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You are what (and where) you eat: Capturing food away from home in welfare measures[☆]

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ABSTRACT

Consumption of food away from home is rapidly growing across the developing world, and will continue to do so as GDP per person grows and food systems evolve. Surprisingly, the majority of household surveys have not kept up with its pace and still collect limited information on it. The implications for poverty and inequality measurement are far from clear, and the direction of the impact cannot be established a priori. This paper exploits rich data on food away from home collected as part of the National Household Survey in Peru, to shed light on the extent to which welfare measures differ depending on whether food away from home is accounted for or not. Peru is a relevant context, with the average Peruvian household spending over a quarter of their food budget on food away from home since 2010. The analysis indicates that failure to account for this consumption has important implications for poverty and inequality measures as well as the understanding of who the poor are. First, accounting for food away from home results in extreme poverty rates that are 18 percent higher and moderate poverty rates that are 16 percent lower. These results are also consistent, in fact more pronounced, with poverty gap and severity measures. Second, consumption inequality measured by the Gini coefficient decreases by 1.3 points when food away from home is included – a significant reduction. Finally, the inclusion of food away from home results in a reclassification of households across poor/non-poor status – 20 percent of the poor are different, resulting in small but significant differences in the profile of the poor in dimensions such as demographics, education, and labor market characteristics. Taken together, the results indicate that a serious re-thinking of how to deal with the consumption of food away from home in measuring well-being is urgently needed to properly estimate and understand poverty around the world.

1. Introduction

Consumption patterns are rapidly changing across the developing world, with prepared and packaged meals and meals consumed outside the home taking an ever growing share of the households' food budget.¹ Furthermore, with rising incomes, urbanization, and women entering the labor force, among various reasons, this trend is expected to persist as economies transition to middle-income status (Smith, 2013; USDA, 2011).

In spite of its growing participation in households' budgets, most

nationally representative household surveys have not kept up with the pace and collect very limited information on food away from home (FAFH). Conceptual and practical challenges make integrating FAFH in household surveys a complex exercise. For example, we need a clear protocol to capture otherwise confusing items such as meals produced outside but consumed at home – or vice versa; we need to measure meals whose content is unknown to the consumer and which are consumed in non-standard quantities. In addition, we are confronted with the likely high measurement error that arises if we elicit the information from a household informant – a common practice in household

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¹ FAFH has been found to contribute to as much as 36 percent of the daily energy intake among men in urban Kenya, and 59 percent among market women in urban Nigeria (Oguntona and Tella, 1999; Van't Riet et al., 2002). Among the younger population, FAFH contributes, for example, to 18 and 40 percent of daily energy intake among Chinese children and school-going adolescents in Benin, respectively (Liu et al., 2006; Nago et al., 2010).

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surveys, when the consumption takes place out of the home and therefore out of sight of the informant.²

As a result, in practice, few countries have addressed these survey design issues adequately, as shown by a recent comprehensive assessment done by Smith et al. (2014). To assess the relevance and reliability of food data, the authors analyzed the questionnaire content of the most recent nationally representative consumption or expenditure household survey from 100 developing countries, which represents 70% of the developing countries. Among various quality indicators, the coverage and detail of FAFH data are analyzed. Following a very lax definition of FAFH, which consists of checking whether “any food item in the food list itself, the title of the section in which it is found, or a question regarding the item, contains words such as consumed out, restaurant, consumed away, and the like”, it turns out that 90 percent of the surveys do consider FAFH in some form. However, when looking more deeply into the way this information is collected the authors find huge variation in quality, painting a far from optimal picture in the collection of FAFH data. For example, a quarter of the surveys aim to capture all related household consumption from FAFH using just one question; one in five surveys considers multiple places of consumption; only 35 percent takes snacks explicitly into account (when most snacking is expected to take place out of the home); and close to half of the surveys do not include FAFH received in kind.

Poor measurement of FAFH may have far reaching consequences in welfare analysis. Food consumption plays an instrumental role in the design and monitoring of development policy at the local, national, and global levels. Poverty, food security, health, and nutrition, lie at the heart of the development agenda, and the computation and monitoring of indicators that track those welfare dimensions rely heavily on food consumption or expenditure data. While data on household consumption or expenditure have dramatically increased over the last few decades³, appropriate information on FAFH patterns is lacking, and the consequences of miss-measurement of food consumption on the assessment and understanding of these major policy areas are largely unknown. Furthermore, as FAFH is expected to gain importance as economies develop, appropriately measuring this component constitutes an urgent issue or overtime comparisons of consumption patterns and poverty will become less meaningful over time.

To the best of our knowledge, only two papers analyze the implications that failing to account for FAFH can have on food security analysis.^{4,5} In a study from India, Smith (2013) argues that the great *Indian calorie* debate, originated by an apparent increase in undernourishment at the time of falling poverty rates, can be partly explained by inaccurate data on calorie intake due to the lack of measurement of FAFH. Similarly, Borlizzi and Cafiero (2014) in Brazil show how the

² In a small-scale study in an urban slum in India, Sujatha et al. (1997) interview spouses about the men’s dietary intake, and find that women are not aware of the foods consumed by their spouses outside their home. Similarly, Gewa et al. (2007) find that mothers of rural school-aged Kenyan children missed 77 and 41 percent of the energy intake originated in FAFH in the food shortage and harvest seasons, respectively (where FAFH contributes to 13 percent and 19 percent of daily energy intake in each season).

³ The 1990 World Bank World Development Report on Poverty relied on data from only 22 countries, and no country had more than one survey. Today, there are more than 850 surveys from 125 countries with consumption or expenditure data (Ravallion and Chen, 2011).

⁴ With obesity increasingly becoming a pressing health issue in some middle-income countries, the link between eating out and obesity is also drawing attention in the developing world (Bezerra and Sichiari, 2009; Lozada et al., 2008).

⁵ The literature on FAFH in the developed world has a longer history, where a main focus has been on health and nutrition issues. There is widespread interest in studying the differences in the nutritional composition of the food provided by commercial outlets relative to home-made food, aiming to understand the health consequences of eating out (Vandevijvere et al., 2009). In particular, there is a body of research devoted to understand the link between obesity and eating out, among other health outcomes (Burns et al., 2002; Guthrie et al., 2002; Kant and Graubard, 2004; Le Francois et al., 1996; Lin and Guthrie, 2012; Binkley et al., 2000). There is also interest in establishing food-based dietary guidelines to prevent obesity and related chronic diseases (Kearney et al., 2001; O’Dwyer et al., 2005).

distribution of food consumption by income strata changes once food consumed at school is taken into account. In particular, they show that proper account for food received through a school feeding program targeted to the poorer population results in a more equal distribution of food consumption than previously thought, allowing for a long due revision of the FAO assessment of undernourishment in Brazil.

In this paper, we evaluate the impact of accounting for FAFH on poverty and consumption inequality estimates in Peru.⁶ Drawing on rich FAFH data collected as part of the multi-year National Household Survey (ENAHO), we simulate a situation where we move from a world where FAFH is not accounted for to one where it is. In the process, we show that from a theoretical point of view the direction of the effect on poverty or inequality cannot be predicted ex-ante. Peru is a relevant context to study this question since FAFH is fairly widespread and increasing. In 2013, the average Peruvian household spent 27 percent of their food budget on FAFH.

To assess the impact on poverty measurement, we follow the official methodology adopted by the National Institute of Statistics and Informatics (INEI) and start with a scenario where FAFH is not accounted for. Then, we use this estimate as the benchmark against which the impact of including FAFH is assessed. Peru updated its poverty measurement methodology in 2010, and therefore we use that year for our analysis. The definition of FAFH included in the ENAHO comprises all food *prepared outside* the home. We estimate the effect of FAFH on the poverty rate, the poverty gap, and the severity of poverty. Then, to evaluate the effect on consumption inequality we compute the Gini coefficient based on the expenditure distribution with and without FAFH. Finally, we go beyond a summary welfare measure and analyze whether lack of accounting for FAFH changes our understanding and characterization of the poor population, by looking at how the profile of the poor changes once we take into account FAFH.

Our analysis indicates that failure to account for FAFH has significant and sizable effects on poverty and inequality indices and to our understanding of poverty in general. First, accounting for FAFH results in extreme poverty rates that are 18 percent higher and moderate poverty rates that are 16 percent lower than the scenario without FAFH. The increase in the extreme poverty rate is driven by the higher per-calorie costs derived from FAFH relative to food prepared at home, which increase the cost of the food basket and therefore the poverty line. In contrast, the moderate poverty rate falls because the increase in measured household consumption, which comes from accounting for FAFH, offsets the rise in the moderate poverty line. These effects are also consistent, in fact more pronounced, when we compute changes in the poverty gap and severity of poverty. Second, consumption inequality not only falls among the poor (severity of poverty), but also across the entire population. When including FAFH, the Gini coefficient falls by 1.3 points.

Finally, accounting for FAFH also generates a re-ordering of households along the consumption distribution. Overall, 41 percent of the population changes their relative ranking when measured by the percentile of the expenditure distribution they belong under each scenario. This generates a reclassification of the population across poor/non-poor status – about 20 percent of the poor population is different, resulting in small but significant differences in the profile of the poor when measured by demographic and socio-economic characteristics.

The remaining of the paper is organized as follows: Section 2 connects FAFH to welfare and discusses the impact that FAFH has on the poverty and inequality indicators analyzed in this paper as well as on the profile of the poor; Section 3 introduces the setting and data, including details on the official methodology INEI implements to compute

⁶ A few papers analyze the impact of different aspects of survey design on total expenditures, and poverty and inequality measures (Backiny-Yetna et al., 2014; Beegle et al., 2012; Deaton and Grosh, 2000; Gibson et al., 2003; Jolliffe, 2001; Pradhan, 2001). The work by Backiny-Yetna et al. (2014) is the only one to look in particular at the impact of food consumption data collection methods on poverty and inequality.

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