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Employment and Economic Wellbeing of Single Female-Headed Households

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Employment and Economic Wellbeing of Single Female-Headed Households

Thesis submitted to
Levy Economics Institute
of Bard College

by
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Dwitiya Jawher Neethi

Abstract

This study focuses on the the employment and economic wellbeing of single female-headed households in the United States in the years 2004, 2007, 2010 and 2013. This has been examined from two vantage points: a Heckman Selection Model shows that the reservation wage for the nonemployed single female heads is lower than the employed single female heads. This indicates a lack of suitable jobs for the nonemployed single female heads. The other mode of investigation involves an economic wellbeing analysis of single female heads using the Levy Institute Measure of Economic Wellbeing. The LIMEW analysis shows that while the gap in money income between the two groups is large, it is rather small in terms of the LIMEW. This is mainly because the nonemployed receive much more in transfers from the government, pay less taxes and have a higher value for household production. Both employed and nonemployed single female heads are net recipients of government benefits. The bulk of transfers include non means-tested benefits such as Social Security and means-tested medical benefits such as Medicaid. The employed have some employer contribution to health but the nonemployed have no other recourse than depending on the government for medical benefits. Higher care responsibilities, lower levels of education and lower reported levels of health status are impediments to the nonemployed single female heads from reaping the full benefits of employment. This indicates that some women in this group of would benefit from suitable jobs with benefits such as adequate childcare provisions and paid leave.

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INTRODUCTION:

The purpose of this essay is to investigate the economic wellbeing of single female-headed households in the United States. Estimates based on gross (pre-tax) money income show that the average single female-headed household is much less well-off than married-couple households and single-male headed households. They also suffer from a substantially higher rate of poverty, as officially measured. Policies aimed at ameliorating the disadvantage faced by single female-headed households have focused on tightening or even cutting back on their welfare benefits and redesigning benefits to encourage them or leave them with no choice but to enter the labor market. Employment is considered the most important stepping stone towards a better life. But how valid is this presumption for single female-headed households?

I examine the issue from two distinct vantage points. First, I estimate a labor supply function to assess whether employment is likely to yield the same conditional hourly wage for single female-heads that are currently nonemployed as for single female heads that are currently employed. The answer, unfortunately, is in the negative. I discuss my results and their policy implications. Second, I compare the economic wellbeing of employed single female-headed households and their nonemployed counterparts using gross money income (the most widely used measure of economic wellbeing in the U.S.) and the Levy Institute Measure of Economic Wellbeing (perhaps the most comprehensive measure of economic wellbeing). The rationale behind this exercise is the well-known limitations of money income—limitations that I argue are especially crippling in the case of the demographic group that I study. Not surprisingly, the comparison based on money income shows the employed to be much better off than the nonemployed. However, comparisons based on LIMEW indicates no sizeable difference in wellbeing between the two groups. I examine the reasons behind this divergence by means of descriptive analysis and using a decomposition methodology. The results of the analysis are discussed with an emphasis on their policy implications.

The main motivation for looking at the difference that employment makes among single female-headed households is the welfare reforms during the 1990s that focused on transitioning the population dependent on means-tested welfare benefits from welfare to employment. Since single female-headed families are the largest group among the officially poor population, they were the ones who were most affected by the change in policy. While the poverty rate, as officially measured, did fall among single female-headed families, critics pointed out that the decline obfuscated the real hardships experienced by single female-headed families because the official measure of poverty ignores the unpaid care requirements for families. Specifically, the official measure does not take into account the out-of-pocket expenses for care (for children or other dependent adults) in its definition of income available to the household or poverty thresholds.

I use the LIMEW to assess their wellbeing because MI is particularly inadequate for this group. This is because MI ignores household production which includes the time spent on caring for children and dependent adults. LIMEW includes an imputed value for this. Hence, a comparison of wellbeing between the employed and the nonemployed based on MI would ignore the tradeoffs between allocating time between employment and unpaid care activities. MI also ignores noncash transfers while LIMEW includes it. This matters because the form of means-tested welfare has become more in-kind. Being employed means giving up on at least some of the means-tested noncash transfers. This tradeoff is not taken into account if the comparison between the employed and nonemployed is based on MI. LIMEW includes imputed values for in-kind benefits.

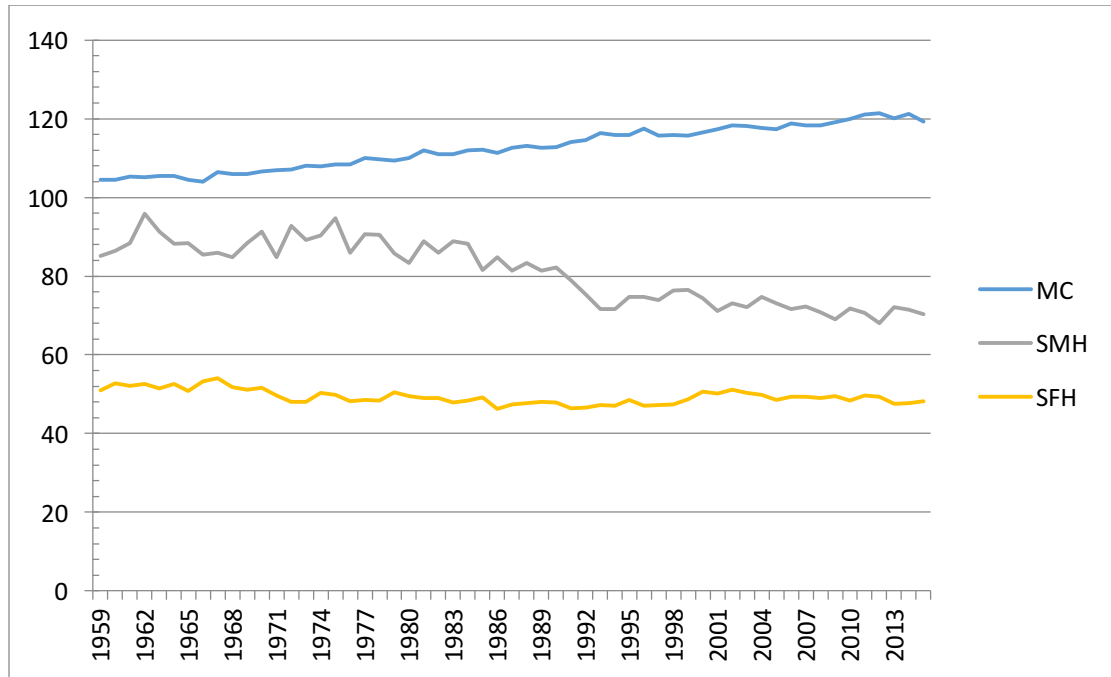
The paper shall be arranged as follows. I begin with an overview of the trends in the economic wellbeing of single female-headed households. This is followed by a review of the literature. The review is broken down into five parts: in the first part, I survey the literature on wellbeing to show that there has been a great shift towards wellbeing measures beyond income and per capita GDP. The second part is on the importance of household production for wellbeing assessments- here we argue why household production is essential to evaluate the economic wellbeing of households. The third section describes the concept and empirical methodology of the Levy Institute Measure of Economic Wellbeing. The last section of the literature review discusses the

views of different schools of thought regarding employment and why promotion of employment is a common prescription to alleviate poverty and inequality. The literature review is followed by the empirical analysis and a discussion of the policy implications of the findings. The empirical section will start with the application of the labor supply function followed by economic wellbeing analysis using the LIMEW. The final section is the conclusion.

ECONOMIC WELLBEING OF SINGLE FEMALE-HEADED HOUSEHOLDS: TRENDS AND ISSUES

The most common classification system for families and households in the US groups them into three categories based on the marital status and sex of the head (or householder): married couple (married head with spouse present), single-male headed (single male head, no spouse present) and single female-headed (single female head, no spouse present). Historical data available on gross money income and official poverty status show that single female-headed families fare the worst among the three types of families. Over the period 1959 to 2015, the median gross money income of the average single female-headed family was never below 46 percent and never above 54 percent of the median gross money income of all families (see Figure 1).

Figure 1¹: Median Gross Money Income of Type of Family as a Percentage of Median Gross Money Income of All Families



Source: Author's calculations

In the more recent period from 1990 to 2015, relative median income has fallen within an even narrower range of 46 to 51 percent. The evidence suggests that the disadvantage in money income faced by single female-headed households has been fairly large and persistent. On the other hand, while the relative median income of single-male headed households has fallen since the 1990s, it continued to be much higher than that of single female-headed households.

According to the latest available data, the relative median income of single female-headed and single-male headed families were, respectively, 48 and 70 percent of the median gross money income of all families. The problem behind the disadvantage therefore does not stem from the status of being single; but being single *and* female.

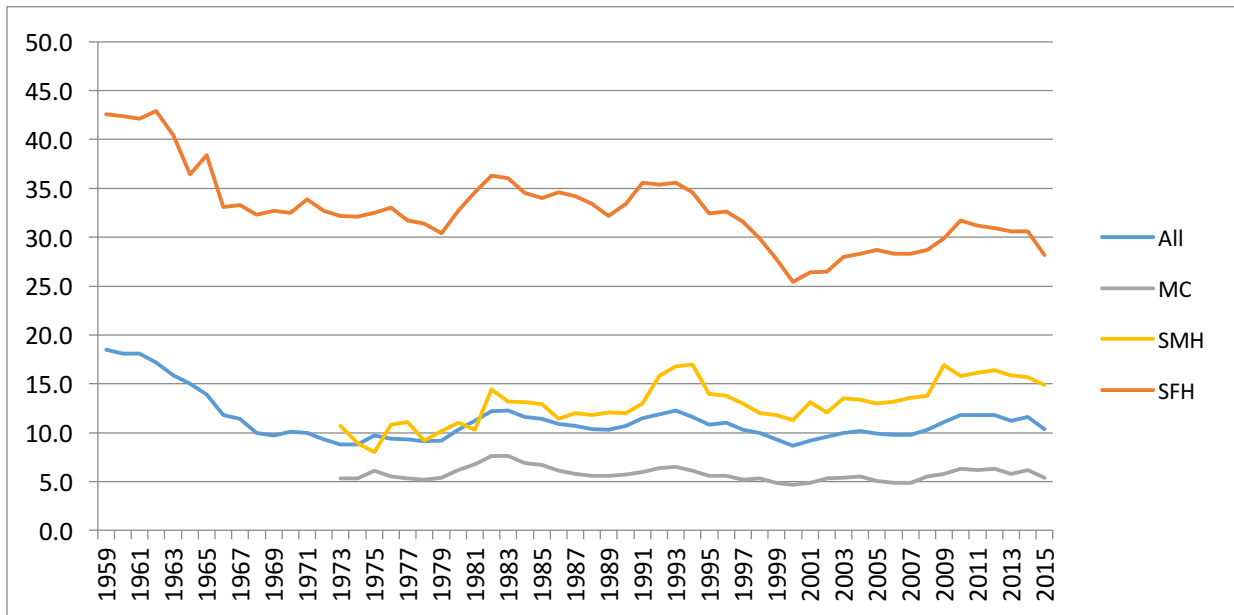
Data on official poverty status also indicates a huge gap in the incidence of poverty between the single female-headed families and other types of families (see Figure 2). They have a persistently

¹ MC= Married Couple Household, SMH= Single Male Headed Household, SFH= Single Female Headed Household

higher poverty rate, as per the official poverty line, compared to married-couple and single-male headed families.

Figure 2: Poverty Status of Families by Type of Family

Note: Numbers in thousands. Families as of March of the following year



Source: Author's calculations

If we further categorize single female-headed families by race, we find that according to the most recent calculations (2015), 25.8 percent of white single female-headed households are below poverty. The rate of poverty is 33.9 percent for black single female heads and 35.5 percent for Hispanic single female-heads. This shows that even within single female-headed households, the different races have different incidences of poverty.

The fall in poverty in the 1990s, that we can see in Figure 2, might be attributable to the welfare reforms that pushed for employment over welfare but it has not been sustainable. This brings the merits of employment for single female-headed households into question.

Issues related to the wellbeing of single female heads have been discussed extensively. Margaret Nelson shows how single female heads with children face additional disadvantages relative to couple households because they have to contribute both the earnings and the unpaid labor that are typically contributed by men in a couple household (Nelson 2006). Through the works of

Judith Record McKinney (2016), Randi Kjeldstad (2000) and Marit Rønsen (2004) we see the vulnerable conditions of single female heads with children, often called “lone mothers” in the literature, in different national settings. They show that single female heads face additional disadvantages even in non-capitalist economies. In her study, McKinney found that the situation of lone mothers seemed to worsen when the Soviet and Russian regimes transitioned to market-based economies because of the failure of the state to create equal opportunities for women in the labor market (McKinney 2016).

A single female head is often the primary breadwinner and the primary caregiver for her family (Albelda, Himmelweit and Humphries 2004). Single mothers are at the “sharpest of sharp ends” when it comes to the dilemma of balancing work and family life (Albelda, Himmelweit and Humphries 2004) because they often have no access to male wages and no other adults to share financial and household burdens with. Since they are female, they are also more likely to be poorly paid. Then comes the dilemma of time – single female heads with dependents have less time than a couple household. This is because they have to juggle between working long hours to be able to provide for their family and spending time with their children and other family members. If they want to pay for high-quality childcare, that will mean that more money will be required to pay for it and thus will translate into longer hours at work. In situations where childcare is not affordable or the mother cannot find jobs, they have to rely on the state or the community to provide it.

The economic wellbeing of single female-headed households depends on a network of support structures that might include men (might include fathers of their children), other immediate family members, friends, neighbors, people from the community, the state and so on. Market based societies depend on the sexual division of labor and the institutions of marriage and family (Albelda, Himmelweit and Humphries 2004). This argument based on the gendered nature of the institutional arrangements that underpin the functioning of market economy stand in sharp contrast to the arguments made by Garry Becker about the comparative advantages of the sexual division of labor. Gary Becker argues that the sex of household members is what differentiates who participates in household production and who participates in the market sector. The assumption here is that an hour of market time for a woman is not a perfect substitute for an hour

of the time for a man when they make the same investments in human capital. If women have a comparative advantage over men in the household sector, then an efficient household would decide that it is better for women to engage solely in the household sector and that the time of men would be better spent in the market. This results in the circular argument of women earning less than men because they specialize in home production and they specialize in home production because they earn less than men in the labor market.

Historically, women have been discouraged to participate in the labor force after becoming mothers and when they have participated, their wages have been lower than that of their male counterparts. Women's wages have been important at improving the standard of living in a "dual-earner" household but the same amount is often insufficient on its own. (Albelda, Himmelweit and Humphries 2004).

Single female heads with children are exposed to negative social judgment because they are still seen as deviant members of the society. However, statistics show that the fact that any mother will become a lone mother at some point in her life is high and growing (Albelda, Himmelweit and Humphries 2004). Marriages among poor women have declined because of changing social dynamics that does not ostracize sex, out-of-wedlock childbirths or cohabiting as much as in the past. Research suggests that poor women wait to get married not because they think too little of it, but because they hold it in high regard and do not want to make commitments that they cannot keep. This happens because they are choosing from a pool of partners, often in a disadvantaged neighborhood, and they want to assess the potential risks and rewards of available partnerships (Edin and Kefalas 2005).

When the whole social structure seems to be tilted in favor of married parents, heads of single female-headed households cannot possibly have a fair chance in the race. Their children grow up materially disadvantaged relative to children who grow up in couple households. Most evidence point towards the fact that lone mothers are at the bottom of the income distribution and according to many feminist economists this phenomenon contributes heavily to the "feminization of poverty" (Albelda, Himmelweit and Humphries 2004).

Now that I have provided a background to show the disadvantages faced by single female-headed households, I shall present a review of the relevant literature on the concepts and measurements of wellbeing, the importance of household production, the Levy Institute Measure of Economic Wellbeing (which will be used in this paper) followed by a discussion on employment. This review will facilitate a better understanding of these concepts and explain why they are important for this study.

LITERATURE REVIEW:

Concepts and Measurements of Wellbeing

Concepts of human wellbeing are important to the study of the economics. Wellbeing measurements try to measure “how well is a person’s being?” (Sen 1999). and involves judging the quality of a person’s life. Most economists today agree that wellbeing is a multidimensional concept and not solely restricted to income measures. The literature surrounding wellbeing focuses mostly on three elements - the material, the relational and the subjective dimensions of life, prescribing varying degrees of importance to the different components (Sumner and Mallett 2013). Wellbeing analysis can take both the individual and the community as the unit of analysis.

Traditional measures of economic wellbeing are material or objective in nature – they are measured by income or consumption per capita. Material indicators of wellbeing in terms of income and consumptions per capita remain useful even though they do not convey the whole picture of human wellbeing. For example, when wellbeing assessments are to be made in developing countries by means of poverty calculations, the World Bank employs internationally comparable poverty lines such as \$1.25 or \$2 per day for a person. (Chen and Ravallion 2008). Anyone making less than the given amount is seen as poor. Measures that only account for income or consumption are being challenged by advocates of multidimensional wellbeing. Perhaps the most prominent critic of income or consumption based measures has been the Nobel laureate Amartya Sen. He has argued that considering only the resources available to a person does not convey the real status of a person’s wellbeing².

² This is because, according to Sen, individuals are different in their ability to transform resources into valuable “functionings” (functionings are states of “being and doing” such as having a shelter or being well-fed). Therefore, focusing only on means without accounting for what the person can or cannot do with them is insufficient. The command over commodities is a “means to the end of well-being, but can scarcely be the end itself” (Sen 1999). As

While it must be admitted that creating a measure that encompasses every aspect of the human condition is a Herculean task to say the least, attempts to incorporate more dimensions of wellbeing have been created by economists. Most widely discussed among them is the United Nations Development Program's Human Development Index (HDI)³.

The Human Development Index (HDI) is a summary of the average achievement in certain perceived key dimensions of human development which are a long and healthy life, being knowledgeable and having a decent standard of living. It is a composite index that is created by aggregating the three dimensions into a summary measure. Life expectancy at birth is used to assess the health dimension; and mean of years of schooling for adults aged 25 years and more and expected years of schooling for children of school entering age is used to assess the education dimension. Gross national income (GNI) per capita is used to assess the standard of living dimension and a logarithm of income is used to reflect the decreasing importance of income with increasing GNI. The HDI is generated using country level data. Between 1990 and 2010, the HDI has undergone several changes in its measurement in terms of education and income indicators used, the treatment of income and the aggregation formula. The index is closely related to Sen's idea of wellbeing but critics argue that the HDI is limited because it only captures certain key dimensions and its indicators are restricted by data availability. Other criticisms include the HDI's neglect of inequality and the environmental dimensions of development. However, the neglect of inequality has been addressed by the introduction of three new measures in the 2010 Human Development Report: the Inequality Adjusted HDI⁴, the

highly adaptive beings, we may also learn to not desire that which we cannot achieve but that does not mean that if we get access to such resources it will not increase our wellbeing. Sen also argues that both actual achievements (functionings) and effective freedom (capability) should be considered in wellbeing evaluations. For instance, the nutritional state of a man who is fasting and another who is starving may be the same. It is important that we consider the options that people have even if they do not avail them. Sen's arguments illustrate that wellbeing is no easy concept to measure and simplistic measures fail to capture the complexity of the human condition.

³ The Oxford Poverty and Human Development Initiative's (OPHI) Multidimensional Poverty Index (MPI) is also another multidimensional index which has a close relationship with the HDI. The MPI was developed to measure deprivations (such as lack of education, lack of employment, poor health and inadequate living standards) along the three main axes on which the HDI was constructed.

⁴ It accounts for inequality in health, education and income and is directly comparable to the HDI and across countries.

Gender Inequality Index⁵ and the Multidimensional Poverty Index (Klugman, Rodriguez and Choi 2011).

Social cohesion measures are typically used to reflect the relational aspects of wellbeing. They try to quantify the extent and quality of personal relationships and social relationships. An example of this approach is the work of Jane Jenson. She has employed a classification with five dimensions – affiliation/isolation (sharing common values or feeling of belonging to the same community), insertion/exclusion (ability to participate in the labor market or the economy), participation/ passivity (involvement in the management of public affairs), acceptance/rejection (pluralism or tolerance in society) and legitimacy/illegitimacy (how well the various institutions which are meant to represent the people and their interests function) (Jenson 1998). Her work mainly focuses on Canada but her breakdown of social cohesion into the five dimensions could be applicable to other countries as well. A recent comprehensive survey argues that social cohesion measures can be strengthened by taking account of the degree of community acceptance of minority groups, confidence in national-level institutions and faith in social and economic institutions, safety and crime rates in the society that reflect to what extent people feel that their freedom of movement and their property are protected, donations to charities and voluntary work or help to strangers as ways of showing solidarity with other people. The authors of the survey suggest that for social cohesion comparisons to be made across societies, the dimensional profiles should be used and not the overall score of social cohesion because different communities have very different norms and characteristics. Two different communities could have the same social cohesion score based on very different dimensional profiles and thus, the overall score might be misleading for policy formulation (Schiefer and van der Noll 2013).

Another family of wellbeing measures is focused on subjective wellbeing and aims to measure mental states, including positive and negative evaluations that people make of their lives and the affective reactions of people to their own experiences. (OECD 2013). It includes three elements which are life evaluation (assessing a person's life or some aspect of it), affect (a person's

⁵ It includes educational attainment, economic and political participation and health issues relevant to women. It is constructed on the same framework as the HDI and attempts to reflect the differences in achievements between men and women.

feelings or emotional state of being with reference to a point in time) and eudemonia (meaningfulness or purpose in life) (OECD 2013). Subjective wellbeing may be determined by personal experience or by wider institutions and cultural norms and values also play a part. An interesting study by Stevenson and Wolfers (2013) analyze subjective wellbeing within and between countries and find that while it is intuitively plausible that there is some critical level of income beyond which income no longer affects wellbeing, there is no evidence of such a satiation point.

Several key issues related to the conceptualization and measurement of wellbeing was addressed in the landmark report of the Stiglitz-Sen-Fitoussi Commission (also known as the Sarkozy Commission). The report views human wellbeing as a multi-dimensional concept. In addition to the capabilities approach of Amartya Sen and the subjective wellbeing approach, the report also mentions the “fair allocations” approach as a complementary approach to the measurement of the quality of life.⁶ It argues that objective and subjective dimensions of wellbeing are both important. The report proposes that objective factors that shape wellbeing are: (a) material living standards (income, consumption and wealth); (b) health; (c) education; (d) time spent on and satisfaction from personal activities including paid and unpaid work; (e) political voice and governance; (f) social connections and relationships; (g) environmental quality (present and future conditions); and (h) economic or physical insecurity (Stiglitz, Sen and Fitoussi 2009). The report also makes a distinction between current and future wellbeing. According to the report, current wellbeing is concerned with economic resources such as income and non-economic variables like what people do, what they can do, how they feel and the natural environment they live in. It claims that whether human wellbeing can be sustained over time depends on stocks of capital that matter for their lives like natural capital, physical capital, human capital and social capital that are passed on to future generations.

The Stiglitz-Sen-Fitoussi report emphasizes the need to shift from measuring economic production to measuring people’s wellbeing. The Commission describes this as a “household

⁶ The fair allocations approach combines the weighted values of different non-monetary dimensions of life with commodities to construct augmented allocations for individuals, with the emphasis that the weighted values of non-monetary dimensions can be derived from individual preferences (Stiglitz et al. 2009: 42).

perspective.” The report recommends that household income and consumption should be used as one of the indicators of material wellbeing rather than aggregate production because aggregate output in an economy can increase even when household income declines or vice versa. These discrepancies can occur when we take account of depreciation, income flows into and out of the country and discrepancies between the prices of output and the prices of consumer products. The Commission also recommends that income measures must be broadened to include nonmarket activities.

The household perspective and broadening income measures to include non-market activities is crucial to address if measurements of economic activity are to reflect the structural changes that occur in a modern economy. Operationalizing the household perspective would involve that payment between sectors such as taxes paid to the government, social benefits provided by the government including in-kind services such as subsidized health care and educational services, and interest payments by households to the financial sector must all be considered in wellbeing measurements. Including non-market activities means primarily taking account of household production. Stiglitz, Sen and Fitoussi also urge the need for considering income and consumption jointly with wealth because while income and consumption provide valuable insight into the current living standards of people, they can only provide a complete picture in conjunction with information on wealth. This is important because a household that chooses to spend its wealth on current consumption increases its current wellbeing at the expense of its future wellbeing. They also recommend that wellbeing measures should be designed to address questions of distributional equity in terms of the distributions of income, consumption and wealth.

The above discussion suggests that human wellbeing is multidimensional. It is therefore quite natural that assessments of wellbeing differ in terms of their focus. We have also found that the volume of produced goods and services at the disposal of the individual or nation is crucial to the different approaches to wellbeing (e.g., the role of per capita GDP in HDI or household income in shaping subjective wellbeing). Assessments of wellbeing would therefore necessarily involve considerations of *economic* well-being or “well-offness” (to use an expression by Amartya Sen). Our discussion has also highlighted the role played by considerations of distributional equity in evaluations of human wellbeing. The capabilities approach also puts a great deal of emphasis on

distributional equity, especially on deprivations. This concern is reflected in the development of the MPI⁷. The OPHI Missing Dimensions of Poverty Data projects in Chad, Nigeria, Chile and Philippines which considers quality of work, empowerment, physical safety, ability to go about without shame and psychological wellbeing, has added to these attempts recently. Information regarding inequalities of wealth, income and consumption should also be integral to wellbeing measures according to the Sarkozy Commission. As I discuss later, the Levy Institute Measure of Economic Wellbeing (LIMEW), developed several years before the Sarkozy Commission's report, fulfills the major recommendations of the Commission.

The importance of household production for economic wellbeing

In a broad sense, household production consists of goods and services that are produced in the household by members of the household without any compensation for their own use. However, for the purposes of this study, household production consists of unpaid services produced by members of the household for their own use. It includes mainly activities such as caring for children, educating the next generation, caring for the elderly and other household responsibilities (such as cooking and cleaning). As we argued above, the volume (or real value) of the goods and services available to the household is considered to be central to human wellbeing in all the major approaches to wellbeing. Given our definition of household production, it follows that household production should also be included in a measure of economic wellbeing. This was indeed the position taken by the Sarkozy Commission.

While household production constitutes an important aspect of economic activity, it is ignored in typical measures of economic growth and welfare. Economists of varying ideological persuasions appear to be in agreement regarding the importance of household production. Sen (2011) has argued that unpaid care activities are absolutely vital to support sustenance and for survival, and it enables workers to get out of the home and work in the market. In a similar vein, Gary Becker (1965) writes that “in recent years economists are recognizing that a 'household is truly a small factory' [Cairncross (1958)]: it combines capital goods, raw materials and labour to clean, feed, procreate and otherwise produce useful commodities”.

⁷ See footnote 2

The second edition of the Canberra Handbook, which was created by an International Expert Group on Household Income Statistics known as the “Canberra Group”⁸, includes the value of household production in the conceptual definition of economic wellbeing but excludes it from the operational definition due to measurement issues. The System of National Accounts, which is a set of macroeconomic accounts approved by the the Statistical Commission of the United Nations and prepared by an Inter-Secretariat Working Group on National Accounts, includes paid domestic services but excludes unpaid domestic services (such as laundry, cooking meals, caring for adults and children, housekeeping and management, as well as unpaid volunteer work) from the production boundary. This is because, according to them, household production has limited impact on the rest of the economy because they are produced for immediate consumption and cannot be sold or bartered. They also claim that difficulties of identifying market prices to value such services serve as a serious limitation, and that changes in household production are not affected and do not in turn affect policies because their imputed values are not equivalent to monetary flows.

However, we know that there are several reasons which challenge the SNA’s rationale for not incorporating household production in economic wellbeing measurements. For example, a person may not be able to work in order to take care of their children. This directly affects their labor force participation and hence the economy. It is also possible to derive a market price for child care since child care services are available in the market. (Canberra Group 2011)

Beyond the Market, a report written by the Panel to Study the Design of Nonmarket Accounts, highlights that estimates of the value of household production are necessary to understand the trend of economic growth, fluctuations in business cycles and trends in inequality⁹ (National Research Council 2005). The report shows that because household production is inherently non-market in nature, a value for it must be imputed rather than measured directly. The authors of the

⁸ This was an outcome of the 2008 Conference of European Statisticians review of statistics on income, living conditions and poverty. The handbook was written to address the importance of household production and the conceptual and measurement problems related to it.

⁹ Economic growth can change the relative importance of home and market production and household production can also differ across different income groups.

report claim that the best valuation method would be to use a quality-adjusted replacement cost method. In this method, the specialist wage¹⁰ for the household task is multiplied with a number that is typically between 0 and 1. This number accounts for the shortfall or excess of the household member's productivity relative to the specialist's productivity in the given activity. The report also recommends including the value of services, materials and energy used to create home-produced outputs into accounts describing household production. While output-based measures of the value of household production may be theoretically more desirable, most existing estimates are based on the valuation of the time spent on household production.

The most widely used method of valuation is described often as the “generalist approach” where the average earnings of domestic servants or household employees is used as the replacement cost. An alternative measure of the replacement cost is the so-called “specialist approach” where the time spent on each category of household production is valued according to the wage of worker who is engaged in a similar occupation. (e.g. time spent on plumbing would be valued at the hourly wages paid to plumbers). Both generalist and specialist approaches fail to account for the differences in the skill and efficiency among household members in performing the tasks of household production. The specialist wage will overstate the value of the input if the household member is not as skilled as a professional and a generalist approach would lead to an underestimation if the member is particularly skilled. There is also the “opportunity cost” or “foregone earnings” method where the household member's time is valued at his or her market wage rate. This means that a CEO's time doing laundry would be valued at his hourly salary. This method leads to overestimations due to high imputed prices for fairly low-skilled jobs.

The LIMEW, which is a comprehensive measure of economic wellbeing, includes three broad categories of unpaid activities which are classified as household production. These include (i) core production activities such as cooking and cleaning; (ii) procurement activities such as shopping for groceries; and (iii) care activities such as taking of children or the elderly. It uses the replacement cost method with the employee compensation of a private household employee multiplied by an index that accounts for three key factors that affect the quality, composition and efficiency of household production performed by the individual. The factors are household

¹⁰ See next paragraph

income, educational attainment and time availability. Equal weights are attached to each factor. In an ideal situation, the performance index would be able to capture all the factors that may influence the performance of household production by individuals. However, given a lack of sufficient research findings, the three factors incorporated by the LIMEW represent the next best way to reflect the differentials (Wolff, Zacharias and Masterson 2009).

The discussion above highlights the importance of unpaid work for the measurement of wellbeing. It also shows that it gets less recognition than it deserves. While there are challenges to measuring household production, it can be derived using different valuation methods. The LIMEW will be used in this paper because it includes an adequate imputation of household production and taking account of household production is particularly relevant for the group I study. The LIMEW will help to determine the tradeoff (if any) between employment and unpaid household work for single female-headed households. The next section explains the objectives and the components of the LIMEW in more detail.

The Levy Institute Measure of Economic Wellbeing

The LIMEW is based on the view that three key institutions – the market, household and state—determine the command of individuals over the necessities and conveniences of life. Money income (MI) is routinely used for poverty and income measurements but it fails to account for all these three institutions adequately. Fringe benefits such as employer contributions for health insurance and contributions from the state in the form of noncash transfers (e.g. healthcare) and direct provisions (such as schooling and highways) are not taken into consideration by MI but the LIMEW captures these dimensions. Household production is also left out of MI. I have discussed the importance of household production previously and it fits naturally within the concept of economic wellbeing that is used in the LIMEW (Wolff and Zacharias 2003).

The LIMEW embodies several of the key recommendations of the Sarkozy Commission although it predates the report. The recommendations include taking account of the household perspective, addressing questions of distributional equity – overall inequality and group

disparities, inclusion of the advantage from wealth¹¹, comprehensive accounting of personal taxes, government expenditures for households and the inclusion of household production.

The LIMEW is not the only or the first attempt at constructing a comprehensive measurement of economic wellbeing. I provide below a comparison of LIMEW with the income measure endorsed by the Canberra Group, drawing heavily on Wolff and Zacharias (2003). As we can see from Table 1, there are three main differences between the LIMEW and the other comprehensive income measurement. The first is the treatment of non-housing wealth which replaces the measure of property-type income (dividend, interest etc.) with an estimated annuity from net worth for non-housing wealth (Wolff and Zacharias 2003).

The second is that public expenditures allocated to households are added and indirect taxes paid on personal consumption are subtracted in the LIMEW. The Canberra Group includes some of the public expenditures such as education, cultural and recreational services which they classify as “social transfers in-kind” and are referred to as noncash government transfers in Table 1. However, the LIMEW includes more categories of public expenditures (e.g. a portion of highway expenditures is allocated to the household sector and distributed among individual households in the LIMEW). When it comes to consumption taxes, the Canberra Group does not include it in their measure of disposable income; however, they recommend that consumption taxes can be included if the objective is to determine the total redistributive effect of government intervention in the form of benefits and taxes on income distribution. The approach taken in the LIMEW is consistent with the suggestion made by the Canberra Group because the LIMEW intends to measure the total effect of government intervention on economic wellbeing (Wolff and Zacharias 2003).

The final difference stems from differences in the treatment of household production. The Canberra Group make a distinction between goods and services produced within the household for its own consumption. They recommend that only goods be included while services should be

¹¹ The Sarkozy Commission highlighted the need for a wealth imputation where a consumption value is derived for being able to live in one’s own home as opposed to a rented home. Two people who receive the same money income but one lives in his own house while the other person has to pay a monthly rent are not equally well-off *ceteris paribus*. This is incorporated in the LIMEW.

omitted because of valuation problems. The LIMEW does not differentiate between goods and services and believes that omitting services would almost be equivalent to omitting household production altogether because in a modern capitalistic economy, like the United States, most of household production consists of services (Wolff and Zacharias 2003).

Table 1: Comparing the LIMEW with other extended income measures

Levy Institute	Canberra Group
Household income	Household income
<i>Wages and salaries</i>	<i>Wages and salaries</i>
<i>Fringe benefits (e.g. employer provided health insurance)*</i>	<i>Fringe benefits*</i>
<i>Self-employment income</i>	<i>Self-employment income</i>
<i>Private pensions</i>	<i>Private pensions</i>
<i>Income from other private welfare funds (e.g. private disability income)</i>	<i>Income from other private welfare funds</i>
<i>Interpersonal transfers</i>	<i>Net Interpersonal transfers</i>
Annuity from (non-home) net worth*	Property-type income (e.g. dividends)
Rent from owner-occupied housing*	Rent from owner-occupied housing*
Government cash transfers	Government cash transfers
<i>Less:</i>	<i>Less:</i>
Income taxes*	Income taxes*
Payroll taxes*	Payroll taxes*
Property taxes on owner-occupied housing*	Property taxes on owner-occupied housing and automobiles*
Consumption taxes*	
<i>Plus:</i>	<i>Plus:</i>
Government noncash transfers*	Government noncash transfers*
Public expenditures allocated to households*	
Household production*	Household production (only goods produced for own-consumption and barter)*
<i>Equals:</i>	<i>Equals:</i>
Levy Institute Measure of Economic Wellbeing	C-G Adjusted Disposable Income
Notes: * indicates values that can only be imputed in income surveys. C-G Adjusted Disposable Income refers to one of the income definitions elaborated in Canberra Group (2001:18).	

Source: Wolff and Zacharias 2003

Now that I have described the concept of the LIMEW and how it compares to other major measure of extended income, I shall briefly describe the methodology behind its construction.

The LIMEW is the sum of the following components (see Table 2): base money income, income from wealth, net government expenditures (both cash and non-cash transfers and public

consumption, net of taxes), and household production. The following paragraphs will explain how each component is calculated.

Base money income is calculated by taking property income (interest, dividends and rents) and government cash transfers (such as Social Security benefits) out of MI. This means that the major portion of base money income consists of earnings and the remainder consists of pensions, interpersonal transfers, worker's compensation paid by the private sector and other small items (Wolff, Zacharias and Masterson 2009).

Then comes an imputed income from the household's wealth holdings. In the LIMEW, there is a distinction made between home wealth and other wealth. Benefits of owner-occupied housing (see footnote 10) are accounted for in terms of the replacement cost of the services derived from it (i.e., a rental equivalent). This method is consistent with the U.S. national accounts. The benefits from non-home wealth is computed using a lifetime annuity method. The annuity is calculated based on a given amount of wealth, an interest rate and life expectancy. The annuity is assumed to be the same for the remaining life of the householder and the terminal wealth is assumed to be zero¹². The LIMEW also accounts for differences in portfolio composition across households. This is done by using a weighted average of asset-specific and historic real rates of return where the weights are the proportions of the different assets in a household's total wealth (Wolff, Zacharias and Masterson 2009).

The third component is net government expenditures which is the difference between the taxes paid and the government expenditures received by the households. Government expenditures included in the LIMEW are cash transfers, non-cash transfers and public consumption. These expenditures are derived from the National Income and Product Accounts (NIPA). For non-cash transfers, the LIMEW method distributes the appropriate cost incurred by the government among the recipients of the transfer (Wolff, Zacharias and Masterson 2009).

¹² In the case of households with multiple adults, the maximum of the life expectancy of the head of household and spouse is used in the annuity formula

Unlike most other available measures, public consumption is included in the LIMEW. Certain public consumption items, like national defense, that do not increase the household's access to goods or services are excluded from the measurement. Such items generally form part of the social overhead and have no market substitutes. Expenditures such as transportation are attributed only in part to households because the business sector also avails this provision. Estimations are based on the household sector's usage of such government provisions, for example, the household sector's utilization of highways would be calculated using the miles driven on the highways by households. On the other hand, health expenditures are allocated fully to households. Education, water and sewerage are distributed on estimated patterns of utilization or consumption (like highways mentioned previously). Public health, fire and police are distributed equally among the households (Wolff, Zacharias and Masterson 2009).

The other part of net government expenditures is taxes. Only taxes paid directly by the households, such as federal and state personal income taxes, property taxes on owner-occupied housing, payroll taxes (employee portion) and consumption taxes, are included in the LIMEW. Business and corporate taxes are not part of the LIMEW since they are paid directly by the business sector. The LIMEW method aligns aggregate taxes (the same method is used for government transfers) in the March CPS with their National Income and Product Accounts (NIPA) counterparts (Wolff, Zacharias and Masterson 2009).

The fourth component of the LIMEW is household production and its imputation and concept was discussed in the previous section.

Table 2: Derivation of the LIMEW, 2010 (average values)

Derivation of LIMEW	Mean
Money Income (MI)	82,115
Less: Property income	325
Less: Government Cash Transfers	8,675
Equals: Base Income	73,115
Plus: Income from Wealth	30,757
Annuity from non-home wealth	22,228
Imputed rent on owner-occupied housing	8,529
Less: Taxes	22,474
Federal Income Taxes	11,475
State Income Taxes	2,802
Property Taxes	1,525
Payroll taxes	4,964
Consumption Taxes	1,708
Plus: Transfers	18,251
Equals: Comprehensive Disposable Income (CDI)	99,649
Plus: Public Consumption	20,173
Equals: Post Fiscal Income	119,822
Plus: Household Production	33,986
Plus: Employer Contribution to Health	4,399
Equals: LIMEW	158,207

Source: Authors' calculation based on the LIMEW microdata file.

Table 2 shows the derivation of the LIMEW and the mean values of all its components for all households in the United States in 2010.¹³ From the table we can see the disparity between the LIMEW (158,207 USD) and MI (82,115 USD) and all the factors of economic wellbeing that MI fails to capture.

¹³ See Wolff, Zacharias and Masterson (2012) for details regarding the construction of LIMEW files. Although the methodology for years after 2007 is not described there, the sources and methods are the same for the later years analyzed here too,

Employment

Since this paper explores the differences in economic wellbeing between employed and nonemployed single female-headed households, before going into the empirical analysis, I discuss how the reform of means-tested transfers have focused on encouraging employment among working-age adults. The arguments between proponents of differing ideological persuasions have generally been based on the premise of employment being good and most forms of government assistance (e.g. cash payments under the Temporary Assistance for Needy Families program) being bad for the wellbeing of working-age adults and their families. However, for the single female heads who do not have the benefits of partnership like a married couple household, there are costs to paid work. These costs include, amongst others, arranging for childcare or having to take care of household chores after work and this has not been taken seriously when it comes to policy formulation that aims to ameliorate their livelihood.

When we explore the literature, we find that Blank and Blinder (1986) have showed that many households, especially those headed by women and nonwhites have not been able to benefit from economic growth as much as other types of households (Albelda 1999). The expansion in the 1990s resulted in large reductions in welfare and poverty rates for single female heads did go down, but they still have the highest incidence of poverty when compared to married couple or single male-headed families.

Welfare reform swept the US in the 1990s under the Clinton administration, culminating in the repeal of Aid to Families with Dependent Children (AFDC) in the Federal Personal Responsibility and Work Opportunity Reconciliation Act of 1996. This act allowed states to define who is “needy” and established the creation of block grants with time limits. In a nutshell, “welfare to work” has come to define welfare reform. These policies intended to promote marriage and employment as a substitute for welfare. Old Age, Survivors, and Disability Insurance (OASDI), Unemployment Insurance (UI), and the former Aid to Families with Dependent Children (AFDC) share their origins in the 1935 Social Security Act which was also based upon the preservation of a “traditional” family comprised of a male breadwinner who is married to a woman who performs all the necessary unpaid work at home.

From the AFDC's work requirements¹⁴ (Page and Larner 1997), it can be seen that by the late 1960s, employment was seen as an important way to get women, especially black women, off welfare rolls. Since the 1990s, this changed even more as paid work became the main alternative due to the time-limited benefits. It was no longer a right to receive an income for taking care of your children.

Public policy insistence of getting single mothers to work means that a substantial share of these women often get a job in the low wage labor market. In the US, jobs in this sector typically have minimal flexibility and few "family-friendly" benefits (Albelda, Himmelweit and Humphries 2004). Welfare reform with employment conditions end up creating "work/family binds" in single female-headed households. I elaborate on this in the LIMEW analysis where we see that being engaged in paid work does not reduce household responsibilities for single female heads and this ends up being a "second shift" for them. This bind to juggle work and family results in uneven employment and volatile earnings for single female-headed households. It also means that these women have to leave children with relatives or foster care and that many such single female heads may have to settle for living arrangements that may not be the best for them or for their families (Albelda 2001). During the 1960s and 1970s feminist literature referred to the work/family bind as the "double day" and this was applicable mostly to white and colored working class women who needed to work to support their families. It is true that working mothers were more common in the 20th century than in the 1950s, but mothers in the United States have always held jobs or been engaged in income generating activities. There was only a short period of time after the WWII when men earned a family wage which was sufficient and their wives did not have to work. This was largely possible because of the unionization of the 1930s and the 1940s (Albelda 1999). When it comes to black women, Moynihan (1965) argued that the lack of opportunity for black men resulted in the need for black women to enter the labor force.

Women who move from welfare to employment often find themselves back on welfare because they usually participate in the low wage market and it is hard for them to be the sole breadwinner

of the family without public assistance or a kinship network. Blank (1995) and Smith (1984) both discuss that poor mothers take jobs that do not help to sustain families and if employment-bound welfare reforms continue it is not likely to improve. Spalter-Roth et al. (1995) and Harris (1993) used longitudinal data to document patterns of earnings and public assistance use of single mothers. They show that some women cycle between welfare and paid employment while others combine the two (Albelda 1999). Edin and Lein (1997) also show in their research that low income mothers with little or no male support slip in and out of employment and welfare. They also highlight that women with extensive labor force experiences still struggle to take care of their families and their low wages are not sufficient to pay regular bills. The jobs women find often do not allow them ample flexibility that is required to deal with the demands of families with children. Meyer and Cancian (1998) found that five years after women left receiving welfare, as many as 41 percent of them still remained in poverty.

Much of the previous work done in the 1960s and the 1970s is about the working poor and while it is useful, it does not cover the entire scope of the reality that encompasses single female heads with children because if they are employed, they are not only workers but also the primary caretakers of their children. This is why it is questionable if earnings can be substituted for public assistance for single female heads with significant care responsibilities.

Policies targeted at poor lone women in the United States were not guided by the needs of the women in this group but rather by judgments about them based upon which it was decided if they are worthy of public assistance or not. Welfare is no longer assumed to be an entitlement and the overall message for single female heads is that welfare is bad while marriage and employment are good. The most generous cash transfer programs in the United States are Social Security and unemployment insurance which are employment based. This means that those who had long spells of not being employed or earned low wages when they were employed and are not attached to someone with a better employment record, may receive very little or no support at all.

Households headed by women ceased to be an anomaly by the 1970's but policies have failed to catch up (Albelda 1999). The social welfare policies are still built on a model where there is one

breadwinner and one caretaker and it is assumed that these are not the same people. The breadwinner secures health benefits, pensions, Social Security, and unemployment insurance through continuous employment and ensures financial security for the household while the caretaker takes care of the household responsibilities. This model has been breaking down for all families and is specifically irrelevant when it comes to single female-headed households (Albeda 1999).

Much of the literature on welfare reform and welfare reform itself places a great deal of emphasis on employment often at the neglect of the impact on families. Success of policies is largely judged by looking at the reduction in the number of caseloads and the employment statistics among those who leave welfare. Child care is often seen as important but mostly as an ancillary support for women moving from welfare into employment. While employment remains one of the keys ways to improve the economic wellbeing of single female-headed households, looking solely at whether a single female head has a job or not is not enough to understand the complex structure of their lives. This will be made clearer in the next section that empirically analyzes and discusses the employment and economic wellbeing of single female-headed households.

EMPLOYMENT AND ECONOMIC WELLBEING: EMPIRICAL ANALYSIS

As we saw above, employment often imposes hardships on single female-headed households. But, it is also one of the key ways to gain access to resources in a capitalist economy. This raises the question regarding barriers encountered by single female heads in seeking employment. It also leads to questions about how much does current economic wellbeing differs between households with employed and nonemployed heads. Is obtaining whatever job that one can reasonably find a “one-size-fits-all” type of solution for single female heads? Are policies that target employment alone informed by an inadequate understanding of their lives?

We try to address these questions by first exploring the differences between the characteristics of the two groups in terms of their age or educational distribution, the number of people or children in their households and so on. Investigating the differences in their characteristics will help shed light on why one group is employed and the other is not. Then, we estimate the reservation wage

for the nonemployed group of single female heads to assess if insufficient wage could be a barrier for their employment.

We also want to understand how the economic wellbeing of the employed and the nonemployed single female-headed households are different in terms of their money income, the taxes the two groups are paying, the transfers they are receiving, their wealth, public consumption and household production. For this we shall turn to the LIMEW to assess the economic wellbeing of the two groups. Then, an Oaxaca Blinder decomposition (explained in the section on LIMEW analysis) will be done to assess the wellbeing gap between employed and the nonemployed single female-headed households to see the impact of college education, race, age and number of children in the household on overall wellbeing.

In our research we attempt to contribute to the existing literature by using the LIMEW to analyze the impact of employment on single female-headed households. We are using the LIMEW because we believe it is the most comprehensive measure of economic wellbeing. It is the best available measure for our research since it gives us insights into how economic wellbeing is affected by household production, public consumption, taxes, noncash transfers and wealth of single female-headed households. The LIMEW has not been previously used before for such an analysis and we aim to contribute this perspective through our research.

Employment and Earnings of Single Female Heads

When households are categorized based on type of family (married head with spouse present, single male head and single female head), the classification is broad enough for ample diversity to exist within a group. We assume single female-headed households are also a diverse group. To confirm our assumption, we dig deeper into the characteristics of the households within our group of interest. This will also help us understand the differences between the employed and the nonemployed households and to understand why one group is working and the other is not. We focus henceforth on heads between the ages of 25 and 64. Our source of data is the 2011 Annual Social and Economic Supplement (ASEC) of the Current Population Survey conducted

by the U.S. Bureau of Census (March CPS)¹⁵. We consider the head as employed if the person was employed during 2010 and as nonemployed otherwise.

Table 3: Marital Status of Single Female Heads

MARITAL STATUS	EMPLOYED %	NONEMPLOYED %
married, spouse absent	3.68	6.89
separated	8.38	11.68
divorced	37.36	27.31
widowed	7.4	10.07
never married/single	43.18	44.06

Source: Author's calculations

First we check the marital status of the two groups (Table 3). We see that the two groups are roughly similar in terms of the share of heads that were never married. The nonemployed group has a larger share of widowed, separated and married with spouse absent female heads in the nonemployed group. There are more divorced female heads in the employed group than in the nonemployed group.

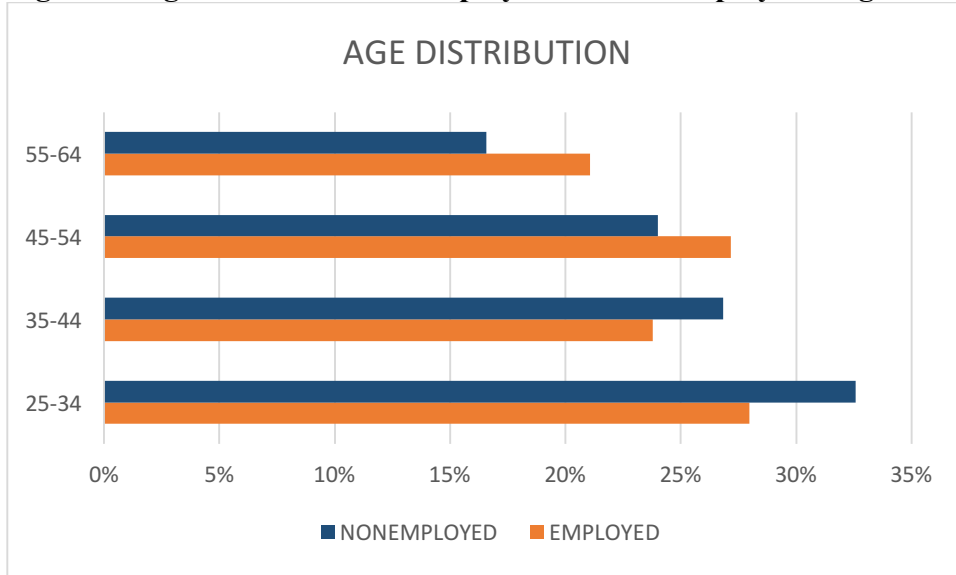
Table 4: Age Distribution of Single Female Heads

AGE GROUP	25-34	35-44	45-54	55-64
EMPLOYED	28%	24%	27%	21%
NONEMPLOYED	33%	27%	24%	17%

Source: Author's calculations

¹⁵ The characteristics of individuals such as age etc. are as of the time of the survey; income questions are for the previous year.

Figure 3: Age Distribution of Employed and Nonemployed Single female heads



Source: Author’s calculations

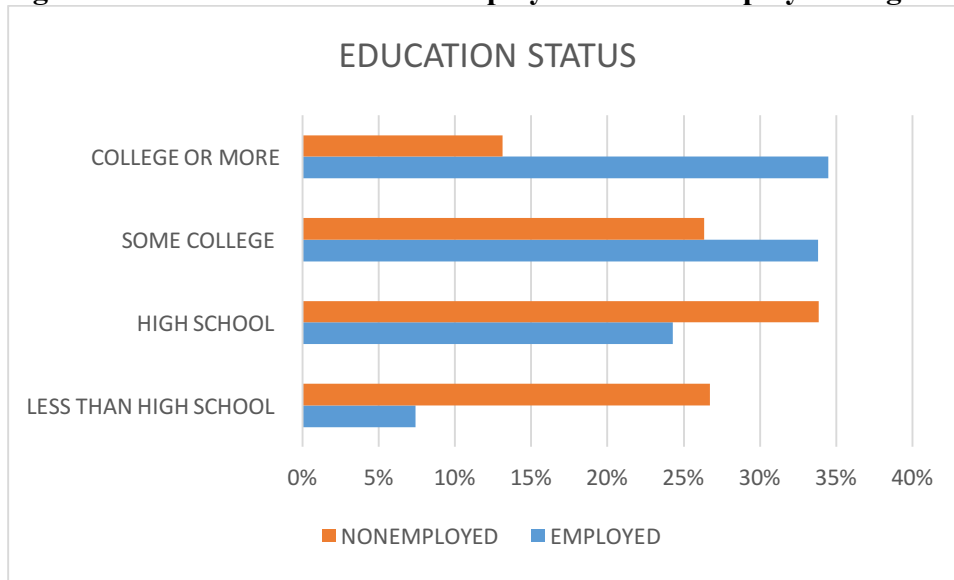
When we check the age distribution of the two groups (Table 4, Figure 3), we see that there is a greater percentage of employed women in the 45 to 64 group. More nonemployed single female heads in the 25 to 44 group.

Table 5: Educational Status of Single Female Heads

EMPLOYMENT STATUS	LESS THAN HIGH SCHOOL	HIGH SCHOOL	SOME COLLEGE	COLLEGE OR MORE
EMPLOYED	7%	24%	34%	34%
NONEMPLOYED	27%	34%	26%	13%

Source: Author’s calculations

Figure 4: Educational Status of Employed and Nonemployed Single female heads



Source: Author’s calculations

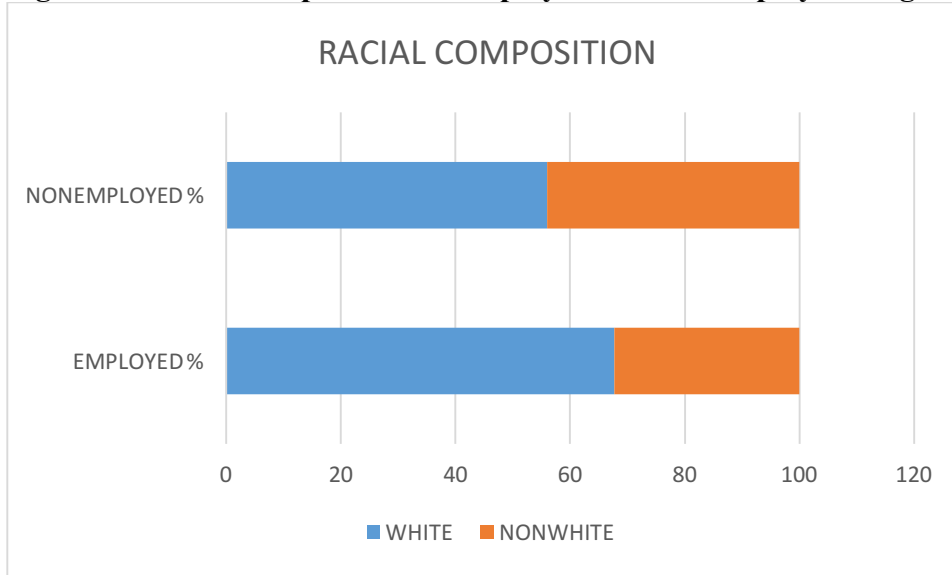
When we look at the education status of the employed and the nonemployed single female heads (Table 5, Figure 4), we see that there is a higher percentage of nonemployed female heads that have less than a high school diploma or only a high school diploma (7 percent of employed single female heads and 27 percent for nonemployed single female heads have less than a high school diploma and 24 percent of employed single female heads and 34 percent of nonemployed single female heads have only a high school diploma). The employed group has spent more years in formal education, which is obvious from the numbers in the table above. More employed single female heads have some college education, have completed college or have more advanced degrees. A higher education is likely to have given these women access to more and better jobs relative to the women in the nonemployed group.

Table 6: Racial Composition of Single Female Heads

RACE	EMPLOYED %	NONEMPLOYED %
WHITE	68	56
NONWHITE	32	44

Source: Author’s calculations

Figure 5: Racial Composition of Employed and Nonemployed Single female heads



Source: Author's calculations

Since race has historically played a role in employment trends in the United States, we check to see the racial composition of the two groups (Table 6, Figure 5). We find that there is a higher percentage of women who report being white (i.e., non-Hispanic white) in the employed group (68 percent) as opposed to the nonemployed group (56 percent).

Next we investigate the similarities or differences in the household size and composition of the two groups. In terms of household size, nearly 40 percent of households in both groups had only a single member, the head (Figure 6). The average size of employed and nonemployed households was, respectively 2.17 and 2.38. Turning to household composition, I found that a little over 60 percent of households in both groups had no children, defined as persons under the age of 18 (Figure 7). However, as shown in Figure 8, the presence of young children (persons under 6 years of age) was higher among the nonemployed than the employed households (19 versus 15 percent). The difference between the two groups is more noticeable when we consider the differences in the average number of children (0.63 for employed single female headed households and 0.80 for nonemployed single female headed households).

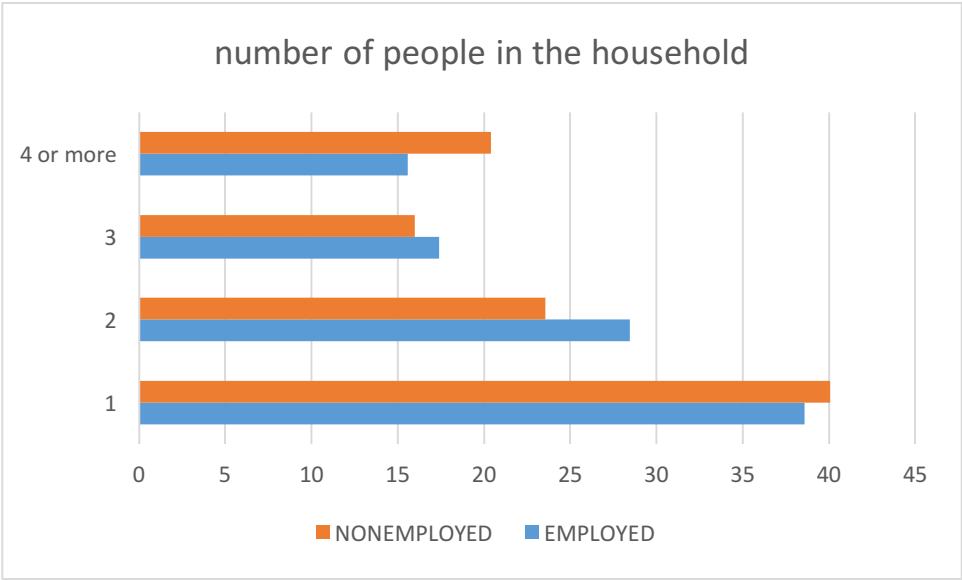
The greater average number of young children (0.17 for employed single female headed households and 0.29 for nonemployed single female headed households) and all children may be

indicative of the higher care responsibilities shouldered by the heads in nonemployed households.¹⁶ Jane Waldfogel (1997, 1998) measured the wage gap between mothers and other women to see the degree to which family responsibilities lower a woman's earnings. She found that even after controlling for education, work experience and hours of work, women with children make less than other women. Waldfogel called it the "pay penalty". She related it to lone mothers and argued that lone mothers are subject to a larger pay penalty than other women with children and this explained their high rates of poverty. Our study focuses on single female headed households and groups them into employed and nonemployed heads and we find that the nonemployed heads have higher child care responsibilities. This could be a very likely explanation for why these women are not working (graphs below).

A national survey of employees and their use of family and medical leave found that more than 20 percent of women who did not receive paid leave turned to welfare when they had a child (Albelda and Manuel 2000). The reforms that push for employment have led to more and more free or low-cost childcare providers joining the labor market. Childcare subsidies are often limited to one year after leaving welfare and finding childcare providers who are willing to take childcare subsidies has also become more difficult. This is compelling families to depend on younger care-givers who are often siblings or having no other option but to leave children unattended or take them to work. In many cases it also means that the single female head must remain nonemployed in order to take care of her young children.

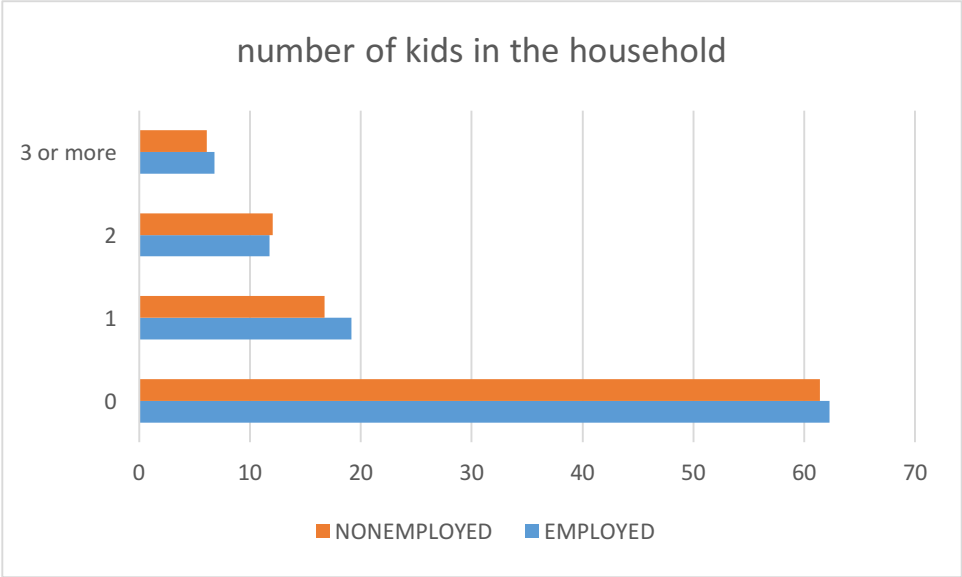
¹⁶ Apart from the presence of children, care responsibilities can also be affected by whether the children have any special needs (e.g. disability or sickness) and the presence of adults who need care. Unfortunately, there is not enough information in the survey regarding these aspects.

Figure 6: Number of people in the household of Employed and Nonemployed Single female heads in



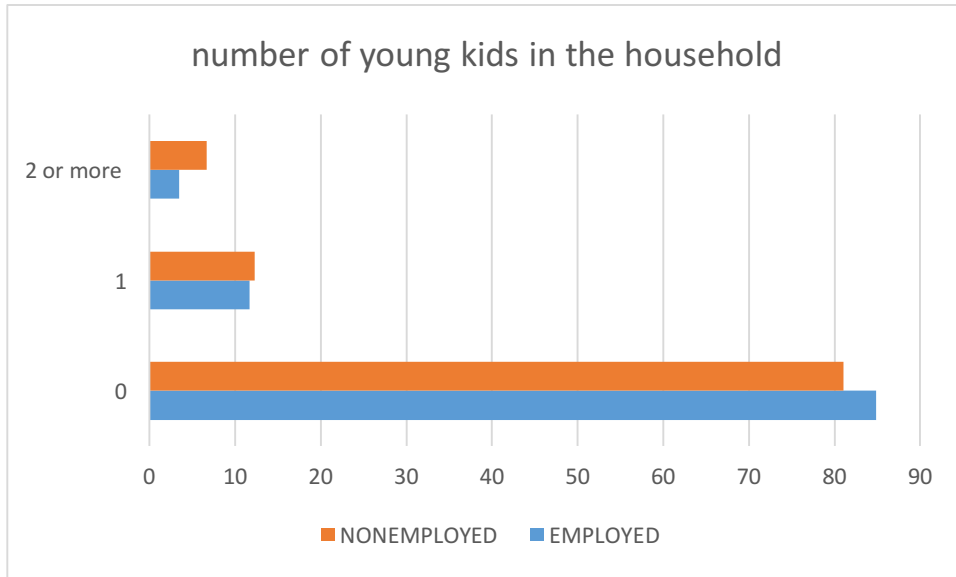
Source: Author’s calculations

Figure 7: Number of kids in the household of Employed and Nonemployed Single female heads



Source: Author’s calculations

Figure 8: Number of young kids in the household of Employed and Nonemployed Single female heads



Source: Author's calculations

From the discussion above, we can confirm our assumption that single female heads are indeed a diverse group of women with women from different marital status, age groups, races, educational status and so on. We also found that, in general, the nonemployed heads are less likely to be divorced, older, college-educated and white; they are also likely to shoulder greater responsibilities of household production.

Now we attempt to find the reservation wage for the nonemployed single female heads. I want to see if the nonemployed single female heads are not working because they have a higher reservation wage than the market wage. If that is the case, their nonparticipation can be explained by the unattractive pay they can hope to receive. As is well-known, standard OLS methods will fail in estimating the reservation wage because hours and wages are not observed for this group. If we group the nonemployed and employed persons together in an OLS regression with the wage as the dependent variable, the resulting parameter estimates will be biased. Neither can we reasonably infer the wage of the nonemployed by predicting their wage using the OLS equation estimated for the employed alone. This is due to the fact that when we

regress wages on the characteristics of those who are in employment, we are not observing the equation for the population as a whole. Those in employment will tend to have higher wages than those who are not and hence results will be biased. This is known as sample selection bias. We use Heckman’s Sample Selection Model because it overcomes the problem of sample selection bias.¹⁷

Table 7: Reason for Not Working Last Year for Employed and Nonemployed Single Female Heads

Reason for not working last year	Nonemployed Single female heads	Nonemployed men
Could not find work	12	18
Ill/ disabled ¹⁸	40	41
Taking care of home/ family	22	4
Going to School	11	10
Retired	13	24
Other	2	3
Total	100	100

Source: Author’s calculations

Before applying our model, we check to see why the nonemployed single female heads did not work in the previous year, i.e., 2010 (Table 7). We see that 40 percent report being ill or disabled, 22 percent report having to take care of their homes or families and 11 percent are going to school. When we compare this to the reasons reported by nonemployed men (between age 25 and 64), we see that only 4 percent report having to take care of their homes or families. These figures reinforce, if not confirm, the gendered responsibilities for care.

¹⁷ The model that I use is similar to the models described in Bishop et al (2009) and Blau and Kahn (2007)

¹⁸ We also see that a high proportion of these women report being ill/disabled. This group is left out of our model because no matter how buoyant the conditions of the labor market, they will not be able to work since they have a disability. They are also kept out of the descriptive statistics and the LIMEW analysis to keep our sample of interest consistent, but a high proportion of ill/disabled nonemployed single female heads has some serious implications when it comes to the medical benefits they receive from the government. This shall be discussed later in the LIMEW analysis.

Sample Preparation

To create the sample for estimating the reservation wage, we exclude women who are ill or disabled, going to school, retired and in the armed forces (using the WHYNWLY variable from ASEC). We define those as employed who report having one or more weeks of work during the preceding calendar year (using the variable WKSWORK2 from ASEC).

The dependent variable is hourly wage. It was generated by dividing total annual income from earnings (adding income from wages, income from business and farm income) by total annual hours worked (usual hours worked last year multiplied by weeks worked last year).

Dependent variables used in the estimation are education, race, age, age squared, regional variables, metropolitan, number of kids, the presence of children under the age of 6, asset income of the single female head (income from dividends, rent and interest), total household income excluding the single female head's income and number of people in the household minus the head.

Estimation method

The Heckman selection model is a two equation model. First, there is the regression model:

$$y = v\beta + u_1$$

And second, there is the selection model:

$$z\gamma + u_2 > 0$$

where the following holds,

$$u \sim N(0, \sigma)$$

$$u \sim N(0, 1)$$

$$\text{corr}(u_1, u_2) = \rho$$

Results

Table 8: Results from Heckman Selection Model for Single Female Heads

hourly wage	Coefficients	Std. Error	z value	P>z	95% Conf.	Int
wage equation						
<i>less than high school</i>	-6.044	3.044	-1.990	0.047	-12.009	-0.078
<i>high school</i>	-11.307	1.445	-7.820	0.000	-14.139	-8.474
<i>some college</i>	-9.500	1.022	-9.300	0.000	-11.502	-7.497
<i>age</i>	1.321	0.280	4.710	0.000	0.772	1.871
<i>age squared</i>	-0.013	0.003	-4.170	0.000	-0.020	-0.007
<i>nonwhite</i>	-2.299	0.836	-2.750	0.006	-3.937	-0.660
<i>new england</i>	-4.491	1.554	-2.890	0.004	-7.537	-1.444
<i>mid atlantic</i>	-2.341	1.565	-1.500	0.135	-5.409	0.727
<i>east north central</i>	-5.382	1.475	-3.650	0.000	-8.273	-2.492
<i>west north central</i>	-6.702	1.552	-4.320	0.000	-9.744	-3.660
<i>south atlantic</i>	-3.128	1.291	-2.420	0.015	-5.659	-0.598
<i>east south central</i>	-6.837	1.877	-3.640	0.000	-10.516	-3.159
<i>west south central</i>	-5.509	1.691	-3.260	0.001	-8.823	-2.195
<i>mountain division</i>	-4.426	1.648	-2.680	0.007	-7.656	-1.195
<i>pacific division</i>	0.000	(omitted)				
<i>not in metropolitan</i>	-4.374	0.976	-4.480	0.000	-6.287	-2.460
<i>constant</i>	3.585	6.044	0.590	0.553	-8.261	15.431
select equation						
<i>number of kids</i>	-0.065	0.030	-2.150	0.031	-0.124	-0.006
<i>dummy for young kids</i>	-0.204	0.054	-3.760	0.000	-0.310	-0.097
<i>asset income</i>	0.000	0.000	-1.450	0.146	0.000	0.000
<i>household total income minus head's income</i>	0.000	0.000	-0.090	0.928	0.000	0.000
<i>number of people in household minus head</i>	-0.049	0.025	-1.960	0.050	-0.098	0.000
<i>less than high school</i>	-1.051	0.067	15.580	0.000	-1.183	-0.918
<i>high school</i>	-0.580	0.051	11.270	0.000	-0.681	-0.479
<i>some college</i>	-0.313	0.051	-6.130	0.000	-0.413	-0.213
<i>age</i>	0.005	0.014	0.340	0.732	-0.023	0.033
<i>age squared</i>	0.000	0.000	-0.330	0.742	0.000	0.000
<i>nonwhite</i>	-0.096	0.038	-2.500	0.012	-0.171	-0.021

<i>new england</i>	0.074	0.077	0.960	0.335	-0.076	0.224
<i>mid atlantic</i>	-0.043	0.074	-0.580	0.559	-0.188	0.102
<i>east north central</i>	0.029	0.070	0.410	0.682	-0.109	0.166
<i>west north central</i>	0.304	0.079	3.840	0.000	0.149	0.459
<i>south atlantic</i>	0.014	0.062	0.230	0.819	-0.107	0.135
<i>east south central</i>	0.018	0.087	0.210	0.833	-0.152	0.188
<i>west south central</i>	0.094	0.081	1.150	0.248	-0.066	0.254
<i>mountain division</i>	0.079	0.081	0.980	0.328	-0.079	0.238
<i>pacific division</i>	0.000	(omitted)				
<i>not in metropolitan</i>	0.028	0.047	0.600	0.550	-0.064	0.121
<i>constant</i>	1.764	0.306	5.760	0.000	1.164	2.365
mills						
lambda	-9.477	6.819	-1.390	0.165	-22.842	3.889
rho	-0.264					
sigma	35.845					

Source: Author's calculations

predicted wage	Observations	Mean	Standard Deviation	Minimum	Maximum
for nonemployed single female heads	996	17.38	6.33	0.87	35.73

Source: Author's calculations

The identification in the wage equation is made possible by the exclusion of children variables such as *number of kids* and the *dummy for young kids* in this equation. From the wage equation we find that the wages of single female heads reflect a premium for college degrees relative to other levels of educational attainment. Surprisingly, the results indicate that the penalty for having a high school diploma or some college education is larger than having less than high school education. Age seems to have a positive effect on wages while being nonwhite and not living outside a metropolitan area carried a wage penalty. The selection equation shows the negative impact of children (both kids and young kids) on single female heads being selected into the equation. Asset income seems to be negligible for this group.

We find that the average reservation wage for nonemployed single female heads is approximately 17.38 dollars per hour. The parameter estimates from the selection equation suggests that the number of kids and the number of young kids negatively affect the selection into the labor market. It is notable that the reservation wage is 16% *lower* than the average wage of employed single female heads in 2010 (the employed have an hourly wage of approximately 20.63 dollars per hour). This suggests that, on the average, the reason for nonemployment is not the expectation of a higher hourly wage than the wage that can be earned under the current labor market conditions.

A number of circumstances may help explain why employable people remain nonemployed in spite of being willing to accept a wage that is lower than the wage earned by those similar to them. First, there may be an overall shortage of jobs related to deficient aggregate demand. This was indeed true in 2010 as it was the year with the highest unemployment rate (9.6 percent) since the Great Recession.¹⁹ In addition, specific disadvantages faced by the group of single female heads excluded from employment also could be at work, i.e., they are proportionately more nonwhite and less college-educated. It has been widely documented that minorities and those without a college education was hit especially hard during the Great Recession (e.g., Hout and Cumberworth 2012).

We should also consider that for some of the nonemployed individuals entering employment may mean losses in government benefits. This is the well-known phenomenon of “poverty-trap.” Housing and medical benefits are quite important in this context (e.g. Danziger et al.2002). For example, lack of availability of adequate medical benefits is often a defining feature of low-wage employment. For those who need medical care for themselves or their dependents, the prospect of losing government medical benefits act as a barrier to employment. Similar considerations also apply to housing.

We already discussed the negative influence of the variables in our model (number of children and presence of young children in the household) reflecting care responsibilities on the

¹⁹ The unemployment rate reported here is the standard definition used by the Bureau of Labor Statistics: annual average of seasonally unadjusted monthly rates (Series LNU04000000).

probability of being employed. However, it should be noted that these variables cannot capture the whole picture regarding care responsibilities in many instances (e.g. presence of adults or children requiring care). Since our source of data (ASEC) does not contain the requisite information, we were unable to specify our model adequately to capture the multiple constraints that caring responsibilities impose on women's employment prospects.

There are also potentially other unobserved characteristics of the individual that prevents her from acquiring a suitable (i.e., suitable on the basis of observed characteristics) and available job. Lack of adequate transportation and the resulting spatial mismatch between job seekers and jobs has often been cited as an important barrier for low-income women (e.g. Blumenberg 2004).

LIMEW Analysis

We have shown that some single female heads were not employed even though their reservation wage was lower than the market wage earned by similar employed individuals in 2010. In discussing the implications of this finding, we highlighted several barriers to women's employment. Some of the barriers in question relate to factors that are not reflected in the money income of individuals and households (e.g. government noncash transfers and household production). This raises the following question: how does the economic wellbeing of the nonemployed single female heads compare to that of the employed heads? To answer this question, I turn to the LIMEW because money income will not convey the difference between the two groups.

In conducting this exercise, I look at four years – 2004, 2007, 2010 and 2013 for identifying recent trends, but concentrate only on 2010 when investigating deeper trends and characteristics of the employed and nonemployed groups.²⁰ Households headed by elderly (65 years or older) single females are excluded from this study because they would distort the comparisons based on employment status. The vast majority of elderly single female heads are nonemployed, although the employment rate among them has increased slightly between 2004 and 2007 from 12 to 14

²⁰ The patterns are approximately the same for all the years studied here and hence focusing on a single year may not compromise my findings. The reason for choosing 2010 rather than 2013 is that the latter year had a smaller sample size due to changes in ASEC survey methods.

percent. Including them in the analysis would drastically alter the composition of the nonemployed group and render the interpretation of the findings harder. Single female heads below 25 years of age, and those who report being ill/disabled, in school or retired are also excluded from the analysis to keep the LIMEW analysis consistent with the Heckman Selection Model.

Table 9: Trends in economic wellbeing of single female-headed households by measure, 2004 to 2013 (2013 dollars)

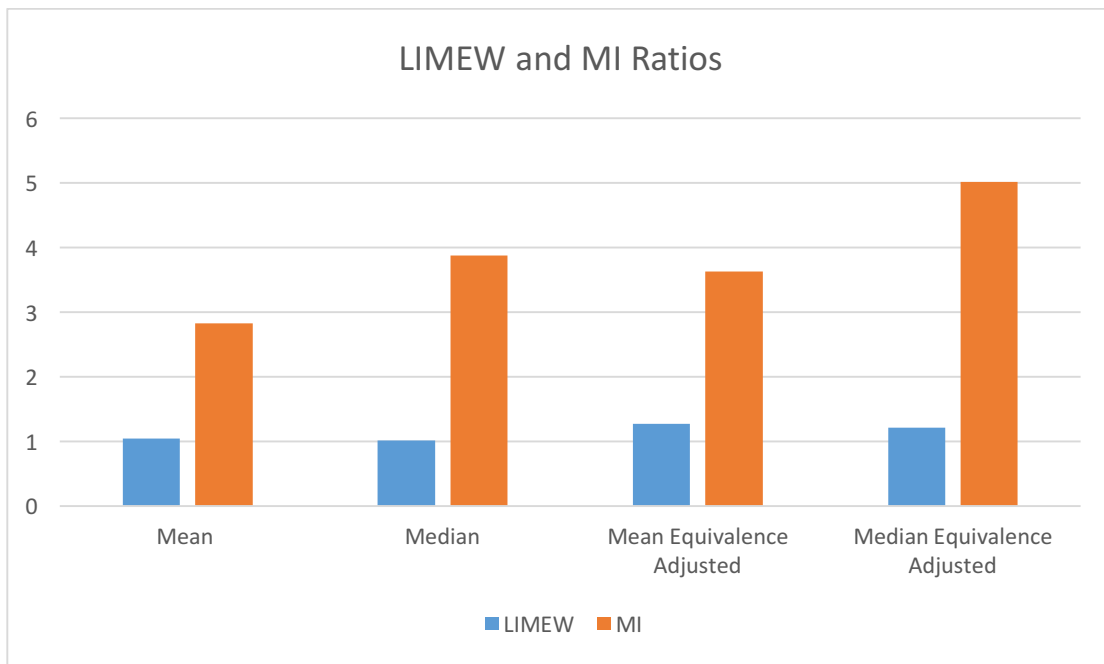
	Employed				Nonemployed			
	2004	2007	2010	2013	2004	2007	2010	2013
Average values								
MI	56,504	58,691	56,904	56,244	18,309	19,436	20,123	22,339
LIMEW	85,691	88,306	89,445	88,249	85,050	84,855	86,038	90,342
Equivalent MI	89,586	92,605	84,146	87,971	22,683	23,885	23,166	25,628
Equivalent LIMEW	125,259	128,327	120,117	125,928	85,050	99,993	94,508	101,753
Median values								
MI	44,397	46,066	43,710	44,221	8,879	9,438	11,267	11,039
LIMEW	71,601	73,101	75,400	74,373	74,111	77,120	74,365	81,899
Equivalent MI	70,365	72,572	64,302	67,206	10,851	12,000	12,821	13,552
Equivalent LIMEW	108,227	109,482	103,929	107,743	92,461	95,601	85,882	95,097

Source: Author's calculations

To understand the difference between using LIMEW and money income (MI) as a measure of economic wellbeing, we first compare the mean and median values of the LIMEW and money income for single female-headed households who are employed (Table 9). The picture of economic wellbeing is substantially different in the two measures. First, the average and median values of LIMEW are higher than their MI counterparts in all four years. This should not be surprising because LIMEW includes components of wellbeing (e.g. value of noncash

government transfers) that are not included in MI. However, the size of the difference is quite noteworthy. For example, the median MI for the employed was only 58 percent of median LIMEW in 2010. Second, the year-to-year changes in the two measures can be in opposite directions. Once again, the median values of LIMEW and MI for the employed can illustrate this aspect. Median MI fell while median LIMEW rose between 2007 and 2010 for the employed single female heads. On the other hand, median MI rose and median LIMEW fell between 2010 and 2013 for the employed heads. In light of our earlier discussion of the two measures, such differences are not unlikely. Year-to-year change in MI primarily reflects change in money earnings. The change in LIMEW is more complex and reflects the balance of the sometimes opposing movements in its different components. Thirdly, and perhaps most importantly for my purposes here, is how the measured disparity between the two groups is strikingly different between the MI and LIMEW measures.

Figure 9: LIMEW and Money Income Ratios of Single Female Headed Households in 2010



Source: Author's calculations

The difference between the two groups in the LIMEW is much smaller than the difference in MI. While this finding can be seen in Table 9, it can be observed more readily if we consider the ratio of the level of well-being of the employed to that of the nonemployed. The ratios calculated from

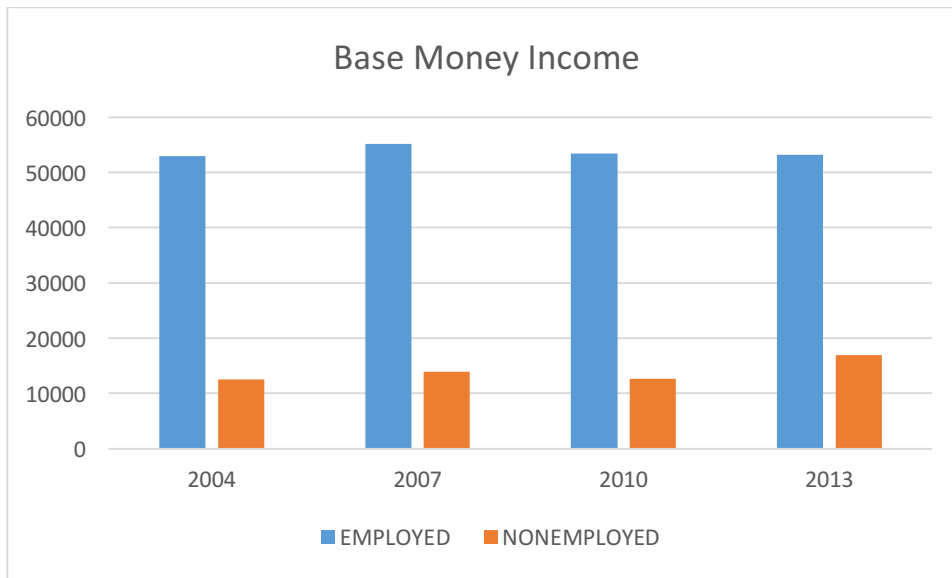
Table 9 are shown in Figure 9. While the average LIMEW of the employed single female-headed households is only 4% higher than the nonemployed single female-headed households in 2010, the average money income is 183% higher for the employed group than the nonemployed group. Similar patterns can be observed for the mean values of LIMEW and MI for the other years as well. Turning to the median values, we see that, in 2010, the median MI for the employed single female heads is 288% higher than median MI for the nonemployed single female heads while the median LIMEW is only 1% higher. Comparing the two measures after adjusting for differences in household size and composition by means of an equivalence scale does not alter the basic finding. For example, the mean value of the equivalence scale adjusted MI for the employed is 263% higher for the employed single female heads while the equivalence adjusted LIMEW is only 27% higher. The much smaller disparity in LIMEW is robust since the trend remains the same whether mean, median or equivalized measures are used. The difference in LIMEW values is less because of the different components that make up the LIMEW such as taxes, transfers, household production, public consumption and a different treatment of wealth that is incorporated in the LIMEW as opposed to simplistic money income measures.

Both MI and LIMEW include base money income (mainly consisting of earnings) and cash transfers. Therefore, these components are not, at a conceptual level, pertinent to explaining why the measured disparity between the two groups is much smaller in the LIMEW than in MI. We must turn to a closer examination of the other components of wellbeing to understand why the gap between the two groups in the LIMEW is small. I will examine the difference in the average values of LIMEW for the two groups because, unlike the median, the difference in the average values can be disaggregated into differences in the average values of the components (e.g. the difference in government transfers can be broken down to differences in its components such as Social Security, Medicaid etc.).

I first consider two components that go in favor of the employed. As we pointed out before, base money income consists mainly of earnings. But, it can also include some other types of money income that are neither government cash transfers nor property income, e.g. alimony. The average base money income is not zero for nonemployed households because household members other than the head are employed in some households. But, as we would expect, the

average base money income of the nonemployed households was much smaller compared to the employed. In 2010, it was less than one-fourth while it was slightly higher in the other years (Figure 10). The bulk of the base money income accruing to the employed households was from the earnings of the head; the latter accounted, on the average, for 77 percent of household base money income in 2010.

Figure 10: Base Money Income of Employed and Nonemployed Single Female-Headed Households (average values in 2013 dollars)



Source: Author's calculations

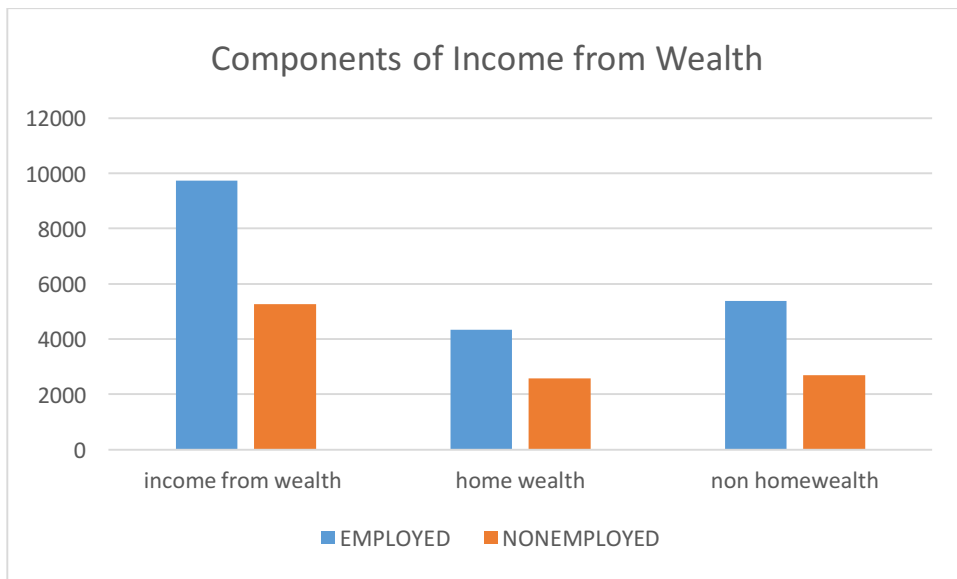
The employed also have a higher average income from wealth (Figure 11). As discussed before, income from wealth in LIMEW is measured as the sum of the annuitized value of nonhome wealth and imputed rent on owner-occupied homes. In 2010, income from nonhome wealth has contributed more than income from home wealth to the gap in income from wealth between the employed and nonemployed single female heads (Figure 12).

Figure 11: Income from Wealth of Employed and Nonemployed Single Female-Headed Households (average values in 2013 dollars)



Source: Author's calculations

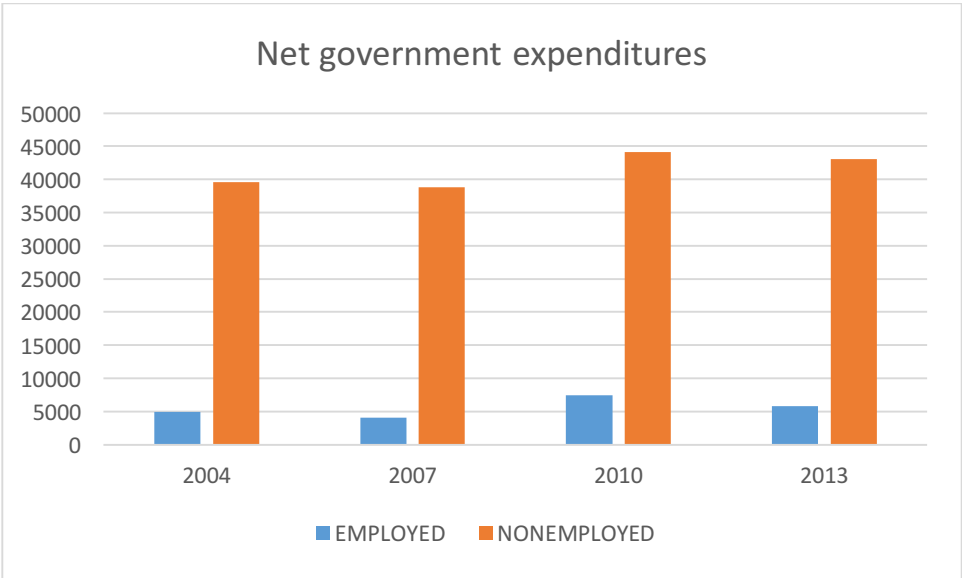
Figure 12: Components of Income from Wealth of Employed and Nonemployed Single Female-Headed Households (average values in 2013 dollars) in 2010



Source: Author's calculations

I now turn to components that go in favor of the nonemployed: net government expenditures and value of household production. Net government expenditures reflect the difference between government expenditures for households and tax payments by households. As shown in Figure 13, average net government expenditures for the nonemployed are *several times* higher than that for employed households.

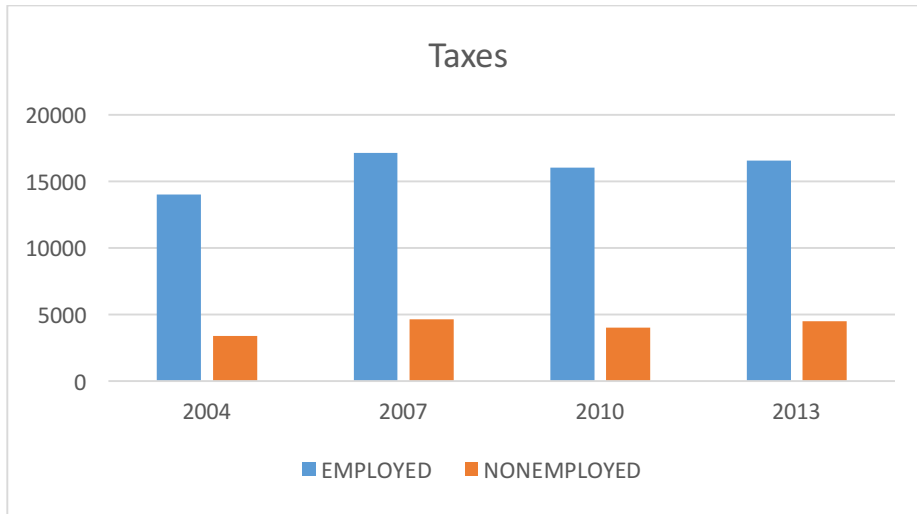
Figure 13: Net Government Expenditures of Employed and Nonemployed Single Female-Headed Households (average values in 2013 dollars)



Source: Author’s calculations

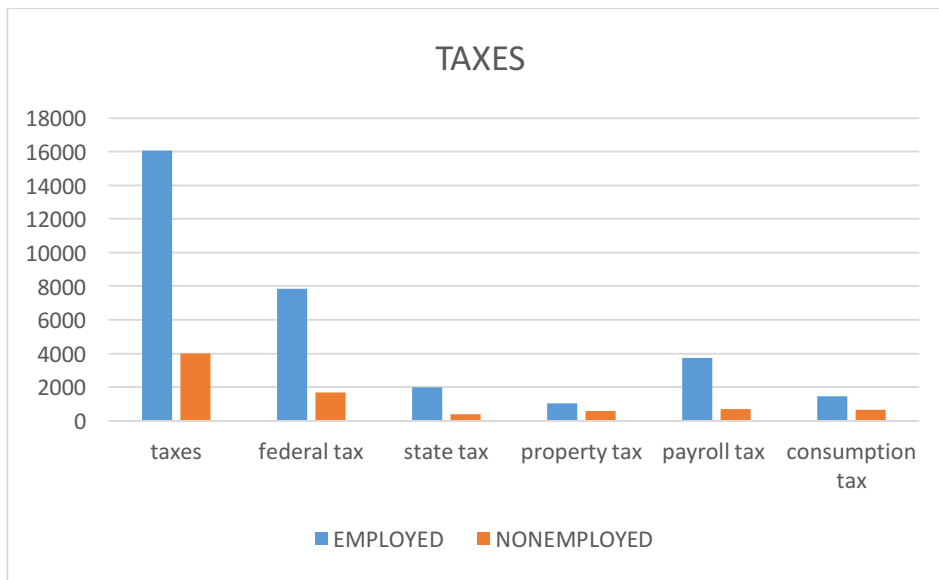
To understand the difference better, I examine the payment side of the ledger first. Here, as one would expect, the average amount is much higher for employed households (Figure 14). The composition of taxes also differs between the two groups. Income (61 percent) and payroll taxes (23 percent) constitute the bulk of the taxes paid by the employed in 2010. In contrast, the nonemployed are paying only 25 percent of the taxes paid by the employed single female-headed households. Their taxes are comprised of 52 percent income taxes, 18 percent payroll taxes, 14 percent property taxes and 16 percent consumption taxes.

Figure 14: Taxes Paid by Employed and Nonemployed Single Female-Headed Households (average values in 2013 dollars)



Source: Author's calculations

Figure 15: Components of Taxes Paid by Employed and Nonemployed Single Female-Headed Households (average values in 2013 dollars) in 2010



Source: Author's calculations

Next, I consider the expenditure side of the ledger, i.e. government expenditures for households. We observe that the average amount of transfers received by the nonemployed is considerably higher than the employed (Figure 16). Transfers consist of cash and noncash transfers - both of

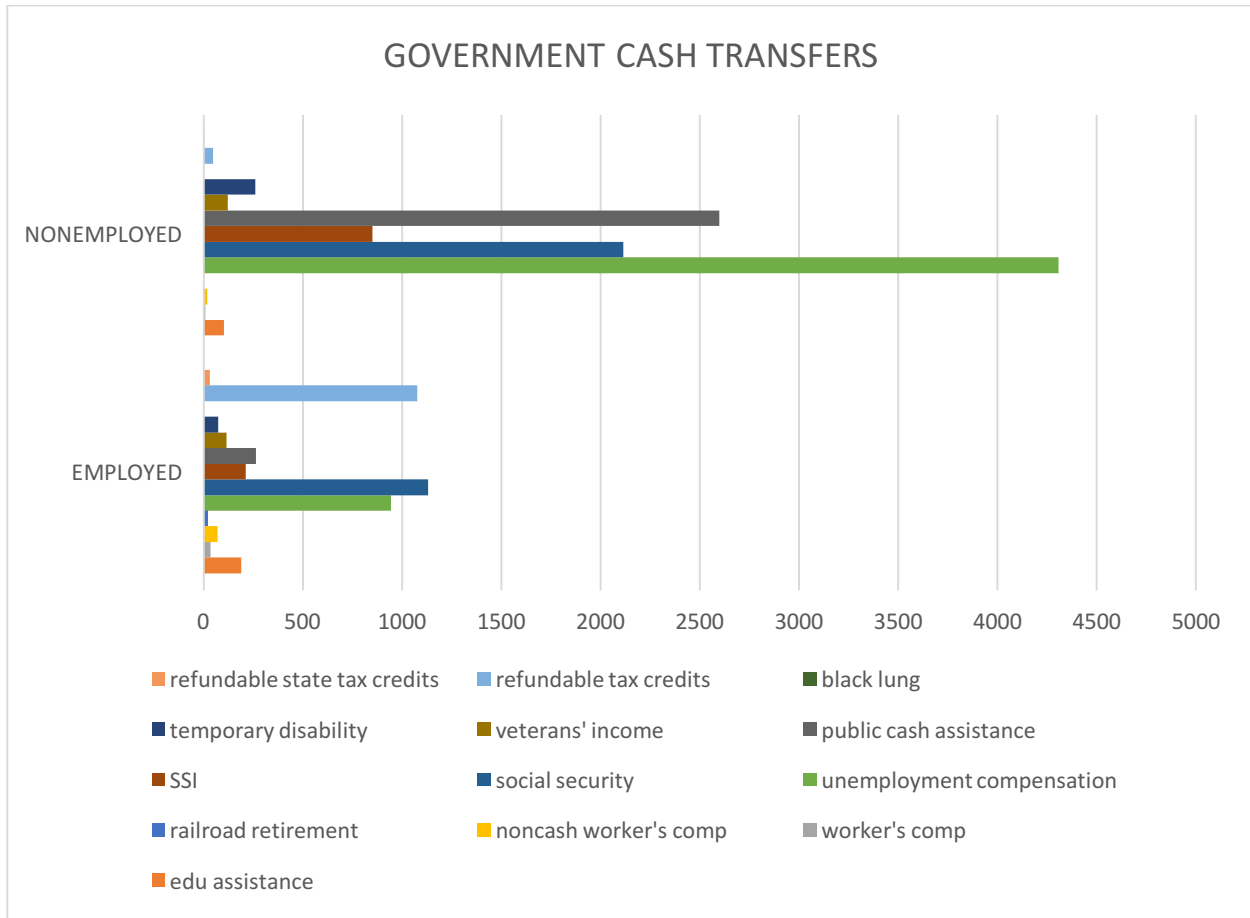
which are higher for nonemployed single female-headed households. The composition of the transfers will become clearer when we look at the components of cash and noncash transfers for the two groups.

Figure 16: Transfers Received by Employed and Nonemployed Single Female-Headed Households (average values in 2013 dollars)



Source: Author's calculations

Figure 17: Components of Government Cash Transfers Received by Employed and Nonemployed Single Female-Headed Households (average values in 2013 dollars) in 2010



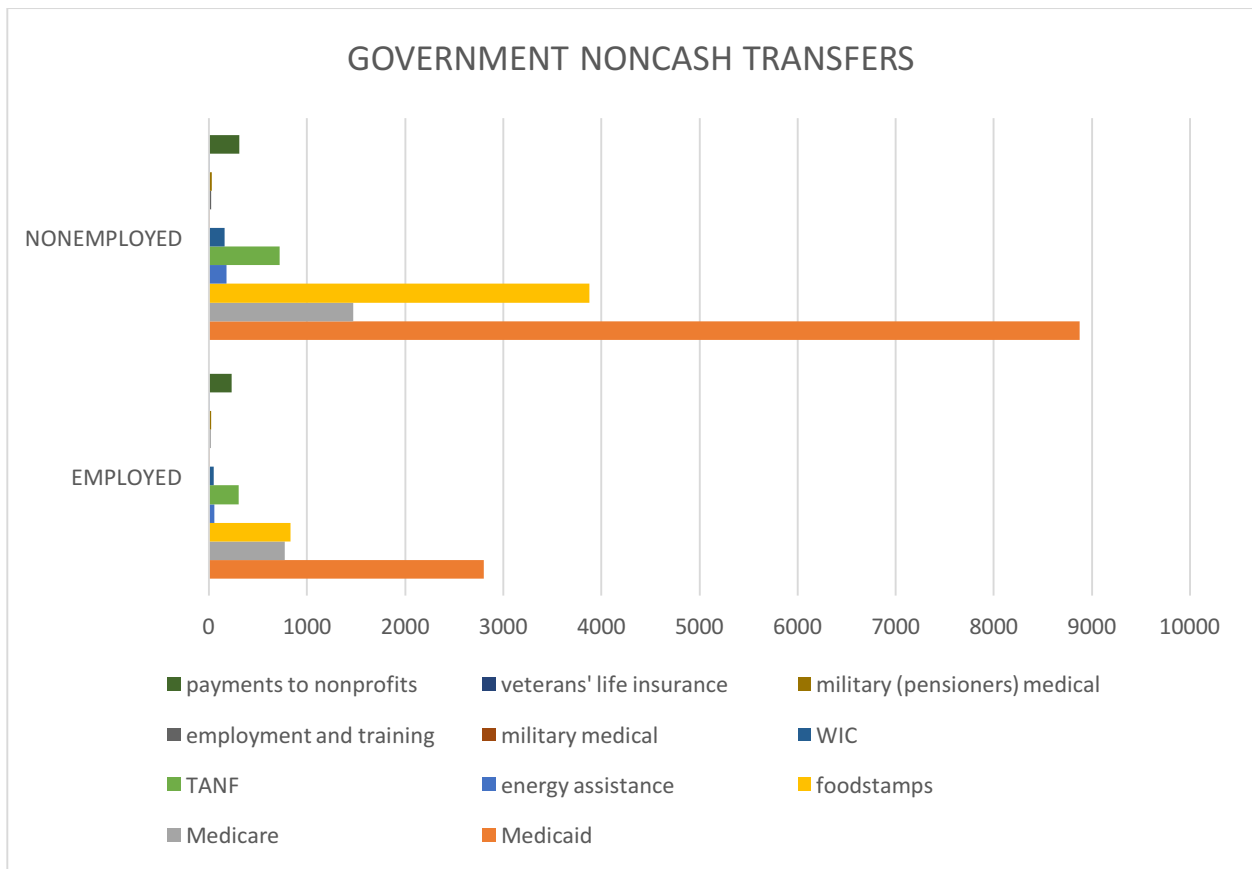
Source: Author’s calculations

Although some may think that the cash transfers are higher because of the “welfare” received by the nonemployed single female heads, this is far from the truth. A disaggregation of cash transfers can show us why (Figure 17). Roughly two thirds of the cash transfers received by the nonemployed in 2010 consisted of unemployment compensation (41 percent of the total) and Social Security (25 percent).²¹ In other words, the major portion of the cash transfers received

²¹ The higher average value of Social Security received by the nonemployed is largely a reflection of the higher proportion of individuals aged 62 (the earliest one could be eligible for the program in 2010) and over and widows living in their households compared to the proportions of similar individuals in employed households. Individuals that were 62 and older made up 30 and 14 percent, respectively, of the people living in nonemployed and employed households in 2010. Similarly, widows constituted 10.07 and 7.4 percent, respectively, of all women older than 25 years living in nonemployed and employed households.

by the nonemployed was *not* means-tested benefits, but entitlements that are available to the covered population, irrespective of their income. Public cash assistance or “welfare” was only one fourth of the cash transfers received by the nonemployed heads in 2010. The next biggest item was Supplemental Social Security (SSI). Limited means is necessary but not sufficient to receive this benefit.²² To be eligible, the person should be older than 65, disabled or blind—attributes that are not in the domain of “choice” of individuals. In comparison, the make-up of cash transfers among the employed households were as follows: the largest component in 2010 for employed households was Social Security (27 percent) followed by refundable tax credits (26 percent) and unemployment compensation (23 percent).

Figure 18: Components of Government Noncash Transfers Received by Employed and Nonemployed Single Female-Headed Households (average values in 2013 dollars) in 2010



Source: Author’s calculations

²² See <https://www.ssa.gov/ssi/text-eligibility-ussi.htm>. (Accessed on 4/21/2017).

Next, let us consider noncash transfers. Just as with cash transfers, the average amount received by the nonemployed is substantially higher than the employed (Figure 18).

Examining the composition of noncash transfers raises some interesting questions about the treatment of health care in the measurement of economic wellbeing since the bulk of noncash transfers consist of Medicaid—a means-tested government medical benefits program—for both groups (Figure). Medicaid was 55 percent and Medicare was 15 percent of total noncash transfers for the employed single female-headed household. The figures were 57 percent and 9 percent respectively for nonemployed single female-headed households. In the LIMEW, government medical benefits are valued at their insurance value. The logic here is that the medical expenditures incurred by the government enhance the individual's command over products—in this case access to health care--- and hence an appropriate monetary value should be assigned to that benefit. Medicare and Medicaid participants are assigned an insurance value for the medical benefits they receive. In the case of Medicaid, there are four risk classes: children under 18, nonelderly adults (18 to 64 years old), elderly (65 and older), and blind and disabled. The insurance value for each class is differentiated across states.²³ In a similar vein, the employer contributions to health insurance premiums are included in the LIMEW of the households.

Given the peculiar nature of healthcare provisioning in the U.S. (compared to other developed countries) and the relatively large value of medical benefits for nonemployed households, it is useful to see how much difference the inclusion of the value of medical benefits makes for the measured disparity between the employed and nonemployed households. I conducted the sensitivity analysis by excluding the value of employer provided health insurance, Medicare and Medicaid from the LIMEW of the single female-headed households. The resulting estimates for 2010 show that the ratio of the average LIMEW of the employed to nonemployed households is 110 percent, compared to 104 percent when the value of medical benefits are included. While this is a sizeable increase in the measured disparity between the two groups, it is important to

²³ The insurance values are provided by the Census Bureau and are available in the public-use microdata files.

note that the extent in the disparity is still a lot lower than the disparity in average money income (283 percent in 2010).

Table 10: Medicare and Medicaid Coverage of Employed and Nonemployed Single Female Headed Households

COVERAGE LAST YEAR	EMPLOYED %	NONEMPLOYED %
MEDICARE	1.39	9.15
MEDICAID	8.97	44.57

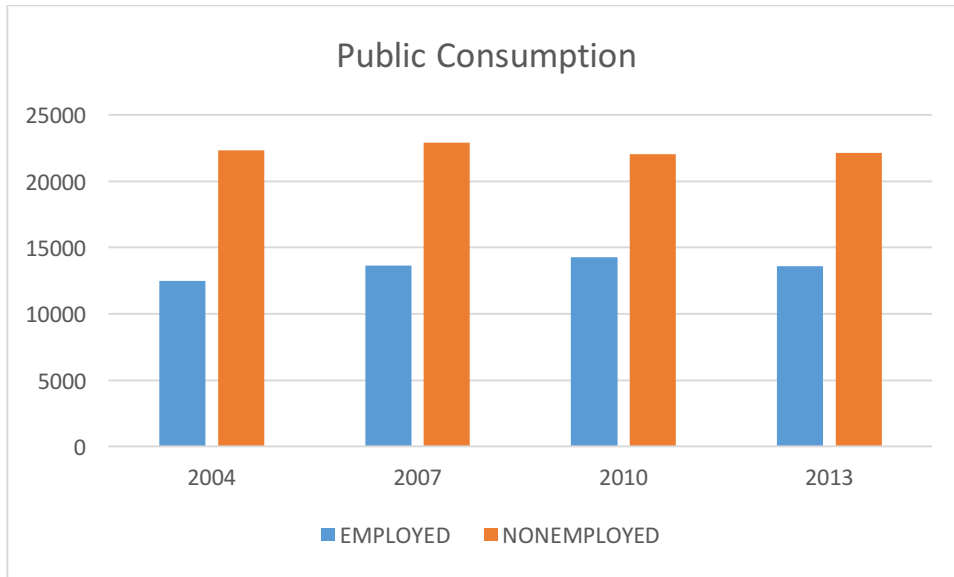
Source: Author’s calculations

When we check the Medicare and Medicaid coverage of the two groups in 2010 (Table 10), we see that 1.39 percent of employed single female-headed households report having Medicare and 9.15 percent of nonemployed single female-headed households report having Medicare. Medicaid coverage is much higher, as expected, (44.57 percent as opposed to 8.97 percent for employed single female heads) for nonemployed single female-headed households.

“Leaver” studies that research women leaving welfare is particularly relevant here. They show that single female heads are often employed in low paid jobs with no health care benefits or sick days, and have little or no vacation time. They do not stay employed for very long and move in and out of employment because of the time limits on welfare grants. (Wendell Primus, Lynette Rawlings, Kathy Larin and Kathryn Porter 1999; Gregory Acs and Pamela Loprest 2000). Such families have more income from earnings when they are employed as opposed to when they are on welfare but they receive less public assistance because they have lost welfare and food stamps (and in some cases WIC and Medicaid). Loss of public assistance is supplemented by an increase in earnings and tax credits but the average “leaver” family finds itself in roughly the same income level as they were when receiving welfare. These results have been observed in the best economic expansions. Therefore, this is the best that we can expect given the current welfare system.

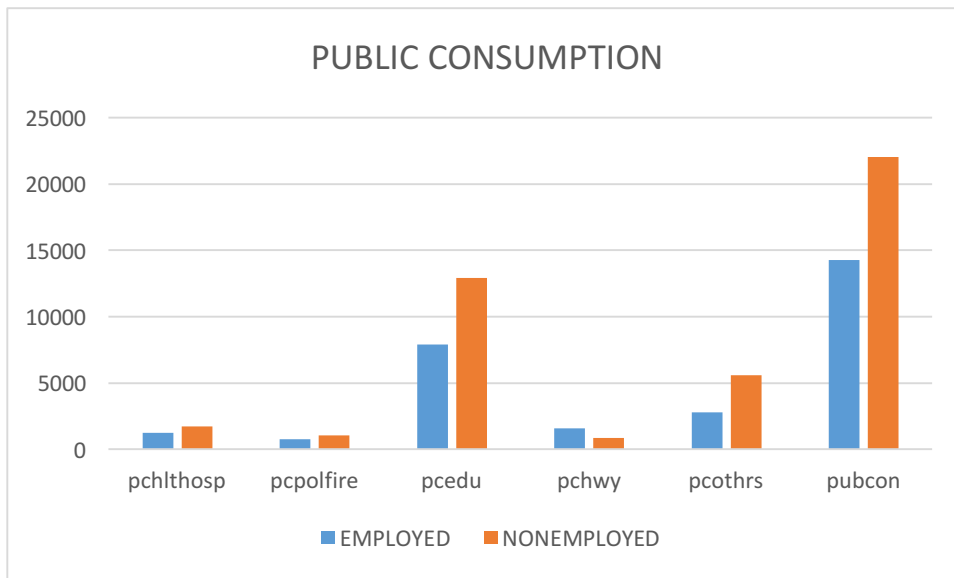
Continuing with the expenditure side of the ledger in the LIMEW analysis, I now discuss disparities in the other major category of government expenditures for households, namely, public consumption. Unlike transfers, the disparity in public consumption between the two groups is not too large (Figure 19).

Figure 19: Public Consumption of Employed and Nonemployed Single Female-Headed Households (average values in 2013 dollars)



Source: Author's calculations

Figure 20: Components of Public Consumption of Employed and Nonemployed Single Female-Headed Households (average values in 2013 dollars) in 2010²⁴



Source: Author's calculations

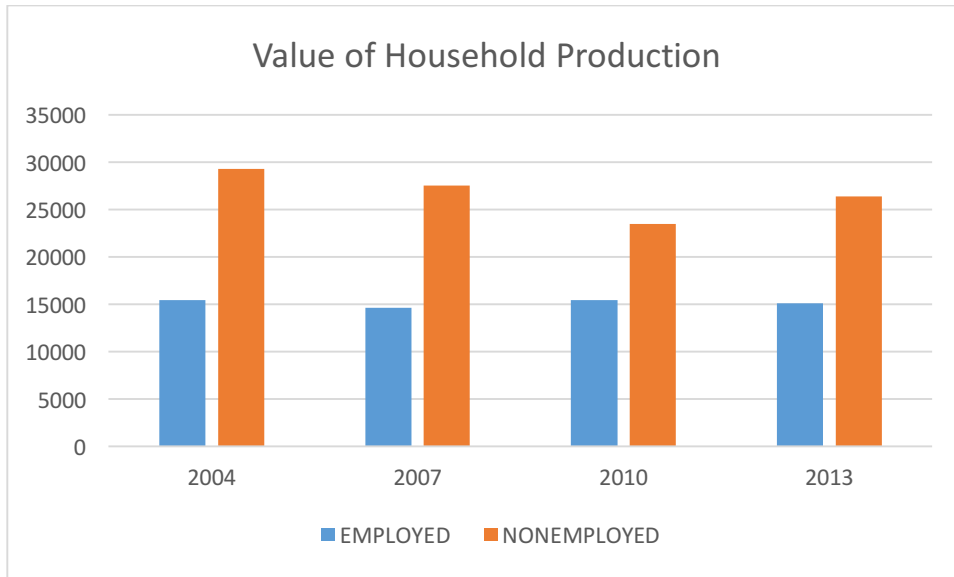
²⁴ pchlthosp= expenditure on public health, pcpolfire=expenditure on fire and police, pcedu=expenditure on education, pchwy=expenditure on highway, pcothrs=all other expenditure, pubcon=public consumption

Upon closer investigation, shown in Figure 20, we see that this is because the largest component of public consumption is public education and it contributes mostly for the difference in public consumption between the two groups. In 2010, public education for the two groups was around 55 percent of the total value of public consumption for the employed group and 59 percent for the nonemployed group. This is because expenditure on education is mainly determined by geographical factors (i.e., the state of residence) and number of school-going children rather than their employment status.

Both the employed and nonemployed households are net beneficiaries of the fiscal system (Figure 13). The reason why the employed appear to receive a net benefit is because public consumption is included in LIMEW. Conventional measures count only government transfers on the benefit side of the ledger. If this practice, which has been criticized as inadequate by Wolff and Zacharias (2003) as well as the Sarkozy Commission later, were to be followed, the employed single female-headed households would appear to be a net payer, on the average, while their nonemployed counterparts would appear as a net beneficiary.

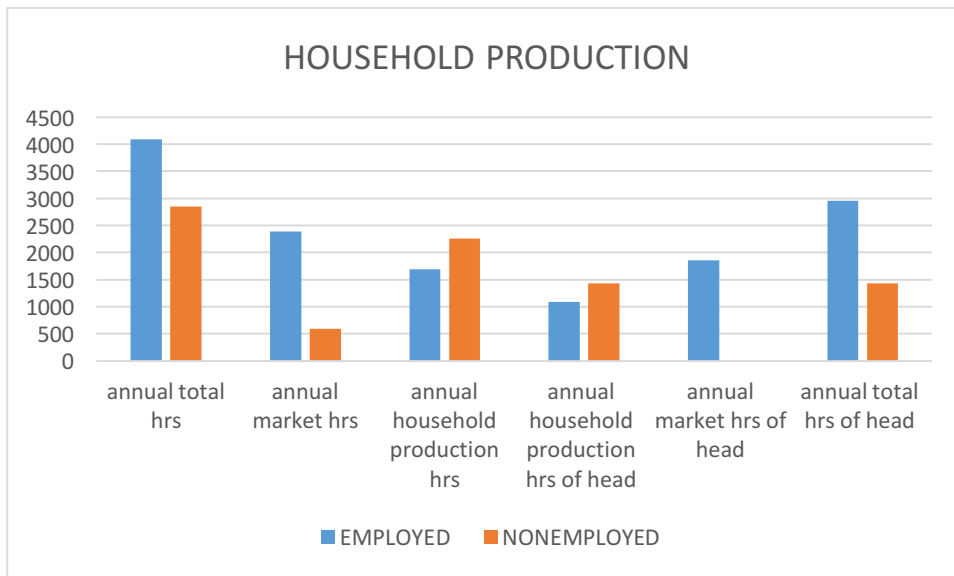
I now turn to the value of household production, a component for which the average value is higher for the nonemployed than employed households (Figure 21). In the next figure (Figure 22), we look at the components and the reasons driving this difference.

Figure 21: Value of Household Production of Employed and Nonemployed Single Female-Headed Households (average values in 2013 dollars)



Source: Author's calculations

Figure 22: Household Production Hours and Market Hours of Employed and Nonemployed Single Female-Headed Households and Heads in 2010 (average values)



Source: Author's calculations

The difference in the average value of household production between the two groups depends on two factors: difference in hours of household production and difference in the implicit unit value of household production.²⁵ To assess the importance of the latter source of difference, I compared the average value of household production for the two groups using the same unit value (estimated hourly wage of domestic help in 2010). I found that the average value of household production for the nonemployed households was 133 percent of that of employed household under the “same unit value assumption” compared to 152 percent under the “differentiated unit value assumption” of LIMEW. This shows that the difference in the value of household production between the two groups is mainly due to the difference in hours and not the difference in the replacement cost.

I found that the average hours of household production was somewhat higher for nonemployed households than employed households (Figure 22). This is not surprising because much of the difference is driven by the difference in the average hours spent on household production by the head. In 2010, for example, out of the 560 hours gap in total hours of household production between the two groups of households, the gap between the heads was 346.7 hours or 62 percent.

It is, however, noteworthy that the employed head too is engaged in a substantial amount of household production, although the average hours are lower than that of their nonemployed counterparts (Figure 22). This reflects the reality of the “second shift” for many working women which means that taking on a job does not translate into a major reduction in housework and care responsibilities.

²⁵ This is an implicit value because the value of household production is generated at the individual level but then summed to find the value for the household.

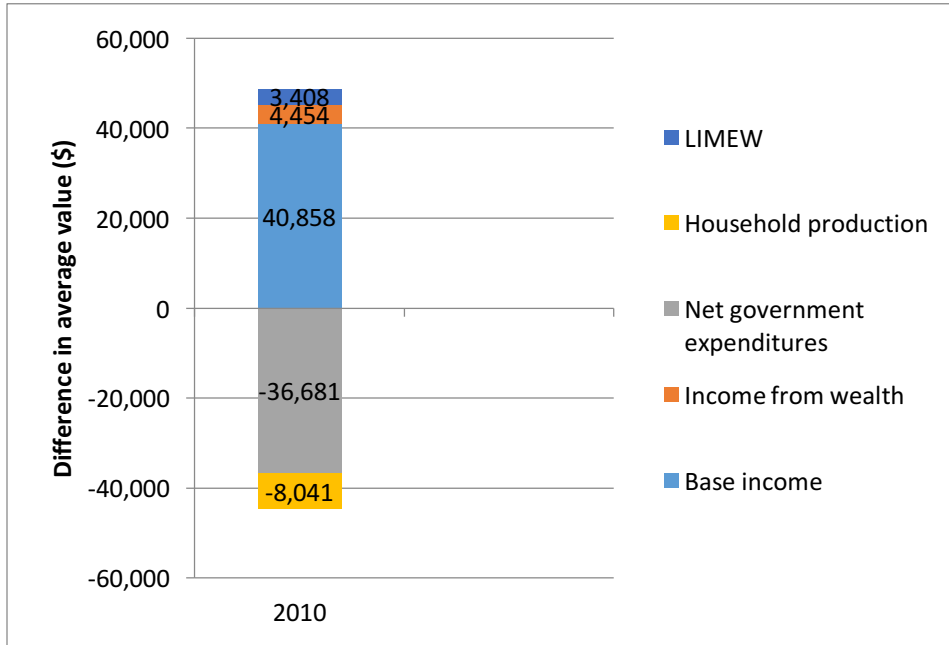
Table 11: Summary of Major Components of LIMEW for Employed and Nonemployed Single Female Heads

Year	2004		2007		2010		2013	
	Employed	Nonemployed	Employed	Nonemployed	Employed	Nonemployed	Employed	Nonemployed
Base MI	52,948	12,539	55,195	13,888	53,471	12,613	53,199	16,952
Employer's contribution to health	3,477	498	3,292	530	3,341	524	3,207	581
Income from wealth	8,892	3,132	11,090	4,101	9,724	5,269	10,867	3,408
Net government expenditures	4,938	39,556	4,073	38,787	7,463	44,144	5,857	43,025
Transfers	6,513	20,603	7,560	20,518	9,236	26,087	8,835	25,387
Public consumption	12,468	22,329	13,653	22,930	14,284	22,063	13,608	22,140
Taxes	-14,043	-3,375	-17,140	-4,661	-16,057	-4,006	-16,586	-4,503
Household production	15,437	29,325	14,657	27,550	15,447	23,488	15,120	26,377
LIMEW	85,691	85,050	88,306	84,855	89,445	86,038	88,249	90,342

Source: Author's calculations

I provide summary information regarding the major components of LIMEW discussed above in Table 11 for the most recent four years for which the LIMEW was estimated. In sum, the gap in average LIMEW between the employed and nonemployed single female-headed households is the outcome of two opposing forces. The higher amounts of base income and income from wealth that the employed receive are offset to a large extent by the higher amounts of net government expenditures received by and value of household production accruing to the nonemployed (Figure 23). Differences in income from wealth and household production are small relative to the differences in base income and net government expenditures. While it is true that some members of the nonemployed households are employed, the fact that the head, generally the person with the most earnings potential in the household, is not employed results in a much lower average base income than the employed households. On the other hand, while average public consumption tends to be roughly similar for the two groups, transfers are skewed heavily in favor of the nonemployed and taxes are much larger for the employed, leading to substantially higher net government expenditures for the nonemployed.

Figure 23: Difference in Components of LIMEW between Employed and Nonemployed Single Female Heads



Source: Author's calculations

Next, we do an Oaxaca Blinder decomposition to understand the gap in economic wellbeing of the two groups. The Oaxaca decomposition method decomposes the overall wellbeing gap between the employed and nonemployed single female-headed households into two components: one explained by observable differences between the employed and the non-employed and the other, residual, due to the differences in the rates of return due to those characteristics. The residual portion of the wellbeing gap is unexplained. The basic idea of this decomposition procedure is that differences in wellbeing between two groups can be partially explained by the fact that these groups have different attributes, whereas the remaining portion of the gap is unexplained.

Estimation Method

$$L_e = \alpha_e + \beta_e + \varepsilon_e$$

$$L_n = \alpha_n + \beta_n + \varepsilon_n$$

Where, L is the LIMEW (log of LIMEW), α is the intercept, β are the coefficients of the different characteristics, ε is the error term, subscript e is for the employed single female heads and n is for the nonemployed single female heads.

$$L_e - L_n = (L_e - L_n)' + (L_e - L_n)$$

Where the total difference is the difference due to characteristics $(L_e - L_n)'$ and the unexplained difference $(L_e - L_n)$.

The same sample used for the Heckman Selection Model and the LIMEW analysis is used for this LIMEW decomposition.

The variable used for the decomposition are - education, race, age, age squared, dummy variables for the geographical division, metropolitan dummy, number of kids, the presence of children under the age of 6, and number of people in the household.

Results

Table 12: Decomposition of the Gap in LIMEW between Employed and Nonemployed Single Female-Headed Households

loglimew	Coefficients	Std. Err	z	P>z	[95%	Conf. Interval]
overall						
Nonemployed SFH	11.084	0.026	433.760	0.000	11.034	11.134
Employed SFH	11.171	0.007	1689.670	0.000	11.158	11.184
difference	-0.087	0.026	-3.300	0.001	-0.139	-0.035
explained	0.079	0.018	4.400	0.000	0.044	0.114
unexplained	-0.166	0.021	-8.070	0.000	-0.207	-0.126
explained						
<i>number of kids</i>	-0.061	0.007	-8.670	0.000	-0.074	-0.047
<i>dummy for young kids</i>	-0.020	0.003	-5.820	0.000	-0.026	-0.013
<i>number of people in the household minus the head</i>	0.286	0.023	12.410	0.000	0.241	0.332
<i>less than high school</i>	-0.077	0.007	-10.310	0.000	-0.091	-0.062
<i>high school</i>	-0.044	0.006	-6.890	0.000	-0.056	-0.031
<i>some college</i>	0.012	0.004	2.850	0.004	0.004	0.020
<i>age</i>	-0.033	0.010	-3.150	0.002	-0.053	-0.012
<i>age squared</i>	0.030	0.009	3.130	0.002	0.011	0.048
<i>nonwhite</i>	-0.015	0.002	-6.090	0.000	-0.020	-0.010
<i>new england</i>	0.000	0.001	-0.480	0.632	-0.001	0.001
<i>mid atlantic</i>	0.000	0.001	0.440	0.657	-0.001	0.002

<i>east north central</i>	0.000	0.001	-0.860	0.390	-0.002	0.001
<i>west north central</i>	0.001	0.001	1.950	0.051	0.000	0.003
<i>south atlantic</i>	0.001	0.001	1.040	0.300	-0.001	0.002
<i>east south central</i>	-0.001	0.001	-0.880	0.378	-0.002	0.001
<i>pacific division</i>	0.000	0.001	-0.080	0.935	-0.001	0.001
<i>not in metropolitan</i>	-0.001	0.001	-1.590	0.112	-0.003	0.000
unexplained						
<i>number of kids</i>	0.052	0.034	1.550	0.121	-0.014	0.118
<i>dummy for young kids</i>	0.017	0.017	0.990	0.321	-0.016	0.050
<i>number of people in the household minus the head</i>	-0.064	0.040	-1.600	0.110	-0.143	0.015
<i>less than high school</i>	0.011	0.015	0.760	0.449	-0.018	0.041
<i>high school</i>	0.045	0.022	2.020	0.043	0.001	0.089
<i>some college</i>	0.039	0.019	2.010	0.045	0.001	0.077
<i>age</i>	-0.052	0.674	-0.080	0.939	-1.372	1.269
<i>age squared</i>	-0.045	0.344	-0.130	0.897	-0.719	0.630
<i>nonwhite</i>	0.075	0.019	3.980	0.000	0.038	0.112
<i>new england</i>	0.006	0.005	1.270	0.204	-0.003	0.016
<i>mid atlantic</i>	0.039	0.011	3.590	0.000	0.018	0.061
<i>east north central</i>	0.037	0.012	3.010	0.003	0.013	0.061
<i>west north central</i>	0.011	0.005	2.260	0.024	0.001	0.021

<i>south atlantic</i>	0.037	0.015	2.410	0.016	0.007	0.067
<i>east south central</i>	0.005	0.007	0.730	0.463	-0.008	0.018
<i>pacific division</i>	0.020	0.010	2.010	0.044	0.001	0.040
<i>not in metropolitan</i>	0.015	0.009	1.650	0.100	-0.003	0.032
<i>constant</i>	-0.415	0.343	-1.210	0.226	-1.088	0.257

Source: Author's calculations

From the decomposition results, we again see that the employed single female-headed households have a higher LIMEW than the nonemployed single female-headed households. Out of the difference, 0.079 is explained by the difference in the characteristics of the two groups and -0.166 is unexplained. The explained differences go in favor of the employed single female heads while the unexplained differences, somewhat puzzlingly, go in favor of the nonemployed. However, this is not an important issue in our context because the decomposition serves only as a descriptive tool and not as a tool for identifying causal effects.

From the characteristics we see that even if the nonemployed single female heads had the same characteristics as the employed single female heads, their LIMEW would still be negatively affected by the number of kids in their household and the presence of young children in the household. The education variables show that a less than high school education would negatively affect the LIMEW of nonemployed single female heads. High school education would also have a negative impact but it would be more beneficial for the nonemployed heads to have a high school degree than have less than high school education. On the other hand, some college education would have a positive effect on the LIMEW of nonemployed single female heads. Age seems to have a negative effect on their economic wellbeing and so does being nonwhite. The regional variables mostly do not yield significant results and the same goes for the variable that shows whether the household is in a metropolitan area. The results are in alignment to what we have observed before and reinstate the burden of care responsibilities from children on the nonemployed single female heads.

CONCLUSION

In this study I attempted to study the economic wellbeing of single female-headed households and how employment impacts the economic wellbeing of such households. Policy reform has pushed for employment over welfare for single female heads and this study explored how employment changes their LIMEW (Levy Institute Measure of Economic Wellbeing). The LIMEW is used in this paper because it takes account of household production and noncash transfers which is particularly relevant for single female-headed households.

From the study we can see that not all nonemployed single female heads can become employed: there are those who are sick, disabled and some have significant care responsibilities. We observe the significance of care responsibilities in terms of caring for children from both our Heckman selection model and our decomposition analysis. This shows that a one-size-fits-all employment program may not be successful when trying to ameliorate the economic status of single female-headed households. Net government expenditures are positive for both groups; but, much more so for the nonemployed. This is mainly because of Social Security, unemployment insurance and medical benefits (Medicaid). Cutting back on these programs will not necessarily prompt nonemployable single female heads to become employed because there are other impediments such as those mentioned above that are preventing them from being employed. The first two programs are non-means tested cash transfers that are broadly supported by the population and politicians. They are unlikely to be reformed in a fashion to exclude single female heads.

When it comes to Medicaid, numerous studies show the benefits of Medicaid and how it has been successful in reducing infant mortality rates in the United States (Moss and Carver 1998). This is particularly true for low income groups in the country (Currie and Gruber 1996). Cutting back on medical benefits is unlikely to push them towards employment. Rather, it will only expose them and their families to health risks and this might make them more prone to a shorter life expectancy. It is unlikely to make them become employed since being ill or disabled is often a barrier to getting hired and keeping a job in the first place. Further, the kind of jobs that they can get is likely to have little or no medical benefits (health insurance). As our wage equation estimates showed, the employable may be willing to work at a lower wage than the currently

employed - but there does not seem to be enough jobs or jobs that they can hold while fulfilling their household responsibilities.

The jobs that would benefit this group of women would have to come with government financed child care (Bergman and Hartmann 1995), child allowances and universal health care. Other ancillary benefits such as family paid leave would address the problem of discontinuous employment caused by child birth. Policies aimed at single female heads must account for such support mechanisms in conjunction with employment if they are to improve the economic wellbeing of this group.

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