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**The Impact of Inflation on Production Costs and Pricing Behavior
In Türkiye:
Case Study of the Automotive Sector and MAN Truck&Bus**

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ABSTRACT

The aim of the study is to examine the impact of inflation on production costs and firms' pricing behaviors in Türkiye, specifically in the automotive sector. In the study, data related to the Consumer Price Index (CPI), Producer Price Index (PPI), exchange rates, and motor vehicle prices for the period 2016–2026 were used. Additionally, the dependence on imported inputs, logistics costs, and tax increases in the automotive sector have also been evaluated. In the study, comparative table analysis, graphs, and cost pass-through approach have been utilized. The findings indicate that the rising inflation, especially after 2021, has created significant pressure on production costs. The fact that the Producer Price Index (PPI) has reached higher levels than the Consumer Price Index (CPI), indicates that firms are operating under serious cost pressure. According to the findings of the study, firms are largely passing on the increased costs to product prices. Especially due to the importation of engines, electronic systems, tires, and many parts, the automotive sector's dependency on imported inputs has been more strongly felt in recent years due to the increase in exchange rates and logistics costs. Observations made within MAN Truck & Bus Company also show that the increase in the cost of imported parts and supply issues directly affect the purchasing and pricing decisions of companies. As a result, high inflation and exchange rate increases have a decisive impact on production costs and pricing behaviors in the automotive sector. In addition, Türkiye is a strong country in the automotive sub-industry; many parts are produced and even exported in Türkiye, especially cables, plastics, metal components, and upholstery are produced domestically. But the main parts of the vehicles (engine, electronic systems, sensors, semiconductors) are still largely imported.

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Introduction

High inflation has become one of the most significant macroeconomic issues facing the Turkish economy in the last 10 years. The increase in inflation not only affects consumer prices but also has significant consequences on production processes and the cost structures of firms. Especially the price increases in raw materials, energy, labor, and imported inputs are raising firms' production costs and making pricing decisions more complex. In import-dependent economies like Türkiye, exchange rate fluctuations also increase the impact of inflation. The rise in the exchange rate increases the cost of imported inputs, creating additional pressure on production costs. This situation makes the question of to what extent and at what speed firms reflect the increasing costs in their prices important. Especially the automotive sector, due to its high dependency on imported inputs and its sensitivity to exchange rate fluctuations, serves as an important example for examining the effects of inflation on production costs and pricing behavior.

The automotive sector is one of the important sectors for the Turkish economy. It is accepted that automotive sector is one of the most important industry and locomotive of economy in almost all developed countries. What makes automotive industry indispensable for countries economy is contributions to country's economy and close relations with the other sectors. Automotive industry in Türkiye is one of the leading sectors. The sector has strategic economic importance due to its high production capacity, export volume, and contribution to employment. However, a significant portion of the parts used in the automotive sector are imported. Therefore, increases in exchange rates and inflation affect the production costs of the automotive sector more than other sectors. Especially the cost increases observed in engines, electronic systems, tires, and various sub-industry parts directly affect the pricing decisions of companies.

Today, the automotive sector has become Turkey's second largest exporting industry, with approximately 73% of its main industry production being exported. Over the past decade, the sector has exhibited a fluctuating growth pattern due to economic volatility. During periods of insufficient domestic demand, it has increasingly turned toward foreign markets and achieved a rapid export momentum.

Throughout the Customs Union process, the sector has attracted a significant amount of foreign direct investment and has gained advantages over many "older producers" in terms of labor productivity, cost structures, and the share of capital in value added. However, considering that global automotive markets present challenging competitive conditions for producers from developing countries, it is understandable that despite its major export expansion, the sector still accounts for only a small share of OECD countries' imports and lacks decisive market power.

Globally, major automotive firms operate within geographically dispersed production, technology, and distribution networks, producing on the basis of large-scale economies.

The main reason for choosing the automotive sector in this study is my opportunity to closely observe the factors affecting cost and pricing in the automotive sector through my internship in the Material Management unit at MAN Truck & Bus.

MAN Inc. is a company operating on an international scale and using many imported parts in its production processes. In addition to having factories in various locations around the world, the company has project design, test centers, and production sites in the cities of Ankara and Munich. I had the chance to be directly involved in production at the plant campus in Esenboğa, Ankara. This allowed me to closely examine the imported parts and monitor the costing policies. Due to being a global scale company, exchange rate fluctuations, inflation, and increases in logistics costs directly affect the company's cost structure. Especially in recent years, the rising transportation and logistics costs on a global scale have impacted the imported parts'... It has increased costs and created additional pressure on production processes. During the internship, the impact of cost increases of parts used in production, especially imported inputs, logistics expenses, and exchange rates, on production costs was observed. I also had the opportunity to observe that changes in the costs of some parts directly affect the company's purchasing and pricing decisions.

1.2 Purpose of Study

The main objective of this study is to examine the impact of inflation on production costs and firms' pricing behaviors specifically in the automotive sector in Türkiye. One of the biggest reasons the automotive sector has recently been affected by rising inflation is that it is one of the sectors most impacted by these developments due to the high use of imported parts and intermediate goods in the production process.

In my project, the effect of inflation on production costs will first be examined through CPI (Consumer Price Index) and PPI (Producer Price Index) data. Afterwards, the relationship between price changes in the automotive sector and production costs will be evaluated. Within this scope, the extent to which and the speed at which firms pass increasing costs onto their prices will be analyzed. Additionally, the impact of exchange rate fluctuations and increases in logistics costs on production costs will also be investigated.

Moreover, the study will explore whether the pricing behaviors of firms operating in the automotive sector differ from the general inflation rate. Specifically, it will be attempted to reveal whether cost increases are directly reflected in prices, how frequently firms change prices, and which factors influence the pricing process.

Although there are numerous studies in the literature on inflation and pricing behaviors, a significant portion of these studies focus on the general manufacturing industry. Studies specifically focused on the automotive sector are more limited. This study aims to fill this gap in the literature by focusing on the automotive sector.

The production volume of the sector, its contribution to exports, and high employment capacity make the automotive sector economically important. However, the importation of engines, electronic systems, steel, tires, and many other parts used in the sector makes it more sensitive to

inflation and exchange rate increases. Therefore, cost increases in the automotive sector affect not only the firms but also consumer prices and the overall economic balance.

By examining whether firms directly reflect cost increases onto prices, under what conditions they change prices, and how they make decisions in an inflationary environment, it is aimed to contribute both to the literature and to sectoral practices.

My greatest resource in this study is my workplace training in a well-established automotive company, specifically in the Material Management unit, which significantly supports production and where I was also able to examine economic inputs. Thus, the costs of parts used in the production process, logistics expenses, and the impact of price changes on firms' decisions can be evaluated with concrete examples.

1.4 Research Questions'

In this study, answers to the following research questions will be sought:

1. How does the rise in inflation in Türkiye affect production costs?
2. To what extent is the increase in production costs in the automotive sector reflected in product prices?
3. Do price increases in the automotive sector differ from the general inflation rate?
4. How do exchange rate fluctuations affect production costs in the automotive sector?
5. To what extent does the increase in logistics and transportation costs affect production costs?
6. How often do companies update their prices in response to rising costs?
7. Do companies pass on cost increases directly to prices, or do they employ different pricing strategies?
8. In the case of MAN Truck & Bus, how do price changes in imported parts and materials affect the company's purchasing and pricing processes?
9. During a period of high inflation in Turkey, is the cost structure of the automotive sector more affected than that of other sectors?

1.5 Method and Scope

In this study, the impact of inflation on production costs and pricing behaviors in Türkiye will be examined with a focus on the automotive sector. In this study, quantitative and qualitative methods will be used in conjunction. In the quantitative part of the study, inflation rates in Türkiye for the period 2016–2026 will be estimated using a linear regression model.

The main data to be used in the study are:

- Consumer Price Index (CPI)
- Domestic Producer Price Index (D-PPI)
- Dollar/TL and Euro/TL exchange rate data
- Motor vehicle price index

- Production and sales data for the automotive sector
- Data on logistics and transportation costs

These data will be obtained from the Turkish Statistical Institute, the Central Bank of the Republic of Türkiye, the Automotive Industry Association and sector reports.

In the research, inflation and producer prices in Türkiye in the last ten years will be examined, and then these data will be compared with price changes in the automotive sector. Next, the relationship between the exchange rate and motor vehicle prices will be evaluated. In this context, tables and graphs will be prepared using the Excel program.

In particular, the following analyzes are planned to be performed in the study:

- Comparison of CPI and D-PPI in the 2016-2026 period
- Comparison of motor vehicle prices with general inflation
- Examining the relationship between exchange rate and automotive prices
- Evaluation of the impact of the increase in logistics costs on production costs
- Examination of cost changes in some selected parts and materials
- Analyzing the extent to which cost increases are reflected in prices

Examples will be given especially of the changes in imported parts, tires, electronic systems and logistics expenses observed during the internship. Thus, not only macro data but also concrete cost increases encountered in the production process will be evaluated in the study. In this respect, the study is a theoretical and practical examination

2.1. The Concept of Inflation

Inflation is a persistent increase in the general price level of goods and services in an economy. This increase in the general price level reduces the purchasing power of money.

While low and stable inflation levels are considered important for economic stability, high inflation negatively affects firms' production and investment decisions.

Inflation refers to a continuous and noticeable increase in the general price level. In other words, it means the increase in nominal national income relative to real national income. As can be understood from this definition, the general price level is accepted as an indicator and it is stated that the increase is continuous (tr.wikipedia.org; mahfiegilmez.com). When examining the types of inflation, it can generally be said that they are divided into two types from a classical perspective: demand inflation and cost inflation.

In markets, inflation where demand exceeds supply, i.e., where supply cannot meet demand, is demand inflation. Inflation caused by cost increases without high demand is cost inflation (Kishali et al., 2003: 8). In general, there are two types of inflation in terms of source: demand inflation and cost inflation (allianz.com.tr). In general terms, demand inflation refers to inflation that occurs when the quantity demanded exceeds the quantity supplied. Demand inflation occurs when supply cannot meet demand. Cost inflation, on the other hand, is a type of cost inflation that occurs when the cost of raw materials, supplies, and materials used in production increases, leading to higher product costs and consequently higher product prices. Another type of inflation, structural inflation, occurs when the quantity supplied cannot meet the quantity demanded. Structural inflation also occurs when companies have high profit margins (allianz.com.tr). Inflation classification according to inflation rates is defined as moderate inflation, high inflation, and hyperinflation (mahfiegilmez.com). In theory, moderate inflation is considered to be between 1-3% annually in developed countries (below 4%), while in developing countries this figure is between 4-6% annually. Inflation above 6% annually is theoretically considered high inflation. Hyperinflation is above 50% monthly and above 200% annually. Hyperinflation is the most severe form of inflation, severely impacting the economy of the affected country and requiring immediate solutions. Many countries in world history have experienced hyperinflation.

Inflation doesn't only refer to price increases faced by consumers. It also increases the costs of raw materials, energy, labor, and intermediate goods used by firms in their production processes. Therefore, inflation is directly related to production costs. In sectors particularly dependent on imported inputs, increases in exchange rates further amplify the impact of inflation. According to Turkish economist Mahfi Eğılmez, inflation is the continuous increase in the general price level of goods and services. Eğılmez argues that simply rising prices of specific products cannot be considered inflation; to speak of inflation, certain factors must be considered. It is stated that a continuous price increase is observed in most goods and services in the economy.

This process causes a decrease in the purchasing power of money and creates negative effects on both consumers and firms. Especially from the perspective of firms, inflation increases the cost of raw materials, energy, labor, and imported inputs used in production; this leads to increased production costs and changes in firms' pricing behavior. In Turkey, the rise in inflation rates in recent years has significantly affected production processes. Especially after 2021, rapid increases were observed in both consumer and producer prices. The fact that the increase in producer prices is higher than that of consumer prices indicates that firms are under cost pressure. This situation leads firms to update their prices more frequently and implement different pricing strategies.

2.2 Type of Inflation

In economic literature, inflation is generally accepted to arise from various causes. The most important of these are demand inflation and cost inflation.

Demand inflation occurs when aggregate demand increases faster than production capacity. Increased consumer spending, government spending, or credit use creates demand that firms cannot meet with their current production capacity, leading to higher prices.

Cost inflation, on the other hand, stems from increases in production costs. Increases in raw materials, energy, labor, logistics, and exchange rates raise firms' production costs, and these costs are reflected in product prices over time. It is believed that a significant portion of the inflation seen in Turkey in recent years is due to cost inflation. In particular, exchange rate increases and

dependence on imported inputs increase cost pressure.

Cost-push inflation is defined as the rise in the general price level as a result of firms reflecting increases in the prices of inputs used in the production process in the final prices of goods and services in order to protect their margins. This type of inflation is associated with a leftward shift in the aggregate supply curve. (International Journal of Economic & Administrative Studies, 2024, Issue 45, p337)

When evaluated from the perspective of the automotive sector, cost inflation becomes more pronounced. This is because a significant portion of the engines, electronic systems, tires, metals, and various intermediate goods used in the sector are imported. Therefore, exchange rate and inflation increases directly affect production costs in the automotive sector.

2.3 Monetary Policy, Inflation and Production Cost

Monetary policies play a significant role in the emergence and trajectory of inflation. Monetary policy is the use of tools such as money supply, interest rates, and exchange rates by central banks to ensure price stability. In Turkey, monetary policies implemented during periods of high inflation affect not only consumer prices but also the production costs of firms. Changes in interest rates and exchange rates, in particular, increase cost pressure in sectors dependent on imported inputs. In Turkey, the increases in exchange rates during the high inflation period after 2021 significantly increased the costs of sectors using imported raw materials and intermediate goods. The automotive sector is one of the sectors most affected by this process. This is because a significant portion of the engines, electronic systems, tires, and various ancillary parts used in the sector are imported. The increase in the exchange rate increases the cost of these parts; these increased costs are then reflected in vehicle prices over time. The literature emphasizes that inflation in Turkey is largely cost-driven. It is particularly noted that increases in producer prices are reflected in consumer prices over time. This situation shows that firms' pricing behavior depends not only on demand conditions but also on production costs. (An Economic Analysis for Determining the Source of Inflation in Turkey¹ Sami TABAN* Mehmet ŞENGÜR**))

Interest rate decisions and exchange rate policies implemented within the scope of monetary policy have an indirect effect on firms' costs. During periods when interest rates are kept low, pressure can be exerted on the exchange rate, which increases the cost of imported inputs. Especially in import-dependent economies like Turkey, the impact of exchange rate increases on production costs is faster and stronger. Therefore, the effect of inflation in the automotive sector cannot be explained solely by domestic demand; monetary policy, exchange rate, and imported input costs must also be considered together.

(<https://www3.tcmb.gov.tr/kutuphane/TURKCE/tezler/timuronder.pdf?>)

2.4 Imported Inputs and Cost Structure in the Automotive Sector

The automotive sector is one that uses a large amount of raw materials, intermediate goods, and technology in its production process. The sector utilizes engines, electronic systems, semiconductors, tires, steel, plastics, glass, and various ancillary industry parts. A significant portion of these inputs is imported. Therefore, the automotive sector is more sensitive to exchange rate fluctuations and inflation compared to other sectors. In recent years, the automotive industry in Turkey has shown significant development in terms of production and exports. However, an examination of the sector's production structure reveals continued dependence on foreign sources for many parts and intermediate goods. In particular, engine parts, electronic systems, sensors, and

some specialized equipment are sourced from abroad. Increases in exchange rates directly increase the cost of these parts. In addition, global logistics problems and increases in transportation costs also raise the cost of imported inputs.

In recent years, high inflation and exchange rate increases in Turkey have significantly changed the cost structure of the automotive sector. Especially after 2021, the rapid rise in the exchange rate increased the cost of imported inputs and created serious pressure on the production costs of companies. This situation made it difficult for companies to control their production costs and affected their pricing behavior.

The 26.36% annual price increase in new motor vehicles as of April 2026 shows that the cost pressure in the sector is significantly reflected in product prices. The 21.30% increase in tire prices and the rise in fuel prices during the same period also increased production and logistics costs. In addition, increases in taxes such as Motor Vehicle Tax and Special Consumption Tax also cause vehicle prices to rise. The most serious cost problem I closely observed during my internship was the constant logistical disruption of a component in my supply chain due to the war, which led to high costs in the brokering process. This situation, in particular, caused delays in the production process and necessitated the search for alternative suppliers. Furthermore, obtaining parts at higher costs and from different countries added extra pressure on production costs.

3. The Relationship Between Inflation and Costs in the Automotive Sector in Turkey.

3.1 General Overview of the Automotive Sector in Turkey

The automotive industry is one of the most important industrial sectors of the Turkish economy. The sector holds strategic importance in terms of production volume, export capacity, and employment. As one of Europe's major automotive production centers, Turkey produces automotive parts for many parts of the world. At the same time, we import not only automotive parts but also the chassis of many vehicles from Türkiye. During my internship, we sent most of the vehicles produced in Ankara to European countries. Therefore, the best thing I can say is that companies operating in the automotive sector produce not only for the domestic market but also for foreign markets.

The automotive sector in Türkiye has shown significant growth, especially since the 2000s. Companies operating in the sector use high-tech equipment and numerous automotive parts in their production processes. However, one of the most important characteristics of the sector is that a significant portion of the inputs used in production are imported. Therefore, the automotive sector is more affected by exchange rate and inflation fluctuations than other sectors. In October 2025, 178,481 vehicles were registered in Türkiye, while in February 2026, this number reached 121,791. The majority of registered vehicles are cars and motorcycles. Despite this, significant increases in vehicle prices have occurred due to high inflation and rising costs. This situation shows that the demand for vehicles has not completely disappeared, and that cars are also seen as an investment vehicle in Türkiye. (TURKSTAT 2025-26)

The high inflation period experienced in Türkiye, especially after 2021, has significantly increased production costs in the automotive sector. Increases in raw materials, energy, labor, exchange rates, and logistics costs have directly affected the cost structure of companies. As a result, companies have been forced to reflect these increased costs in product prices. The fact that motor vehicle prices have increased at rates close to or higher than general inflation in recent years shows that cost pressure is strong in the automotive sector.

3.2 The Impact of Inflation on Production Costs

In Türkiye, production costs increase significantly during periods of high inflation. Price increases in raw materials, energy, labor, transportation, and intermediate goods used in the production process raise the total costs of firms. Exchange rate increases also increase cost pressure, especially in sectors dependent on imported inputs.

In Türkiye, inflation rates have risen significantly over the last decade. While the annual inflation rate ranged between 8% and 15% during the 2016-2020 period, inflation increased noticeably after 2021. The fact that the annual inflation rate exceeded 60% in 2022 and 2023 created significant pressure on the cost structures of firms. During the same period, the fact that the Domestic Producer Price Index (DPPI) increased faster than the Consumer Price Index (CPI) indicates that the increase in production costs was higher than that of consumer prices.

Table: CPI Data In Türkiye 2016-2025

This table shows that inflation in Türkiye has significantly increased, especially after 2021. The highest increase was observed in 2022 and 2023, followed by a downward trend in 2024 and 2025. Nevertheless, inflation remains at high levels.

In Türkiye, inflation rates have shown significant fluctuations over the past decade. During the 2016–2020 period, the annual inflation rate fluctuated between 8% and 15%, but a significant increase in inflation was observed starting from 2021. The increase in the inflation rate above 60% in 2022 and 2023 has put significant pressure on the cost structures of firms. Especially in sectors dependent on imported inputs for production, in addition to inflation, currency exchange rate increases have also caused costs to rise rapidly. During this process, firms have had to pass on the rising costs to their prices, leading to significant changes in their pricing behavior.

Annual CPI data for the 2016-2025 period are as follows:

These data show that the cost pressure faced by firms increased significantly, especially after 2021. The rise in the exchange rate due to imported inputs used in production also accelerated this process. The increase in the exchange rate increased the cost of engines, electronic systems, tires, metals, and various ancillary parts used in the automotive sector in particular.

As of April 2026, there has been an annual price increase of 26.36% in new motor vehicles. During the same period, tire prices increased by 21.30%, and fuel for personal transportation vehicles by 9.92%. This indicates that cost increases in the automotive sector are significantly reflected in product prices. In addition, increases in logistics and transportation costs are also raising production costs. In particular, global supply chain problems, wars, and increased international transportation costs have increased the cost of imported parts used in the automotive sector. As I observed during my internship, the inability to obtain some parts on time due to various logistics problems led to both increased costs and delays in production processes. This situation has caused companies to turn to alternative suppliers and procure parts at higher costs.

3.3 Exchange Rate, Logistics Costs and the Automotive Sector

The production structure of the automotive sector in Türkiye is largely based on imported inputs. Therefore, changes in the exchange rate directly affect the cost structure of the sector. In particular, increases in the dollar and euro exchange rates increase the cost of imported engine parts, electronic systems, steel, semiconductors, and various ancillary products. This situation leads to an increase in production costs and causes companies to readjust their prices.

The rapid rise in the exchange rate in Türkiye after 2021 significantly increased the cost pressure in the automotive sector. The increase in the exchange rate affects not only the cost of parts but also the energy, fuel, and logistics expenses used in the production process. In particular, the increase in fuel prices increases transportation and distribution costs, creating additional pressure on total costs.

Companies operating in the automotive sector work with numerous suppliers and international logistics networks in their production processes. Therefore, global crises, wars, and supply chain problems directly impact the sector. In particular, logistics problems experienced during and after the pandemic significantly increased container and transportation costs. In addition, wars and geopolitical developments have made access to certain parts difficult and extended delivery times. During my internship, I also learned that a significant portion of the parts used in the production process are sourced from abroad. Engines, electronic systems, and various ancillary parts are directly affected by exchange rates and international logistics costs. Here, it's not just the materials used in assembling a vehicle that matter; logistics costs are also closely affected by inflation. Since cargo and transportation costs enter our country via the exchange rate, we proceeded with this in mind. This allowed me to analyze that logistics costs are affected by inflation at least as much as production parts.

This process also affects the pricing behavior of companies. Because companies cannot fully absorb the increasing exchange rates and logistics costs internally, they gradually reflect these costs in product prices. Particularly in the automotive sector, the fact that vehicle prices have increased at rates close to or higher than general inflation in recent years clearly demonstrates the impact of exchange rates and logistics costs on prices.

Table: Comparison of CPI and DI-PPI over the years

YEAR	CPI (%)	DI-PPI (%)
2016	8,53	9,94
2017	11,92	15,47
2018	20,3	33,64
2019	11,84	7,36
2020	14,6	25,15
2021	36,08	79,89

The comparison of CPI and DI-PPI between 2016 and 2021 shows that DI-PPI generally increased at a much faster rate than CPI. This divergence indicates strong cost pressures on producers, particularly in the automotive sector, where input costs such as imported components, energy, and raw materials are highly sensitive to exchange rate movements. The sharp rise in DI-PPI, especially after 2018, suggests that producer costs were not fully or immediately passed on to consumer prices, implying a delayed and partial cost pass-through in the automotive industry.

4. DATA SET VE ANALYSIS

4.1 Data Set

This study examines the impact of inflation on production costs and pricing behavior in Türkiye using various economic indicators for the period 2016–2026. The data used in the study were obtained from the Turkish Statistical Institute, the Central Bank of the Republic of Türkiye, the Automotive Industry Association, and sector reports.

The main variables used in the study are as follows:

Variable	Explanation
CPI	Annual rate of change in consumer prices
D-PPI	Annual rate of change in producer prices
USD/TL	Annual average exchange rate
Motor Vehicle Price Index	Changes in used vehicle prices
Tire and Fuel Prices	Key cost elements in the automotive sector
MTV and SCT increases	Tax factors affecting vehicle prices

With the help of these variables, the relationship between inflation and production costs was analyzed and the extent to which cost increases were reflected in prices, especially in the automotive sector, was examined.

4.2 Analysis Method

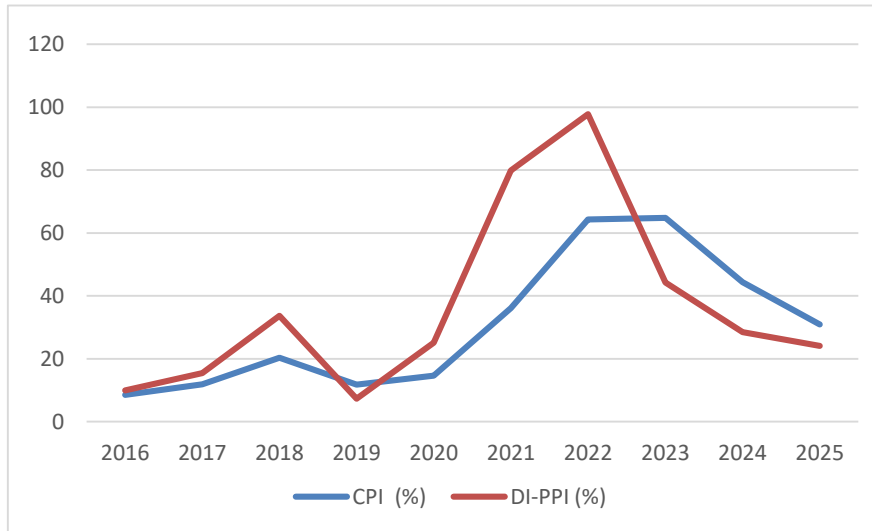
In the study, firstly, the change in production costs over time was examined by comparing CPI and D-PPI data. Then, motor vehicle prices and exchange rate data were compared. Thus, it has been tried to reveal to what extent cost increases in the automotive sector are reflected in prices.

The following methods were used within the scope of the analysis:

- Comparative table analysis
- Line and column charts
- Percentage change analysis
- Correlation analysis
- Cost pass-through assessment

In particular, the relationship between D-PPI and motor vehicle prices is important in terms of showing the extent to which companies reflect cost increases to prices. In addition, the examination of the relationship between the exchange rate and motor vehicle prices reveals the dependence of the automotive sector on imported inputs.

Graph 1: 2016-2025 compare with CPI and DI-PPI:



4.3.2 Increase in Motor Vehicle Prices and Automotive Inputs 2026 April

Indicator	Monthly Change (%)	Annual Change (%)
New Motor Vehicles	0.93	26.36
Tires	-	21.30
Fuels for Personal Transport Equipment	1.03	9.92

Analyzing the data for April 2026, it is seen that price increases continued in the motor vehicles group. First-hand motor vehicles increased by 0.93% monthly and 26.36% annually. In the same period, tire prices increased by 21.30% annually and fuel prices increased, indicating that production and usage costs in the automotive sector increased.

Especially tires, fuel and various spare parts are among the main cost elements in the automotive sector. For this reason, the increases in these items affect not only the vehicle usage costs, but also the production process. The increase in tire and logistics expenses increases the transportation and distribution costs of manufacturing companies.

A similar situation was observed in the case of MAN Truck & Bus. While the cost of some imported parts used within the company increased, transportation and logistics expenses also increased. In particular, the prolongation of the delivery time of parts brought from Europe and the increase in freight costs have made purchasing processes difficult. For this reason, the company had to turn to alternative suppliers in some cases. However, the higher cost of alternative suppliers has increased the total production costs.

According to Chart 2, the highest increase is seen in first-hand motor vehicles. The rise in tire and

fuel prices also supports the cost pressure in the automotive sector. This shows that the increases in production costs are reflected in product prices.

Year	Average Dollar/TL	New Car Price Increase (%)
2020	7,01	15,2
2021	8,89	28,4
2022	16,56	48,7
2023	23,77	61,1
2024	32,5	39,8
2025	36,2	26,4

When the table is examined, it is seen that there is a strong relationship between the increase in the exchange rate and vehicle prices. The rapid rise in the dollar exchange rate, especially after 2021, has increased the cost of imported parts used in the automotive industry. As a result, there have been significant increases in vehicle prices.

In 2022, the average dollar exchange rate increased to 16.56 TL, while first-hand vehicle prices increased by 48.70%. Similarly, with the increase in the dollar exchange rate to 23.77 TL in 2023, the increase in vehicle prices reached 61.10%. This shows that the automotive industry is highly dependent on the exchange rate.

In the case of MAN Truck & Bus, it is seen that many parts used in production are purchased in euros and dollars. Therefore, increases in the exchange rate directly affect the material costs of the company. During the internship, price increases were observed due to the exchange rate, especially in engine parts, electronic equipment and imported sub-industry products. This situation caused purchasing decisions to be made in a shorter term and some orders were placed before the exchange rate increase occurred.

Chart 2- Key Price Increases in the Automotive Sector in 2026

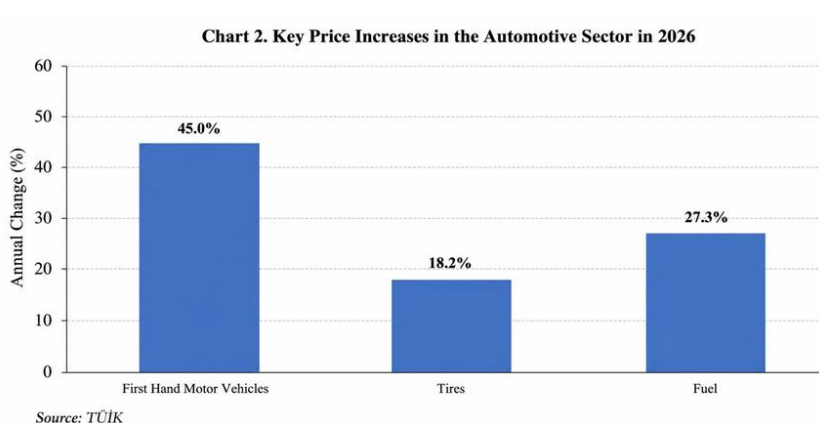
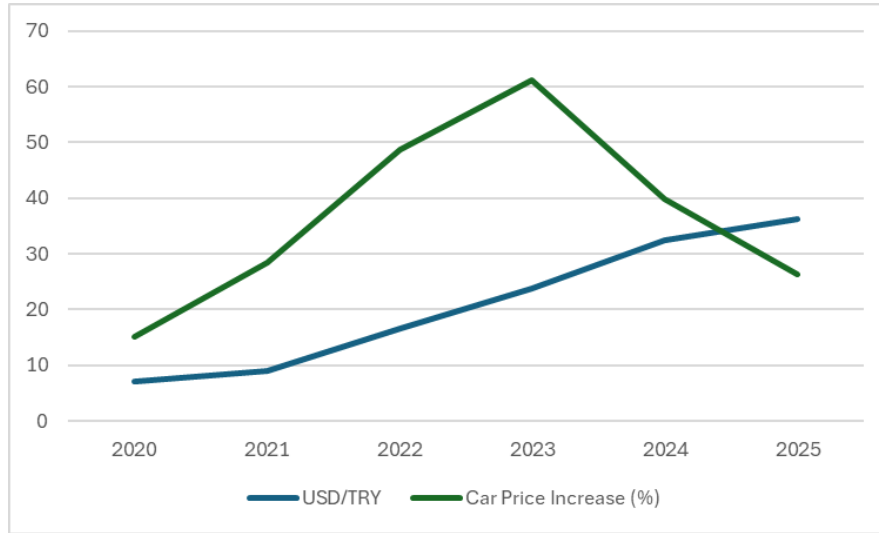


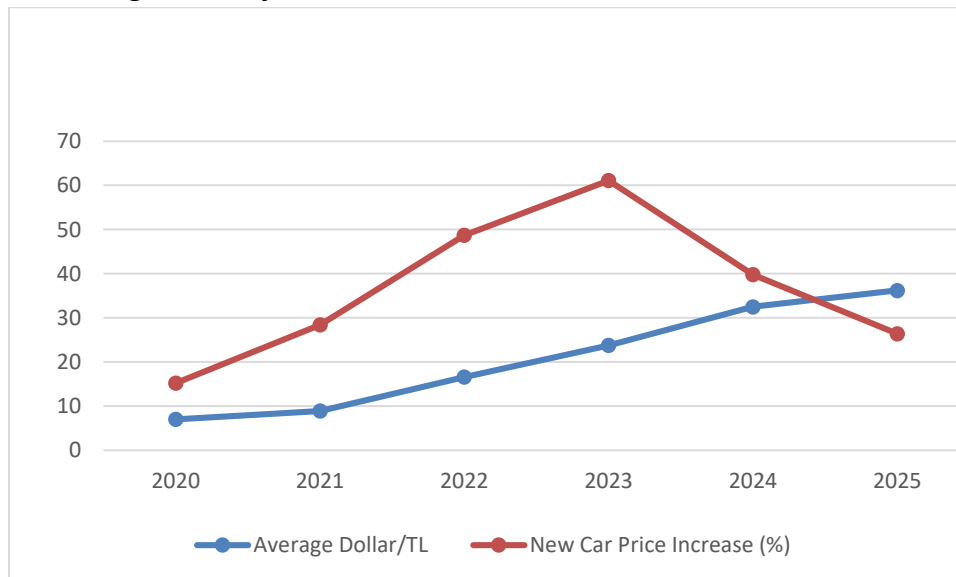
Chart 3. The Relationship Between Exchange Rate and First-Hand Car Prices



Source; TCMB

According to Chart 3 there is a clear relationship between Exchange rate increases and car price changes. As the Exchange rate rises, production costs increase, leading to higher vehicle prices. This shows the strong dependency of the automotive sector on imported inputs. Automotive sector, which is dependent on imported inputs, exchange rate increases directly affect production costs and therefore prices. (tcmb, tük)

Grafik Figure 2. Key Price Increases in the Automotive Sector in 2026



4.3.4 Impact of Logistics Costs and Supply Issues on the Production Process

The impact of inflation on production costs is not limited to raw materials and the exchange rate. Especially in recent years, logistics problems experienced on a global scale, the increase in transportation costs and disruptions in the supply chain have also significantly increased production costs. After the pandemic process, there have been significant increases in container, freight and international transportation costs. In addition, delays in the supply of some parts and raw materials have arisen due to wars and geopolitical developments.

The automotive industry has a complex manufacturing structure with a large number of different parts and suppliers. For this reason, increases in logistics costs have a direct impact on the sector. Most of the engine parts, electronic systems, semiconductors and various sub-industry products used in production are brought from abroad. The increase in the transportation costs of these products increases the total costs of the companies.

During the internship at MAN Truck & Bus, it was observed that the increase in logistics costs and problems in the supply chain directly affected the production process. It has been observed that the delivery time of some parts, especially those brought from Europe, has been extended and transportation costs have increased. In addition, the inability of some suppliers to produce or ship due to the war has led to the inability to supply certain parts on time.

This situation caused the company to turn to alternative suppliers. However, the higher cost of purchases from alternative suppliers has increased production costs. Additionally, in some cases, the late arrival of parts has caused disruptions to the production plan and slowed down the production process. For this reason, logistics costs and supply problems have become as important a cost factor as inflation in the automotive industry.

Table 4. Effects of Logistics and Supply Issues on Production Costs;

Cost Element	Impact on the Production Process
Exchange Rate Increase	Increases the cost of imported parts
Freight and Transportation Expenses	It increases the total logistics cost
War and Supply Issues	It causes delays in the supply of parts
Using Alternative Suppliers	It leads to higher costs
Delayed Deliveries	Slows down the production process

When Table 4 is examined, it is seen that cost increases in the automotive sector cannot be explained only by inflation and exchange rates. Logistics costs and problems in the supply chain also have a significant impact on production costs.

5. CONCLUSION AND EVALUATION

In this study, the effect of inflation on production costs and pricing behavior of firms in Turkey is examined in the automotive sector. The findings obtained in the study show that increasing

inflation in Turkey, especially after 2021, has created significant pressure on production costs. Price increases in raw materials, energy, labor, logistics and imported inputs used in the production process have significantly increased the costs of companies.

When the data used in the study were examined, it was seen that D-PPI was higher than CPI in many periods. Especially in 2021 and 2022, D-PPI reached 80-98%, indicating that production costs increased faster than consumer prices. This situation reveals that companies operate under cost pressure.

From the perspective of the automotive sector, it is seen that cost increases are more pronounced compared to other sectors. The main reason for this is that a significant part of the parts and intermediate goods used in the sector are imported. Exchange rate increases increase the cost of imported parts; In addition, increases in logistics and transportation expenses also increase total costs. In particular, wars, global supply chain problems and the increase in transportation costs have negatively affected the production process in the automotive sector.

The study also observed that the pricing behavior of firms changed in the inflation environment. During periods of high inflation, firms update their prices more frequently and reflect rising costs to product prices more quickly. The significant increase in motor vehicle prices in the automotive sector in recent years shows that cost increases are largely reflected in prices.

Similar results were reached in the case of MAN Truck & Bus. During the internship carried out in the materials management unit within the company, it was observed that there were significant increases in the cost of imported parts, logistics expenses and delivery times. There have been delays in the supply of some parts, especially due to the exchange rate and the war, which has made it necessary to turn to alternative suppliers. However, the higher cost of alternative suppliers has further increased production costs.

In conclusion, high inflation and exchange rate increases in Turkey have a significant impact on production costs and pricing behavior in the automotive sector. Companies have to reflect the increasing costs to their prices to a large extent; This situation causes vehicle prices to rise. Therefore, it is important to ensure exchange rate stability, increase domestic production and reduce dependence on imported inputs in order to reduce cost pressure in the automotive sector.

6. Economic Explanation

The empirical findings demonstrate a significant alignment with established economic theories. When analyzed within the framework of cost-push inflation, it becomes evident that the price escalations in production inputs are directly transmitted to the costs of final products. The research outcomes fundamentally resonate with the conceptual definitions of cost-push inflation, reinforcing the prevailing perspectives held by economists in the field. This correlation suggests that the upward trajectory in prices is primarily driven by structural supply-side pressures rather than domestic demand fluctuations.

The fact that the Producer Price Index (PPI) is increasing faster than the Consumer Price Index (CPI) indicates the cost pressure faced by firms. While this leads to a narrowing of firms' profit margins in the short term, it is balanced by price increases in the medium and long term. This process is called cost pass-through.

Furthermore, the impact of exchange rate increases on costs can be evaluated within the framework of an open economy. In sectors dependent on imported inputs, exchange rate increases directly

increase costs, and this is reflected in prices. The automotive sector is particularly sensitive in this respect.

7. Policy Recommendations for the Turkish Automotive Industry

The empirical findings of this study, particularly the operational challenges observed at MAN Truck & Bus—such as systemic delays in imported components and escalating freight expenditures—necessitate a strategic realignment of industry policies. To mitigate cost-driven pressures and ensure the sector's long-term viability as of 2026, the following recommendations are proposed:

I. Stabilizing the Macroeconomic Framework

The heavy reliance on foreign-sourced critical components, including engines and advanced semiconductors, renders the sector extremely vulnerable to currency shocks. Therefore, it is imperative to implement monetary policies that prioritize exchange rate stability. Creating a predictable financial environment is not merely a macroeconomic goal but a direct requirement for firms to conduct long-term procurement planning without the constant threat of pricing uncertainty. (<https://dergipark.org.tr/tr/download/article-file/3745075>)

II. Strategic Localization and Technical Sovereignty

Although the localization rate for original equipment manufacturers (OEMs) in Turkey currently fluctuates between 50% and 70%, there is an urgent need to deepen domestic production in high-value-added areas. Incentivizing investments in transmission components and electronic control units will reduce the industry's exposure to international supply shocks. Shifting the focus from simple assembly to the production of technology-intensive intermediate goods is essential for structural resilience. (<https://www.invest.gov.tr/en/sectors/pages/automotive.aspx>)

III. Logistical Resilience and Infrastructure Modernization

The fragility of global supply chains, highlighted during recent disruptions, underscores the importance of the 2053 Transport and Logistics Master Plan. Reducing freight costs and enhancing the efficiency of multi-modal transportation networks are critical for maintaining "just-in-time" production cycles. Strengthening domestic logistics infrastructure will serve as a buffer against rising international transport expenses.

(https://www.utikad.org.tr/images/HizmetRapor/stefaniskanutikad_transportlogisticsandsupplychainservicesinturkey-0678.pdf)

IV. Digital Transformation and Risk Mitigation

Automotive firms must accelerate their transition toward Industry 4.0 standards to enhance supply chain visibility. As seen in the MAN Truck & Bus case, digital inventory management and supplier diversification are no longer optional but vital for managing shortages. Advanced predictive analytics can allow firms to pivot more quickly when faced with disruptions in imported part arrivals. (https://javstudies.com/files/javstudies_makaleler/953ba930-d8e2-4a0a-b975-b5ee26e6621a.pdf)

V. Green Transition and Global Competitiveness

Finally, aligning with the European Green Deal and the Carbon Border Adjustment Mechanism

(CBAM) is a strategic necessity. Transitioning toward electrification and circular manufacturing processes—focusing on waste recovery and carbon efficiency—will future-proof the sector against evolving international trade regulations. (https://javstudies.com/files/javstudies_makaleler/953ba930-d8e2-4a0a-b975-b5ee26e6621a.pdf)

In conclusion, these interventions advocate for a fundamental paradigm shift: moving the Turkish automotive industry away from a labor-intensive assembly model toward a technologically sovereign, sustainable, and high-tech manufacturing ecosystem.

8. Conclusion

This research has analyzed the multifaceted impact of inflationary dynamics on manufacturing costs and corporate pricing strategies within Türkiye, with a specialized focus on the automotive industry. The empirical evidence underscores that the inflationary surge post-2021 did not merely increase prices but fundamentally strained the operational framework of manufacturing firms. This heightened cost environment necessitated more aggressive price revisions and complicated the long-term fiscal predictability of industry players.

A key takeaway from this study is the disproportionate vulnerability of the automotive sector to inflationary shocks compared to other industrial branches. This sensitivity is largely a byproduct of the sector's structural reliance on international supply networks and foreign-sourced inputs. Throughout the analyzed period, the convergence of currency volatility, escalating logistical overheads, and systemic supply chain bottlenecks directly inflated the procurement costs of indispensable components, such as semiconductors and engine systems. Ultimately, these cost-side pressures were mirrored in the upward trajectory of final vehicle prices.

The comparative analysis between CPI and D-PPI figures reveals a critical gap: producer-side costs frequently outpaced consumer price indices. This disparity indicates that firms were forced to absorb substantial cost burdens before gradually reflecting them in the market. Such a trend reinforces the conclusion that the Turkish automotive landscape is currently dictated by the mechanisms of cost-push inflation rather than demand-side drivers.

These macroeconomic findings are further validated by practical insights gained during my internship at **MAN Truck & Bus**. The real-world implications of inflation were observed through recurring delays in part arrivals, surging freight expenses, and the logistical necessity of pivoting to alternative, often more expensive, suppliers. These experiences highlight that inflation is not just a statistical phenomenon but a disruptive force that dictates daily material planning and purchasing workflows.

In summary, the interplay between monetary instability, logistical constraints, and supply chain fragility has become the primary determinant of the Turkish automotive sector's pricing behavior. To safeguard the industry's competitive edge and long-term sustainability, it is vital to prioritize macroeconomic stability and structural reforms aimed at enhancing domestic production capacity. Reducing external dependency remains the most viable path toward building a resilient industrial ecosystem capable of weathering future economic fluctuations.

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APPENDIX-2: Assessment Topics and Scoring

Scientific Qualification		Weight	D	J1	J2	Ort
The objectives of the graduation project have been determined and designed in line with these objectives	5					
The fact that the study has been examined in line with the determined objectives and that the literature examined reflects the subject, its	5					
Compliance with the educational objectives of the program of study	5					
Acting in accordance with ethical principles, reflecting professional and ethical responsibility awareness	5					
The methods applied in the study have been selected correctly to achieve these objectives, and the ability to use modern methods and tools required by the profession has been proven.	10					
The ideas presented should contain original and creative thoughts	10					
Ability to identify, define and model the problem using the basic knowledge related to the department	10					
Ability to interpret and discuss solutions and results accurately	10					
Formal Qualification						
Compliance of the project with the writing guide and the way it is written	10					
Accuracy of source usage	10					
Presentation Qualification						
Fulfilled the necessary presentation procedures when starting to present the graduation project	4					
Visual equipment was used effectively, information technology was utilized	4					
Concepts are used correctly and clearly	4					
The student used the specified time effectively. The presentation was fluent and understandable.	4					
Questions were answered accurately and clearly.	4					
Total	100					
Success Grade (Absolute)	Success Grade (4s)	Letter Grade		ECTS Grade		
100-88	4.00	AA		A		
87-80	3.50	BA		B		
79-73	3.00	BB		C		
72-66	2.50	CB		D		
65-60	2.00	CC		E		
59-55	1.50	DC		-		
54-50	1.00	DD		-		
49-0	0	FF		FX		

APPENDIX-3: Summary of Contents Table

Section Name	Summary of Contents
Preface	Following a short introductory paragraph about the project, the person, institution, etc. supporting the project is thanked.
Table of Contents	This is the section where the section and sub-section titles and page numbers in the project are shown. It is written justified on both sides.
Introduction	This is the section where the project is introduced. In this section, information is given about the subject and importance of the project and the contents of the project sections. Finally, the purpose of the work to be done in the project is stated.
Literature	In this section, studies related to the project subject should be explained by following the citation rules.
Methodology	This is the section where the methodology and field of the study is explained. All kinds of experimental instruments, tools, materials, theories, etc. used in the study are described in this section.
Findings	The findings of the project are described in this section.
Discussion and Conclusion	The results of the evaluation of the study findings are interpreted together with the existing literature. Suggestions are made for future research to improve the study.
References	The sources (books, articles, papers, etc.) used in the thesis are indicated.
Appendix	Calculations, tables, figures used in the project are included in this section if they are too many to interrupt the flow of the text.