

Risk Protection, Service Use, and Health Outcomes under Colombia'
Health Insurance Program for the Poor

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Online Appendix

APPENDIX A: SUBSIDIZED REGIME BENEFITS

AGE / POPULATION GROUP	TYPE OF BENEFIT							
	Preventive care	Primary care (basic medical consultations, procedures and diagnostic tests)	Secondary care (specialist care, hospitalizations)	Tertiary care	Catastrophic care	Medications	Transportation	Excluded interventions
< 1 YEAR	Neonatal care and screening (Vit K, anemia, TSH), immunizations, well child care	All	All	All	Treatment with radiotherapy and chemotherapy for cancer, dialysis and organ transplant for renal failure, Surgical treatment of heart, cerebrovascular, neurological and congenital conditions, treatment of major trauma, intensive care unit, hip and knee replacement, major burns, treatment for AIDS	All medications in national formulary	For referrals, catastrophic care cases	Aesthetic surgery Infertility treatment Treatment for sleep disorders Organ transplants (except renal, heart, chornea and bone marrow) Psychotherapy and psychoanalysis Treatments for end stage disease
1-4 years	Well child care, immunizations, anemia screening		Cataract and strabismus surgery, herniorraphy, appendectomy, cholecystectom, orthopedics, rehabilitation services and procedures	Not covered				
5-19 years	Well child care, immunizations, anemia screening							
20-60 years	Cardiovascular and renal disease risk screening, cervical and breast cancer screening							
>60 years	Cardiovascular and renal disease risk screening, cervical and breast cancer screening							
PREGNANT WOMEN	High risk screening, STD, prenatal care							

APPENDIX B: COMPONENTS OF THE SISBEN INDEX AND SISBEN SCORE CALCULATIONS

This appendix describes the components of SISBEN Index, detailed the index information available in each household survey, and explains how we calculate SISBEN scores in each data source.

1. Components of the SISBEN Index

As explained in the text of the paper, our study focuses on the original urban SISBEN index. There are four general types of information used in calculating the SISBEN index: (A) human Capital, employed characteristics, and benefits; (b) demographic, income, and labor force participation; (c) housing characteristics; and (d) access to Public utilities. The index is composed of 14 components across these categories. For each component, respondent are categorized according to mutual exclusive, collectively exhaustive polychotomous response categories. Each response category for each component corresponds to a weight or “points”, and index scores are calculated by summing across points. Scores ranges between 0 and 100; higher scores denote higher socio-economic status.

The specific components of the index are:

(A) Human Capital, Social Security and Firm Size

- (1) Schooling of member with highest income
- (2) Mean Schooling for people 12 years old and older
- (3) Plant size and social security of member with highest income (family head)

(B) Demographic, income, and labor force participation

- (4) Proportion of children six years old and under (as share of children under age eighteen)
- (5) Proportion of household members employed (as a share of those older than twelve)
- (6) Per capita income indexed to the minimum wage (all types of income are counted)

(C) Housing Characteristics

- (7) Number of rooms per person
- (8) Primary wall material
- (9) Primary roof material
- (10) Primary floor material
- (11) Number of appliances (among those on a pre-determined list)

(D) Access to Public Utilities

- (12) Water source
- (13) Sewage disposal
- (14) Garbage disposal

2. SISBEN components available in each Household Survey

Our analysis uses the 2003 ECV and the 2005 DHS. The table below shows which SISBEN components are available in each survey.

VARIABLES	DHS 2005	ECV 2003
Educational Attainment	Available	Available
Employment status	Available	Available
Social Security Benefits		
Health insurance	Available	Available
Pension	Not Available	Available
Firm size (Number of employees)	Not Available	Available
Age	Available	Available
Income	Not available	Available
Number of rooms	Available	Available
Primary Wall Material	Available	Available
Primary Roof Material	Not available	Not available
Primary Floor Material	Available	Available
Number of Appliances		
TV	Available	Available
Refrigerator	Available	Available
Air Conditioner	Available	Available
Blender	Available	Available
Washing machine	Available	Available
Water source	Available	Available
Sewage Disposal	Available	Available
Garbage Disposal	Available	Available

Most SISBEN components are available in the household surveys we use in our primary analysis (near all in the 2003 ECV and the great majority in the 2005 DHS). For missing components, we used an ordered probit procedure to predict the most likely response category for each missing component using a large number of observable household characteristics. The section below describes how we performed our SISBEN score calculations.

3. SISBEN Score Calculations

In this section we report SISBEN index weight for each response category for each component and describe how we impute scores for components not represented in our

household survey. SISBEN index scores are then calculated summing weight or points across all components

A. Human Capital; Employer Characteristics and Benefits

(1) Educational attainment of the household head

1	No education	0
2	Some elementary	1.6239
3	Complete elementary	3.4435
4	Some secondary	5.0039
5	Complete secondary	7.3434
6	Some of higher education	9.7833
7	Complete higher education	11.546
8	Graduate studies	12.4806

To compute educational attainment, we use information of level of schooling completed and number of years of schooling. Level of schooling corresponds to the following number of years of education:

- Complete elementary school: 5 years
- Complete secondary education: 11 years
- Complete higher education: 16 years
- Graduate studies: 16 or more years

Sufficient information on level and years of schooling is available to compute this variable in all household surveys.

(2) Mean Schooling for household members twelve years old and older.

1	0	0
2	Between 0 and 4 years	1.657
3	Between 4 and 5 years	2.9947
4	Between 5 and 10 years	4.969
5	Between 10 and 11 years	7.6387
6	Between 11 and 15 years	9.4425
7	Between 15 and 16 years	10.69
8	16 years or more	11.1396

Using the coding scheme described for calculating educational attainment for the household head, we calculate mean years of schooling for all household members 12 and

older. Sufficient information is available to compute this variable in all household surveys.

(3) *Firm size and provision of Social Security benefits for the household head*

1	Without social security and works alone or doesn't work	0
2	Without social security and works in plant with 2 to 9 employees	1.166
3	Without social security and works in plant with 10 or Between employees	2.6545
4	With social security and works alone or doesn't work	3.9539
5	With social security and works in a plant with 2 to 9 employees	5.8427
6	With social security and works in a plant with 10 or Between employees	6.9718

Assigning response categories for this index component requires information about employment status, social security benefits (health insurance and pension benefits), and firm size:

- *Employment status* is available in all household surveys.
- *Firm size* is not available in 2005 DHS. We therefore use ordered probit models to predict the probability of falling into each of the three size categories (1 employee, 2-9 employees, 10 or more employees). We then select the category with the highest predict probability. To obtain parametric estimates of the relationship between a variety of observable household characteristics (demographic characteristics, education, and regional controls among urban residents) and firm size, we estimated this ordered probit model using the 2003 ECV
- *Social Security benefits* consist of two components: health insurance benefits and pension benefits:
 - *Health Insurance Benefits.* Health insurance status is judged in each household survey in the following way.

ECV 2003: Has health insurance if affiliated with “ISS”, “Caja de Prevision”, “army/police” insurance scheme, “Ecopetrol” scheme, the “educational system” scheme, or an “EPS – different to ISS or Caja de Prevision”. Those with insurance through an “ARS” or “Empresa solidaria” are excluded.

DHS 2005: Has health insurance if affiliated with “ISS”, “EPS”, “Public Agency”, “army/police” insurance scheme, “Ecopetrol” scheme, the

“educational system” scheme, or “Foncolpuertos”. Those with insurance through an “ARS” are excluded

- *Pension benefits.* Pension benefits are judged according to affiliation with the public or private pension system. The information is available in the 2003 ECV but not in the 2005 DHS.

In the 2003 ECV, Social Security benefits are judged according to having health insurance and/or pension benefits. In the 2005 DHS, Social Security benefits are judged according to health insurance benefits.

B. Demographics, Income, and Labor Force Participation

(4) *Proportion of children six years old and under (as share of children under age eighteen)*

1	Greater than 0.65	0
2	From 0 to 0.65	0.2237
3	Zero	1.4761

Sufficient information is available to compute this variable in all household surveys.

(5) *Proportion of household members employed (as a share of those older than twelve)*

1	Less than 0.30	0
2	From 0.30 to 0.60	0.6717
3	From 0.60 to 0.90	1.739
4	Greater than 0.90	4.0149

For construction this proportion, employment is defined as having work in the preceding week, not having work but having regular job, or received payment for working more than an hour. Sufficient information is available to compute this variable in all household surveys.

(6) *Per capita income indexed to the minimum wage (all types of income are counted)*

1	Up to 0.15	0
2	Above 0.15 up to 0.25	0.8476
3	Above 0.25 up to 0.35	2.1828
4	Above 0.35 up to 0.50	3.5362
5	Above 0.50 up to 0.75	5.3636

6	Above 0.75 up to 1.00	7.0827
7	Above 1.00 up to 1.25	8.2489
8	Above 1.25 up to 1.50	9.4853
9	Above 1.50 up to 2.00	10.2098
10	Above 2.00 up to 3.00	11.3999
11	Above 3.00 up to 4.00	13.0872
12	Above 4.00	13.7378

To calculate per capita income for a family, we defined income to include labor income from primary and secondary jobs (both for employed and self-employed) and pension benefits for retirees. In-kind subsidies are excluded. We obtained nominal minimal wage information (summarized below) from the Colombian Central Bank's *Monetary and Financial Statistics*:

Year	Minimum wage (in Colombian Pesos)
2003	332,000.0
2005	381,500.0

Income variables are available only in the 2003 ECV. For the 2005 DHS, we used ordered probit models to predict the probability of falling into each of the 12 discrete categories; we then select the category with the highest predicted probability. To obtain parametric estimates of the relationship between a variety of observable household characteristics (demographics characteristics, education, and regional controls among urban residents) and firm size, we estimate these ordered probit models using the 2003 ECV.

C. Household Characteristics

(7) *Number of rooms per person*

1	Less than 0.20	0
2	0.20 to 0.30	0.5584
3	0.30 to 0.40	1.6535
4	0.40 to 0.70	2.5727
5	0.70 to 1.00	4.3886
6	1.00 to 4.00	6.0042
7	Greater than 4.00	8.3828

To assign response categories for this index component, rooms are defined as rooms exclusively used by household members (including living rooms but excluding kitchens, bathrooms, garages, and rooms used for business). This information is available in the

2003 ECV. For the 2005 DHS, we used number of rooms used by household members for sleeping.

(8) *Primary wall material*

1	Without walls, bamboo or other organic materials	0
2	Zinc, cloth, cardboard, cans	0.2473
3	Raw wood	2.0207
4	Mud and cane wall	4.8586
5	Adobe, wide mud wall	6.2845
6	Block, bricks, stone, prefabricated material, polished wood	7.7321

Information on wall material is available in both the 2003 ECV and the 2005 DHS.

(9) *Primary roof material*

1	Straw or palm leaves	0
2	Recycled household materials (cardboard, cans, burlap sacks, etc)	2.1043
3	Zinc, asbestos, cement, without ceiling	3.7779
4	Clay tile, zinc, asbestos, cement, with ceiling	5.0973

Information on primary roof material is available only in the 1997 ECV. We therefore use parametric estimates of the relationship between observable characteristics (number of rooms, floor material and regional dummies among urban households) and roof material obtained from an ordered probit model fit with the 1997 ECV to predict the probability of falling into each roof material category shown above. We assign the category with the highest predict probability.

(10) *Primary floor material*

1	Dirt	0
2	Raw wood, boards	2.9037
3	Cement	3.6967
4	Floor tile (clay, vinyl), brick or paving tile	5.8712
5	Wall to wall carpet, marble, polished wood	6.8915

Sufficient information is available to compute this variable in all household surveys.

(11) *Number of appliances (among those on a pre-determined list)*

1	No appliances	0
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2	1-3 basic appliances	2.1435
3	4 basic appliances without laundry machine	3.0763
4	3 or more basic appliances with laundry machine	4.7194

For this SISBEN index component, four appliances are considered “basic” (TVs, refrigerators, blenders, and air conditioners) and a washing/laundry machine is treated separately as shown in the above table. All necessary information about appliances is present in both the 2003 ECV and the 2005 DHS.

D. Access to Public Utilities

(12) *Water source*

1	River or spring	0
2	Public fountain or other source	1.1606
3	Well without water pump, container or rain water	2.6497
4	Well with water pump	4.6037
5	Container truck	6.1693
6	Aqueduct	7.2554

All necessary information for assigning response categories is available in the 2003 ECV. In the 2005 DHS, we classified “bottled water” as “aqueduct”.

(13) *Sewage disposal*

1	No sewage	0
2	Latrine	2.4519
3	Toilet without connection to sewer or septic tank	3.3323
4	Toilet with connection to septic tank	3.9615
5	Toilet with connection to sewer	6.8306

Information on sewage disposal is available in all household surveys, but in the 2005 DHS, some minor coding assumptions were necessary. In the 2005 DHS, we code both “traditional pit toilet” and “traditional toilet to sea/river” as “latrine”.

(14) *Garbage disposal*

1	Yard, lot, river, etc.	0
2	Local container or public trashcan	2.1291
3	Picked up by public services	3.2701

Information on garbage disposal is available in both the 2003 ECV and the 2005 DHS.

APPENDIX C: SAMPLE DENSITY BY SIMULATED SISBEN SCORE

The figure in this appendix plots histograms of simulated SISBEN scores relative to county-specific eligibility thresholds. Using the ECV 2003, density in the distribution of relative SISBEN scores evolves smoothly across local thresholds. There are some spikes in density at other scores (-3, 5, and 7 for example) that we presume to be idiosyncratic noise.¹ In the DHS 2005, we observe similar spikes, but one of them coincides with relative score -1. The magnitude is comparable to those at other scores (4 and 8, for example) as well as spikes in the ECV 2003. Given balance on observable characteristics across the eligibility threshold (shown in Table 2) as well as the fact that county-specific thresholds were not stipulated or even known *ex ante*, we believe that it is unlikely that simulated SISBEN scores are manipulated. We also predict values for more index components when constructing simulated scores in the DHS 2005 than in the ECV 2003.²

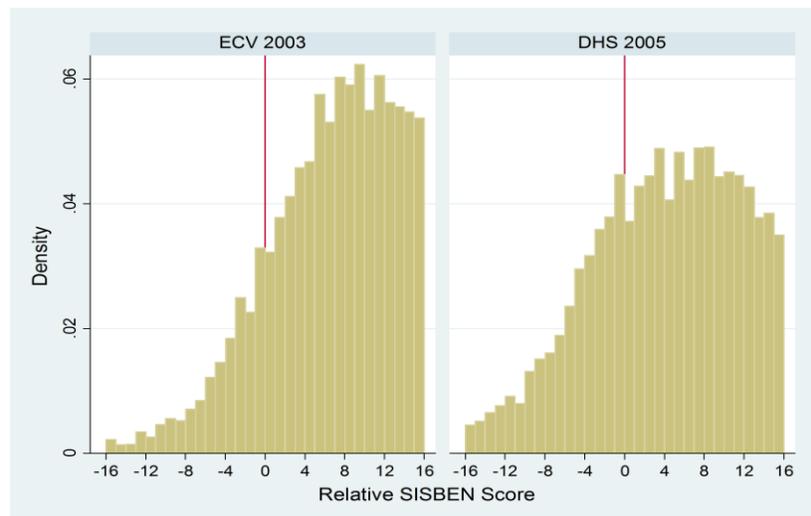


Figure 1. Distribution of Simulated SISBEN Scores Relative to Local Eligibility Thresholds

Notes: Scores were computed using household surveys. Observations with exactly zero are not included.

¹ We omit observations with values of exactly zero because our estimation of county-specific eligibility thresholds (producing the best fit between eligibility and actual insurance coverage (Chay, McEwan, and Urquiola 2005)) mechanically yields differential density.

² In the 2005 DHS, we predict values for two SISBEN components: firm size and per-capita income (variables measuring these components are available in the 2003 ECV). Additionally, response categories in the 2005 DHS are coarser for four other SISBEN components: social security, number of rooms, water source, and sewage disposal. See Appendix B for more details.

APPENDIX D

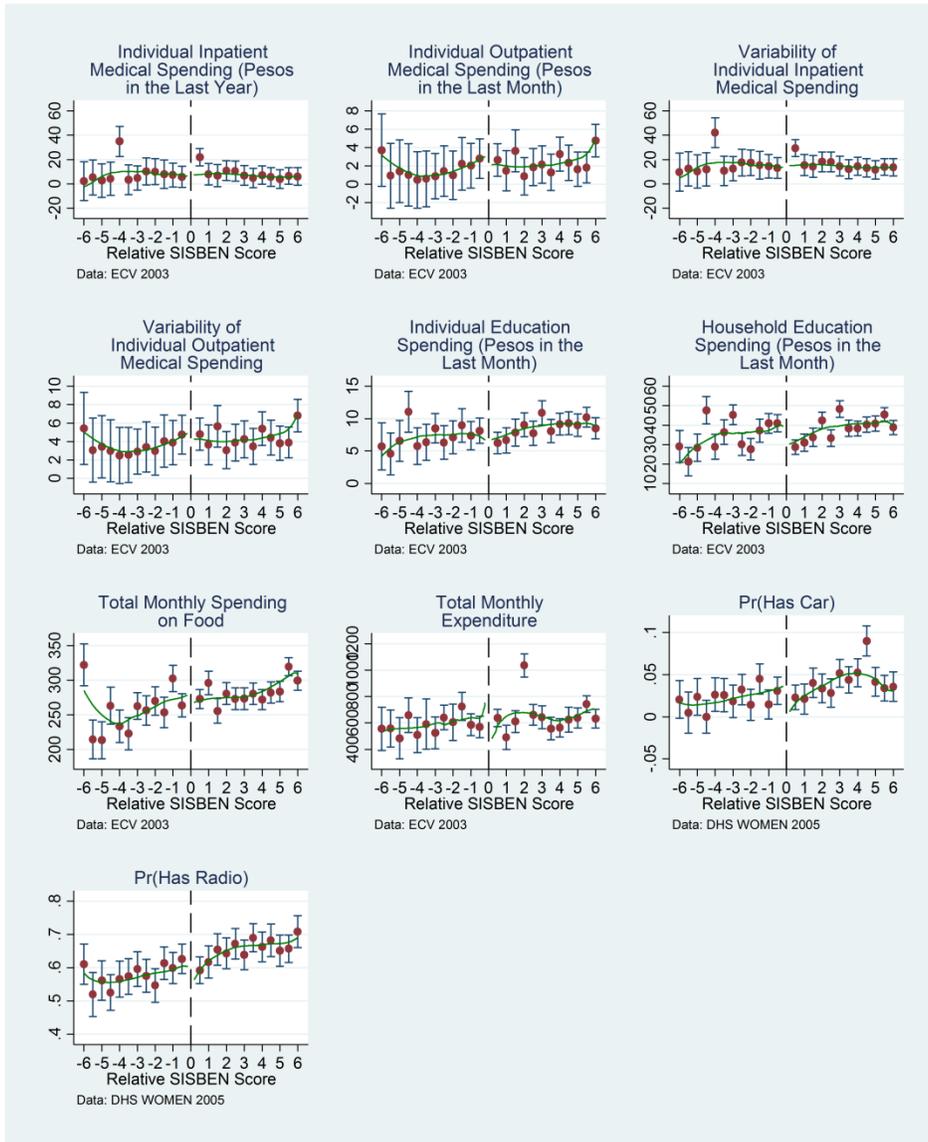


Figure 1. Risk Protection, Consumption Smoothing, and Portfolio Choice

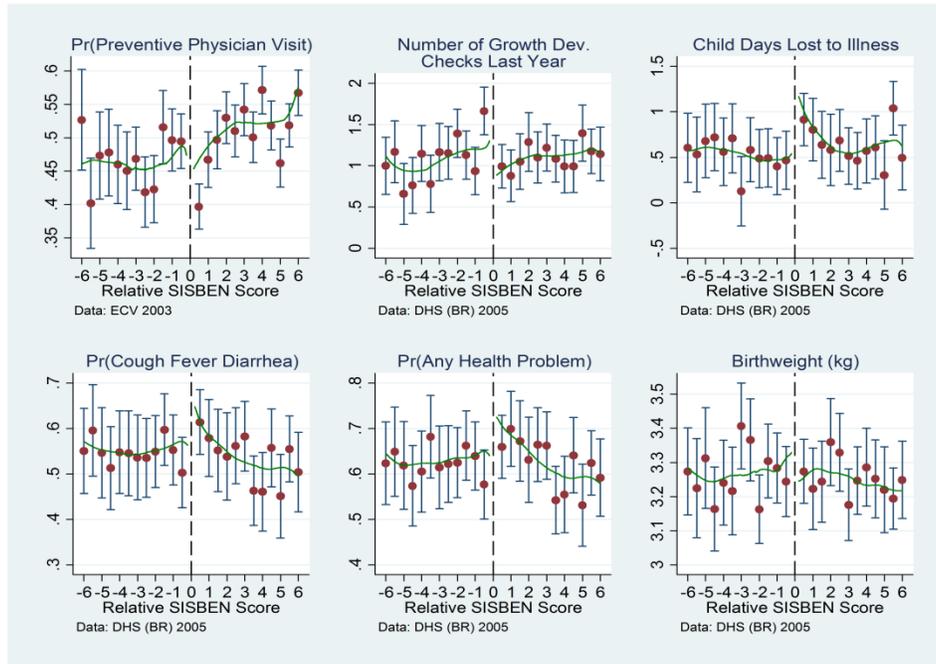


Figure 2. Use of Preventive Care and Health Status

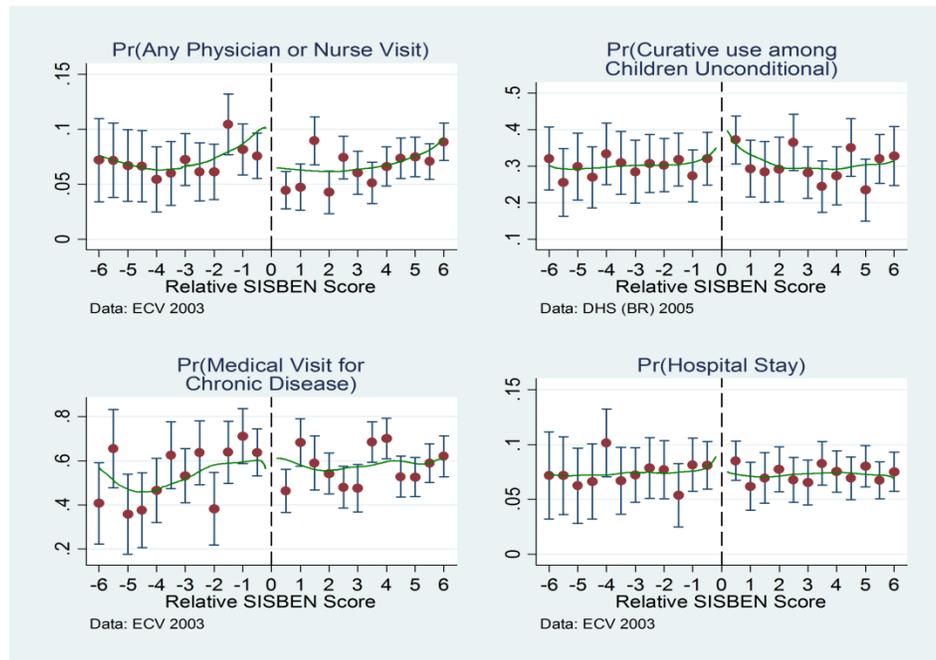


Figure 3. Use of Curative Care

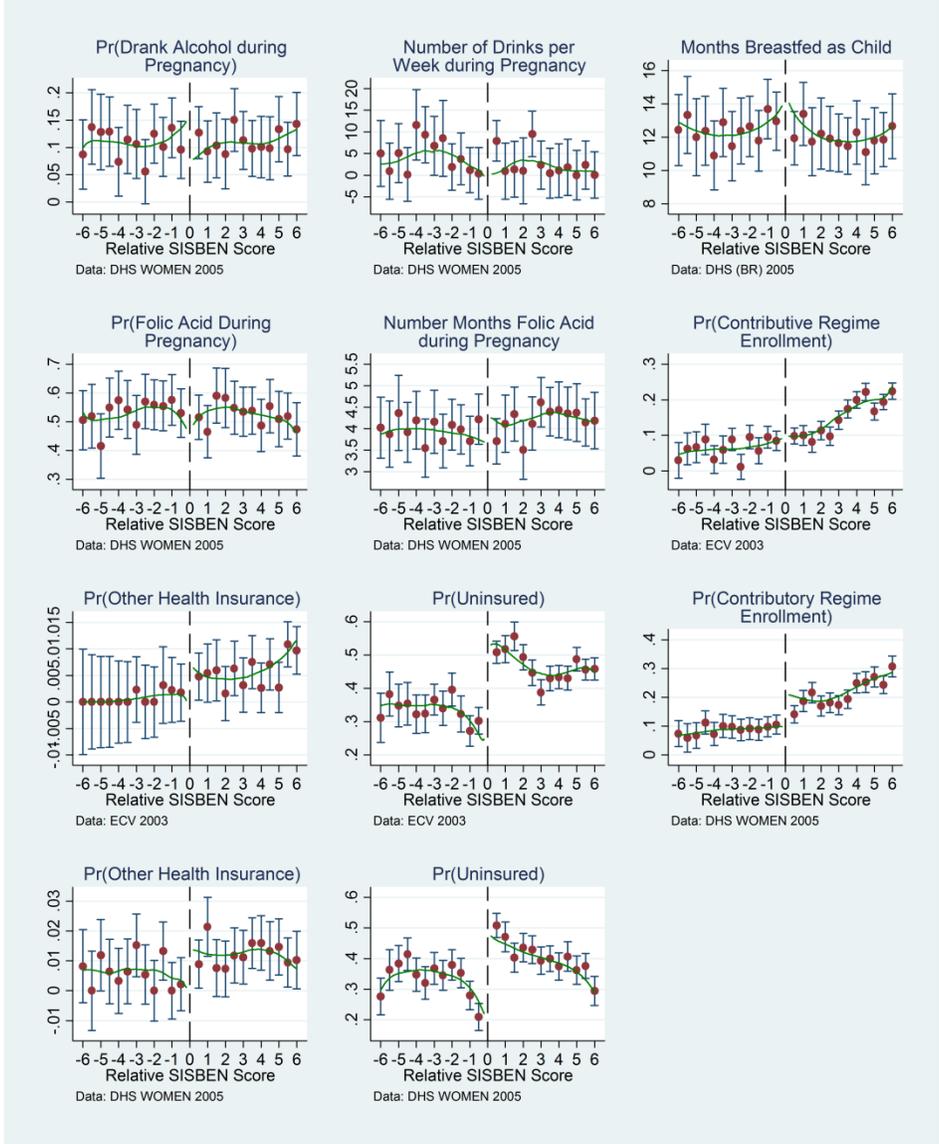


Figure 4. Behavioral Distortions

APPENDIX E

TABLE 1—ROBUSTNESS OF RISK PROTECTION AND PORTFOLIO CHOICE RESULTS

Panel A: Risk Protection				
Model	Individual Inpatient Medical Spending	Individual Outpatient Medical Spending	Variability of Individual Inpatient Medical Spending	Variability of Individual Outpatient Medical Spending
Bandwidth 2	-58,870* [33,263]	3,562 [2,702]	-67,499.38** [32,906]	167.57 [2,417]
Bandwidth 3	-46,961* [26,813]	703.76 [3,950.72]	-55,322.91** [26,608]	-3,073.60 [3,923]
Bandwidth 4	-62,449** [28,967]	2,544 [3,248]	-71,069.15** [28,582]	-1,334.10 [3,226]
Bandwidth 2 with Higher Order SISBEN Polynomial	-150,905 [107,544]	10,029 [7,035]	-159,204.24 [105,502]	6,722.59 [7,159]
Bandwidth 3 with Higher Order SISBEN Polynomial	-83,857* [44,116]	-93.44 [6,397]	-91,866.62** [43,437]	-3,628.60 [6,269]
Bandwidth 4 with Higher Order SISBEN Polynomial	-41,990 [31,578]	-1,483 [5,657]	-50,532.50 [31,467]	-5,146.52 [5,610]
Bandwidth 2 with SISBEN×Eligible Interactions	-53,932* [30,187]	4,128 [2,752]	-62,293.76** [29,554]	824.61 [2,5534]
Bandwidth 3 with SISBEN×Eligible Interactions	-43,836* [24,405]	1,634 [3,608]	-52,273.19** [24,152]	-2,133.27 [3,549]
Bandwidth 4 with SISBEN×Eligible Interactions	-64,384** [31,236]	4,071 [2,666]	-73,063.09** [30,615]	166.82 [2,601]
Bandwidth 2 without County Fixed Effects	-61,031 [39,242]	-1,996 [6,662]	-70,053.43* [38,960]	-5,454.59 [6,619]
Bandwidth 3 without County Fixed Effects	-44,811 [28,071]	-56.44 [4,774]	-53,497.76* [27,960]	-3,782.96 [4,734]
Bandwidth 4 without County Fixed Effects	-61,590** [30,746]	1,343 [4,778]	-70,361.82** [30,455]	-2,539.67 [4,753]
Bandwidth 2 Local Linear Regression	-88,119 [65,068]	-120.65 [6,598]	-96,820.11 [64,134]	-3,434.45 [6,482]
Bandwidth 3 Local Linear Regression	-59,699 [37,781]	155.77 [4,914]	-68,314.38* [37,423]	-3,393.91 [4,810]
Bandwidth 4 Local Linear Regression	-52,402 [32,325]	855.97 [4,294]	-61,162.26* [32,082]	-2,798.77 [4,198]
Data Source	ECV	ECV	ECV	ECV

Table 1 (Cont.)—ROBUSTNESS OF RISK PROTECTION AND PORTFOLIO CHOICE RESULTS

Panel B: Portfolio Choice						
Model:	Individual Education Spending	Household Education Spending	Total Spending on Food	Total Monthly Expenditure	Has Car	Has Radio
Bandwidth 2	-341.68 [3,781]	30,366 [25,055]	32,136 [103,540]	-33,826 [278,060]	-0.01 [0.05]	0.15 [0.14]
Bandwidth 3	2,599 [5,408]	28,059 [28,1908]	-1,495 [92,076]	-320,415 [351,586]	0.02 [0.04]	0.09 [0.11]
Bandwidth 4	2,613 [5,186]	25,670 [30,120]	18,654 [85,054]	-348,373 [372,119]	0.03 [0.04]	0.03 [0.12]
Bandwidth 2 with Higher Order SISBEN Polynomial	-7,023 [7,529]	7,150 [24,022]	3,136 [209,963]	-776,577* [445,614]	-0.01 [0.05]	0.15 [0.14]
Bandwidth 3 with Higher Order SISBEN Polynomial	-2,350 [3,918]	27,095 [28,643]	27,129 [125,891]	-362,101 [372,691]	-0.02 [0.04]	0.12 [0.11]
Bandwidth 4 with Higher Order SISBEN Polynomial	1,842 [4,851]	28,281 [28,097]	14,132 [93,018]	-319,591 [340,240]	0.02 [0.04]	0.11 [0.10]
Bandwidth 2 with SISBEN×Eligible Interactions	-1,384 [3,754]	30,593 [25,749]	32,790 [101,536]	-63,185 [287,655]	0.01 [0.03]	0.16 [0.11]
Bandwidth 3 with SISBEN×Eligible Interactions	1,884 [5,357]	25,782 [28,574]	-837.43 [99,064]	-326,491 [363,209]	0.02 [0.04]	0.08 [0.10]
Bandwidth 4 with SISBEN×Eligible Interactions	2,243 [5,129]	24,374 [30,313]	27,751 [95,376]	-230,269 [343,713]	0.03 [0.04]	0.03 [0.12]
Bandwidth 2 without County Fixed Effects	3,595 [3,556]	40,950* [24,025]	-76.00 [109,894]	7,924 [378,659]	0.01 [0.04]	0.18 [0.12]
Bandwidth 3 without County Fixed Effects	4,882 [5,094]	31,351 [26,704]	-5,734 [100,300]	-315,118 [379,380]	0.03 [0.04]	0.09 [0.12]
Bandwidth 4 without County Fixed Effects	4,495 [5,335]	29,234 [29,591]	8,948 [97,637]	-466,629 [386,631]	0.03 [0.04]	0.06 [0.14]
Bandwidth 2 Local Linear Regression	8,457 [7,815]	60,037 [45,284]	-29,196 [157,519]	-365,953 [2,984,775]	0.01 [0.042]	0.14 [0.121]
Bandwidth 3 Local Linear Regression	7,512 [7,113]	50,717 [39,165]	-10,243 [130,782]	-202,306 [4,347,890]	0.02 [0.035]	0.12 [0.109]
Bandwidth 4 Local Linear Regression	7,619 [7,174]	46,440 [37,423]	3,082 [128,102]	-238,253 [459,354]	0.02 [0.034]	0.09 [0.118]
Data Source	ECV	ECV	ECV	ECV	DHS	DHS

Individual-level “urban” data used from the 2003 ECV and 2005 DHS. Dependent variables are shown at the top of each column; all estimates are 2SLS estimates for enrollment in the Subsidized Regime (SR), instrumenting for SR enrollment using simulated eligibility. The first three rows report estimates using samples of individuals within two, three, and four SISBEN index points of county-specific eligibility thresholds (respectively). The fourth through sixth rows control for squared, cubic, and fourth power terms of SISBEN scores using samples of individuals within two, three, and four SISBEN index points of county-specific eligibility thresholds (respectively). The seventh through ninth rows include interactions between SISBEN scores and an indicator variable for eligibility according to our calculations. The tenth through twelfth rows do not condition on county fixed effects and use samples of individuals within two, three, and four SISBEN index points of county-specific eligibility thresholds (respectively). The thirteenth through fifteenth rows report non-parametric local linear regression estimates obtained through the following process. First, local linear regression functions (with triangle kernels) are used to estimate conditional means (conditioning only on SISBEN_diff) of outcome variables on either side of the eligibility threshold. Second, this estimation process is repeated for enrollment in the SR. Finally, Wald statistics are constructed using differences in outcome variable means on either side of the threshold as numerators and the difference in SR enrollment means on either side of the threshold as the denominator; 250 bootstrap replications are used to estimate standard errors. All specifications otherwise include SISBEN score, distance from the county-specific threshold, estrato dummy variables, and county fixed effects. Standard errors (clustered by household) are shown in brackets below each estimate.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

Table 2—ROBUSTNESS OF USE OF PREVENTIVE MEDICAL CARE AND HEALTH STATUS RESULTS

Model	Use of Preventive Care		Health Status (Children)			
	Preventive Physician Visit	Number of Growth Dev. Checks Last Year	Child Days Lost to Illness	Cough, Fever, Diarrhea	Any Health Problem	Birthweight (KG)
Bandwidth 2	0.29*** [0.11]	1.50** [0.69]	-1.40** [0.65]	-0.18 [0.17]	-0.06 [0.18]	0.26 [0.29]
Bandwidth 3	0.20** [0.10]	1.43** [0.68]	-0.96 [0.74]	-0.12 [0.18]	-0.14 [0.17]	-0.08 [0.28]
Bandwidth 4	0.24** [0.09]	1.43** [0.66]	-1.52* [0.91]	-0.23 [0.18]	-0.25 [0.18]	0.05 [0.30]
Bandwidth 2 with Higher Order SISBEN Polynomial	0.40 [0.29]	1.66** [0.83]	-1.00 [0.66]	-0.46* [0.24]	-0.20 [0.23]	-0.13 [0.36]
Bandwidth 3 with Higher Order SISBEN Polynomial	0.48*** [0.15]	1.33* [0.78]	-1.13* [0.62]	-0.21 [0.16]	-0.07 [0.17]	0.31 [0.28]
Bandwidth 4 with Higher Order SISBEN Polynomial	0.26** [0.11]	1.76** [0.75]	-1.06 [0.68]	-0.16 [0.19]	-0.14 [0.19]	0.02 [0.29]
Bandwidth 2 with SISBEN×Eligible Interactions	0.27** [0.10]	1.51** [0.68]	-1.40** [0.63]	-0.19 [0.17]	-0.06 [0.18]	0.27 [0.29]
Bandwidth 3 with SISBEN×Eligible Interactions	0.21** [0.09]	1.39** [0.68]	-0.90 [0.71]	-0.11 [0.18]	-0.14 [0.17]	-0.09 [0.28]
Bandwidth 4 with SISBEN×Eligible Interactions	0.23** [0.10]	1.43** [0.66]	-1.52* [0.90]	-0.23 [0.18]	-0.25 [0.18]	0.05 [0.30]
Bandwidth 2 without County Fixed Effects	0.46*** [0.12]	1.56** [0.60]	-1.57*** [0.57]	-0.25* [0.15]	-0.19 [0.15]	0.23 [0.25]
Bandwidth 3 without County Fixed Effects	0.32*** [0.10]	1.55** [0.61]	-1.48** [0.63]	-0.19 [0.16]	-0.20 [0.16]	-0.14 [0.26]
Bandwidth 4 without County Fixed Effects	0.31*** [0.09]	1.44** [0.60]	-1.72** [0.73]	-0.29* [0.17]	-0.33* [0.17]	0.01 [0.25]
Bandwidth 2 Local Linear Regression	0.72** [0.36]	1.68** [0.708]	-1.26** [0.533]	-0.39** [0.170]	-0.30* [0.174]	0.03 [0.310]
Bandwidth 3 Local Linear Regression	0.55** [0.22]	1.50** [0.635]	-1.44*** [0.554]	-0.28* [0.150]	-0.23 [0.154]	0.03 [0.275]
Bandwidth 4 Local Linear Regression	0.45** [0.18]	1.51*** [0.583]	-1.54*** [0.578]	-0.27* [0.150]	-0.27* [0.155]	-0.02 [0.271]
Data Source	ECV	DHS	DHS	DHS	DHS	DHS

Individual-level “urban” data used from the 2003 ECV and 2005 DHS. Dependent variables are shown at the top of each column; all estimates are 2SLS estimates for enrollment in the Subsidized Regime (SR), instrumenting for SR enrollment using simulated eligibility. The first three rows report estimates using samples of individuals within two, three, and four SISBEN index points of county-specific eligibility thresholds (respectively). The fourth through sixth rows control for squared, cubic, and fourth power terms of SISBEN scores using samples of individuals within two, three, and four SISBEN index points of county-specific eligibility thresholds (respectively). The seventh through ninth rows include interactions between SISBEN scores and an indicator variable for eligibility according to our calculations. The tenth through twelfth rows do not condition on county fixed effects and use samples of individuals within two, three, and four SISBEN index points of county-specific eligibility thresholds (respectively). The thirteenth through fifteenth rows report non-parametric local linear regression estimates obtained through the following process. First, local linear regression functions (with triangle kernels) are used to estimate conditional means (conditioning only on SISBEN_diff) of outcome variables on either side of the eligibility threshold. Second, this estimation process is repeated for enrollment in the SR. Finally, Wald statistics are constructed using differences in outcome variable means on either side of the threshold as numerators and the difference in SR enrollment means on either side of the threshold as the denominator; 250 bootstrap replications are used to estimate standard errors. All specifications otherwise include SISBEN score, distance from the county-specific threshold, estrato dummy variables, and county fixed effects. Standard errors (clustered by household) are shown in brackets below each estimate.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

Table 3—ROBUSTNESS OF USE OF CURATIVE MEDICAL CARE RESULTS

Model	Curative Use (Not Conditional on Health Status)	Curative Use among Children (Not Conditional on Health Status)	Medical Visit for Chronic Disease	Hospital Stay
Bandwidth 2	0.13** [0.05]	-0.00 [0.16]	0.51* [0.28]	-0.04 [0.11]
Bandwidth 3	0.15*** [0.03]	-0.01 [0.16]	0.26 [0.27]	-0.05 [0.07]
Bandwidth 4	0.16*** [0.04]	-0.11 [0.16]	0.60** [0.27]	-0.03 [0.07]
Bandwidth 2 with Higher Order SISBEN Polynomial	0.23** [0.10]	-0.10 [0.23]	1.79 [1.59]	-0.08 [0.28]
Bandwidth 3 with Higher Order SISBEN Polynomial	0.18*** [0.06]	0.03 [0.17]	0.83 [0.53]	-0.07 [0.16]
Bandwidth 4 with Higher Order SISBEN Polynomial	0.14*** [0.04]	0.05 [0.18]	0.21 [0.18]	-0.03 [0.08]
Bandwidth 2 with SISBEN×Eligible Interactions	0.12** [0.05]	-0.00 [0.16]	0.56** [0.28]	-0.03 [0.12]
Bandwidth 3 with SISBEN×Eligible Interactions	0.15*** [0.03]	-0.00 [0.16]	0.28 [0.28]	-0.04 [0.08]
Bandwidth 4 with SISBEN×Eligible Interactions	0.16*** [0.04]	-0.11 [0.16]	0.60** [0.30]	-0.03 [0.08]
Bandwidth 2 without County Fixed Effects	0.14** [0.06]	-0.13 [0.16]	0.41** [0.19]	-0.00 [0.11]
Bandwidth 3 without County Fixed Effects	0.14*** [0.03]	-0.21 [0.20]	0.22 [0.19]	-0.01 [0.07]
Bandwidth 4 without County Fixed Effects	0.16*** [0.04]	-0.19 [0.15]	0.55*** [0.19]	0.00 [0.07]
Bandwidth 2 Local Linear Regression	0.13** [0.06]	-0.19 [0.184]	0.99 [0.61]	0.01 [0.17]
Bandwidth 3 Local Linear Regression	0.13*** [0.04]	-0.16 [0.154]	0.55 [0.79]	0.00 [0.11]
Bandwidth 4 Local Linear Regression	0.14*** [0.04]	-0.17 [0.142]	0.48 [0.42]	0.01 [0.09]
Data Source	ECV	DHS	ECV	ECV

Individual-level “urban” data used from the 2003 ECV and 2005 DHS. Dependent variables are shown at the top of each column; all estimates are 2SLS estimates for enrollment in the Subsidized Regime (SR), instrumenting for SR enrollment using simulated eligibility. The first three rows report estimates using samples of individuals within two, three, and four SISBEN index points of county-specific eligibility thresholds (respectively). The fourth through sixth rows control for squared, cubic, and fourth power terms of SISBEN scores using samples of individuals within two, three, and four SISBEN index points of county-specific eligibility thresholds (respectively). The seventh through ninth rows include interactions between SISBEN scores and an indicator variable for eligibility according to our calculations. The tenth through twelfth rows do not condition on county fixed effects and use samples of individuals within two, three, and four SISBEN index points of county-specific eligibility thresholds (respectively). The thirteenth through fifteenth rows report non-parametric local linear regression estimates obtained through the following process. First, local linear regression functions (with triangle kernels) are used to estimate conditional means (conditioning only on SISBEN_diff) of outcome variables on either side of the eligibility threshold. Second, this estimation process is repeated for enrollment in the SR. Finally, Wald statistics are constructed using differences in outcome variable means on either side of the threshold as numerators and the difference in SR enrollment means on either side of the threshold as the denominator; 250 bootstrap replications are used to estimate standard errors. All specifications otherwise include SISBEN score, distance from the county-specific threshold, estrato dummy variables, and county fixed effects. Standard errors (clustered by household) are shown in brackets below each estimate.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

Table 4—ROBUSTNESS OF BEHAVIORAL DISTORTION RESULTS (EX ANTE MORAL HAZARD)

Model	Drank Alcohol during Pregnancy	Months Breastfed as Child	Folic Acid During Pregnancy
Bandwidth 2	-0.10 [0.11]	-0.23 [5.36]	0.10 [0.18]
Bandwidth 3	0.01 [0.10]	-0.71 [4.41]	0.16 [0.16]
Bandwidth 4	-0.01 [0.10]	0.84 [3.97]	0.05 [0.17]
Bandwidth 2 with Higher Order SISBEN Polynomial	-0.11 [0.12]	0.14 [6.72]	0.05 [0.18]
Bandwidth 3 with Higher Order SISBEN Polynomial	-0.03 [0.12]	-0.44 [5.11]	0.06 [0.18]
Bandwidth 4 with Higher Order SISBEN Polynomial	-0.03 [0.10]	-1.80 [4.95]	0.16 [0.17]
Bandwidth 2 with SISBEN×Eligible Interactions	-0.10 [0.11]	-0.24 [5.37]	0.10 [0.18]
Bandwidth 3 with SISBEN×Eligible Interactions	0.01 [0.10]	-0.47 [4.43]	0.16 [0.16]
Bandwidth 4 with SISBEN×Eligible Interactions	-0.00 [0.10]	0.90 [3.98]	0.05 [0.17]
Bandwidth 2 without County Fixed Effects	-0.12 [0.11]	3.54 [4.39]	0.18 [0.18]
Bandwidth 3 without County Fixed Effects	-0.02 [0.10]	3.14 [4.25]	0.16 [0.15]
Bandwidth 4 without County Fixed Effects	-0.03 [0.10]	3.37 [3.76]	0.09 [0.16]
Bandwidth 2 Local Linear Regression	-0.13 [0.116]	5.13 [4.766]	0.18 [0.199]
Bandwidth 3 Local Linear Regression	-0.05 [0.102]	4.44 [4.254]	0.16 [0.171]
Bandwidth 4 Local Linear Regression	-0.04 [0.099]	3.86 [3.786]	0.15 [0.159]
Data Source	DHS	DHS	DHS

Individual-level “urban” data used from the 2003 ECV and 2005 DHS. Dependent variables are shown at the top of each column; all estimates are 2SLS estimates for enrollment in the Subsidized Regime (SR), instrumenting for SR enrollment using simulated eligibility. The first three rows report estimates using samples of individuals within two, three, and four SISBEN index points of county-specific eligibility thresholds (respectively). The fourth through sixth rows control for squared, cubic, and fourth power terms of SISBEN scores using samples of individuals within two, three, and four SISBEN index points of county-specific eligibility thresholds (respectively). The seventh through ninth rows include interactions between SISBEN scores and an indicator variable for eligibility according to our calculations. The tenth through twelfth rows do not condition on county fixed effects and use samples of individuals within two, three, and four SISBEN index points of county-specific eligibility thresholds (respectively). The thirteenth through fifteenth rows report non-parametric local linear regression estimates obtained through the following process. First, local linear regression functions (with triangle kernels) are used to estimate conditional means (conditioning only on SISBEN_diff) of outcome variables on either side of the eligibility threshold. Second, this estimation process is repeated for enrollment in the SR. Finally, Wald statistics are constructed using differences in outcome variable means on either side of the threshold as numerators and the difference in SR enrollment means on either side of the threshold as the denominator; 250 bootstrap replications are used to estimate standard errors. All specifications otherwise include SISBEN score, distance from the county-specific threshold, estrato dummy variables, and county fixed effects. Standard errors (clustered by household) are shown in brackets below each estimate.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

APPENDIX F

Table 1—HETEROGENEITY BY ABSOLUTE SISBEN SCORE: RISK PROTECTION AND PORTFOLIO CHOICE

Panel A: Risk Protection						
Outcome	Individual Inpatient Medical Spending	Individual Outpatient Medical Spending	Variability of Individual Inpatient Medical Spending	Variability of Individual Outpatient Medical Spending		
Enrolled Subsidiado	-14,444 [186,361]	-12,516 [21,894]	-20,924.11 [183,706]	-16,609.78 [19,330]		
(Enrolled Subsidiado)*SISBEN	-989 [4,137]	358 [518]	-1,036.95 [4,069]	373.37 [458]		
SISBEN	2,265 [1,989]	-555.27** [262]	2,318.25 [1,951]	-524.03** [232]		
SISBEN_diff	-5,029.91 [3,217]	629.25** [315]	-5,074.36 [3,218]	650.77** [276]		
Effect of being enrolled in subsidiado at score 45	-58953* 0.08	3,585 0.23	-67586.74** 0.04	191.89 0.94		
P-value of hypothesis that the above effect is null						
Observations	4,219	4,218	4,219	4,218		
Data Source	ECV	ECV	ECV	ECV		
Panel B: Portfolio Choice						
Outcome:	Individual Education Spending	Household Education Spending	Total Spending on Food	Total Monthly Expenditure	Has Car	Has Radio
Enrolled Subsidiado	-2,431 [23,319]	-273,304* [162,446]	997,617 [732,788]	-6778852 [5,532,992]	0.09 [0.25]	0.89 [1.28]
(Enrolled Subsidiado)*SISBEN	46 [593]	6,759* [3,952]	-21,423 [16,055]	147,659 [123,948]	-0.00 [0.01]	-0.02 [0.03]
SISBEN	255 [361]	-2,786 [2,043]	3,117 [6,940]	-239,413*** [64,369]	-0.00 [0.00]	-0.01 [0.01]
SISBEN_diff	-311 [299]	1,670 [1,490]	14,831 [13,758]	193,184*** [40,664]	0.01 [0.01]	0.05*** [0.01]
Effect of being enrolled in subsidiado at score 45	-347 0.92	30833 0.12	33589 0.75	-134205 0.68	0.02 0.60	0.19* 0.08
P-value of hypothesis that the above effect is null						
Observations	3,567	4,222	4,096	966	3,334	3,334
Data Source	ECV	ECV	ECV	ECV	DHS	DHS

Individual-level “urban” data for those within two SISBEN index points of county-specific eligibility thresholds from the 2003 ECV and 2005 DHS. Dependent variables are shown at the top of each column. The first two rows shows 2SLS estimates for enrollment in the Subsidized Regime (SR) and its interaction with simulated SISBEN score, instrumenting both using simulated eligibility and its interaction with simulated SISBEN score. The third row shows the coefficient associated with simulated SISBEN score, and the fourth row shows the coefficient associated with distance from the county-specific threshold. The fifth row shows the effect of being enrolled in SR for those with a SISBEN score of 45, computed as the coefficient associated with Enrolled Subsidiado -first row- summed to the multiplication of 45 with the coefficient associated with (Enrolled Subsidiado)*SISBEN -second row-. The sixth row shows the P-value that this effect is null. The seventh row shows the number of observations. All specifications include estrato dummy variables, and county fixed effects. Standard errors (clustered by county) are shown in brackets below each estimate.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

Table 2 —HETEROGENEITY BY ABSOLUTE SISBEN SCORE: USE OF PREVENTIVE MEDICAL CARE AND HEALTH STATUS

Outcome	Use of Preventive Care		Health Status (Children)			
	Preventive Physician Visit	Number of Growth Dev. Checks Last Year	Child Days Lost to Illness	Cough, Fever, Diarrhea	Any Health Problem	Birthweight (KG)
Enrolled Subsidiado	0.72 [0.82]	6.47 [5.41]	4.59 [4.47]	-0.38 [2.03]	0.27 [1.63]	-1.43 [2.25]
(Enrolled Subsidiado)*SISBEN	-0.01 [0.02]	-0.11 [0.12]	-0.13 [0.10]	0.00 [0.04]	-0.01 [0.04]	0.04 [0.05]
SISBEN	-0.02** [0.01]	-0.02 [0.06]	0.08 [0.05]	0.01 [0.01]	0.00 [0.01]	-0.11*** [0.04]
SISBEN_diff	0.06*** [0.01]	0.07 [0.11]	-0.04 [0.09]	-0.02 [0.03]	0.00 [0.02]	0.13*** [0.05]
Effect of being enrolled in subsidiado at score 45	0.29***	1.66***	-1.21**	-0.19	-0.05	0.20
P-value of hypothesis that the above effect is null	0.01	0.01	0.05	0.27	0.74	0.46
Observations	4,222	1,167	1,161	1,167	1,161	897
Data Source	ECV	DHS	DHS	DHS	DHS	DHS

Individual-level “urban” data for those within two SISBEN index points of county-specific eligibility thresholds from the 2003 ECV and 2005 DHS. Dependent variables are shown at the top of each column. The first two rows shows 2SLS estimates for enrollment in the Subsidized Regime (SR) and its interaction with simulated SISBEN score, instrumenting both using simulated eligibility and its interaction with simulated SISBEN score. The third row shows the coefficient associated with simulated SISBEN score, and the fourth row shows the coefficient associated with distance from the the county-specific threshold. The fifth row shows the effect of being enrolled in SR for those with a SISBEN score of 45, computed as the coefficient associated with Enrolled Subsidiado -first row- summed to the multiplication of 45 with the coefficient associated with (Enrolled Subsidiado)*SISBEN -second row-. The sixth row shows the P-value that this effect is null. The seventh row shows the number of observations. All specifications include estrato dummy variables, and county fixed effects. Standard errors (clustered by county) are shown in brackets below each estimate.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

Table 3—HETEROGENEITY BY ABSOLUTE SISBEN SCORE: USE OF CURATIVE MEDICAL CARE

Outcome	Curative Use (Not Conditional on Health Status)	Curative Use among Children (Not Conditional on Health Status)	Medical Visit for Chronic Disease	Hospital Stay
Enrolled Subsidiado	-0.46 [0.45]	1.07 [1.45]	2.67* [1.39]	0.44 [0.68]
(Enrolled Subsidiado)*SISBEN	0.01 [0.01]	-0.02 [0.03]	-0.05 [0.03]	-0.01 [0.02]
SISBEN	-0.01** [0.01]	0.05*** [0.01]	0.12*** [0.03]	0.00 [0.01]
SISBEN_diff	0.01 [0.01]	-0.04* [0.02]	-0.06** [0.03]	0.00 [0.01]
Effect of being enrolled in subsidiado at score 45	0.13**	0.03	0.64***	-0.04
P-value of hypothesis that the above effect is null	0.035	0.85	0.01	0.70
Observations	4,222	1,161	564	4,222
Data Source	ECV	DHS	ECV	ECV

Individual-level “urban” data for those within two SISBEN index points of county-specific eligibility thresholds from the 2003 ECV and 2005 DHS. Dependent variables are shown at the top of each column. The first two rows shows 2SLS estimates for enrollment in the Subsidized Regime (SR) and its interaction with simulated SISBEN score, instrumenting both using simulated eligibility and its interaction with simulated SISBEN score. The third row shows the coefficient associated with simulated SISBEN score, and the fourth row shows the coefficient associated with distance from the the county-specific threshold. The fifth row shows the effect of being enrolled in SR for those with a SISBEN score of 45, computed as the coefficient associated with Enrolled Subsidiado -first row- summed to the multiplication of 45 with the coefficient associated with (Enrolled Subsidiado)*SISBEN -second row-. The sixth row shows the P-value that this effect is null. The seventh row shows the number of observations. All specifications include estrato dummy variables, and county fixed effects. Standard errors (clustered by county) are

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** Significant at the 5 percent level.

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Table 4—HETEROGENEITY BY ABSOLUTE SISBEN SCORE: BEHAVIORAL DISTORTION – EX ANTE MORAL HAZARD

Outcome	<i>Ex-Ante Moral Hazard</i>		
	Drank Alcohol during Pregnancy	Months Breastfed as Child	Folic Acid During Pregnancy
Enrolled Subsidiado	-0.22 [0.92]	47.45 [35.54]	-1.00 [1.75]
(Enrolled Subsidiado)*SISBEN	0.00 [0.02]	-1.04 [0.79]	0.02 [0.04]
SISBEN	-0.00** [0.00]	0.57 [0.38]	0.05*** [0.00]
SISBEN_diff	-0.02 [0.02]	-0.30 [0.70]	-0.06** [0.03]
Effect of being enrolled in subsidiado at score 45	-0.11	0.87	0.07
P-value of hypothesis that the above effect is null	0.31	0.87	0.68
Observations	998	946	988
Data Source	DHS	DHS	DHS

Individual-level “urban” data for those within two SISBEN index points of county-specific eligibility thresholds from the 2003 ECV and 2005 DHS. Dependent variables are shown at the top of each column. The first two rows shows 2SLS estimates for enrollment in the Subsidized Regime (SR) and its interaction with simulated SISBEN score, instrumenting both using simulated eligibility and its interaction with simulated SISBEN score. The third row shows the coefficient associated with simulated SISBEN score, and the fourth row shows the coefficient associated with distance from the the county-specific threshold. The fifth row shows the effect of being enrolled in SR for those with a SISBEN score of 45, computed as the coefficient associated with Enrolled Subsidiado -first row- summed to the multiplication of 45 with the coefficient associated with (Enrolled Subsidiado)*SISBEN -second row-. The sixth row shows the P-value that this effect is null. The seventh row shows the number of observations. All specifications include estrato dummy variables, and county fixed effects. Standard errors (clustered by county) are shown in brackets below each estimate.

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* Significant at the 10 percent level.