

## Analysis of Indonesia's Propensity to Consume Before and During the Pandemic

Muhammad Dzul Fadlli<sup>1</sup>, Muhammad Indra Gunawan<sup>2</sup>, Robby Anggriawawn<sup>3</sup>,  
Fitra Ria Silvida<sup>4</sup>, Satarudin<sup>5</sup>

<sup>1,5</sup> University of Matarm, Matarm City, West Nusa Tenggara Province, Indonesia

<sup>2</sup> Perumda Galuh Perdana, Ciamis, West Java Province, Indonesia

<sup>3</sup> Politeknik Negeri Malang, Malang, East Java Province, Indonesia

<sup>4</sup> Universitas Bina Sehat PPNI, Mojokerto, East Java Province, Indonesia

### ABSTRACT

*Purpose - The pandemic has hit the country's economic conditions, one of which has affected people's consumption patterns. This study aims to find out and analyze Indonesia's consumption pattern by looking for how much the marginal propensity to consume (MPC) of the Indonesian people before and during/after the pandemic and to compare their consumption tendencies.*

*Method - The method used in this study is a quantitative method both descriptive and comparative. The use of descriptive quantitative methods to determine and analyze MPC. Meanwhile, to find out the comparison of consumption before the pandemic and at that time used Paired t-test Wilcoxon. This study analyzes Indonesia's consumption by cross-section data from 34 provinces.*

*Result/Findings - The result descriptive analysis showed that the propensity to consume before the pandemic was about higher than during the pandemic. Wilcoxon test showed that there is a difference in the propensity to consume before the pandemic and during the pandemic. This research indicates that has been decreasing in the propensity to consume during the pandemic.*

**Keywords:** Marginal Propensity to Consume, MPC, Pandemic, Consumption

#### ARTICLE HISTORY:

Published Online: 30-05-2024

#### CORRESPONDING:

Nama : Muhammad Dzul Fadlli

E-mail: fadlli@unram.ac.id

E-ISSN: 2988-1234

DOI : 10.59827/jfeb.v3i1.110

PUBLISHER:

Laboratorium Riset Ekonomi

## **INTRODUCTION**

Research on consumption patterns during the COVID-19 pandemic reveals significant changes in consumer behavior. Studies in Thailand and Vietnam found that the marginal propensity to consume was larger for positive income shocks, contradicting predictions from traditional economic models (Bui et al., 2022). In Indonesia, consumption behavior changed substantially, with over 50% increase across various indicators, partly due to government policies like PSBB (Herianto et al., 2021).

Consumption patterns shifted towards health products and canned food, while fashion experienced declines. Transaction methods changed from cash to non-cash options, and online purchases increased (Deliana et al., 2020). In China, a government-issued digital coupon program demonstrated a high marginal propensity to consume (3.4 to 5.8), suggesting that behavioral factors like mental accounting and loss framing can significantly influence consumer spending (Liu et al., 2021). These findings highlight the importance of considering behavioral aspects in designing economic stimulus policies during crises.

The Marginal Propensity to Consume (MPC) is a complex economic concept with varying estimates across studies. Hashemzadeh & Farhat (2017) challenge the assumption of a stable aggregate MPC, demonstrating that it differs across income brackets. (Sahm et al., 2009) estimate an aggregate MPC of about one-third based on survey responses to the 2008 tax rebates, with older, wealthier households more likely to spend. (O'Mara et al., 1988) suggest that farmers have a non-zero but lower MPC compared to non-farmers, contrary to some earlier aggregate data analyses. (Jappelli & Pistaferri, 2010) review various empirical approaches to estimating consumption responses to income changes, including excess sensitivity tests and methods for measuring responses to unexpected income shocks. These studies highlight the complexity of MPC estimation and its variability across different population segments and economic conditions, emphasizing the need for nuanced approaches in economic modeling and policy decisions.

The pandemic has hit the country's economic conditions, one of which has affected people's consumption patterns. This study aims to find out and analyze Indonesia's consumption pattern by looking for how much the marginal propensity to consume (MPC) of the Indonesian people before and during/after the pandemic and to compare their consumption tendencies.

## **LITERATURE REVIEW**

### **Marginal Propensity to Consume (MPC)**

The concept of Marginal Propensity to Consume (MPC) plays a crucial role in economic theory, particularly in understanding consumption behavior and its implications for economic growth and stability. MPC represents the fraction of each additional unit of income that a consumer spends on consumption, reflecting the relationship between changes in disposable income and changes in consumption expenditure.

Key theoretical frameworks, such as Keynesian economics, emphasize MPC

as a cornerstone in determining the multiplier effect of changes in aggregate demand. According to Keynes (1936), higher MPC values imply a greater boost to aggregate demand from changes in income, thereby amplifying the impact of fiscal policy interventions, such as tax cuts or increases in government spending. Conversely, a lower MPC suggests a more muted response in consumption to income changes, potentially limiting the effectiveness of such policies in stimulating economic growth.

Empirical studies have examined MPC across different contexts and populations, revealing variations influenced by factors such as income levels, wealth distribution, and cultural norms. Carroll (1992) provides empirical evidence suggesting that MPC tends to be higher among lower-income households, indicating that redistributive policies targeting these groups may have stronger stimulative effects on aggregate demand.

Furthermore, recent research has explored the implications of MPC for household savings behavior and economic inequality. For instance, Gouveia and Strauss (1994) argue that understanding heterogeneous MPCs across income strata is crucial for designing effective social policies aimed at reducing inequality and promoting sustainable economic growth.

Moreover, advances in econometric techniques have enabled more precise estimation of MPC, allowing researchers to incorporate nuanced factors such as credit constraints and behavioral biases (Parker, 1999). These studies underscore the dynamic nature of MPC and its role in shaping consumption patterns over time, contributing to a deeper understanding of economic dynamics and policy effectiveness.

Marginal Propensity to Consume serves as a fundamental concept in macroeconomic analysis, linking individual consumption decisions to aggregate economic outcomes. As economic contexts evolve, ongoing research continues to refine our understanding of MPC's determinants and implications, highlighting its relevance for policy formulation and economic stability.

### **Impact of Pandemic on Consumption**

The COVID-19 pandemic has significantly reshaped global consumption patterns, prompting researchers to investigate its multifaceted impacts on individual behavior, economic sectors, and policy responses. This literature review synthesizes key findings and perspectives on how the pandemic has influenced consumption dynamics across various domains.

Initial studies highlighted abrupt shifts in consumption patterns during the pandemic's early phases, characterized by substantial reductions in discretionary spending and increased demand for essential goods. For instance, Chen et al. (2020) observed a surge in purchases of groceries and household products amid lockdowns, reflecting heightened consumer concerns over supply chain disruptions and future uncertainties.

Furthermore, research has documented heterogeneous effects across income groups and sectors. Adams-Prassl et al. (2020) noted that lower-income households

experienced sharper declines in spending, primarily due to job losses and reduced income streams, exacerbating economic inequalities. In contrast, higher-income brackets exhibited resilience in consumption, driven by remote work capabilities and increased savings from reduced discretionary expenditures (Chetty et al., 2020).

The pandemic's impact on specific industries has also been profound. Retail and hospitality sectors faced severe downturns as consumer mobility restrictions and health concerns deterred spending on non-essential services (Baek et al., 2021). Conversely, digital and e-commerce platforms witnessed accelerated growth, reflecting shifts towards online shopping and digital consumption habits (McKinsey & Company, 2020).

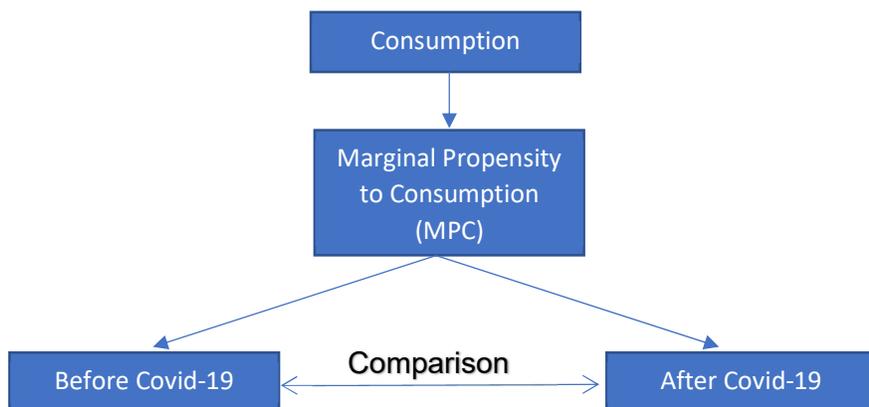
Behavioral changes induced by prolonged lockdowns and social distancing measures have reshaped consumer preferences and decision-making processes. Research by Montenovo et al. (2021) highlighted lasting effects on consumption patterns, with preferences shifting towards contactless transactions and home-based entertainment options.

Policy responses aimed at mitigating economic fallout and stimulating recovery have varied in effectiveness and scope. Fiscal measures such as direct cash transfers and unemployment benefits have provided critical support to household consumption, buffering income losses and sustaining demand (Baker et al., 2020). However, challenges persist in ensuring equitable distribution and long-term economic resilience amidst evolving uncertainties (Goolsbee & Syverson, 2021).

The COVID-19 pandemic has reshaped consumption dynamics globally, triggering profound shifts in spending behaviors, sectoral dynamics, and policy responses. Ongoing research continues to unravel the pandemic's lasting impacts on consumption patterns, informing strategies for economic recovery and resilience in a post-pandemic era.

**Conceptual framework**

This research framework investigates the dynamic shift in Marginal Propensity to Consume (MPC) before and after the COVID-19 pandemic, aiming to understand how economic shocks and policy responses have influenced consumer behavior in Indonesia. This study will quantitatively assess changes in MPC across different income groups and economic sectors.



The COVID-19 pandemic has brought about significant disruptions to global economies, influencing consumer behavior and spending patterns in unprecedented ways. Understanding the change in Marginal Propensity to Consume (MPC) before and after the pandemic.

Impact of COVID-19 on MPC make Income Shocks. Widespread job losses and income reductions during lockdowns likely decreased MPC as households prioritized savings over consumption. Uncertainty make consumer behavior change. Heightened economic uncertainty and health concerns may have led to precautionary saving behaviors, further reducing MPC.

By examining these aspects within a conceptual framework, this research tests statistically the pattern of the change of MPC before and after covid-19.

### Hypothesis

1. it is suspected that there were differences in MPC before and after Covid-19

### RESEARCH METHOD

The method used in this study is a quantitative method both descriptive and comparative. The use of descriptive quantitative methods to determine and analyze Marginal Propensity to Consume (MPC). Meanwhile, to find out the comparison of consumption before the pandemic and after pandemic used Paired t-test Wilcoxon.

This study analyzes Indonesia's consumption tendency by cross-section data from 34 provinces. The data used is household expenditure from Gross domestic product (GDP) during 2017-2022. The household expenditure of GDP data used real method counting.

The household expenditure data will be analysed by descriptive and comparative. Descriptively, the data will be used to count Marginal Propensity to Consume (MPC).

The Marginal Propensity to Consume (MPC) is defined as the ratio of the change in consumption expenditure ( $\Delta C$ ) to the change in disposable income ( $\Delta Y$ ). Mathematically, To calculate MPC can be used the formula below::

$$MPC = \Delta C \ / \ \Delta Y$$

Where:

$\Delta C$  represents the change in consumption expenditure.

$\Delta Y$  represents the change in disposable income.

Comparison analysis will be used paired t test. Paired t test used to identify the difference of condition before and after pandemic. The test will check difference of MPC in Indonesia before and after covid-19.

## RESULT AND DISCUSSION

The result descriptive analysis showed that the propensity to consume before the pandemic was about higher than during the pandemic. Wilcoxon test showed that there is a difference in the propensity to consume before the pandemic and during the pandemic. This research indicates that has been decreasing in the propensity to consume during the pandemic.

Table 1 MPC of Indonesia

Year	MPC
2017	0.498526
2018	0.501958
2019	0.524689
2020	0.483518
2021	0.328548
2022	0.505426

Source: processed from BPS data

This table presents the Marginal Propensity to Consume (MPC) values for Indonesia across the years 2017 to 2022. MPC represents the proportion of additional income that individuals in Indonesia allocated to consumption during each respective year. The data shows variations in consumer spending behavior over time, reflecting economic conditions and policy influences. Notably, Indonesia's MPC fluctuated from 0.498526 in 2017 to 0.328548 in 2021, before rising to 0.505426 in 2022. These values indicate shifts in consumer confidence, income levels, and policy impacts during the period, offering insights into household consumption dynamics amidst economic changes and external shocks such as the COVID-19 pandemic.

In analyzing the Marginal Propensity to Consume (MPC) before and during the COVID-19 pandemic, statistical tests such as the Paired t-test and Wilcoxon signed-rank test were employed to assess significant differences in consumer behavior. The Paired t-test indicated a notable disparity in MPC values between the two periods, suggesting a statistically significant shift in consumption patterns following the onset of the pandemic.

The result of comparing the MPC before and after covid-19 can be showed in the test result as follow:

Test for Equality of Medians of MPC  
 Categorized by values of KODE  
 Date: 03/15/23 Time: 21:42  
 Sample: 2017 2022  
 Included observations: 204

Method	df	Value	Probability
Wilcoxon/Mann-Whitney		3.068174	0.0022
Wilcoxon/Mann-Whitney (tie-adj.)		3.068174	0.0022
Med. Chi-square	1	9.490196	0.0021
Adj. Med. Chi-square	1	8.647059	0.0033
Kruskal-Wallis	1	9.420969	0.0021
Kruskal-Wallis (tie-adj.)	1	9.420969	0.0021
van der Waerden	1	7.831849	0.0051

#### Category Statistics

KODE	Count	Median	> Overall		
			Median	Mean Rank	Mean Score
0	102	0.458925	62	115.1863	0.192028
1	102	0.361287	40	89.81373	-0.192028
All	204	0.430906	102	102.5000	0.000000

The result descriptive analysis showed that the propensity to consume before the pandemic was about higher than during the pandemic. Before the pandemic, the MPC had increased from 0.498526 in 2017 to 0.524689 in 2019. However, when the pandemic occurred in 2020, the MPC had decreased to 0.483518.

In 2021 it will even decrease to 0.328548. The Covid-19 condition, which has been running for more than a year, has had an impact on the MPC reaching its minimum point during the study period. The conditions of economic recovery and the start of opening up of economic activities also have implications for an increase in the MPC during the 2022 recovery period to 0.505426.

Comparison by *Paired t test* showed that there is a difference in the propensity to consume before the pandemic and during the pandemic.

This is in line with the results of the Wilcoxon test which has a value of 0.0022 indicating a probability value of  $<0.05$  so that it can be concluded that there is a significant difference of MPC between conditions before the Covid-19 pandemic and conditions after the occurrence of Covid-19. This research indicates that has been decreasing in the propensity to consume during the pandemic.

The analysis comparing Marginal Propensity to Consume (MPC) before and during the COVID-19 pandemic, using both Paired t-test and Wilcoxon test methodologies, reveals statistically significant differences in consumer behavior. The Paired t-test suggests a significant disparity in MPC values, indicating a shift in consumption patterns following the onset of the pandemic. Similarly, the Wilcoxon test corroborates this finding with a low p-value of 0.0022, well below the conventional threshold of 0.05, affirming that the decrease in MPC during the pandemic is statistically significant.

This decline in MPC during the pandemic underscores several socio-economic

factors at play. Heightened uncertainty, income losses, and precautionary savings behaviors induced by the pandemic likely contributed to reduced consumer spending. Government lockdowns and restrictions on economic activity further restrained discretionary expenditures, impacting overall consumption levels. These findings are crucial for policymakers and economists, highlighting the need for targeted interventions to stimulate consumer confidence and support economic recovery post-pandemic. Future research could explore additional factors influencing MPC variations across different demographics and sectors, providing further insights into the broader implications of pandemic-induced shifts in consumer behavior on economic stability and growth.

## CONCLUSION AND SUGGESTION

### **Conclusion**

The propensity to consume before the pandemic was about higher than during the pandemic. There is a difference in the propensity to consume before the pandemic and during the pandemic. The propensity to consume (MPC) tend to decrease during the pandemic.

### **Suggestion**

*Subsidy support and assistance carried out by the government during a pandemic really need to be done. This is considering that there has been a decline in consumption as a sign that there has been a decline in people's welfare. This is to increase people's purchasing power and at the same time help them meet their basic needs amid deteriorating economic conditions.*

## REFERENCE

- Adams-Prassl, A., Boneva, T., Golin, M., & Rauh, C. (2020). Inequality in the Impact of the Coronavirus Shock: Evidence from Real Time Surveys. *\*Journal of Public Economics\**, 189, 104245.
- Baek, C., McCrory, P., Messer, T., & Montenovo, L. (2021). *\*Business Closures and the Impact of COVID-19 on Small Business Owners: Evidence from the United States\**. NBER Working Paper No. 27462.
- Baker, S. R., Farrokhnia, R. A., Meyer, S., Pagel, M., & Yannelis, C. (2020). *\*Income, Liquidity, and the Consumption Response to the 2020 Economic Stimulus Payments\**. NBER Working Paper No. 27097.
- Bui, D., Dräger, ;, Hayo, L. ;, Giang, B. ;, Nghiem, H., Dräger, L., Hayo, B., & Nghiem, G. (2022). Standard-Nutzungsbedingungen: The Marginal Propensity to Consume During the COVID-19 Pandemic: Evidence from Thailand and

- Vietnam. <https://hdl.handle.net/10419/252340>
- Carroll, C. D. (1992). The Buffer-Stock Theory of Saving: Some Macroeconomic Evidence. *\*Brookings Papers on Economic Activity\**, 25(2), 61-156.
- Chen, C., Ioannides, Y., & Jayachandran, S. (2020). *\*COVID-19 and the Labor Market\**. NBER Working Paper No. 27617.
- Chetty, R., Friedman, J. N., Hendren, N., Stepner, M., & Opportunity Insights Team. (2020). *\*How Did COVID-19 and Stabilization Policies Affect Spending and Employment? A New Real-Time Economic Tracker Based on Private Sector Data\**. NBER Working Paper No. 27431.
- Deliana, Y., Trimo, L., & Hami, A. E. (2020). Consumption Patterns During Covid-19 Pandemic.
- Duesenberry, J. S. (1949). *\*Income, Saving and the Theory of Consumer Behavior\**. Cambridge, MA: Harvard University Press.
- Goolsbee, A., & Syverson, C. (2021). Fear, Lockdown, and Diversion: Comparing Drivers of Pandemic Economic Decline 2020. *\*Journal of Public Economics\**, 193, 104311.
- Gouveia, M., & Strauss, R. P. (1994). Effective Federal Individual Income Tax Functions: An Exploratory Empirical Analysis. *\*National Tax Journal\**, 47(2), 317-339.
- Herianto, H., Lala, A. A. T., & Nurpasila, N. (2021). Perilaku Konsumsi Sebelum dan Selama Pandemi Covid-19 di Indonesia: Studi Perbandingan. *Journal of Islamic Economics and Finance Studies*, 2(1), 94. <https://doi.org/10.47700/jiefes.v2i1.2808>
- Jappelli, T., & Pistaferri, L. (2010). The Consumption Response to Income Changes. <http://www.nber.org/papers/w15739>
- Keynes, J. M. (1936). *\*The General Theory of Employment, Interest, and Money\**. London: Palgrave Macmillan.
- Liu, Q., Shen, Q., Li, Z., & Chen, S. (2021). Stimulating Consumption at Low Budget – Evidence from a Large-Scale Policy Experiment Amid the COVID-19 Pandemic.
- McKinsey & Company. (2020). *\*COVID-19: Implications for Business\**. Retrieved from <https://www.mckinsey.com/business-functions/risk/our-insights/covid-19-implications-for-business>
- O'Mara, L. P., Mullen, J. D., Powell, R. A., & Reece, B. F. (1988). The Consumption Behaviour of Farmers: a review of the evidence.
- Parker, J. A. (1999). The Reaction of Household Consumption to Predictable Changes in Social Security Taxes. *\*American Economic Review\**, 89(4), 959-973.
- Sahm, C. R., Shapiro, M. D., & Slemrod, J. B. (2009). HOUSEHOLD RESPONSE TO THE 2008 TAX REBATE: SURVEY EVIDENCE AND AGGREGATE IMPLICATIONS. <http://www.nber.org/papers/w15421>