

**Measuring the Intra-Household Distribution of Wealth in Ecuador:
Qualitative Insights and Quantitative Outcomes**

Carmen Diana Deere* and Zachary B. Catanzarite**

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*Distinguished Professor of Latin American Studies and Food & Resource Economics,
University of Florida

**Statistical Data Analysis, Center for Latin American Studies, University of Florida

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1. Introduction

Among the concerns in the study of gender inequality is the role played by unequal access to resources within households. According to the bargaining power hypothesis, outcomes for women are often conditioned by the resources they command relative to others in the household, specifically their partners. Thus, women who own and control assets are expected to have a larger say in household decision-making than those who do not, and to use their bargaining power to secure outcomes more favorable to them and their children. For example, women's relatively greater bargaining power within the household might be expected to result in consumption patterns that de-emphasize male-only (vice) goods or be associated with a lower incidence of intimate partner violence, among other outcomes.

Most studies following a bargaining approach have utilized women's level of education or income (either absolute or relative to their spouse), their ownership of a particular asset (such as land or housing), or access to credit, as proxies for women's bargaining power.¹ This paper reports on a study that measured the intra-household distribution of wealth directly for such a purpose, and in a manner that contributes to the development of a feminist economics methodology.²

In developed countries, government statistical agencies routinely carry out household wealth surveys where one respondent is asked about all the assets owned by members of the household. Rarely is the question posed of who in the household owns each asset, since it is assumed that ownership of major assets, such as housing, cannot be attributed to specific individuals.³ This means that the only kind of (partial) gender analysis that can be carried out is with respect to household structure or composition (i.e., comparing sole female- vs. sole male-headed households with households consisting of a couple) (Deere and Doss 2008). Thus the very manner in which data is collected precludes an analysis of the intra-household distribution of wealth, and hence, of gender inequality and potential power differences between husbands and wives.

Similarly, in developing countries the Living Standard Measurement Study (LSMS) surveys, sponsored by the World Bank, increasingly contain questions regarding the assets owned by the household; relatively few of these gather information on to whom, specifically, these assets belong (Doss, Grown and Deere 2008).⁴ The review of these existing surveys served as one of the motivations for the Gender Asset Gap project, a comparative study of Ecuador, Ghana and the state of Karnataka in India, on which this paper—on the Ecuadorian experience-- is based.

As a team of feminist economists with considerable research experience in developing countries, we anticipated that developing the appropriate methods to estimate the intra-household distribution of wealth would be a complicated undertaking. First, we expected that the notion of ownership might depend on context and, potentially, gendered notions of property. Second, we expected that who was reported to be an asset owner might differ depending on who in the

household was asked. Third, we knew that the existence of markets for all physical and financial assets could not always be assumed, complicating any attempt to value assets and hence to estimate wealth. Finally, we could not discard the fact that the very valuation of assets could also be gendered.

On the first point, in the context of developing countries, Western private property rights cannot be assumed to be the general case (Meinzen-Dick et al 1997). This issue could be even more complex in countries where men and women do not enjoy similar property rights. Moreover, social norms could systematically discourage women from even thinking of themselves as property owners.

There is now an emerging literature around the second issue, related to the question of how many people should be interviewed in a household survey. Interviewing only one person assumes that there is perfect information within the household and that there will be one person (usually the head) who knows about all of the economic activities of other household members. Studies have shown that this assumption is often incorrect and that self-reporting provides better information than when data on an individual's economic activities are collected by proxy (Bardasi et al 2010). For example, husbands may not know their wives' income and thus if only the male household head is interviewed, he may underestimate his wife's income and thus total household income (Fisher, Reimer and Carr 2010). Moreover, studies that have interviewed husbands and wives separately on household economic activities and outcomes have shown that spouses often disagree, since, given gender roles, they may have different perceptions of these issues (Valentine 1999; Becker et al 2006; Clocke 2007).

With regards to valuation, a number of factors influence whether respondents are able to value their assets at market prices. To begin with, there is the issue of whether a market even exists for the assets in question. In addition, a range of personal characteristics may influence an individual's ability to estimate the value of the assets that they own, such as their level of literacy and schooling, occupation, mobility, ability to participate in markets, and access to information. Complicating the issue further, the value of an asset to an individual may include more than its exchange value (the potential market or sales price) and be influenced by a series of other factors, such as its use value or how difficult it would be to ever garner the income to replace the asset.

These concerns informed our decision to pursue a mixed- methods approach to the study of the intra-household distribution of wealth—an approach that has now become practically the standard among feminist economists intending to carry out quantitative survey research in developing countries. As Berik (2007: 122) explains, “qualitative methods not only help generate more reliable quantitative data by delineating the meaning of concepts which are to be measured, but also provide non-meaningfully-quantifiable, detailed information about the processes underlying economic outcomes without which our understanding would be incomplete.”

All three countries studies in the Gender Asset Gap project relied on a mixed-methods approach, with the first phase of the study dedicated to qualitative field research, followed by a second phase where a representative household asset survey was carried out in order to collect information on individual-level asset ownership (Doss et al 2011; 2012). It was expected that the qualitative field work would inform the design of the survey protocols and instruments in such a way that we would be able to minimize systematic measurement error in estimating household wealth. This phase was also expected to assist in generating hypotheses regarding the intra-household distribution of wealth and, subsequently, in the interpretation of the results.

One of the main ways the three household asset surveys differed in their implementation was with respect to whom in the household provided the initial information regarding the household's stock of assets, to whom they belonged and their value. While all three surveys intended to interview the person or persons in the household who were the most knowledgeable about the assets owned, the protocols for selecting this person differed. Based on the results of the qualitative field work, in Ecuador it was determined that the survey protocol should be to carry out the household inventory with both members of the couple together whenever possible. In contrast, in India and Ghana, only one person, the most knowledgeable, provided the initial inventory. In all three countries an individual questionnaire was then separately administered to up to two household members of the opposite sex and gathered further information on asset ownership, among other questions.

The main purpose of this paper is to present the qualitative data for Ecuador regarding the existence of asset markets and men's and women's participation in these that informed the decision to interview couples together. We then triangulate the qualitative and quantitative data to explore whether interviewing couples together in this case may have contributed to reducing measurement error in the estimates of gross household wealth and the intra-household distribution of wealth.

2. Qualitative research methods

The first phase of the Ecuador research, conducted between August and December 2009, began with the selection of the provinces and municipalities (*cantones*) where qualitative field work was to be carried out. Such required the development of hypotheses specific to Ecuador regarding the processes that might facilitate the accumulation of assets by women.

Theoretically, asset accumulation by individuals depends on two major factors: what people are able save out of their income or acquire through credit, and what they might receive through inheritance or public or other private transfers. The first point required a prior analysis of the labor and credit markets to identify the different ways women were inserted in these and their spatial distribution. The second required the selection of provinces in different regions of the

country to also capture differences in inheritance practices as well as in rates of international migration, another potentially important factor in Ecuador due to the volume of remittances.

Based on a reading of the secondary literature and informal interviews with experts, three provinces were selected-- one in the northern highlands (Pichincha), another in the southern highlands (Azuay) and one on the coast (Manabí), representing the major geographical divisions of the country. The aim was to carry out field work in at least three municipalities within each, including that of the provincial capital, and a minimum of one rural municipality. In urban areas women's income generating activities are quite diverse yet fairly similar across the country-- including a broad range of activities in both the formal and informal sectors. They differ most across rural municipalities thus it was these that were chosen to represent different modes of insertion of rural women to the broader economy. In Pichincha, both rural municipalities chosen are located in the heart of the cut-flower industry, the main source of stable wage employment for rural women in Ecuador, which exists alongside a relatively vibrant peasant economy. In Azuay, remittances from international migration along with craft production constitute the main source of women's incomes, and field work was carried out in three rural municipalities of declining peasant agriculture. Manabí has a diverse agricultural economy and three rural municipalities were selected to highlight this diversity, along with two urban centers, to capture women's employment in the fisheries and tourism sectors.⁵

The main methods employed in the field work included focus groups, interviews with key informants, and participant observation of asset markets, complemented by the collection of additional secondary data. In total, 40 focus groups were conducted with the logistical support of 23 different organizations. The facilitating organizations were primarily women's organizations, farmer cooperatives and peasant associations, and microfinance NGOs. Most of the focus groups, which averaged 15 persons in size, were composed of all women, although at least one all-male group discussion was also held in each province. On several occasions, only mixed-sex groups could be organized. In addition, in each provincial capital focus groups consisting of women from the middle and upper-middle class, primarily business and professional women, were held.

The focus groups addressed four themes, following a semi-structured guide:⁶ i) income generating activities and the role of assets when facing economic shocks; ii) the meaning of owning assets and knowledge of asset markets; iii) the accumulation of assets over the life cycle; and iv) household decision-making over the acquisition and use of assets. The focus groups lasted from 1.5 to 2 hours and usually covered one to two themes; the themes were rotated in such a manner that all were covered in at least one of the urban and rural groups in each province. The discussions were led by the project's four researchers (three economists and an anthropologist), working in teams of two, and were tape recorded with the contents subsequently transcribed for analysis.

A total of 58 semi-structured interviews were carried out with key informants, including lawyers, judges, public notaries, real estate agents, leaders of grassroots movements, academics and representatives of NGOs, local government, and financial institutions. In addition, to better understand asset prices and the working of markets, we carried out participant observation in certain asset markets, including livestock markets, appliance, hardware and equipment stores, and pawnbroker and second-hand stores.

Toward the end of the first phase of field work, we also began to test the draft survey instrument, carrying out some 15 interviews in Manabí and Pichincha.⁷ The preparatory phase for the national survey ran from January to March, 2010, and included further testing and revisions of the survey instrument during the training of the enumerators and the execution of a pilot survey of 165 households in Quito, Guayaquil and a rural area of Manabí.⁸ The researchers were directly involved in the training and pilot survey and this facilitated early testing of many of the insights gained from the qualitative work, influencing the final survey design and content of the survey instrument. The representative national survey was carried out between April and June, 2010.

3. The Functioning and Knowledge of Assets Markets

Ecuador, with a 2010 population of around 14.5 million, is categorized as a high-medium human development country. It has a fairly extensive transportation system that supports a relatively well-integrated market economy.⁹ The vibrancy of markets tends to correspond to the size of urban centers and political divisions. The two major cities, Quito (highlands) and Guayaquil (coast), are major industrial centers and the capitals of their respective provinces (Pichincha and Guayas). The other provincial capitals, as well as some of those of the municipalities, serve as dynamic poles that concentrate economic activity and non-farm employment within their respective areas.

In this section we summarize some of the salient information gained during the qualitative phase of research on the functioning of asset markets and men's and women's knowledge of these markets as well as of asset values. Each of the main asset markets is described in turn.¹⁰

The Housing Market

All of the cities have well developed housing markets characterized by the presence of multiple real estate agencies and agents, considerable on-going construction of new housing stock, and houses, apartments, and lots being advertised for sale or rent. It is common to see "for sale" or "for rent" signs posted on windows or fencing, sometimes including the price. All the major national and provincial newspapers carry real estate listings, usually on a weekly basis, and often with price information. They also carry advertisements placed by developers for new housing developments, usually aimed at the middle class, with information on the price range.

Real estate agents, who are found in even some of the small municipal towns, have a very good notion of the potential market value of housing lots and dwellings, based on locale, size and the quality of construction materials. They readily provide estimates of the going price per square meter. However, there is no organized source of information (such as a web site) of properties for rent or sale and their price available either to real estate agents or the public at large. Thus agents primarily rely on their own experience and networks, as well as newspapers, for price information.¹¹

According to focus groups, among the “popular classes”¹² it is much more common to build a dwelling than to purchase it, whether in urban or rural areas. Housing lots are obtained either through inheritance (particularly in rural areas), purchase, or, sometimes, squatting. Information on the availability of housing lots is often acquired by walking through a neighborhood looking for postings or passed by word of mouth. Homes tend to be built bit by bit, as savings allow. Many urban popular neighborhoods seem to be in perpetual construction, since once the basic one-story house is finished, a second story is frequently begun, either to accommodate an expanding family (particularly, as children marry) or to serve as a rental unit. Some microfinance institutions provide mortgages to low income groups for housing construction but it appeared more frequent for people to access credit for home improvements, such as building a second story and using the main dwelling as collateral.¹³ Among the middle class it is much more common to purchase a home outright and to rely more on private bank mortgages and direct financing by developers.

While the urban housing sales and rental markets can be characterized as well developed, this is not the case in rural areas outside of the municipal capitals. In focus groups in all three provinces, it was reported that very few houses, if any, were for sale and that it was also unusual to rent homes. Sales of dwellings generally only come about in the case of migration of whole families and are often tied to the sale of agricultural land. The occasional housing rental is also linked to the migration dynamic, with homes built by absent migrants sometimes available for rent, such as in rural Azuay, where migrant remittances fed a construction boom in the late 1990s. Migrant investments in real estate have more notably increased the supply of housing available for rent in some of the municipal and provincial capitals.

In the focus groups it was evident that the women most likely to have a sense of housing prices were those who had recently purchased or built a home or had a neighbor who recently sold one or was trying to do so. Similarly, those who currently rented out a room or second dwelling were the most confident discussing rental values. Another factor that seemed to increase the likelihood of women having a good notion of the potential value of their home was whether the dwelling was being purchased on credit or if they had taken out a loan for an expansion or remodeling project since the dwelling might be serving as collateral.

Also, being involved in litigation or being a member of a neighborhood organization appeared to be associated with women's awareness of the potential sales value of their home. In the informal settlement of Pisulí on the outskirts of Quito, for example, that had begun as a land take-over in the 1980s and where residents were still trying to formally title their lots and homes, focus group participants were nearly unanimous that the average price of a 300 square meter home built of concrete walls and good flooring was on the order of US\$25,000, with the lot representing almost half of that value. Each time that they filled out the paper work related to obtaining titles or when they demanded services from the city they had to declare the value of their property. In this and in other popular sector neighborhoods that were well organized, focus group participants were well aware of any homes that were currently for sale or rent as well as the price.

Those most likely not to have any idea at all about the potential sale or rental values of their homes were rural women residing in areas where real estate markets are thin or nonexistent. Nonetheless, we also found some urban women who did not have any notion of the potential market value of their home, although sometimes they were savvy about the cost of building materials, given that home improvements are such a constant activity.

One of the questions that came up in the pre-testing of the survey questionnaire and in the pilot survey was that sometimes women would respond to the question of how much they thought their dwelling, in its current condition, would sell for today with the answer to a different question- for how much they would be *willing* to sell their home (ie., the supply curve question). It was not infrequent to get the response that they would be unwilling to sell their home at any price (or to mention an unreasonably high price), given the sweat and tears that had gone into obtaining the lot and/or constructing the dwelling. This was consistent with focus group discussions regarding the intrinsic value placed on owning one's own home, which was the aspiration of most who did not already own one. For most women homeowners, the dwelling was their most valued asset, one that provided them with a sense of security in raising their family in addition to being the most valuable asset they owned. This could be a factor that would lead women to overestimate the value of their homes. At the same time, in the pre-testing and pilot survey, it seemed that women respondents were more hesitant than men to provide an estimate of the potential sales value of their home when they had no objective basis to draw upon.

According to real estate agents, owners who come to them to list their dwellings for sale generally tend to overestimate the value of their home-- whether men or women--, related to the intrinsic value of homeownership. Our general sense, then, upon completing the field work was that, in the case of Ecuador, we could reasonably expect survey respondents to be able to estimate at least one among the potential sales, replacement or rental value of their homes, if we paid proper attention to wording and follow-up questions. At the same time we were cognizant that there might be a tendency to overestimate home values, but perhaps not a systemic gender

bias. How this qualitative data informed our final survey instrument is discussed in a subsequent section.

The Agricultural Land Market

The main offer of land for rent or sale in many rural communities is by migrants or from older peasants who no longer have family labor available to work the land. Migrants generally prefer to rent rather than sell their land, since they often intend to eventually return to their communities. Rentals are usually short term, for the duration of the crop season; among peasants, sharecropping seems more common than cash rentals, with the latter characterizing larger holdings and capitalist farming. In some locales, hacienda land (from large landholdings) would occasionally be placed on the market when it was undergoing a process of subdivision, often linked with a succession (inheritance) process. Besides supply constraints, another reason it seemed easier for peasant to access the rental market compared to the sales market is the lack of access to credit for purchasing land.

Awareness of land prices was best in locales where the land market was more dynamic and had experienced recent increases in price, such as in Cayambe in Pichincha. In this and the neighboring municipality of Pedro Moncayo, land prices were rising until recently due to the expansion of flower plantations and land purchases by international migrants and the urban upper middle-class from Quito for week-end homes and, in some cases, hobby farms. The 2008 international financial crisis dampened demand and in 2010 land prices appeared to be stabilizing, given the consistent figures often reported for valley bottom land. While peasants have been priced out of valley bottom land, some sales of hacienda lands at higher elevations were taking place in which groups of peasants were participating. In certain regions of rural Azuay in the southern highlands, it was reported that international migrants had bid up the price of agricultural land, although they tended not to farm it, and this facilitated a more dynamic rental market for smallholders.

In the rural focus groups there was general recognition by both men and women of the factors that influence land prices, such as the locale (particularly, the elevation), access to transportation and markets, irrigation, and soil quality. While there tended to be more interest in discussing land values in the men's focus groups, rural women were often cognizant of land values and it was not unusual for some rural women to be more aware of land values than they were of housing values. This is partly because those who wish to sell land frequently post a notice on the property or a by-way, sometimes including the price. Otherwise, land prices are shared by word of mouth, information readily available to those who belong to peasant associations who are primarily, although not exclusively, men.

Livestock Markets

All of the provincial and most of the municipal capitals have weekly markets where large and small farm animals are bought and sold. Cattle and work animals (horses, donkeys, mules) tend to be bought and sold at the most dynamic regional markets, whereas sheep, goats, pigs, poultry and other small animals are more likely to be bought and sold at local markets.

Of all the different assets that make up household wealth, potential animal sales prices were probably the most readily known and not just by those residing in rural areas. Animal raising activities are often carried out by women in semi-peripheral urban areas and both urban and rural women participate in these markets as consumers. Knowledge of livestock prices tends to follow the gender division of labor in animal raising and marketing, with men more confident of the going prices for large livestock and women more confident of those of smaller animals.

Animals were also considered to be the most liquid of all physical assets owned since these could be readily sold if faced with an emergency, with the animal that might be sold (a pig versus poultry, for example) depending on the magnitude of the economic shock. In the rural focus groups, ownership of animals was also discussed as an important means of accumulating savings, with hogs in particular being the “piggy bank.”

The Market for Consumer Durables

One of the main differentiating factors between the middle class and the popular sector is the ownership of an automobile. Ownership of a vehicle is also an important means of upward mobility, often tied to specific (and generally male) occupations, such as taxi drivers, truck drivers and delivery services. Automobile dealerships (and those for trucks and motorcycles) for both new and used vehicles are located in all the provincial capitals and other large urban centers. The most well developed second-hand market of all consumer durables is for vehicles. There is a website that lists the inventory of used vehicles at all the major dealerships nationally, by type, make, price, etc. Dealerships provide credit for both new and used vehicles. Those being sold privately are listed in weekly sections of most newspapers and include the price.

Those most confident about the potential market value of their vehicles were the individuals who owned them and had purchased them relatively recently, as was the case for other consumer durables. In the focus groups it was widely reported that men were more likely than women to own a vehicle of some sort. For women who did not own a vehicle, if their partner did, they were most likely to know its value if it was purchased on credit, for it is likely that the loan was in both of their names.

Ecuador has several chain stores that specialize in kitchen appliances and electronic goods (La Ganga and Comandato), and these are located in every provincial and municipal capital. While

prices and credit terms appear to be fairly standard, in some focus groups it was reported that better prices were available in provincial capitals, indicating awareness of prices. Prices are advertised widely in newspapers and through other media, such as television ads, and store credit is readily available for their purchase.

The most standard consumer durable owned by most households is a gas stove, purchased by most couples upon setting up a home. Ecuador engaged in a major rural electrification push in the 1980s (as a result of new petroleum wealth), and this also opened up the possibility for households in rural areas to purchase a variety of consumer goods (most commonly, television sets and sound systems and, to lesser extent, refrigerators – the latter which are more common on the coast than in the highlands). Washing machines are still considered a luxury item.

We were particularly interested in the potential liquidity of appliances since these were the main assets owned by the majority of popular sector women. We learned that these are generally purchased with the idea that they would last a lifetime and are rarely purchased second-hand. One of the factors discouraging the purchase of used appliances is the relative ease of obtaining store credit with a minimum down payment, even among lower income groups. There was general awareness that consumer durables could be sold or pawned in an emergency. Yet, second-hand markets are generally thin and these, as well as pawn shops, are limited to urban areas. Some women noted that, in a crisis, you could always sell a television set or small appliance to a neighbor but it was preferable to get a loan. The concern was that if you tried to sell a consumer durable you would not get a price close to its replacement value, and moreover, that if you did sell it, it would be difficult to later replace. Several focus groups participants who had pawned items in the past noted that they never had been able to reclaim them.

In focus group discussions, some women were adamant that they would never sell their gas stove, for how would they cook for their families? In an emergency, women were more likely to consider selling or pawning a television, a sewing machine, or small kitchen items such as a blender. Men mentioned a television set or sound system, or perhaps a bicycle, as the items they would be most likely to sell or pawn if need be. Gold jewelry seems to be a fairly liquid asset and women from both the popular and middle classes reported having sold or pawned jewelry. Besides pawn shops, some cooperatives and NGOs offer jewelry pawning facilities as sources of emergency loans. We now turn to how these insights from the qualitative field work informed the design of the survey and questionnaires.

4. Qualitative Insights and Survey Design

Among the main conclusions from the qualitative field work in Ecuador was that, with the exception of some rural areas, asset markets are generally well developed and private property rights over assets are relatively well defined, so that men and women within households can

usually differentiate between what belongs to each of them separately or jointly together.¹⁴ Another conclusion is that men and women often have very different links to and experience with asset markets, which in turn is related to the gender division of labor both inside and outside the household. Moreover, men and women oftentimes have different access to information based on their own gendered networks. In the case of the housing market, for example, the focus group discussions suggested that in urban neighborhoods women are more likely than men to learn through their networks about dwellings that are for sale or rent and the prices for which these are being sold or rented. Thus if they themselves had no idea about the potential sales value of their home, they could draw upon their knowledge of what similar dwellings in their neighborhood have sold for to provide an estimate. In contrast, in the case of the land market, land prices seem to be a focus of greatest interest in the male-dominated peasant associations where information on any land transaction is quickly socialized among the members.

Another insight was that, within a given household, owners of a particular asset have a better understanding of that particular asset market, including of prices, than non-owners. Thus, since men tend to be the owners of the majority of vehicles, they are more likely to be aware of vehicle prices than their wives; the exception being the cases where the vehicle was purchased on credit and constitutes a joint liability of the couple. In terms of major kitchen appliances, women tend to be the owners of these and seem more likely to be aware of market prices compared with men.

The implication of these insights is that it matters who is interviewed in an assets/wealth survey. In the case of Ecuador we came to the conclusion that to enhance the likelihood of capturing reasonable estimates of the potential sales value of the assets owned by members of a household, it would be important to interview both the principal man and woman of the household. However, should they be interviewed together or separately? There are arguments pro and con.

An advantage of interviewing a couple together is that if one of them does not have knowledge of the market for a particular asset that is owned, the other person might, thus reducing the rate of potential missing observations. In our pre-testing of the instrument with couples we observed that it was not uncommon for a man to defer to his wife on the value of certain assets and for a wife to defer to her husband for others.

Another potential benefit of interviewing a couple together is that they can discuss their potential answer to a question, coming to a consensus on their response. Such a process might lead to more accurate responses if, for example, men tend to provide a valuation estimate whether or not they actually have a clue about the potential market value of their asset, or if women on their own are more likely not to provide an estimate at all if they are not certain about the potential value.

Consider the following scenario that took place in one of our first practice interviews with a couple together, in Portoviejo, Manabí. After establishing that the couple had constructed their home together some twenty years ago in what had been then the outskirts of the city, when asked

for how much this two-story house could be sold for today, the husband immediately gave an estimate of US\$50,000. The wife then interjected that a home down the street that was newer and larger had recently sold for US\$50,000, so his estimate was probably optimistic. After some back and forth they settled on an estimate of US\$45,000.

Whether a process of providing a consensual response to valuation questions is even feasible, however, very much depends upon gender relations and the extent of female subordination. If women always defer to their husbands, or at the extreme, do not speak to outsiders in the presence of their spouse, a joint interview will not yield the desired results. Generating a consensual response thus depends upon social norms and women having the right as well as the confidence to disagree with their spouse. Another disadvantage of interviewing a couple together is the potential time and cost of being able to arrange an interview where both are present.

The advantage of interviewing a man and woman who form part of a couple separately is that in the intimacy of a one-on-one interview they may be more forthcoming in discussing what assets they own and their potential value. This would be particularly the case if there are ‘hidden’ assets, such as financial assets or other property that a spouse might not know about and that they would not divulge in his/her presence. Another issue favoring separate interviews is whether the enumerator and respondent need to be paired by sex to ensure the development of greater rapport and trust. The main disadvantages of interviewing a man and woman separately in a survey is that it could also involve greater costs (since it involves more time and/or more enumerators) and could result in conflicting information regarding the ownership and valuation of an asset which then complicates the analysis of wealth.

As noted above, the pre-testing of the survey instrument during the qualitative field work and the period of training of the enumerators provided us with the opportunity to experiment with different interview protocols and observe first-hand the pros and cons of interviewing a couple together versus separately. We finally came to the conclusion that in the case of Ecuador, where gender relations within the household are relatively equitable and women seem to have little problem speaking their minds, interviewing a couple together would enhance the quality of the information gathered, particularly the valuation measures. We also did not find that sex pairing of enumerators and respondents was crucial to establishing rapport for the interview.

With respect to the valuation questions, one of the important insights from the qualitative field work was that, in effect, in many locales there were no markets for certain assets, and if we wanted to be true to the lived experience of our respondents, we would have to provide the option in the questionnaire for respondents to indicate that alternative (‘missing markets’), along with an honest “don’t know.” Such purposely missing observations could, of course, potentially result in an underestimation of household and individual wealth unless such values were subsequently imputed. Our primary concern was whether such a practice would introduce a

gender bias in our results, if women, for example, were more likely than men to report missing markets or don't know, a possibility we test in the subsequent section of the paper.

On the basis of the qualitative field work and field testing of the instrument, it seemed that sometimes it was easier for people to provide information on the potential sales price of owned assets than on their replacement cost, and at other times, the reverse. In the case of housing, since home construction and improvements seems to be a never ending process in popular sector neighborhoods, the price of building materials was relatively well known and thus what it would cost to build the same home today could be estimated without much difficulty. However, for those who had finished constructing their homes years ago or had purchased a home, it was easier to provide a potential sales price as opposed to replacement cost. In addition, in the case of houses, the latter would need to take into account the price of purchasing the housing lot today, requiring an additional piece of information. Another problem is that to the replacement cost question people would sometimes respond with the estimated cost of the home that they wished they could build, made of materials of much higher quality than those in their current house. Given the variation in the measure with which people were more familiar with, we finally decided to include all three measures of valuation (sales, replacement and rental) for dwellings and two for agricultural land (sales and rental) in the questionnaire, to allow us to analyze the responses for their statistical properties at a later date, and the results are discussed below.

While people might not be certain of the price they could sell their home in its current condition, they could draw upon knowledge of recent sales in their neighborhood to provide a reasonable estimate. In case respondents were not sure of the potential sales price, we made the important decision to include such a prompt. This prompt was also useful in case respondents insisted that they would not sell their home (or any other valued asset) at any price because it was too important to them.

In the case of consumer durables we decided that it made little sense to ask for the replacement cost, since responses to such questions inevitably referred to what it would cost to purchase a new appliance, rather than a used one, which would overstate the value of the asset that was owned. Thus, in this case we only asked about the potential sales price, cognizant that markets for used appliances were thin. On the other hand, given the generally dynamic market for used vehicles, estimating the potential sales price was relatively straightforward for most owners.

Valuing businesses presented its own special difficulties. Given the heterogeneity of the businesses owned, particularly in the informal sector, we did not dedicate much time exploring market and valuation issues relating to these in the focus group discussions. The main insight we garnered was with respect to the importance of access to and use of credit, both formal and informal, for the acquisition of business assets as well as working capital. This gave us some degree of confidence that people would be able to estimate the value of their business assets. In the pre-testing of the instrument and pilot survey, we experimented asking about the value of businesses in two ways, the estimated price for which a business could be sold today and by

taking a detailed inventory of existing assets of the business and their potential value, and included both questions in the final instrument.

5. Quantitative research and triangulation

The 2010 Ecuador Household Assets Survey (EAFF, by its Spanish initials) is a nationally representative sample of 2,892 households.¹⁵ Most households surveyed, 68.5%, were composed of a principal couple with the remaining 31.5% consisting of a sole female (24.8%) or male (6.7%) head. In half of what we termed the “couple-headed” households, we achieved our aim of interviewing both members of the principal couple together, a group representing 34.4% of the total household sample. In another 27.5% of the total sample the household assets inventory was completed by only one member of the couple but both spouses completed the individual questionnaire separately.¹⁶ Only in 4.6% of the total sample were we not able to interview the second person of a couple, either because they were temporarily absent from the home or because they refused to be interviewed.¹⁷ In this case (as in the case of non-partnered respondents, the sole heads) only one person completed both the household and individual questionnaires. This distribution of interviews provides us with an unusual opportunity to compare the results of interviewing men and women in a couple together and separately and we do so below to triangulate the results on missing observations and the valuation of two of the major assets, the principal residence and agricultural parcels.

Missing Observations

First consider valuation responses regarding the principle residence. As Table 1 shows, we had a higher share of missing values overall for rental values (5%), compared with potential sales (3%) or replacement values (4%). Moreover, in each case there is a greater share of missing values for couples than for women or men interviewed separately, with men always reporting the lowest share of missing values. The differences by type of respondent are only statistically significant, however, in the case of rental values, with a greater share of values missing for couples than for those interviewed separately, particularly men.

With respect to agricultural parcels, there was also a much higher share of missing values with regard to potential rental values (15%), than for estimates of the sales price (4%). A similar trend to the case of housing is apparent in terms of the type of respondent, there being a higher share of missing values for couples than for female, and particularly, male respondents, although the differences are not statistically significant.

This data suggests that for Ecuador, taken as a whole, respondents were more likely to be able to provide valuation estimates for the potential sales price than for other value measures.¹⁸ When they did not provide a response, in all cases, this was principally because they reported that there was not a market for the asset in their locale, rather than that they did not know or refused to provide an answer.¹⁹

Based on our qualitative field work we had expected that interviewing a couple together was more likely to result in fewer cases of missing variables since perhaps at least one spouse could provide the information, given gender differentiated relations to markets and access to information. The data nonetheless suggest that both male and female respondents may be more likely to provide an answer to a valuation question when interviewed separately than when interviewed together as a couple, perhaps because the presence of the other spouse makes them less likely to guess in the face of missing markets or when they do not know the potential value of the asset. Thus, rather than reducing the percentage of missing observations, this suggests that one of the advantages of interviewing a couple together may be to improve the reliability of the estimates.

Estimates of Value

Table 2 compares the mean estimates for residences and agricultural parcels by the form of valuation and type of respondent. With respect to housing values, it shows that men on average report higher values than women or couples, and that these differences are statistically significant. In terms of land values, however, this trend only holds for annual rental values, and only these differences are significant.

With respect to the other statistical properties of these estimates, for housing values, estimates of the potential sales price have a lower coefficient of variation, skewness and kurtosis than either the estimated replacement value or rental value, and similarly for agricultural land, comparing the potential market value with the annual rental value (Doss et al 2013: tables 5 & 6). This suggests that, for Ecuador, valuation at potential sales prices provides the most reliable estimates, based both on statistical properties and the share of missing values.

Before we can conclude that men tend to overvalue their assets or women and couples undervalue them, we must take into account housing and land quality and other characteristics of the asset. In Table 3 we control for these factors by comparing the estimates of potential sales prices for housing and land provided by husbands and wives for the *same* asset but who were interviewed separately. It shows that while the trend is for husbands to report higher mean values than their wives, the difference is only statistically significant in the case of agricultural parcels. Nevertheless, via this test we cannot discount the fact that the spouse that was first interviewed may have shared the questions that were to be posed and their answer, so that the second spouse provided a similar figure (in the case of housing), or corrected the estimate of the first (in the case of land).

Modeling by Type of Respondent

Another way to investigate whether there are systematic differences in valuation due to who was interviewed is by constructing a model based upon “objective” measures of value and comparing this model among the different types of respondents. In this way, we are able to examine

potential differences among more types of respondents, since we are not restricted to only those where two respondents report separately on the same asset. For instance, we can pose the question whether men and women, responding individually, differ from when both a man and a woman are interviewed together. Here we conduct this analysis only for the principal residence.

The first step is to construct a relatively simple model that adequately accounts for the variance in housing values. We collected information on whether the dwelling was in an urban or rural locale and whether it was titled (there was a registered or unregistered property document), as well as on the number of rooms,²⁰ and square meters. In addition, information was collected on housing quality such as the building material for the walls, floor, and roof as well as on the source of the water supply (e.g. public network, public well, river, etc.), where it was located (e.g. inside the house, outside the house but on the lot, etc.), and on the type of sewage system employed. We ordered these six housing quality variables and combined them to form a housing quality index that demonstrated good overall internal consistency ($\alpha = .79$). Table 4 presents the overall basic descriptive statistics for these variables and the market value of the principal residence. For modeling purposes, we then centered the number of rooms, square meters, and housing quality on the overall averages such that the intercepts represent undocumented rural residences with three rooms, average square meters, and average housing quality.

Next, in Table 5, we compare the regression results for a reduced (nested) model that does not incorporate the type of respondent ($R^2 = .381$) to a model that includes separate coefficients for each type of respondent, individual male, individual female, and couple together ($R^2 = .644$). This analysis reveals that the complete model with separate regressions for type of respondent results in a significant reduction in error and improvement in model fit. This is a primary indicator that it may not be appropriate to ignore the type of respondent when analyzing the valuation of residences.

Now that we have evidence that we should incorporate the type of respondent in our analysis of housing valuation we want to pose the question whether this model differs among the type of respondents. Similar to above, we want to know whether this model fits one type of respondent significantly better than others. To do so, in Table 6 we perform a Fisher's Z transformation on the resulting R values for each type of respondent separately using this model.²¹ These tests reveal that there are no significant differences in model fit among individual male respondents ($R = .791$), individual female respondents ($R = .799$) and couple respondents ($R = .827$). Despite not reaching significance, there is some, albeit weak, evidence that the model may fit somewhat better for couples than males or females, as the p values for these comparisons (.17 and .14 respectively) are far smaller than that between males and females (.76). This is also in line with the qualitative research where it was noted that providing men and women with the ability to deliberate and form a consensus on the potential sales value of their residence may result in greater precision.

Finding that there are no significant differences in overall model fit by type of respondent does not address the question as to whether the model coefficients are equal across respondents. There may be structural differences in the model according to the type of respondent. In other words, the model may account for a similar amount of variance in potential sales value across respondents but may be accounting for this variance in different ways. These tests reveal that there are significant differences in the intercepts for individual male respondents ($b = 30748.49$) when compared to individual females ($b = 18351.11$) or couples ($b = 18660.01$) but not between females and couples. That is to say, the predicted value of rural undocumented residences with average characteristics is significantly greater for male respondents than females or couples.²² There are significant differences in the coefficient for square meters between male respondents ($b = 197.17$), female respondents ($b = 122.08$), and couple respondents ($b = 99.09$) but not between female and couple respondents. Likewise, there are significant differences in the coefficient for the housing quality index with male respondents ($b = 4174.19$) greater than females ($b = 2883.21$) and couples ($b = 2638.11$) but no difference between females and couples.²³

Taken together, these results show that there are structural differences in this model according to the type of respondent such that males differ from females and couples. First, there is evidence that male respondents provide significantly higher values than females or couples for rural undocumented homes but not urban documented homes. Second, there is evidence that the value of the residence provided by male respondents is significantly more sensitive to the size of the residence, in square meters, than are females or couples, such that a similar change in square meters results in a significantly greater change in value for male respondent values than female or couple respondent values. Finally, there is evidence that the value of residence provided by male respondents is significantly more sensitive to the quality of the residence than female or couple respondents, such that a similar change in quality results in a significantly greater change in value for male respondent values than female or couple respondent values. Overall, this conforms to the insight from the qualitative research that men and women may differ in how they value residences. Moreover, our results suggest that couples may incorporate the woman's perspective of values in that there appear to be no significant structural differences in the model between female and couple respondents.

6. Conclusions

In this paper we aimed to contribute to a feminist economics methodology in several ways. First, we posed a question not usually considered by mainstream economists-- the intra-household distribution of wealth—a potentially important source of gender inequality and a variable that may be crucial in supporting broader structures of gender inequality. Second, we utilized a mixed-methods approach to establish the feasibility of conducting research on this topic. The

study of personal wealth requires that markets exist and that people be familiar enough with them to be able to estimate the value of what they own. Further, to analyze the intra-household distribution of wealth, individual ownership of assets must be sufficiently defined so that people can differentiate what belongs to them individually versus jointly with someone else. Third, we have demonstrated that it matters how you go about collecting quantitative data on wealth and the importance of doing so in a gender-sensitive manner.

Valuing assets in a household survey is a complicated undertaking. Missing markets are a real phenomenon in developing countries that must be taken into account in designing a survey instrument to measure wealth. Our qualitative research suggested a range of situations where people might be more or less likely to be able to report on the value of the assets that they owned, but yielded no consistent insight on which measure of value might be captured most reliably. Triangulating the qualitative with quantitative data and statistical analysis lead us to conclude that, in the case of Ecuador, the potential sales price provides the most reliable estimates, but whether this result can be generalized to other countries requires further research.²⁴

Our qualitative research strongly reinforced our initial intention to interview both men and women, and led us to experiment with interviewing both members of a couple together and separately. While we had expected that interviewing both members of a couple together would lead to fewer missing responses, data triangulation showed that this was generally not the case for housing and land values, but rather, perhaps improved the reliability of our estimates by reducing the tendency to guess when there were in fact missing markets or the person really did not know the answer.

We had also expected that interviewing a couple together would improve the estimates by allowing them to reach a consensus on the potential asset value. The focus groups with women had highlighted the factors that might lead women to overvalue their assets. We did not carry out sufficient focus groups with men or mixed groups to develop strong expectations regarding men's perception of values, although testing of the questionnaire in the various types of interviews suggested that men were often more confident than women in reporting asset values and perhaps more prone to exaggeration. The quantitative findings of a tendency toward men overvaluing and/or women undervaluing their dwelling thus conforms to this insight.

Overall, this series of quantitative analyses suggests that it makes a difference who you interview, not only in terms of their sex, but also the form of the interview—whether couples are interviewed separately or together. We found that our model fit was greatest among respondents who are couples interviewed together and that there are structural differences according to the type of respondent; these differences are such that only male respondents tended to differ from female and couple respondents. We also found that predicted values for male respondents were

greater than those for female respondents and couples, particularly in rural areas with regards to undocumented residences. Though relatively simple, this model adjusts for “objective” measures of the residence and as such these differences in predicted values are likely to be partially reflecting a perceptual bias where rural male respondents may be overvaluing or female and couple respondents may be undervaluing the residence. In short, we found evidence that valuation of potential sales prices is likely to be dependent on several factors such as the gender of the respondent, whether they are interviewed separately or together, and whether the residence is located in an urban or rural locale.

One aspect that we did not investigate is whether the marital status of the respondent makes a difference. In the analysis presented the category of individual male respondents includes those who are non-partnered (single, separated, divorced or widowed) and those who are partnered (married or in a consensual union) but who were interviewed separately from their spouse. Studies in developed countries suggest that the mean wealth of married couples is substantially greater than that of sole household heads (whether male or female) and much greater than explained by the fact that the former generally consist of two adults compared to one (Schmidt and Sevak 2006; Deere and Doss 2006). Since housing wealth makes up such a large share of personal wealth, it may be the case that couples own more valuable homes, due to economies of scale of various types, greater access to credit, etc. If this were to be the case, then we might expect partnered spouses to report higher values whether they were interviewed alone or together with their spouse.

In the case of Ecuador those who are partnered – whether responding as a couple or individually—report lower average home values than those reported by non-partnered individuals. Nonetheless, it would be worth investigating whether non-partnered male and female respondents are responsible for the structural differences noted above, expecting there to be fewer differences among partnered male respondents, partnered female respondents, and couple respondents. This would be the case if men and women who are married tend to share other personal characteristics and are more similar (i.e., “marriage sorting”) than the pool of non-partnered individuals. Also, we cannot totally discount the fact that some degree of information sharing may take place among husbands and wives, such that when interviewed alone about housing values they provide values more similar to those of couples when interviewed together as compared to non-related individuals.

Tables

Table 1. Share of missing values by form of valuation and type of respondent (%)

Principal Residence	n	Sales Value	Replacement Value	Rental Value
Male	273	1.8	2.2	2.2
Female	832	2.9	4.0	4.1
Couple	622	3.9	4.0	6.9
Total	1,727	3.1	3.7	4.8
Chi-squared test		$p = 0.248$	$p = 0.355$	$p = 0.004$
Agricultural Parcels	n	Sales Value	n ^a	Rental Value
Male	66	1.5	58	6.9
Female	201	3.5	189	14.3
Couple	245	4.9	230	17.4
Total	512	3.9	477	14.9
Chi-squared test		$p = 0.418$	$p = 0.128$	$p = 0.128$

Notes: * $p < .10$, ** $p < .05$, *** $p < .01$

^aThe number of observations for land parcels differs, since the potential sales value includes all parcels while potential rental value includes only those parcels which are not currently rented.

Source: Doss et al (2013), based on authors' calculations from EAFF 2010.

Table 2. Mean value of asset by form of valuation and type of respondent (US \$)

Principal Residence	n ^a	Sales Value	Replacement Value	Monthly Rental Value
Male	259	37,734	43,975	156
Female	768	28,264	33,747	123
Couple	559	21,309	24,412	97
Total	1,586	27,359	32,127	119
F-test		$p < 0.000^{***}$	$p < 0.000^{***}$	$p < 0.000^{***}$
Agricultural Parcels	n ^a	Sales Value		Annual Rental Value
Male	54	11,454	-	1,067
Female	161	9,688	-	366
Couple	190	14,029	-	395
Total	405	11,960	-	473
F-test		$p = 0.215$	-	$p = 0.006^{***}$

Notes: * $p < .10$, ** $p < .05$, *** $p < .01$

^aBased on those observations where respondents provided valuation estimates for all measures of value.

Source: Doss et al (2013), based on authors' calculations from EAFF 2010.

Table 3. Comparison of mean sales values reported by husbands and wives interviewed separately (US\$)

	Principal Residence	Agricultural Parcels
Male	32,435	13,683
Female	31,040	11,002
N	338	79
T-test	$p = 0.230$	$p = 0.064^*$

Note: * $p < .10$, ** $p < .05$, *** $p < .01$

Source: Doss et al (2013), based on authors' calculations from EAFF 2010.

Table 4. Descriptive statistics, residences

Variable ^a	Minimum	Maximum	Mean	Std. Deviation
Potential sales value	100.00	400000.00	27484.94	32974.431
Urban	0.00	1.00	62.6%	.484
Titled	0.00	1.00	69.2%	.461
Number of rooms	1.00	14.00	3.12	1.280
Square meters	6.00	696.00	88.34	60.436
Housing Quality	1.00	16.00	10.92	3.846

Note: ^an = 1555 for each variable.

Source: authors' calculations from EAFF 2010.

Table 5. Comparing the reduced model with complete model, housing values

Variable	b	SE	B	
Reduced model				
Intercept	20147.43	1528.30		
Urban	6721.97	1480.14	0.10	***
Titled	4046.58	1548.88	0.06	***
Number of rooms	2856.80	621.84	0.11	***
Square meters	133.35	13.09	0.24	***
Housing quality	2943.28	212.82	0.34	***
Complete model				
Male				
Intercept	30748.49	4426.71	0.29	***
Urban	342.53	4201.54	0.00	
Titled	-215.18	4297.03	0.00	
Number of rooms	3421.97	1411.16	0.05	**
Square meters	197.17	28.06	0.13	***
Housing quality	4174.19	581.26	0.15	***
Female				
Intercept	18351.11	2364.58	0.30	***
Urban	7363.50	2105.48	0.10	***
Titled	5129.41	2275.69	0.07	**
Number of rooms	2749.19	882.66	0.06	***
Square meters	122.08	19.11	0.12	***
Housing quality	2883.20	301.56	0.17	***
Couple				
Intercept	18660.01	2272.50	0.26	***
Urban	6624.71	2419.59	0.07	***
Titled	3686.18	2430.69	0.04	
Number of rooms	2220.93	1097.05	0.04	**
Square meters	99.09	22.98	0.08	***
Housing quality	2638.11	348.72	0.15	***

Notes: * $p < .10$, ** $p < .05$, *** $p < .01$

$n = 258$ for males; $n = 744$ for females; $n = 553$ for couples.

$R^2 = .38$ for Reduced model; $R^2 = .64$ for Complete model, $F(12, 1536) = 3.18$, $p < .000$.

$R^2 = .63$ for males; $R^2 = .64$ for females; $R^2 = .68$ for couples.

Source: EAFF 2010.

Table 6. Comparing complete model coefficients among types of respondent, housing values

Variable	Comparison					
	Male - Female		Male - Couple		Female - Couple	
	$b_1 - b_2$	Z	$b_1 - b_2$	Z	$b_1 - b_2$	Z
Intercept	12397.38	2.47 **	12088.48	2.43 **	-308.90	-0.09
Urban	-7020.97	-1.49	-6282.18	-1.30	738.79	0.23
Titled	-5344.59	-1.10	-3901.36	-0.79	1443.23	0.43
Number of rooms	672.79	0.40	1201.05	0.67	528.26	0.12
Square meters	75.09	2.21 **	98.08	2.70 ***	22.99	0.77
Housing quality	1290.98	1.97 **	1536.07	2.27 **	245.09	0.53

Note: * $p < .10$, ** $p < .05$, *** $p < .01$

Source: EAFF 2010.

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Endnotes

¹ See Vyas and Watts (2009), for example, for a review of a large number of studies focusing on the relationship of different measures of women's empowerment and the incidence of intimate partner violence.

² We draw upon the distinction in the literature that methods refer to particular research tools or techniques while "a methodology is a combination of techniques, the practices we conform to when we apply them, and our interpretation of what we are doing when we do so" (Olsen and Morgan 2005: 257). A feminist methodology is one based on feminist principles and vision of social change; i.e., doing research to advance an agenda of social justice for women (see Miner-Rubino et al 2007 and other essays in Nagy 2007). A feminist economics methodology is still in the process of construction, but includes an emphasis on what Robeyns (2000:4) terms a "thick" definition of gender, "the power differences between men and women in society, and the structures and constraints that make these power-differences occur and persist."

³ For example, in the US, the Panel Study of Income Dynamics of non-pension wealth-- which is frequently utilized to study household wealth trends-- does not ask who in the couple owns the major assets (Schmidt and Savak 2006). In the UK, The Family Resource Survey does collect information on pension wealth by individuals and their sex, but for couples, housing and financial assets are reported only at the household level (Warren 2006). The exception thus far seems to be the German Socio-Economic Panel, which collected wealth information on all adult household members (Sierminska et al 2010).

⁴ Deere, Alvarado and Twyman (2012) in a detailed review of 167 household survey instruments utilized by twenty-three Latin American and Caribbean countries since the 1990s found that only eleven countries had collected some asset ownership data at the individual level in one of their household surveys. The most frequent asset for which individual-level information was available was for housing, for nine countries. Only one survey collected information on a large number of assets (housing, land, livestock, businesses, consumer durables) at the individual-level, but the inconsistent manner in which value information was collected precluded a rigorous analysis of the intra-household distribution of wealth.

⁵ Field work was carried out in the following municipalities: in Pichincha, in Quito, Cayambe and Pedro Moncayo; in Azuay, in Cuenca, Gualaceo, Paute and Sig Sig; in Manabí, in Portoviejo, Manta, Montecristi, 24 de Mayo and Olmedo.

⁶ The focus group themes were developed collectively by the Gender Asset Project team, and modified appropriately by each country team.

⁷ The template for the Gender Asset Gap project surveys was derived from the previous review of survey instruments reported in Doss, Grown and Deere (2008). The generic template was then adapted to each country situation, informed by the qualitative field work.

⁸ The national survey was executed by the consulting firm, HABITUS Inc, and included over 50 enumerators and supervisors.

⁹ The exception to this description is the Amazon region of Ecuador, which actually covers over half of the country's geographic extension but holds only 5% of the nation's population. This region, as well as the Galapagos Islands, was excluded from our study.

¹⁰ For lack of space, we exclude a description of the market in agricultural equipment and tools, the market for existing businesses, or the financial market.

¹¹ Other sources of information on real estate values that we pursued in order to educate ourselves about dwelling and land prices were the municipal-level cadaster offices and property registries. The cadaster offices are charged with valuing real estate for tax purposes and do so based on fixed rates according to location and square footage. These tables are updated approximately every ten years, and we found that in many cases they were considerably out of date, severely undervaluing property compared to current market values. Each real estate transaction must be recorded in the local property registry, so this is another potential source of information on current values. However, the records of neither of these offices is systematically computerized, thus it proved impossible to gather administrative data from these sources to incorporate into our study.

¹² The term ‘popular’ classes is a translation of the Spanish term referring to everyone in the bottom 60% of the income distribution, including the urban and rural working class, informal sector workers and peasants.

¹³ There is also a government housing program, the Bono de Vivienda, which provides a housing subsidy for low income groups of up to \$5,000 (in 2009-10) for housing construction for those who already own a titled lot, and of up to \$1,500 for home improvements.

¹⁴ For lack of space, this information is not presented herein, however, among the topics discussed in the focus groups was the bundle of rights that ownership confers. In Ecuador it became quickly apparent that most people consider ownership of an asset, including land, to entail the right to sell and rent it, use it as collateral and to bequeath it. There was greater confusion over the property rights entailed in marriage, and these results from the qualitative research are reported in Deere, Contreras and Twyman (2013).

¹⁵ It was a stratified random sample, based on socioeconomic status as determined from the 2001 Ecuadorian National Population and Housing Census and two-stage random sampling. For the sampling method, see Deere and Contreras (2010).

¹⁶ The protocol was to make three attempts to interview the couple together. Due to time and budget constraints, if after the third try, this was impossible to arrange, whoever was present (the husband or wife) completed the household inventory and the other spouse was interviewed separately at a later moment.

¹⁷ There were 15 households where the household inventory was completed by the couple together, but where for various reasons it proved impossible to complete the individual questionnaire with one of the spouses.

¹⁸ See Doss et al (2013) for a comparative analysis of this issue across the three country sites.

¹⁹ With respect to rural-urban differences, for the principal residence, the only measure that was statistically significant was for the rental value, with 10% of rural respondents compared to only 1% of urban respondents reporting this variable as missing, as expected, principally because of missing markets. In terms of agricultural parcels, there was a significant difference by locale with respect to the potential sales price, with 5% of rural and less than 1% of urban respondents not reporting this measure, again primarily because of missing markets (see Doss et al 2013).

²⁰ The number of rooms excludes the kitchen, bathrooms, garage, or rooms dedicated exclusively to business purposes.

²¹ Here we report R , rather than R^2 values, because this is the coefficient utilized in the Fisher Z transformation.

²² A similar test for the predicted value of the average residence that is urban and documented does not reveal significant differences among male ($b = 30875.84$), female ($b = 30844.03$), and couple ($b = 28970.91$) respondents.

²³ Similar overall results are obtained from the log transformed potential sales values such that model fit is improved by modeling values separately by type of respondent (male, female, and couple) and that there exist structural differences in the coefficient for housing quality for male respondents when compared to female or couple respondents.

²⁴ See Doss et al (2013) for a comparative analysis with Ghana and India on this question.