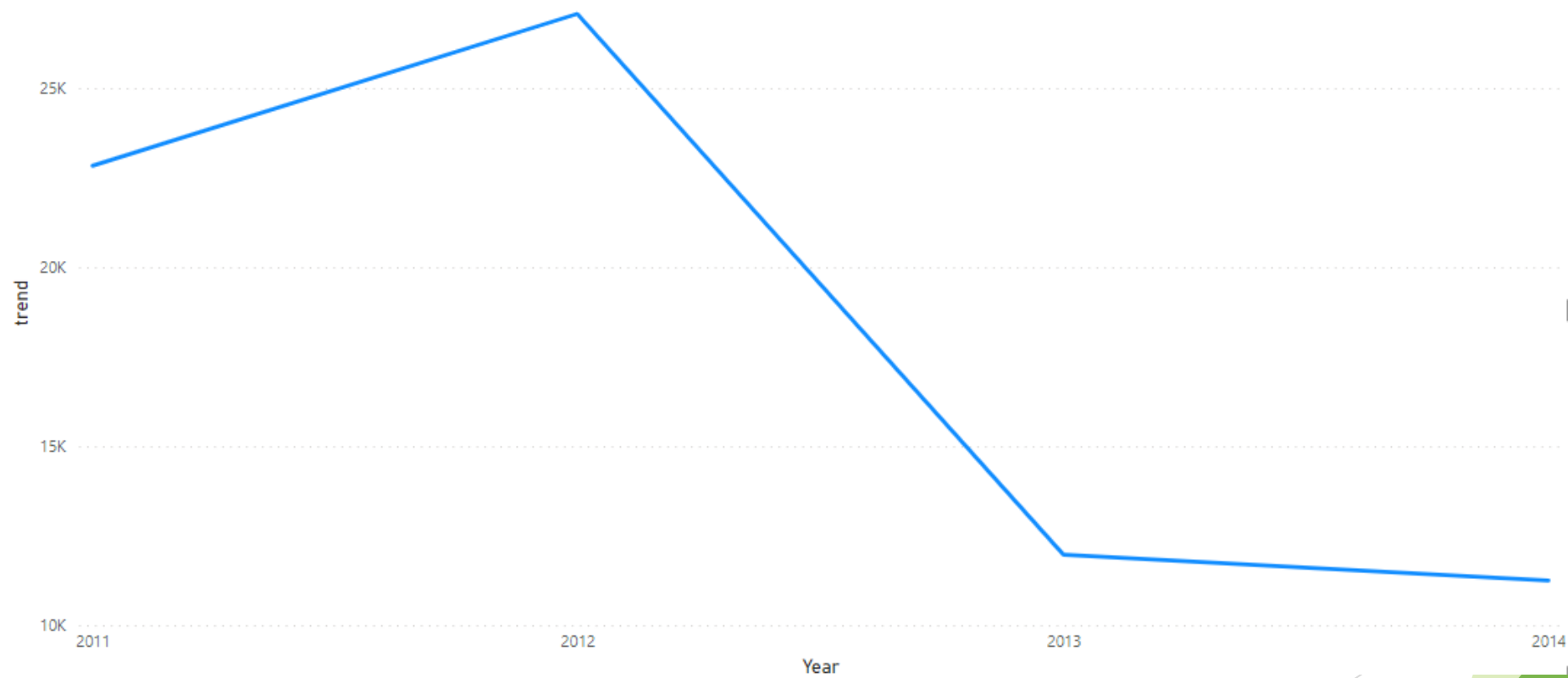
GB FORECAST

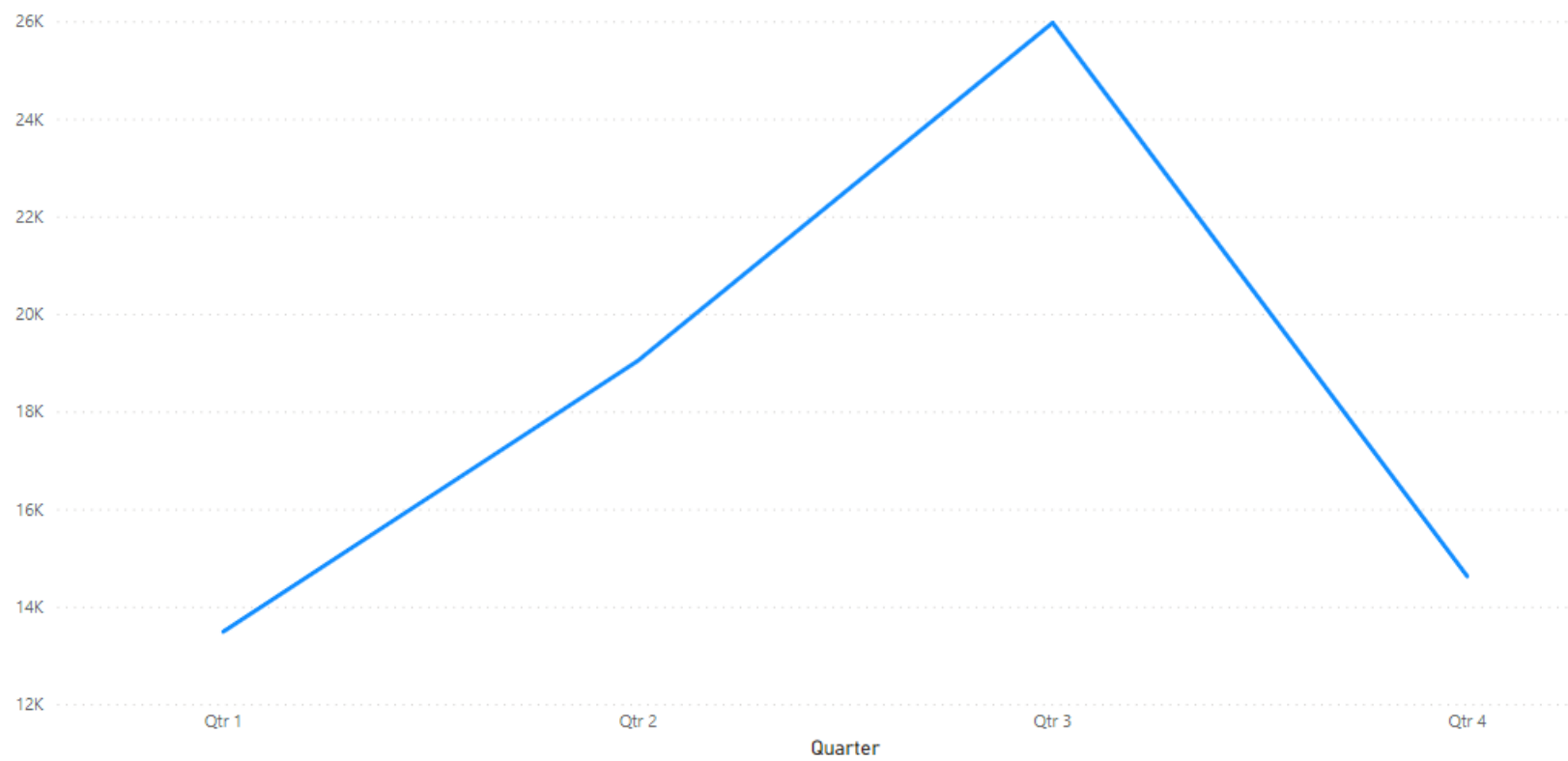
trend by ds





DE FORECAST





CONCLUSION

- ▶ There is a clear shift, with the number of online transactions increasing exponentially between 2013 and 2013.
- ▶ In 2013, both accessories and clothing were made available online.
- ▶ These categories were well received. online and is rapidly displacing reseller sales
- ▶ The data also shows that, from 2011 to 2014, Reseller Sales generated more revenue than Online Sales.
- ▶ In 2014, sales surpassed reseller sales for the first time.
- ▶ Despite accounting sales, the Bikes Market Reseller has a 40% of loss.
- ▶ The explanation These losses are explained by sales of Road Bikes and Touring Bikes, which have higher costs than sales.
- ▶ Year after year, average sales and costs per sale have decreased significantly.
- ▶ As indicated by the investigation of the market crate, the items that should be sold together in view of productivity are the accompanying:
 - ▶ online- MTB with Tire and Tubes/Road B. with Tire and Tubes/Helmets with Tire and Tubes.
 - ▶ reseller- MTB with MTB Frames and Short and Pedals.
- ▶ Delivering Cost is extremely high for certain organizations contrasted with others.

RECOMMENDATION

- ❖ Instead of discount sale in a particular days and month, if it make available in limited hours rapidly then it reduce the discounted rate sale loss.
- ❖ Remedy to increase the sale of bike in reseller can improve the profit in reseller, otherwise we can reduce the production of bikes those have less selling rate in reselling. Then we can avoid the transportation cost.
- ❖ The delay in manufacturing must be reduced, also the feedback and complaint against each product should increase,. Then only we can make increase in the product availability and quality.
- ❖ The products which do not have profit reseller, must be reduced in production for reseller. Try to convert it in top online sale.
- ❖ The components have a good chance to increase the sale and profit through online.

ACKNOWLEDGEMENT

- ▶ A thank you for the week after week backing to Michael Olabode
- ▶ Special because of my Family.