

Political Marginalization and Fertility: A Case Comparison of Arizona and New Mexico

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Abstract

Objectives: How does political marginalization affect women's fertility decisions? New Mexico and Arizona have divergent political cultures and levels of political incorporation for Hispanics. This article explores the effect of political marginalization on aggregate fertility patterns for Hispanic women in New Mexico and Arizona. *Methods:* Using the Census American Community Survey from 2005 to 2010 and New Mexico and Arizona Vital Statistics, this article uses two separate approaches to explore political fertility. The first is a county level analysis of differences in fertility and the second is a natural experiment using the border between Arizona and New Mexico. *Results:* This paper will show that political marginalization both on a county and state level significantly increases fertility when holding all other factors constant. *Conclusions:* Politics can drive demographic change. Political incorporation should be considered when examining fertility differences between subgroups and should be controlled for when modelling the effect of population on politics.

1 Introduction

The 21st Century will be marked by some of the most rapid population growth in human history. Since 1999, the world has added more than a billion people. The relationship between population and power is contentious,

relevant, and under explored by contemporary political scientists (Teitelbaum, 2005).

Within the American race and ethnicity literature, impending demographic changes and their effects on attitudes, social structures and politics are explored (Preuhs, 2007; Bowler and Segura, 2008; Brown, 2012). However, there is often an implicit assumption that the causal arrow moves in one direction from demographic change, sometimes mediated by institutions, to political change (Gladstone, 1991; Posner, 2004; Preuhs, 2007). In contrast, this paper will consider the effect of politics on demographic processes. In particular, this paper will focus on how political marginalization and exclusive political culture affect women's fertility decisions. It will show that political marginalization strongly effects fertility differences within the same subgroup. Since population is an exponential process, small differences in aggregate fertility patterns can have large long run effects on total population size, subgroup population size and age structure.

2 Theory

Utilizing the Davis and Blake framework¹, there has been an abundance of literature that explores the socio-economic correlates to fertility. It is widely accepted that a lack of educational attainment and fewer earning opportunities for women are significantly correlated to increased fertility rates (Simon, 1969; Cain and Weinger, 1973; Jain, 1981; Martin, 1995; Isen and Stevenson, 2008). Even though the causal chain may be long, changing desired family size and constraints that affect desired family size are often far more important than direct changes to access to contraception and other family planning services (Princhett, 1986).

Political culture is defined from Elazar (1966) as "the particular pattern of orientation to political action in which each political system is imbedded." Political marginalization, or an exclusive political culture, will be measured by degree of descriptive representation, the degree of acceptance of a subgroup identity within the broader political arena and the degree of grassroots advocacy for fringe groups. Parts of this definition have been used and discussed in (Mansbridge, 1999; Barreto *et al*, 2004; Wolbert and Hero, 2005; Minta, 2011).

¹There are eleven proximate causes to fertility (Davis and Blake, 1956) which fall into three categories: (1) exposure to the risk of contraception, (2) variables affecting conception probabilities, and (3) variables affecting gestational lengths and events. Exposure to risk of contraception include: (1) age of entry into a child-bearing union, (2) celibacy, (3) time spent between and after unions (divorce and widowhood), and (4) abstinence within a union. The variables that affect contraception probabilities include: (1) fecundability (voluntary and involuntary sterilization), (2) frequency of coitus, and (3) use of contraception (both "modern" and "traditional"). Fecundity includes post-partum infecundity which is waiting time to conception, time to gestation, and lactational amenorrhoea (Bongaarts, 1976). Lactational amenorrhea is temporary infecundability accompanying breastfeeding; it is used in many societies as a birth spacing technique. Finally, variables that affect gestational lengths and events include involuntary and voluntary fetal mortality.

I will argue that political marginalization works through two mechanisms to affect fertility. A lack of political power affects the direct level of redistribution in terms of income and education. Lower education and income have already been shown in numerous studies to increase fertility.² This paper theorizes that political marginalization also leads marginalized women to have more children, not because they consciously respond to politics, but because politics limits their *perceived* economic and educational opportunities outside the home. Political marginalization also instills a sense of powerlessness and meaninglessness in relation to the broader society. Child-bearing can offer women with few opportunities a sense of opportunity and meaningfulness.

Some qualitative work has been done in the field of pediatric nursing on the attitudes and perspectives of teenage mothers. The main results of Spear (2001) is a feeling of opportunity and optimism in relation to the pregnancy in the face of marginalization and poverty.³ Studies conducted mainly in the 1960s and 1970s have rigorously studied the effect of socio-psychological correlates to fertility. Groat and Neal (1967) and Neal and Groat (1970)

²It increases fertility through lower educational access for women. Lower education is highly correlated with increased fertility. Martin (1995) surveys the literature on education and fertility.

³Some quotes from teenage mothers include:

Being pregnant is a benefit to me; I probably wouldn't be getting an education if I wasn't pregnant. I never got such good grades before; I'm more motivated to do better in school. (Spear, 2001; 576)

Now I have somethin' to live for. I'm kind of ashamed; not because of bein' pregnant, but because of my age. I'm happy, my mom's happy. The baby's daddy don't care about me, but I know he'll be there to help with the baby. Since I got pregnant, I'm happier. I don't know why; I feel like I have somethin' to live for. (Spear, 2001; 576)

find that psychological factors such as powerlessness, meaninglessness and normlessness were all found to significantly affect fertility in the positive direction.⁴ Political fertility will be defined as the aggregate fertility difference due primarily to the effects of political marginalization.

This paper will explore the effect of political marginalization on fertility by two different approaches. The first approach will be to look at Census ACS data on fertility for New Mexico and Arizona. The other approach will be to construct a natural experiment using the New Mexico-Arizona border to test the effect of politics on fertility differences.

2.1 Paired Comparison: New Mexico and Arizona

Arizona and New Mexico make an excellent case study since Arizona's Hispanic Total Fertility Rate (TFR) is higher than New Mexico's Hispanic TFR despite a wealthier and more educated Hispanic population on average. Arizona's Hispanic TFR is 2.70 whereas New Mexico's Hispanic TFR is 2.46.⁵ Figure 1 shows the differences in age specific fertility rates (ASFR) between non-Hispanic and Hispanic women in Arizona and New Mexico. There is a distinctly different trend. New Mexico's ASFRs suggests fertility limitation

⁴Particularly within socioeconomic categories, specific alienation in this case in relation to religion was found to significantly affect total fertility. (Groat and Neal, 1974; Neal and Groat, 1975) Some other papers that study this have found: Morris and Sison (1974) find that powerlessness is correlated to higher fertility in Guamanian, and US White Population, but not in the US Black population. They find that powerlessness does not lead to higher parity(Number of live births to a woman) by non-contraceptive use. Lopez and Sabagh (1978) find that ethnic integration, in this case in relation to Chicano couples in Los Angeles, lowers fertility rates.

⁵TFR was calculated from the Census ACS Survey. TFR in this paper is a weighted average based on population samples from 2005 to 2010. TFR is age standardized fertility rate meaning that compositional differences in age groups are not driving differences in this fertility measure

from 20-33, while Arizona's ASFRs show fertility skewed toward younger ages and no fertility limitation for Hispanic women compared to the non-Hispanic female population.

[Figure 1 about here.]

2.2 New Mexico versus Arizona and the Political Incorporation of Hispanics

New Mexico, compared to Arizona, has a strong Hispanic bloc in its state legislature and a very different political culture that is more inclusive of the Hispanic and Native American identity. New Mexico is the only state in the United States where population and representation for Hispanics is 1:1; it had a democratic Hispanic governor from 2003 to 2011, Bill Richardson, who was the highest ranking Hispanic elected official during that time period.

The differences between the political cultures of the two states was evident even while they were still territories. Historically, New Mexico and Arizona pursued very different strategies to gain admittance into the Union although both states faced similar demographic realities (Noel, 2011). New Mexicans argued for pluralistic ideal where the Native American and Hispanic populations were integral to the New Mexican identity. From the very formation of the New Mexico territory into a state in 1910s, the state recognized and protected the rights of its Spanish American, Native and Black inhabitants. A Republican delegate, Nestor Montoya, at the state constitutional convention promised and followed through in protecting the rights of Spanish American members in the state.

In the name of the Spanish American members of the Convention, I wish to say, that all the delegates here have, as one man, helped to safeguard the rights of the two hundred thousand people of that blood in this territory.” (Noel, 2011; 430)

In contrast, no such protection was granted to Hispanic, Native and Black Americans in Arizona. Arizona’s delegates argued for marginalization. They argued that minority populations would be supervised and controlled under white employers.

Hispanics in New Mexico were always seen in line with the New Mexican political identity. The New Mexican constitution in 1912 also provided for a bilingual government and required that all the laws were written in both Spanish and English. Under the New Mexican judiciary, witnesses have the right to testify in both Spanish and English. In regards to public education, the state has the constitutional obligation to provide bilingual education for school districts in which the majority of the population speaks Spanish. Throughout the 20th Century, New Mexico’s Hispanic representation was always comparable, or almost 1:1, with the Hispanic population.

New Mexican multiculturalism is strongly supported by the legislature. New Mexico has been a national trailblazer with the adoption of a bilingual state song in 1995, the adoption of an English Plus resolution in 2008⁶, and

⁶Declares that the U.S. government should pursue English-plus policies that: (1) encourage all residents of this country to become fully proficient in English by expanding educational opportunities and access to information technologies; (2) conserve and develop the nation’s linguistic resources by encouraging all residents of this country to learn or maintain skills in languages other than English; (3) assist Native Americans, Native Alaskans, Native Hawaiians, and other peoples indigenous to the United States in their efforts to prevent the extinction of their languages and cultures; (4) continue to provide services in languages other than English as needed to facilitate access to essential functions

adoption of a Navajo textbook by the state legislature.

These efforts are in complete contrast to Arizona. Political movements in Arizona for equal wages and civil rights were often started from the grassroots because of the lack of political representation. Arizona's legislature enforced tough anti-miscegenation laws from the early 1900s and allowed widespread segregation and occupational discrimination. In 1915, the Western Federation of Miners organized Hispanic mine workers to demand equal wages to Anglo mine workers. In addition, in the early 1930s and 1940s, "Mexican Americanism" an Anglo acculturation program in Arizona caught hold. Arizona Hispanics only started to fight for political incorporation in the 1960s and 1970s. The overall gains from these movements still left Arizona Hispanics far behind their New Mexican counterparts in terms of political representation. Recently, Arizona's state legislature has also passed SB1070 which gives police officers the power to check the immigration status of individuals they suspect and HB2281 which bans all ethnic studies courses, particularly Mexican studies programs, in public schools.

Arizona also enforced English as the dominant language of political and economic affairs. When Arizona became a state, it was mandated that a certain degree of English proficiency was required to be a member of government.

The ability to read, write, speak, and understand the English

of government, promote public health and safety, ensure due process, promote equal educational opportunity, and protect fundamental rights; and (5) recognize the importance of multilingualism to vital American interests and individual rights, and oppose English-only measures and other restrictionist language measures." US House. 112th Congress. H. CON. RES. 8. English Plus Resolution (2011), Congressional Record ONLINE. Thomas. Available: <http://thomas.loc.gov/cgi-bin/query/z?c112> [7 May 2012]

language sufficiently well to conduct the duties of the office without aid of an interpreter shall be a necessary qualification for all state officers and members of the state legislature.(Adams *et al*, 1990; 320)

While this qualification was originally in New Mexico's first constitution, it was dropped. In Arizona, this provision still holds. In 2006, this qualification was used to prevent Alejandrina Cabrera from putting her name on the ballot for election in Yuma County. It has been quite effective in creating an official state political identity around the English speaking identity in stark contrast to New Mexico which has always supported multilingualism. In 1988, Proposition 106 passed with 50.5 percent of the vote in Arizona. It mandated that state employees speak only English on the job and was later overturned by the Supreme Court under violation of the First Amendment.

Today, Arizona's state legislature is highly unrepresentative with only 12 percent of representatives being Hispanic even though the population is 30 percent Hispanic. New Mexico's state legislature is 44 percent Hispanic and the population is 44 percent Hispanic. Figure 2 shows Latino Legislative Incorporation Index (Preuhs, 2007) divided by Latino population in the state over the period from 1986 to 2002. New Mexico's Latino legislative representation is far above Arizona's Latino legislative representation.

Overall, New Mexican Hispanics are much less marginalized than Arizona's Hispanics.⁷ New Mexican Hispanics are not underrepresented and their lingual and ethnic identity is integral to the New Mexican political

⁷This paper is not arguing that Hispanics in New Mexico are not marginalized, but just not to the degree of Hispanics in Arizona.

identity. On the other hand, Arizonan Hispanics are underrepresented, their linguistic and cultural heritage is not seen in line with the Arizona political identity and they are often portrayed as the 'outsider' in Arizonan politics.

A common counterclaim to this hypothesis is that Hispanics, particularly of Mexican origin, in New Mexico are a much older population than similar Hispanics in Arizona. This idea has been propagated by political culture in Arizona which does not see the Mexican American identity as integral to the Arizonan political identity. However, the percentage of Mexican origin Hispanics in Arizona even in the early 1900s was much higher than in New Mexico. In 1930, Hispanic Americans of Mexican origin in Arizona represented 26.21 percent of the total state population while only 14.02 percent of the total state population of New Mexico (Alvarez, 1966).

2.3 Case Comparison in Arizona: Pima, AZ versus Maricopa, AZ

Pima County, AZ contains the city of Tucson, and Maricopa County contains the city of Phoenix. Tucson and Phoenix are the two largest cities in Arizona. Pima is part of a majority minority Hispanic congressional district where Rep. Raul Grijalva [D] serves. This district is also one of the most representative for Hispanics in the state of Arizona in terms of school board and city representation. The Tucson city council is one of the most representative in Arizona with 8 out of 8 city council members being Hispanic in 2006 according to International City Management Association (ICMA).

Meanwhile Phoenix in Maricopa County is one of the least representative with 8 out of 9 council members being non-Hispanic white and 1 out of 9

being non-Hispanic black in 2006 according to ICMA. Tuscon and Phoenix have comparably large Hispanic populations with Tuscon being 42 percent Hispanic and Phoenix 41 percent Hispanic. Maricopa County received national recognition in 2010 related to anti-Hispanic sentiment due to SB1070. Maricopa County is a republican stronghold in Arizona and its congressional representative, school board, and city government are far to the right. If my hypothesis is correct, Maricopa County should have higher fertility rates, especially Hispanic fertility, and Pima County should have lower fertility.

[Figure 2 about here.]

2.4 Assumption: Control and Treatment Groups are similar

The hypothesis of this paper is that an inclusive political culture and greater representation lowers birth rates. However, there are a couple of alternative hypotheses:

Hypothesis 2: The Hispanic population in Arizona has a higher proportion of foreign born/first and second generation than New Mexico and this is driving fertility differences.

A third of Hispanics in Arizona were foreign born in 2010. About 19 percent of Hispanics in New Mexico were foreign born in 2010. I control for foreign-born status in my regressions. What I cannot control for is the difference between second and third generation immigrants which could have potentially different fertility than first generation. To overcome this potential problem I am going to use counties along the border as the reference counties for the following regressions in the Census ACS. All of these coun-

ties have under the state average of foreign born populations.

The average percent of foreign born in the AZ/NM border counties is 5.18 percent and 4.28 percent respectively. The AZ/NM border counties on average have a much lower number of foreign born women on either side because of the border patrol/surveillance and the lack of adequate employment for undocumented immigrants. This suggests that if more recent immigration is driving fertility that the non-reference counties should have significantly higher fertility than reference counties. This does not hold. In fact, if they have significantly different fertility it's lower than counties such as Pima, AZ which has a higher percentage of undocumented, foreign born, first and second generation Hispanic immigrants than border counties.

In addition, there are different population distributions based on immigration status from north to south in both states. There are fewer first generation Hispanic immigrants to the northern counties. However, again the northern counties fertility rates are insignificant. Some of the southern counties have negative fertility. These trends all run opposite to the proposed trends for generationality and fertility.

Hypothesis 3: Hispanics in New Mexico have higher educational attainment and socioeconomic status than Hispanics in Arizona.

High school graduation rates in New Mexico for Hispanics are around 56 percent in 2009. The Hispanic graduation rate in Arizona is 61 percent. They represent a 17 percent and 10 percent difference from the non-Hispanic white population, respectively. On average, Hispanic Arizonians are better educated than their Hispanic counterparts in New Mexico. This should suggest a lower birth rate in Arizona versus New Mexico.

The median household income for Hispanics in Arizona is 40,476 and 39,742⁸ for New Mexico in 2009. The difference is not large, but Arizona's Hispanics on average are doing slightly better than New Mexico's Hispanics. However, in other economic indicators, particularly related to other aspects of marginalization such as number of Hispanic owned businesses, Arizona falls far behind New Mexico. New Mexican Hispanics-owned businesses comprise 23.6 percent of the total businesses while in Arizona, they make up only 10.7 percent. Adjusted for different population proportions, New Mexican Hispanic-owned businesses are underrepresented by 46 percent while Hispanic-owned businesses in Arizona is underrepresented by 64 percent.

Hypothesis 4: A Higher Percentage of Women in the Legislature is driving better provisions for women in New Mexico offering better opportunities than childbearing.

Some papers argue that having a higher number of women in the legislature is correlated to higher spending on women and children's well-being. (Thomas, 1991; Swers, 1998; Swers, 2001) Therefore, greater female representation may lead to better opportunities for women and a lower fertility rate. The Arizona state legislature has more women 34 percent compared to 27 percent in New Mexico in 2011. Theoretically, if this marginalization hypothesis holds in terms of women, New Mexico should have a higher fertility rate than Arizona.

⁸Race and Ethnicity and Economic Outcomes in New Mexico

3 Methodology

3.1 Data 1: (Census ACS, New Mexico and Arizona)

The data for this analysis will come from the Census 2005-2010 American Community Survey (ACS). The Census ACS is a one percent sample of the total United States population. The total sample was 479,064 from Arizona and New Mexico of which 244,900 were women. The dependent variable was whether or not in a given year a women had a child. The independent variable was a dummy variable for state with Arizona as the reference category. The other independent variable is a county level dummy variable for the following eight counties and a number of people outside those eight counties. Those counties include the following: Maricopa, AZ, Pima, AZ, Coconino, AZ, Yavapai, AZ, Yuma, AZ, Bernalillo, NM, San Juan, NM, and Dona Ana, NM. Most of these do not lie on the New Mexico-Arizona border. The exception to this is San Juan, NM.

The number of people in an unrecognized county is 121,272 and in a recognized county is 357,792. The control variables include age, race, Hispanic status, total family income, marital status, farm status, type of dwelling, education and citizenship status. A rural/urban variable does not exist for the ACS during this time period, so I relied on proxies such as farm status and dwelling type.

3.2 Census ACS Results

[Figure 3 about here.]

[Figure 4 about here.]

In both regression models, Figures 3 and 4, OLS and LOGIT, the coefficient on New Mexico is significant and lowers the probability of having a child in a given year. Based on the odds ratio from the LOGIT model in Figure 3 holding all other variables constant, Non-Hispanic women living in Arizona have 16 percent higher odds of having a live birth. Holding all other variables constant, Mexican American women living in Arizona have 25 percent higher odds of having a live birth than Mexican American women living in New Mexico. Interestingly, a more inclusive political culture seems to be correlated to significantly lower fertility for all women. Part of this effect may be due to lower fertility for Native American, Asian American, and African American women in New Mexico.

The only county in the OLS that is significant is Pima, AZ and it significantly lowers the likelihood of having a live birth. In the LOGIT, both Pima and Maricopa county significantly lower fertility. Pima is one of the most representative counties in Arizona and supports my thesis that political inclusion lowers fertility. Pima, AZ also has a greater first generation Hispanic population than border counties, but still has a lower fertility rate.

[Figure 5 about here.]

Maricopa County made headlines during the debate of the SB 1070 bill. It is one of the least representative counties in Arizona. In Figure 5, I find that Maricopa County significantly lowers fertility in both the OLS and LOGIT when I control for being Hispanic and living in Maricopa. The interaction effect of being Hispanic and living in Maricopa increases fertility.

Holding all other variables constant including race, Hispanic women in Maricopa County have 26 percent *higher* odds of having a live birth compared to Hispanic women in Pima County. The interaction between being Hispanic and living in Pima is insignificant although the Pima County dummy variable is still significant and lowers fertility. Some of the New Mexico counties, Bernalillo and Dona Ana, have a significantly lower fertility between being Hispanic and living in those counties. These results follow my underlying hypothesis and suggest that an exclusive political culture can increase fertility rates.

3.3 Natural Experiment

A natural experiment is based on two conditions. First condition: An intervention occurs at some point in time that affects some of the subjects but not all and there is an assumption that this intervention was as-if-random (Dunning 2008). In this case the assumption is that the border is exogenously determined and is not based on Hispanic fertility. The second assumption underlying a natural experiment is that "the naturally occurring intervention generates some subjects who receive treatment and other subjects who do not" (Sekhon and Titunik 2012).

The control group in this experiment is Hispanic women living in the border counties on the New Mexico side of the border which receive the benefits of better Hispanic representation in New Mexico, a 1:1 population to representative relationship. The group that receives the treatment is Hispanic women in the border counties on the Arizona side. I have argued in a previous section argued that the Hispanic populations on the border

on the New Mexico versus Arizona side are quite similar. A selection table follows the regression table in Figure 8. In the next section, I will argue for the exogeneity of the formation of the New Mexico-Arizona border.⁹

3.4 Assumption: Exogeneity of the Border

[Figure 6 about here.]

The AZ/NM border is divided from east to west on the 109th parallel longitude line due to Confederate versus Union battles in the northern part of the New Mexico territory. The New Mexico Territory was gained through the Mexican American war and expanded with the Gadsden Purchase which included both Arizona and New Mexico. Proposals for the division of the territory were first proposed in 1856 and they were based on a North-South division instead of an East-West border on the latitude versus the longitude line. The border was decided through a host of Union and Apache battles in the northern territory of New Mexico. After the war, they settled on an East-West, rather than a North-South division, on the latitude line of the 109th parallel. The border was not decided based on Hispanic fertility or the Hispanic population.

Figure 6 includes a set of regressions with 2005 to 2010 Census ACS (data from the prior section). The old border is a dummy variable for whether the county is north of the 34th parallel or the 1863 proposed border. For counties that traverse the parallel, the side with the majority of area was chosen. The effect of the 1863 proposed North-South border was insignificant both

⁹Posner (2004) exploits a similar set up, he uses the Zambia and Malawi border to test the effect of subgroup population size relative to the political arena on cultural cleavage.

with the inclusion of Maricopa and without Maricopa County which is the largest county. This suggests that politically defined borders account for some degree of fertility variation within a subgroup.

[Figure 7 about here.]

3.5 Data 2: (New Mexico and Arizona Vital Statistics)

The data for this section came from the New Mexico and Arizona department of Vital Statistics. The dependent variable is Hispanic crude birth rates from 2004 to 2009 from the following border counties: Apache, AZ, Navajo, AZ, Greenlee, AZ, Graham, AZ, Cochise, AZ, San Juan, NM, McKinley, NM, Cibola, NM, Catron, NM, Grant, NM, and Hidalgo, NM. I was not able to age standardize my crude birth rates because I was unable to find the age distribution for women by race and for counties in New Mexico because of their small size. Given the age distribution of the general population, on average, New Mexico had a larger percentage of women at childbearing ages both from 15-34 and from 34-49 than Arizona. I control for age structure in my regressions for each individual county. See graphs for the Hispanic weighted and averaged crude birth rates from 2004 to 2009 in Arizona and New Mexico.

3.6 Natural Experiment Results

[Figure 8 about here.]

My primary independent variable is the state dummy variable for Arizona and New Mexico. Again, the dummy variable this time for Arizona

has a significant positive effect on Hispanic crude birth rates (see Model 1 in Figure 8). As one can see, these populations are similar enough across the border that median family income is not significant. Also, controlling for age structure, these findings still hold that the Hispanic birth rate in Arizona is higher than in New Mexico. The results mirror both in sign, magnitude and significance the results that I found in the last section using the Census ACS data. Here, foreign born status or rural versus urban is much less of a problem when just looking at border counties, but I still find the same results.

When I include a regression of interaction effects (see Model 3 in Figure 8), I find that a higher percent Hispanic in a county lowers the Hispanic crude birth rate. The interaction effect between percent Hispanic and Arizona is also significant. This means that Hispanics living in Arizona have a higher birth rate when there are fewer Hispanics in the county than in a similar border county in New Mexico. In Model 3, I also control for the Old 1863 proposed border as a test of my hypothesis and again it is insignificant with respect to Hispanic Crude Birth rates. My adjusted R-squared is quite high, where my models are explaining roughly 45 to 70 percent of the variance in Hispanic birth rates. The Arizona dummy explains about 10 percent of variation in Hispanic crude birth rates.

Overall, the results mirror the findings from the Census ACS data. This analysis suggests that the state boundaries between Arizona and New Mexico have a strong positive effect on Hispanic birth rates even in similar border populations. The 1863 proposed North South border does not have this strong effect on fertility differences.

4 Conclusion

Population is directly related to the functioning of a state, yet is often seen as a static or control variable. This paper offers a more dynamic understanding of population. First, it draws a theoretical connection between political marginalization and fertility. Then it shows that on a county and state-level, differences in political culture seem to be at least one factor driving fertility differences. Holding other factors constant including race, differences in the odds ratio of a live birth in the most and least marginalized areas for women of the same ethnic group is between 20 and 45 percent. These results hold in the natural experiment framework as well. Political fertility is underexplored and there are many fruitful paths forward to better understanding this phenomenon.

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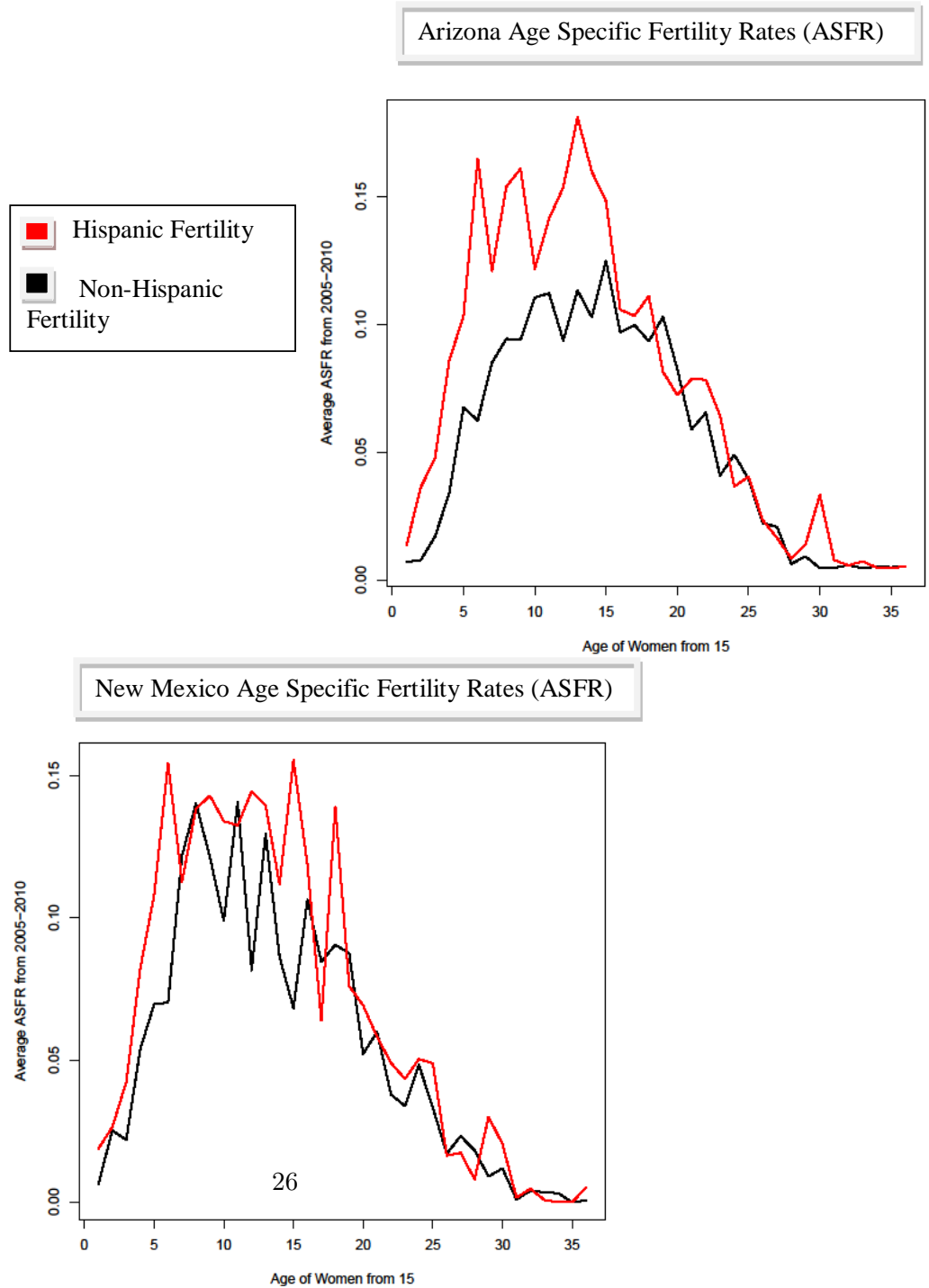
A Description and Coding

[Figure 9 about here.]

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Figure 1: Age Specific Fertility Rates for Arizona and New Mexico

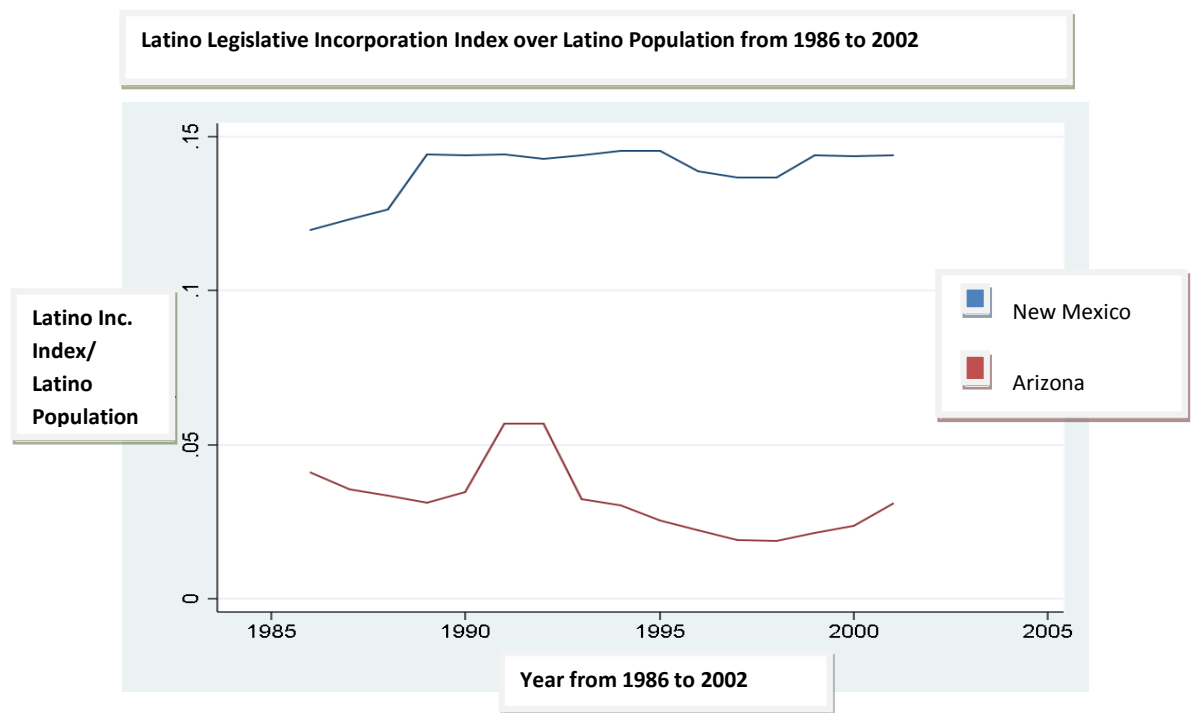


**Graphs created from average Age-Specific Fertility Rates (ASFR) from Census American Community Survey (ACS) for the years 2005-2010 for women aged 15-50

**I slightly population weighted ASFR towards later years because of a larger number of observations

**Based ASFR on the Census ACS individual person weights

Figure 2: Latino Representation Index Over Population for New Mexico and Arizona



**Data from Preuhs (2007)

**Latino Legislative Incorporation Index/Total Latino Population over time

Latino Legislative Incorporation: “Factor score of (1) percentage legislature that is Latino and (2) Latino incorporation score. Factor scores used to construct the measure were .49 for each standardized component. The unstandardized Latino incorporation score is the weighted sum of all committee chair and leadership positions held by Latinos, where weights were 1 if the committee was a regular standing committee, 2 if it was a fiscal policy committee, and 3 if Latino was a chamber leader.” (Preuhs, 2007)

Figure 3: Regression Results

<i>Dependant Variable: A live birth in the last year</i>	<i>Reference Category (Categorical Variables)</i>	<i>Model 1 (OLS)</i>	<i>Model 2 LOGIT (ML)</i>	<i>Odds Ratios (Logistic Regression)</i>
Intercept	NA	2.982e-02*** (1.903e-03)	-6.700*** (.2234)	—
STATE (New Mexico)	ARIZONA	-3.796e-03*** (1.325e-03)	-.0177** (.0539)	.8377
Total Family Income	NA	-1.548e-09 (3.147e-10)	-1.019e-07*** (2.059e-8)	.9999
Education (var for every year of educ)	Not Applicable/ No Schooling			
Grade 12		.4.294e-03** (2.037e-03)	3.911** (.1751)	1.479
4 Years of College		3.234e-04 (2.202e-03)	.2442 (.1776)	1.277
Citizen Status	US Citizen			
Naturalized		-7.549e-03*** (1.658e-03)	-.3474*** (.0674)	.706
Not A Citizen		9.455e-03*** (1.436e-03)	2.714e-02*** (.0439)	1.03
Age	15-45	5.455e-03*** (1.837e-03)	4.140*** (.1875)	62.80
	45+	-2.445e-02*** (1.918e-03)	-.4208*** (.2171)	.6565
Farm Status	Do not live/work farm	-5.708e-03 (5.027e-03)	-.2482 (.2603)	.7802
Race	White			
Black		6.118e-03*** (2.073e-03)	.2388*** (.0803)	1.270
American Indian		1.028e-02*** (1.438e-03)	.3474*** (.0530)	1.415
Hispanic	Not Hispanic			
Mexican		1.172*** (9.957e-04)	.4148*** (.0368)	1.514
Puerto Rican		1.062e-02** (5.302e-03)	.3330* (.1770)	1.395
Other		7.590e-03*** (1.513e-03)	.3273*** (.0573)	1.387
Marital Status	Married			
Never Married/Single		-3.439e-02*** (1.028e-03)	-.7674*** (.0310)	.4642

Figure 4: Regression Results Continued

<i>County</i>	<i>Not in a Census Identifiable County</i>		
Maricopa, AZ	-1.689e-03 (1.079e-03)	-.0920** (.0431)	.9121
Pima, AZ	-3.820e-03*** (1.328e-03)	-.1702*** (.0542)	.8435
Coconino, AZ	-3.681e-03 (2.678e-03)	-.1342 (.1056)	.8744
Yavapai, AZ	-1.941e-03 (2.282e-03)	-.1185 (.1084)	.8883
Yuma, AZ	-2.756e-03 (2.359e-03)	-.0931 (.0925)	.9111
Bernalillo, NM	-1.517e-03 (1.515e-03)	-.0758 (.0628)	.9270
San Juan, NM	4.360e-03 (2.935e-03)	.0517 (.1131)	1.051
Dona Ana, NM	-4.741e-04 (2.468e-03)	.1496 (.1114)	1.161
N	244900	244900	
R2	.047		

The coefficients are listed with standard errors in parentheses. *** – significant at $p < .01$, ** - $p < .05$, * - $p < .10$.

Education, Race, Hispanic, Marital Status, Citizenship Status, Farm status, Housing Characteristics have more categories than listed or are unlisted- removed for the sake of ease of reading results (none of these factors significantly changed results)

Figure 5: Interaction Effects

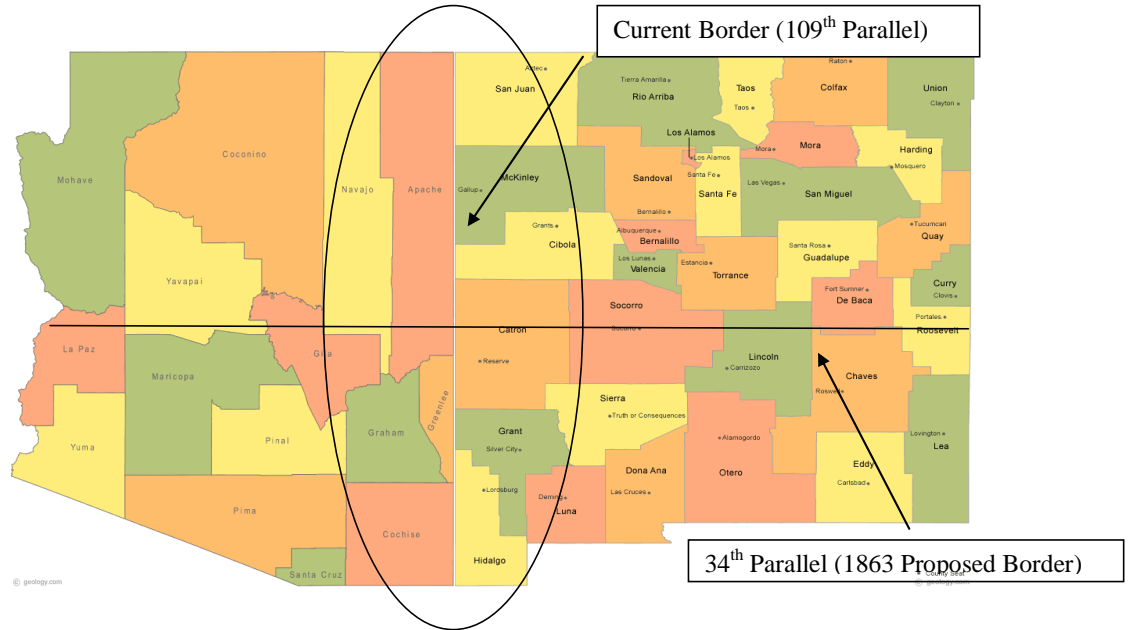
<i>Dependant Variable: (A live birth in the last year)</i>	<i>Model 3 (OLS INTERACTIONS)</i>	<i>Model 4 (LOGIT INTERACTIONS)</i>	<i>Odds Ratio</i>
Intercept	.0306*** (1.958e-03)	-6.658*** (.2246)	—
State (Ref cat: Arizona)	-5.004e-03*** (1.575e-03)	-.2805*** (.0705)	.7554
Hispanic	7.647e-03*** (2.345e-03)	.2632*** (.0863)	1.125
County			
Bernalillo, NM	1.294e-03 (1.977e-03)	.0640 (.0907)	1.066
Maricopa, AZ	-3.327e-03*** (1.228e-03)	-.1563** (.0522)	0.855
Pima, AZ	-4.330e-03*** (1.541e-03)	-.2133*** (.0648)	0.808
Dona Ana, NM	5.349e-03 (3.799e-03)	.3151 (.1611)	1.370
County: Hispanic			
Hispanic & Bernalillo, NM	-6.819e-03*** (3.067e-03)	-.2668** (.1255)	.7658
Hispanic & Maricopa, AZ	6.984e-03*** (2.552e-03)	.1978** (.0926)	1.219
Hispanic & Pima, AZ	2.658e-03 (3.047e-03)	.1449 (.1138)	1.156
Hispanic & Dona Ana, NM	-8.455e-03* (4.997e-03)	-.4203** (.1996)	.6568
Hispanic: New Mexico	3.068e-03 (2.922e-03)	.2289** (.1119)	1.257

Model includes all of the controls listed and unlisted in Table I. OLS regression results were the same, except interaction between Hispanic and New Mexico was insignificant. () are standard errors for regressions.

(Baseline) 1=Non-Hispanic woman in Non-Reference County in Arizona	Total Effect* (Odds Ratio of a Live Birth)	Difference in the Odds Ratio from Non-Hispanic** Women in County X
A Hispanic woman in Maricopa, AZ	1.173	.32
A Hispanic woman in Pima, AZ	.909	.10
A Hispanic woman in Bernalillo, NM	.872	.07
A Hispanic woman in Dona Ana, NM	.961	-.07
A Hispanic woman in a Non-Reference Census County in New Mexico	1.068	.31
A Hispanic woman in a Non-Reference County in Arizona	1.125	.13

*Note: The odds of any given woman having a child in a given year is very small (intercept value). These are only comparisons of the total effects of county level and ethnic differences. **Non-Hispanic does not equal European American women. Many counties have significant populations of Native American, Asian American, African American and Multiracial Americans. (Race is not included in computation of total effects – effects can be larger for Hispanic women who do not check ‘White’ on the Census)

Figure 6: Map of the Border Counties

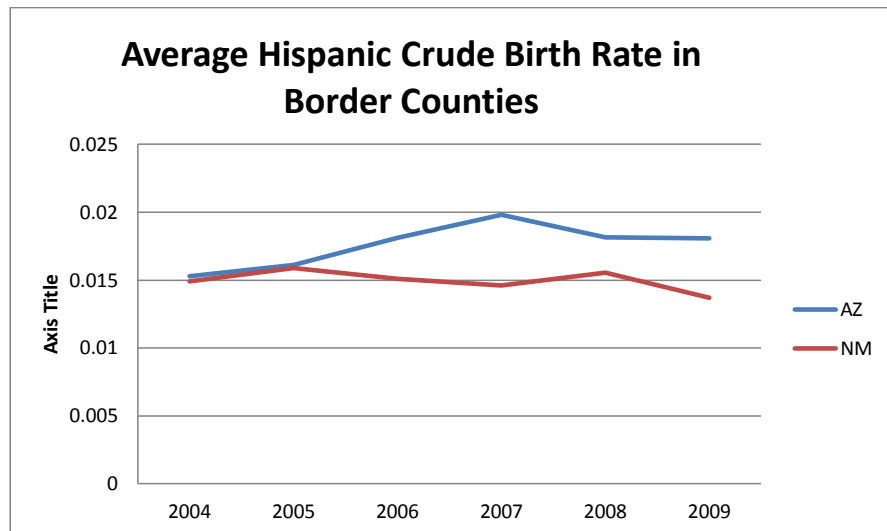
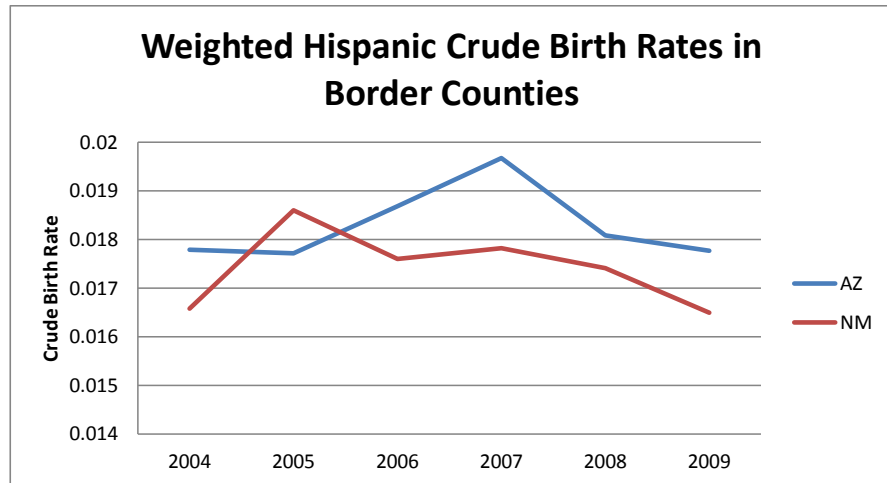


***These maps are from: <http://geology.com/state-map/new-mexico.shtml>

Dependant Variable: Whether a women has a live birth in the past year	Model 5 (LOGIT with Maricopa County)	Model 6 (LOGIT without Maricopa County)
Intercept	-6.396*** (.2840)	-5.843*** (4.160e-01)
Old Border (North- South Border)	-.1874 (.1196)	-.1748 (.1729)
Age (15-45)	4.238*** (.2261)	3.540*** (3.304e-01)
Single -Never Married	-.8906*** (.0359)	-8.557e-01*** (5.856e-02)
Hispanic	-.4009*** (.0404)	3.45e-01*** (1.599e-01)
Household income	-8.511e-08*** (2.241e-08)	-1.535e-07*** (4.441e-08)
Hispanic * Old Border		4.397e-02 (1.650e-01)

***Regression includes all the control variables of the first regression model including all the county level dummy variables and holds with the addition of dummy level interaction terms.

Figure 7: Hispanic Crude Birth Rates Overtime



These are Hispanic Crude Birth rates that are NOT age standardized due to lack of data. The Weighted crude birth rate is weighted on the population size of the counties.

Figure 8: Final Regression Results

Dependant Variable Hispanic Crude Birth Rates in Border Counties

	Model 1 (OLS)	Model 2 (OLS)	Model 3 (OLS)
Intercept	-3.695e-03 (7.032e-03)	1.743e-03 (7.453e-03)	-5.439e-02 (3.593e-02)
Arizona (Ref Cat=New Mexico)	2.663e-03*** (1.055e-03)	5.005e-03*** (1.678e-03)	9.747e-03*** (3.520e-03)
Old Border(North-South)			1.407e-02 (1.06e-02)
Women (15-34)	.1862*** (.0397)	.2176*** (.03248)	2.921e-01*** (1.443e-01)
Women (35-49)	-6.231e-02 (4.395e-02)	-9.840e-02 (6.353e-02)	1.443e-01 (1.457e-01)
Women (5-14)	3.039e-02 (4.395e-02)	-1.663e-01*** (3.962e-02)	-4.723e-02 (1.130e-01)
Median.HHI	-8.727e-09 (1.056e-07)	5.120e-07*** (1.236e-07)	7.080e-07*** (2.167e-07)
Percent Hispanic		-1.131e-02*** (3.355e-03)	-7.860e-03 (1.002e-02)
Arizona: Percent Hispanic		-1.939e-02*** (4.757e-03)	-3.889e-02*** (1.420e-02)
Old Border: Percent Hispanic			-1.728e-02 (1.950e-02)
R	.4969	.6736	.6914
N	67	67	67

Selection Statistics for Border Counties

	Counties on AZ	Counties in NM
Median HH Income	\$30,833	\$28,476
Foreign Born	5.18%	4.28%
Age Structure		
Women (15-34)	12.39%	13.38%
Women (34-49)	10.16%	11.12%
Women(5-15)	8.09%	8.61%
Hispanics	67061	58530
Percent Hispanic	24.30%	32.12%

Figure 9: Description

Name	Description and Coding
CENSUS ACS	
Fertility	Dummy Variable. (Dependant Variable). 1 – If a Women had a live birth in the past year, else 0
STATE	Dummy variable. (Main Independent Variable) 1 is lives in New Mexico, 0 else
County	Categorical Variable: Non-Recognizable Census county, Maricopa, AZ, Pima, AZ, Coconino, AZ, Yavapai, AZ, Yuma, AZ, Bernalillo, NM, San Juan, NM, and Dona Ana, NM
Old Border	Dummy Variable. 1863 Proposed North South Border. 1 – If the majority of the county is below the 34 th parallel in New Mexico or Arizona.
Marital Status	Categorical Variable. Categories: Married, Married Spouse Absent, Separated, Divorced, Never Married/Single
Age	Categorical Variable. Three categories 0-15 (prior to reproductive years) 15-45(prime reproductive years) and 45+ (post reproductive years)
Race	Categorical Variable. Census racial categories: European American, African American, American Indian or Alaska Native, Chinese, Japanese, Other Asian or Pacific Islander, Other Race, Two or more races, Three or More Races.
Hispanic Origin	Categorical Variable. Categories: Not Hispanic, Mexican, Puerto Rican, Cuban, Other
Hispanic	Dummy Variable. 1 If Hispanic and 0 if not Hispanic
Education	Categorical Variable. Categories: No Schooling/Not Applicable, Nursery to Grade 4, Grade 5-8, Grade 9, Grade 10, Grade 11, Grade 12, 1 Year of College, 2 Years of College, 3 Years of College, 4 Years of College, 5+ Years of College
Citizen	Categorical Variable. Categories: Citizen, Citizen Born Abroad to American Parents, Naturalized Citizen, Not a Citizen
Household Income	Continuous Variable. Household Income in a given year.
Farm	Dummy Variable. 1 –If currently lives on a farm, 0 else.
Hispanic: County	Interaction between Hispanic and County
Hispanic: STATE; Old Border	Interaction between Hispanic and State dummy variable or Old Border dummy variable
VITAL STATISTICS	
Hispanic Crude Birth Rates	Number of Live Births to Hispanic Women in the County over the Total Population of Hispanics in the County. (Was unable to get more specific measures for all counties because of their small size/disclosure issues for the counties and small cell sizes makes TFR potentially inaccurate)
Arizona	Dummy Variable. 1- If County is in Arizona, 0 else
Age Structure	Categorical Variable. Categories: 5-15, 15-33, 34-49
Percent Hispanic	Continuous Variable [0,1]. Percent of the population that is Hispanic
Median Household Income	Continuous Variable. Median Household Income in the County