



# **A GLASS HALF FULL: CHANGES IN STANDARD OF LIVING SINCE 2012**

## **Evidence from the India Human Development Survey**

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### **OVERVIEW**

The National Sample Survey (NSS), the flagship survey providing information on standards of living in India, has recently come under criticism as the Government chose not to release the results of the NSS Consumption Expenditure data from 2017-18 (Jha 2019). Critics argue that this is due to declining consumption between 2011-12 and 2017-18, which the National Statistical Office (NSO) is trying to conceal; the NSO, on the other hand, claims that the data quality for this particular survey is unreliable. One of the challenges facing the interpretation of consumption data over this period pertains to difficulties in disentangling long-term changes from the short-term supply shock caused by demonetisation. The demonetisation, implemented in November 2016, led to a tremendous cash crunch and adversely affected the purchasing power of consumers as well as incomes of small businesses and workers in the informal economy. In this brief, we use information from the India Human Development Survey (IHDS) to provide an independent assessment of changes in living standards across the country.

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## Key Results

- 1. On an average both income and consumption grew between 2011-12 and 2017 in real terms:** Contrary to headlines generated by the leaked NSS results, on an average, IHDS documents growth in per capita income and per capita consumption at annualised rates of 3.5 per cent and 2.7 per cent, respectively. The ownership of consumer durables such as motorcycles and air coolers/conditioners also grew substantially over this period.
- 2. This growth is lower than that for the same households between 2004-05 and 2011-12:** Incomes and consumption grew by 7.2 per cent and 4 per cent, respectively, between 2004-05 and 2011-12 for the same households.
- 3. In the immediate aftermath of demonetisation, real consumption declined slightly and income growth slowed down substantially but both rebounded after six months:** The average figures mask considerable heterogeneity between the households surveyed immediately following demonetisation and those surveyed after a lag of six months. The households surveyed immediately following demonetisation between February and April 2017 experienced a slight decrease in per capita consumption but this decline was not seen for the households surveyed between May and July 2017.
- 4. Most of the consumption decline following demonetisation took place for discretionary items:** Expenditures on discretionary items such as the purchase of TVs, cars and motorcycles, travel, social functions and entertainment declined by 8.4 per cent between February and April, while expenditure on food remained stable and that on education and health continued to increase.
- 5. Consumption declined slightly in urban areas but incomes continued to increase.** Unlike the leaked NSS results, which document sharp consumption decline in rural Rajasthan and Bihar, there was a slight consumption decline in the urban sample covered by IHDS-M, even as incomes continued to increase.
- 6. Slowdown in growth is most evident at the upper levels of consumption and income distribution:** Between 2004-05 and 2011-12, both consumption and incomes increased in the upper parts of distribution, resulting in growing inequality. In contrast, between 2011-12 and 2017, the increases in consumption and incomes were concentrated at the lower end of the distribution, thereby moderating inequality. It is difficult to ascertain whether this is a short-term impact of demonetisation or a long-term phenomenon.

The India Human Development Surveys, jointly undertaken by the University of Maryland and National Council of Applied Economic Research (NCAER), were carried out in two waves in 2004-05 and 2011-12, and involved repeated interviews of over 40,000 households nationwide. A sub-sample of about 48,00 households in the states of Uttarakhand, Bihar and Rajasthan was re-interviewed between January and July 2017. Results based on this data suggest continued long-term improvements in the standards of living, though the growth between 2004-05 and 2011-12 was higher than that between 2011-12 and 2017. The results also suggest that for the households interviewed in the immediate aftermath of demonetisation, consumption declined slightly in real terms, though there was a net improvement for households interviewed with a six-month lag following demonetisation. However, these results need to be interpreted with caution due to the relatively small size of the sample and limited geographic coverage.

## METHODOLOGY

IHDS is a panel study that was first fielded in 2004-05 (Desai et al. 2005), with a sample of 41,554 households spread across all the States and Union Territories (UTs) of India with the exception of the UTs, Andaman & Nicobar Islands and Lakshadweep Islands. During the survey, face-to-face interviews were carried out in 12 languages in both urban as well as rural households. The sample was designed to be representative at an all-India level but not at the state level. The same households were again surveyed in 2011-12, with an 83 per cent re-contact rate.

In 2017, households in three states, viz., Rajasthan, Bihar and Uttarakhand, were interviewed again with the objective of understanding migration patterns, and included interviews of all root households as well as labour migrants who had left these households. When the households sub-divided, members who were part of each split were interviewed as long as they lived in the same village or urban block.

The results presented here rely on data from the households of origin that were interviewed during all three waves of the survey, but do not include migrants since they are geographically scattered and migrant interviews provide more

limited information. The resultant sample of 4,828 households comprises 2,706 households from Rajasthan; 1,643 households from Bihar; and 479 households from Uttarakhand. The interviews were conducted between February and July 2017, with a handful of households falling outside this window. The total number of households interviewed between February and April was 2,391 while the number of those interviewed between May and July was 2,437 (including a few households interviewed outside the window).

Panel studies are inevitably affected by attrition. In the 2017 sub-sample (IHDS-M), IHDS was able to interview members of at least one split of the 81 per cent households comprising the initial 2004-05 sample of 4,373 households. Since split households were also interviewed in both 2011-12 and 2017, the total sample of 4,828 households in 2017 more than exceeded the sample losses. However, the sample losses are disproportionately located in urban areas (30 per cent urban vs. 13 per cent rural), among higher income households (24 per cent in the top income quintile vs. 20 per cent in the bottom income quintile), and among forward-caste households [28 per cent in the forward castes vs. 17 per cent in the Scheduled Castes/Scheduled

Tribes (SCs/STs)]. It is for this reason that the results should be interpreted with caution.

The IHDS is a multi-topic survey containing information regarding various sources of income, a 52-item consumption expenditure module (modelled on the NSS mixed recall period approach) and employment. While the IHDS Waves 1 and 2 contain extensive information on education,



## Data Specific Considerations in Interpreting these Results

The results presented above should be viewed in the context of the following limitations pertaining to the data:

- Limited geographic coverage (only in Rajasthan, Bihar and Uttarakhand);
- Relatively small sample (4,828 households);
- Potential sample selectivity due to attrition between 2004-05 and 2017; and
- Post-demonetisation interviews mainly located in Rajasthan due to phased fieldwork.

However, the strengths of panel data help alleviate some concerns by allowing for:

- Comparison of the same households over time; and
- Three waves of the data making it possible to undertake a difference-in-difference analysis to at least partially address the issue of conflation of geography and fieldwork timing.

### Survey Timing Considerations

- Interviews were mainly concentrated between February and July 2017, with a few interviews falling outside this range.
- Demonetisation was implemented in November 2016 and we argue that the effect may be less severe after six months.
- The Goods and Services Tax was implemented from July 1, 2017 and there may have been a spurt in consumption in the preceding month as high end buyers sought to avoid paying GST.



health and gender relations in the household, the migration sub-sample contains only a subset of these questions. The IHDS Waves 1 and 2 are considered highly reliable sources of data on Indian households, and their data are in the public domain, with over 9000 users and more than 400 publications.

All the results are presented in per capita terms with the prices between 2004-05 and 2011-12 being adjusted using CPI-Agricultural Labourers and CPI-Industrial Workers for rural and urban areas, respectively. Price adjustment between 2012 and 2017 is carried out using month-specific data from the new series, CPI-Rural and CPI-Urban, published by the National Statistical Office.



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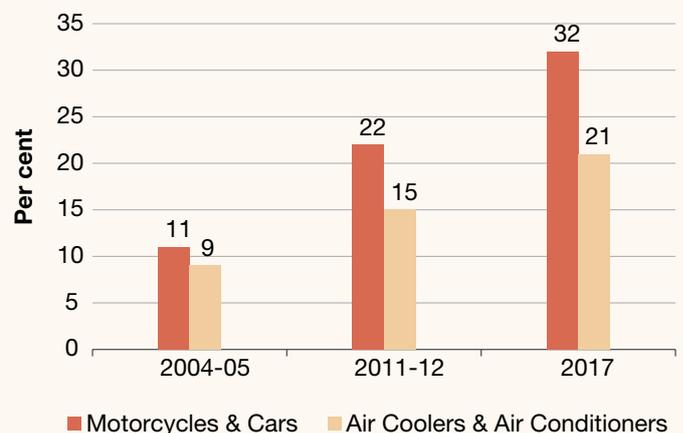
## RESULTS

### 1. On an average, both income and consumption grew between 2011-12 and 2017

We examine three aspects of household economic well-being with a varying degree of sensitivity to sudden economic shocks:

- Individuals planning to acquire large consumer items such as motorcycles and air coolers or air conditioners may put off purchases in the context of major economic shocks. However, since at any given point in time, only a tiny fraction of the population

Figure 1: Ownership of consumer durables grew consistently between 2004-05 and 2017



engages in these purchases, the stock of consumer durables in the household is less sensitive to shocks than the flow. Our results show that ownership of motorcycles and/or cars increased from 11 per cent in 2004-05 to 22 per cent in 2011-12, and further grew to 32 per cent in 2017. A similar trend in ownership of air coolers and/or air conditioners is observed at 9 per cent, 15 per cent, and 21 per cent in 2004-05, 2011-12, and 2017, respectively (Figure 1).

- The IHDS measures household incomes over the preceding 12 months. Assuming a reasonably even distribution of incomes over this period, the shocks taking place partway through the reference period will not have a disproportionate impact. Thus, income can be expected to exhibit moderate elasticity to shocks. The annualised growth in per capita income during the period between 2004-05 and 2011-12 was 7.2 per cent as compared to a corresponding figure of 3.5 per cent during the period between 2011-12 and 2017 (Table 1).
- Consumption is measured in the IHDS using a mixed recall period approach wherein items purchased at high frequency or those signifying long-term consumption (for example, food, home rent, transportation expenses) are measured with a one-month recall period, whereas those purchased at a low frequency or signifying intermittent consumption (for example, clothing or shoe purchase, hospitalisation costs) are measured with a one-year recall period. The purchase

of items of short-term use form about two-thirds of the overall consumption and hence sudden shocks that affect recent consumption will have a disproportionately high effect on monthly consumption expenditure measures, making consumption expenditure the most volatile of the three measures we examine. Consumption expenditure grew at an annualised rate of 4 per cent between 2004-05 and 2011-12, and at 2.7 per cent between 2011-12 and 2017 (Table 1).

While our results present a different trend from the leaked NSS results showing absolute decline in consumption expenditure between 2011-12 and 2017-18, given the differences in methodology, sample sizes and geographic coverage, direct comparisons are not feasible. Nonetheless, our results complement other studies (Felman et al., 2019) that suggest implausibility of absolute decline in real standards of living in India in recent years.



**Table 1: Changes in per capita income and consumption as well as various components of consumption between 2004-05 and 2017 (in 2017 prices)**

	Average Per Capita			Absolute Change		Annual Rate of Change	
	2004-05	2011-12	2017	2004-05 to 2011-12	2011-12 to 2017	2004-05 to 2011-12 (%)	2011-12 to 2017 (%)
Income	1238	1861	2216	623**	355**	7.2	3.5
Consumption Exp	1491	1932	2232	417**	279**	4.0	2.7
Food Expenditure	810	889	978	78**	89**	1.4	1.9
Home Expenditure	303	455	576	152**	121**	7.2	4.9
Education, Health Exp	241	337	435	96	98**	5.7	5.4
Discretionary Exp	121	212	182	91**	-30	10.7	-2.6

\*\* Significant at the 0.01 level.

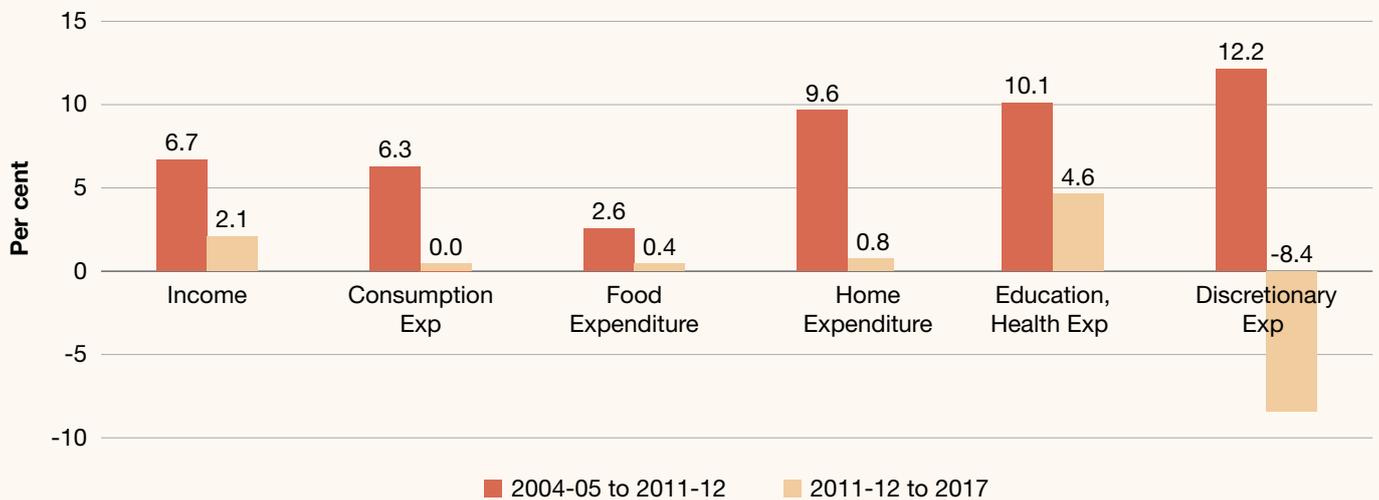
## 2. Growth in both income and consumption between 2011-12 and 2017 was slower than that between 2004-05 and 2011-12

Although our results do not support the arguments noting absolute declines in the standards of living, they are consistent with other studies that have noted slower economic growth (Subramanian 2019) since 2011. Consumption measured by the IHDS for these same households showed a growth rate of 2.7 per cent in the most recent period as compared to a corresponding growth rate of 4 per cent in the preceding years.

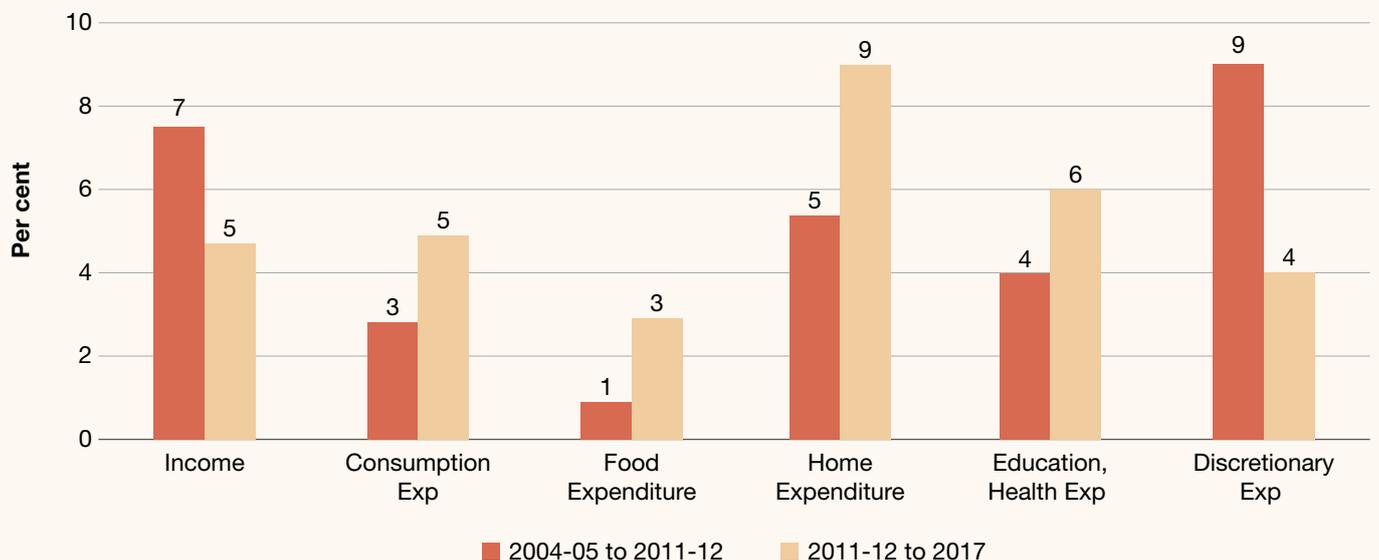
## 3. In the immediate aftermath of demonetisation, real consumption declined and income growth was relatively small but both rebounded after six months

The average figures mask considerable heterogeneity between households surveyed immediately following demonetisation and those surveyed after a lag of six months. The 2,391 households surveyed immediately after demonetisation experienced a slight decrease in per capita consumption but this decline was not seen for the 2,347 households surveyed six months after demonetisation.

**Figure 2a: Annual growth in real income and consumption over the 2012-2017 period for households interviewed between February and April 2017**



**Figure 2b: Annual growth in real income and consumption over the 2012-2017 period for households interviewed between May and July 2017**



The income growth for households interviewed between February and April declined from 6.7 per cent (during the period 2004-05 to 2011-12) to 2.1 per cent (during the period 2011-12 to 2017), whereas growth in consumption fell from 6.7 per cent to stagnation (miniscule drop of Rs. 4 per person per month). However, we see a far more modest deceleration in incomes for households interviewed between May and July (7.5 per cent to 4.5 per cent) and the expenditure growth rate actually increased (from 2.6 per cent to 4.7 per cent). The increase in consumption may be due to advanced purchases of larger household items in preparation for the implementation of the Goods and Services Tax (GST) that came into effect on July 1, 2017 (Figures 2a and 2b).

Our fieldwork began in the state of Rajasthan, followed by that in the states of Bihar and Uttarakhand. Hence regional diversity may be confounded with timing effects. However, comparing the trends for the same households between two periods allows us to approximate a difference-in-difference specification that may address some of this concern but does not fully circumvent it.

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Consumption expenditure grew at an annualised rate of 4 per cent between 2004-05 and 2011-12, and at 2.7 per cent between 2011-12 and 2017 (Table 1).

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#### 4. Most of the consumption decline during the period February to April 2017 took place in expenditure on discretionary items

Expenditures on discretionary items such as the purchase of cars and motorcycles, and expenditures on travel, social functions, and entertainment



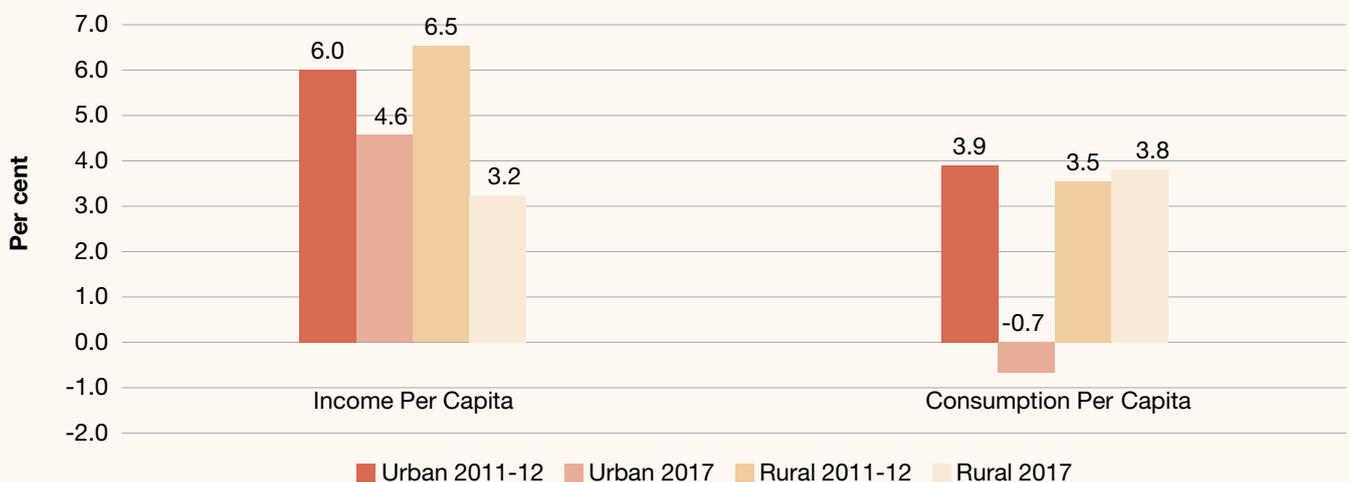


declined by 8.4 per cent while those on food remained stagnant. In contrast, the expenditure on education and health care continued to exhibit an increasing trend but at a slower rate. Since data on purchase of cars, motorcycles, social functions and travel—the largest component of discretionary expenditure—is collected with a 12-month recall period, the post-demonetisation drop must have been significantly large to cause about an average 8.4 per cent drop over the preceding period. The effect on discretionary expenditure is visible even six months after demonetisation, with growth in discretionary items slowing from 9 per cent to 3.8 per cent.

### 5. Consumption slowdown is limited to urban areas

While leaked NSS results indicate a sharp decline in consumption for rural areas and an equally sharp increase for urban areas in Rajasthan and Bihar, IHDS-M results show a decline in consumption (-0.7 per cent) for the urban areas combined with modest income growth (4.6 per cent). This may reflect a consumption shock associated with lack of cash rather than long-term changes in household consumption. Since IHDS-M urban sample is relatively small (1,351 households), these results should be treated with caution.

**Figure 3: Annual growth rate in income and consumption per capita for rural and urban areas in 2011-12 and 2017 (at 2017 prices)**





The 2,391 households surveyed immediately after demonetisation experienced a slight decrease in per capita consumption but this decline was not seen for the 2,347 households surveyed six months after demonetisation.



## 6. Slowdown in growth is most evident at the upper levels of consumption and income distribution

Between 2004-05 and 2011-12, disproportionate gains were documented in consumption and income distribution by individuals falling in the top 20 per cent fragment of the distribution. The annual growth in consumption was 5.4 per cent for individuals in the top twentieth percentile, while it was 1.8 per cent for those in the bottom twentieth percentile. These figures are consistent with a large body of literature that has documented rising inequality (see Chancel and Piketty 2017). However,

the IHDS-M data suggest that this pattern was reversed in 2017. The bottom fifth fragment saw a consumption growth of 3.6 per cent while the top tenth percentile saw a growth of 1.9 per cent. A similar pattern is visible for income inequality. The Gini coefficient for consumption inequality declined from 0.359 during 2011-12 to 0.336 in 2017 while that for income declined slightly from 0.510 to 0.494. It is, however, not clear whether this is a long-term moderation in inequality or a short-term effect of demonetisation (Table 2).

Demonetisation placed a ceiling on cash availability and may have affected large purchases. It may have also affected purchases often undertaken with black money. Thus, it may have disproportionately reduced the consumption of richer consumers. It may also have affected businessmen and service providers who received more payment in cash than farmers. Thus, it is not clear whether the moderation in inequality recorded in the 2017 survey is a long-term phenomenon or a short-term blimp associated with demonetisation.

## IMPLICATIONS

Ever since the Government refused to release the results from the NSS Consumption Expenditure Survey of 2017-18, speculation has been rife that the decline in real consumption is the real reason that has led to this embargo on data rather than the stated reason about the poor quality of the data.

**Table 2: Changes in consumption and income at various points in distribution (in 2017 prices)**

	Per Capita Consumption*					Per Capita Income*				
				Growth Rate					Growth Rate	
	2004-05	2011-12	2017	2004-05 to 2011-12 (%)	2011-12 to 2017 (%)	2004-05	2011-12	2017	2004-05 to 2011-12 (%)	2011-12 to 2017 (%)
Bottom Quintile	669	752	942	1.8	3.6	255	350	470	5.3	4.9
2nd Quintile	931	1115	1371	2.8	3.3	552	759	1032	5.4	5.1
3rd Quintile	1189	1434	1802	2.9	3.7	850	1169	1493	5.4	4.0
4th Quintile	1576	1946	2421	3.4	3.5	1321	1837	2228	5.6	3.0
5th Quintile	3075	4228	4788	5.4	1.9	3212	5193	6330	8.8	3.1
Gini	0.317	0.359	0.336			0.47	0.51	0.494		

\* Quintiles calculated at current levels of per capita income and consumption for each survey period.



The results presented above corroborate other evidence about the slowdown in economic growth. Nonetheless, they do not suggest a long-term decline in consumption as noted by the leaked results from the NSS. The IHDS results document a stagnation in real consumption (instead of anticipated growth) for the households surveyed within six months of demonetisation. However, they also corroborate conclusions by Chodorow-Reich et al. (2019) that this effect might have diminished after six months following the demonetisation. It is important to note that in spite of low economic growth, the incomes (Table 1) and acquisition of consumer durables (Figure 1) were rising prior to November 2016. Hence, stagnation in consumption for the 2012-2017 period for households surveyed shortly following demonetisation may reflect overall growth in consumption prior to November 2016

and sharp drop following November 2016 to result in zero change.

The NSS survey was initiated in July 2017 just around the time that the IHDS survey was concluding. Hence, if the results from the IHDS hold true, it should have documented a weak increase in real consumption rather than an absolute decline. This provides prima facie credibility to the claims by the Government regarding the poor quality of NSS data. However, without access to raw data, it is difficult to establish whether the data quality is indeed suspect or whether other explanations, such as the widespread drought of 2017, may explain some of the findings. Hence, it is important to release both the report and the raw data in order to let the research community evaluate the quality of the data.



## FURTHER READING

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All results reported in this brief represent authors' calculations from the India Human Development Surveys (IHDS), which form part of a collaborative research programme between National Council of Applied Economic Research (NCAER) and University of Maryland. This programme was initiated with the first round of IHDS, conducted in 2004-05, a second wave in 2011-12, and interviews of a sub-sample in 2017. Part of the panel is drawn from the households first interviewed by NCAER in 1993-94. Funding for these surveys is provided by US National Institutes of Health, The Ford Foundation and The World Bank.

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