

# Income and Consumption Inequality in Latin American Countries

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## I. Introduction

According to the Bruegel database, the Gini coefficient of Latin America in 2017 based on disposable income was 44.7, higher than the Middle East and Africa (39.1), and higher than the global average of 41.5. In particular, when compared to developed countries such as the EU (30.6), the gap is even greater.

The recent large-scale protests across Latin America show the seriousness of this inequality in the region. Accumulated complaints about poverty, inequality, and the gap between the rich and the poor are the root causes of the massive protests in Chile that broke out in October 2019 and the demonstrations in Colombia that started in April 2021.

Even though researchers have consistently recognized inequality in Latin America as a severe social problem, improvement has rarely

been reported. In this context, why is studying inequality in Latin America—particularly income and consumption inequality—essential for us?

First, many experts at home and abroad tend to perceive the problem of inequality in Latin America as a constant. This is in line with the perception that inequality has long been a serious social problem in Latin America, and there has been no significant change in inequality-related indicators. Because of this perception, not many existing studies have analyzed inequality in each country in Latin America in depth. Second, existing studies do not examine various indicators related to inequality, so they cannot deliver accurate information about the country concerned. Third, it is meaningful to carefully examine inequality in Latin American countries because income

inequality and economic conditions can be significant variables for predicting future regime change and regional situations in Latin America. Fourth, a study on income and consumption inequality in Latin America is necessary to more accurately understand the current state of inequality in a given country by supplementarily examining consumption inequality.

Against this background, how profound is inequality in Latin America, and has there been no notable change in its pattern over time? Are the current conditions of poverty and inequality and patterns of inequality the same across Latin American countries? These are research questions that we should answer through this study.

## II. Determinants of Income Inequality in Three Latin American Countries

The trends and causes of inequality in Latin America, related statistics, and welfare spending to reduce inequality may differ from country to country. The purpose of this section is to analyze and compare the relationship between individual demographic and sociological characteristics and income in Chile, Mexico, and Brazil. To this end, through quantile regression analysis, we analyze the relationship between ordinary income and demographic and socioeconomic characteristics of individuals included in the sample according to the conditional quantile of ordinary income.

### 1. Chile

According to Table 1, even if other conditions are the same, the average monthly income of the female economically active population is lower than that of the male economically active population. For example, in the ninth decile from 2016 to 2017, the average monthly income of women was 28% lower than that of men. Also, the income gap between genders is likely to be more pronounced as the income decile is high. In addition, as time passed, the gender gap tended to widen in the lower-income decile, while the ordinary income gap by gender decreased over time in the upper-income decile.

**Table 1. Gender and Average Monthly Ordinary Income: Chile**

	1 <sup>st</sup> decile	5 <sup>th</sup> decile	9 <sup>th</sup> decile
1987~88	-0.20*** (0.04)	-0.29*** (0.02)	-0.31*** (0.04)
1996~97	-0.28*** (0.02)	-0.30*** (0.02)	-0.31*** (0.03)
2006~07	-0.33*** (0.02)	-0.27*** (0.01)	-0.29*** (0.02)
2011~12	-0.33*** (0.03)	-0.33*** (0.02)	-0.37*** (0.02)
2016~17	3.73 (2.59)	-0.19*** (0.01)	-0.28*** (0.02)

Notes: 1) Bootstrap robust standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

2) The reference group is male.

Source: Author's calculation.

Table 2 presents the monthly average income gap between education levels was statistically significant in all years and all income deciles except for the first decile in the 2016-17 household budget survey. This income gap tends to increase as the income decile increases each year.

**Table 2. Education Attainment and Average Monthly Ordinary Income**

	1 <sup>st</sup> decile	5 <sup>th</sup> decile	9 <sup>th</sup> decile
1987~88	0.52*** (0.06)	0.94*** (0.05)	0.91*** (0.05)
1996~97	0.63*** (0.02)	0.88*** (0.02)	1.00*** (0.03)
2006~07	0.47*** (0.02)	0.85*** (0.02)	1.16*** (0.02)
2011~12	0.33** (0.03)	0.67*** (0.02)	1.09*** (0.03)
2016~17	0.51 (0.36)	0.61*** (0.01)	1.02*** (0.02)

Notes: 1) Bootstrap robust standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

2) The reference group is individuals who have attended high school or higher but are not enrolled in college.

Source: Author's calculation.

## 2. Mexico

Table 3 shows that when controlling for other variables, women's average monthly ordinary income was lower than men's, and the gender gap in monthly average ordinary income was statistically significant in all income deciles in all years. Comparing the 2016-17 analysis results for Chile and the 2016 analysis for Mexico, the gender income gap in Chile increases as the income quintile increases. In contrast, the gender income gap in Mexico decreases as the income quintile increases.

According to Table 4, when controlling for other explanatory variables, the average monthly income of the individuals with a college education or higher education level was higher than the income of those with an educational level of higher education or lower than a college education. In Mexico, as in the case of Chile, the income gap between education levels increases as the income quintile increases in all years of the household budget survey. However,

compared with Chile, the level of income gap according to educational level was smaller in Mexico.

**Table 3. Gender and Average Monthly Ordinary Income: Mexico**

	1 <sup>st</sup> decile	5 <sup>th</sup> decile	9 <sup>th</sup> decile
2005	-0.32*** (0.03)	-0.36*** (0.01)	-0.32*** (0.02)
2006	-0.47*** (0.03)	-0.42*** (0.01)	-0.35*** (0.02)
2008	-0.56*** (0.04)	-0.39*** (0.01)	-0.36*** (0.01)
2010	-0.36** (0.03)	-0.33*** (0.01)	-0.28*** (0.01)
2012	-0.48*** (0.06)	-0.42*** (0.02)	-0.36*** (0.02)
2014	-0.55*** (0.03)	-0.39*** (0.01)	-0.34*** (0.02)
2016	-0.63*** (0.02)	-0.41*** (0.01)	-0.39*** (0.01)
2018	-0.60*** (0.02)	-0.40*** (0.01)	-0.37*** (0.01)

Notes: 1) Bootstrap robust standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

2) The reference group is male.

Source: Author's calculation.

**Table 4. Education Attainment and Average Monthly Ordinary Income: Mexico**

	1 <sup>st</sup> decile	5 <sup>th</sup> decile	9 <sup>th</sup> decile
2005	0.23*** (0.04)	0.44*** (0.02)	0.59*** (0.03)
2006	0.30*** (0.04)	0.45*** (0.02)	0.64*** (0.03)
2008	0.29*** (0.04)	0.52*** (0.02)	0.62*** (0.01)
2010	0.39** (0.03)	0.49*** (0.02)	0.63*** (0.02)
2012	0.33*** (0.06)	0.51*** (0.02)	0.62*** (0.05)
2014	0.34*** (0.05)	0.52*** (0.03)	0.65*** (0.02)
2016	0.23*** (0.02)	0.46*** (0.01)	0.60*** (0.02)
2018	0.22*** (0.01)	0.38*** (0.01)	0.54*** (0.01)

Notes: 1) Bootstrap robust standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

2) The reference group is individuals who have attended high school or higher but are not enrolled in college.

Source: Author's calculation.

### 3. Brazil

Table 5 presents that all other things being equal, the average monthly income of female earners was lower than that of male earners. In addition, in all income deciles of the household budget survey for all years, the gender gap in monthly average ordinary income was statistically significant. It is noteworthy that, similar to the case of Chile and Mexico, the gender income gap decreases over time in most deciles.

**Table 5. Gender and Average Monthly Ordinary Income: Brazil**

	1 <sup>st</sup> decile	5 <sup>th</sup> decile	9 <sup>th</sup> decile
2002~03	-0.47*** (0.02)	-0.45*** (0.02)	-0.73*** (0.02)
2008~09	-0.44*** (0.01)	-0.41*** (0.01)	-0.55*** (0.01)
2017~18	-0.29*** (0.01)	-0.30*** (0.01)	-0.56*** (0.02)

Notes: 1) Bootstrap robust standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

2) The reference group is male.

Source: Author's calculation.

According to Table 6, all other things being constant, the average monthly income of those with a high school diploma or higher than a high school diploma was higher than that of those with a middle school education but less than a high school diploma. Also, the income gap according to educational attainment shows an evident trend, and the income gap between educational levels decreases as time passes in all deciles; however, as the income decile increases in all years, the income gap tends to increase.

**Table 6. Education Attainment and Average Monthly Ordinary Income: Brazil**

	1 <sup>st</sup> decile	5 <sup>th</sup> decile	9 <sup>th</sup> decile
2002~03	0.85*** (0.04)	0.95*** (0.02)	1.15*** (0.05)
2008~09	0.68*** (0.02)	0.81*** (0.01)	1.09*** (0.03)
2017~18	0.54*** (0.03)	0.57*** (0.01)	0.82*** (0.03)

Notes: 1) Bootstrap robust standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

2) The reference group is individuals who have attended middle school or higher but are not enrolled in high school.

Source: Author's calculation.

So far, we have analyzed the determinants of income inequality using microdata from Chile, Mexico, and Brazil. The first common finding was that women's earnings were lower than men's in all three countries, despite controlling for all other factors. However, there were differences, with Chile having the lowest gender income gap and Brazil the highest. Furthermore, it is noteworthy that in Brazil, the gender gap was greatest in the high-income group, whereas in Mexico, the gender gap was largest in the low-income group.

The second common point was a clear income gap according to the level of education. In other words, the higher the education level, the higher the income. The income gap between education levels in Chile and Brazil was relatively large compared to Mexico. The income disparity according to the level of education is more prominent in the high-income group than in the low-income quintile, a phenomenon commonly observed in the three countries.

### III. Consumption Inequality in Three Latin American Countries

The in-depth analysis of income and consumption inequality in Latin American countries conducted in this section has several important implications. First, by analyzing relative poverty, not absolute poverty, it provides concrete grounds for understanding whether there are differences in the patterns of poverty and inequality in Latin American countries. Absolute poverty rates in major countries in Latin America are on the decline, and no differences are found between countries in this pattern. Therefore, if we focus only on absolute poverty, it may be difficult to properly understand the poverty and inequality problems Latin American countries face.

Second, this section will analyze income and consumption inequality in three Latin American countries, contributing to the existing research that analyzed differences in patterns between income and consumption inequality. Although existing studies mainly analyze data on the United States, research on income and consumption inequality patterns seems to be still under debate.

Lastly, this study is meaningful in that it attempts a multidimensional approach to inequality through the analysis in the absence of analysis on consumption poverty and consumption inequality in Latin American countries. For example, if consumption inequality

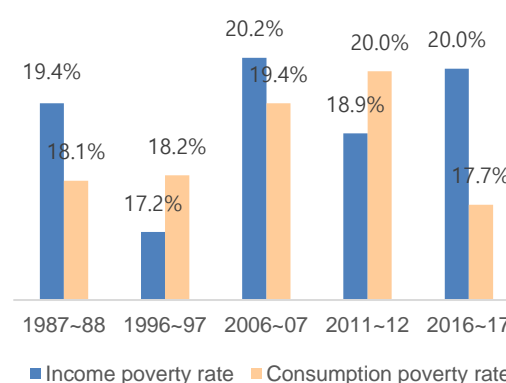
declines at a time of growing income inequality—that is, if the consumption gap between the high and low-income groups narrows—the financial pressures on the low-income class could be more severe than expected.

#### 1. Patterns of Income Inequality and Consumption Inequality

##### 1) Chile

Figure 1 shows the change in the income and consumption poverty rate calculated by setting the relative income poverty line and the relative consumption poverty line. One thing to note is that between 2011-12 and 2016-17, the income poverty rate increased while the consumption poverty rate decreased, and the gap between the two poverty rates was the largest in 2016-17. This result means that, while the size of the low-income group increased during the same period, the expenditures of these households did not decrease or increase, so the low-income households are likely to face serious financial difficulties.

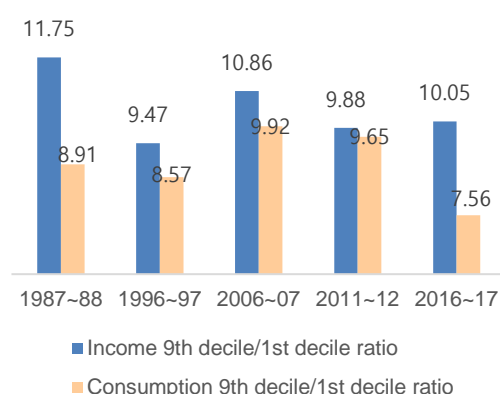
**Figure 1. Changes in Income Poverty Rates and Consumption Poverty Rates: Chile**



Source: Author's calculation.

Figure 2 shows the ratio of the ninth decile to the first decile of income and consumption. It is noteworthy that differences appeared in the income and consumption inequality patterns between 2011-12 and 2016-17. This result suggests that although income inequality has worsened, the consumption gap between the high and low-income groups may have decreased. Therefore, just as Figure 1 implies, Figure 2 indicates that the low-income class is experiencing the double burden of reduced income and constant consumption.

**Figure 2. Income Inequality and Consumption Inequality: Chile**



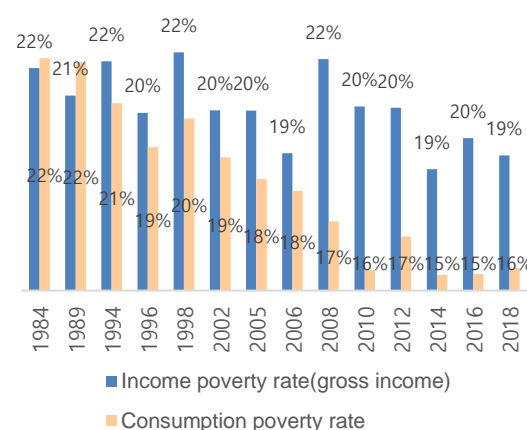
Source: Author's calculation.

## 2) Mexico

In Figure 3, it is noteworthy that although the consumption poverty rate was higher than the income poverty rate in 1984 and 1989, it has been lower than the income poverty rate since 1994. In this regard, Mexico's accession to GATT in August 1986, the abolition of many trade barriers over the past three years, such as the reduction of tariff rates, and the entry into force of NAFTA in 1994 can be pointed out as the main reasons. As such, Mexico's policy to

break with import substitution industrialization resulted in a decrease in the price of labor-intensive goods, which may have contributed to a decrease in the consumption poverty rate.

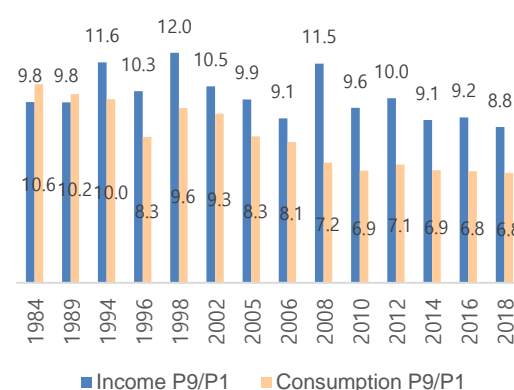
**Figure 3. Changes in Income Poverty Rates and Consumption Poverty Rates: Mexico**



Source: Author's calculation.

Figure 4 shows that in 1984 and 1989, consumption inequality exceeded income inequality, but since then, consumption inequality has fallen below income inequality. These results indicate a pattern very similar to Figure 3.

**Figure 4. Income Inequality and Consumption Inequality: Mexico**



Source: Author's calculation.



With the trade liberalization movement in the late 1980s and the conclusion of NAFTA in 1994, Mexico's consumption poverty rate and consumption inequality decreased remarkably, while the income poverty rate and income inequality worsened, although temporarily. Since then, the consumption poverty rate and consumption inequality have been lower than the income poverty rate and income inequality. In other words, although Mexico's trade liberalization policy improved the consumption of the income poor, who would have had low consumption levels otherwise, improvement in income-related indicators was relatively slow. The relatively slow improvement in income-related indicators is because trade liberalization is likely a factor that causes both the increase and the narrowing of the wage gap.

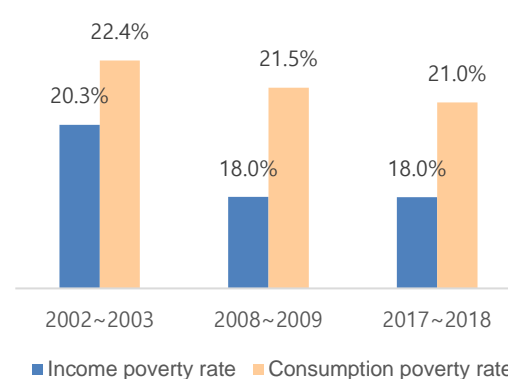
### 3) Brazil

In Figure 5, the consumption poverty rate showed a similar pattern to the change in the income poverty rate during the same period. The consumption poverty rate in 2002-03 was recorded at 22.4%, and since then, it has continuously decreased, decreasing by 1.3%p to 21.0% in 2017-18. In particular, it is noteworthy that the income and consumption poverty rate indicators did not deteriorate between 2008-09 and 2017-18, although Brazil's economy has been in recession since 2013.

Figure 6 shows the ratios between the ninth and first deciles of income and consumption. Income and consumption inequality decreased between 2002-03 and 2017-18; in this trend,

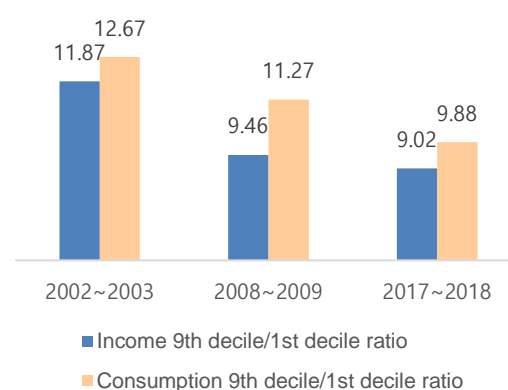
consumption inequality exceeds income inequality. The relatively high consumption inequality does not necessarily indicate the negative status of low-income households, given that the income and consumption decile are highly likely to be low-income groups. Since the income gap between the high- and low-income brackets is smaller than the consumption gap, the financial pressures on low-income households in terms of income and consumption may not be significant.

**Figure 5. Changes in Income Poverty Rates and Consumption Poverty Rates: Brazil**



Source: Author's calculation.

**Figure 6. Income Inequality and Consumption Inequality: Brazil**



Source: Author's calculation.

## 2. Changes in Consumption Inequality by Goods

The previous analysis showed different patterns between income inequality and consumption inequality over some periods. In this section, we examine the degree of consumption inequality by product and try to understand the consumption of which product is responsible for the change in consumption inequality identified in the previous section. Through this, it is possible to accurately interpret the meaning of changes in consumption inequality in each country.

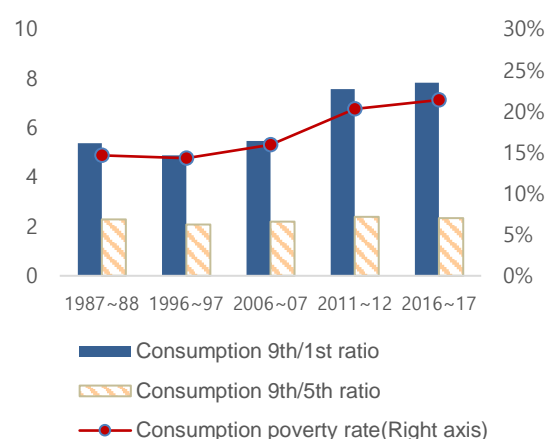
### 1) Chile

According to Figure 7, although food, alcohol, and cigarettes are a kind of necessity, the consumption poverty rate increases, and the consumption inequality, which indicates the gap between the low-consuming and high-consuming groups, increases. This result means that, for some reason, the low-income class faces a situation where they have no choice but to reduce their consumption of essential goods.

Figure 8 shows that the consumption poverty rate fell sharply between 2006-07 and 2011-12 and remained constant. The ratio of the ninth decile to the first decile of consumption also fell significantly during the same period. The ratio of the ninth to the fifth decile also decreased slightly. Considering that housing costs, housing management costs, and utilities are also expenditures for essential goods related to housing, the decrease in consumption inequality for these items is due to a significant increase in the

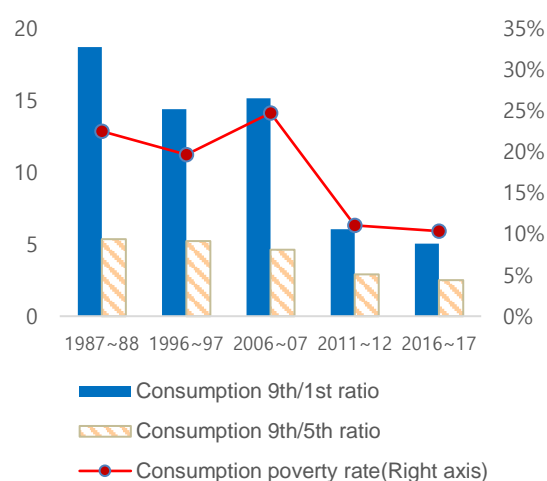
expenditures of the low-income class. Moreover, the increase in spending could be driven by price hikes rather than increased consumption by poor households.

**Figure 7. Consumption Poverty Rate and Consumption Inequality by Item: Food, Alcohol, Tobacco**



Source: Author's calculation.

**Figure 8. Consumption Poverty Rate and Consumption Inequality by Item: Housing cost, Housing management cost, Utility fee**



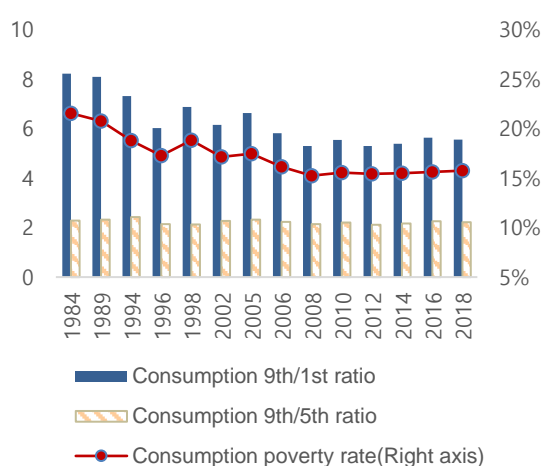
Source: Author's calculation.



## 2) Mexico

According to Figure 9, the consumption poverty rate for food, alcohol, and tobacco has been on a downward trend since 1984 and has remained constant since 2008. Consumption inequality is also showing a similar pattern. In contrast to the case of Chile, household spending on food, alcohol, and tobacco shows a constant trend, which shows the characteristics of necessities well.

**Figure 9. Consumption Poverty Rate and Consumption Inequality by Item: Food, Alcohol, Tobacco**

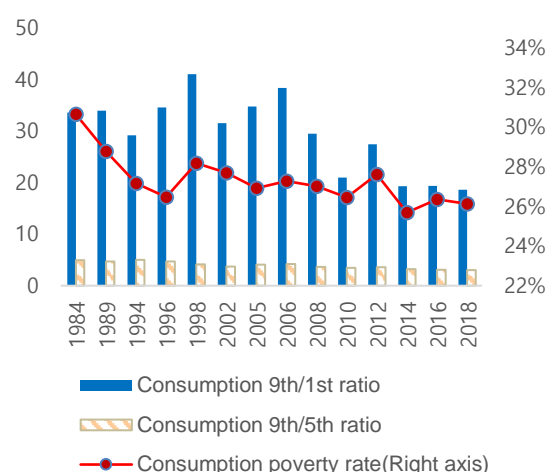


Source: Author's calculation.

Figure 10 shows that the consumption poverty rate for housing costs, housing management costs, and utility fees continues to increase and decrease but shows a decreasing trend overall. The ratio of the ninth decile to the first decile of consumption also increased and decreased, but since 2014, it has remained constant without significant change.

The low consumption poverty rate for housing costs, housing management costs, and utility fees means that the level of spending on these items is high. In particular, the low consumption poverty rate for housing costs, housing management costs, and utility fees means that the spending on these items is high. Therefore, Mexico's low-income class may face an increased burden on housing-related expenses compared to the past.

**Figure 10. Consumption Poverty Rate and Consumption Inequality by Item: Housing cost, Housing management cost, Utility fee**



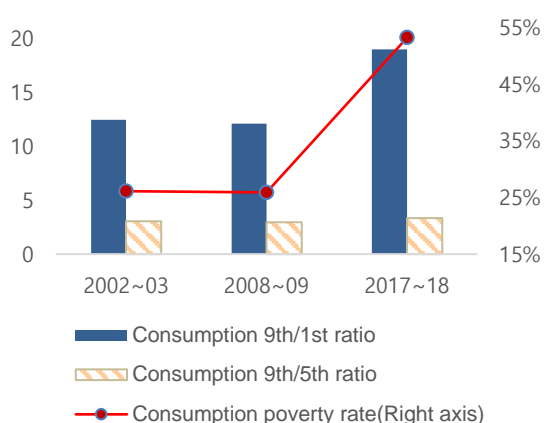
Source: Author's calculation.

## 3) Brazil

Figure 11 shows that the consumption poverty rate for food, alcohol, and tobacco remained constant at around 26% between 2001-03 and 2008-09 but rose to 53% in 2017-18. The ratio of the ninth decile to the first decile of consumption shows a similar pattern. By contrast, the ratio of the ninth decile to the fifth decile of consumption does not show significant change over the entire period. Therefore,

spending by poor households on essential commodities such as food, alcohol, and tobacco decreased in 2016-17, resulting in increased consumption inequality.

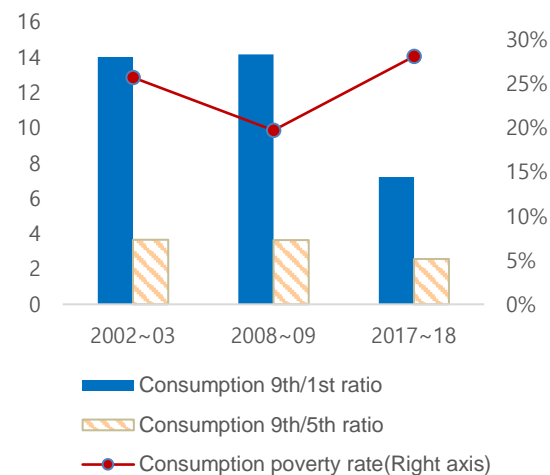
**Figure 11. Consumption Poverty Rate and Consumption Inequality by Item: Food, Alcohol, Tobacco**



Source: Author's calculation.

In Figure 12, the consumption poverty rate decreased during the survey period and then increased again. The ratio of the ninth decile to the first decile of consumption remained constant but decreased sharply in 2017-18. Considering that the consumption poverty rate has increased, this result could be due to a significant decrease in the spending of the high-income class. Therefore, contrary to the results of Chile and Mexico, the high-income group in Brazil has reduced housing-related spending, and as a result, consumption inequality has improved.

**Figure 12. Consumption Poverty Rate and Consumption Inequality by Item: Housing cost, Housing management cost, Utility fee**



Source: Author's calculation.

## IV. Conclusion

This study is meaningful as crucial basic research that provides information on the region. It analyzes income and consumption inequality, which are serious social problems in Latin America, from various angles. In particular, although the phenomena of income inequality and consumption inequality are similar in Latin America, each country has different characteristics for these inequalities.

In Chile, Mexico, and Brazil, we observed that the income inequality between the middle- and high-income classes is relatively stable, with no change compared to the income inequality between the low- and high-income classes. Based on this result, the inequality problem in Latin America can be seen as not lying in inequality between the high-income and middle-income classes. Instead, inequality between the low-income class and the higher-

income class is a severe situation, and thus the problem of inequality is a social problem limited to the low-income class.

When examining the consumption poverty rate and consumption inequality in a complementary way, in the case of Chile, the indicators of consumption inequality showed signs of easing at a time when income inequality worsened, showing different patterns of income inequality and consumption inequality. That is, the low-income group's spending did not decrease while the income of the low-income group was declining, suggesting that they were likely facing significant financial difficulties. In Mexico, the consumption poverty rate and consumption inequality decreased following the active trade liberalization movement in the late 1980s and the entry into force of NAFTA in 1994. In Brazil, income poverty, consumption poverty, income inequality, and consumption inequality all improved over time.

From a policy perspective, when considering ODA projects for Latin America, it is necessary to keep in mind the pattern of income inequality that differs from country to country. As mentioned above, although the gender-based income disparity is significant in all Latin American countries, the degree may be different, and there may be differences by income decile. Therefore, to maximize the effect of the policy, it is necessary to promote policy that considers the phenomenon of income inequality which is characteristic of each country. **KIEP**