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## THE GLOBAL CRISIS AND POVERTY

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**Abstract:**

*In this study, we examine the impact of the 2008-2009 Global Crisis on poverty rates across the globe. Our results are mixed. We find that, after the crisis, there was a marginally significant increase in the number of the poorest group of people (living on less than \$1.25 a day at 2005 international prices) across the world. However, we do not find any significant increase in the number of people in the other low-income categories (living on less than \$2, \$2.50, \$4, or \$5). Although we do not find any significant increase in the poverty headcount ratios (the percentage of poor people in the population living on less than \$1.25, \$2, \$2.50, \$4, or \$5), our results show that, interestingly, there has been a significant decrease in the national poverty headcount ratios (percentage of people living below the national poverty line which is based on estimates from household surveys) after the crisis. Overall, we suggest policymakers to focus on the poorest group of people during these hard times since this group is affected the most.*

**Key words:** *economic crisis, financial crisis, poverty*

### 1. Introduction

In this study, we examine the impact of the 2008-2009 Global Crisis on poverty rates across the globe. We look into how the crisis has affected the number of the poor (using different measures of poorness) and the poverty headcount ratios.

Several studies (i.e. Dhanani and Islam (2002), Skoufias and Suryahadi (2000), Zin (2002), and others) examine the impact of economic/financial crises on poverty. These studies generally show that an economic or financial crisis increases poverty levels. These studies are narrow in scope though. They focus on certain countries or regions rather than examining the whole globe.

In this study, we make two main contributions. First, we do not focus on a particular country or region. Our study covers 173 countries across the globe. By using a more comprehensive dataset, we are hoping to draw more generalized conclusions when compared to the previous studies.

Second, we use several different measures of poverty and poverty headcount ratio. We use measures that use certain dollar amounts as the poverty line. We also

use the national poverty lines that are established using household surveys. Using several different measures of poverty will allow us to make a stronger statement regarding the relationship between an economic/financial crisis and poverty.

We believe that the results found in this study will shed a new light on the relation between economic/financial crises and poverty. We expect to make policy recommendations that would reduce the negative impact of crises on populations with low income.

The paper proceeds as follows: Section 2 reviews the previous literature. Section 3 states our hypotheses. Section 4 explains the data and the methodology. Section 5 shows the empirical results. Finally, Section 6 concludes.

## **2. Literature Review**

Some of the previous research examines the relation between economic/financial crises and human development in general. These studies find that economic/financial crises negatively affect human development.

Both De Pee et al. (2000) and Block et al. (2004) examine the impact of the 1997/1998 crisis on Indonesia. Both studies find that the crisis affected nutrition and health negatively in that country.

Fouere et al. (2000) and Martin-Prével, Yves, et al. (2000) focus on Africa. Both studies examine the effects of currency devaluation on dietary change and nutritional vulnerability. These studies find a decline in the quality of nutrition.

Other studies examine the impact of the 2008 crisis. Brinkman et al. (2010) find that the crisis affected young children, pregnant and lactating women, and the chronically ill people the most. De Pee et al. (2010) find that the 2008 global economic crisis, commodity price hikes, and climate change have had the worst impact on the poor. Darnton-Hill and Cogill (2010) show that rising food prices affect the poor the most.

Tiwari and Zaman (2010) show that the 2008 crisis increased undernourishment. Breisinger et al. (2011) show that the 2008 crisis slowed the economy in Yemen and this, along with the food crisis, made poverty effects worse. Nikoloski and Ajwad (2013) examine the impact of the 2009 crisis on Russia. They find that the crisis resulted in less spending on healthcare services and that the most vulnerable people altered their health and nutrition behavior.

West and Mehra (2010) argue that economic crises affect both dietary quality/diversity and adequacy of vitamin A. Similarly, Thorne-Lyman et al. (2010) examines the impact of food price increases on micronutrient deficiencies and child malnutrition in Bangladesh. Wodon and Zaman (2010) argue that reducing import tariffs on food is not a good idea because it would likely benefit the non-poor, rather than the poor. Webb and Block (2012) argue that structural transformation in a country improves nutrition, especially in rural areas.

Bloem, Semba, and Kraemer (2010) contends that governments should emphasize nutrient-rich food instead of calorie-rich food. Christian (2010) examines the

impact of economic crises on childhood mortality. The author recommends that, in order to reduce child mortality, nutritional and health surveillance data are urgently needed.

Other than these studies that relate crises to human development, there are several other papers that directly examine the relation between economic/financial crises and poverty. These studies generally find crises have a significant negative impact on poverty and poverty gap.

Skoufias and Suryahadi (2000) find that there was a big drop in household welfare during the crisis in the 1990s. They find that the average per capita decreased and inequality increased after the crisis. The authors contend that the poverty rate doubled from the pre-crisis level. Said and Widyanti (2002) examine the impact of the 1997/1998 crisis on poverty and inequality in Indonesia. The authors find that the poverty rate increased due to the crisis. They show that rural poverty increased more than urban poverty during this crisis.

Dhanani and Islam (2002) examine the impact of the 1997 crisis on poverty in Indonesia. The authors point out the importance of a fiscally sustainable social safety net. Fallon and Lucas (2002) explained the financial crises in 1990s. The authors contend that the countries that had the largest currency depreciations suffered the most.

Suryahadi and Sumarto (2003) examined Indonesia and find that the level of vulnerability to poverty increased due to the crisis in 1997/1998. Suryahadi, Sumarto and Pritchett (2003) examine the impact of the 1997 crisis on Indonesia. They show that the poverty rate increased from fifteen percent at the onset of the crisis to thirty-three percent at the end of 1998.

Zin (2005) goes over the previous papers that examine the impact of the Asian Crisis on Asian countries. Zin (2005) points out to the fact that the Asian Crisis affected the uneducated, the inexperienced, the young female workers, and the urban sector the most. The author explains that while in some countries, the rural and agriculture sectors suffered more than the urban sectors, in other countries, it was the opposite.

Ahmed and O'Donoghue (2010) examine the impact of the 2008 global crisis on Pakistan. They show that poverty headcount ratio increased by almost eighty percent. They show that, after the crisis, interestingly, there were wage increases for farm workers and wage reductions for skilled labor. Habib et al. (2010) examine the impact of the crisis on poverty in Bangladesh, Mexico, and the Philippines. The authors find that there was a significant increase in poverty. According to the authors, the crisis has hit the middle-income households the hardest.

Sobrevinas, De Jesus and Reyes (2010) examine the impact of the crisis on poverty in the Philippines. They find that there was a modest increase in poverty. They show that the crisis affected some specific sectors in the economy. The degree of impact also varies among different groups of households. Breisinger et al. (2011) show that the 2008 crisis impacted Yemen because of the drop in oil prices and reduction in remittances. They find that poverty in this country increased by eight percentage points due to the crisis. Suryahadi, Hadiwidjaja and Sumarto (2012) examine the relationship

between economic growth and poverty reduction in Indonesia before and after the Asian financial crisis. They show that the crisis slowed the improvement in poverty in this country.

### **3. Hypotheses**

In line with the previous literature on economic/financial crises and human development, we expect the number of poor people to increase after an economic crisis. Therefore, we expect the number of poor people to increase after the 2008-2009 Global Crisis. Our first hypothesis is as follows:

*Hypothesis 1: The number of poor people across the globe had increased after the global crisis.*

We expect to see a similar increase in the poverty headcount ratios after an economic crisis. Therefore, our second hypothesis is:

*Hypothesis 2: The poverty headcount ratios across the globe had increased after the global crisis.*

The next section explains our data and methodology.

### **4. Data and Methodology**

In this study, we examine the impact of the 2008-2009 Global Crisis on poverty rates across the globe. World Bank's World Development Indicators dataset has poverty-related data, so we use these data in our analyses. This dataset has poverty data on 173 countries across the globe.

Our variables and their definitions are as follows:

NOPONE (Number of poor at \$1.25 a day (PPP) (millions)):

Number of the poor population in millions living on less than \$1.25 a day at 2005 international prices.

NOPTWO (Number of poor at \$2 a day (PPP) (millions)):

Number of the poor population in millions living on less than \$2 a day at 2005 international prices.

NOPTWOFIVE (Number of poor at \$2.50 a day (PPP) (millions)):

Number of the poor population in millions living on less than \$2.50 a day at 2005 international prices.

NOPFOUR (Number of poor at \$4 a day (PPP) (millions)):

Number of the poor population in millions living on less than \$4 a day at 2005 international prices.

NOPFIVE (Number of poor at \$5 a day (PPP) (millions)):

Number of the poor population in millions living on less than \$5 a day at 2005 international prices.

DDAY (Poverty headcount ratio at \$1.25 a day (PPP) (% of population)):

Population below \$1.25 a day is the percentage of the population living on less than \$1.25 a day at 2005 international prices.

TWODAY (Poverty headcount ratio at \$2 a day (PPP) (% of population)):

Population below \$2 a day is the percentage of the population living on less than \$2 a day at 2005 international prices.

TWOFIVEDAY (Poverty headcount ratio at \$2.50 a day (PPP) (% of pop.)):

Population below \$2.50 a day is the percentage of the population living on less than \$2.50 a day at 2005 international prices.

FOURDAY (Poverty headcount ratio at \$4 a day (PPP) (% of pop.)):

Population below \$4 a day is the percentage of the population living on less than \$4 a day at 2005 international prices.

FIVEDAY (Poverty headcount ratio at \$5 a day (PPP) (% of pop.)):

Population below \$5 a day is the percentage of the population living on less than \$5 a day at 2005 international prices.

NAHC (Poverty headcount ratio at national poverty lines (% of pop.)):

National poverty headcount ratio is the percentage of the population living below the national poverty lines. National estimates are based on population-weighted subgroup estimates from household surveys.

NAHCNC (Poverty headcount ratio at national poverty lines (% of pop.), including noncomparable values:

National poverty headcount ratio is the percentage of the population living below the national poverty lines. National estimates are based on population-weighted subgroup estimates from household surveys.

In the next section, we compare the pre-crisis period to the post-crisis period. We take the pre-crisis period as the three-year period before the crisis started (i.e. 2005-2007). Similarly, we take the post-crisis period as the three-year period after the crisis ended (i.e. 2010-2012). Then, using non-parametric tests (only the results of the Mann-Whitney-Wilcoxon tests are reported), we compare the pre-crisis period to the post-crisis period.

## **5. Empirical Results**

Table 1 shows the trend in our five variables on “number of poor” (i.e. NOPONE, NOPTWO, NOPTWOFIVE, NOPFOUR, and NOPFIVE) over time. Figure 1 graphically shows the variation in these variables over time.

Table 1 (and also Figure 1) shows that all five variables went down until 2007, and after that, they went up. We conclude that the “number of poor” had been declining up until 2007, but that this improvement in the “number of poor” stopped after the crisis started.

**Table 1. Number of Poor over Time**

Year	NOPONE	NOPTWO	NOPTWOFIVE	NOPFOUR	NOPFIVE
2005	1.02	2.61	3.27	5.51	8.24
2006	0.57	1.59	2.46	4.95	5.86
2007	0.12	0.59	0.89	2.36	3.25
2008	0.33	1.11	1.80	3.65	4.44
2009	0.26	0.77	1.62	3.32	4.43
2010	0.45	1.00	1.31	2.82	3.81
2011	1.08	2.34	3.30	5.18	6.37
2012	0.84	1.40	1.99	4.30	6.31

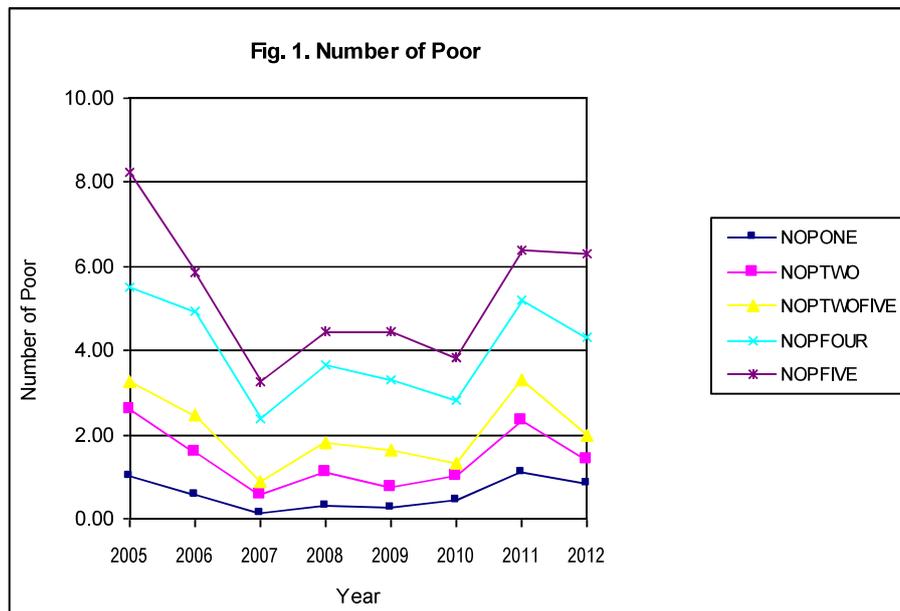
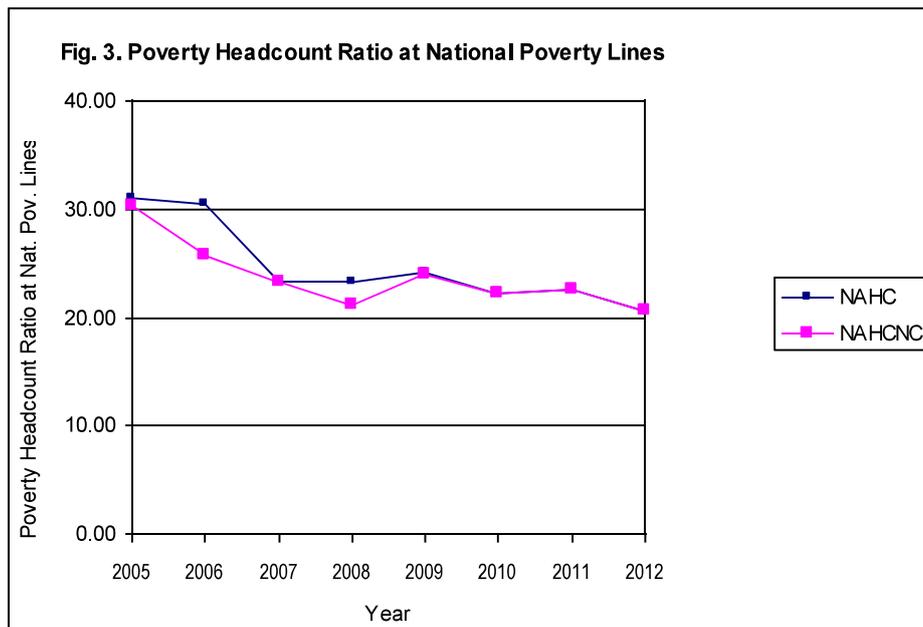
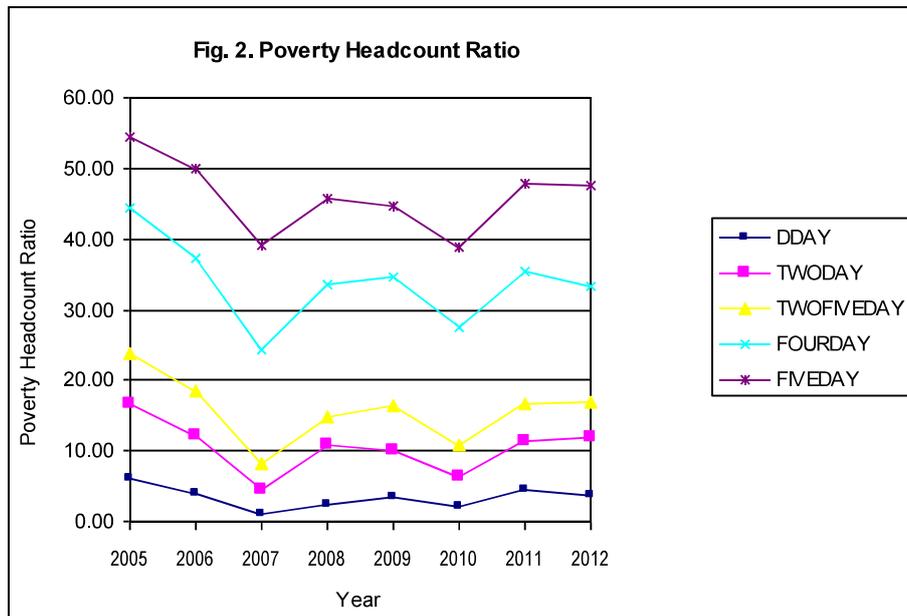


Table 2 shows the trend in our seven variables on “poverty headcount ratio” (i.e. DDAY, TWODAY, TWOFIVEDAY, FOURDAY, FIVEDAY, NAHC, and NAHCNC) over time. Figure 2 and Figure 3 graphically show the variation in these variables over time.

Table 2 (and also Figures 2 and 3) shows that all seven variables went down until 2007, and after that, they went up. We conclude that the “poverty headcount ratio” had been declining up until 2007, but that this improvement in the “poverty headcount ratio” stopped after the crisis started.

**Table 2. Poverty Headcount Ratio over Time**

Year	DDAY	TWODAY	TWOFIVEDAY	FOURDAY	FIVEDAY	NAHC	NAHCNC
2005	6.10	16.60	23.88	44.35	54.57	31.10	30.30
2006	4.00	12.17	18.49	37.35	50.04	30.45	25.70
2007	1.18	4.59	8.24	24.21	39.14	23.30	23.30
2008	2.28	10.77	14.72	33.56	45.60	23.30	21.15
2009	3.50	9.97	16.39	34.71	44.63	24.20	23.90
2010	1.99	6.29	10.97	27.43	38.93	22.20	22.15
2011	4.58	11.46	16.62	35.55	47.80	22.60	22.60
2012	3.75	12.00	16.95	33.25	47.48	20.60	20.60



In order to statistically test whether the trend in the “number of poor” had changed due to the crisis, we run non-parametric tests (i.e. Mann-Whitney-Wilcoxon). Using these tests, we compare the pre-crisis period (i.e. the 2005-2007 period) to the post-crisis period (i.e. the 2010-2012 period).

Table 3 shows that the change in the “number of poor” was not statistically significant. Only the change in NOPONE was marginally significant ( $p=0.1029$ ). NOPONE, NOPTWO, and NOPFIVE values were slightly higher in the 2010-2012 period when compared to the 2005-2007 period, but the difference is not statistically significant. Only, the change in NOPONE was marginally significant. NOPTWOFIVE and NOPFOUR values were slightly higher in the 2005-2007 period when compared to the 2010-2012 period.

**Table 3. Comparison of Number of Poor Pre- and Post-Crisis**

VARIABLES	MEAN	MEDIAN	STDEV	MEAN	MEDIAN	STDEV	PVALUE	SIG.
NOPONE	36.42	0.45	157.62	59.36	0.69	176.66	0.1029	—
NOPTWO	69.49	1.25	299.77	126.85	1.40	376.70	0.1296	
NOPTWOFIVE	84.40	2.00	361.92	159.51	1.99	471.81	0.1436	
NOPFOUR	109.88	4.00	463.82	218.84	3.82	639.32	0.2240	
NOPFIVE	119.87	5.28	501.92	242.42	5.67	704.71	0.2236	

In order to statistically test whether the trend in the “poverty headcount ratio” had changed due to the crisis, we run non-parametric tests (i.e. Mann-Whitney-Wilcoxon). Using these tests, we compare the pre-crisis period (i.e. the 2005-2007 period) to the post-crisis period (i.e. the 2010-2012 period) in Table 4.

Table 4 shows that the change in five of these variables (i.e. DDAY, TWODAY, TWOFIVEDAY, FOURDAY, and FIVEDAY) was not statistically significant. There was a slight increase in variable DDAY from pre-crisis to post-crisis, and there was a slight decrease in the other four variables from pre-crisis to post-crisis, but none of these changes are statistically significant.

On the other hand, the change in NAHC and NAHCNC are both significant at 1% level. The median value of NAHC is 26.60% pre-crisis. The corresponding value is only 21.90% post-crisis. This drop is significant at 1% level ( $p=0.0076$ ). Similarly, the median value of NAHCNC is 25.85% pre-crisis. The corresponding value is only 21.90% post-crisis. This drop is also significant at 1% level ( $p=0.0081$ ). Interestingly, these tests show that the poverty headcount ratio at national poverty lines actually declined after the crisis.

**Table 4. Comparison of Poverty Headcount Ratio Pre- and Post-Crisis**

VARIABLES	MEAN	MEDIAN	STDEV	MEAN	MEDIAN	STDEV	PVALUE	SIG.
DDAY	12.22	3.47	19.16	12.29	3.55	18.37	0.3213	—
TWODAY	22.24	12.22	26.61	23.06	9.88	27.10	0.4129	
TWOFIVEDAY	28.02	18.49	29.43	28.94	14.67	30.38	0.4424	
FOURDAY	42.02	37.27	32.60	42.08	32.77	34.04	0.4127	
FIVEDAY	49.28	48.57	32.80	48.64	44.46	34.36	0.4071	—
NAHC	30.52	26.60	16.77	25.92	21.90	15.81	0.0076	***
NAHCNC	30.25	25.85	16.81	25.81	21.90	15.82	0.0081	***

## 6. Conclusion

In this study, we examine the impact of the 2008-2009 Global Crisis on poverty rates across the globe. We examine the 2005-2012 period and classify the three-year period before the crisis (i.e. the 2005-2007 period) as the pre-crisis period and the three-year period after the crisis (i.e. the 2010-2012 period) as the post-crisis period. We use World Bank's World Development Indicators dataset. The dataset has poverty data on 173 countries across the globe.

We look into three groups of variables: The "number of poor" (i.e. number of the poor population living on less than \$1.25, \$2, \$2.50, \$4, or \$5 a day at 2005 international prices), the "poverty headcount ratio" (i.e. percentage of the population living on less than \$1.25, \$2, \$2.50, \$4, or \$5 a day at 2005 international prices), and the "poverty headcount ratio at national poverty lines" (i.e. percentage of the population living below the national poverty lines which are based on population-weighted subgroup estimates from household surveys).

Our results are mixed. When we look at the first group of variables, we find that, after the crisis, there was a marginally significant increase in the number of the poorest group of people (living on less than \$1.25 a day at 2005 international prices) across the world. However, we do not find any significant increase in the number of people in the other low-income categories (living on less than \$2, \$2.50, \$4, or \$5).

When we look at the second group of variables, we do not find any significant increase in the poverty headcount ratios (the percentage of poor people in the population living on less than \$1.25, \$2, \$2.50, \$4, or \$5).

When we look at the third group of variables, interestingly, we find that there has been a significant decrease in the national poverty headcount ratios (percentage of people living below the national poverty line which is based on estimates from household surveys) after the crisis.

Overall, our results show that the global crisis had affected the poorest group of people the most. Therefore, we suggest policymakers to focus on this group of people the most during these hard times.

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