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"The Winning Couple: Formal Wife and Informal Husband"

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Abstract

Over decades a large fraction of literature, in all social sciences, has devoted to gender studies. Differences between sexes in the labor market are an established fact, linked to several theoretical and empirical evidences. On the other hand, informality is a large and persistent reality for most developing countries. Some authors link the women's vulnerability, typically less educated, and their customary child care activities, carried out by women, to higher rates of informality by women. However, recent trends in middle-income countries may pose a challenge to those previous results as women may be choosing formal jobs, even at larges rates than men. We present such result for the Colombian case, by using the NTA-gender methodology and a review of educational attainment, child labor and labor market statistics by gender. Indeed, we argue that the massive increase in female education, the proliferation of child labor in paid activities, that "favor" boys over girls, and the rampant growth of the informal market, that includes illegal activities very profitable in Colombia, drive gender segregated decisions with the formal/informal duality of the labor market in an unexpected way. That is, women working in the formal sector earn almost as much as men working in the informal sector. But more importantly, women show at all ages larger consumption patterns of health, for which the prefer the formal jobs that guarantee access to the health system for them and their kids, as well as receiving a formal pension in later years.

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1. Introduction

Colombia´s fertility reduction during the 1970s coincides with a large rural-urban migration and several sociological changes. Among such changes experts highlight the rapid increase of female education and massive incorporation to the labor market (Flórez, 2000). The repercussions of such changes have important consequences in developing countries, where labor markets are highly segregated between formal and informal.

Formal jobs are those under which employees receive at least a minimum wage, health and pension benefits, and contribute paying taxes; while informal jobs cover all other jobs, including those in under-ground economies where workers do not receive such benefits or pay taxes. The segmentation between formal and informal jobs overlaps to gender segregation, where certain kinds of jobs are more prone to be taken by men, while others by women. For instance, most pre-school teachers are traditionally women, while most construction workers are men.

Although several studies have focused on either the formal/informal duality of the labor market (Gindling, 1991; Rauch, 1991; Fields, 2009; Pagés and Stampini, 2009; Basu et al. 2011) or the gender segregation (Blau & Kahn, 2003; Olivetti & Petrongolo, 2008; Yamauchi & Tiongco, 2012), little has been devoted to the potential relationship that could exist between both (Cho, J. & Cho, D., 2011). We propose, in this paper, that they are highly correlated, particularly in developing economies where informal markets are rampant. We use the National Transfer Accounts (NTA) methodology and labor market analysis using the Living Standards Household Survey (ECV for its initials in Spanish) for Colombia in year 2008; in order to quantify the intergenerational transfers by gender and informality, in a middle income country with a mixed pensions system, including public, private and familiar support, such is Colombia. Our focus is in labor income profiles for formal and informal sectors, and gender differences for which NTA methodology and profiles allows us to do estimations to all stages of the labor market: education, productive and retirement years. Given the large constraints in developing countries for alternative longitudinal data that allows such calculations, the NTA methodology provides a reliable alternative.

Our results show important differences in educational attainment that highly correlates to informality, labor income, access to health and pension benefits. The study of all of these conditions combined, allows us not only to report the increase in women's education and labor income for recent cohorts, or the persistent gender segmentation, but more importantly we observe that women tend involve more in formal jobs that not necessarily imply larger wages, but guarantee access for them and their children to the health system, and later in life to pension benefits. While men prefer to enroll in informal jobs where current income is probably more unstable, but larger which compensates for the lack of benefits. The decisions of men getting involved more in informal jobs and women in

formal ones may be driven by educational attainment. Younger cohorts of women, on average, reach more years of education than men, as paternal households seem to favor educational investments in women rather than men. This is partly due to a sociological change, but partly due to the increase of under-ground economies that include: child labor, drug and gun trafficking and all war-related production, all of them more attractive and lucrative to men than to women.

The remaining of this document is organized as follows. The next section includes the motivation for this document. Section 3 presents the methods, section 4 the results and the final section presents the conclusions.

2. Gender Segregation and Informality in the Labor Market

Gender differences in labor market have been studied over decades by social scientist from different perspectives; however those theories have not been fully developed for situations overlapping a dual economy split between formal and informal. For that reason, this section provides a quick review on the literature on one and other topic that may help us link both literatures and provide an explanation to the research question at hand and some particularities found for both topics for the Colombian case.

To begin with, parental decisions on human capital formation, as investments in education, take a central role in future labor market outcomes by gender. Alderman & King (1998) look at opportunity cost in this decision and mark out that the limitation for women in obtaining returns from their education may reduce the desire of parents for investing in girls' education. While Schultz (2002) supports that "boys often receive more family educational expenditures" because of the expected private rate of return, larger for boys than for girls. Thus to increase girls' education, parents should be rewarded by the political family for providing a more productive and educated wife. Similar results are attained by Hazan & Zoabi (2012) who argue that whenever there are sex-preferences towards sons; daughters end up with lower levels of education, as they are born in larger families, by nature of sex-preferences. In contrasts, Yamauchi & Tiongoc (2012) find, for the Philippines case, that parents' optimal action to offset labor market discrimination is to provide more schooling to girls, as they tend to share returns with them.

Other set of theories, like those proposed by several Demographers and New Household Economists propose that the demand for children is jointly taken between spouses, in order to coordinate market and domestic labor. By doing so, labor market supply and reserve wages are also jointly decided with the number of kids couples decide on (Schultz, 1997). This may be the case of several developing countries. For instance, in Colombia the segmentation between formal (48%) and

informal market (52%) may be leading the investments parents do on their kids' human capital by gender, as well as leading young adults' decisions on the same matter. Those investments in female education are probably not fully reflected in labor income, but in the access they get to the formality of their jobs, namely stability and access to formal social security systems. More recently, Baker and Jacobsen (2007) propose that the gender division of labor relies on the distribution of marriage surplus from human capital formation, in which distributional effects and welfare gains of customary gender division of labor decreases as opportunities for market exchange increase.

At the presence of informal markets there are not so many theoretical approaches, but empirical research show that according to global figures, women are more prone to enroll in informal jobs and more likely to accept vulnerable employment circumstances, or even illegal ones. On one hand, informality is preferred by middle income women as self-employment offers them flexible schedules (Bueno, 2009), well needed by women for child-caring reasons. Thus, women's employment election is influenced by other dimensions beyond payment, which include: pleasant working conditions, occupational hazards, meaningful work (Joyce, 2012). Similarly, Gallaway and Bernasek (2002) find that parenting have no influence in men's job, but absolutely increase the probability that a woman choose the informal sector.

On the other hand, women with low income and low levels of education devote themselves to informal activities such as home-based work, street vending and other trade and services in order to survive and this way they become more vulnerable. This vulnerability is originated in the primary women responsibility of domestic activities and child care, both unpaid, reducing women's ability to move upward in the occupational categories or even towards the formal sector (Beneria, 2001). For instance, one extreme occupation in the informal markets is illegal activities. At drug trafficking women are more disadvantaged as traffickers take advantage of low educated women, with high unemployment rates at specific zones and offer them risky and underpaid activities such as cleaning and domestic services, packers, cashiers, figureheads (Ovalle & Giacomello, 2006).

Colombia's particular case may pose a contradiction to the previous literature review. Adult population has steadily increased the average number of years of education, since 1970 (Ribero & García, 1996), accompanying several social changes. This increment has been more notorious for women than for men (Flórez, 2000), and since the late 1990's women have on average more years of education than men. This fact is particularly true for cohorts born since 1956 (Herrera, 2010). This increase on female educational attainment is linked to overall fertility reduction and massive incursion of women in the labor market (Flórez, 2000) namely, female labor participation passed from almost 47% in 1984 to 65% in 2006 (Amador et al., 2012). Simultaneously, child labor is increasing in Colombia (passed from 6.9% in 2007 to 9.2% in 2009) and boys work more in paid labor market jobs

(Gallego & Sepulveda, 2011; Urueña et al., 2009; Flórez & Méndez, 1998) related to larger educational desertion rates of boys (Sánchez et al., 2011).

Also, informality in Colombia is rampant and recently is more likely that a worker moves from formal to informal sector in the labor market than the opposite (Cuesta & Bohórquez, 2011). While women are more likely to retain their jobs at the formal sector than men, not because of the salary but because of the availability of fringe benefits (Bernal, 2009).

3. Methods

We followed the NTA methodology described in the NTA-manual V.1 (March 2009), and based in Lee's theoretical developments (Lee, 1980; Lee, 1994; Lee, 2000; Bommier y Lee, 2003). In summary, the flows between generations are measured from a set of accounts using a balance sheet, a flow account, an asset transfer account, and holding gains. The identity that links these elements is:

$$W(x,t) = W(x-1, t-1) + F(x,t) + \tau^A(x,t) + H(x,t)$$

Where, W(x,t) is the wealth for those of age x at the end of year t, F(x,t) is the net flows for those age x during year t, τ^A(x,t) is capital transfers during the period for each age, and H(x,t) is holding gains during the period for each age. The flows consist of both the production and consumption of goods and services produced and distributed during the current period and transferred to individuals of all ages. These flows correspond to the macroeconomic aggregate flows most are familiar with: GDP, total consumption, savings, etc. Transfers in the flow account refer to goods and services produced during the current period. Asset transfers are large previously accumulated wealth that is transferred to individuals of a different age, such as cross-subsidies. The NTA methodology "translates" national accounts systems into household's income-expenses age profiles, using for age profiles the data recorded in a detailed household survey that includes income and expenses, that are latter multiplied by factors that allow the total area under each profile to add up to the total macroeconomic account. For instance, the profile of labor income follows the age distribution of all labor income recorded from workers in the household survey and arranged following the NTA methods, for which the total area under the curve adds up to the homologous of "payment of workers" account of the System of National Accounts, when the NTA methodology is applied.

The NTA methods require the manipulation of a household survey that in Colombia corresponds to the Living Standards and Life Quality Survey for 2008 (ECV-08, for its acronym in Spanish) and a large collection of macroeconomic data that includes the System of National Accounts (DANE); GFS accounts from the International Monetary Fund (IMF); Balance of Payments, Financial and price data from the Colombian Central Bank (Banco de la República); Central Government Income and

Expenditure Balance, Expenses per program and Public Finances from the Ministry of Finance and the Ministry of Health (Ministerio de la Protección Social).

Gender calculations using NTA is an extension of the NTA project, but adding the gender perspective includes disaggregating the national accounts-based NTA by gender, following the gender distribution from the household survey (ECV-08). Whenever there are only household-level information available, as it is the case of general consumption and taxes, we imputed amounts to individuals by assuming equivalent adult consumer weights. Finally, it is necessary to make an adjustment with the aim that the gender-specific age profiles' area under the curve are consistent to the Official System of National Accounts.

We chose this particular methodology because it allows us to cover all stages of the labor market both for men and women and both for formal and informal workers, during the entire life-cycle rather than just focusing in the productive years, or the retirement age given the lack of longitudinal data in most developing countries, such is the case of Colombia. Here, formal workers have been defined as those who responded to the occupational category as private or public employees plus independent workers with at least tertiary education and informal all other categories workers, which include: domestic workers, family workers, independent workers or employers with less than tertiary education, and agricultural workers.

For consistency, other statistics are calculated from ECV-08, carried out by DANE (The Colombian Official Bureau of Statistics). It surveyed 13.600 households between August 11 and October 10, 2008. It is representative at the national level, as well as rural/urban and for nine Colombian regions (Amazons and Putumayo, Caribbean, Pacific, Central, Eastern, Antioquia, Valle del Cauca, Bogotá, and Orinoquía). The sampling design was probabilistic, stratified by clusters and multi-stage. The ECV-08 covers all the traditional household and socio-demographic characteristics, subjective poverty measures, income-expenses per individual and household, and includes a set of questions with gender perspectives such as the activities developed with children under age 5 by both parents.

Other than descriptive statistics we have calculated a traditional segregation index (Duncan O. and Duncan B., 1955). For that purpose we classify economic activities based on the International Standard Industrial Classification of all Economic Activities and summarized them in 14 categories. Whenever educational level was considered in categories we followed the standard: completed primary, completed secondary and tertiary, in this last type we include some graduate study no mater it is not finished, and measure socio-economic categories by quintiles of total expenses per household.

4. Results

The basic statistics, following ECV-08 data, confirm what others have found for the Colombian case (see Section 2), that is average years of education are nowadays larger for men than for women, and the increase is mainly pushed by younger generations. In fact, men older than 15 reach on average 5.74 years of education and women 5.93, being this difference on average statistically significant. For those with tertiary education the average numbers of years approved in the category is 4.37 for men and 4.07 for women, as seen in Figure 1. The average is highly influenced by generational differences. For instance, the proportion of women with secondary education is 3 times larger compared to their mothers, and 10 points higher in tertiary education (for older than 15 years old), as shown in Figure 2.

Figure 1. Average years of schooling by gender in Colombia, 2008
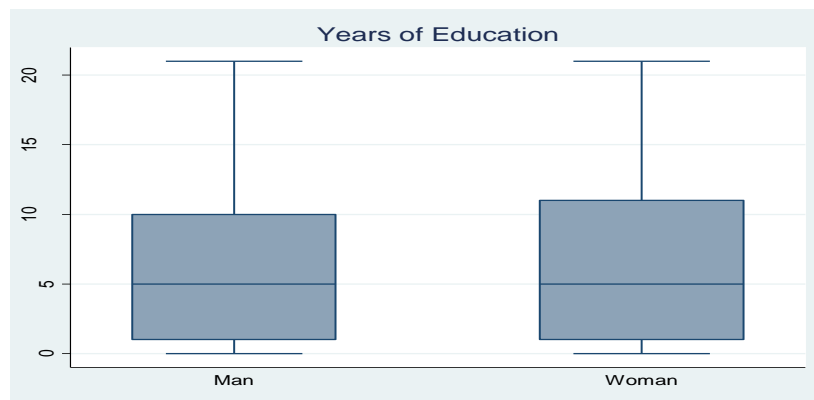
Source: Own Calculations from ECV-08

Figure 2. Proportion of generational schooling attainment in Colombia, 2008
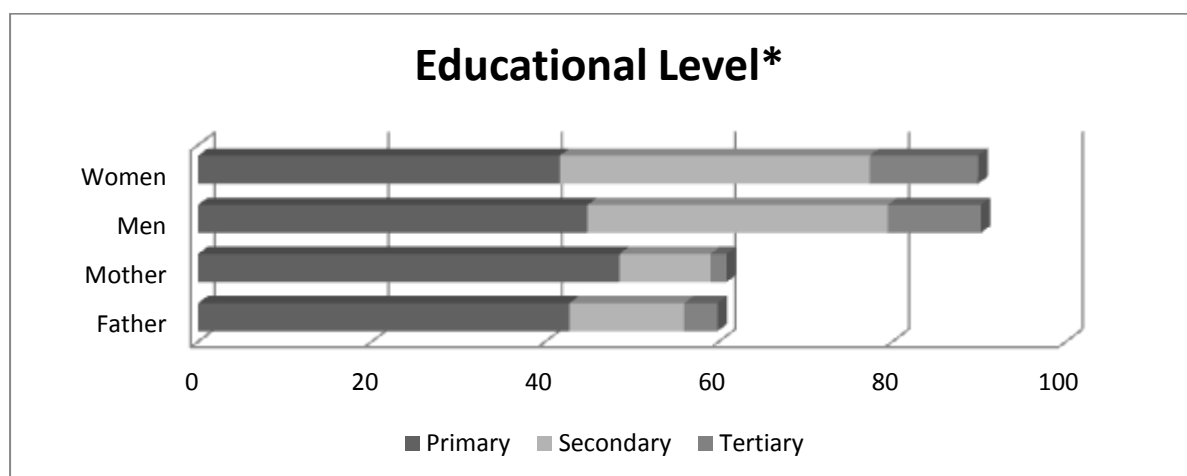
Source: Own Calculations from ECV-08

The combination of educational attainment and child labor trends is probably leading the larger numbers of males working, later in life, in the informal sector (62% of men are informal) and women more in the formal sector. First, child labor for children 12 to 15 reaches high levels: 12.9% for boys and 11.7% from the ECV-08. Second, and not surprisingly, boys drop out of school in larger numbers than girls. Considering that the tertiary education cycle begins on average at age 18, we estimated the overall schooling unattendance rates for ages 10-17, which reach 15.2% for boys and 11.6% for girls. This trend repeats across socioeconomic groups, to our surprise these trends are more persistent for the poorest. We categorized households by quintiles of consumption, which are more reliable than income (Deaton, 1986), being the first quintile (Q1) the poorest and the fifth quintile (Q5) the richest. Table 1 shows these results where the difference in the unattendance rates is almost 10 percentual points between boys and girls for the poorest group, and as the socioeconomic group moves forward the gap closes between genders. Also, the rate is always bigger for boys than for girls, except for the very last group, the richest, where the unattendance rate is practically the same. This trend shows that there are no socioeconomic influences on the drop-out rates that equalize boys and girls. If any, this table shows that boys drop out in large numbers in the most disadvantaged households. This does not imply that girls do not leave school across socioeconomic groups, it definitely is a problem that concerns both sexes, but the effects are much more dramatic for boys in the poorest households of Colombia, and this can be explained by the theories of poverty and child labor that leads parents to push their boys earlier into the labor market over girls, as they tend to enroll in paid jobs.

Table 1. Unattendance Rates by Quintiles of Expenditure for Ages 10-17 in Colombia, 2008

Expenditure Quintile	Men	Women
Q1	35.7	27.3
Q2	18.4	12.3
Q3	10.2	9.9
Q4	7.6	5.4
Q5	3.4	3.5

Source: Own Calculations from ECV-08

Moreover, if we focus on the older adolescents, Table 2 shows the average number of years of education for ages 15 to 19 years old, where there is a preoccupant trend for which girls are staying longer in the educational system and over-passing average years of education of boys, since age 15. Unfortunately this trend is not exclusive of adolescents, it repeats for younger adults and in general for cohorts born in 1975 this difference is statistically significant (using a t-test of differences of means), as shown in Table 3. Just like the unattendance rates this trend repeats for all quintiles of the household expenditures, for the same cohorts, as presented in Table 4. The average difference is no larger than half a year of education, but it is striking that even women of all quintiles of expenditure hold larger averages of education at all ages, except for the 21-25 in Q1, where the average is 0.2 years below for women than for men.

Table 2. Average Years of Education for Adolescents by Gender in Colombia, 2008

Age	15	16	17	18	19	20
Men	7,34	7,9	7,85	7,09	7,06	6,7
Women	8,03	8,44	8,1	7,21	7,2	6,9

Source: Own Calculations from ECV-08

Table 3. Average Years of Education for Adults by Gender in Colombia, 2008

Age	Men	Women
21-25	7.4	7.7
26-30	7.6	8.0
31-35	7.3	7.7
36+	5.7	5.7

Source: Own Calculations from ECV-08

Table 4. Social Security coverage most segregated occupations, Colombia-2008

Age	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
	Q1		Q2		Q3		Q4		Q5	
21-25	6.4	6.2	7.1	7.4	7.6	7.8	8.2	8.6	7.7	8.3
26-30	5.6	5.4	6.9	7.3	7.7	8.2	8.3	9.0	9.8	9.9
31-35	4.6	4.6	5.7	6.2	7.0	7.9	8.6	9.1	10.6	10.6
36+	3.0	3.0	4.1	4.2	5.2	5.3	6.6	6.6	9.6	9.4

Source: Own Calculations from ECV-08

Finally, the time devoted to work is larger for men, whom work 4 more hours on average than women per week, while women expend more hours with their kids. Table 5 shows that most out of school activities for children 5 years or younger at carried out by mothers, on average 62.1% of the activities are carried out by women. This pattern is almost universal and widely studied disregarding the quality of jobs or gender segregation. Culturally, thus, women need to fix their jobs around child caring, which is time-intensive while men devote longer hours to paid work (Ganguli et al., 2011; Figart et al., 2002).

Table 5. Social Security coverage most segregated occupations, Colombia-2008

Sing, read or tell stories	63,38
Play games	58,44
Go out to the playground/park	57,62
Playing sports	53,33
Arts and crafts	70,93
Share at least one meal per day	59,46
Supervise homework	71,43

Source: Own Calculations from ECV-08

As a result, more women than men are currently affiliated to the formal pension system: 34.91% of working women against 25.13% of working men, and there is a significant generational shift: those

in 2008 *receiving* a pension add up to almost 3% in the case of women and 3.63% for men. This low rates of people receiving pensions is mainly explained by the demographic composition in Colombia, as older adults are a small fraction of the total population, and the fact that the formal pension system was implemented only until 1946 with very low coverage rates ever since.

To provide further evidence on the effect that the differences may actually have on the labor market, we estimated the traditional Duncan Occupational Segregation Index (DOSI) for 14 occupational categories that summarize 80% of workers that exclude the highest 10th percentile of income. We find that 44.39% of men or woman would have to change their occupation in order to have the same sex distribution. The more segregated categories are primary sector (which includes agriculture, fishing, extraction of minerals) mostly dominated by men (more than three times); trading and hotels where women are 1.6 times men; and Education and Health where females are four times their counterparts.

In order to analyze segregated occupations we select the more segregated ones (more than five percent) and we calculate the pension and health coverage to fully measure formality of each sector. An occupation classifies as formal if the person is public or private employee or is independent worker with tertiary education, since 98% of workers report one job only, in the few cases where there are two or more occupations for one person we take into account the one that generates the larger income. In this sense, male traditional occupations are more homogenous than women: 36% work as agricultural workers and 19% are stonemason, driver, and merchants. Women, instead, are employed as domestic workers 12%, 11% are peddler, 10% are merchants and three occupations have near 6%: agricultural workers, cooks, and educators.

These results also points towards our hypothesis that such segregated occupations in the labor market are not due to income, but social security coverage. Health insurance coverage is widespread, being higher for women than for men (Table 6). Instead the pension system coverage reaches less than 18% to either the PAYGO or private retirement account. An interesting issue is that female occupations are mostly formal in comparison with males', and obviously both pension and health coverage is higher for females.

Table 6. Social Security coverage most segregated occupations, Colombia-2008

Occupation	Male	Female
Health coverage	82.6	89.0
Pension coverage	12.1	17.8
Informal	76.9	56.7

Source: Own Calculations from ECV-08

This results show that women tend to favor formal occupation over informal, this implies a contribution to health system and pension system, although the latter to a lesser extent. Besides, we observe that those occupations with strong segregation are those that demand little or no education, such as mason and domestic worker. While in the formal sector the most segregated occupation is teaching which is female dominated. The explanation may come from two reasons; first remuneration is low and maybe not preferred by men. Second, teaching allows women to work from home after the school hours, thus preferred by women who also need to attend their own homes' domestic work. This idea, obviously follows the old patriarchal customs where men are suppliers, that is why they look for more profitable work, and women are care-givers, although these days they bring money home, they still have the largest responsibility to take care of their children and husband, fitting cultural settings in Colombia.

4.1. The NTA Profiles

The NTA methodology allows us to plot age profiles for different accounts, such as income, consumption, pension transfers, among others. Our results reinforce the descriptive statistics, above presented, that women prefer to enroll in the formal market that guarantees access to social security, ensuring a lower but more stable income for them and their children, while men prefer the higher current income from the informal labor market. This decision, however, was taken independently from their partners, long before marriage could join " the formal wife and informal husband", as schooling investments segregated by gender took place at least 20 years ago, and clearly followed their parents' preferences, that seemed to have favored women in terms of job quality.

NTA age profiles by gender show that women's labor income profiles lay, almost always, under men profiles for both formal an informal work. However differences are more pronounced in the informal market. These differences point out towards the fact that labor market choices (formal/informal) are the result of early life investments in education, which also affects fertility preferences. Besides, the age profiles reflect cohort effects in the sense that elderly women with tertiary education are markedly lower than their male counterpart. Mean wage in the formal market is much higher for men than for women in elderly ages for tertiary education because just a minority of women could reach upper level of education in the seventies.

In fact, Figures 3 and 4 show the income differences for sexes presented as rates of how many more times men earn more than women (labeled as "times"). Women reach their income peak at older ages than men, particularly for the formal jobs. This may be reflecting the childbearing years invested by women, that latter catch up and even overpass men's income. On the other hand, men have the income advantage in the informal market, even controlling for education. These figures portrait the results for paid workers only, in order to avoid distorted comparisons that would include in the average profiles several unpaid workers. Besides, we present scaling profiles being 1 the maximum of

the women profile with the aim of making comparison easier. Figure 3 depicts formal income profile, we see that women income is consistently lower than male's during most life-cycle, although until age 30 is mostly the same, and a big gap is presented after age 55.

This reflects a cohort effect, as recent cohorts of women have attained more years of education so they reach similar income to men in formal sector. However, there are few women of older cohorts that reach tertiary education, which is why averages at some ages for women are based on one data point, making the comparison unreliable. So, we conclude that income gap in formal sector is small and tend to decrease with more recent generations, but one must be cautious when reading these age profiles at advance ages, namely after age 55.

Figure 3. Formal Income
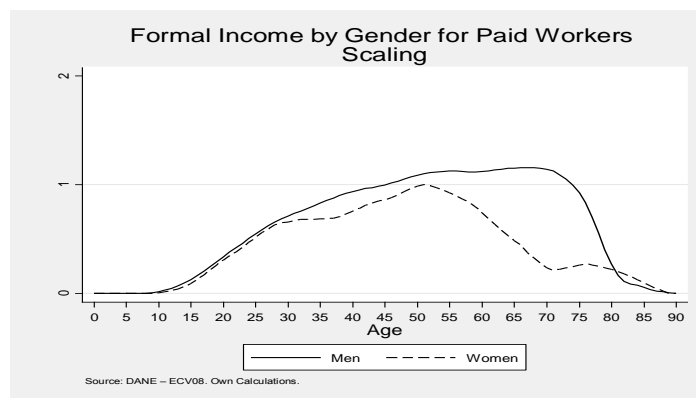
Source: Own Calculations from ECV-08

Figure 4 portrays the informal life-cycle income. The differences with the formal sector are notorious. The gender gap now is much larger as men informal income is persistently higher at all ages, but it stresses after age 25. In its peak, men's income reaches more than twice women's income. Also, there is a substantial age difference for men and women entrance to the informal sector, there is a gap of most than 5 years, in average men are starting working at age 10 , while women wait until age 15. This is consistent with the theory that women devote more time to invest in education while men start working at much younger ages and probably disrupting their investments in education.
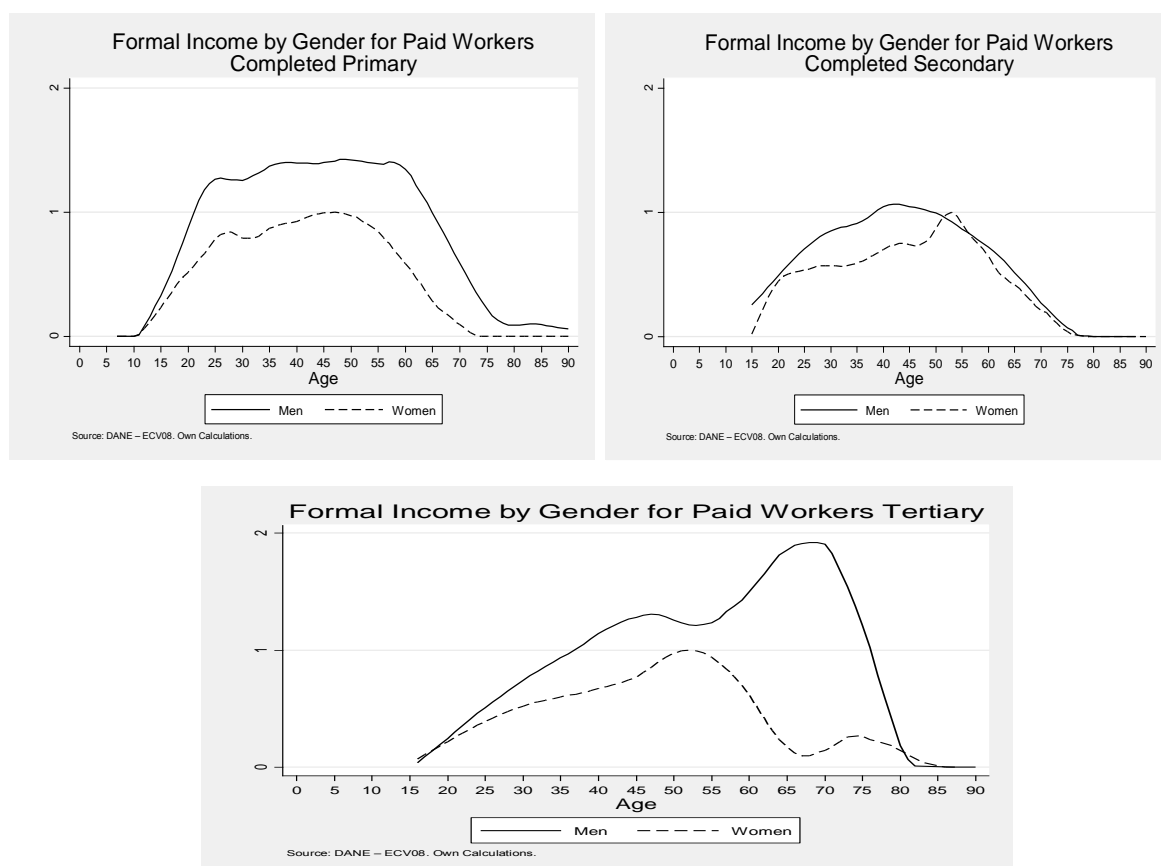
Figure 4. Informal Income
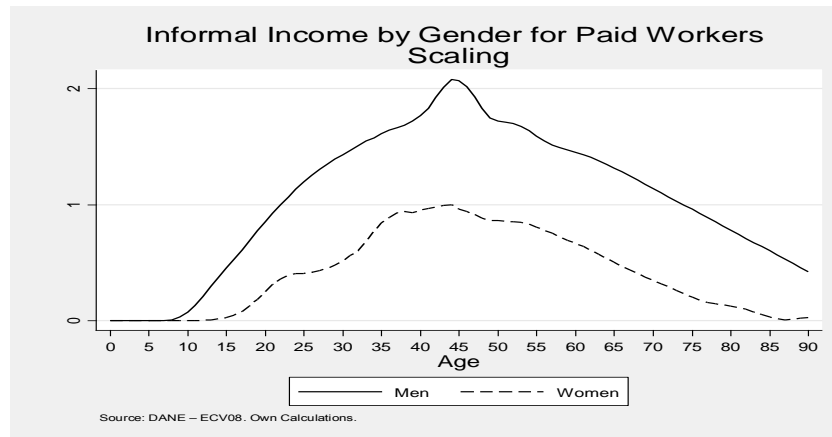
Source: Own Calculations from ECV-08

These striking differences between formal and informal labor market could be perceived by both sexes and drive women to choose investing for longer periods on their education, given that they have not the pressure to bring money to home soon, in order to look for occupations with similar remuneration among sexes in the formal sector. Instead, men also perceive such differences and choose not to spend much time in formal training and pursuing a well remunerated informal work, that translates into "instant cash", but with a myopic full life cycle income, as they are being deprived of future pensions.

These differences we are finding could, however, be just explained by the domination of a particular educational category that could bias total results. Thus, we have decomposed income differences in both formal and informal segments of the labor market by gender and three educational attainment categories (primary, secondary and tertiary) to spot such problems, if any. In the formal sector, Figure 5, the gap is more notorious in the extremes categories, especially in primary education. We do not see the cohort effect for primary or secondary, but it is very clear in tertiary education.

Figure 6 shows the results for the informal sector, where we observe again the large gap between men and women independently of the educational level. Men earn more than three times than women in the tertiary education category and more than 2.5 times in completed secondary. These results confirm that women benefit from the formal sector not only from access to the social security system, but for recent generations also for income levels. As expected the most years of education the higher their income for both men and women.
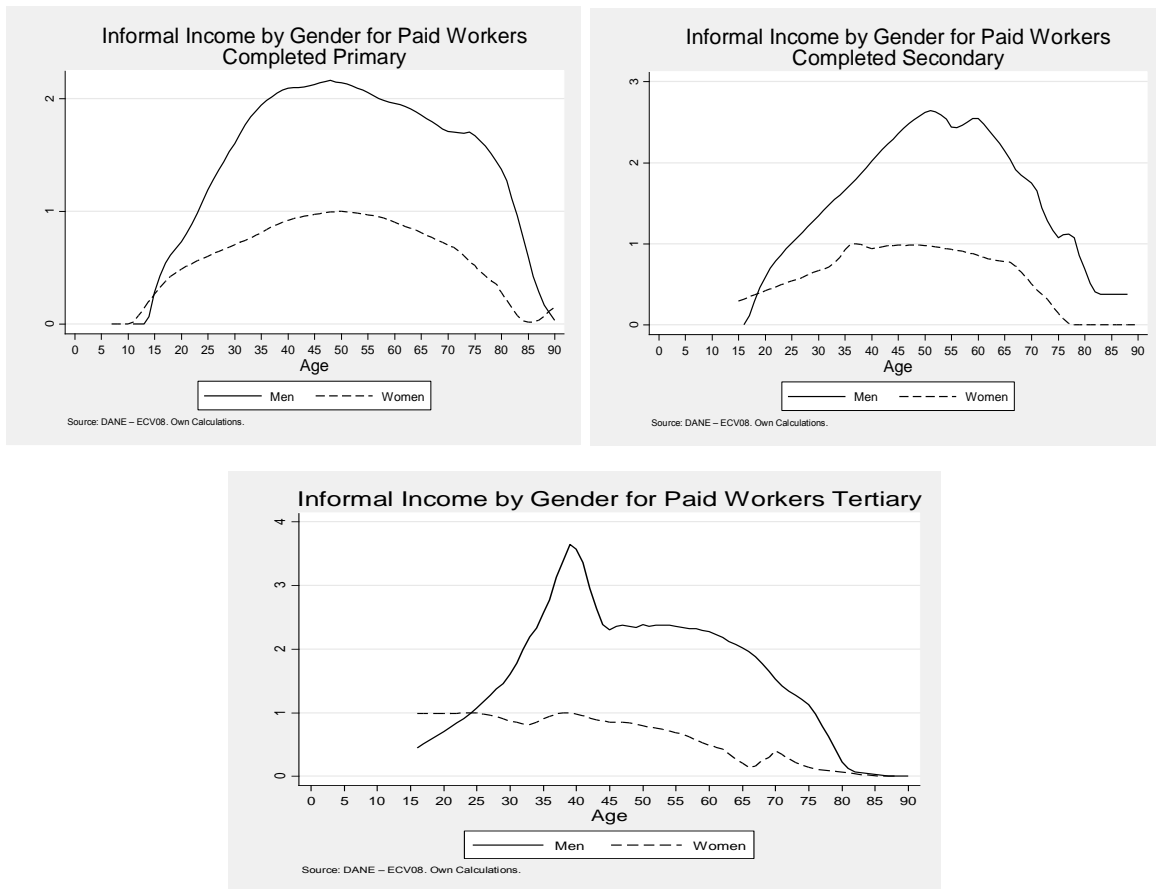
Figure 5. Formal income by educational level

Formal Income by Gender for Paid Workers Completed Primary

Source: DANE – ECV08. Own Calculations.

Formal Income by Gender for Paid Workers Completed Secondary

Source: DANE – ECV08. Own Calculations.

Formal Income by Gender for Paid Workers Tertiary

Source: DANE – ECV08. Own Calculations.

Source: Own Calculations from ECV-08

We propose that paternal households make rational decisions on educational investments boys and girls differently. The consumption of health shows that women benefit more from the formal sector, as the health system in Colombia covers all family members with just her having a formal job. Thus the possibility of being covered by the health system and having a pension by the end of their working years is the rational choice made by women, and can attain it as their families invested more on their education when girls. While men receive larger incomes by staying in the informal market, that can start collecting since childhood and therefore prefer not to increase investments on education. Finally, the age profiles reflect a strong cohort effect in the sense there are very few women from age 55 and on with tertiary education which pulls down means to women up to a point that is not comparable against men.

Figure 6. Informal income by educational level

Informal Income by Gender for Paid Workers
Completed Primary

Informal Income by Gender for Paid Workers
Completed Secondary

Informal Income by Gender for Paid Workers Tertiary
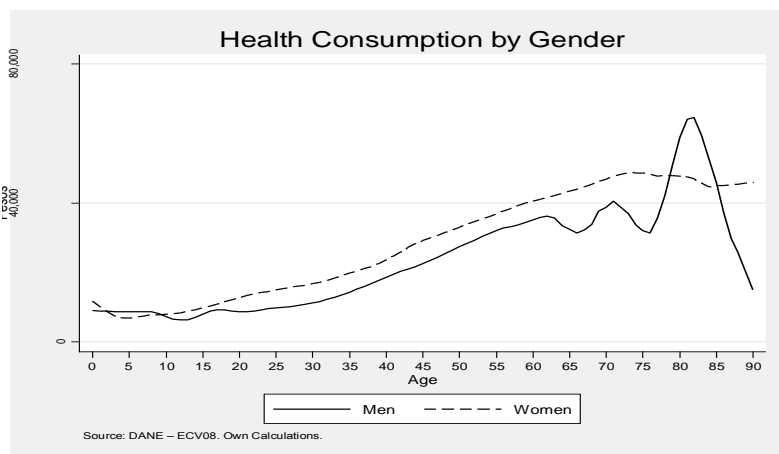
Source: Own Calculations from ECV-08

Other profiles help us portrait these differences between sexes on the balance of current and future income and transfers from and to other generations. Figure 7 reconfirms our idea that parents prefer to invest on girls' education, as it shows private transfers within households. This figure shows that between ages 15 and 20 women receive slightly more transfers –from their parents- than men, probably devoted mostly to education, reflecting a parent's gender preference at those ages towards women. After age 20 both men and women become givers instead or receivers, until age 50 when men start receiving a little more than women, until the last ages.

Figure 7. Private Transfers

Intra Private Transfers by Gender

Source: DANE – ECV08. Own Calculations.
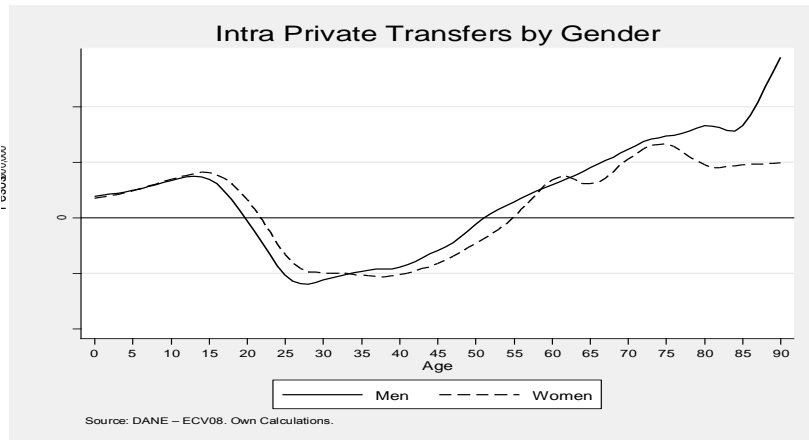
Source: Own Calculations from ECV-08

Figure 8. Health Consumption

Health Consumption by Gender

Source: DANE – ECV08. Own Calculations.

Source: Own Calculations from ECV-08

Finally, Figure 8 shows health consumption profile, with always larger consumption levels for women than men that are not only exclusive of the reproductive years, except at the very advanced ages (after age 75). This pattern may also explain why women could prefer lower payments but guarantee of health care access, as they probably are more intensive users of the health system.

5. Conclusions

Using NTA methodology with the gender component and other descriptive statistics, including the construction of the Duncan Index, we have gathered enough evidence from the labor market, educational attainment, and within household transfers that point out towards our hypothesis: parents tend to prefer educational investment of girls, especially at the later ages of secondary education and

some tertiary education. These larger investments translate into larger labor incomes in the formal sector for the recent generations of highly educated women, who prefer to enroll in the formal labor market as it not only provides higher incomes, but also enrollment in the social security system. While men, who have lower educational attainment than women, are mostly working in the informal sector market that does not require high educational training and still provides large incomes.

The review of child labor statistics and educational attainment prove a disadvantage for boys, for cohorts born since 1975. That is, boys drop out from the scholar system more than girls since age 10 and hold larger and increasing child labor rates than girls. This patterns repeats for all socio-economic strata, measured as quintiles of household expenditures from the ECV-08. Simultaneously, girls stay longer than boys in the educational system, which has increased their average years of education overall and at each socio-economic stratum, with a particular increase in the second quintile.

As a result, women are enrolling increasingly to the formal sector of the labor market, while men are more suited to the informal sector due to their lack of education and the "fast income" they can attain in the current period, that unluckily is a myopic perspective as they are reducing future income in an important amount as health and pension benefits will have to be provided by their own savings, for several years, as the demographic aging trends will hold for such cohorts. Indeed, Duncan segregation index shows that women prefer to enroll in particular occupations that allow them to access the social security system. These preferences are clearly established by the NTA profiles by gender that do not only show the catching up effect between sexes in the labor income, but more importantly the consumption preferences for men and women. Women at all ages consume more health, not only during their reproductive years, for which they are large users of the health system. Moreover, despite the differences in education of older cohorts the rates of pension benefits is almost the same for men and women. NTA gender profiles do also show the increasing trend of women enrolled in the pension system and we expect, that if the trend holds constant, they are expected to pay more contributions and receive more benefits in the future.

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