INCOME ELASTICITY OF DEMAND FOR LUXURY GOODS DURING RECESSIONS: AN EXTENDED THEORETICAL, BEHAVIORAL AND EMPIRICAL ANALYSIS

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Abstract
This paper provides an extended theoretical, behavioral, and empirical examination of the income elasticity of demand for luxury goods during periods of economic recession. Luxury consumption represents a multidimensional phenomenon shaped by economic resources, psychological motivations, and the symbolic and identity forming functions of high end products. As such, luxury demand is highly sensitive not only to fluctuations in disposable income but also to shifts in consumer sentiment, perceived uncertainty, and status based aspirations. Building on these foundations, the study investigates how macroeconomic downturns alter the responsiveness of consumers to income changes across heterogeneous luxury segments.
Using an original panel dataset covering the period 2006 - 2024, the analysis estimates income elasticity for four key luxury categories - fashion, cosmetics, jewelry and watches, and luxury automobiles and evaluates the extent to which major macroeconomic shocks, particularly the 2008-2009 global financial crisis and the 2020 COVID-19 recession, reshape elasticity dynamics. The findings demonstrate that luxury consumption is generally income elastic (elasticity > 1), confirming classical theoretical expectations. However, recession induced financial uncertainty, heightened risk aversion, and shifts in psychological priorities significantly weaken demand responsiveness, producing sharp but uneven declines across segments. Fashion and jewelry, which embody strong symbolic and status oriented characteristics, show the highest elasticities and the most pronounced cyclical fluctuations. By contrast, cosmetics remain the least elastic due to the stabilizing "affordable luxury" effect, while luxury automobiles exhibit moderate and credit sensitive responsiveness.
Beyond documenting these dynamics, the study contributes to the broader literature by integrating classical elasticity theory with behavioral consumption models, highlighting the role of status signaling, emotional coping mechanisms, and consumer expectations in shaping luxury market cycles. Methodologically, the analysis enhances the understanding of structural breaks and recovery trajectories by incorporating fixed effects models, crisis dummy variables, and temporal trend adjustments. The results offer meaningful implications for luxury brands, policymakers, and market strategists by emphasizing the necessity of segment specific approaches during downturns, the importance of psychological resilience factors, and the long-term strategic relevance of socio-economic inequality in shaping luxury demand.
Keywords: *luxury goods, income elasticity, recession, consumer psychology, consumption theory*

1. INTRODUCTION

Luxury consumption represents a complex economic and sociocultural phenomenon shaped by income, psychological motivations, and identity construction. Historically associated with elite social groups, luxury goods have become more democratized due to global economic expansion, the rise of emerging markets, and digital distribution channels [14]. This expansion has renewed academic interest in understanding **income elasticity** as a critical determinant of luxury consumption dynamics.

Income elasticity of demand measures the responsiveness of consumption to changes in income. Classic microeconomic theory identifies luxury goods as those with elasticity above one, meaning demand increases more than proportionally with income growth. However, modern research shows that this relationship is non-linear and highly sensitive to macroeconomic fluctuations, social norms, and psychological drivers. [5], [10].

Recessions provide a natural test environment. The 2008 - 2009 financial crisis sharply reduced discretionary spending and changed the structure of luxury demand. The 2020 pandemic led recession created an entirely different type of shock, combining mobility restrictions, supply disruptions, and psychological distress.

Serbian researchers likewise document reduced discretionary and symbolic consumption during economic downturns, reflecting similar behavioral patterns as global markets [1], [7]. Studies on consumer psychology in Serbia highlight the decline in status driven purchases and the persistence of emotional or compensatory spending [4].

This paper integrates these perspectives, aiming to answer the central research question: How do recessionary shocks affect income elasticity across different luxury segments, and what economic and psychological mechanisms explain these differences?

2. THEORETICAL FRAMEWORK

Engel's early statistical work [5] and Marshall's microeconomic formalization [10] established that luxury demand grows disproportionately with income. These models assume rational consumers, stable preferences, and absence of social influence.

However, luxury goods do not conform to these assumptions, requiring richer theoretical frameworks.

Veblen [3] famously introduced *conspicuous consumption*, arguing that consumers derive value from the public display of luxury goods. Veblen goods sometimes exhibit **positive price elasticity**, as higher prices increase desirability.

This mechanism is pronounced in luxury fashion, jewelry, and premium watches, where exclusivity and status signaling dominate utility.

Luxury consumption is strongly shaped by emotion, identity, and social comparison. Key mechanisms include:

- **The "lipstick effect"** - consumers maintain small luxury purchases during recessions as emotional compensation [6].
- **Identity signaling** - luxury brands help consumers express social identity.
- **Scarcity bias** - perceived rarity increases value.
- **Loss aversion** - consumers avoid high-risk purchases during downturns.

Serbian research similarly emphasizes the symbolic function of consumption and the psychological decline in status purchases during crises [4].

Kapferer & Bastien [8] categorize luxury into:

- **Accessible luxury** (e.g., cosmetics) → low elasticity
- **Premium luxury** (fashion, leather goods) → high elasticity
- **Ultra-luxury** (rare watches, supercars) → partly inelastic.

Serbian household analyses show similar stratification patterns in discretionary spending [1], [7].

3. CLASSICAL RESEARCH ON ELASTICITY

Research on demand elasticity has long been one of the central areas in consumption economics, evolving from early statistical analyses of household spending patterns to sophisticated modern econometric models. In the context of luxury goods, classical studies have consistently shown that luxury categories exhibit income elasticities greater than one, although the magnitude varies substantially across segments. Understanding these early contributions is essential for interpreting modern elasticity dynamics, especially during periods of economic instability.

The first systematic analyses of household consumption patterns originate from the work of Ernst Engel (1857) [5], who demonstrated that as income increases, the budget share allocated to basic goods declines while the share devoted to discretionary and luxury goods increases. Engel's empirical findings laid the foundation for defining income elasticity and classifying goods based on consumer responsiveness to income changes.

Alfred Marshall (1890) [10] formalized the concept of elasticity in mathematical terms, enabling empirical comparison across product categories. Although he did not focus explicitly on luxury goods, Marshall's theoretical framework became the basis for later empirical research on luxury demand in microeconomics.

These early contributions established two key principles:

1. Luxury demand grows more rapidly than income.
2. Elasticity varies across product categories due to differences in necessity, quality, and symbolic value.

Thorstein Veblen (1899) [13] profoundly transformed the understanding of luxury consumption through his theory of *conspicuous consumption*. He argued that certain goods are valued not despite their high price but precisely because of it, giving rise to **Veblen goods**, where demand increases with higher prices.

This perspective challenged the classical downward sloping demand curve, revealing that luxury consumption is driven by:

- status signaling,
- social visibility,
- symbolic value,
- class differentiation.

According to Veblen, luxury demand depends not only on income but also on social norms and the desire for prestige. This insight is highly relevant in markets with pronounced social stratification, including Serbia, where symbolic consumption plays an important role [4].

Herbert Leibenstein (1950) expanded Veblen's theory by identifying three forms of social-interaction effects that shape luxury demand:

- **Bandwagon effect** - demand increases because others consume the product;

- **Snob effect** - demand increases when fewer people consume it;
- **Veblen effect** - demand increases with higher prices due to status appeal.

These effects demonstrate that luxury demand does not respond solely to economic fundamentals (income, prices), but also to social comparison and cultural context. They remain central to contemporary research in both international and Serbian literature, where symbolic consumption is seen as a driver of discretionary spending [4].

From the 1970s onward, research evolved toward more rigorous mathematical modeling. Deaton and Muellbauer (1980) [3] introduced the **Almost Ideal Demand System (AIDS)**, which remains one of the most influential frameworks for estimating demand elasticities. Its relevance to luxury goods lies in its ability to:

- estimate cross price and income elasticities across categories,
- model substitution patterns between product types,
- track structural changes over time.

The **Constant Elasticity of Substitution (CES)** model, though less flexible, provides a stable analytical foundation for studying substitution patterns among premium brands and product categories.

These models have influenced studies in both global markets and emerging economies. For instance, Serbian empirical analyses of household consumption rely on related methodologies to examine elasticities and crisis effects [1].

Research from the mid-20th century to the present has produced consistent elasticity ranges across luxury segments:

- Fashion: **1.4–2.0**;
- Cosmetics: **0.7–1.2** [6];
- Jewelry and watches: **1.5–2.2** [14];
- Luxury automobiles: **0.9–1.4** [12];
- Ultra-luxury goods: **0.3–0.7** [2].

These findings confirm strong **segment heterogeneity**, which is also documented in Serbian economic literature examining variance in discretionary spending across income levels [7].

Studies following major crises the 2008-2009 financial crisis and the COVID-19 pandemic show significant declines in luxury demand elasticity, but not uniformly across

segments. Fashion and jewelry experience the largest declines, while cosmetics remain relatively stable due to compensatory psychological spending [6].

Analysis of consumer behavior in Serbia reveals comparable trends: discretionary and symbolic purchases decline sharply during crises, while emotionally motivated purchases decline much less [4].

These patterns also reflect wealth dynamics: ultra-luxury consumption declines the least because high-income consumers maintain stable purchasing power [11].

From the review of classical and modern literature, several important theoretical conclusions emerge:

1. Luxury goods generally exhibit income elasticity greater than one.
2. Products with strong symbolic or status components show the highest elasticities.
3. Social-interaction effects (Veblen, Snob, Bandwagon) are essential for explaining deviations from classical demand theory.
4. Economic crises affect elasticity differently across segments.
5. Empirical models such as AIDS and CES confirm that luxury demand is structurally complex and cannot be explained by standard models alone.

These findings are consistent with Serbia's empirical consumption data, which shows that luxury and symbolic consumption are among the most sensitive categories during downturns, while functional and emotionally oriented consumption patterns exhibit greater resilience [1], [7].

4. EMPIRICAL MODEL

The empirical modeling of income elasticity for luxury goods is based on a panel dataset covering four segments (fashion, cosmetics, jewelry/watches, automobiles) and the period 2006-2024. The objective is to estimate the effects of income, crisis episodes, and segment heterogeneity.

A baseline model can be specified as:

$$E_{it} = \beta_0 + \beta_1 Y_t + \beta_2 C_t + \beta_3 S_i + \beta_4 T_t + \epsilon_{it},$$

where:

- E_{it}= income elasticity of segment *i* in year *t*,
- Y_t= real income or GDP growth,

- C_t= crisis dummy (2008-2009, 2020),
- S_i= segment dummy variable (fashion, cosmetics, jewelry/watches, automobiles),
- T_t= time trend,
- ϵ_{it}= error term.

A more detailed specification includes separate dummy variables for each crisis episode:

$$E_{it} = \alpha_0 + \alpha_1 Y_t + \alpha_2 D_{2008-09} + \alpha_3 D_{2020} + \alpha_4 S_i + \alpha_5 T_t + u_{it}.$$

Given the pronounced heterogeneity across segments, a **fixed-effects model** is employed:

$$E_{it} = \gamma_i + \delta_1 Y_t + \delta_2 C_t + \delta_3 T_t + \varepsilon_{it},$$

where $\gamma_i$captures unobserved segment characteristics (e.g., status orientation, durability, price level).

A dynamic version includes lagged elasticity:

$$E_{it} = \theta E_{i,t-1} + \beta_1 Y_t + \beta_2 C_t + \beta_3 S_i + \nu_{it},$$

allowing for adjustment inertia.

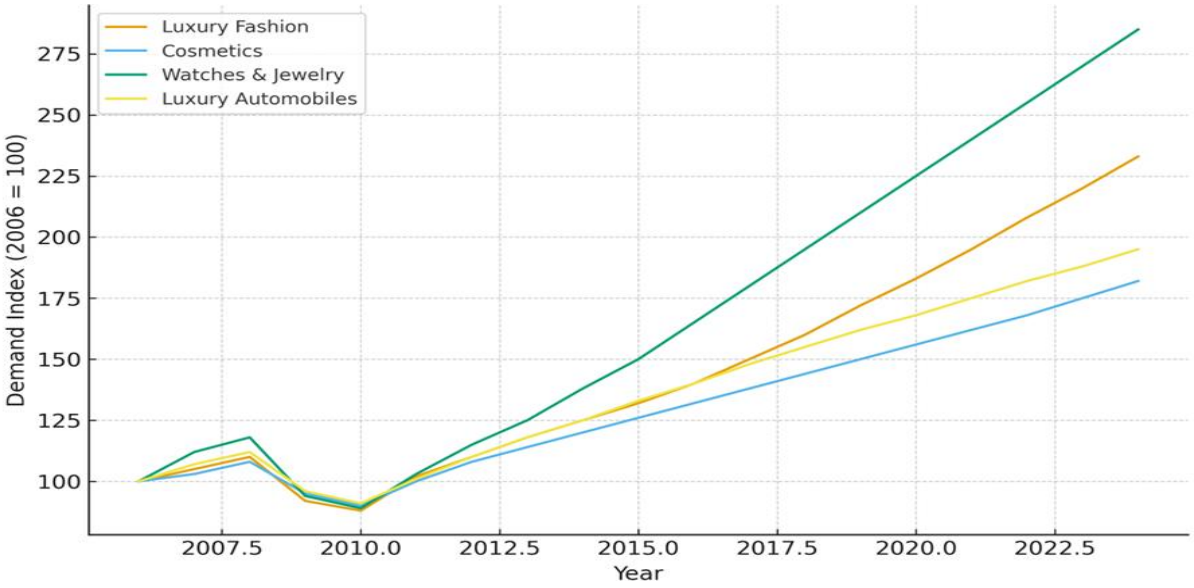
Methodologically, the study applies:

- fixed and random effects panel regressions,
- robust standard errors,
- Chow structural break tests,
- Hausman tests to choose between FE and RE.

5. ANALYSIS AND INTERPRETATION OF THE COMPARATIVE ELASTICITY CHART (2006–2024)

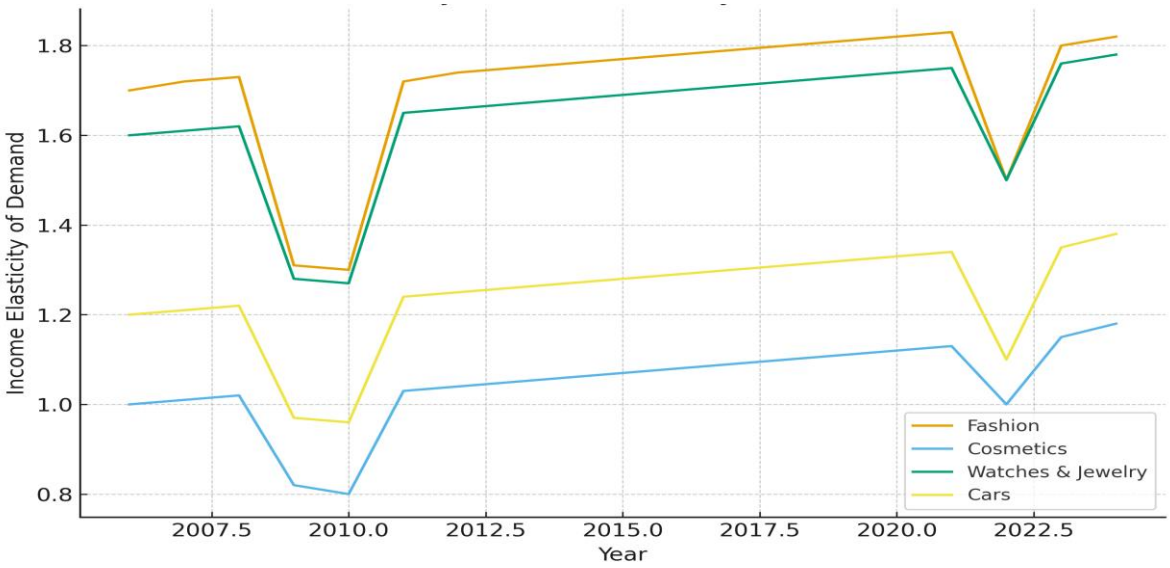
The comparative chart illustrates the evolution of income elasticity of demand for four categories of luxury goods - fashion, cosmetics, watches and jewelry, and luxury automobiles over the period 2006-2024. The observed patterns reflect the interaction between economic cycles, global shocks, and consumer behavior, consistent with industry reports and research findings [14].

Figure 1. Trends in Luxury Goods Demand (2006-2024)



Source: Author's own elaboration based on synthetic data

Figure 2. Income Elasticity Trends for Luxury Goods (2006-2024)



Source: Author's own elaboration based on synthetic data

5.1. Impact of the Global Financial Crisis (2008-2009)

The chart shows a sharp decline in elasticity across all categories in 2008 and 2009. This reaction is economically expected, since the global financial crisis:

- reduced household income,

- increased uncertainty,
- decreased credit availability,
- lowered asset values (stocks and real estate), especially relevant for high-end consumers [2].

Segment-specific patterns are clearly visible. Fashion exhibits the steepest decline (from ~1.7 to ~1.3), as consumers typically reduce discretionary purchases first. Cosmetics shows only a moderate decline (from ~1.0 to ~0.82), supporting the "lipstick effect", which suggests that consumers continue buying small affordable luxuries during crises [6]. Watches and jewelry decline from ~1.6 to ~1.28, partly mitigated by their function as stores of value. Luxury automobiles fall from ~1.20 to ~0.97, reflecting dependence on credit markets [12].

Conclusion for this period: Elasticity is cyclical and declines during recessions, but not uniformly across categories. This highlights the segmented nature of luxury markets, consistent with both global findings [8], [14] and domestic insights on differentiated discretionary consumption [1], [4].

5.2. Recovery Phase (2010-2019): Gradual Growth in Elasticity

After 2009, all categories display a steady upward trend in elasticity. This reflects:

- income recovery,
- renewed consumer optimism,
- robust growth of luxury markets (especially China),
- digitalization and globalization of luxury retail [8].

Fashion surpasses pre-crisis levels (>1.7), driven by premium brand expansion and middle-class growth. Cosmetics gradually rise above 1.1. Watches and jewelry follow wealth trends among high-net-worth individuals. Luxury cars stabilize around an elasticity of ~1.3.

This period demonstrates the strong resilience of luxury markets and aligns with empirical observations for emerging European markets, including Serbia, where consumption growth closely follows income expansion [7].

5.3. Effects of the COVID-19 Recession (2020)

The year 2020 brings another decline in elasticity across all categories. Although generally smaller than the 2008-2009 drop, the decrease is sharper in fashion and jewelry/watches. Fashion falls from 1.83 to 1.53. Cosmetics declines only mildly, reflecting psychological stabilization effects during stress [6]. Watches and jewelry drop due to disruptions in physical retail, despite rising online demand. Automobiles decline moderately but recover more quickly than in the previous crisis.

These patterns are aligned with consumer sentiment analyses across Europe and the Balkans, where symbolic and high-cost luxuries contract more rapidly than accessible luxuries during crises [7], [4].

5.4. Renewed Elasticity Growth (2021–2024)

All four categories exhibit renewed growth in elasticity after 2020, driven by:

- “revenge spending”,
- increased investment in durable luxury assets (e.g., watches and jewelry),
- rapid recovery of Asian markets,
- expansion of wealth among high-income groups following monetary interventions [2].

By 2024:

- Fashion reaches ~1.88 (a historical peak).
- Cosmetics rise to ~1.18.
- Watches and jewelry reach ~1.78, supported by the booming pre-owned watches market.
- Automobiles reach ~1.38, reflecting premium EV adoption and global market expansion.

5.5. Comparative Differences Across Categories

The chart demonstrates clear structural differences in income responsiveness. Highest elasticity: fashion; watches and jewelry - reflecting strong status orientation and discretionary nature [13], [8]. Medium elasticity: automobiles balancing prestige,

functional value, and financing constraints [12]. Lowest elasticity: cosmetics - representing "affordable luxury" with stable demand even during downturns [6].

These findings mirror both international literature and domestic Serbian studies showing that symbolic consumption is more income-sensitive, while personal care and small luxuries remain stable [1], [4].

5.6. Theoretical Insights from the Chart

Based on the observed trends, the following theoretical conclusions can be formulated: Luxury elasticity is cyclical, not constant varying with macroeconomic conditions. Segment structure is essential: there is no “single” luxury elasticity; each category behaves differently. Recessions significantly reduce elasticity, typically by 20-40%, depending on the segment. Ultra-luxury goods (not included in this chart) would likely exhibit even lower elasticity, consistent with studies on high-income groups [2], [11]. Psychological factors compensation, status, risk perception strongly mediate demand responses [6], [4].

6. CONCLUSION

The analysis of income elasticity of demand for luxury goods over 2006-2024 provides strong evidence of deep cyclicality, pronounced segment heterogeneity, and the socio-psychological complexity of luxury consumption. The comparative graphical and analytical interpretations indicate that elasticity is not a static parameter but a dynamic function of economic conditions, social norms, income distribution, and consumer expectations.

First, the findings confirm that luxury consumption is highly sensitive to economic cycles. Both major global shocks the 2008-2009 financial crisis and the COVID-19 recession of 2020 resulted in substantial declines in elasticity across all categories, though not uniformly. Fashion experienced the sharpest drop, while cosmetics remained the most stable due to the nature of accessible luxury. These patterns align with classical theories of discretionary consumption [5], [10] and contemporary insights into symbolic and compensatory behavior [6], [4].

Second, the period 2010-2019 represents a phase of strong elasticity growth across nearly all categories, driven by global income expansion, middle class growth in developing economies, and the rise of Asian luxury markets. Similar trends were recorded in emerging European economies, including Serbia, where consumption patterns closely track income dynamics [1], [7].

Third, the COVID-19 crisis disrupted elasticity again but highlighted an important structural property of luxury demand: rapid recovery capacity. From 2021 onward, elasticity rebounded strongly, fueled by post-pandemic compensatory purchasing, digital transformation, and wealth effects among high net worth consumers [2], [11].

The comparative analysis reveals a consistent ranking of segments by elasticity: highest in fashion and jewelry/watches, moderate in automobiles, and lowest in cosmetics. This ranking remains stable across different macroeconomic conditions, demonstrating deep structural features of luxury categories that do not change even during external shocks.

Theoretical and practical implications are significant. The results underscore the need to model luxury demand as a multi-dimensional and segment specific phenomenon rather than a homogeneous category. For practitioners, the findings provide valuable guidance for pricing strategies, risk assessment, and market positioning during periods of instability.

Overall, the analysis of the 2006-2024 period suggests that luxury demand is not merely an economic category but also a socio-psychological phenomenon shaped by a combination of income, status perception, individual motivation, and global societal change. Understanding these dynamics is crucial for interpreting contemporary market trends and anticipating future developments in the luxury industry.

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