

Adventure Works Cycles sales data analysis insights

Adventure Works Cycles, a large wholesaler of bicycles in the US and Europe, has noticed that their total profits have been declining over the last few months.

Main objectives of the analysis:

- identify the drivers of this change,
- clearly communicate key findings to the company's executive committee
- provide data-driven strategic recommendations

Monthly revenue & monthly profit

No signs of decay in terms of monthly revenue over the last three months;

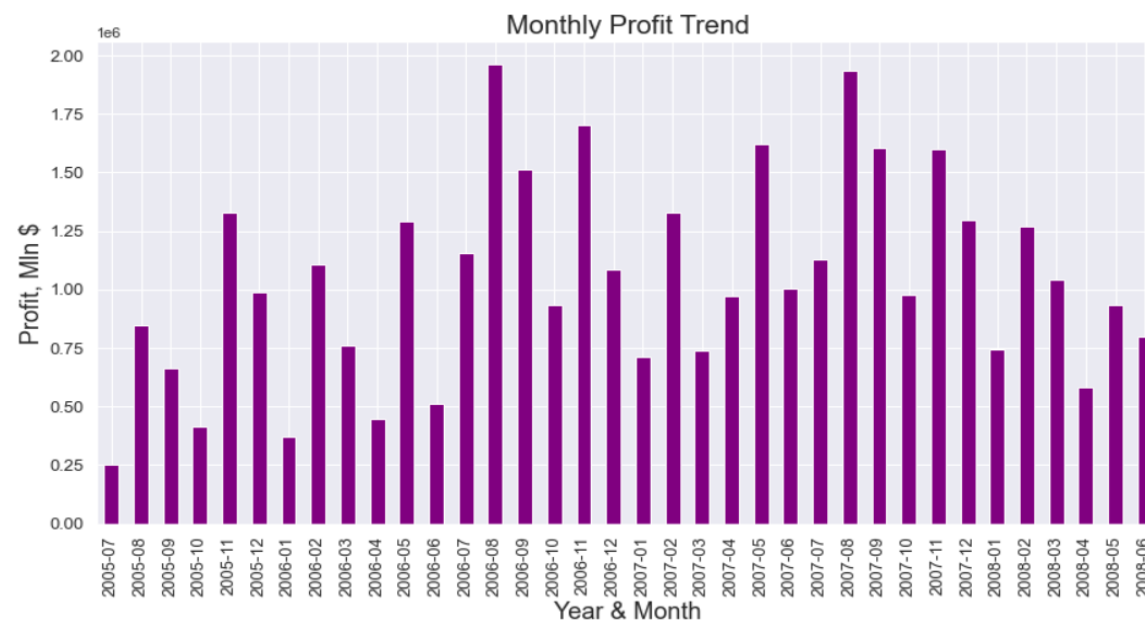
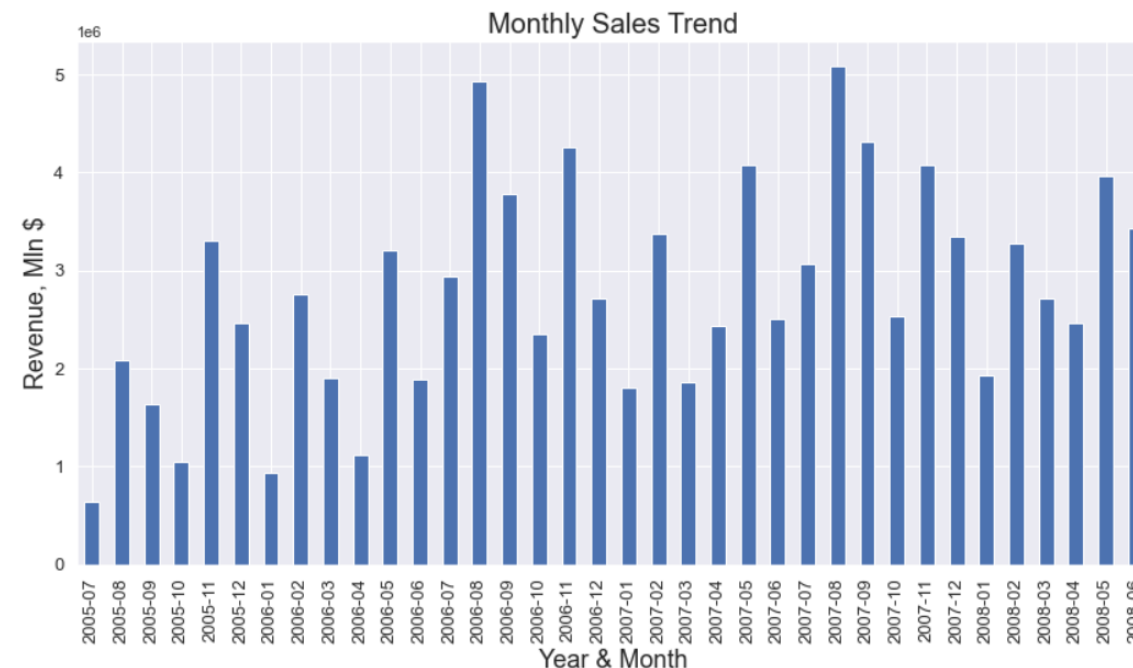
The average revenue for Apr, May & Jun of 2008 is even 9.3% higher compared to the same period in 2007;

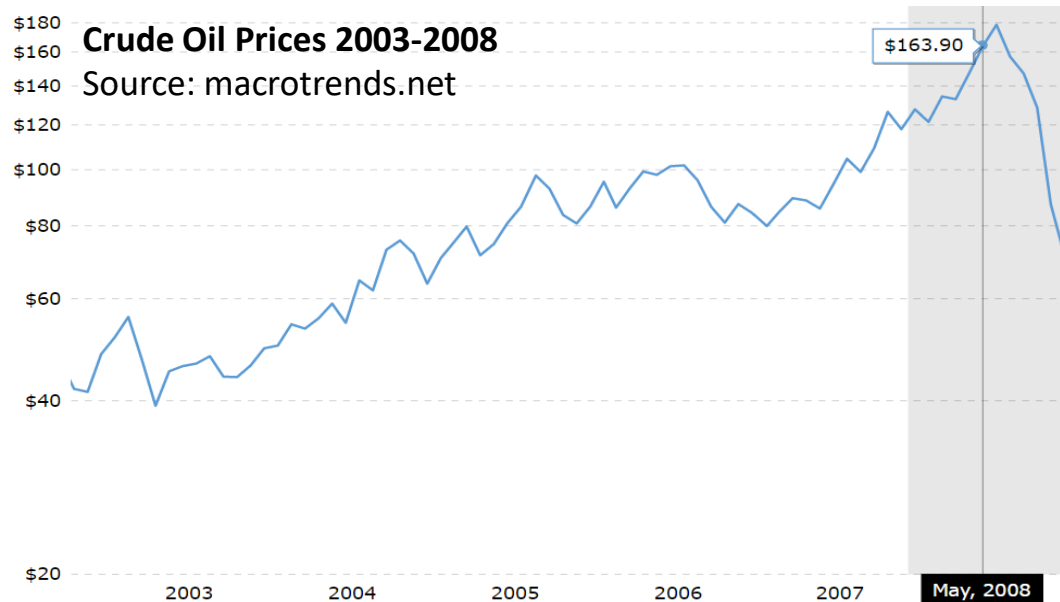
August was the most financially successful month for the company in 2006 & 2007;

We can also see high volumes of sales during November, apparently due to BlackFriday event;

There are clear signs of seasonality in data. It looks like the sales reach their maximum in August-September, and then gradually decrease until April, where the upward trend begins again;

Monthly total profit has been decreasing recently. Its monthly average in the 2nd quartal of 2008 is 35.5% lower than in 2007 for the same period.





Monthly variable costs

We can now understand, why the company's profit has been decreasing recently. The monthly total variable costs over the last three months are considerably higher than in previous year for the same period;

Between order costs & freight costs, it is the order costs that contribute to the recent overall expenditure increase the most;

This cost category also accounts for the largest share of the company's total variable cost;

Such a drastic increase in item costs has most likely occurred due to the spike in oil prices which reached the value of 164 USD per barrel in May 2008;

High oil prices make manufacturing and shipment from China more expensive, where most of the company's products originate from.

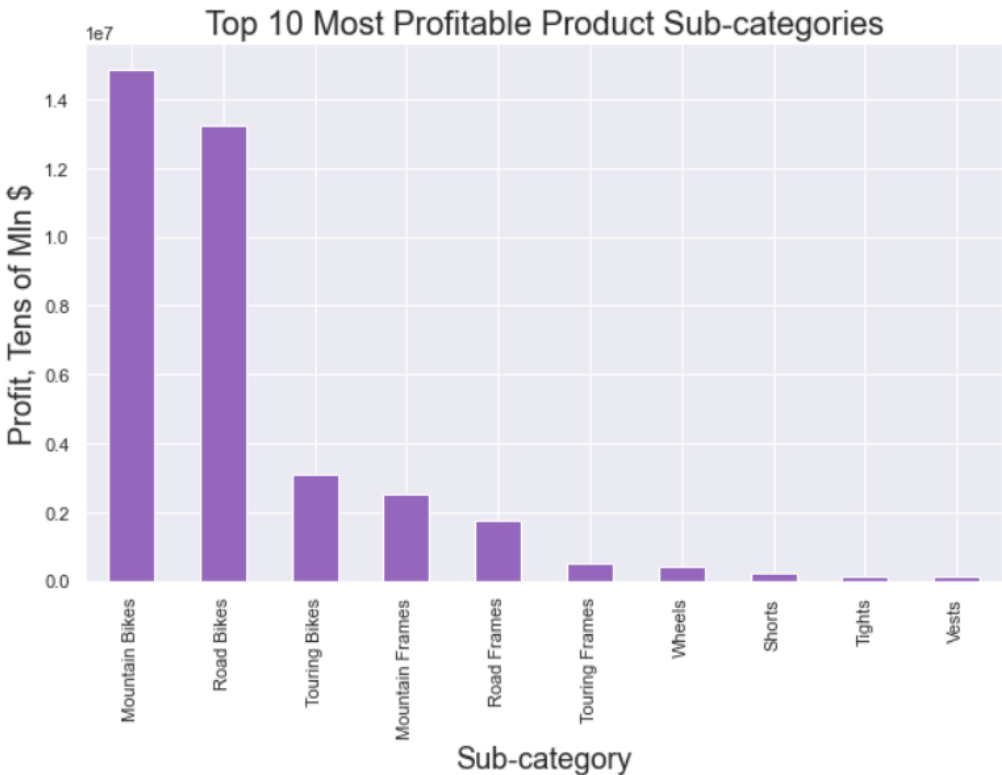
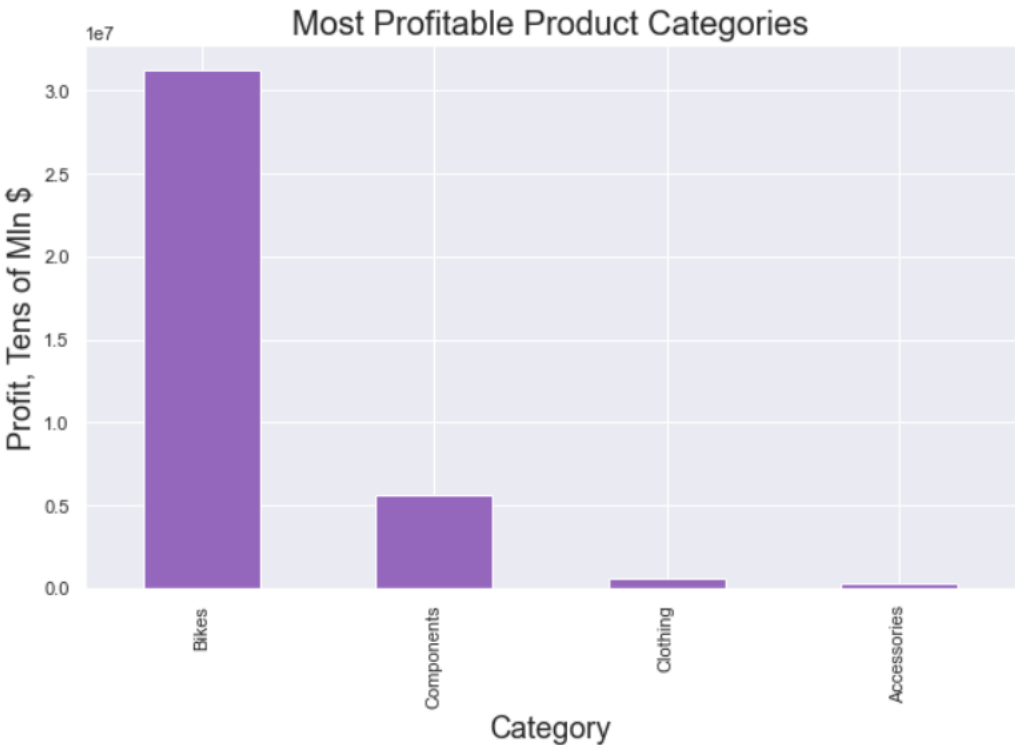
Most profitable product categories & sub-categories

'Bikes' is the most profitable product category by a large margin. During the observed period, this category earned Adventure Works Cycles more than 30 Mln USD in profit;

On the other hand, categories 'Accessories' & 'Clothing' have barely exceeded their operating break-even points;

As for sub-categories, 'Mountain Bikes' & 'Road Bikes' are the 1st and the 2nd most profitable ones respectively;

These two sub-categories combined have brought the company over 28 Mln USD in profit.



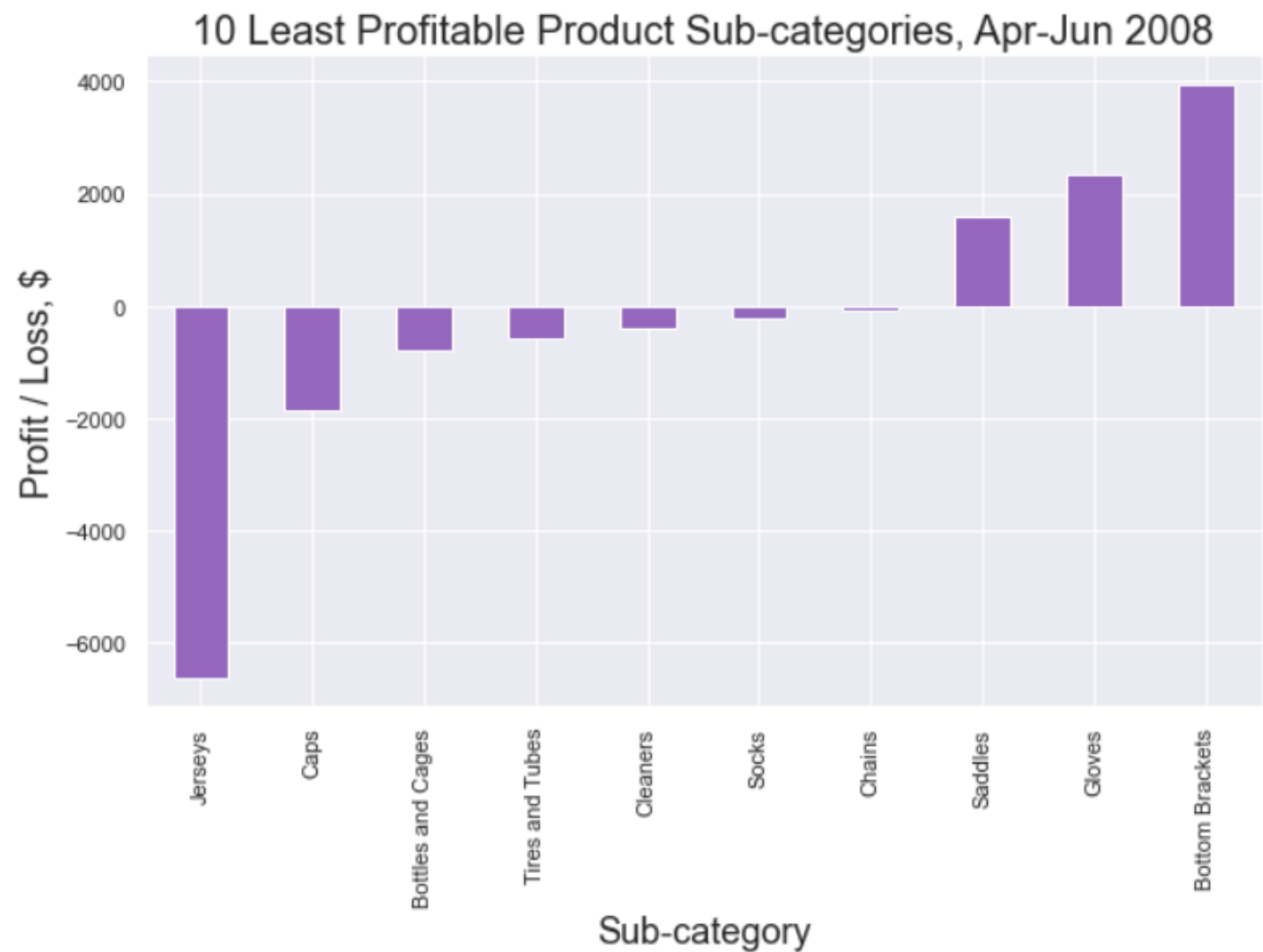
Unprofitable sub-categories over the last three months

The recent increase in unit costs made selling products from several sub-categories unprofitable;

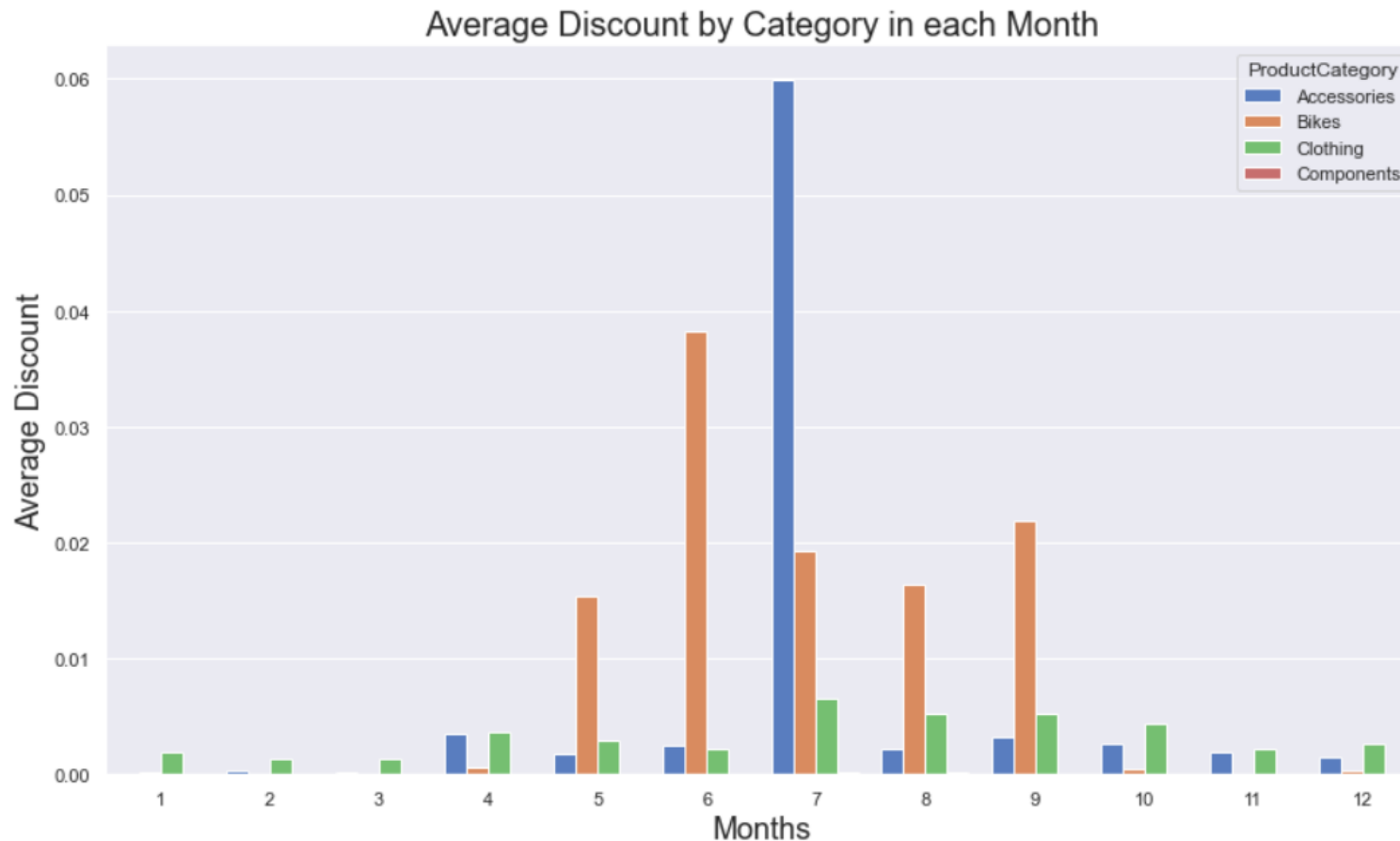
These sub-categories are 'Chains', 'Socks', 'Cleaners', 'Tires & Tubes', 'Bottles & Cages', 'Caps', and 'Jerseys';

Selling items from the latter one alone has caused an over 6000 USD loss over the last three months;

It is recommended to either increase prices on products from mentioned sub-categories, or exclude them from company's product range.



Analysis of sales promotion activities



The company greatly intensifies its sales promotion activities during the five-months period from May till September;

In July, there are particularly frequent price discounts on items from category 'Accessories', whereas bikes are mostly discounted in June;

The company does not offer any price discounts on products from category 'Components';

Very occasional sales promotions during the period from October till March;

Almost no discounted items from category 'Bikes' outside the May-Sep period;

Strangely enough, there are almost no sales promotions during November, despite the BlackFriday event.

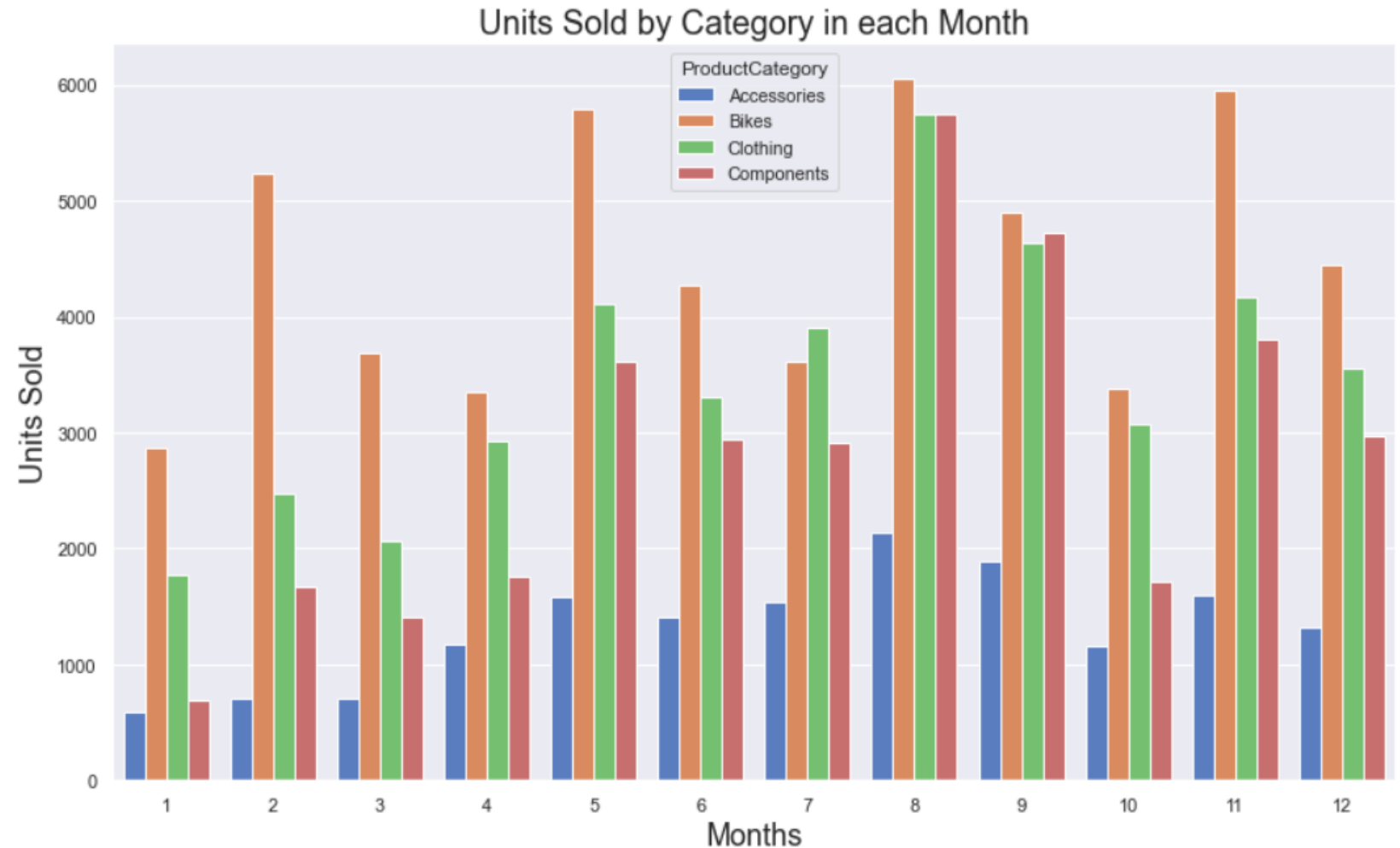
Units sold by category in each month

Products from category 'Bikes' are most frequently sold during August, November, May, & February;

Items from categories 'Clothing' & 'Components' are especially popular during August & September;

Despite very active sales promotions for products from category 'Accessories' during July, it doesn't seem to have any remarkable effect on the number of units sold in this month;

Also, no clear effect on number of bikes sold in June from frequent price discounts on items from this category.



Recommendations

Recent growth in company's monthly sales reflects increasing demand on bikes and related products, which is most likely influenced by higher oil prices and – as a consequence – overall higher cost of car ownership.

On the other hand, company's monthly profit has been declining compared to corresponding periods in previous years. The reason for this are growing variable costs, which even makes a number of product sub-categories unprofitable.

To counteract the effect of rising costs, I recommend the following measures:

- ✓ Overall prices increase, especially for products from unprofitable sub-categories;
- ✓ Stop selling unprofitable items. Consider focusing on selling only products from categories which proved to be the most profitable – 'Bikes' & 'Components';
- ✓ As a wholesaler, the company should increase a minimum order quantity, especially for the low-profit-margin products. This, combined with price rise, will increase company's overall profitability;
- ✓ Overhaul company's sales promotion strategy: a) Cancel or reduce summer discounts, which proved to be inefficient; b) Introduce new promotions in November to facilitate BlackFriday sales, in December (X-mas), and in February.