**The Effect of Child Gender on Parents' Labor Supply:
An Examination of Natives, Immigrants, and their Children**

by

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I. Introduction

Previous research has shown that child gender has significant effects on household

behavior in developing countries. More recently, research on parents in developed countries has

shown that child gender affects many aspects of parents' behavior, including parents' labor

supply (Lundberg and Rose 2002), marital stability (Dahl and Moretti 2004, Lundberg and Rose

2003), and time spent with children (Lundberg, Pabilonia, and Ward-Batts 2006). Using the

NLSY79, Lundberg (2005) found that U.S. fathers change their work behavior following the

birth of a son rather than the birth of a daughter – they work relatively fewer hours after the birth

of a son. One hypothesis for why there is differential parental behavior by child gender is that

there is a gender preference, i.e., fathers prefer sons. This seems like a reasonable explanation

for differential parental behavior by child gender in some developing countries where the eldest

male son and his wife traditionally provide old-age security for his parents. However, it is less

clear why son preference would be a significant explanation for differential parental behavior by

child gender in an industrialized country such as the U.S., where Social Security and private

pensions are used as old age support and there is greater gender equality in the workplace.

Using the March Current Population Survey (CPS) Supplement, we examine American-

born and foreign-born U.S. parents to see whether having a son rather than a daughter has a

significant effect on parents' labor supply. If son preference is the only explanation, then we

would expect to find that immigrant status increases the effect of having a son on parents' labor

supply. Using country of origin, we classify immigrants into groups, paying particular attention

to immigrants from Asia, where a tradition of son preference is common. We might expect that

any son preference effect would be smaller among second and later generation immigrants than

among first-generation immigrants. We do not distinguish second-generation immigrants from

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other native-born individuals in the present paper. If culture is persistent, then the effect may still be present if the cultural tradition of son preference persists even when the economic rationale for valuing sons no longer applies. In this case, we would expect to find similar effects of child gender among immigrant groups, regardless of country of birth, but differences across these groups. However, differential parental labor supply behavior by child gender may be due to differences in child production functions, such as sons needing more father time or the greater financial resources a father can provide. If this is the case, then we expect that having sons (especially young sons) rather than daughters would have a similar effect upon the parents' labor supply for both natives and immigrants, given the greater likelihood of similar adult outcomes in the U. S. than in developing countries.

In this paper, we investigate whether or not the cultural preferences of immigrants play a role in generating the effects of child gender on U.S. parents' labor supply. A novel approach to capturing the effects of culture has been used by Antecol (2000). For each immigrant woman, Antecol (2000) uses the female labor force participation rate in her country of origin as a measure of culture. In order to follow this approach, we would need labor force participation rates of fathers and mothers in the country of their origin stratified by the gender of a recently born child. One purpose of the current paper is to ascertain whether assembling such data is warranted. If immigrants' responses to child gender do not differ significantly from natives' responses to child gender, then such a measure of the culture is unnecessary.

II. Data

We analyze pooled data from the March CPS Supplement for the years 1994-2006 in order to examine the civilian labor supply behavior of married individuals with only one child

under age three in single family households.[1] Therefore, the mothers and fathers that we examine are from the same households; however, their behavior is analyzed separately. We use three different labor supply measures: actual hours worked last week, weeks worked last year, and annual hours worked last year. The samples used in the regression analysis for hours worked last week include 17,381 mothers and 17,381 fathers. For the latter two labor supply measures, we analyze the behavior in the previous calendar year of parents who currently have only one child aged one or two. Each sample includes 11,405 observations. Annual hours worked last calendar year are calculated using weeks worked last year and usual hours worked each week last year. Each model includes the usual demographic and human capital controls: age (and its square), spouse's age (and its square), age of child, family non-labor income, and dummy variables for own education, spouse's education, race, Hispanic ethnicity, geographic region, and year in the sample. Family non-labor income is expressed in 1984-based real dollars using the CPI-U. All analyses are performed using the March supplement weight. The standard errors in the regression analyses are corrected for households that are sampled in consecutive March samples.

Table 1 reports summary statistics for the hours worked last week sample and for the mean of weeks worked last year and annual hours where the sample size is reduced. On average, women with young children work about half as much as men with young children. Fathers are about 2 years older on average than mothers. Mothers and fathers have similar distributions across race and ethnicity categories as well as across educational attainment categories.

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[1] The analysis is restricted to 1994 forward because information on country of birth was collected beginning in 1994.

III. Results

Table 2 presents OLS regression estimates of weeks worked per year, annual hours worked, and hours worked last week for fathers and mothers respectively.[2] In the first specification for each outcome, we do not allow for differences between natives and immigrants. In the second specification, we allow for such differences both in levels of the outcome and in the response to having a son rather than a daughter. In the third specification, we allow for differences between Asian immigrants and other immigrants, again, both in the levels of the outcome and in the relative response to having a son rather than a daughter.

In both mother and father samples, immigrants work fewer hours than natives in our sample. Immigrant mothers also work fewer weeks per year than native mothers. We find that fathers with a son work almost half a week more per year on average than fathers with a daughter. The point estimates for hours are also positive but are not statistically significant. Immigrant men with a son rather than a daughter work 67 fewer hours annually than similar natives. This effect remains large but is no longer statistically significant when we allow for differences between Asian immigrants and other immigrants. Among mothers, the only statistically significant differential effect of having a son rather than a daughter for immigrants relative to natives is found in the third specification for hours worked last week. Non-Asian immigrant women with a son rather than a daughter work almost two hours more per week than U.S.-born women with sons rather than daughters.

These results do not suggest that first-generation immigrants, who may bring with them a son preference stemming from incentives they no longer face in the U.S., play a large role in generating the child-gender differences that have been found in U.S. data. Therefore, we explore the possible differences between racial and ethnic groups within the U.S. In our specifications

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[2] We also estimated censored regression models for mothers. Results are similar and thus not reported.

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presented in Table 2, we control for race and Hispanic ethnicity, but we do not allow these different groups among the native born to have differential responses to child gender. If cultural beliefs or norms are persistent, so that second and later generation immigrants share the preferences of more recent immigrants, then our specifications in Table 2 would not allow us to identify this cultural difference. In order to address this possibility, we add interactions of race and ethnicity dummy variables with the son dummy. This allows differential responses to having a son rather than a daughter among the various groups.

Table 3 presents results for each labor supply outcome for fathers (Panel A) and mothers (Panel B) respectively. For each outcome, we first include a son dummy and interactions of this variable with race indicators for Black, Asian, and other (non-white) race as well as for Hispanic ethnicity. Then, we add an immigrant indicator in the second specification. Finally, we add an immigrant-son interaction in the third specification. The only significant child gender difference for mothers is that immigrant women with a son work 2 hours more per week relative to immigrant women with a daughter. We find no significant child gender differences between racial or ethnic groups for mothers in either weeks or hours worked. However, we find that, compared to whites, men in the "other race" category work 6 fewer weeks per year when they have a son rather than a daughter. This result is robust to the addition of the immigrant dummy and the immigrant-son interaction, which is also negative and significant. There are similarly large effects on annual hours worked for both other race and Asian men. These remain significant for both groups when the immigrant dummy is added, but when the immigrant-son interaction is included, the result for men of other race remains significant while the result for Asian men is no longer significant at conventional levels. Our results are consistent with, but much larger in magnitude than, the finding by Lundberg (2005) that men work 63 fewer hours

annually when they have a son rather than a daughter. These race-group specific effects may be driving the average effect found by Lundberg (2005). We find no significant child-gender effects for hours worked last week among men. The differences in findings for hours using the two measures is puzzling and will be further investigated. These differential effects across groups may explain some of the significant effects other researchers have found for parental labor supply behavior in U.S. data.

IV. Conclusion

We find some evidence that there are differential child gender effects on parents' labor force behavior among immigrants relative to natives. However, we find stronger evidence that the effect of child gender on men's labor supply is different for different racial groups. Asian men and particularly men in the "other race" category work less relative to white men, as measured by weeks per year or hours per year, if they have a son rather than a daughter. This suggests that there may be a decline in specialization within marriage for these groups relative to whites when the couple has a son rather than a daughter. It could be attributable to men's greater desire to spend more time with sons, especially young sons. However, it could also mean that sons need father's time more than daughters do.

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Table 1: Summary Statistics

	Household-level variables	
Variable	Mean	Std. Dev.
Son	0.51	
Age of child	0.92	0.94
Non-labor income	15.46	52.88
Year	1999.95	4.75

	Mothers		Fathers	
	Mean	Std. Dev.	Mean	Std. Dev.
Hours last week	20.25	24.94	40.80	21.12
Weeks last year (N = 11,405)	32.05	28.75	48.69	12.82
Hours last year (N = 11,405)	1160.13	1192.77	2174.10	819.56
Immigrant	0.18		0.17	
Black	0.05		0.06	
Asian/Pacific Islander	0.06		0.05	
Other race	0.01		0.01	
Hispanic	0.12		0.11	
Age	29.34	7.70	31.76	8.67
Age^2	0.89	0.49	1.05	0.61
Education				
High School	0.23		0.26	
Some college	0.28		0.27	
College Degree	0.29		0.26	
Advanced Degree	0.13		0.13	
N=17,381				

Notes: Survey weights used.

Table 2: Differential Effects of Son for Immigrants versus Natives

Fathers	Weeks worked last year			Annual hours			Hours worked last week		
Son	0.26	0.45*	0.46*	11.85	24.69	26.18	0.32	0.40	0.41
	(0.23)	(0.25)	(0.25)	(14.88)	(16.40)	(16.39)	(0.31)	(0.35)	(0.35)
Immigrant *son		-1.01	-0.83		-66.76*	-63.10		-0.44	-0.27
		(0.66)	(0.65)		(38.61)	(41.04)		(0.80)	(0.89)
Asian immigrant			0.16			-6.38			-0.25
* son			(1.68)			(90.57)			(1.82)
Immigrant		-0.46	0.03		-50.67	-10.93		-2.26***	-2.22***
		(0.53)	(0.54)		(33.27)	(36.17)		(0.69)	(0.76)
Asian immigrant			-2.76*			-231.09***			-0.87
			(1.41)			(80.20)			(1.61)
N	11,405	11,405	11,328	11,405	11,405	11,328	17,381	17,381	17,263
R^2	0.05	0.05	0.05	0.06	0.06	0.06	0.04	0.04	0.04

Mothers	Weeks worked last year			Annual hours			Hours worked last week		
Son	0.30	0.26	0.26	21.02	22.67	22.62	-0.01	-0.18	-0.18
	(0.51)	(0.55)	(0.55)	(21.11)	(23.27)	(23.27)	(0.36)	(0.40)	(0.40)
Immigrant * son		0.05	0.81		-15.05	26.94		0.87	1.81*
		(1.34)	(1.50)		(53.98)	(59.42)		(0.93)	(1.01)
Asian immigrant			-2.00			-112.97			-2.73
* son			(2.95)			(119.42)			(2.05)
Immigrant		-8.20***	-8.94***		-288.1***	-331.4***		-5.41***	-6.53***
		(1.12)	(1.23)		(45.46)	(48.94)		(0.78)	(0.82)
Asian immigrant			1.92			123.00			4.70**
			(2.68)			(115.62)			(1.95)
N	11,405	11,405	11,312	11,405	11,405	11,312	17,381	17,381	17,247
R^2	0.11	0.12	0.12	0.10	0.10	0.11	0.08	0.09	0.09

Notes: Standard errors in parentheses. Survey weights are used.

Significance levels: *** = 1%; ** = 5%; * = 10%. Control variables also include age of child, quadratic in age of respondent and spouse, region, year, education categories for respondent and spouse, and a constant.

Table 3A: Differential Effects of Son by Race and Ethnicity

Fathers	Weeks worked last year			Annual hours			Hours worked last week		
Black * son	-0.47	-0.52	-0.39	-45.29	-49.35	-44.0	2.34	2.27	2.33
	(1.27)	(1.27)	(1.28)	(67.47)	(67.57)	(67.88)	(1.55)	(1.55)	(1.55)
Asian * son	-1.47	-1.38	-0.36	-138.6*	-130.12*	-88.6	-0.51	-0.34	0.03
	(1.43)	(1.43)	(1.51)	(77.41)	(77.03)	(85.33)	(1.50)	(1.49)	(1.66)
Other race * son	-6.11**	-6.14**	-6.10**	-465.6***	-467.9***	-466.6***	-4.31	-4.31	-4.31
	(2.93)	(2.92)	(2.91)	(146.76)	(144.66)	(144.48)	(3.48)	(3.49)	(3.48)
Hispanic * son	0.54	0.57	1.29*	4.50	6.93	36.5	-0.17	-0.13	0.13
	(0.64)	(0.64)	(0.76)	(36.02)	(35.98)	(46.17)	(0.80)	(0.80)	(0.99)
Son	0.35	0.36	0.45*	25.63	26.04	29.7*	0.26	0.26	0.29
	(0.25)	(0.25)	(0.25)	(17.07)	(17.07)	(17.24)	(0.36)	(0.36)	(0.36)
Black	-1.91**	-1.78**	-1.87**	-184.9***	-174***	-177.4***	-6.28***	-5.96***	-5.99***
	(0.89)	(0.89)	(0.89)	(46.99)	(47.22)	(47.23)	(1.12)	(1.12)	(1.12)
Asian	-1.94**	-1.28	-1.77*	-160.4***	-103.3*	-123.3**	-4.42***	-2.72**	-2.91**
	(0.91)	(0.95)	(1.00)	(51.10)	(53.72)	(57.59)	(1.07)	(1.12)	(1.19)
Other race	1.59*	1.62*	1.60*	121.74*	124.3*	123.3*	-1.24	-1.21	-1.22
	(0.87)	(0.86)	(0.87)	(66.38)	(64.8)	(65.38)	(2.00)	(2.01)	(2.01)
Hispanic	-0.10	0.36	0.00	-112.3***	-72.8**	-87.3**	-1.64***	-0.46	-0.59
	(0.53)	(0.56)	(0.61)	(30.06)	(32.57)	(35.84)	(0.63)	(0.69)	(0.76)
Immigrant		-0.98**	-0.30		-84.5***	-56.6		-2.47***	-2.22***
		(0.39)	(0.59)		(25.32)	(37.41)		(0.53)	(0.78)
Immigrant * son			-1.33*			-54.65			-0.49
			(0.77)			(49.74)			(1.03)
N	11,405	11,405	11,405	11,405	11,405	11,405	17,381	17,381	17,381
R²	0.05	0.05	0.05	0.06	0.06	0.06	0.04	0.04	0.04

Notes: Standard errors in parentheses. Survey weights are used.

Significance levels: *** = 1%; ** = 5%; * = 10%. Control variables also include age of child, quadratic in age of respondent and spouse, region, year, education categories for respondent and spouse, and a constant.

Table 3B: Differential Effects of Son by Race and Ethnicity

Mothers	Weeks worked last year			Annual hours			Hours worked last week		
Black * son	2.93	2.04	1.93	119.43	87.30	83.95	0.66	0.31	0.05
	(2.20)	(2.19)	(2.19)	(93.96)	(93.27)	(93.27)	(1.70)	(1.70)	(1.70)
Asian * son	-1.88	-1.67	-2.34	-96.51	-88.92	-108.39	-1.33	-1.29	-2.91
	(2.44)	(2.42)	(2.74)	(97.69)	(97.15)	(109.82)	(1.66)	(1.65)	(1.86)
Other race * son	1.29	1.79	1.73	-86.74	-68.44	-70.43	-1.30	-0.85	-1.00
	(3.99)	(3.88)	(3.88)	(175.69)	(174.21)	(173.99)	(3.35)	(3.31)	(3.29)
Hispanic * son	0.13	-0.05	-0.51	-7.93	-14.13	-27.50	0.02	-0.04	-1.13
	(1.41)	(1.39)	(1.67)	(56.46)	(55.84)	(67.33)	(0.95)	(0.94)	(1.15)
Son	0.22	0.25	0.19	21.81	22.64	21.15	0.04	0.04	-0.08
	(0.58)	(0.58)	(0.59)	(24.34)	(24.29)	(24.65)	(0.42)	(0.42)	(0.42)
Black	2.55	4.16**	4.24***	188.7***	246.7***	249.1***	3.99***	4.80***	4.97***
	(1.64)	(1.64)	(1.64)	(70.03)	(69.53)	(69.57)	(1.17)	(1.16)	(1.16)
Asian	-8.06***	-1.96	-1.62	-201.4***	19.01	28.79	-3.47***	0.21	1.03
	(1.68)	(1.78)	(1.91)	(68.56)	(72.37)	(77.50)	(1.25)	(1.31)	(1.37)
Other race	4.66*	4.98*	5.00*	241.0*	252.7**	253.2**	2.35	2.44	2.46
	(2.79)	(2.66)	(2.66)	(125.43)	(121.04)	(120.91)	(2.66)	(2.59)	(2.58)
Hispanic	-4.98***	-0.84	-0.60	-121.1***	28.3	35.4	-2.42***	-0.01	0.56
	(1.09)	(1.15)	(1.25)	(43.39)	(46.27)	(50.55)	(0.72)	(0.77)	(0.85)
Immigrant		-8.13***	-8.56***		-293.7***	-306.1***		-4.96***	-6.01***
		(0.88)	(1.24)		(35.12)	(50.87)		(0.61)	(0.86)
Immigrant * son			0.84			24.34			2.07*
			(1.70)			(68.50)			(1.18)
N	11,405	11,405	11,405	11,405	11,405	11,405	17,381	17,381	17,381
R^2	0.11	0.12	0.12	0.10	0.11	0.11	0.08	0.09	0.09

Notes: Standard errors in parentheses. Survey weights are used.
Significance levels: *** = 1%; ** = 5%; * = 10%. Control variables also include age of child, quadratic in age of respondent and spouse, region, year, education categories for respondent and spouse, and a constant.