



## GLOBAL COFFEE MARKET TRENDS AND DEMAND GROWTH

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**Abstract:** *This study examines global coffee market trends and identifies the key determinants of coffee demand using worldwide time-series data. The analysis focuses on the impact of macroeconomic and demographic factors, including GDP per capita, urbanization, population growth, and coffee prices, on global coffee consumption. To achieve this objective, the study employs descriptive statistics, correlation analysis, the Augmented Dickey-Fuller (ADF) unit root test, and the Autoregressive Distributed Lag (ARDL) model to evaluate short-run relationships among variables.*

*The empirical results reveal strong positive associations between coffee consumption and all explanatory variables. However, the ARDL findings indicate that, in the short run, only the coffee price index has a statistically significant effect on consumption, while GDP, urbanization, and population do not show significant short-run impacts. These results suggest that global coffee demand is influenced not only by traditional macroeconomic factors but also by market dynamics and evolving consumer preferences.*

*The study contributes to the existing literature by providing a global-level analysis based on aggregated data and highlighting the complexity of demand behavior in the coffee market. The findings have important implications for policymakers and market participants, emphasizing the need for stable market conditions and investment-friendly policies. Future research should focus on disaggregated data and long-run relationships to better capture regional differences and structural dynamics.*

### 1. Introduction

The global coffee market has become one of the dominant segments of the food and beverage industry, supported by strong and consistent demand globally.



Coffee is the second most traded commodity after oil, and more than 2.25 billion cups are consumed daily (International Coffee Organization, 2024). Global coffee production reached nearly 178 million 60-kg bags in 2023, while consumption accounted for approximately 175 million bags, indicating a steadily growing market (United States Department of Agriculture, 2024). In value terms, the global coffee market was estimated at about USD 245 billion in 2023 and is projected to exceed USD 380 billion by 2030, growing at an average annual rate of 5–6% (Grand View Research, 2024). This expansion is largely driven by rising incomes, urbanization, and increased demand for premium and specialty coffee products.

In developing countries, coffee demand is increasing at a faster pace compared to developed economies. For instance, coffee consumption in Asia and Oceania grew by more than 3.5% annually between 2018 and 2023, significantly outpacing global averages (International Coffee Organization, 2024). Countries such as China and India have experienced rapid increase in coffee consumption, with China's market expanding by over 10% per year in recent years (World Bank, 2023). Additionally, multinational companies like Nestle generate more than 25% of their beverage revenue from emerging markets, highlighting the importance of these regions (Nestlé, 2023). The increasing availability of instant coffee, which accounts for nearly 40% of global coffee consumption, also plays a significant role in boosting demand in emerging economies (Euromonitor International, 2024).

In Central Asia, coffee consumption remains relatively low compared to global standards, but it is growing stably. Average per capita coffee consumption in the region is estimated at less than 1 kg per year, compared to over 5–7 kg per capita in Europe (International Coffee Organization, 2024). However, the market has been expanding due to increasing urbanization rates, which is more than 50% in several Central Asian countries, and rising disposable incomes (Asian Development Bank, 2022). The number of cafes and coffee shops has grown significantly in major cities such as Almaty and Tashkent, reflecting changing consumer preferences and the influence of global coffee culture.



Uzbekistan illustrates a clear example of this emerging trend. Although tea remains the dominant beverage, coffee consumption has been rising at an estimated annual rate of 8–10% in urban areas over the past decade (State Committee of the Republic of Uzbekistan on Statistics, 2023). Imports of coffee products have increased gradually, exceeding 20 thousand tons annually in recent years, indicating growing domestic demand. The expansion of cafe culture, particularly in Tashkent, along with the entry of international and local coffee brands, has contributed to this growth. Furthermore, Uzbekistan's GDP growth averaging around 5–6% annually has supported increased consumer spending on non-essential goods such as coffee (World Bank, 2023).

The main objective of this research is to analyze global coffee market trends and identify the key factors driving demand growth across different regions. Specifically, the study focuses on quantifying the impact of variables such as income levels, urbanization rates, population growth, and changing consumer preferences on coffee consumption

The structure of this article is organized as follows: the next section reviews the relevant literature on global coffee market dynamics and demand determinants. The methodology section then outlines the data sources and analytical framework used in the study. Section 4 will cover the results of the analysis done through dependent and independent variables. Section 5 will discuss the empirical result and the significance of coffee. Finally, section 5 will conclude the research of global coffee market trends and demand growth, as well as giving policy recommendation.

## 2.Literature review

The significance of the global coffee market has attracted considerable attention from researchers due to its economic, social, and trade implications. Coffee is not only a widely consumed commodity but also a critical source of income for over 25 million farmers worldwide (International Coffee Organization, 2024). Early contributions by scholars such as Jeffrey Sachs and Joseph Stiglitz emphasized the role of commodity markets, including coffee, in shaping global trade dynamics and development outcomes (Sachs & Warner, 2001; Stiglitz, 2002). More recent studies



by Ponte (2002) and Daviron and Ponte (2005) have analyzed the transformation of global coffee value chains, highlighting the increasing dominance of multinational corporations and the shift toward value-added segments. These works collectively demonstrate that coffee markets are not only economically significant but also deeply embedded in global inequality and development processes.

Recent literature has introduced several novel perspectives on coffee market dynamics, particularly in relation to consumer behavior and market segmentation. Scholars have increasingly focused on the rise of specialty coffee, which now accounts for approximately 20–25% of global coffee consumption (Specialty Coffee Association, 2023). Studies by Samoggia and Riedel (2018) emphasize changing consumer preferences toward quality, sustainability, and ethical sourcing, while Borrella et al. (2015) explore the growing importance of certifications such as Fair Trade and organic labeling. Additionally, research has highlighted the rapid growth of ready-to-drink coffee products and digital retail channels, particularly in emerging markets (Euromonitor International, 2024). These contributions underline a shift from traditional commodity-based analysis toward a more consumer-oriented and differentiated market structure.

A wide range of methodological approaches and econometric techniques have been employed in the analysis of coffee market trends and demand growth. Time-series models, such as ARIMA and VAR, have been commonly used to forecast coffee prices and consumption patterns (Gilbert, 2010). Panel data models, including fixed effects and random effects estimators, have been applied to examine cross-country determinants of coffee demand, incorporating variables such as income, prices, and urbanization (World Bank, 2023). Furthermore, cointegration and error correction models (ECM) have been used to analyze long-run relationships between coffee consumption and macroeconomic indicators (ICO, 2024). More recent studies have also utilized advanced techniques such as logit models to assess consumer preferences and structural equation modeling (SEM) to evaluate behavioral factors influencing coffee consumption (Samoggia & Riedel, 2018).



These diverse methodologies provide robust analytical frameworks for understanding both macroeconomic and micro-level dynamics of the coffee market.

Despite the extensive body of literature, several research gaps remain. First, most studies focus primarily on major coffee-consuming regions such as Europe and North America, while emerging markets in Central Asia remain largely underexplored. Second, although existing research has extensively examined global trends, there is limited empirical evidence on the interaction between economic growth, urbanization, and coffee demand in smaller developing economies such as Uzbekistan. Third, previous studies often rely on aggregated global data, overlooking regional heterogeneity and local consumption patterns. Finally, there is a lack of integrated analysis combining global market trends with country-specific case studies. Addressing these gaps, this research aims to provide a comprehensive analysis of coffee demand growth with a particular focus globally contributing to the existing literature by offering new regional insights and empirical evidence.

### 3. Methodology

The primary objective of this research is to analyze global coffee market trends and identify the key determinants of demand growth across different regions, with a particular focus on global coffee consumption. Specifically, the study aims to examine how macroeconomic factors such as income levels, urbanization, population growth, and prices-influence coffee consumption. Previous empirical studies have shown that income growth and urbanization are among the most significant drivers of demand for non-essential goods, including coffee (Samoggia & Riedel, 2018; International Coffee Organization, 2024). In addition, global consumption patterns indicate that coffee demand is increasingly shifting toward emerging markets due to rising purchasing power and lifestyle changes (World Bank, 2023).

The theoretical framework of this study is grounded in classical and modern demand theory, as well as consumer behavior theory. According to demand theory, the quantity demanded of a good is influenced by income, prices, and preferences (Varian, 2014). Coffee, as a normal good, tends to exhibit positive income elasticity,



meaning that consumption increases as income rises. This concept is further supported by Engel's Law, which states that higher-income households allocate a greater share of expenditure to non-essential goods (Nicholson & Snyder, 2017). Additionally, the study incorporates the global value chain perspective, as discussed by Stefano Ponte (2002), which highlights how production and consumption are interconnected across countries through international trade and multinational corporations. These theoretical foundations provide a comprehensive basis for analyzing the determinants of coffee demand.

The conceptual framework assumes that coffee demand is influenced by a set of economic and demographic variables. The dependent variable is coffee consumption (or demand), while the independent variables include GDP per capita, coffee prices, urbanization rate, population size, and trade openness. Empirical studies have confirmed that GDP per capita has a strong positive effect on coffee consumption, reflecting increased purchasing power (Gilbert, 2010; World Bank, 2023). Urbanization is also expected to positively influence demand, as urban populations are more exposed to modern consumption patterns and café culture (Samoggia & Riedel, 2018). In contrast, higher prices are likely to reduce demand, consistent with the law of demand. Population growth contributes to higher aggregate consumption, while trade openness enhances market accessibility and product availability (International Coffee Organization, 2024). This conceptual model allows for a comprehensive analysis of the key determinants of coffee demand.

To empirically test these relationships, the study employs a panel data econometric model across multiple countries over a specified time period. The model is specified as follows:

$$COFFEE_{it} = \beta_0 + \beta_1 GDP_{it} + \beta_2 Price_{it} + \beta_3 Urban_{it} + \beta_4 POP_{it} + \beta_5 Trade_{it} + \varepsilon_{it}$$

Where:

- COFFEE = coffee consumption per capita (dependent variable)
- GDP = GDP per capita
- PRICE = coffee price index



- URBAN = urbanization rate
- POP = population size
- TRADE = trade openness
- $i$  = country,  $t$  = time period,  $\varepsilon$  = error term

The empirical analysis is based on global time-series data. Descriptive statistics and correlation analysis are first used to examine the basic properties of the variables. The Augmented Dickey-Fuller (ADF) test is then applied to check stationarity, revealing a mix of I(0) and I(1) variables. Therefore, the ARDL model is employed, as it is suitable for such cases. The model is used to estimate the short-run relationships between coffee consumption and its key determinants, including GDP per capita, urbanization, population, and coffee prices. The data used in this study are obtained from reliable international sources, including the World Bank, International Coffee Organization, and United States Department of Agriculture, which are widely used in empirical economic research.

#### 4.Result

The main objective of this study is to analyze global coffee market trends and identify the key determinants of coffee demand growth using worldwide data. In particular, the research examines how macroeconomic and demographic factors—such as GDP per capita, urbanization, population growth, and coffee prices— influence global coffee consumption. To achieve this objective, the study employs a range of econometric techniques, including descriptive statistics, correlation analysis, unit root testing, and the ARDL model. The results presented in this section provide empirical evidence on the relationships between these variables and offer insights into the short-run dynamics of the global coffee market.

**Table 1.**

Descriptive statistics

Variable	Obs	Mean	Std.dev	Min	Max
coffCONS	30	5014937	2380734	1676801	1.02e+07
GDP	30	8913.376	2735.571	5294.217	13631.2



URB	30	3.61e+09	6.72e+08	2.54e+09	4.69e+09
POP	30	6.96e+09	7.40e+08	5.74e+09	8.14e+09
CPI	30	631720.9	343278.3	19646	110740
coffCONS	30	5014937	2380734	1676801	1.02e+07

The descriptive statistics provide an overview of the main characteristics of the variables used in the analysis. Coffee consumption (CoffCONS) shows a relatively high mean value of 5,014,937 with a substantial standard deviation of 2,380,734, indicating considerable variation across the sample period. This suggests that global coffee demand has experienced noticeable fluctuations over time. GDP per capita has an average value of 8,913.38, reflecting moderate economic growth in the observed countries. The variation between the minimum (5,294.22) and maximum (13,631.2) values indicates differences in income levels across the sample. Urbanization (URB) and population (POP) exhibit large magnitudes, which is expected given that they are measured at the global level. Both variables show steady growth trends, as reflected in their relatively smaller standard deviations compared to their means. The coffee price index (CPI) demonstrates significant variability, with a mean of 631,720.9 and a wide range between minimum and maximum values. This indicates that coffee prices have been volatile over the study period, which may influence consumption behavior. Overall, the descriptive statistics suggest that while economic and demographic variables follow relatively stable trends, coffee consumption and prices exhibit greater variability, highlighting the importance of further econometric analysis.

**Table 2.**

Correlation analysis

	CoffCONS	GDP	URB	POP	CPI
CoffCONS	1.0000				
GDP	0.9187	1.0000			
URB	0.8647	0.9711	1.0000		
POP	0.8601	0.9711	0.9997	1.0000	



CPI	0.9071	0.9595	0.9279	0.9299	1.0000
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The correlation matrix reveals strong positive relationships between coffee consumption and all explanatory variables. In particular, coffee consumption is highly correlated with GDP (0.9187), CPI (0.9071), urbanization (0.8647), and population (0.8601). This suggests that increases in income, prices, and demographic factors are associated with higher coffee demand. However, the correlation among independent variables is also extremely high. For example, GDP and urbanization (0.9711), GDP and population (0.9711), and urbanization and population (0.9997) are almost perfectly correlated. This indicates a serious multicollinearity problem, which may affect the reliability of regression coefficients. Such high correlations are common in macroeconomic time series data, especially when variables follow similar upward trends over time. Therefore, further econometric techniques, such as unit root testing and ARDL modeling, are necessary to address these issues and obtain robust results.

**Table 3.**

Augmented Dickey-Fuller test for Unit root

Variables	Level		First difference	
	ADF statistics	test p-value	ADF statistics	test p-value
CoffCONS	-0.404	0.9095	-5.865	0.0000***
GDP	0.332	0.9788	-4.860	0.0000***
URB	-10.275	0.0000***	-0.764	0.8296
POP	-2.898	0.0455**	-1.278	0.6391
CPI	-1.198	0.6743	-4.379	0.0003***

The ADF test results indicate that the variables are integrated of different orders, which justifies the use of the ARDL model. At level form, coffee consumption ( $p = 0.9095$ ), GDP ( $p = 0.9788$ ), and CPI ( $p = 0.6743$ ) are non-stationary, as their p-values exceed conventional significance levels. However, after first differencing, these variables become highly significant ( $p = 0.0000$ ), indicating that they are integrated of order one,  $I(1)$ . In contrast, urbanization (URB) is



stationary at level ( $p = 0.0000$ ), meaning it is  $I(0)$ . Population (POP) is also stationary at level at the 5% significance level ( $p = 0.0455$ ), although it becomes non-stationary after differencing, which further confirms that it is not  $I(1)$ . The presence of a mixture of  $I(0)$  and  $I(1)$  variables confirms that the ARDL (Autoregressive Distributed Lag) approach is appropriate for this analysis, as it can handle variables with different integration orders.

**Table 4.**

Autoregressive Distributed Lag model

ARDL ( 4,2,1,4,3) regression

Sample: 1999 thru 2024

Log likelihood= -361.26207

Number of obs = 26

F(18.7) = 32.50

Prob > F = 0.0000

r-squared = 0.9882

Adj R-squared = 0.9578

Root MSE = 5.048e+05

CoffCONS	Coefficient	Std.err.	t	P> t	[95% conf. interval	
CoffCONS						
L1.	-.2878909	.6508549	-0.44	0.672	-1.826918	1.251136
L2.	-.0034828	.470448	-0.01	0.994	-	1.10895
					1.1115915	
L3.	.193674	.2409007	0.80	0.448	-.3759657	.7633136
L4.	-.1400569	.2951802	-0.47	0.650	-.8380471	.5579334
GDP						
--	149.6248	482.1866	0.31	0.765	-990.5653	1289.815
L1.	76.59682	484.6227	0.16	0.879	-1069.354	1222.547
L2.	209.1739	624.8233	0.33	0.748	-1268.298	1686.646
URB						



--	.0472677	.0581651	0.81	0.443	-.0903419	.1848773
L1.	.0201591	.065932	0.31	0.769	-.1357452	.1760635
POP						
--	-.1117105	.0951362	-1.17	0.279	-.3366718	.1132508
L1.	.1766318	.2859115	0.62	0.556	-.4994415	.8527051
L2.	-.1875421	.3811718	-0.49	0.638	-1.08887	.7137859
L3.	-.133298	.2822738	-0.47	0.651	-.8007694	.5341735
L4.	.1921901	.1355724	1.42	0.199	-.1283877	.5127679
CPI						
--	14.21566	5.497851	2.59	0.036	1.21531	27.21601
L1.	-5.054384	6.173752	-0.82	0.440	-19.65299	9.54422
L2.	-6.549772	6.830338	-0.96	0.370	-22.70096	9.601411
L3.	6.610553	5.768097	1.15	0.289	-7.028829	20.24993
_cons	2.13e+08	2.24e+08	0.95	0.375	-3.18e+08	7.43e+08

The ARDL (4,2,1,4,3) model provides insights into the short-run dynamics between coffee consumption and its determinants. The overall model is statistically significant, as indicated by the F-statistic (Prob > F = 0.0000), suggesting that the explanatory variables jointly influence coffee demand. The model also demonstrates a very high goodness of fit, with an R-squared of 0.9882 and an adjusted R-squared of 0.9578. This implies that approximately 98% of the variation in coffee consumption is explained by the included variables.

### 5. Discussion

The main objective of this study is to analyze global coffee market trends and identify the key determinants of coffee demand growth using worldwide data. In particular, the research examines how macroeconomic and demographic factors—such as GDP per capita, urbanization, population growth, and coffee prices— influence global coffee consumption. To achieve this objective, the study employs a range of econometric techniques, including descriptive statistics, correlation analysis, unit root testing, and the ARDL model. The results presented in this section



provide empirical evidence on the relationships between these variables and offer insights into the short-run dynamics of the global coffee market.

The empirical results of this study provide several important insights into the determinants of global coffee demand. First, the descriptive statistics and correlation analysis indicate strong positive associations between coffee consumption and key macroeconomic variables, particularly GDP per capita, urbanization, population, and coffee prices. These findings suggest that global coffee demand tends to increase alongside economic development and demographic expansion. Such patterns are consistent with previous research emphasizing the role of income growth and structural transformation in shaping consumption behavior (International Coffee Organization, 2024; World Bank, 2023; Euromonitor International, 2024). However, the presence of high correlations among independent variables also points to potential multicollinearity, which is common in macro-level time series data and justifies the use of more advanced econometric techniques (Wooldridge, 2010; Gujarati & Porter, 2009; Brooks, 2019).

The unit root test results reveal a mixed order of integration among the variables, with some variables being stationary at level and others at first difference. This supports the use of the ARDL modeling approach, which is suitable for handling such combinations of  $I(0)$  and  $I(1)$  variables. The appropriateness of the ARDL framework in such contexts is well documented in the econometric literature (Pesaran et al., 2001; Nkoro & Uko, 2016; Shahbaz et al., 2013). The ARDL results further show that, despite strong correlations, most macroeconomic variables (GDP, urbanization, and population) do not have statistically significant short-run effects on coffee consumption, while the coffee price index emerges as the only significant determinant in the short run.

The positive and statistically significant effect of coffee prices on consumption is somewhat counterintuitive from the perspective of standard demand theory, which predicts an inverse relationship between price and quantity demanded (Varian, 2014; Nicholson & Snyder, 2017; Mankiw, 2021). However, this result may reflect specific characteristics of the global coffee market. One possible explanation



is that rising prices are driven by increasing demand for premium and specialty coffee, which is consistent with the findings of Samoggia and Riedel (2018), as well as industry reports highlighting product differentiation and value-added consumption (Specialty Coffee Association, 2023; Euromonitor International, 2024). In this context, higher prices may act as a signal of quality, thereby attracting consumers rather than discouraging them.

The strong positive correlations between coffee consumption and GDP are consistent with previous studies such as Gilbert (2010), World Bank (2023), and International Coffee Organization (2024), which identify income as a key driver of demand for non-essential goods. Similarly, the positive relationship with urbanization aligns with findings that emphasize the role of urban lifestyles and café culture in increasing coffee consumption (Samoggia & Riedel, 2018; Borrella et al., 2015; Ponte, 2002). The role of population growth in expanding aggregate demand is also well documented in global consumption studies (United States Department of Agriculture, 2024; International Coffee Organization, 2024; World Bank, 2023).

However, the lack of statistically significant short-run effects for GDP, urbanization, and population in the ARDL model differs from many previous empirical studies that report strong and significant impacts of these variables (Gilbert, 2010; Samoggia & Riedel, 2018; Shahbaz et al., 2013). This discrepancy may be explained by several factors. First, the use of global aggregated data may mask country-specific variations and reduce the statistical significance of individual variables, unlike panel data studies that exploit cross-country heterogeneity (World Bank, 2023; ICO, 2024; Pesaran et al., 2001). Second, the relatively small sample size (26 observations) may reduce the power of statistical tests (Brooks, 2019; Wooldridge, 2010; Gujarati & Porter, 2009). Third, multicollinearity among explanatory variables—particularly the extremely high correlation between GDP, urbanization, and population—may inflate standard errors and weaken statistical significance (Gujarati & Porter, 2009; Wooldridge, 2010; Kennedy, 2008). Finally, differences in methodology may also explain the divergence from previous findings. While many studies employ panel data models, cointegration techniques, or



structural models, this study uses an ARDL framework focused primarily on short-run dynamics (Pesaran et al., 2001; Nkoro & Uko, 2016; Shahbaz et al., 2013). As a result, long-run relationships—which are often found to be significant in the literature—may not be fully captured in the estimated model. Overall, the findings suggest that global coffee demand is strongly associated with macroeconomic and demographic trends, but in the short run, price dynamics and market structure appear to play a more dominant role (Euromonitor International, 2024; Specialty Coffee Association, 2023; International Coffee Organization, 2024).

## 6. Conclusion

The main aim of this study was to analyze global coffee market trends and identify the key determinants of coffee demand using worldwide data, with a particular focus on the role of macroeconomic and demographic factors. By applying a range of econometric techniques, the research sought to provide empirical evidence on how variables such as income, urbanization, population, and prices influence global coffee consumption.

The findings indicate that global coffee demand is strongly associated with economic growth, demographic expansion, and market dynamics. In particular, price-related factors appear to play a more prominent role in shaping short-run consumption patterns, while other macroeconomic variables show weaker immediate effects despite their strong overall relationships. These results highlight the complex nature of the global coffee market, where both structural trends and evolving consumer preferences interact to influence demand.

The importance of these findings lies in their contribution to a better understanding of global consumption behavior in the coffee market. The results suggest that demand is not driven solely by traditional economic factors but is also influenced by market structure, product differentiation, and changing consumer preferences. This has important implications for producers, exporters, and market participants, as well as for policymakers seeking to support sustainable growth in the sector.



However, the study is subject to several limitations. First, the use of aggregated global data may mask regional and country-specific differences in coffee consumption patterns. Second, the relatively small sample size may limit the statistical power of the analysis. Third, the focus on short-run dynamics within the ARDL framework may not fully capture long-run relationships between variables. These limitations should be taken into account when interpreting the results.

Future research could address these limitations by using disaggregated panel data across countries or regions to better capture heterogeneity in consumption patterns. In addition, applying alternative econometric approaches, such as cointegration techniques or structural models, could provide deeper insights into long-run relationships. Further studies may also incorporate additional variables, such as consumer preferences, technological change, and sustainability factors, to better reflect the evolving nature of the global coffee market.

From a policy perspective, the findings suggest that policymakers should adopt strategies that support stable market development and encourage long-term investment in the coffee sector. In particular, governments should implement investment-friendly regulations, improve institutional quality, and promote sectors that attract long-term foreign direct investment (FDI). Strengthening infrastructure, enhancing market transparency, and supporting value-added production can also contribute to sustainable growth in the coffee industry. Such measures would not only support domestic market development but also improve integration into global value chains.

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