

Is The Motherhood Wage Penalty A Heterosexual Phenomenon?

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Background

Objective:

- To determine the wage penalty for childrearing and explore the role household division of labor may play in explaining wage penalty differences between different-sex married, different-sex cohabiting and partnered lesbian women.

Research Questions:

- Previous research has shown motherhood is associated with lower wages for heterosexual women. But do partnered lesbian women experience the same penalty for childrearing as their heterosexual counterparts?
- What is the relative importance of labor force participation, other observable characteristics (i.e., education, age, region) and household division of labor (i.e., “how child care responsibilities may be divided in the household?”) in explaining the sexual orientation gap in the motherhood wage penalty?

Motivation

Previous Literature

Goal:

- Theorize differences in the wage penalty for childrearing by sexual orientation may partially explain the sexual orientation wage gap (Berg and Lien 2003, Peplau and Fingerhut 2004, Baumle 2009)

Weaknesses:

- Do not address the division of labor within lesbian households
- Do not attempt to determine the role of various observed characteristics (particularly education) in explaining the observed differences in the motherhood wage penalty by sexual orientation.
- Analysis only of differences between mean values

Motivation

What can explain differences in the wage penalty for childrearing by sexual orientation?

1. Division of Labor within Lesbian Households

- One lesbian partner may specialize in home production and the other market work, whereas most married women specialize in home production and their husband specializes in market work.

2. Education and Other Characteristics

- What role do higher wages play in explaining differences in the motherhood wage penalty of lesbian women relative to married women?

3. Role of Selection out of the Labor Force

- Differences in occupational choice, employer perception and ability to share household responsibilities may lead partnered lesbian women to have higher attachment than different-sex married women.

Outline

- **Foundation/Economic Theory**
- **Data**
- **Results Conditional on Working**
- **Decomposition Results**
- **Results of Selection into the Labor Force**
- **Conclusion**

Economic Theory

Family Division of Household and Market Work

- Increasing Returns from Investments in Specific Human Capital Encourages a Division of Labor into Market and Household Work Between Household Members (Becker 1981)
- Married Women May be More Likely to Specialize in Household Production because of an Initial Comparative Advantage Arising from Children.
- Incentives Persist to have one Partner Specialize in Household Production and the other Specialize in Market Work even between Identical Partners (Becker 1985).
- A Large Literature Supports the Household Specialization Hypothesis (Kenny 1983; Daniel 1992; Loh 1996; Gray 1997; Hersch and Stratton 2000; Stratton 2002; Bardasi and Taylor 2008)

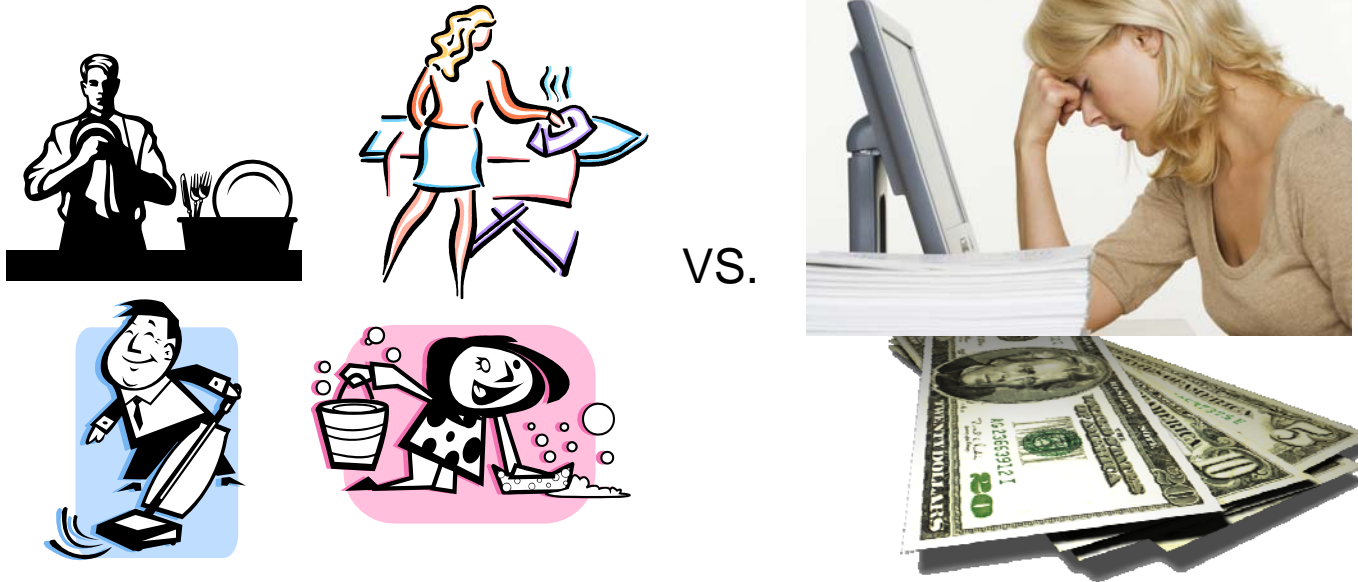
Economic Theory

Married Women and Child care Production

- Children Increase the Value of time Spent on Home Production.
- Married Women Spend More Time on Child Care than their Spouses (Kalenkoski, Ribar, and Stratton 2005; 2007; Bianchi, Robinson, and Milkie 2006; Lundberg; Pabilonia, and Ward-Batts 2007; Drago and Lee 2008a; 2008b).
- Sociology Literature Argues Married Women are more likely to Identify Themselves in the Context of Family and Market Work while Married Men are more likely to Identify Themselves in the Context of Market Work Alone (see for example, Bielby and Bielby 1989).

Economic Theory

Couples Face a Decision of how to Manage Household Tasks and Earn Money for the Family.



Economic Theory

Couples Face a Decision of how to Manage Household Tasks and Earn Money for the Family.



vs.



Exacerbates these Trade-Offs

Data

- 2000 Census Data, 5% IPUMS Sample
- Only Different-Sex Married, Different-Sex Partnered and Lesbian Partnered Women
- Identify Lesbian Couples by “Unmarried Partner” Classification (First used in 1990)
- 910, 894 married women 74,493 cohabiting women and 6,238 lesbian women

Sample Restrictions:

- Sample of non-Hispanic white women
- Women 25-45
- Husband/Partner 20-55
- Not in school
- Neither Partner has Imputation of Sex, Marital Status or Relationship variables
- Observations with Self-Employed or Unpaid Family Worker Wage Values are Given Imputed Wages

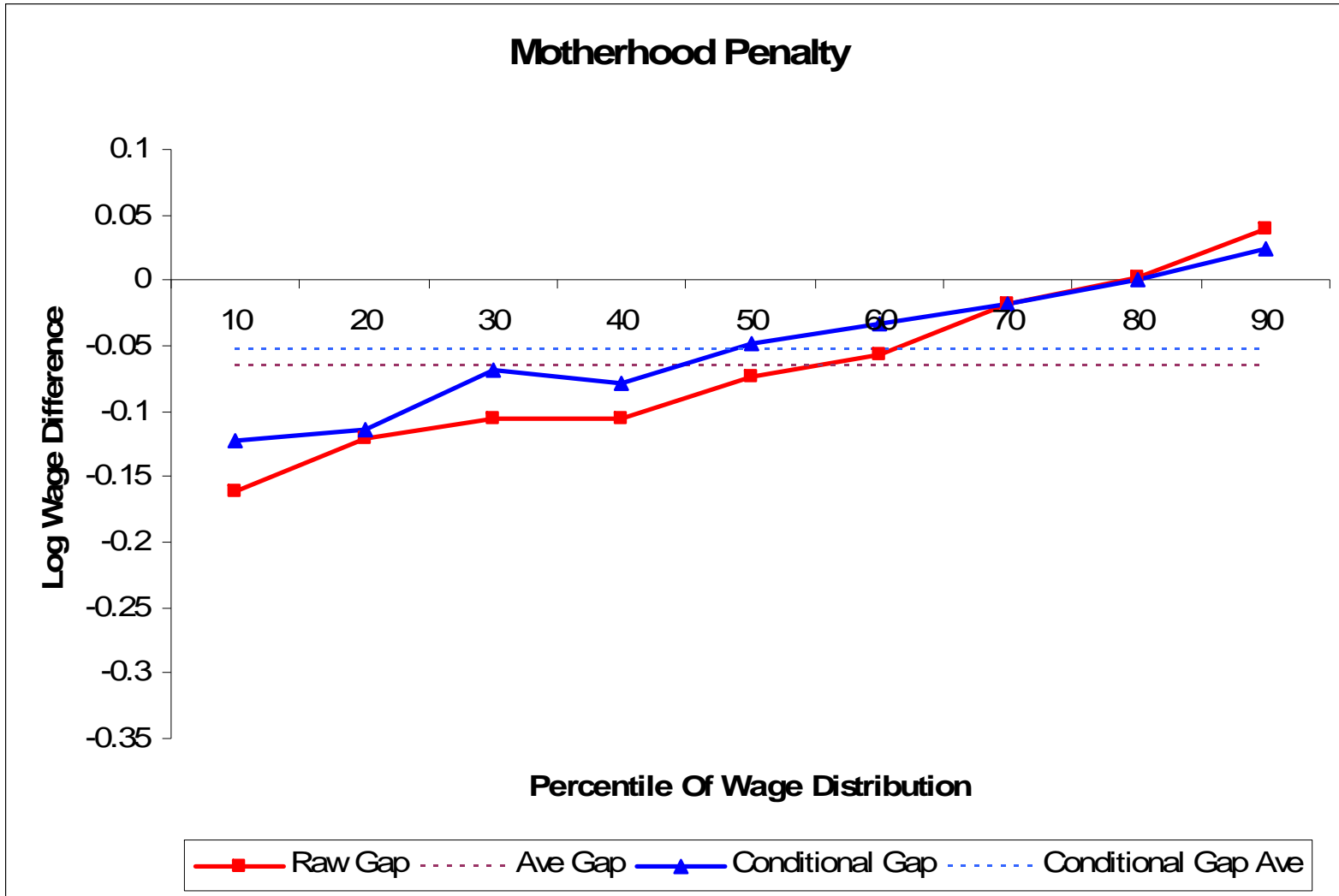
Data

Key Limitations with the Data:

- No Time-Series Observations of Multiple Wages per Woman
- No Measure of Actual Experience
- Small Sample of 1,560 Lesbian Mothers
- Measurement Error in Estimated Wages

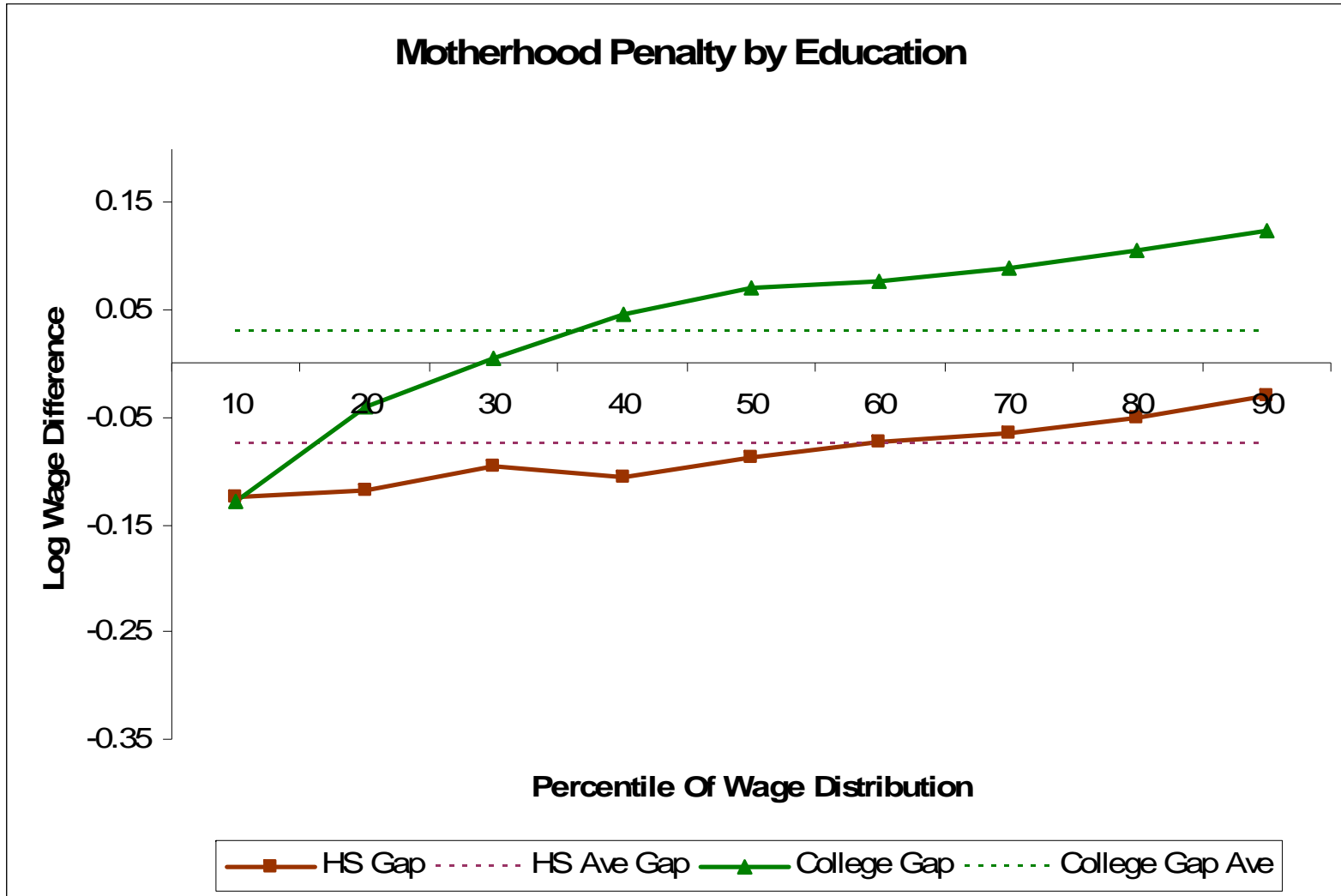
Data

Motherhood Penalty for Married Women over the Distribution of Wages



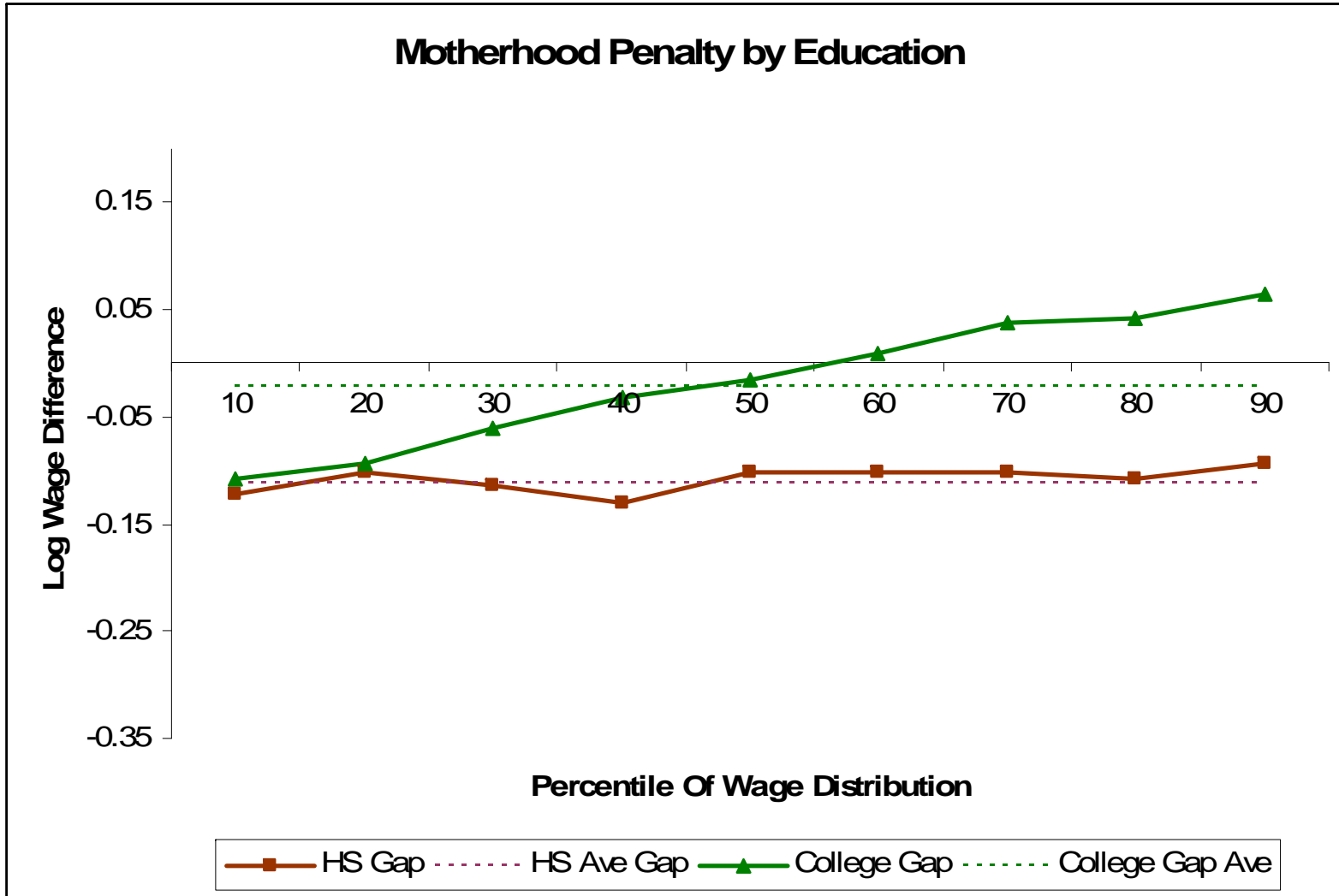
Data

Motherhood Penalty by Ed. for Married Women over the Dist. of Wages



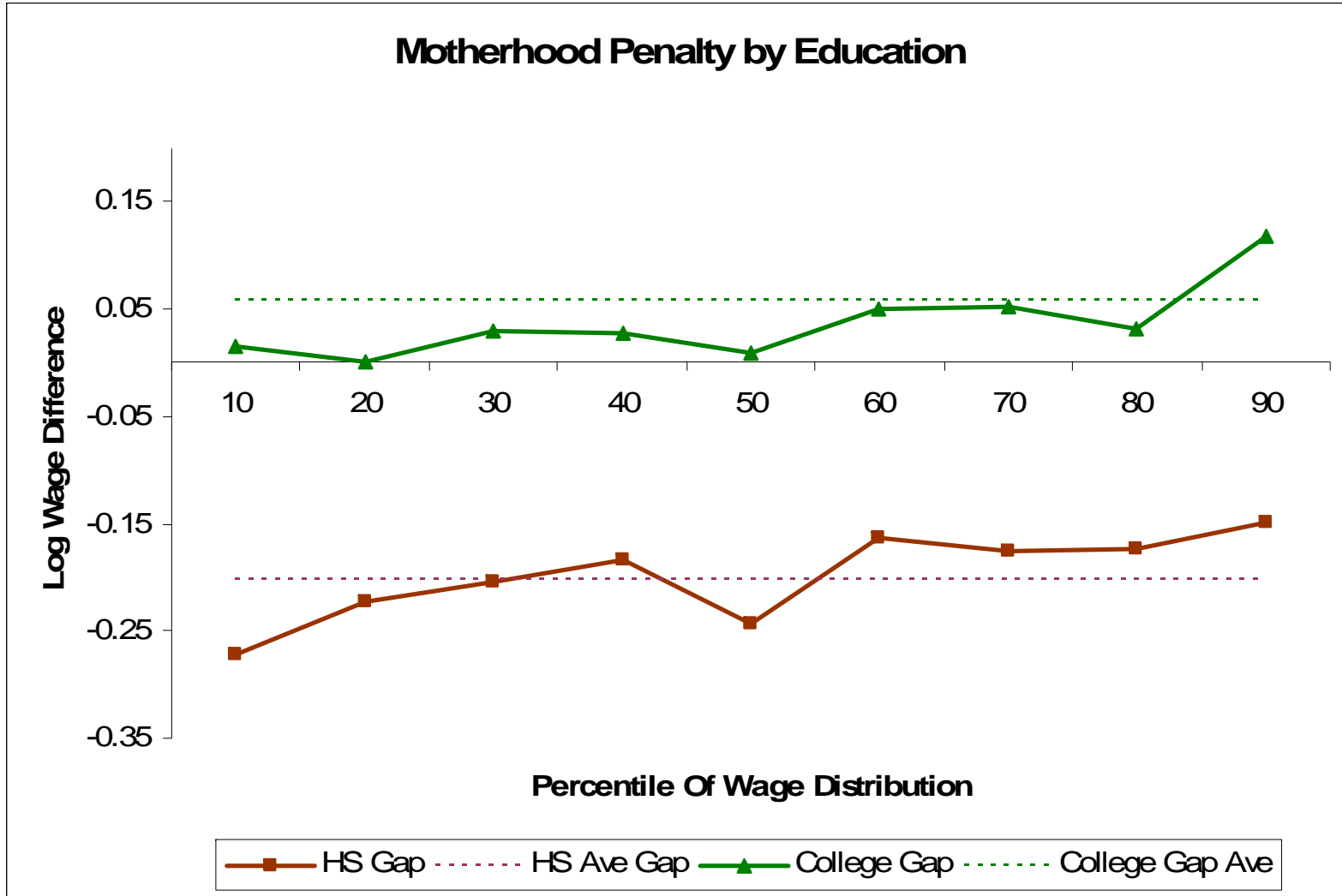
Data

Motherhood Penalty by Ed. for Cohabiting Women over the Dist. of Wages



Data

Motherhood Penalty by Ed. for Lesbian Women over the Dist. of Wages



Data

Educational Attainment and Age by Couple Type

	Married Women (1)	Lesbian (2)	Cohabiting Women (7)
Less Than HS	0.053 (0.22)	0.026 (0.16)	0.065 (0.25)
HS Grad	0.255 (0.44)	0.126 (0.33)	0.244 (0.43)
Some College	0.308 (0.46)	0.298 (0.46)	0.322 (0.47)
College Grad	0.384 (0.49)	0.549 (0.50)	0.369 (0.48)
Age	36.11 (6.59)	36.15 (5.50)	33.50 (6.32)

Data

Table 1. Wages and Labor Force Attachment by Couple Type

	Married Women (1)	Lesbian (2)	Cohabiting Women (7)
Mother Wages	16.04 (14.86)	17.62 (16.04)	12.24 (11.10)
NonMothers Wages	16.32 (13.63)	19.49 (16.07)	15.48 (13.02)
Motherhood Gap	-0.28	-1.87	-3.24
Labor Force Attachment	0.79	0.95	0.89
LFA Gap		0.16	0.10
Children in the Household	74.31%	22.70%	44.78%

Data

Which Partner Specializes in Home Production and Which Partner Specializes in Market Work? (Antecol and Steinberger 2009)

Household Definition:

- Which Partner Owns or Rents the House?
- Census Question:
“Start with the person, or one of the people living here who owns, is buying, or rents this house, apartment, or mobile home. If there is no such person, start with any adult living or staying here.”
- 90% of Married Women are Not the “Head/Householder.”
- This Designation Divides the Sample into: (House)Holders and Partners
- Does This Definition Really Represent Specialization in Home Production?

Data

Log Wage, Labor Force Participation by Sexual Orientation Sub-Sample

		Household Definition		
	Married Women	Lesbian Partner	Lesbian Holder	Cohabiting Women
	(1)	(3)	(4)	(7)
Log Wage	2.56 (0.633)	2.69 (0.598)	2.81 (0.597)	2.45 (0.596)
Log Wage Gap		0.13	0.25	
Labor Force Attachment	0.79 (0.41)	0.93 (0.26)	0.97 (0.18)	0.89 (0.32)
LFA Gap		0.14	0.18	

Data

Which Partner Specializes in Home Production and Which Partner Specializes in Market Work?

Earnings Definition:

- Which Partner Earns More Through Market Work?
- Based on Total Yearly Earnings from Wage and Self-Employment Income
- 81% of Married Women Earn Less than their Spouse
- In Cases of Ties, we Revert to the Household Definition
- This Designation Divides the Sample into: **Secondary Earners** and **Primary Earners**

Data

Annual Hours, Labor Force Participation by Sexual Orientation Sub-Sample

	Married Women	<u>Earnings Definition</u>		Cohabiting Women
	(1)	Lesbian Secondary	Lesbian Primary	(7)
	(1)	(5)	(6)	(7)
Log Wage	2.56 (0.633)	2.56 (0.559)	2.91 (0.586)	2.45 (0.596)
Log Wage Gap		0.0	0.35	
Labor Force Attachment	0.79 (0.41)	0.90 (0.30)	0.99 (0.09)	0.89 (0.32)
LFA Gap		0.11	0.20	

Role of Children	<u>Data</u>			
	Married Women	Lesbian Partner	Lesbian Secondary	Cohabiting Women
	(1)	(3)	(5)	(7)
Full Sample				
Wage	2.56 (0.63)	2.69 (0.60)	2.56 (0.56)	2.45 (0.60)
Wage Gap		0.13	0.00	
Without Children				
Wage	2.61 (0.58)	2.72 (0.58)	2.59 (0.56)	2.55 (0.58)
With Children				
Wage	2.54 (0.65)	2.57 (0.64)	2.45 (0.56)	2.31 (0.59)
Mother Gap	-0.06	-0.16	-0.14	-0.24

Role of Children	<u>Data</u>			
		Household Definition	Earnings Definition	
	Married Women	Lesbian Holder	Lesbian Primary	Cohabiting Women
	(1)	(4)	(6)	(7)
Full Sample				
Wage	2.56 (0.63)	2.81 (0.60)	2.91 (0.59)	2.45 (0.60)
Wage Gap		0.25	0.35	
Without Children				
Wage	2.61 (0.58)	2.84 (0.58)	2.95 (0.55)	2.55 (0.58)
With Children				
Wage	2.54 (0.65)	2.70 (0.64)	2.78 (0.67)	2.31 (0.59)
Mother Gap	-0.06	-0.14	-0.16	-0.24

Methods

What Would Happen to the Motherhood Wage Penalty if Mothers had the Same Human Capital Characteristics as Non-Mothers, but Maintained their Own Unique Return to those Characteristics?

Can Observable Characteristics Explain Differences in the Motherhood Wage Penalty over the Distribution of Wages between Married Women and Lesbian Partnered Women?

To What Extent does Selection into the Labor Force Explain Observed Differences in the Motherhood Wage Penalty over the Distribution of Wages between Married Women and Lesbian Partnered Women?

Methods

What Affects Married and Lesbian Women's Log Hourly Wages?

- Hourly Wages Derived from Annual Earnings and Annual Hours

- Account for:
 - Children- Dummy Variable for the Presence of a Child Family
 - 4 Education Categories (Less than HS, HS grad, Some College, College Graduate)
 - 4 Five-Year Age Groupings (24-29, 30-34, etc.)
 - Metro Area
 - 9 Regions of the US

- Imputed Hourly Wages for Non-Workers/Self-Employed

Methods

	Married Women (1)	Lesbian (2)	Cohabiting Women (3)
Self-Employed, Unpaid Family Worker or Allocated Earnings	0.2703 (0.44)	0.1756 (0.38)	0.2165 (0.41)

Allocation for Self-Employed, Unpaid Family Worker and Allocated Wage Values:

- Following Juhn 2003 give the weight of the observation to a similar wage and salary worker
- Match workers on Education, 5-year Age Bin, Part-Year/Full-Year Weeks Worked and Number of Children in the Home (0,1,2), Earner Status
- Empty Bins: 2 Children → 1 Child, Part-Year → Full-Year
- Allocation Changes slightly based on definition of Earner Status

DiNardo, Fortin and Lemieux Decomposition

DiNardo, Fortin and Lemieux *Econometrica* (1996) A Semi-Parametric Decomposition Approach

Goal:

- Create a Distribution of Wages for Mothers if they had the Same Distribution of Observable Characteristics as Non-Mothers.

Technique:

- Re-Weight the Population of Mothers so it has a Distribution of Observable Covariates Equal to the Distribution of Observable Covariates for the Population of Non-Mothers.

DiNardo, Fortin and Lemieux Decomposition

- Focus on the Difference in the Distribution of Covariates Between Groups
- Mother Sub-Samples Maintain their Unique Returns
 - No Need to Impose Non-Mother Returns on Mothers as with an Oaxaca-Blinder Decomposition
- Decomposes the Entire Distribution of Annual Hours
 - Allows Analysis of the Median, Inter-Quartile Range, etc. along with the Average

DiNardo, Fortin and Lemieux Decomposition

The Distribution of Wages:

$$\int_{X \in \Omega_X} dF(W, X | g = M) = \int_{X \in \Omega_X} f(W | X, g = M) dF(X | g = M)$$

DiNardo, Fortin and Lemieux Decomposition

The Distribution of Wages:

$$\int_{X \in \Omega_X} dF(W, X | g = M) = \int_{X \in \Omega_X} f(W | X, g = M) dF(X | g = M)$$

And

$$\int_{X \in \Omega_X} dF(W, X | g = N) = \int_{X \in \Omega_X} f(W | X, g = N) dF(X | g = N)$$

What if Mothers had the Same Conditional Distribution of Observable Characteristics as Non-Mothers, but Kept their Unique Return to those Characteristics?

$$\int_{X \in \Omega_X} dF(W, X | g_{W|X} = M, g_X = N) = \int_{X \in \Omega_X} f(W | X, g = M) dF(X | g = N)$$

DiNardo, Fortin and Lemieux Decomposition

The Problem Becomes Simply Finding the Appropriate Reweighting Factor ψ_X Such That:

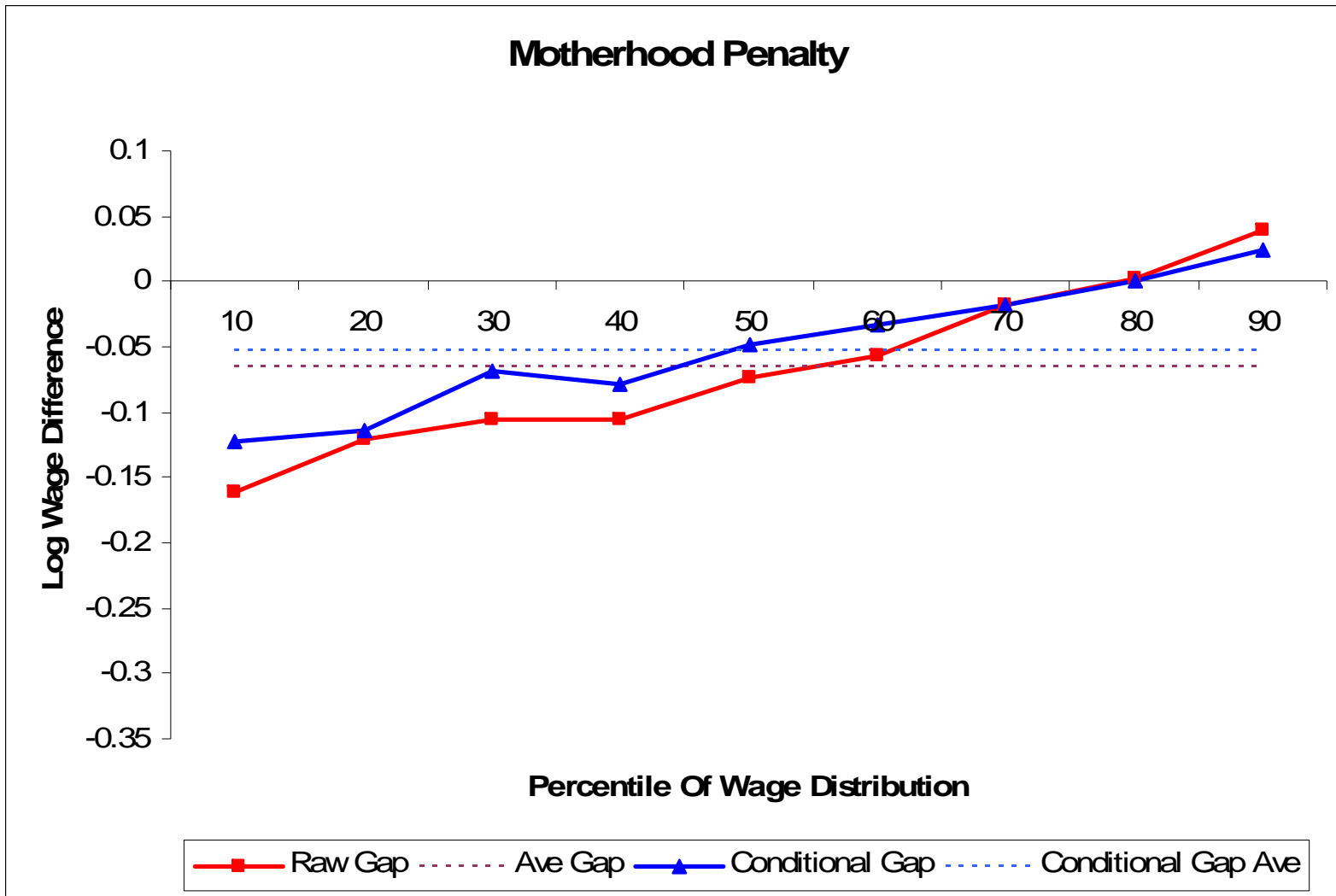
$$\begin{aligned} \int_{X \in \Omega_X} dF(W, X | g_{W|X} = M, g_X = N) &= \int_{X \in \Omega_X} f(W | X, g = M) dF(X | g = N) \\ &= \\ \int_{X \in \Omega_X} dF(W, X | g = M) &= \int_{X \in \Omega_X} f(W | X, g = M) \psi_X(X) dF(X | g = M) \end{aligned}$$

Where

$$\psi_X(X) = \frac{dF(X | g = N)}{dF(X | g = M)}$$

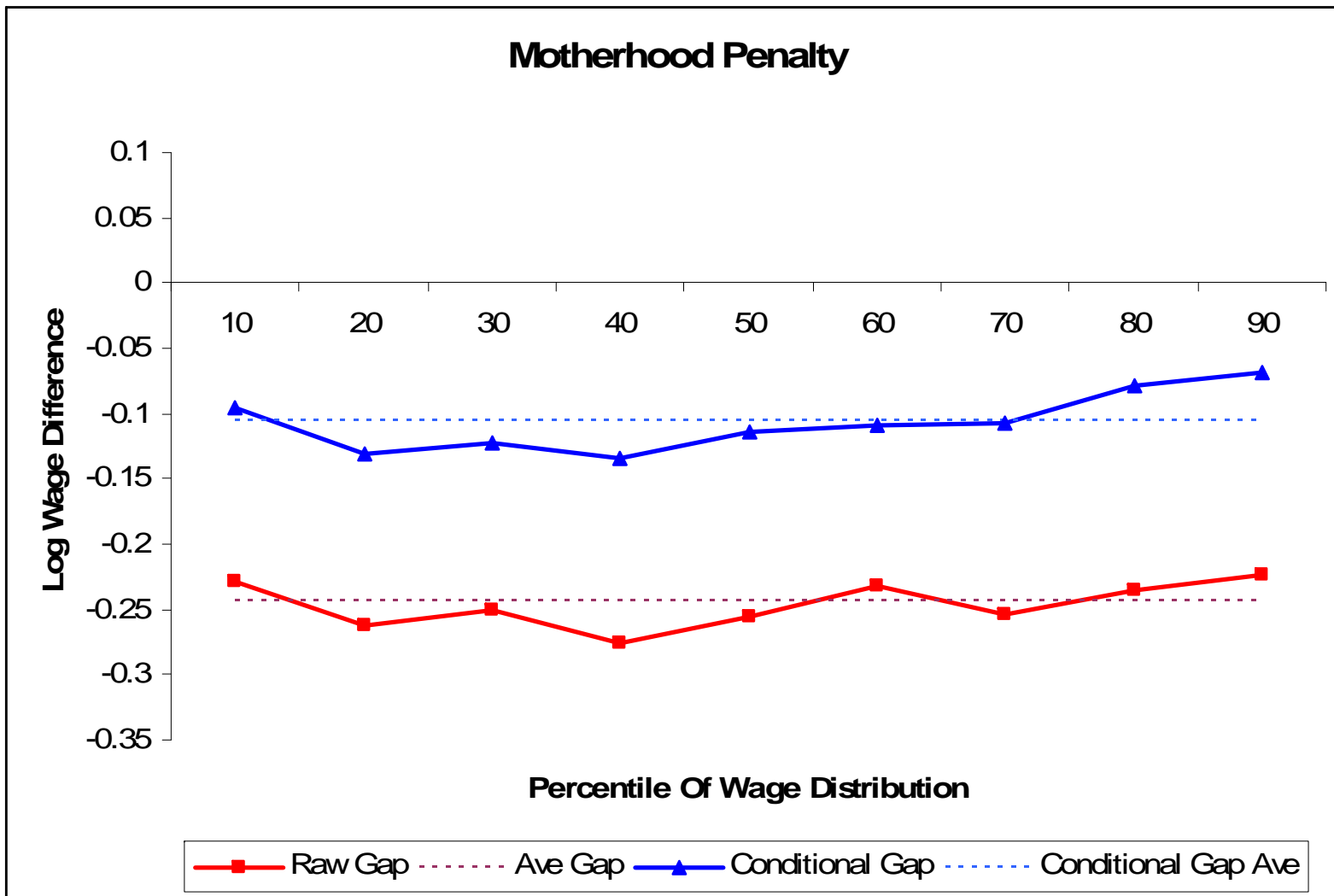
Results

Motherhood Penalty for Married Women over the Distribution of Wages



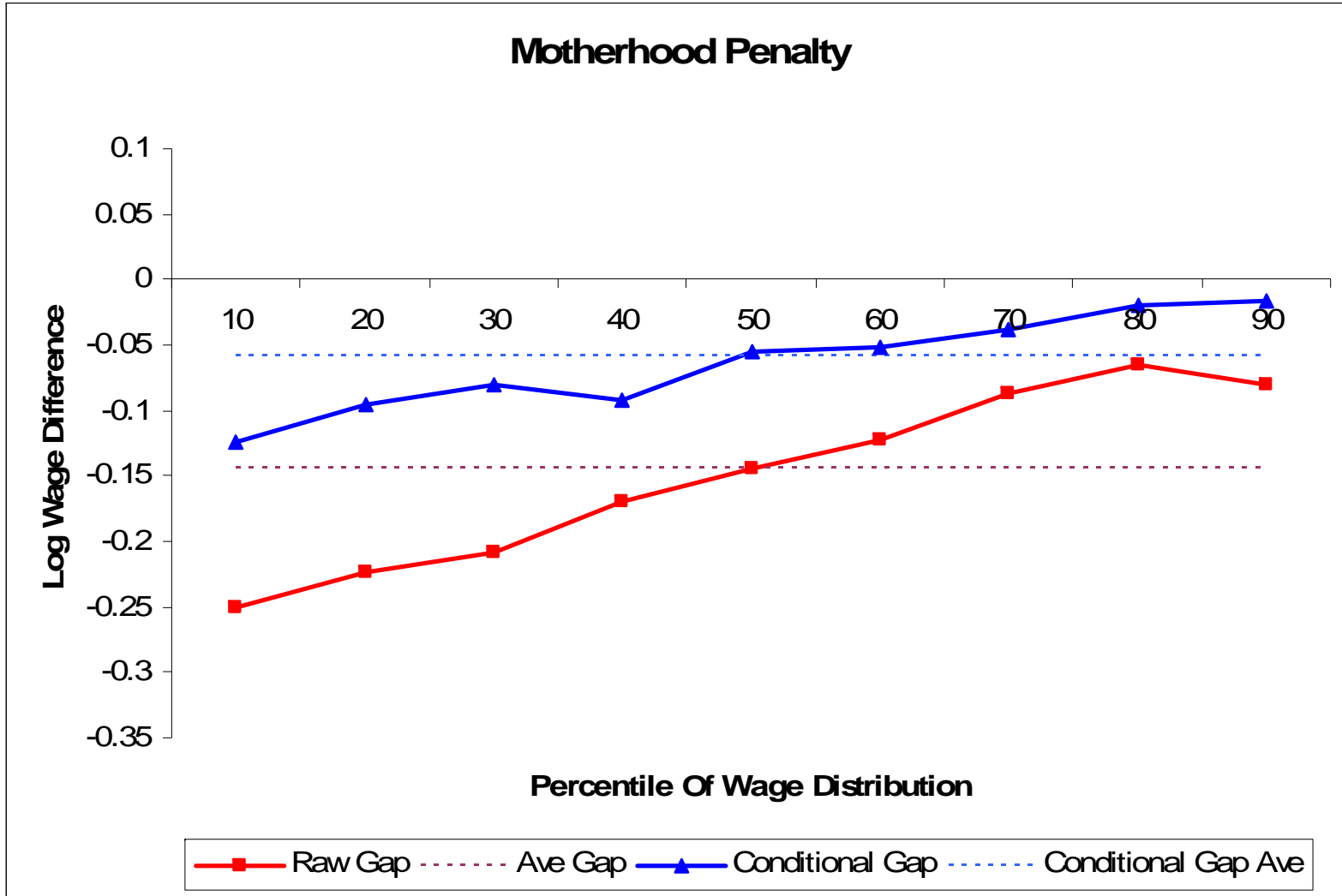
Results

Motherhood Penalty for Cohabiting Women over the Distribution of Wages



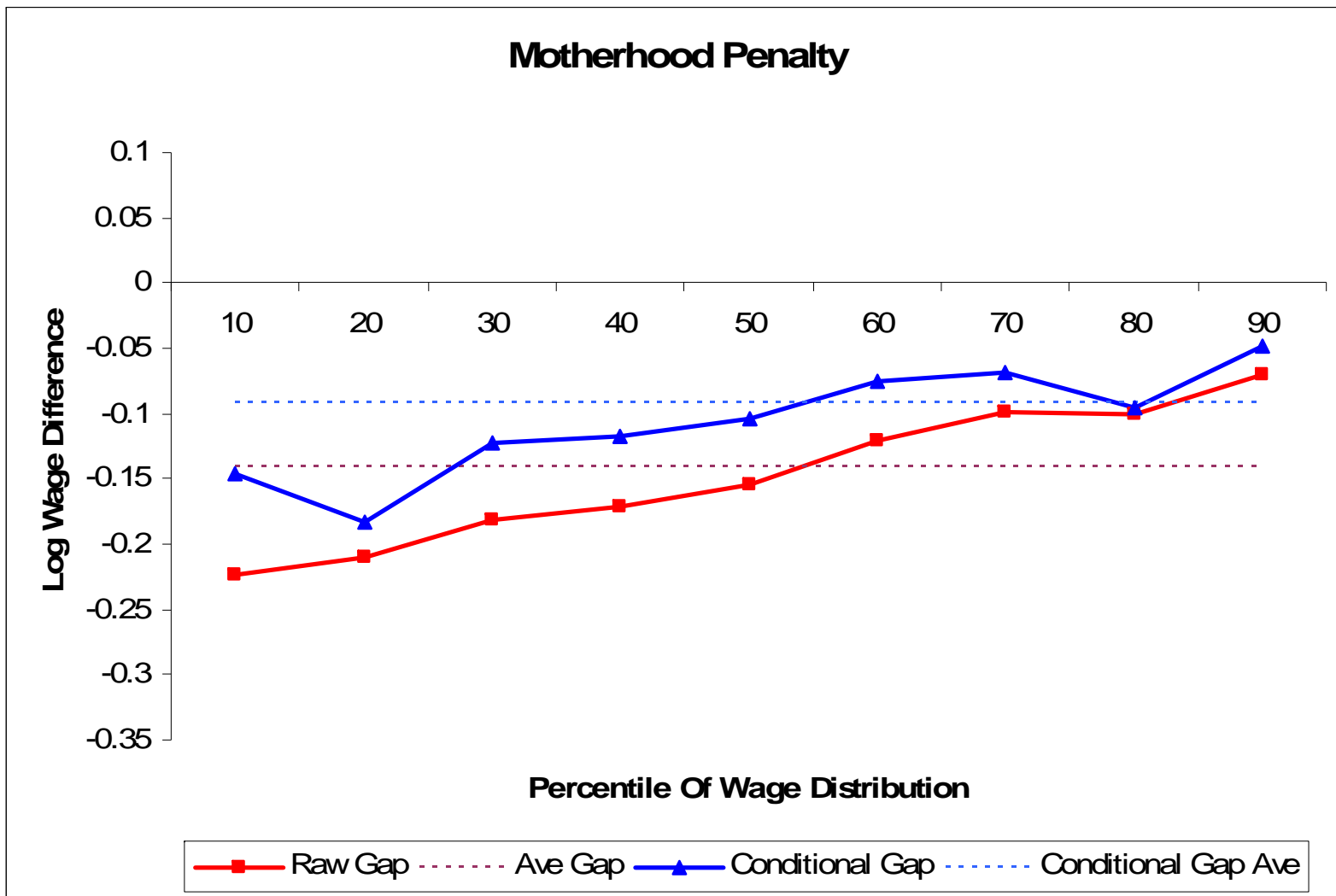
Results

Motherhood Penalty for Lesbian Women over the Distribution of Wages



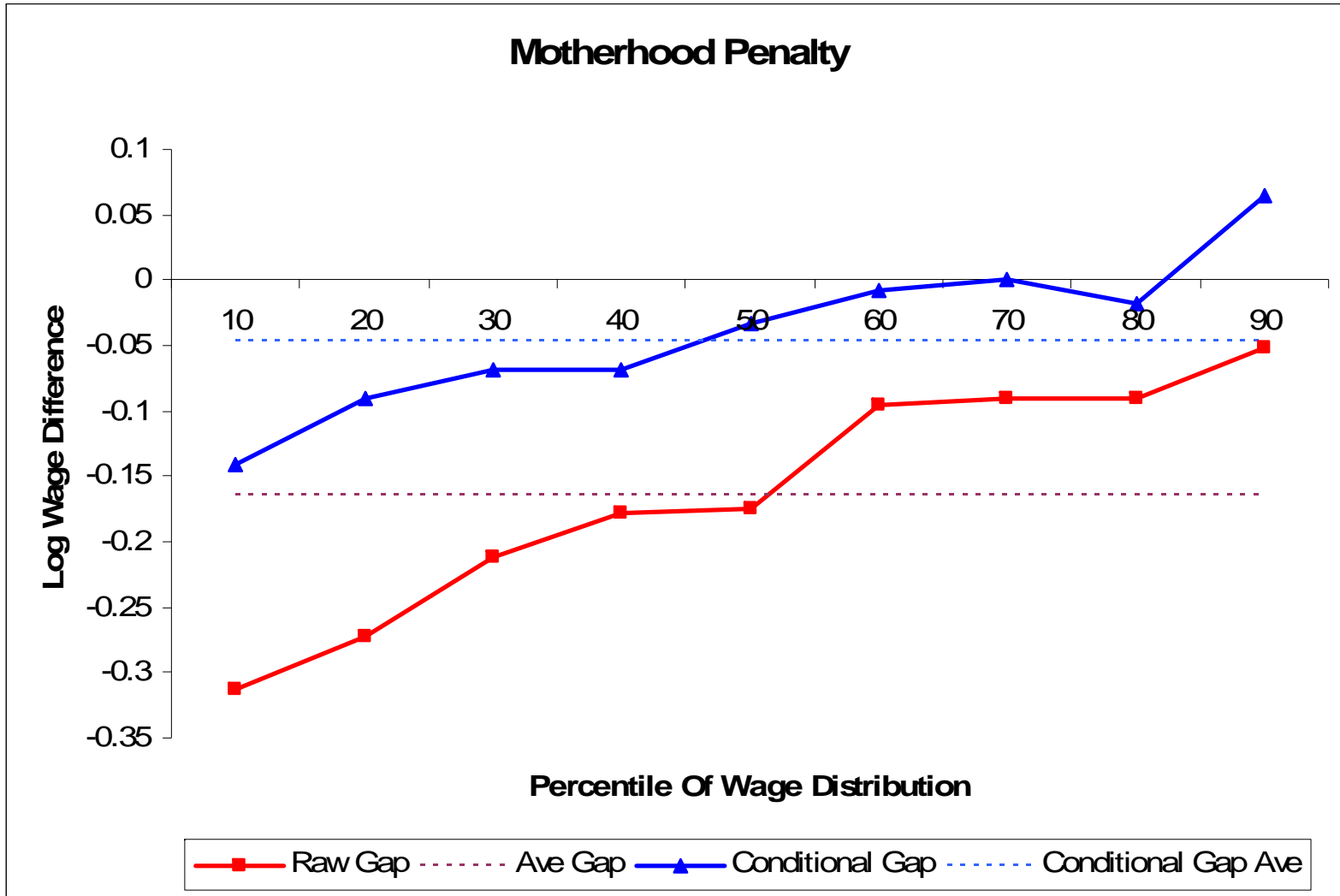
Results

Motherhood Penalty for Secondary Earner Lesbians over the Dist. of Wages



Results

Motherhood Penalty for Primary Earner Lesbians over the Dist. of Wages



Questions

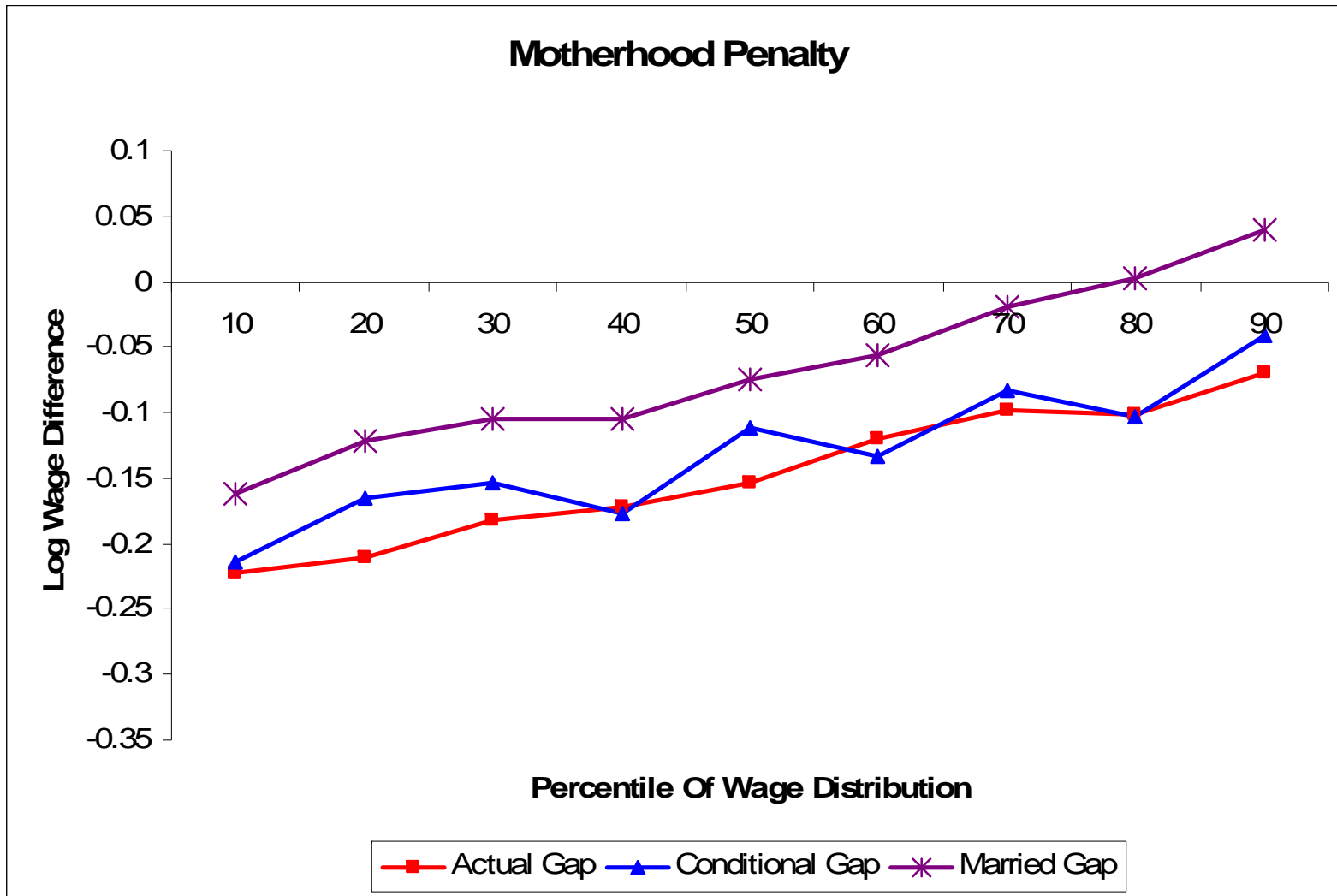
~~What Would Happen to the Motherhood Wage Penalty if Mothers had the Same Human Capital Characteristics as Non-Mothers, but Maintained their Own Unique Return to those Characteristics?~~

Can Observable Characteristics Explain Differences in the Motherhood Wage Penalty over the Distribution of Wages between Married Women and Lesbian Partnered Women?

To What Extent does Selection into the Labor Force Explain Observed Differences in the Motherhood Wage Penalty over the Distribution of Wages between Married Women and Lesbian Partnered Women?

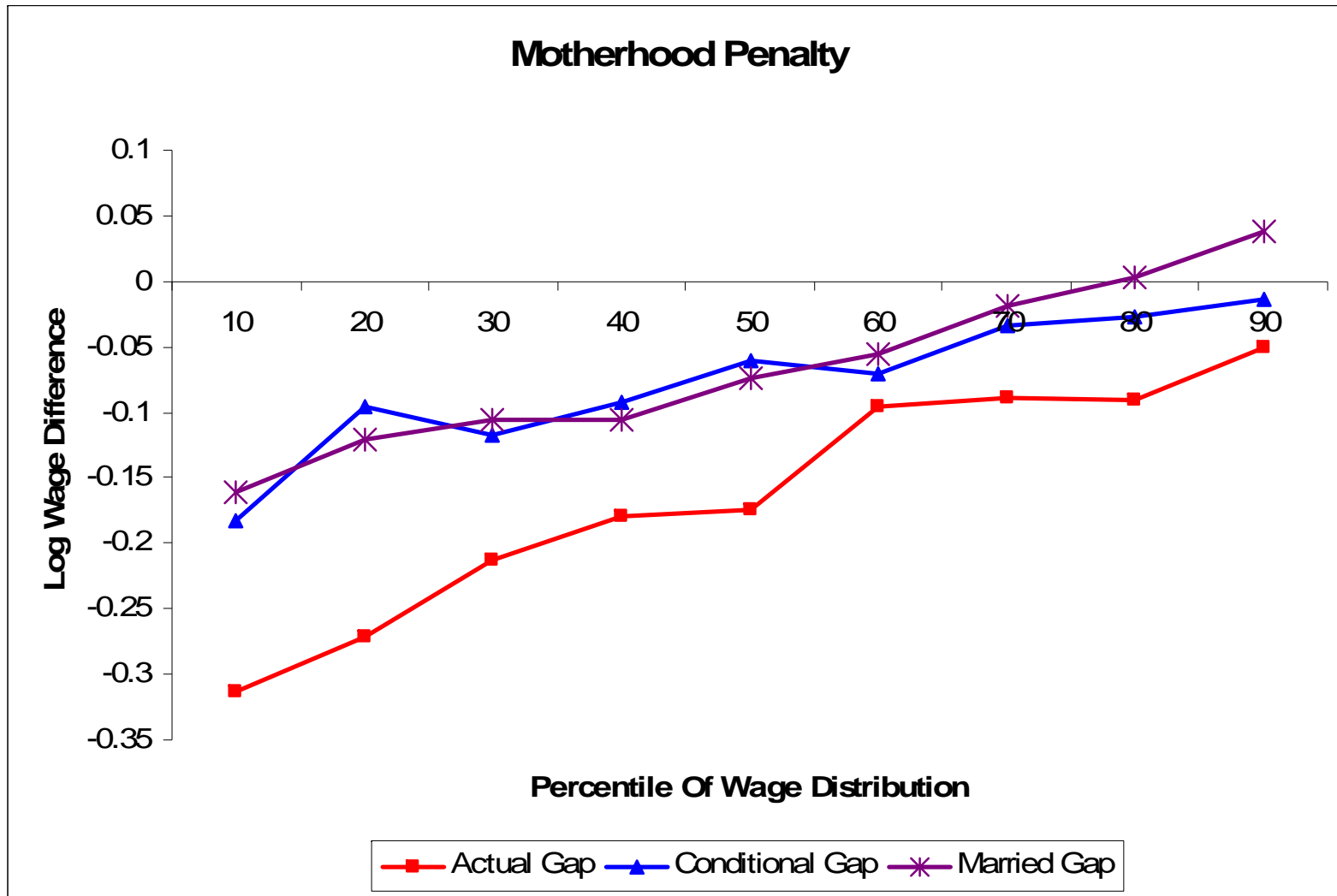
Results

Motherhood Penalty for Secondary Earner Lesbians and Married Women



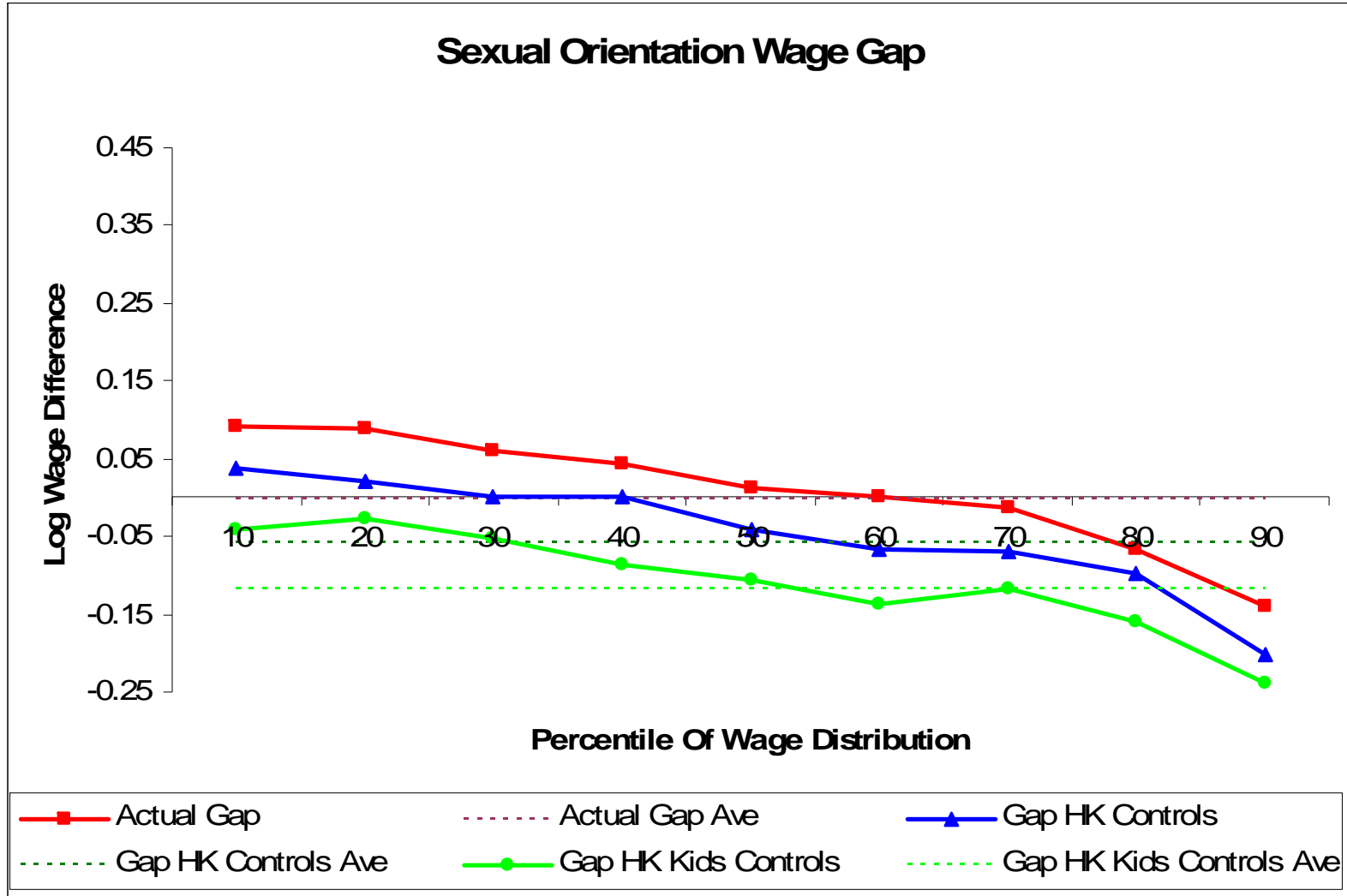
Results

Motherhood Penalty for Primary Earner Lesbians and Married Women



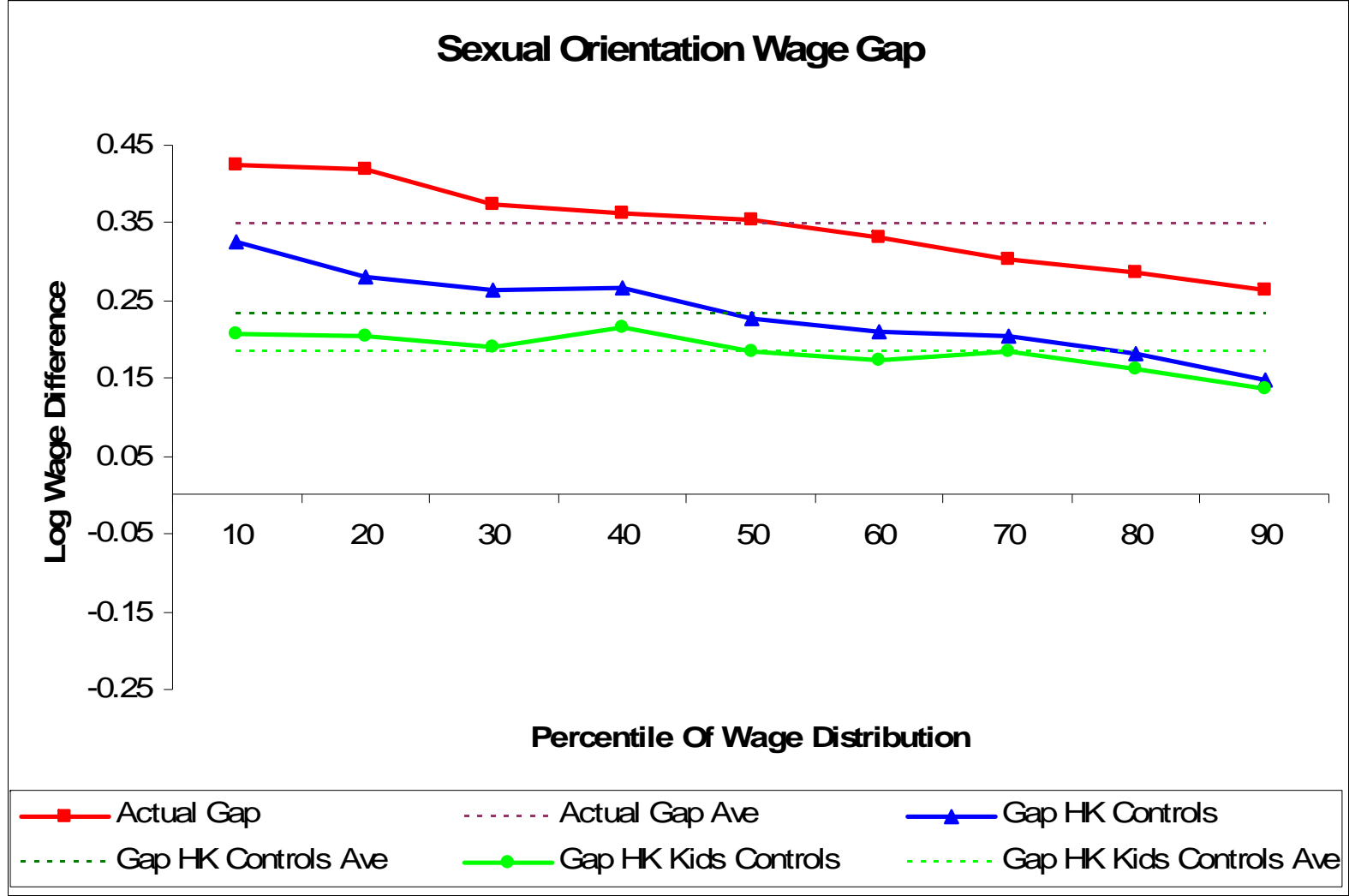
Results (Aside)

Wage Advantage of Secondary Earner Lesbians Relative to Married Women



Results (Aside)

Wage Advantage of Primary Earner Lesbians Relative to Married Women



Questions

~~What Would Happen to the Motherhood Wage Penalty if Mothers had the Same Human Capital Characteristics as Non-Mothers, but Maintained their Own Unique Return to those Characteristics?~~

~~Can Observable Characteristics Explain Differences in the Motherhood Wage Penalty over the Distribution of Wages between Married Women and Lesbian Partnered Women?~~

To What Extent does Selection into the Labor Force Explain Observed Differences in the Motherhood Wage Penalty over the Distribution of Wages between Married Women and Lesbian Partnered Women?

Motherhood and Labor Force Participation

Large Literature Estimating Effect of Withdraw from Labor Force (Mostly for Black/White Wage Differences):

- Juhn 2003 Non-Workers get the Wages of Workers with <26 Weeks in same Characteristic Group
- Manski 1995 Non-Workers get the Wages of Lowest Paid Worker in same Characteristic Group
- Blau and Beller 1992 Non-Workers get 0.6-0.8 of Imputed Wage from Observationally Equivalent Workers
- Blau and Kahn 2007 Non-Workers get the Imputed Wage from Observationally Equivalent Workers
- Chandra 2003 Non-Workers get the Median Wage from same Characteristic Group

Data

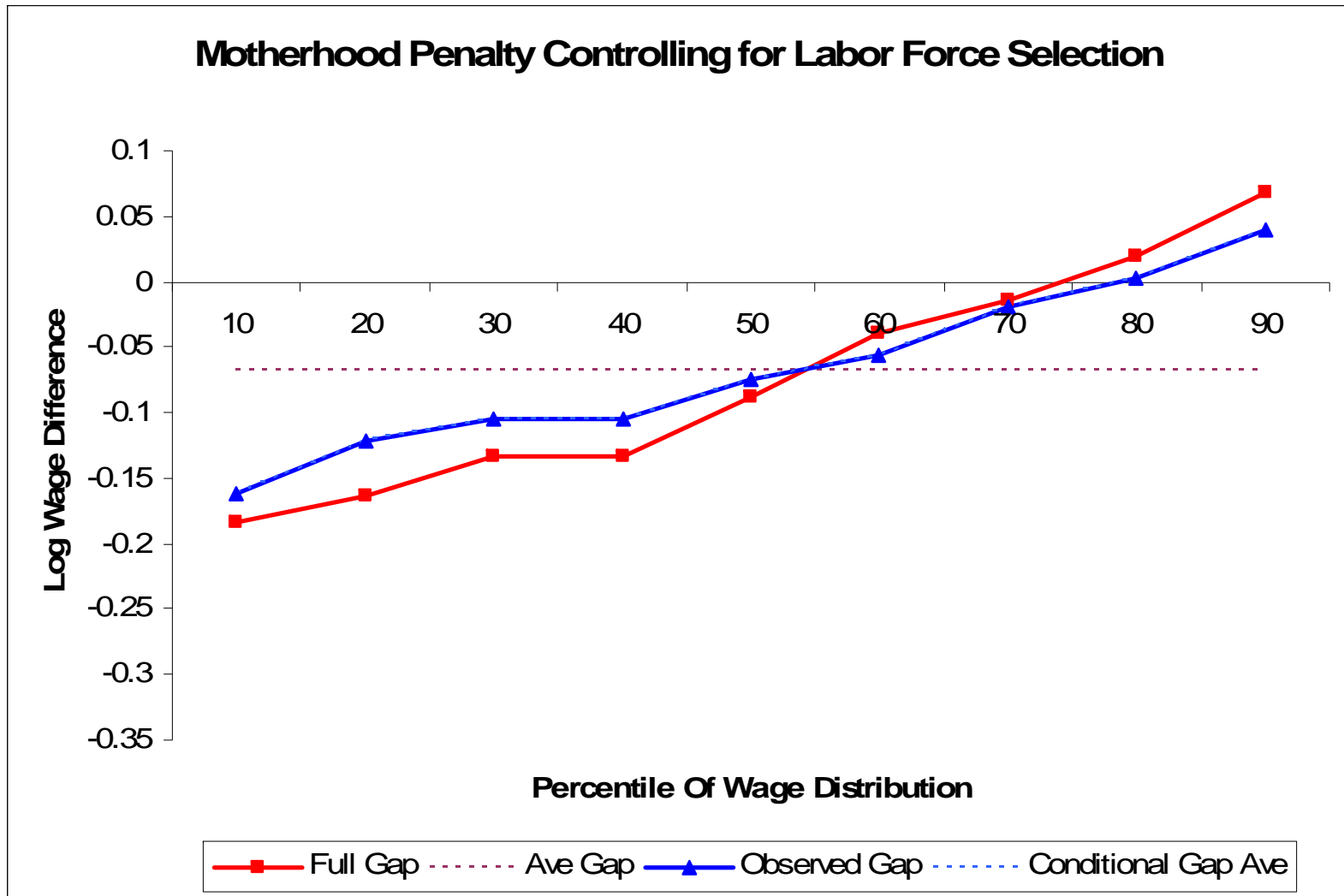
Labor Force Attachment by Motherhood Status and Couple Type

	Married Women (1)	Lesbian (2)	Cohabiting Women (7)
Labor Force Attachment	0.79	0.95	0.89
LFA Gap		0.16	0.10
Mother LFA	0.76 (0.43)	0.92 (0.27)	0.84 (0.36)
NonMothers LFA	0.89 (0.31)	0.96 (0.21)	0.92 (0.26)
Motherhood LFA Gap	-0.13	-0.04	-0.08

Role of Children	<u>Data</u>					
		Household Definition		Earnings Definition		
	Married Women	Lesbian Partner	Lesbian Holder	Lesbian Secondary	Lesbian Primary	Cohabiting Women
	(1)	(3)	(4)	(5)	(6)	(7)
Full Sample						
LFA	0.79 (0.41)	0.93 (0.26)	0.97 (0.18)	0.90 (0.30)	0.99 (0.09)	0.89 (0.32)
LFA Gap		0.14	0.18	0.11	0.20	0.10
With Children						
Wage	0.76 (0.43)	0.89 (0.32)	0.96 (0.21)	0.85 (0.36)	0.99 (0.10)	0.84 (0.36)
Without Children						
Wage	0.89 (0.31)	0.94 (0.24)	0.97 (0.16)	0.91 (0.28)	0.99 (0.08)	0.92 (0.26)
Mother Gap	-0.13	-0.05	-0.01	-0.06	-0.00	-0.08

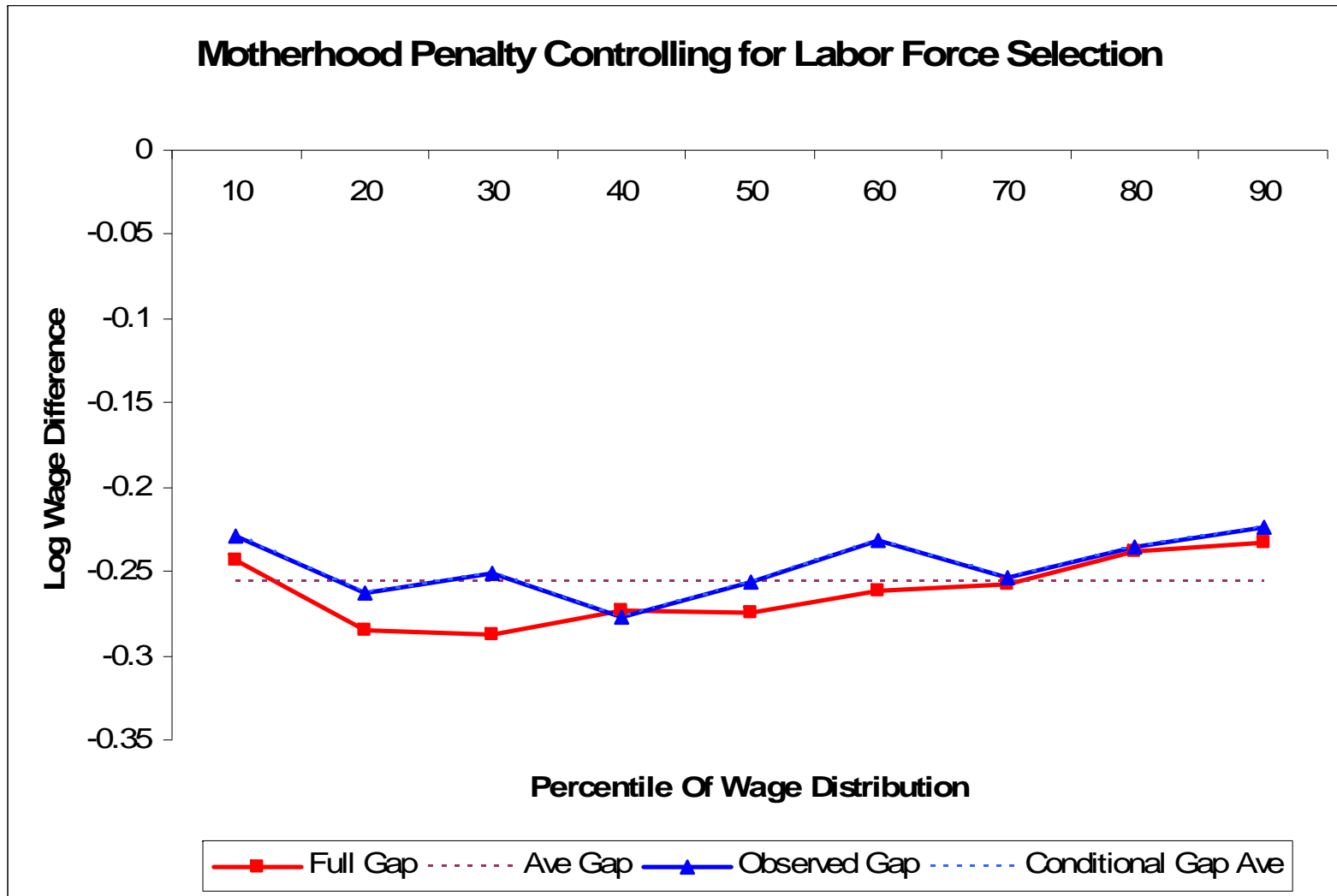
Results

Motherhood Penalty for Married Women



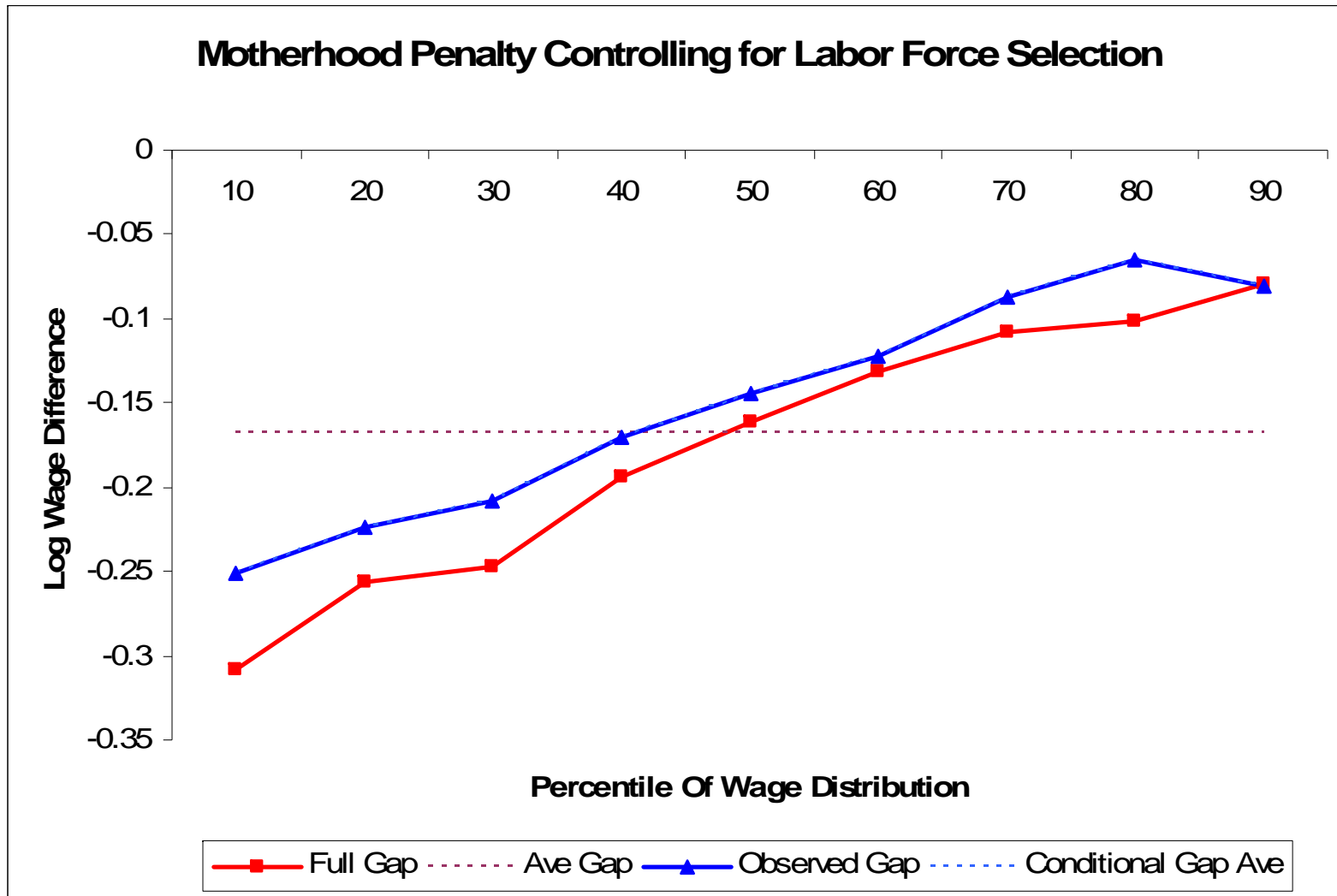
Results

Motherhood Penalty for Cohabiting Women



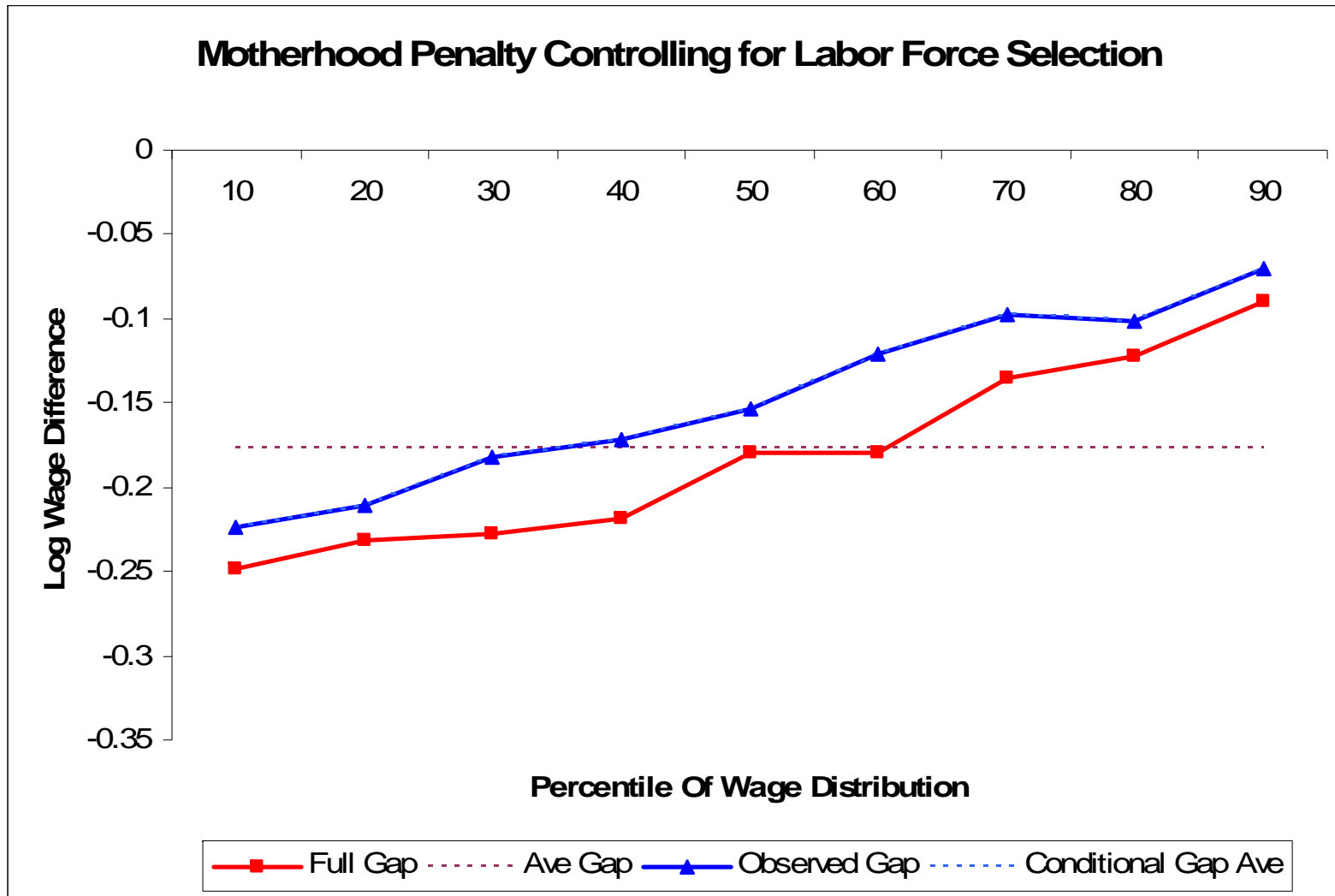
Results

Motherhood Penalty for Partnered Lesbian Women



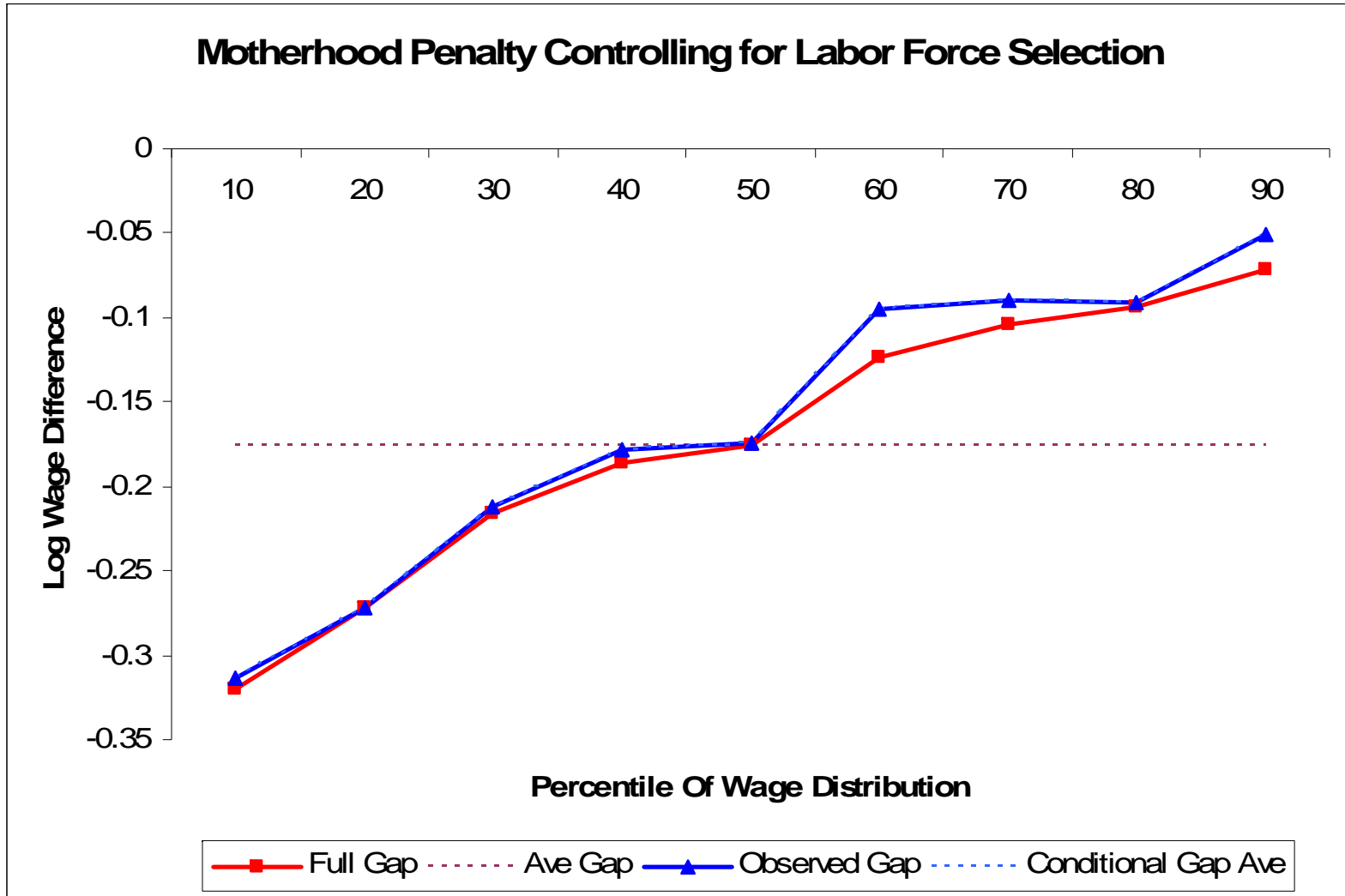
Results

Motherhood Penalty for Secondary Earner Lesbian Women



Results

Motherhood Penalty for Primary Earner Lesbian Women



Conclusions

- Partnered lesbians face even higher wage differences associated with children in the household than married women.
- It is not advisable to ignore household specialization in partnered lesbian households. We suggest two methods to identify primary and secondary earners in partnered households.
- Partnered lesbian women who are the primary earner in the household are less likely to leave the labor force and less likely to reduce their hours, but experience roughly the same percentage wage penalty for childrearing relative to lesbian secondary earners.
- Controlling for observable factors eliminates the observed differences in the motherhood wage gaps between married women and primary earner lesbian women, but lesbian secondary earners continue to face larger observed wage penalties.

Conclusions

- Lesbian mothers are more attached to the labor force than married women. In line with the literature on white married women, selection of married women out of the labor force is not uniform.
- The motherhood wage gap may also help explain a modest amount of the sexual orientation wage gap.

Policy Implications