



Unemployment and household values: Distribution sensitive measures of unemployment[☆]



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ABSTRACT

Headcount measures have been criticized as potentially inadequate when looking at changes in poverty or literacy over time or in determining the success of particular public policies. In this paper I argue that using the headcount measure of unemployment can be misleading as well. I utilize an externality argument similar to the one used in the literacy debate and provide a class of measures that capture externalities of employment.

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1. Introduction

In measuring welfare one often aggregates individual level information into a summarizing statistic. Generally this has been done by using the headcount ratio which involves counting up the number of people in a particular category – such as the number of people considered poor – and dividing by the overall population. However, this approach has been widely criticized in two important areas: poverty and literacy. With regards to poverty, the insensitivity of the headcount ratio to the income distribution among the poor has been cited as a main criticism (see Sen (1973, 1979) for examples and a discussion). As a response, new measures of poverty have been proposed by Sen (1976) and Foster et al. (1984) to address the concerns raised. In regards to measuring literacy, critiques have focused on the inability of the headcount ratio to capture externalities. An illiterate person may receive some ‘literacy benefits’ if she is not isolated from others who are literate.¹ Basu and Foster (1998)

derive a measure that accounts for such externalities when measuring literacy. Dutta (2004), Mitra (2002), Subramanian (2004), and Valenti (2002) also provide other measures of literacy and extensions that account for externalities and discuss the properties of their measures.

The inadequacies of the headcount ratio are not limited to the areas of poverty and literacy. Basu and Nolen (2009) argued why the headcount ratio of unemployment may not be appropriate when some employed people are vulnerable to becoming unemployed. That paper built on the idea that, with vulnerability, the benefits of employment were shared with more people over time.² In this paper, however, I outline cases of when the headcount ratio of unemployment may be inadequate because of externalities from the current distribution of employment within a society. Work in this area has primarily focused on the distribution of employment at the household level and used data from the developed world. For example, Dickens and Ellwood (2003, 2004) discuss how workless households are associated with higher levels of poverty in Great Britain and the United States. Their work suggests that having employment distributed more evenly across households would play a role in decreasing absolute and relative poverty. Gregg and Wadsworth (2001, 2008) discuss how the headcount ratio and household measure of

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¹ Some empirical work on examining the extent of household spillovers with regards to literacy have been conducted. See Basu et al. (2002) for instance.

² The Basu and Nolen (2009) measure built on the framework introduced in Basu and Foster (1998) and the vulnerability and income mobility literatures (see Fields, 1996; Shorrocks, 1978 for instance).

joblessness can diverge and tell different stories of a society. They then provide indices to measure the divergence between these two indicators. This work provides strong evidence for the importance of the household level distribution of employment in the developed world. When considering developing countries, though, other factors, such as household public goods and network effects, illustrate situations when the headcount ratio may be inappropriate. I will build on these last two effects to derive a class of measures appropriate for the employment situation in many developing countries.³

Governments in developing countries are often unable to provide unemployment or social benefits to all members of society. Thus having a job may be the only way to access some form of income, retirement benefits, or health insurance. With employment being so closely tied to many benefits, how it is distributed in a society is likely to have consequences on welfare. Considering the distribution of employment, the Indian government passed the National Rural Employment Guarantee Act (NREGA) in 2005 guaranteeing a minimum of 100 days of employment to one person in most rural households. The act was seen as providing some level of income and social security.⁴ With an employed person in one's household, members of that household are likely to have access to more public goods such as heating or health insurance. The access to public goods is not something that is necessarily captured by an income measure. Since households are typically characterized by economies of scale, income measures might not pick up social benefits due to public good access. For example, providing one dollar more of heating in a three person household benefits less people than providing one dollar more of heating in a ten person household. In fact per person income goes up less in the household of ten when an additional dollar is provided but the societal benefits can be higher in that situation if the money is spent on a household public good it will benefit ten people as opposed to only three.⁵

The distribution of employment is also related to the availability of employment information.⁶ The large literature on networks in labor markets shows that access to different types of networks can have large differences on employment outcomes (see *Calvó-Armengol and Jackson, 2004; Fernandez et al., 2000; Montgomery, 1991; Simon and Warner, 1992* for instance). To lower search or screening costs firms sometimes rely on 'word-of-mouth' to advertise available jobs. When this occurs, being in a social network with a higher proportion of employed people means one is more likely to hear of a job. The use of social networks in developing countries may arguably be more common than in developed countries because many information gathering tools such as recruitment agencies, internet sites, and standardized curriculum vitae may not exist or be as widespread. Consider this example: say Eve is a black South African woman who is looking to work as a housemaid. With high unemployment in South Africa, Gwen, a potential employer, is unlikely to advertise for a

housemaid in the local paper. If she did a large number of potential housemaids would likely apply and she would have to screen them all. With non-zero screening costs this could be a large investment she is not willing to make.⁷ Therefore Gwen will probably ask friends to recommend housemaids for her to consider. If Eve knows someone who is working as a housemaid for one of Gwen's friends then it is more likely she will get the job than if she doesn't know anyone who is employed. Therefore having access to people who are employed when social networks are important can have a large effect on whether one is able to find work. These types of social networks, though, are rarely considered to be a household. For instance, in this example, a black housemaid is more likely to recommend another black, female South African rather than her husband even if he is unemployed. Of course if Eve has a daughter or lives with her extended family she is likely to tell one of her cohabitants about the position first.

Labor markets in developing countries provide a unique environment in which to consider these types of social networks.⁸ A household in a developing country is likely to have multiple potential employees because of extended families living together. If this is the case a household member is likely to share employment information with someone living in her house before sharing with another individual. Thus households may behave more like social networks that exist in developed labor markets. Furthermore, employment may be considered more multifaceted; an employee may be formally employed, informally employed, or employed as a subsistence farmer. The social networks and public goods associated with each type of employment may differ. Likewise, the benefits that those networks and public goods bring to the unemployed members of the household may depend on whether the household is located in an urban or rural area.

To account for employment externalities, such as access to information and public goods, the headcount ratio is not adequate. Therefore, I will fully characterize a class of measures that accounts for the externalities discussed above. To do this I need to specify the level at which the externality exists. Unlike previous literature, I will argue that, in the developing world where households are larger and more likely to include extended family members, the household can be viewed as a network. This argument will be examined by looking at the data in *Section 3*. If one would prefer to consider the employment externalities at a level higher than the household then the class of measures proposed here can still be used but the public goods motivation presented here would not readily apply to a higher unit of analysis. In *Section 3* I will use data from the South African Labour Force Survey (SA LFS) to examine this issue, calibrate a measure of unemployment and explore some applications. The measure suggested by the SA LFS data may be specific to the South African context but the method used to determine which specific measure of the class of measures is most appropriate can be done for any country where panel data is available.⁹

The next section provides axioms that measures of unemployment should satisfy and explicitly defines the type of externality the new class of measures will incorporate. *Section 3* will then use the SA LFS

³ Household public goods and network effects are not the only reason to consider the household distribution of employment; consumption and savings behavior, tax receipts, educational outcomes and many other issues also provide a strong reason to focus on the household distribution of employment as well.

⁴ Households in India's poorest 200 districts are guaranteed employment. Refer to "Reform in India: Democracy's Drawbacks" in the *Economist* (29/10/2005). The full text of the act, as introduced on December 21st 2004, can be found at <http://rural.nic.in/NREGbillp.pdf>. The act was passed August 25, 2005 and came into effect February 6, 2006 (*Hindustan Times* 9/7/2009).

⁵ The issues of household externalities and economies of scale have been dealt with in the income distribution literature by using equivalence scales; *Lewbel and Pendakur (2008)* provide a good discussion of equivalency scales and their uses. This type of approach has not been used in looking at literacy or unemployment.

⁶ Employment in the context of a developing country could refer to anything from subsistence farming to formal wage employment. While subsistence farming may be relevant, the type of employment considered in this paper is informal and formal employment. This is because the latter two types of employment typically involve working with non-family members and is likely to involve the entitlements or information exchanges that do not occur when considering subsistence farming.

⁷ The implicit assumption here is that the costs of advertising and screening are larger than the benefits of having a housemaid. This could easily occur if the cost of gathering information on potential employees is large – perhaps there is no potential database on employees Gwen could access – or labor laws place strong restrictions on the hiring and firing process to avoid discrimination and thus raise the screening costs.

⁸ While I am motivating this measure by discussing features of labor markets in developing countries, the household social networks discussed here can exist in developed countries. For instance *Addison and Portugal (2002)* use Portuguese data and find that a large group of people search for a job by contacting 'friends and relatives.'

⁹ The axiomatization of the class of measures provides guidance on how to choose an appropriate measure even if there is no panel data available as long as one has a good idea of the labor market situation within the country.

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