

How Underreporting of Inflation could Harm the Macroeconomy: A Turkey Case Study

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ABSTRACT

This paper studies how underreporting inflation harms the economy, with a focus on Turkey. This paper demonstrates how discrepancies between inflation rate reported by the government organisation TÜİK and the independent organisation ENAG could mean a potential underreporting of inflation. Using data from statistical organisations, literature, and survey results, the paper then analyses the detrimental consequences in three distinct branches: income levels, public trust and housing prices. This paper thus calls for higher transparency in inflation reporting, and a more careful consideration for inflation-indexed mechanisms such as unemployment benefits, pensions, and investments.

INTRODUCTION

This paper explores how harm is caused due to underreported inflation, specifically in Turkey. Underreporting of inflation has severe consequences for the macroeconomy of countries.

While TÜİK is the official statistical organization that provides inflation rates, other independent organizations were formed over the years, such as ENAG, offering alternative measurements. Even though both of these organizations use CPI to calculate the inflation rate, TÜİK mainly relies on data collection via interview, while ENAG collects data mainly through web scraping. These differences along with other factors cause great dissimilarities between the rates of inflation calculated by ENAG and TÜİK. The largest percentage difference was a staggering 102.79 , which took place September 2022 (when inflation rates reached an all time high).

The current research has shown that there are a number of different indices used in different countries, such as the Consumer Price Index, Retail Price Index and the Consumer Prices Index including owner occupiers' housing costs in the UK (ONS, 2024). Unlike the Consumer Price Index that accounts for the goods and services that a typical household consumes, Retail Price Index refers to the price index that measures the retail prices of goods and services. There are multiple ways to measure inflation such as the Laspeyres index, the Paasche index and the Fisher index

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(Guðnason, 2025). These methods of measuring inflation all use baskets of goods and services to calculate the rate of inflation. However, they differ in the exact calculation.

Inflation has been shown to significantly decrease the purchasing power and real income of individuals (Tragakes, 2020). It will also decrease the real value of social benefits especially for people that collect unemployment benefits, who are already poor. As a result, they would have less ability to protect themselves and become even poorer. Current research also shows that accurate inflation rate matters as it is used to determine central bank decisions, such as the monetary policy. In particular, central banks need to target the inflation rate, which is often the CPI. As a result, it is important to have an accurate inflation metric.

Using data from statistical organisations, literature, and survey results, the paper then analyses the detrimental consequences in three distinct branches: income levels, public trust and housing prices. This paper thus calls for higher transparency in inflation reporting, and a more careful consideration for inflation-indexed mechanisms such as unemployment benefits, pensions, and investments.

The rest of the paper is structured as follows. Section 2 is the literature review and mainly focuses on different measures of inflation, and relationships between inflation and other economic variables. Section 3 is the context section, and it provides general information about Turkey's economy. Section 4 is the analysis section and it explores how Turkey's inflation being underreported by TÜİK affects income levels, public trust and housing prices. Section 5 concludes.

SECTION 2: LITERATURE REVIEW

This paper sits within two branches of literature: 1) ways to measure inflation, and 2) why inflation matters to the economy.

1) Ways to measure inflation

Inflation refers to a sustained increase in the general price level and the measures of inflation are obtained by the use of price indices (Tragakes, 2020).

There are multiple ways to measure inflation such as the Laspeyres index, the Paasche index and the Fisher index (Guðnason, 2005). These methods of measuring inflation all use baskets of goods and services to calculate the rate of inflation. However, they differ in the exact calculation. The Laspeyres index uses fixed weights and references base periods or previous time periods, on the contrary the Paasche index is referred to as the “variable weighted aggregate index” and it takes into account recent periods of time, the Fisher method is referred to as the “ideal” index and it is calculated by taking the geometric mean of the Laspeyres index and the Paasche index (TÜİK, 2008).

There are a number of different indices used in different countries, such as the Consumer Price Index, Retail Price Index and the Consumer Prices Index including owner occupiers' housing costs in the UK (ONS, 2024). Unlike the Consumer Price Index that accounts for the goods and services that a typical household consumes, Retail Price Index refers to the price index that measures the retail prices of goods and services.

CPI is one of the most commonly used indices. It is a measure of the cost of living or the cost of goods and services purchased by the typical household in an economy. CPI is constructed as a hypothetical basket and it reflects the goods and services consumed by a typical household. The value of the basket is calculated throughout a year by multiplying price times quantity for each good and service in the basket and adding these values together. The rate of inflation is calculated as the percentage change of the value of the basket in a given time period (Tragakes, 2020).

PCE is another index and it refers to the personal consumption expenditures and is a type of measurement used in the US. PCE differs from CPI in the sense that the consumer price index includes the consumption of a typical household while PCE covers that of individuals. The indexes use different data sources and different weights for goods and services. Another difference between the indices is that while CPI reflects out-of-pocket expenditures of all urban households, the PCE also includes the goods and services purchased on behalf of households. As a result of these differences inflation rates calculated through CPI are generally higher than inflation rates calculated through PCE. These differences also result in advantages and disadvantages for PCE and CPI. One advantage PCE has over CPI is the fact that it can capture and reflect the changing consumer behaviour patterns as it contains a versatile basket. On the other hand, one disadvantage of PCE is the fact that in certain circumstances it might need to be revised, whereas CPI is never revised as it is not seasonally adjusted.^[1]

Now that we have understood how to measure inflation, it is important to explain how inflation could affect the economy. Having an accurate inflation measurement is vital as it captures how quickly prices are changing in the economy. However, its usage goes beyond that.

2) Why inflation matters to the economy.

Monetary policy is a demand side policy that aims to reduce the short-run fluctuations of the business cycle and increase aggregate demand. The monetary policy is carried out by the central bank of each country. It attempts to achieve a low and stable rate of inflation and relatively low unemployment levels. It also aims to reduce disruptive factors within an economy and aims to provide a stable economic environment for growth (Tragakes, 2020). Another prominent objective of monetary policy in a number of countries is to control the inflation rate. (Kaplan and Wohl, 2016).

Inflation targeting is defined as “...the public announcement of medium-term numerical targets for inflation with an institutional commitment by the monetary authority to achieve these targets.” by the IMF (Tragakes,2020; IMF, 2008). The inflation target is set in terms of the consumer price index. Inflation targeting consists of predictions or forecasts. It helps achieve a low and stable rate of inflation, helps improve the ability of firms and consumers to anticipate the future rate of inflation and allows for a better co-ordination between monetary and fiscal policy. However, it could limit the actions that can be taken by the central bank and may cause higher unemployment if the target inflation is too low (Tragakes, 2020)

Inflation has significant effects on purchasing power and real income. Purchasing power refers to the quantity of goods and services that can be bought with money (Tragakes, 2020). As inflation increases, purchasing powers of households, firms or individuals decrease. In relation to this the real income of households also decreases. Real income refers to the income that is adjusted to inflation. As a result of a higher rate of inflation the general price levels increase, and real incomes decrease (Tragakes, 2020). In addition to these, there was some evidence that suggested inflation volatility affects growth negatively (Pappas, Nikolaos, 2025). Also, It is suggested that sudden changes in inflation volatility have immediate effects on asset prices and delayed effects on output (Hossain and Raghavan, 2019).

The relationship between inflation and income inequality has also been explored. The article, “Inflation and Income Inequality”, suggests that inflation decreases the real value of social benefits as imperfect indexation may cause lower real incomes for people with already low incomes that collect unemployment benefits. As a result of this lower-income masses have less ability to protect themselves against inflation when compared to higher-level income masses. Which causes the poor to be poorer and increases the gaps between income levels. Also lower-income households suffer more from inflation as they spend a higher share of their income on goods and services that rise in price quickly-such as food. This further increases income inequality.

The article presents data calculated with the use of the gini index that showcases the levels of income inequality, which rose from 0.40 to 0.47 between 1971 and 2006, in a period where inflation was prominent (Sieroń, 2017). According to Kaplan and Wohl, data collected showcases inflation is higher on average for lower-income households for goods, which could indicate inequality in real incomes is rising faster than inequality in nominal incomes(Kaplan and Wohl, 2016).

SECTION 3: CONTEXT

TÜİK is the official statistical organization of Turkey. TÜİK is an organization that collects, compiles, publishes and distributes data. The current president, as of July 11 2025, is Dr. Erhan Çetinkaya who was appointed in 2022 by the decision of the presidency. It's been discovered that Erhan Çetinkaya is married to the daughter of a former mayor from AKP(T24, 2024).

This creates a potential conflict of interest, as TÜİK is not entirely separated from the government party, AKP. The fact that inflation is a negative data and the fact that the government would desire a low-rate of inflation for political approval creates this potential conflict of interest. The president of TÜİK being appointed by the presidency and Erdoğan also further weakens the perceived independence of TÜİK and raises concerns regarding the integrity of the inflation data presented by TÜİK.

The primary duties of TÜİK are: preparing the official statistical program, providing technical and scientific explanations for official statistical results, determining the methods, definitions, classifications and standards that will be used in the production of statistical data.

While TÜİK is the official statistical organization that provides inflation rates, other independent organizations were formed over the years, such as ENAG, offering alternative measurements.

ENAG (Inflation Research Group) is an independent statistical organization that calculates and publishes the rate of inflation in Turkey. ENAG was founded in 2020 by Prof. Dr. Ulusoy, who is the president of the organization. The aim of ENAG is to create a dynamic and timeless price index. ENAG collects data daily from online and offline sources.

Between these two organisations that aim to calculate the rate of inflation in Turkey, there are a few similarities. Both of the organizations use consumer price index to calculate the rate of inflation. TÜİK and ENAG use COICOP to classify consumer spendings. As for data collection, it can be said that both organizations use varying online and offline methods

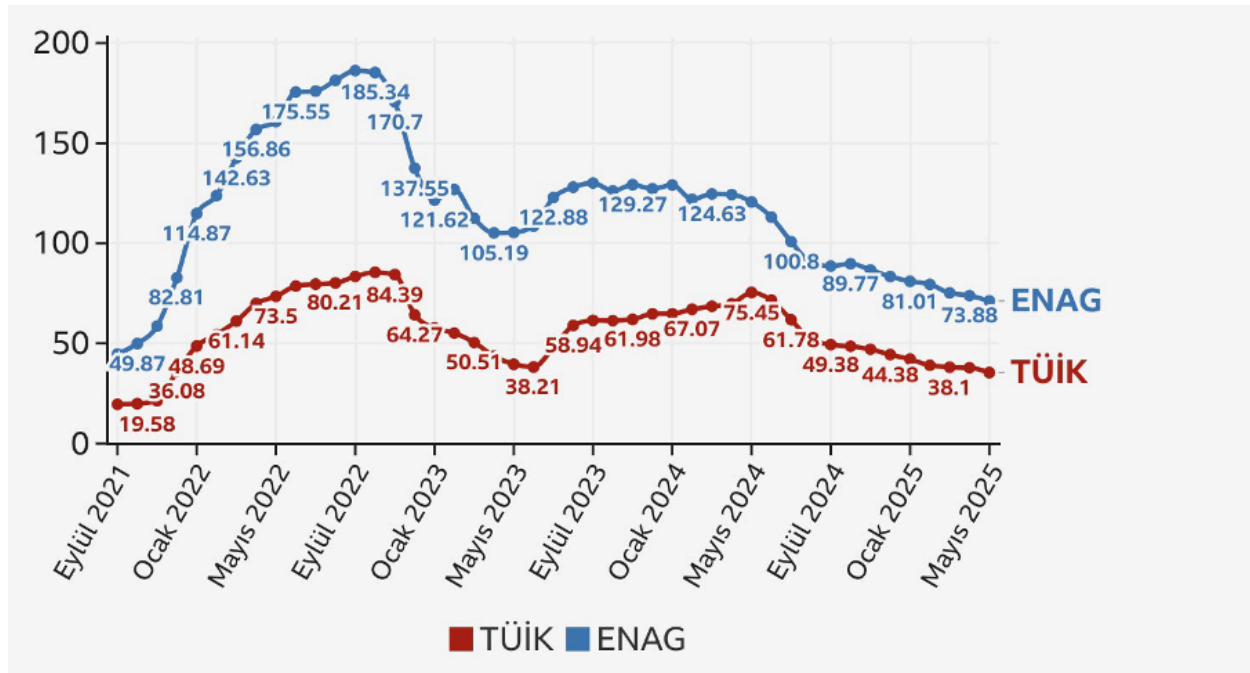
TÜİK mainly relies on data collection from the field with Computer Assisted Personal Interviewing. Web scraping, surveys and telephone interviews are other methods TÜİK uses to collect data for the consumer price index. Whereas, ENAG collects data mainly through web scraping while also using offline methods. ENAG uses the ENAG-Laspeyres Index to create daily price indices. TÜİK uses the Laspeyres method(TÜİK, 2008).

As for the basket lists, ENAG includes 339 of the 418 items that are present in the TÜİK basket. 79 items are excluded from the ENAG basket due to the “intermittent behaviour affecting inflation” or because “controlled products make up the majority.” However, “in order to make one-on-one comparisons with the TÜİK inflation rate the monthly price changes of these remaining 79 products are taken from TÜİK, and presented as a weighted inflation rate.” (ENAG, 2025)

These differences along with other factors cause great dissimilarities between the rates of inflation calculated by ENAG and TÜİK. This can be observed in diagram 1 below:

Diagram

1:



(BBC,2025),(ENAG,2025),(TÜİK,2025)

The graph above showcases the difference between the rates of inflation calculated by TÜİK and ENAG. It can be seen from the graph that both inflation rates follow a similar pattern on different levels. The increases and decreases happen relatively at the same period of time. This is an expected relation as both organisations use CPI, use similar data collection methods, similar calculation methods and similar baskets. However, one thing that is not expected is the large gaps between the inflation rates. It can be inferred from the graph that the inflation rates calculated by TÜİK are much lower than the inflation rates calculated by ENAG, throughout the four year period. One possible factor that contributed to this might be the fact that TÜİK interacts with more small and medium sized enterprises due to the field work they do. Although ENAG accesses a large quantity of data through their methods, because they lack the labor force required for extensive field work they could miss out on some small businesses. This could be a factor in the low inflation rate of TÜİK as small businesses are more likely to raise prices less frequently due to menu costs and in order to retain their customer base.

Another factor that contributes to this large gap between the rates of inflation could be the fact that ENAG collects data daily while TÜİK collects most data monthly. This could result in ENAG providing more accurate data for goods that are more volatile and it could help them capture sudden changes in prices, while TÜİK remains insensitive to these changes due to their monthly data collection. This would most likely cause TÜİK's calculation of inflation rates to be lower than ENAG. Another factor

contributing to this could be different weights of goods used in the baskets. Different weights of goods being used, especially controlled products may cause TÜİK's inflation rate to be lower.

However, these factors alone do not justify the massive gaps between the inflation rates of the two organizations. The largest percentage difference was a staggering 102.79 , which took place September 2022, when inflation rates reached an all time high. The greatest ratio between the inflation rates was 2.85 in June 2023 when inflation rates dropped to the lowest since January 2022 (both according to TÜİK and ENAG). The inflation rates differing the most during the peak and the ratio differing the most after a fall, further strengthens the idea that there is another underlying cause. The most probable reason for a gap of this magnitude between the inflation rates is political agenda. It is likely that TÜİK is suppressing and therefore lowering the true rate of inflation due to political reasons. The percentages differing the most when inflation is highest gives the impression that inflation is being suppressed to appear less than it actually is. Given the high and rising rates of inflation, the instances when the inflation rates differ the most, the fact that inflation is a negative data, the current TÜİK president's relation with AKP and the fact that TÜİK presidents are appointed by the presidency and Erdoğan, TÜİK suppressing the rate of inflation might be a logical explanation for the huge differences between the inflation rates calculated by TÜİK and ENAG. The lack of transparency provided by TÜİK regarding their basket lists, the quantity and quality of their goods and services also creates more controversy around this topic.

It is important to note that the methodological differences between ENAG and TÜİK mentioned throughout Section 3 might be an explanation for the discrepancies between the inflation rates presented by ENAG and TÜİK. However, the gap in inflation rates of this huge magnitude suggests that methodological differences are not the only factor that causes this discrepancy. It was previously established that inflation is a negative data. This leads to the idea that TÜİK is underreporting the rate of inflation in Turkey. However, it is also crucial to highlight that the gap between inflation rates calculated by ENAG and TÜİK can not be accepted as evidence of underreported inflation. The purpose of this research is to explore how underreporting inflation can affect the economy of a country. For the purpose and focus of this essay it will be assumed that TÜİK underreports the rate of inflation in Turkey. Section 4 analyses the possible effects of this assumed underreporting on the Turkish economy.

SECTION 4: ANALYSIS

This section of the essay will focus on how the TÜİK potentially undervaluing the inflation rate affects income levels, public trust and housing prices. It is important to note that this section lies on the presumption that TÜİK actually undervalues inflation, which is likely, as explained in section 3. This section explores each of the three channels mentioned individually and analyses how the discrepancies between the inflation rate of TÜİK and ENAG, and the possible undervaluement of inflation by TÜİK, affects these channels.

Section 4.1: Income Levels

Income levels and the real incomes of a considerable number of people are affected because of TÜİK's undervalued inflation. An undervalued inflation means that people working jobs with wages indexed to the rate of inflation will be affected negatively. Due to the official rate of inflation provided by TÜİK being less than the real rate of inflation, these people would get raises that are indexed to TÜİK's inflation, which is less than what they should be getting, which is the real rate of inflation. As a result of this, people who are working in jobs that are indexed to inflation will suffer from a significant fall in their real income. Considering that pensions, wages of public personnel, minimum wages and unemployment benefits are directly indexed to inflation and considering that mostly low-paying jobs are indexed to inflation, and other high-paying jobs are not, it can be said that low-income earners are more dependent on the inflation rates declared by TÜİK. Because of this, low-income earners would experience the consequences of the underreporting of inflation more than high-income earners. Subsequently, the real incomes of low-income earners would deteriorate significantly more than high-income earners. As a result of this, the gap between income levels would increase. Therefore, the income inequality in Turkey would widen.

To get an understanding of the magnitude of people who work at jobs that are indexed to inflation, 7.6 million people, around 44% of workers, say they work for minimum wage or less. While 11.5 million (66%) people work at jobs paying 20% more than minimum wage or less and 14.5 million (80%) people work at jobs paying 50% more than minimum wage or less (Çelik, Beyazbulut, Kandaz, 2025). There were 1.6 million people who applied for unemployment benefits in 2024 (Doğan,2025). There are currently 15.9 million people who are retired and eligible for pension (DİSK-AR,2025). There are 5.243 million public personnel as of 2025(Strateji ve Bütçe Başkanlığı,2025).

Minimum wage in Turkey is determined by the government, specifically by the "Minimum Wage Detection Commission". The rate of inflation is a factor in determining the inflation in Turkey(ING,2024). For the reasons mentioned above the rate of inflation being undervalued by TÜİK would also cause the minimum wage to be undervalued and cause a drop in the real incomes of minimum wage earners. As of now minimum wage is being adjusted yearly. There were two instances in recent history where inflation was adjusted twice in a year(in 2022 and 2023). The last adjustment was in January 2025 and the minimum wage was increased by 30%. The yearly inflation in January 2025 was 42.12 according to TÜİK and 81.01 according to ENAG. It is important to note that the increase of the minimum wage was less than the yearly inflation in January 2025, which further challenges minimum wage earners. The current net minimum wage currently stands at 22104 TL. The hunger threshold in June 2025, which includes the food expenses of a family with four members, was 26115 TL and the poverty line, which includes food expenses and fundamental spendings, was

85066 TL. Also the living costs of a single worker was determined as 33587 TL(TÜRK-İŞ, 2025). From these data, it is evident that minimum wage in Turkey is undervalued. Minimum wage is not enough for a person to live on their own. Families of four can not even afford food let alone worry about other aspects of life if they depend solely on a single minimum wage. We can interpret that minimum wage is severely undervalued due to the possible undervaluation of inflation by TÜİK. As a result of this the real incomes of minimum wage workers are also severely undervalued, even though it is calculated using a number of factors in which inflation is included. This causes the 7.564 million minimum wage earners to struggle to make ends meet, along with unemployed individuals.

Unemployment benefits are calculated through the earnings of the unemployed individual and can not surpass 80% of the minimum wage(İŞKUR,2025). The maximum unemployment benefit is directly indexed to minimum wage. This means that unemployed individuals who claim the maximum amount of unemployment benefits are not benefiting as much as they would in the case that inflation rates were not undervalued by TÜİK, causing them to endure more challenges during the period that they are unemployed.

As of 2025 there are 15.9 million people who are retired. It was suggested by the main opposition party CHP that 70% of pension earners earned less than minimum wage in 2021 (CHP,2021). There are two main organisations that private sector retirees get their pension from which are SSK and Bağ-Kur. Both of these organisations announced an increase of 16.67% in pensions for June 2025, which is the inflation rate of TÜİK for the 6 month period prior to June 2025. There are currently 2.538 million retired public personnel and 3.651 million working public personnel.^[1] The current lowest monthly pension is 16682 TL. (BBC,2025). A monthly pension of 16682 TL is an incredibly low amount and is not sufficient enough to cover the needs of a person, as mentioned above. The pension being directly indexed to the inflation rate calculated by TÜİK showcases how the undervalued rate of inflation causes the real incomes of retired masses to be quite low and insufficient. The lowest wage for public personnel as of July 2025 is 50503 TL and the lowest pension for retired public personnel is 22671 TL. An increase of 15.57% ,based on inflation rates provided by TÜİK, happened since the last change which was in January 2025(AA,2025). Due to the undervalued inflation provided by TÜİK, the real incomes of over 5 million former or current public personnel has dropped significantly.

The possible underreporting of inflation by TÜİK causes the real incomes of large masses to decrease. Due to the minimum wage, pensions and unemployment benefits being directly indexed to TÜİK's inflation, millions of citizens earn less than what they would earn if inflation was not underreported. Many individuals whose income depend on these can not subsist as the increase in their income is significantly less than the increases in average price levels. This causes many individuals to earn below the poverty line, hunger line and the living costs of a single worker, as mentioned previously. It can be interpreted that the underreporting of inflation causes a decrease in the real incomes of low-income earners and therefore further increases the poverty in Turkey. It was also previously mentioned that the underreporting of inflation may lead to increased income inequality in Turkey. The increase in poverty, decrease in income levels of low-income earners and increased income inequality is likely to cause the

living standards in Turkey to decline. A decrease in living standards may trigger poverty cycles across the country as individuals would be unable to invest in their productivity and human capital because of their reduced income and increasing living costs.

4.2: Public Trust

As a result of the significant difference between the real inflation experienced by people and the inflation TÜİK announced, and due to the huge differences between the inflation rates calculated by ENAG and TÜİK there has been a notable decrease in the public trust towards TÜİK and other public organizations. These differences lead citizens to perceive data provided by TÜİK as inaccurate and untrustworthy. The public distrust in TÜİK can be seen in polls and in the behaviours of firms.

There are a number of polls that showcase the level of public trust towards TÜİK. For instance; a poll conducted by the main opposition party CHP, suggests that 84% of participants say that they don't believe in data provided by TÜİK. Also, the same poll suggest that 54.5% of participants said that the real inflation experienced is way above the announced inflation, 29.5% of participants said that the real inflation is above the announced inflation and only 11.5% of participants said that the real inflation they experience is the same as the inflation rates announced by TÜİK(T24,2025). This poll showcases how a majority of citizens have lost their trust for TÜİK. Also it showcases that many people believe that the real inflation rate is higher than the inflation rate calculated by TÜİK. Here the interpretation is that the rate of inflation TÜİK calculated is perceived to be undervalued and that this perception leads to a loss of public trust. Also, it is a concrete possibility that the large gaps between the inflation rate calculated by TÜİK and ENAG contributes to the loss of trust as ENAG seems to be more in accordance with the inflation people experience. The president of ENAG himself says that the gap between the inflation rates provided by TÜİK and the inflation rates citizens experience is very large and larger than ever(BBC,2022).

Another poll that showcases the lack of public trust in TÜİK and other government organisations is a poll conducted by ASAL araştırma. When asked the most trustworthy organization in Turkey 24.9% participants said "none". And only 1.3% of participants said TÜİK, which was among the least trusted organisations(SarayMedya, 2025). This poll showcases how trust for government organisations and TÜİK is quite low. Turkish economist Prof. Dr. Gökhan Çapoğlu says that he multiplies TÜİK's inflation by 2.5 to estimate the correct inflation(TELE1,2021). This quote shows how TÜİK is not trusted by academicians and experts in economics. Another case that showcases how TÜİK is not being trusted is the behaviour of Galatasaray, one of the biggest sports clubs in Turkey, during a sponsorship deal. Galatasaray signed a 5 year sponsorship deal worth more than 8 million dollars(yearly, for their first year) with RAMS in 2023 for stadium name rights. Galatasaray initially announced that the contract values would be determined through the average of CPI and PPI rates calculated by TÜİK and ENAG(T24,2023). This act by Galatasaray showcases how TÜİK is not trusted. The official government organisation is not trusted by a sports club for a multi-million dollar deal and instead the club opts to take the average of the government institute and an independent organization. Also, this showcases how it is

likely that Galatasaray believed that the inflation rate provided by TÜİK did not represent the real inflation rate and was most likely undervalued.

These examples demonstrate how TÜİK is not trusted by the public and firms. Individuals and firms showcase a lack of trust towards TÜİK through their opinions, actions and words. The distrust towards TÜİK also results in distrust towards other official organizations. The primary cause for this distrust is the discrepancy between the inflation rates announced by TÜİK and the inflation experienced by citizens in daily life. The inflation rates announced do not reflect the increases in the prices of products, which leads to the loss of public trust. Furthermore, the discrepancy in the inflation rates announced by TÜİK and ENAG likely creates doubt regarding the accuracy of TÜİK and causes concerns regarding the integrity of the data declared by TÜİK. Consequently, the level of public trust towards TÜİK and other official organizations decreases.

The lack of trust in TÜİK and therefore other official organizations may result in detrimental consequences. Firstly, this lack of trust might cause firms and citizens to not respond to government policies and nudges. This could cause a rise in the already high inflation or it may prevent market failure corrections. Also the lack of trust towards TÜİK by the public might cause foreign investors to have doubts about the economic stability of Turkey and may result in less foreign investment and therefore a drop in the stock markets. Lastly, the lack of trust in TÜİK may cause consumers to spend more ,even when inflation according to TÜİK drops. This would result in an increase in aggregate demand and therefore a further increase in the rate of inflation.

Section 4.3: Housing Prices

Prices of houses would be affected negatively by undervalued inflation. In the case that the data declared by TÜİK is perceived to be underreported, sellers determine the prices of their houses with the idea that the inflation rate provided by TÜİK is undervalued. Due to this the house prices increase at a rate higher than inflation. The inflation rate provided by TÜİK between June 2020 and June 2025 was over 700%. While the Housing Price Index, which aims to calculate the increase in house prices, rose over 1300% during the same period (Trading Economics,2025); TCMB,2025). This significant gap between the increase in the two indices suggests that the undervalued inflation causes house prices to be greater. It is a plausible explanation that sellers overprice their properties because of the lack of trust they have towards the data presented by TÜİK. As a result of this, potential house buyers may not be able to find a house within their budget and they may have to overspend.

Rent is another aspect of housing that is affected by this matter. As of 2025 yearly increases of rent can be pre-determined through a contract or if at the time of the contract an agreement was not written down a maximum increase of the inflation rate provided by TÜİK can be implemented(Or,2024). This means that landlords who have not signed a contract with an agreed yearly increase rate will suffer as their income would be indexed to the undervalued inflation rate of TÜİK. As a result of this landlords will

have decreased real incomes. This issue may lead to illegal transactions between the landlords and tenants that are done without contracts which may cause tenants financial and other various problems.

CONCLUSION

This paper focuses on the detrimental effect caused due to underreported inflation, specifically in Turkey. Underreporting of inflation harms the macroeconomy of countries.

Section 2 uses existing research to provide some general information regarding inflation. This part of the section showcases how inflation may be calculated through various methods and presents some possible reasons for the calculation of different rates of the same inflation. The second part of this section focuses on how inflation affects the economy via purchasing power, and inequality, as well as inflation targeting, showing the importance of an accurate inflation rate.

Section 3 aims to provide a context on the two inflation indices in Turkey, one from Turkey's official statistical organization TÜİK and one from an independent statistical organization ENAG. It focuses on the great differences between the rates of inflation calculated by these organizations and tries to identify the possible reasons for the differences, such as the methods of data collection, the contents of baskets and possible political agenda.

Section 4 focuses on how underreported inflation of TÜİK can have a detrimental effect on income levels, public trust and housing prices. In Turkey, underreported inflation causes the real incomes of millions of people to decrease significantly. People who are earning minimum wage, government personnel, people who are working jobs that are indexed to inflation and people who are retired all get affected by the underreported inflation and suffer financially as a result of it. Public trust is also affected negatively as a result of the underreported inflation, which can be seen through polls, surveys and the behaviours of firms. Lastly, Section 4 explores how house prices and rents are affected by the underreported inflation and how this could affect people involved.

There are various policy implications that may be implemented to minimize the negative effects on citizens. More transparency by TÜİK regarding the basket list, weights and the methods of data collection may be crucial to increase public trust towards statistical organizations. Also a higher minimum wage and an increase in the frequency at which it is adjusted would ensure the welfare of minimum wage earners and would increase their quality of life. An increase in pensions given out by private sectors or benchmarking the pension against an average of TÜİK and ENAG inflation rates would also benefit the retired masses. Another policy implication to ensure a more accurate inflation rate would be to increase regulations on inflation rates conducted by international organizations, as such a thing would most likely prevent bias and nudge statistical organizations to be more accurate.

There were also some limitations in this paper. The most prominent limitation was the fact that there was no concrete proof that TÜİK was underreporting the rate of inflation. A proof of this underreporting would allow a convincing analysis and would allow this paper to be utilised in policymaking. A more in-depth analysis, such as by doing web scraping and/or survey to track prices in Turkey, would be a way to see whether TÜİK is indeed underreporting.

Future research regarding this topic could be focused on proving the possible data manipulation that was done by TÜİK. An article titled: “Tampering with inflation data: A Benford law-based analysis of national statistics in Argentina” was written to determine whether data manipulation had occurred in Argentina during a certain time period. This research could be adapted to Turkey and be expanded on. This research would explore if the inflation data declared by TÜİK satisfies the Benford Law and therefore interpretations on whether TÜİK manipulates data or not could be made.

Further research could use the different methodologies of TÜİK and ENAG to construct different inflation indices. Through this, the inflation values obtained by using the same typical basket but different methodologies would be achieved. Researchers can use the values obtained to explore the impact of methodological differences between TÜİK and ENAG on the inflation rates calculated. The difference, if there is any, could signal if methodological differences are a prominent cause in the discrepancies between the inflation rates declared by TÜİK and ENAG or not. In the case that, the inflation rates obtained during this new research is also significantly higher than the inflation rates calculated by TÜİK, the idea that TÜİK is underreporting inflation may be strengthened. The inflation data collected in this extension would also act as another source of inflation in Turkey, similar to ENAG, for other researchers.

Another extension of this research would be to conduct surveys regarding the effects of the discrepancies between the data presented by TÜİK and ENAG and the possible underreporting of inflation on public trust. Participants could be asked if they believe inflation is underreported by TÜİK, if they trust TÜİK and other official organizations, if they perceive ENAG or TÜİK as the more reliable source and the possible reasons for any trust or distrust they show towards TÜİK. This would showcase the general public trust levels towards TÜİK and other official organizations and the relationship between these public trust levels and the inflation rates declared by TÜİK.

Moreover, this paper also touches upon 3 angles. As shown in the literature, underreporting would affect central bank decisions. It is also important to look at how other macroeconomic phenomena such as unemployment or production costs could be affected. Finally, while this paper focuses on the situation of Turkey, it would be interesting to see if other countries, especially developing countries, would be facing a similar issue as well.

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