

# Gender and Ethnic Wage Gaps in Latin America

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# The One Slide Presentation

What is this paper about?

- » Harmonized and comparable measures of gender and ethnic wage gaps for 18 countries in the region
- » A refined answer to the old question:
  - » To what extent gender and ethnic differences in individuals' characteristics can explain the differences in earnings?
- » Methodological improvements:
  - » Matching and a decomposition that recognizes not only differences on average characteristics but also on their distribution; and most importantly, on their supports

Findings? New Insights?

Gender wage gaps

- » Between 8% and 25%.
- » Higher gaps among those with lower income, with secondary incomplete and out of the capital cities
- » Some “CEO effects”
- » Surprising role for occupational and sector segregation

Ethnic wage gaps

- » Between 20% and 40%.
- » Higher gaps both at the top and the bottom of the wage distribution, among those with no education, out of the capital cities and older.
- » Stronger “CEO effects”

# Outline

- » Setup of the Problem. Methodological considerations
  - » Blinder-Oaxaca decompositions
  - » Matching
  - » Combining the two tools
- » Empirical Results. LAC (circa 2005)
  - » The Data
  - » For Gender and Ethnic Gaps
    - » Averages
    - » Distributions
    - » The role of occupational and sector segregation
- » Conclusions

# 1. Setup of the Problem. Methodological considerations

- »Blinder-Oaxaca decompositions
- »Matching
- »Combining the two tools

# Gender and Ethnic Differences in:

- » Wages
- » Individual Characteristics
  - » Age
  - » Education
- » Individual Characteristics
  - » Urban
  - » Kids in the household
  - » Other with income in the household
- » Job Characteristics
  - » Occupation
  - » Industry
  - » Type of employment
  - » Part – time
  - » Formality

# Blinder-Oaxaca Decompositions

- » The wage gap is separated into two additive components
  - » One attributable to the existence of differences in the average characteristics of females and males
  - » The other attributable to the existence of differences in the rewards that females and males get for the same characteristics
    - » Discrimination
    - » Unobservable characteristics

# Blinder-Oaxaca Decomposition.

## Linear Setup

$$E[Y|F] = \hat{\beta}^F \cdot \bar{x}^F; \quad E[Y|M] = \hat{\beta}^M \cdot \bar{x}^M$$

$$\Delta = \hat{\beta}^M \cdot \bar{x}^M - \hat{\beta}^F \cdot \bar{x}^F$$

$$\Delta = \hat{\beta}^M \cdot (\bar{x}^M - \bar{x}^F) + (\hat{\beta}^M - \hat{\beta}^F) \cdot \bar{x}^F$$

$$\Delta = \Delta_X^{BO} + \Delta_0^{BO}$$

# Critiques

- » Recent data violates key implications of the Mincerian model
  - » Hansen (1999)
  - » Heckman, Lochner and Todd (2001)
  
- » B-O is informative only about the average decomposition, no clues about the distribution of the components
  - » Jenkins (1994)
  - » DiNardo, Fortin and Lemieux (1996)
  - » Donald, Green and Paarsch (2000)
  
- » The comparison should be restricted only to comparable individuals. The failure to recognize this fact may bias the estimates in the gap decomposition
  - » Barsky, Bound, Charles and Lupton (2001)
  
- » The relationship governing characteristics and wages is not necessarily linear



# Matching. Impact Evaluation

- » Treatment effects
- » Identification of counterfactual situations
- » Extensively used in the Program Evaluation literature
  - » Rubin (1977)
  - » Heckman, Ichimura and Todd (1998)
  - » Heckman, LaLonde and Smith (1998)
  - » Angrist (1998)
  - » Dehejia and Wahba (1998)

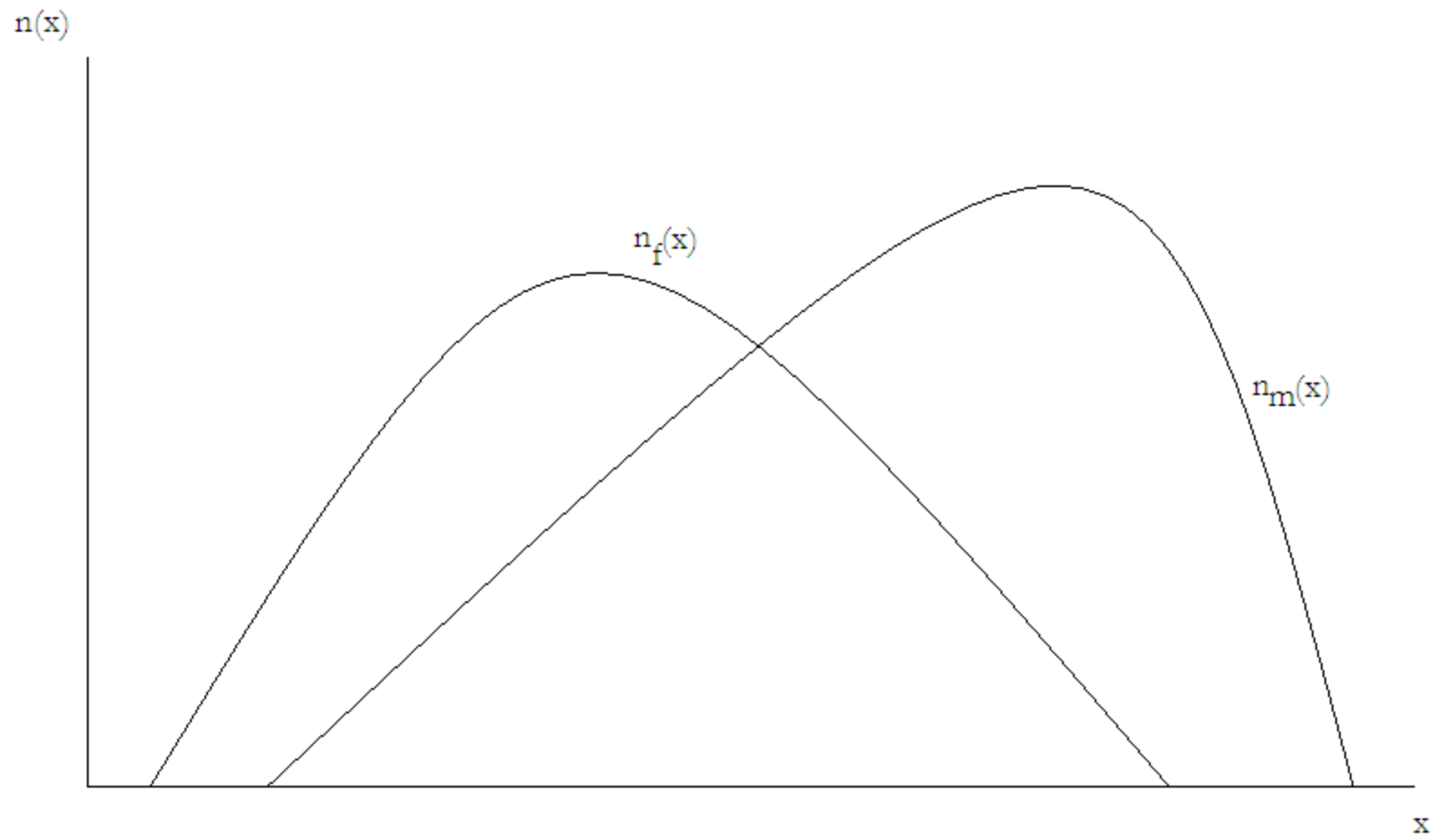
# The Main Counterfactual Question

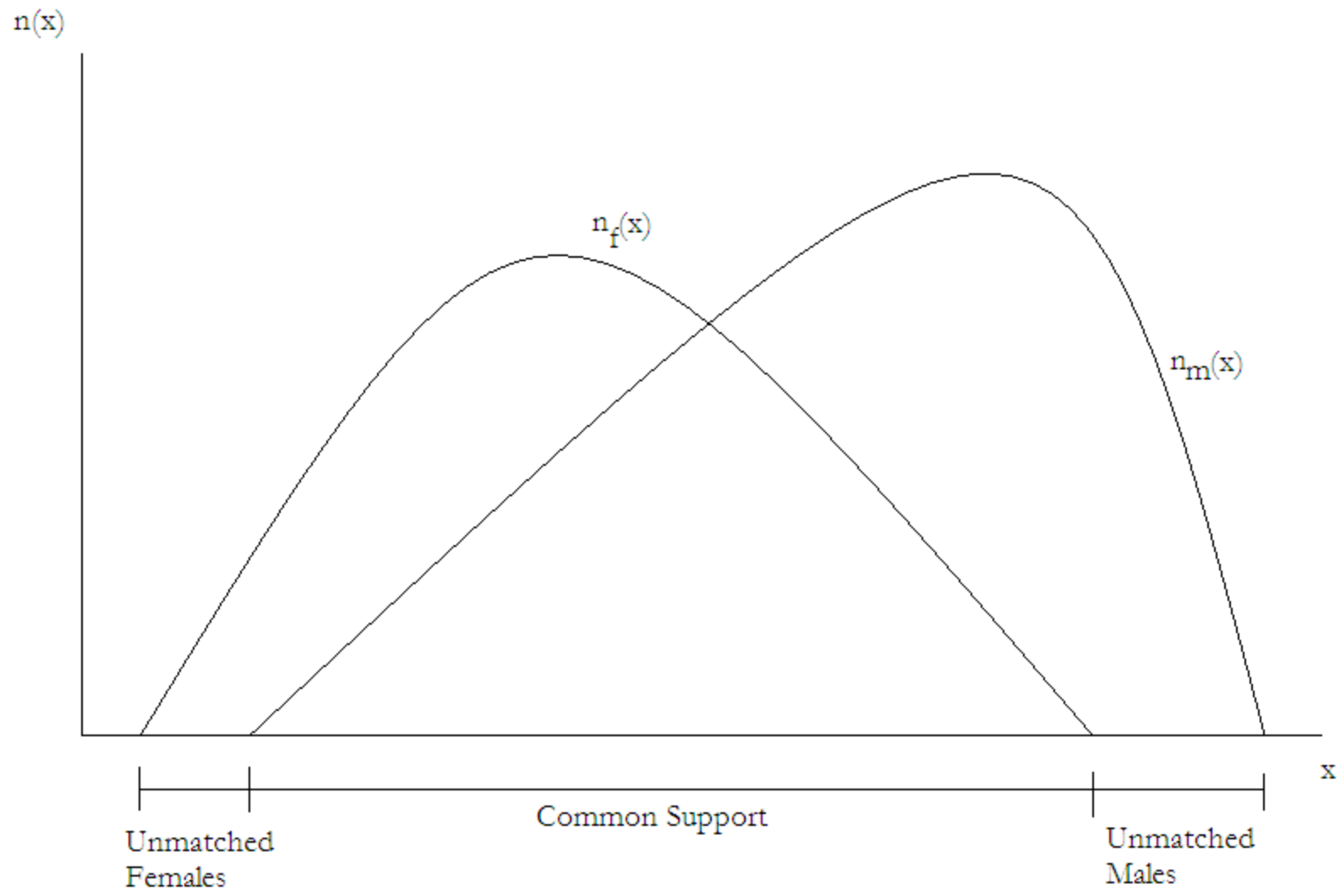
What would the distribution of earnings for males be, in the case that their individual characteristics follow the distribution of the characteristics for females?

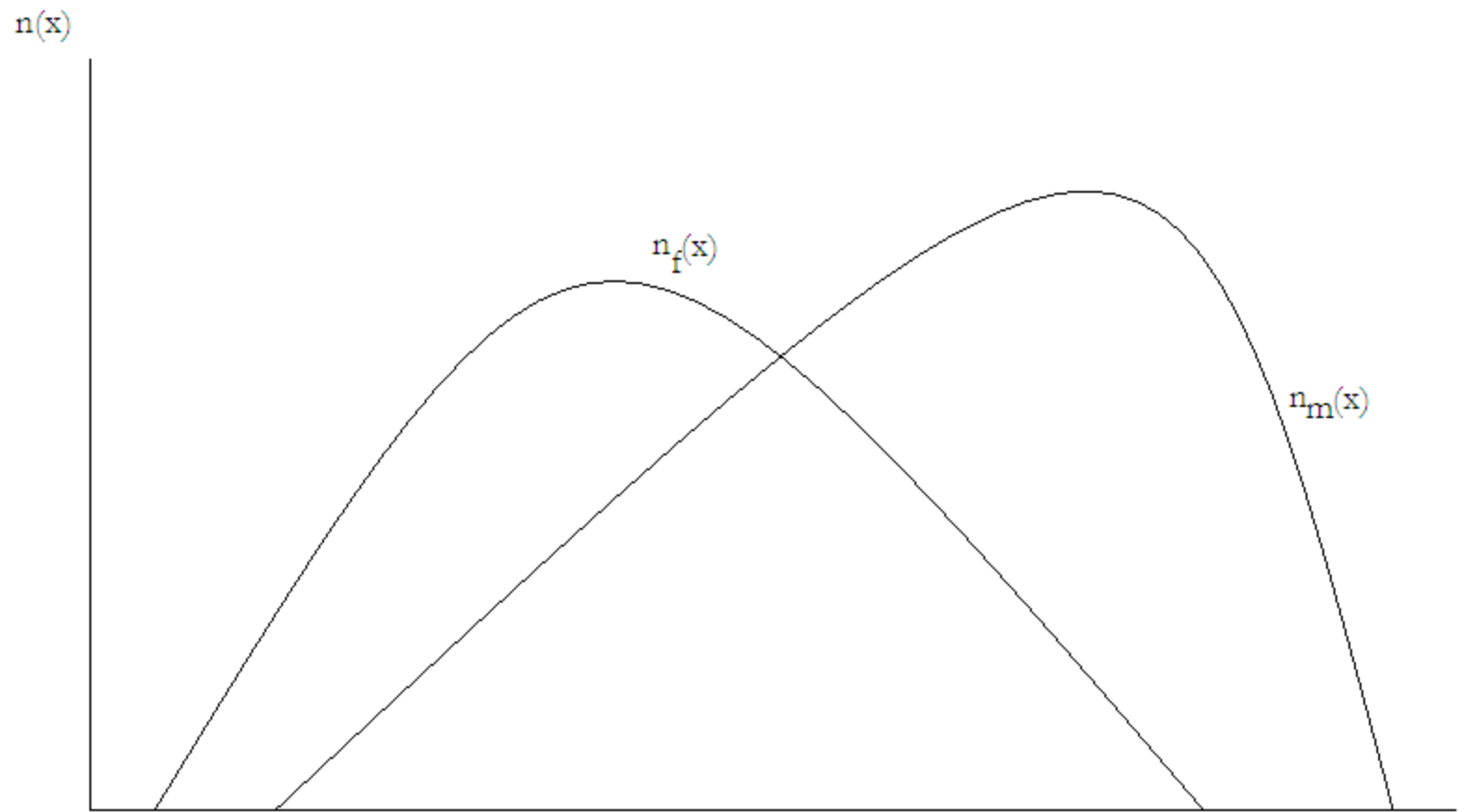
# The Matching Algorithm

For each possible value of the vector of characteristics  $x$ :

- » Select all females with these characteristics  $n_F(x)$
- » Select all males with these characteristics  $n_M(x)$
- » If  $n_F(x)=0$  and  $n_M(x)>0 \rightarrow$  unmatched males
- » If  $n_F(x)>0$  and  $n_M(x)=0 \rightarrow$  unmatched females
- » If  $n_F(x)>0$  and  $n_M(x)>0 \rightarrow$  reweight:
  - » Each female with 1
  - » Each male with  $n_F(x)/n_M(x)$



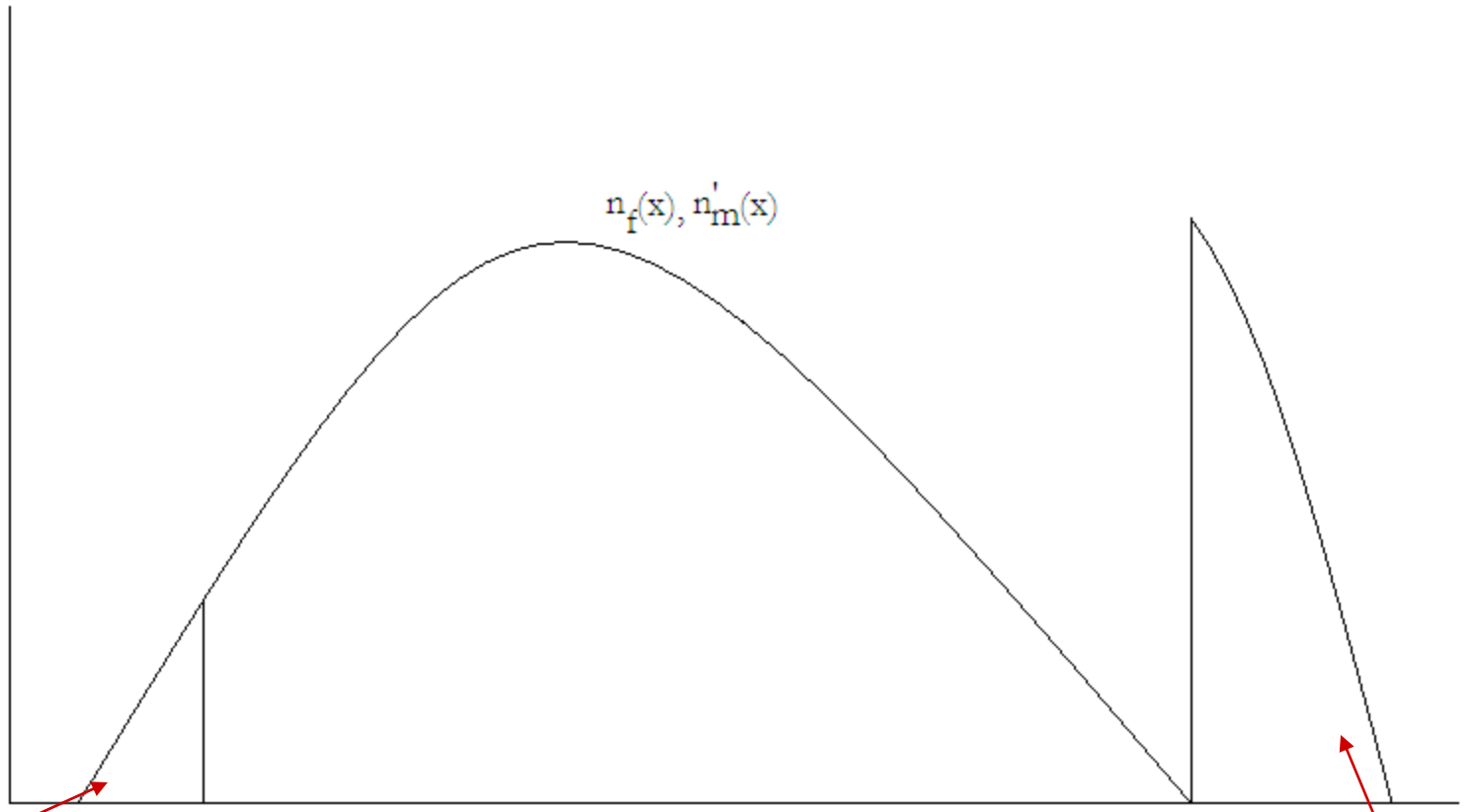




$$\Delta = \Delta_F + \Delta_0 + \Delta_X + \Delta_M$$

Unmatched Females                      Common Support                      Unmatched Males

$n(x)$



$n_f(x), n'_m(x)$

$x$

Maids

Unmatched  
Females

Common Support

Unmatched  
Males

CEOs

$$\triangle - \triangle_X = \triangle_F + \triangle_0 + \triangle_M$$

# The Matching Algorithm

→ Result:

A sample of matched females and males with the same distribution of observable individual characteristics (but not necessarily the same distribution of earnings).

A sample of unmatched females and another of unmatched males



# This Matching Approach is...

A non-parametric alternative to B-O decompositions that has advantages in terms of:

- » Simplicity

Avoiding the estimation of earnings equations

- » Flexibility

It “contains” all possible propensity scores

- » Identification/Correct specification

Recognizing that the supports of empirical distributions of characteristics do not completely overlap (the failure to recognize this leads to an overestimation of the unexplained component of the wage gap)

- » Information

Allowing us to compute directly the distribution of the unexplained effects, not just the average

## The New Decomposition and Matching

$$\Delta_M = \mu^M (\text{Unmatched}) \left( E_{M,\text{unmatched}} [Y|M] - E_{M,\text{matched}} [Y|M] \right)$$

$$\Delta_X = E_{M,\text{matched}} [Y|M] - E_{F,\text{matched}} [Y|M]$$

$$\Delta_0 = E_{F,\text{matched}} [Y|M] - E_{F,\text{matched}} [Y|F]$$

$$\Delta_F = \mu^F (\text{Unmatched}) \left( E_{F,\text{matched}} [Y|F] - E_{F,\text{unmatched}} [Y|F] \right)$$

## 2. Empirical Results. LAC (circa 2005)

The Data

Gender and Ethnic Gaps

Averages

Distributions

The role of occupational and sector segregation

# The Data

Country	Name Of The Survey	Year	Number of Observations*	Coverage
Argentina	Encuesta Permanente de Hogares (EPH), Segundo Semestre	2006	41287	31 urban regions
Bolivia	Encuesta Continua de Hogares (ECH)	2006	4959	National
Brasil	Pesquisa Nacional por Amostra de Domicilio (PNAD)	2007	133764	National
Chile	Encuesta de Caracterizacion Socioeconomica Nacional (CASEN)	2006	85968	National
Colombia	Encuesta Continua de Hogares (ENH)	2003	52388	National
Costa Rica	Encuesta de Hogares de Propositos Multiples (EHPM)	2006	13810	National
Dominican Republic	Encuesta Nacional de Fuerza de Trabajo (ENFT)	2003	9718	National
Ecuador	Encuesta de Empleo, Desempleo y Subempleo (ENEMDU)	2007	15611	National
Guatemala	Encuesta Nacional de Condiciones de Vida (ENCOVI)	2006	18865	National
Honduras	Encuesta Permanente de Hogares de Propositos Multiples (EPHPM)	2007	23278	National
Mexico	Encuesta Nacional Empleo (ENE), Segundo Trimestre	2004	131348	National
Nicaragua	Encuesta Nacional de Hogares sobre medicion de Niveles de Vida (EMNV)	2005	9838	National
Panama	Encuesta de Hogares (EH)	2003	17368	National
Paraguay	Encuesta Permanente de Hogares (EPH)	2006	5592	National
Peru	Encuesta Nacional de Hogares (ENAHO)	2006	27665	National
El Salvador	Encuesta de Hogares de Propositos Multiples (EHPM)	2005	16856	National
Uruguay	Encuesta Continua de Hogares (ECH)	2005	20351	Urban
Venezuela	Encuesta de Hogares Por Muestreo (EHM), Segundo Semestre	2004	47880	National

\* Workers between 18 and 65, after eliminating observations with incomplete data or outliers in wage

# The pooled data set

- » Covering all Latin American countries (except rural Argentina and Uruguay)
- » Use of expansion factors, so the size of the economies are properly represented (all but Mexico)
- » Income measures are normalized to 2002 PPP USD, deflated by nominal GDP
- » After that, average females (minorities) income is normalized to one

# Who are the ethnic minorities?

Country		Criterion
Bolivia	Self declaring as being:	Quechua, Aymara, Guarani, Chiquitano, Mojeño or other
Brasil	Having colour of skin:	Black or brown
Chile	Self declaring as being:	Aymara, Rapa nui, Quechua, Mapuche, Atacameño, Coya, Kawaskar, Yagan, Diaguita
Ecuador	Self Declaring as being:	Indigenous, Black, Mulato or Other
Guatemala	Self Declaring as being:	K'iche', Q'eqchi', Kaqchikel, Mam, Q'anjob'al, Achi, Ixil, Itza', Poqomchi', Chuj, Awakateko, Poqomam, Ch'orti', Jakalteko, Sakapulteco, Mopan, Uspanteko, Tz'utujil, Sipakapense, Chalchiteko, Akateko, Xinka or Garifuna
Paraguay	Self declaring as speaking :	Guarani (only)
Peru	Self Declaring as being:	Quechua, Aymara, From Amazonia, Black, Mulato, Zambo or Other

# Relative Wages by Characteristics

(Base: Average female wage = 100)

(Base: Average minority wage = 100)

	Male	Female	Non Minority	Minority
<b>All</b>	109.52	100.00	138.25	100.00
<b>Age</b>				
18 to 24	79.45	75.07	98.82	77.87
25 to 34	106.18	100.96	134.11	98.19
35 to 44	121.89	108.70	149.90	109.49
45 to 54	126.50	111.21	160.25	113.40
55 to 65	112.29	97.63	151.68	100.10
<b>Education</b>				
None or Primary Incomplete	72.08	70.15	108.63	74.43
Primary Complete or Secondary Incomplete	94.98	75.99	113.58	90.86
Secondary Complete or Tertiary Incomplete	141.71	118.54	156.05	127.43
Tertiary Complete	203.66	180.79	225.70	160.85
<b>Presence of children in the household</b>				
No	120.22	111.58	145.15	104.49
Yes	95.14	85.30	131.18	96.25
<b>Presence of other member with labor income</b>				
No	105.88	99.01	140.94	96.19
Yes	111.48	100.28	137.13	101.97

# Relative Wages by Characteristics

	(Base: Average female wage = 100)		(Base: Average minority wage = 100)	
	Male	Female	Non Minority	Minority
<b>Urban</b>				
No	89.04	89.77	92.85	67.89
Yes	117.42	102.34	146.17	108.24
<b>Type of Employment</b>				
Employer	164.33	142.17	265.49	215.77
Self - Employed	96.45	89.88	135.75	94.82
Employee	109.92	101.84	131.26	97.96
<b>Part time</b>				
No	104.60	92.27	133.40	94.30
Yes	157.58	123.35	170.09	132.66
<b>Formality</b>				
No	94.83	86.42	113.92	83.80
Yes	128.95	117.48	160.42	121.30
<b>Small fim</b>				
No	115.90	113.72	152.10	113.79
Yes	85.28	78.13	122.92	87.60



# Relative Wages by Characteristics

Occupation	(Base: Average female wage = 100)		(Base: Average minority wage = 100)	
	Male	Female	Non Minority	Minority
Professionals and technicians	214.71	184.87	242.70	178.50
Directors and upper management	216.00	171.59	276.97	214.09
Administrative personnel and intermediary level	134.55	103.78	134.42	113.78
Merchants and sellers	110.25	101.30	128.39	108.39
Service workers	94.82	71.15	98.05	80.31
Agricultural workers and similar	66.22	86.44	97.94	62.65
Non-agricultural blue-collars, drivers and similar	96.14	72.69	131.48	104.35
Armed forces	106.32	117.05	457.57	563.28
Occupations not classified above	111.16	88.87	155.98	153.07
<b>Economic Sector</b>				
Agriculture, Hunting, Forestry and Fishing	60.80	58.22	96.09	63.82
Mining and Quarrying	131.84	140.05	182.64	143.45
Manufacturing	117.14	87.52	140.90	107.13
Electricity, Gas and Water supply	154.87	169.59	177.64	152.92
Construction	97.31	109.09	125.58	95.13
Wholesale and Retail Trade and Hotels and Restaurants	107.30	91.95	139.00	105.62
Transport, Storage	118.70	126.21	168.50	134.43
Financing Insurance, Real Estate and Business Services	154.58	148.45	209.47	147.04
Community, Social and Personal Services	154.86	110.23	152.23	111.12

# Descriptive statistics

	Men	Women	Non Minority	Minority
<b>Age</b>	37.18	36.74	37.32	36.47
<b>Education (%)</b>				
None or Primary Incomplete	21.41	16.46	15.05	25.09
Primary Complete or Secondary Incomplete	44.30	37.64	38.72	42.94
Secondary Complete or Tertiary Incomplete	28.74	37.39	38.15	27.41
Tertiary Complete	5.54	8.52	8.08	4.56
<b>Presence of children in the household (%)</b>	42.55	43.71	47.81	53.86
<b>Presence of other member with labor income (%)</b>	64.97	78.23	70.97	66.18
<b>Urban (%)</b>	73.03	82.38	86.26	80.12
<b>Type of Employment (%)</b>				
Employer	6.39	3.29	5.19	2.63
Self - Employed	27.62	25.38	24.40	27.89
Employee	65.99	71.33	70.41	69.49
<b>Part time (%)</b>	9.28	24.74	13.56	15.06
<b>Formality (%)</b>	44.36	46.58	55.75	44.99
<b>Small firm (%)</b>	52.55	52.89	48.77	57.84

# Descriptive statistics

	Men	Women	Non Minority	Minority
<b>Age</b>	37.18	36.74	37.32	36.47
<b>Occupation (%)</b>				
Professionals and technicians	10.77	18.01	19.17	11.16
Directors and upper management	3.88	3.55	6.81	2.82
Administrative personnel and intermediary level	5.08	10.71	10.86	7.33
Merchants and sellers	8.80	15.02	10.66	10.39
Service workers	11.70	31.44	17.65	24.82
Agricultural workers and similar	14.35	6.74	8.29	13.94
Non-agricultural blue-collars, drivers and similar	30.34	8.43	25.06	27.87
Armed forces	0.86	0.08	0.01	0.00
Occupations not classified above	14.21	6.02	1.50	1.66
<b>Economic Sector (%)</b>				
Agriculture, Hunting, Forestry and Fishing	17.05	3.35	9.49	14.19
Mining and Quarrying	0.99	0.19	0.70	0.68
Manufacturing	16.56	14.47	16.17	14.13
Electricity, Gas and Water supply	0.87	0.24	0.68	0.53
Construction	11.93	0.83	6.88	9.61
Wholesale and Retail Trade and Hotels and Restaurants	21.13	25.96	23.24	21.39
Transport, Storage	8.71	1.99	6.26	5.27
Financing Insurance, Real Estate and Business Services	2.90	3.06	3.63	1.76
Community, Social and Personal Services	19.85	49.91	32.95	32.43

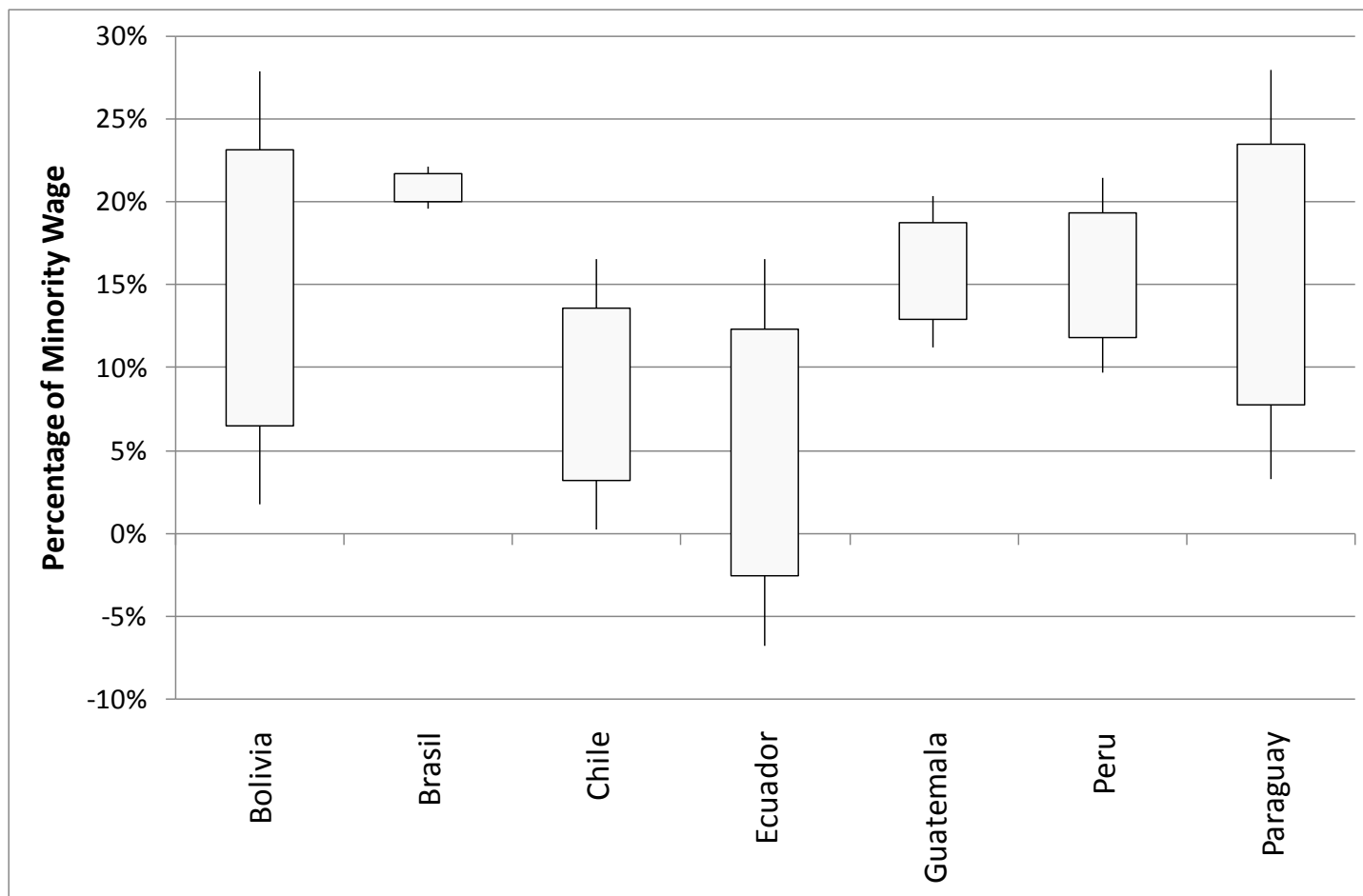
# Ethnic Wage Gap Decompositions

	Gender	Gender and age	Gender, age and education	Gender, age, education and children	Gender, age, education, children and other with income	Gender, age, education, children, other with income and urban	Gender, age, education, children, other with income, urban and type of emp.	Gender, age, education, children, other with income, urban, type of emp. And part-time	Gender, age, education, children, other with income, urban, type of emp., part-time and formality
$\Delta$	38.25%	38.25%	38.25%	38.25%	38.25%	38.25%	38.25%	38.25%	38.25%
$\Delta O$	40.28%	39.82%	28.04%	27.04%	26.30%	25.14%	22.73%	23.48%	19.74%
$\Delta M$	0.00%	0.01%	1.34%	2.27%	3.53%	3.64%	6.77%	8.20%	10.85%
$\Delta F$	0.00%	0.00%	-0.17%	-0.42%	-0.78%	-0.64%	-1.40%	-2.64%	-3.29%
$\Delta X$	-2.03%	-1.58%	9.04%	9.35%	9.19%	10.10%	10.15%	9.20%	10.94%
% Non Minority in CS	100.00%	100.00%	98.03%	96.04%	93.40%	89.70%	83.66%	79.30%	73.37%
% Minority in CS	100.00%	100.00%	99.74%	99.29%	98.15%	95.78%	91.32%	86.60%	82.10%

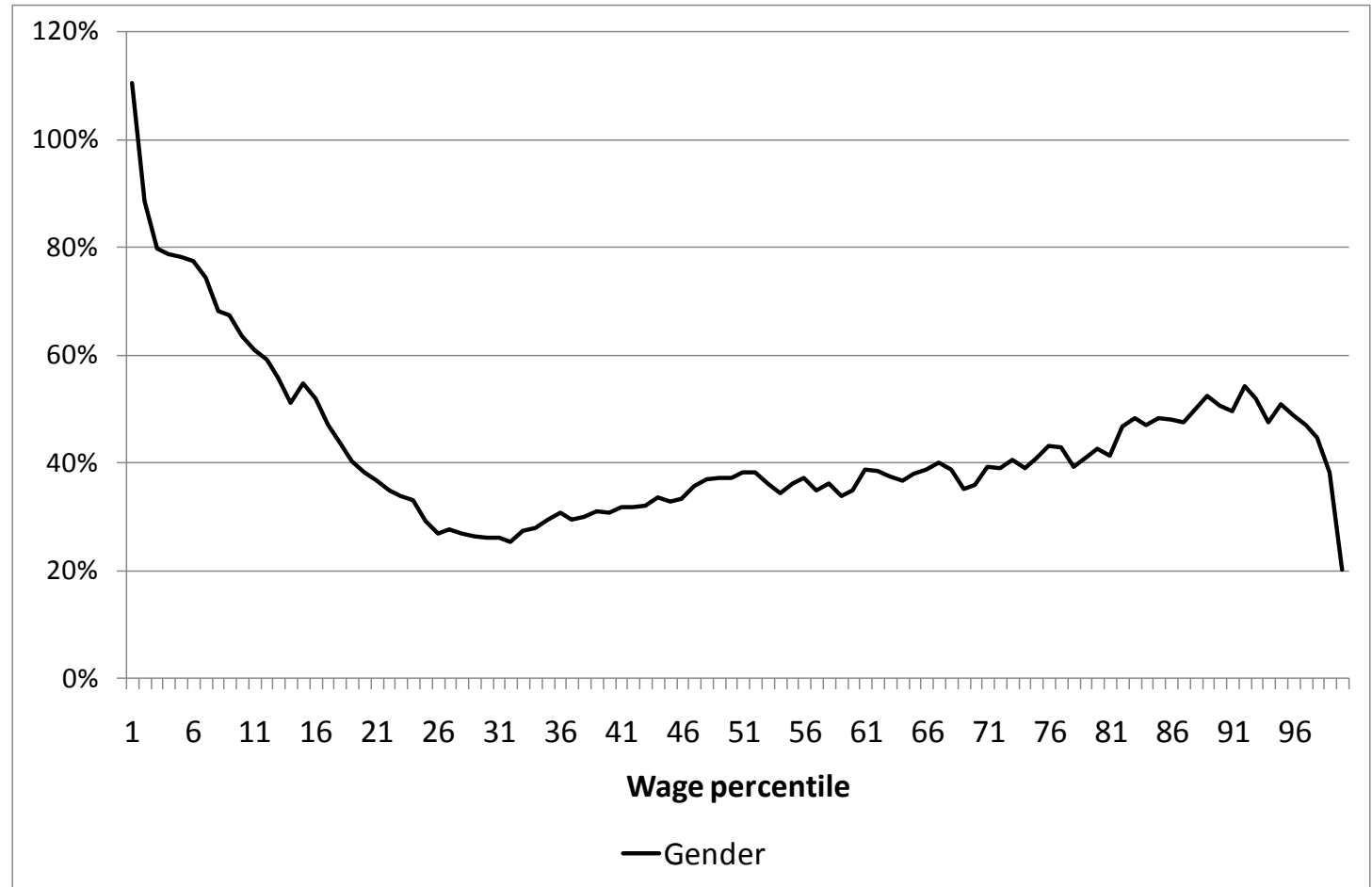
# Unexplained Ethnic Wage Gaps by Country

Country	$\Delta$		$\Delta 0$	
		Gender and age	Gender, age and education	Gender, age, education, children, other with income, urban, type of emp., part-time and formality
Bolivia	30.58%	35.61%	16.50%	14.83%
Brasil	38.86%	38.94%	30.17%	20.88%
Chile	31.50%	30.21%	11.61%	8.42%
Ecuador	30.74%	26.71%	3.85%	4.89%
Guatemala	67.73%	67.44%	23.52%	15.84%
Peru	45.76%	45.78%	20.91%	15.60%
Paraguay	59.88%	60.27%	22.88%	15.63%
<b>Pooled Data</b>	<b>38.25%</b>	<b>39.82%</b>	<b>28.04%</b>	<b>19.74%</b>

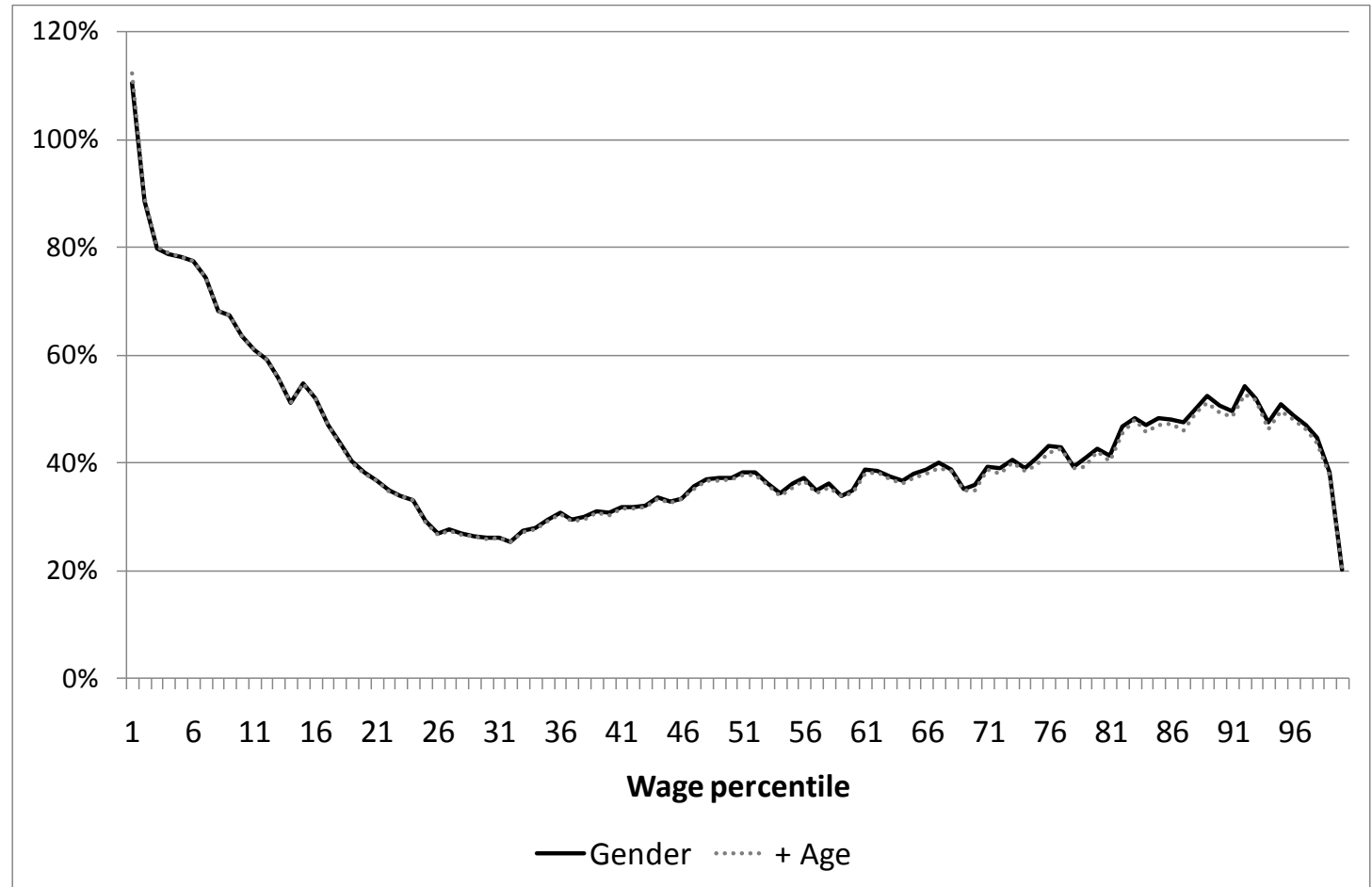
# Confidence Intervals for the Unexplained Ethnic Gap



# Unexplained Ethnic Wage Gaps by Percentiles of the Wage Distribution

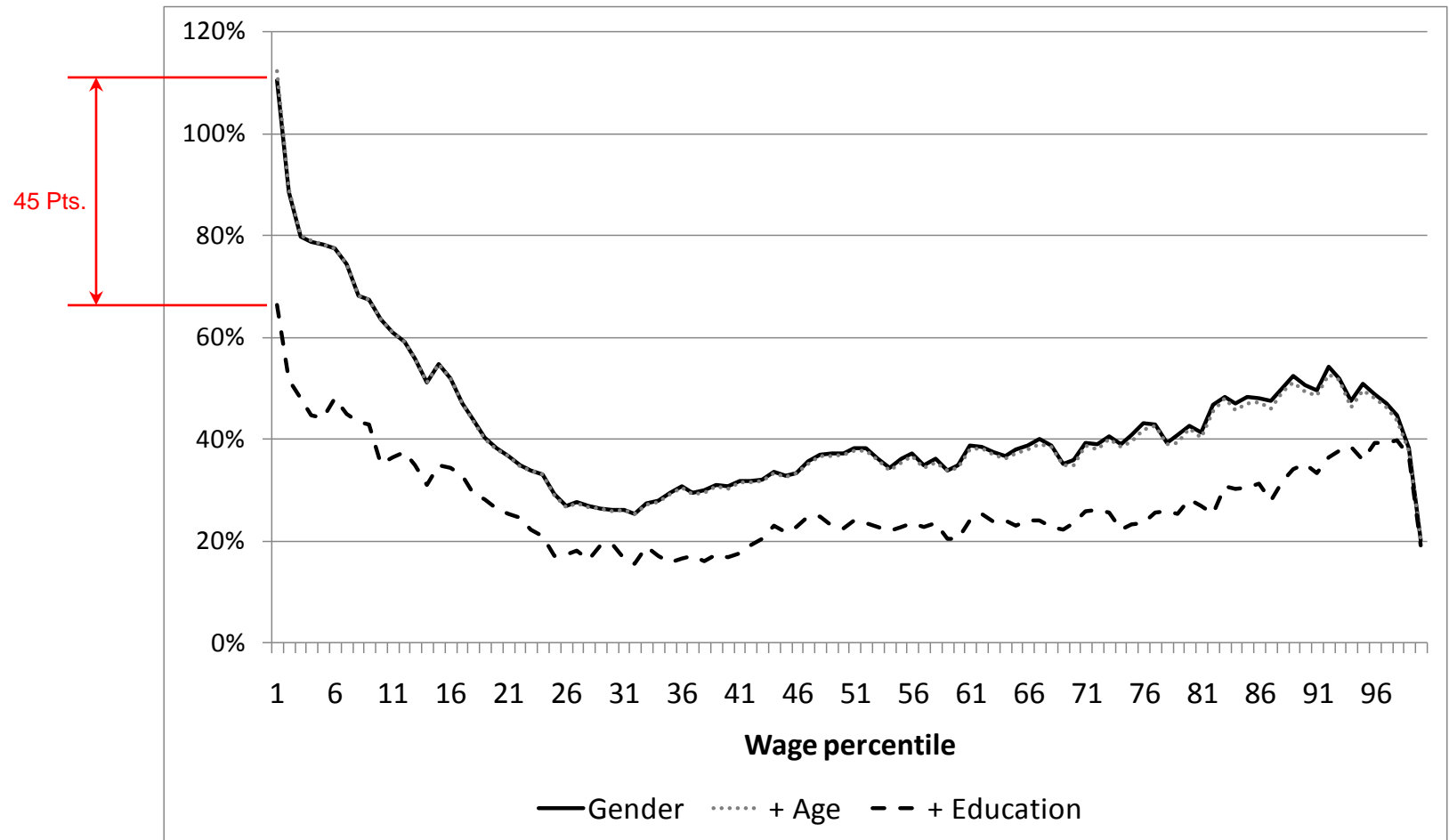


# Unexplained Ethnic Wage Gaps by Percentiles of the Wage Distribution

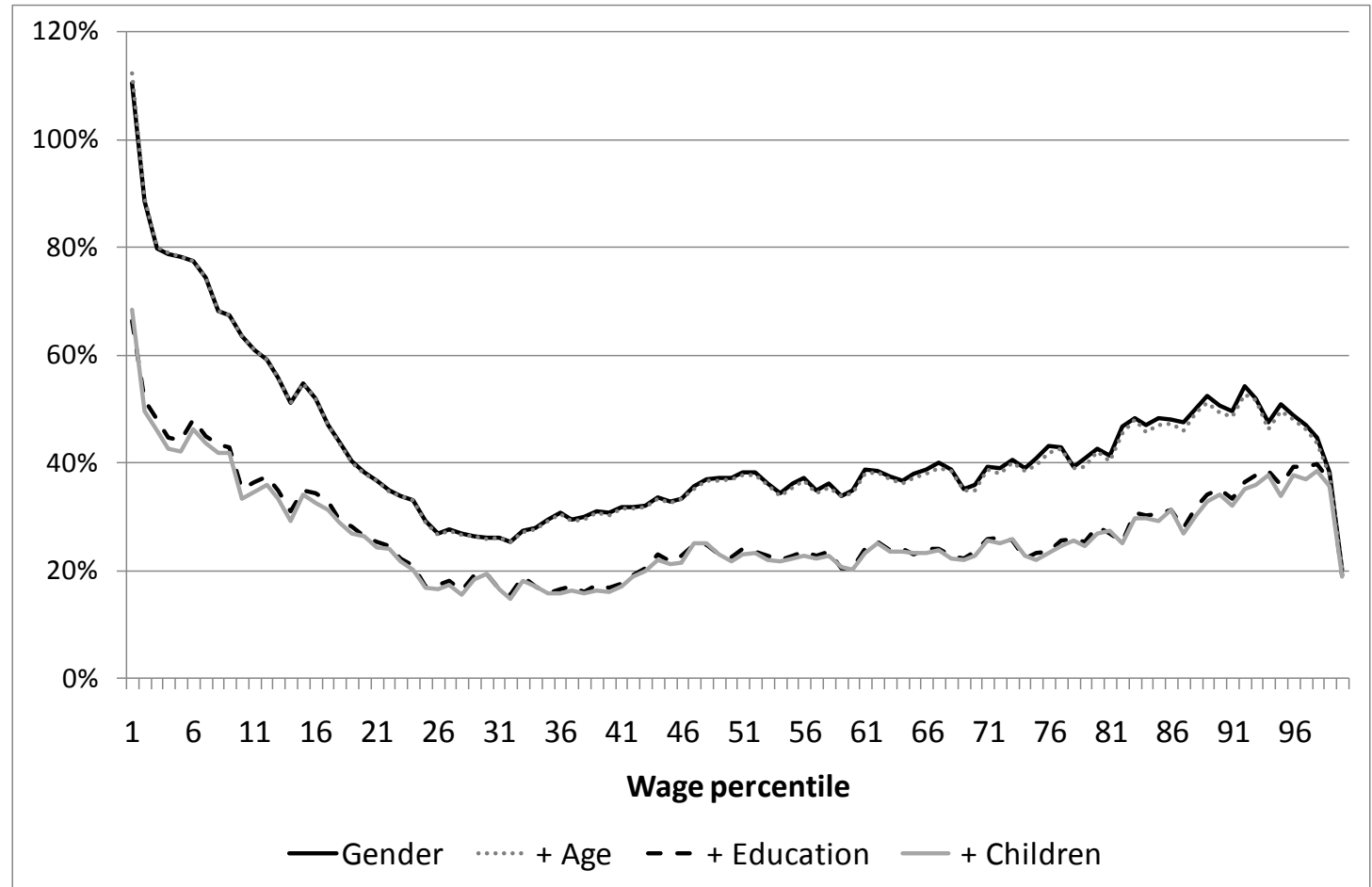




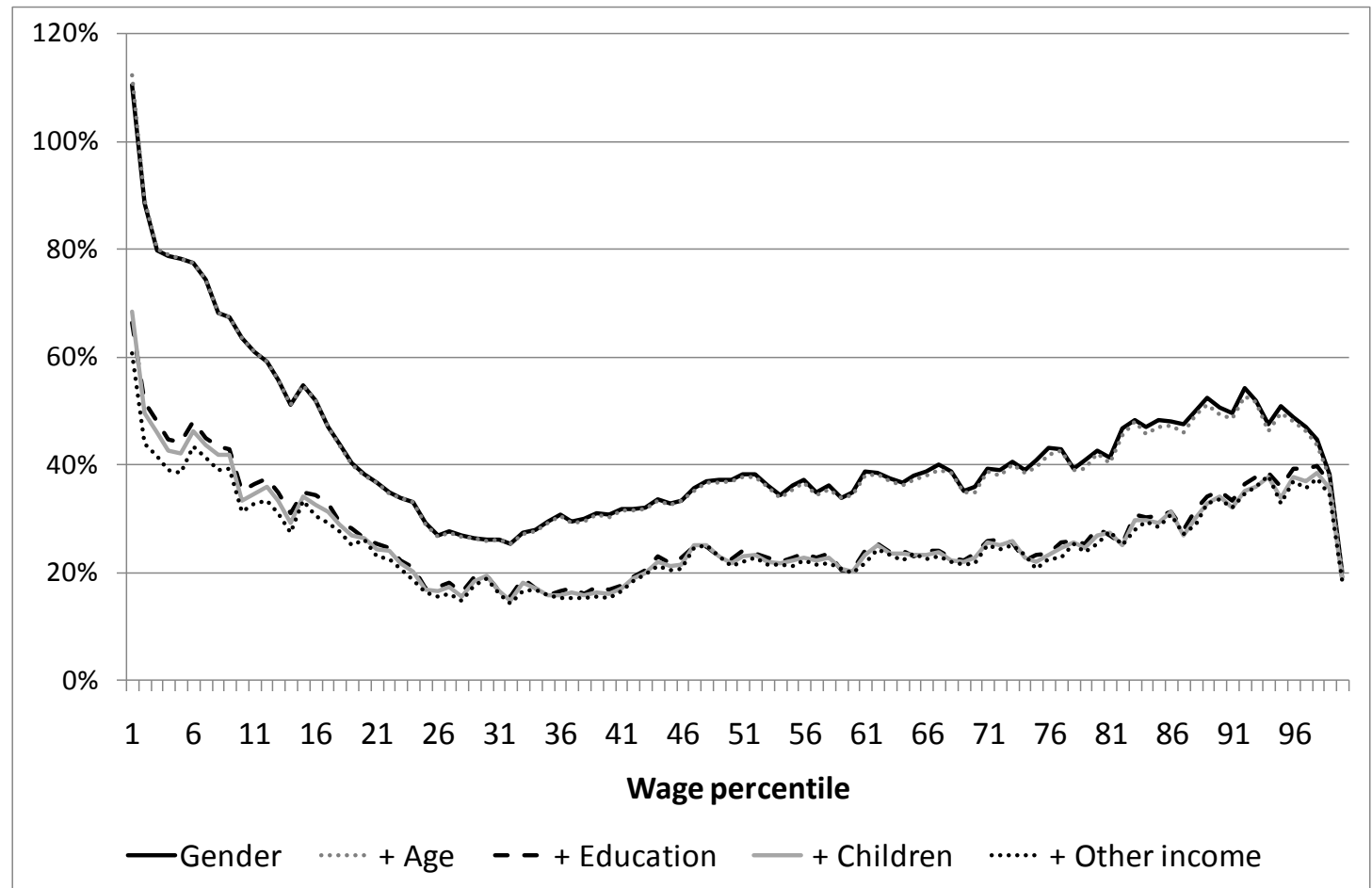
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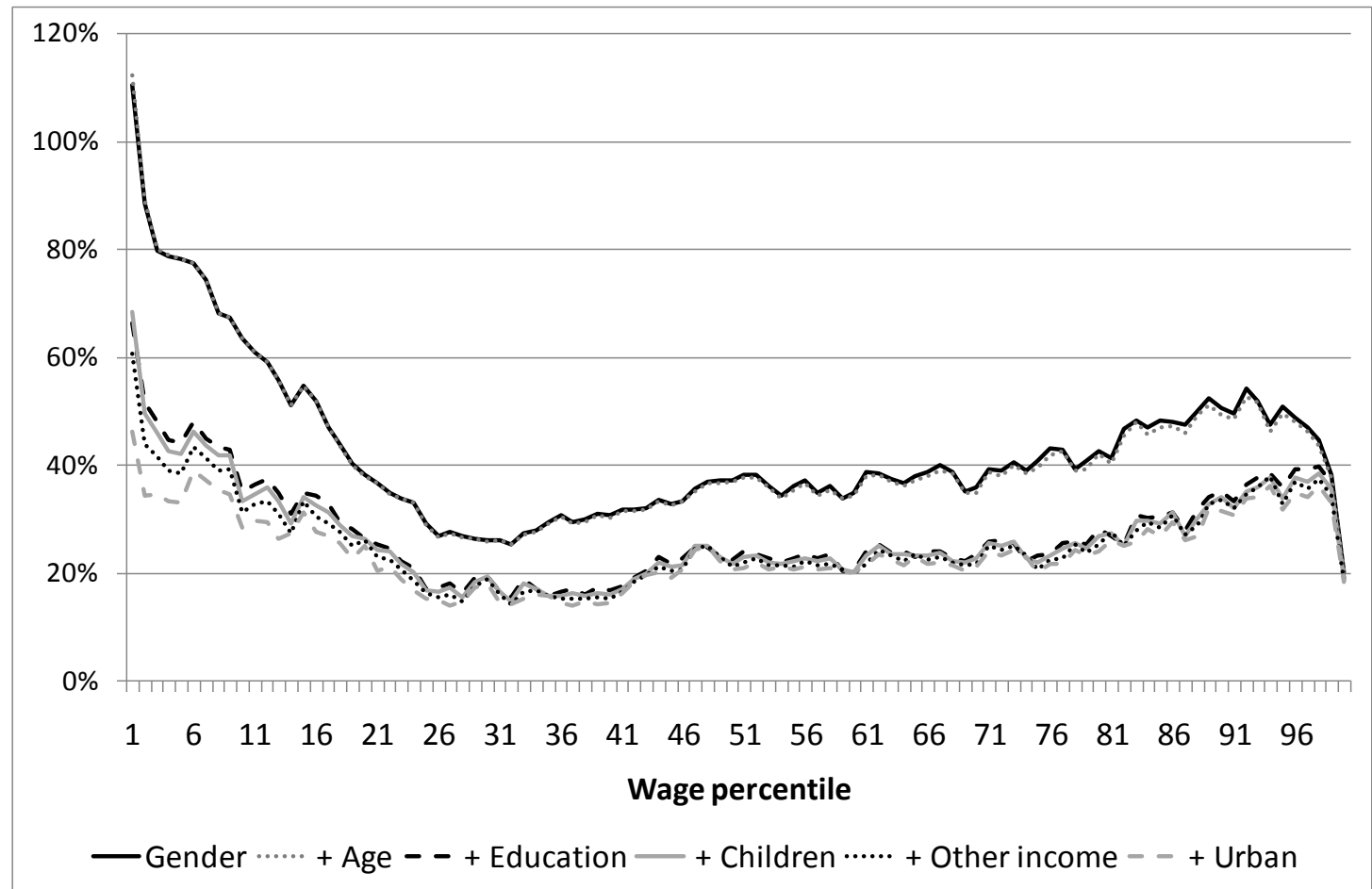
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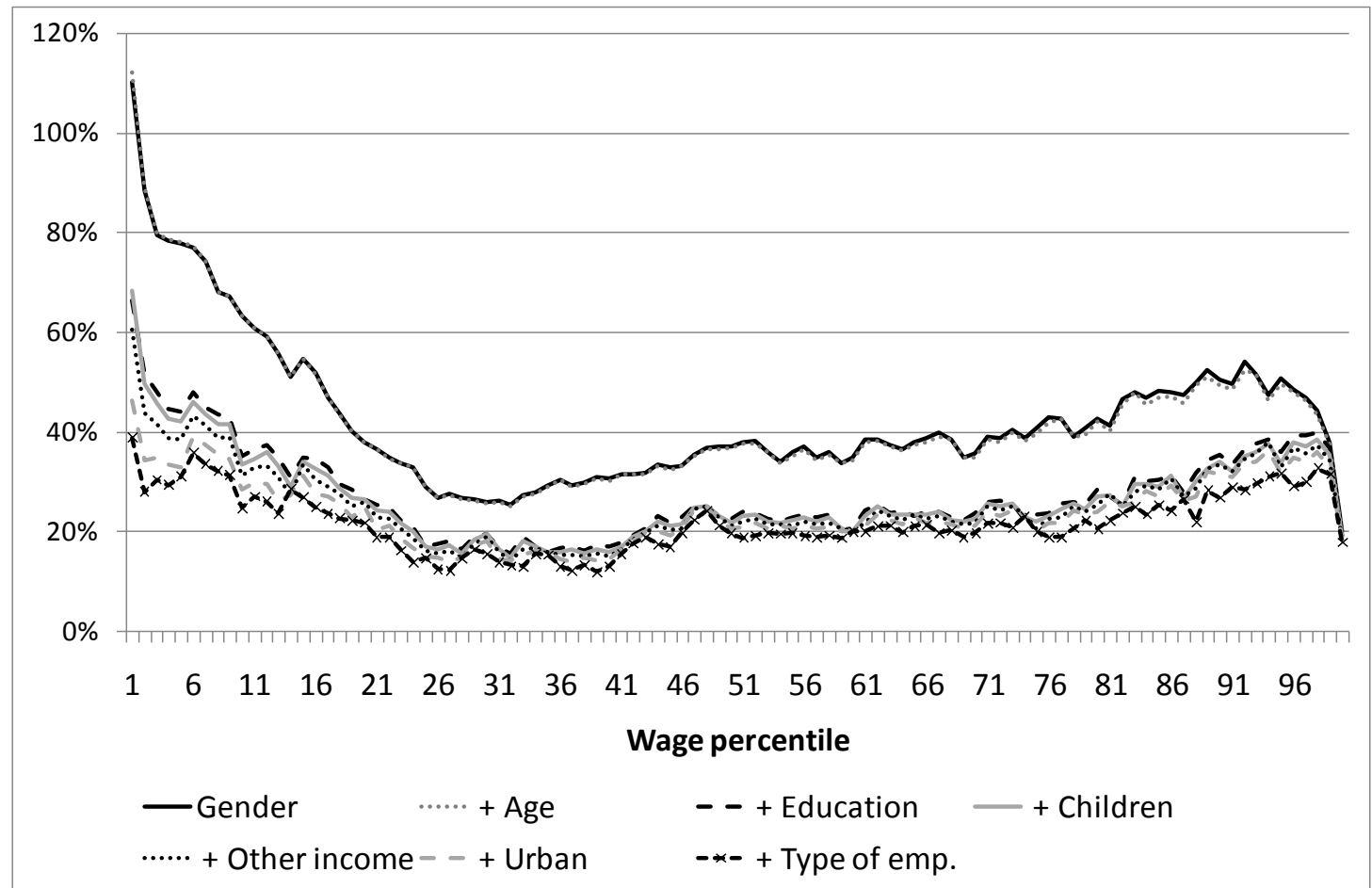
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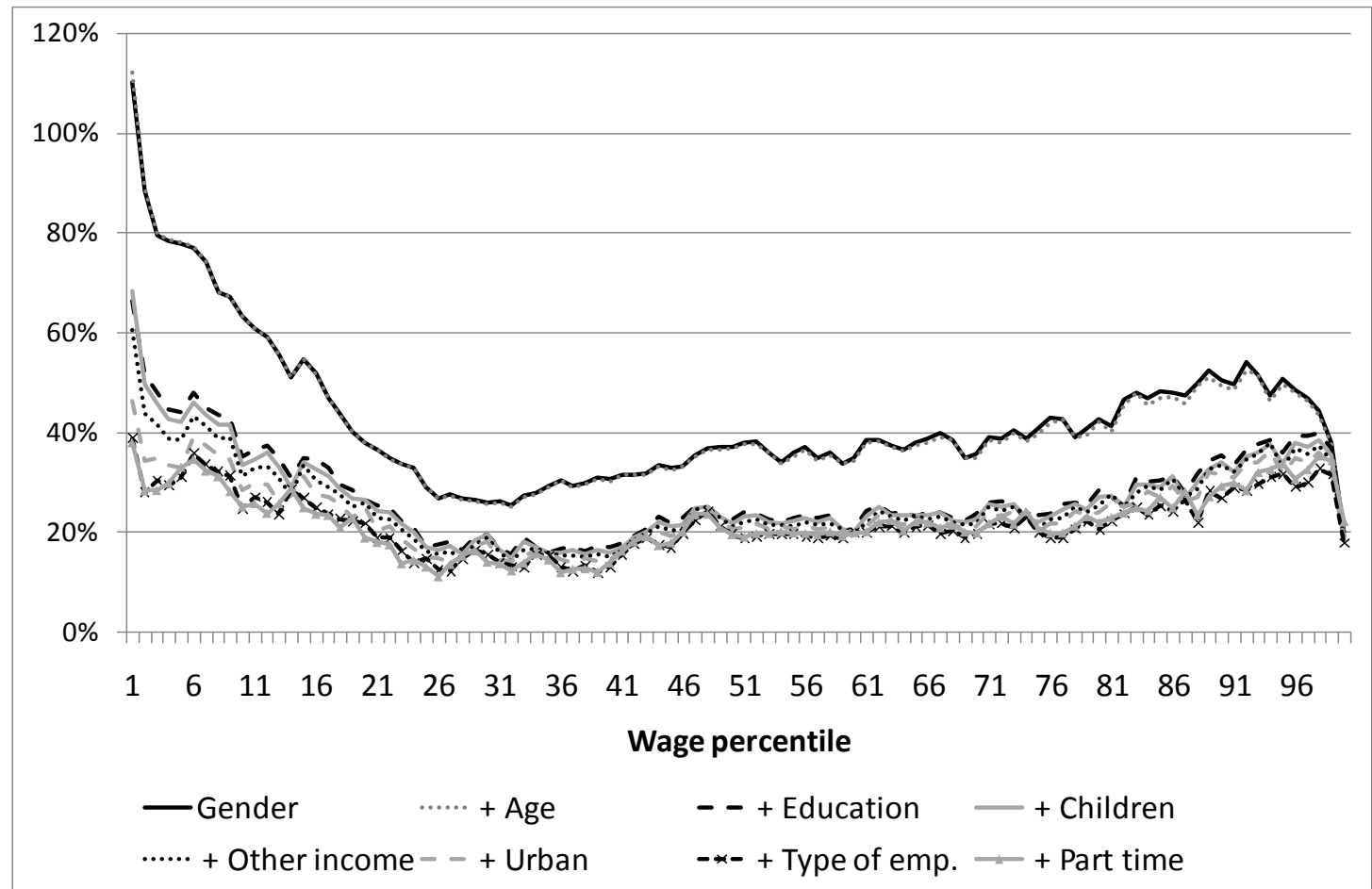
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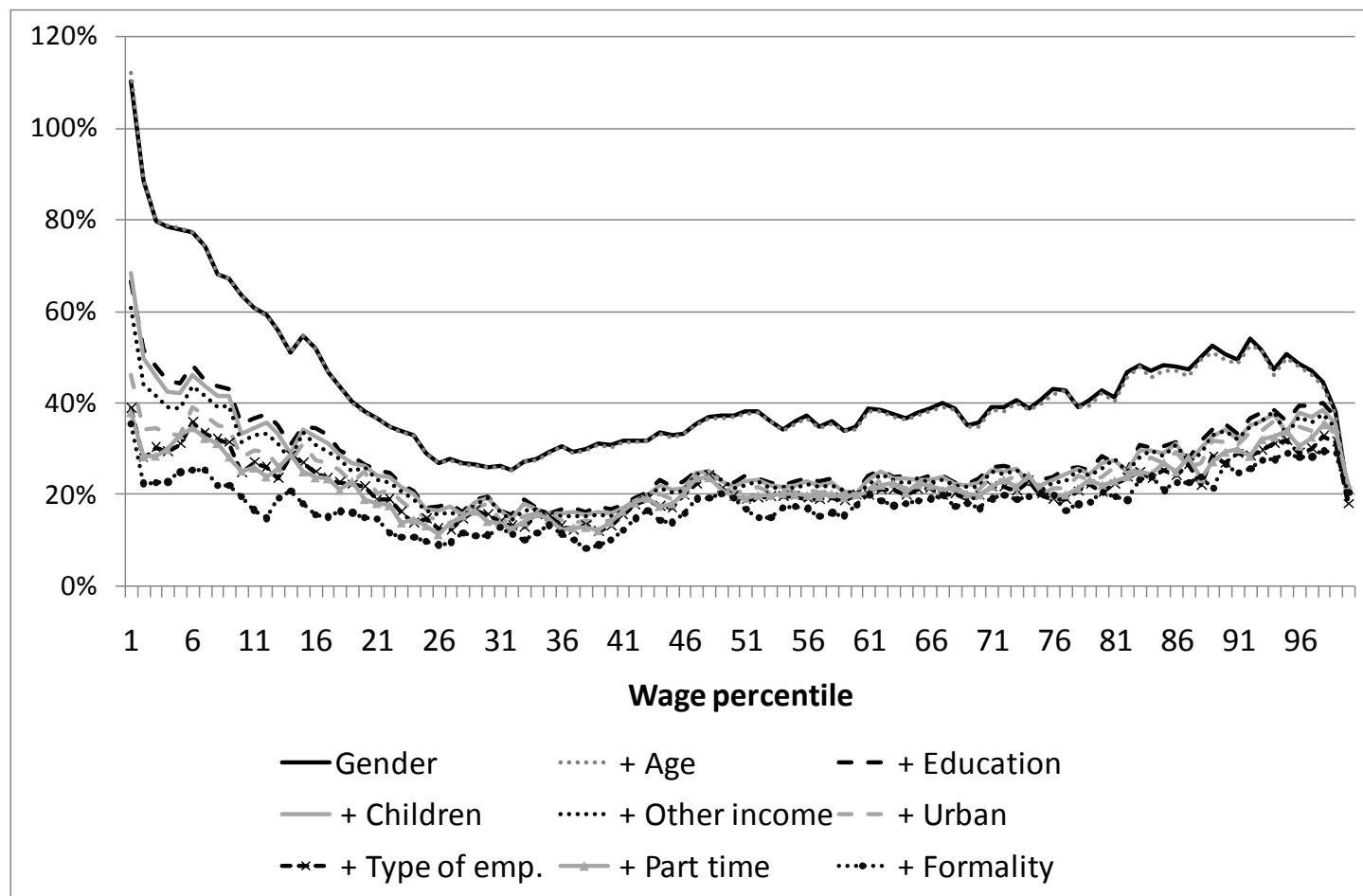
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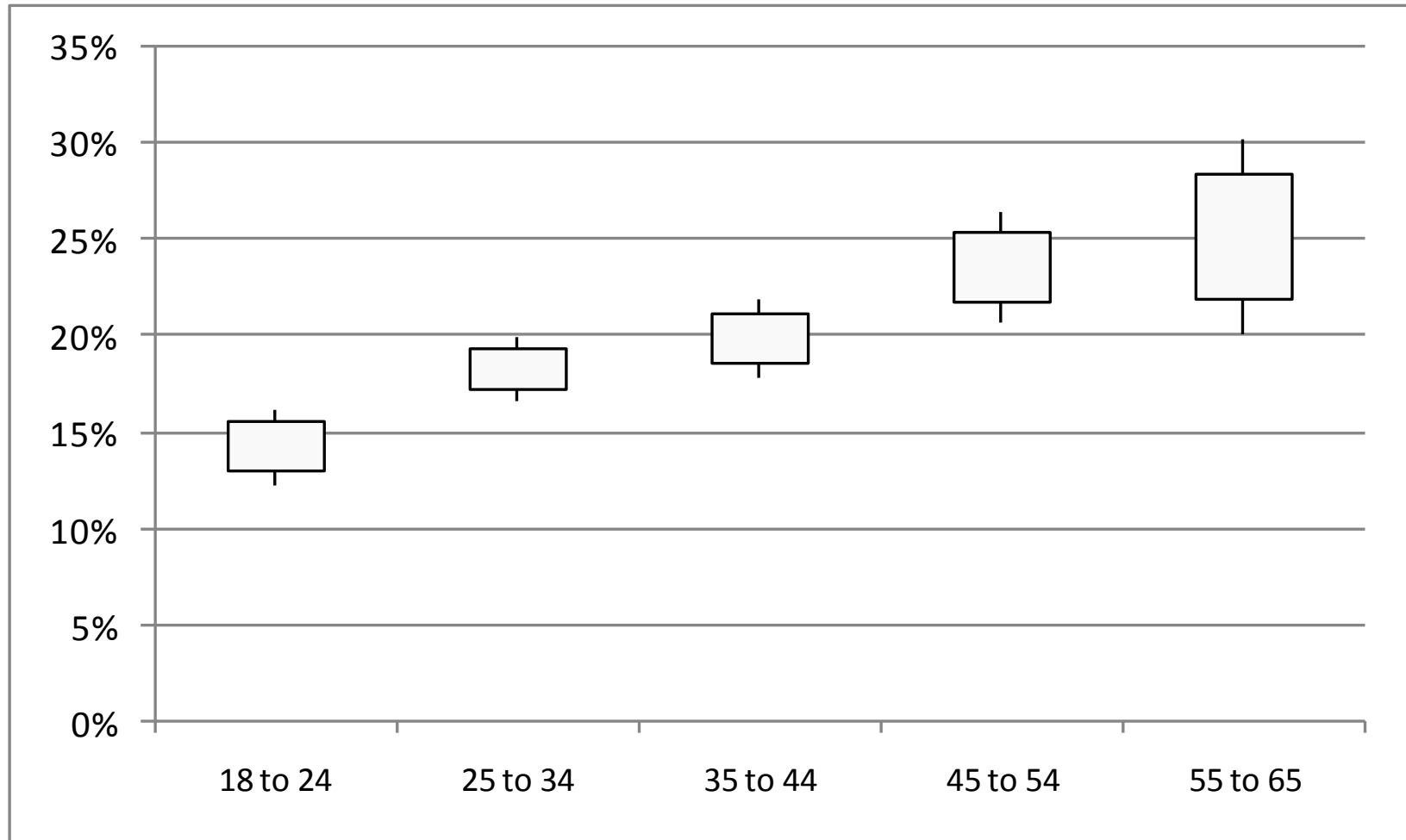
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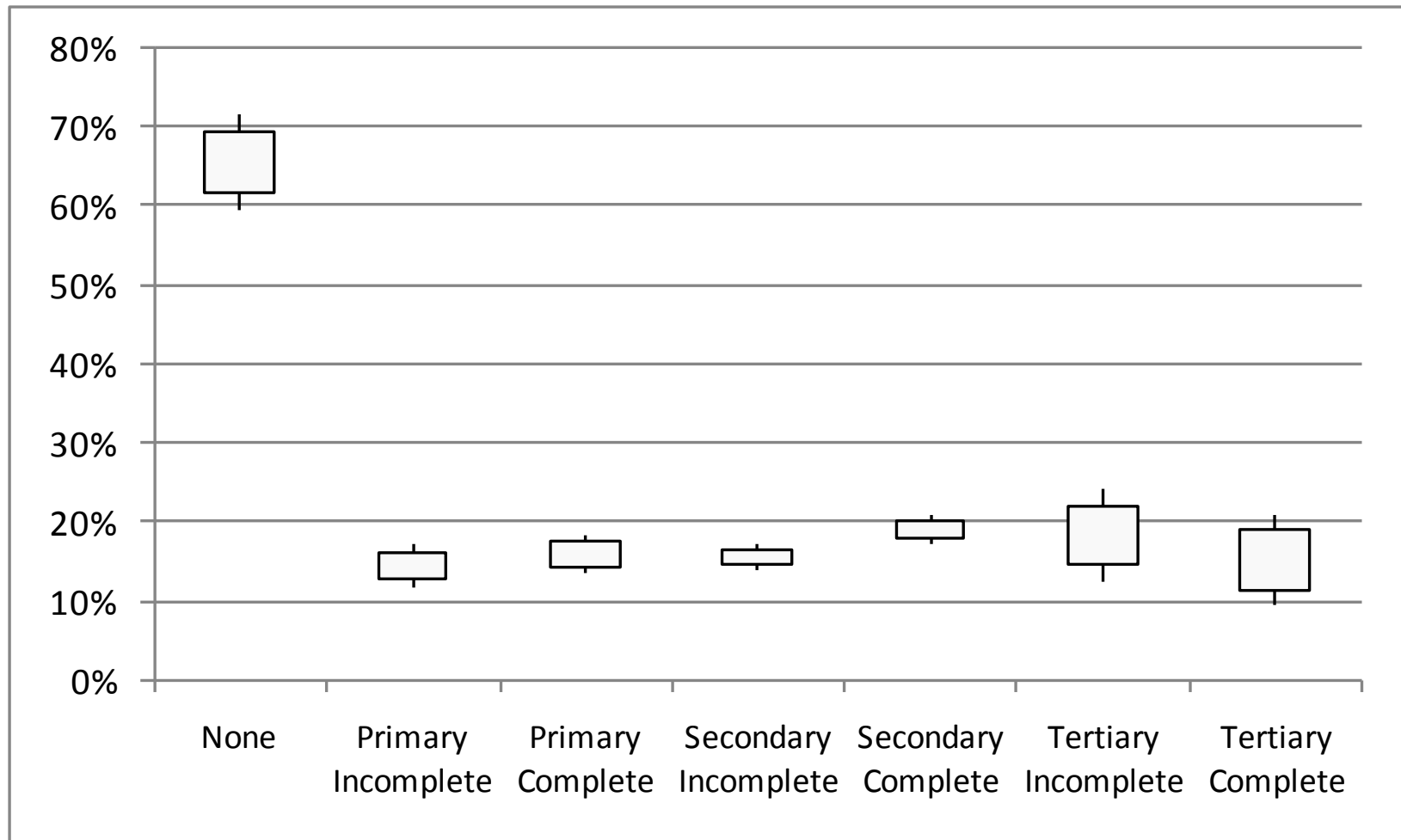


# Unexplained Ethnic Gaps By Age



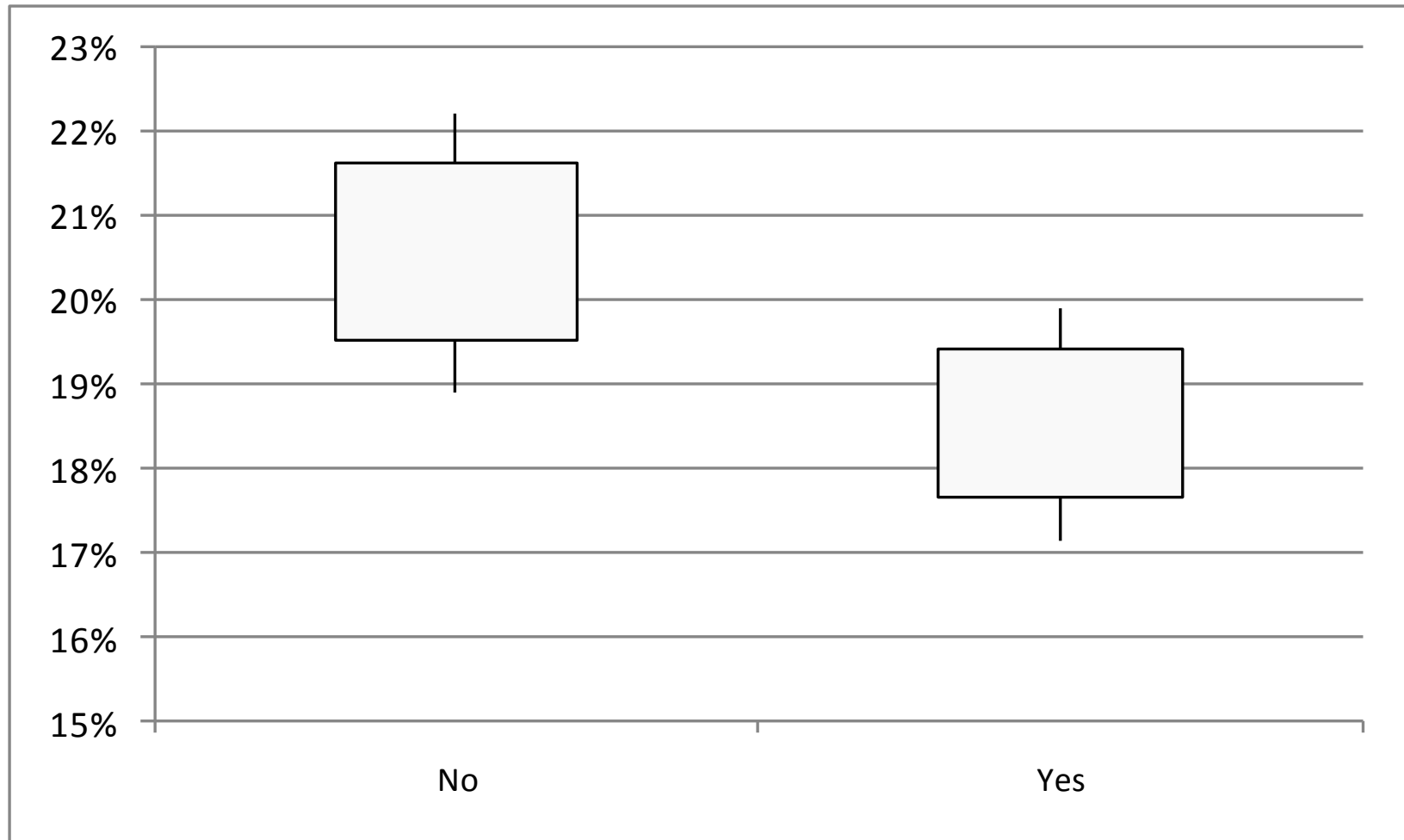


# Unexplained Ethnic Gaps By Education



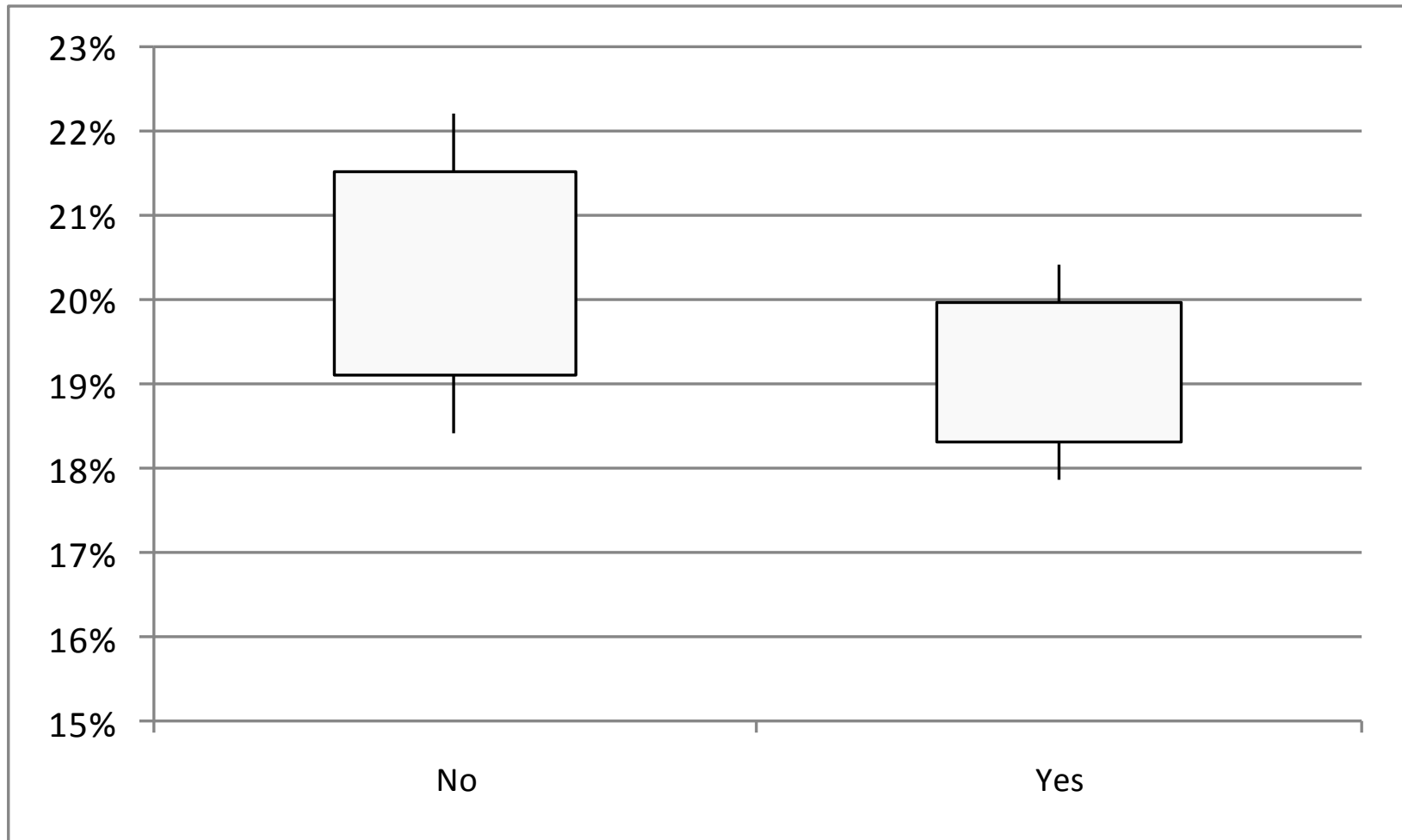
# Unexplained Ethnic Gaps

By presence of kids in the household



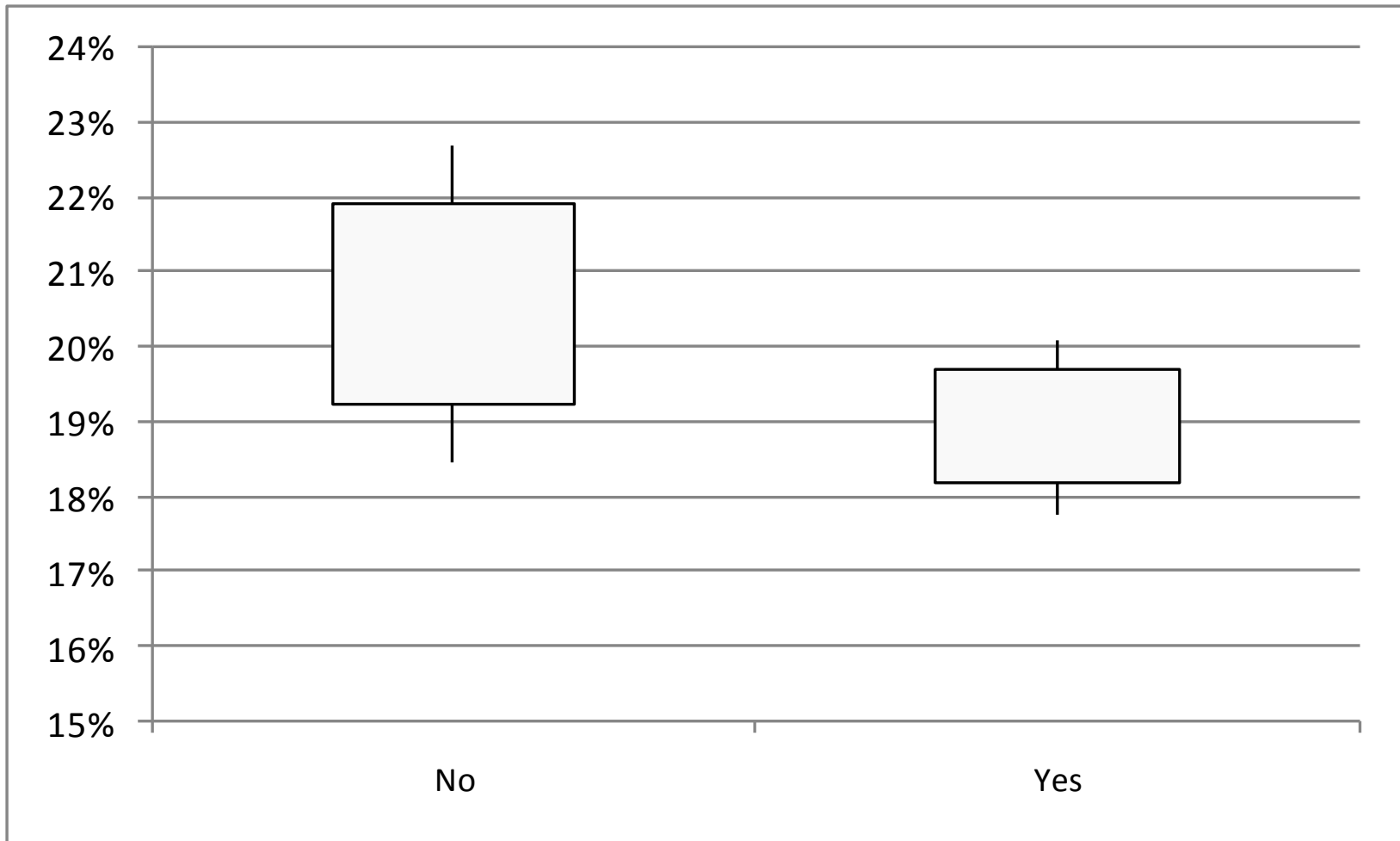
# Unexplained Ethnic Gaps

By presence of other income earner in the household



# Unexplained Ethnic Gaps

## By Zone (urban)



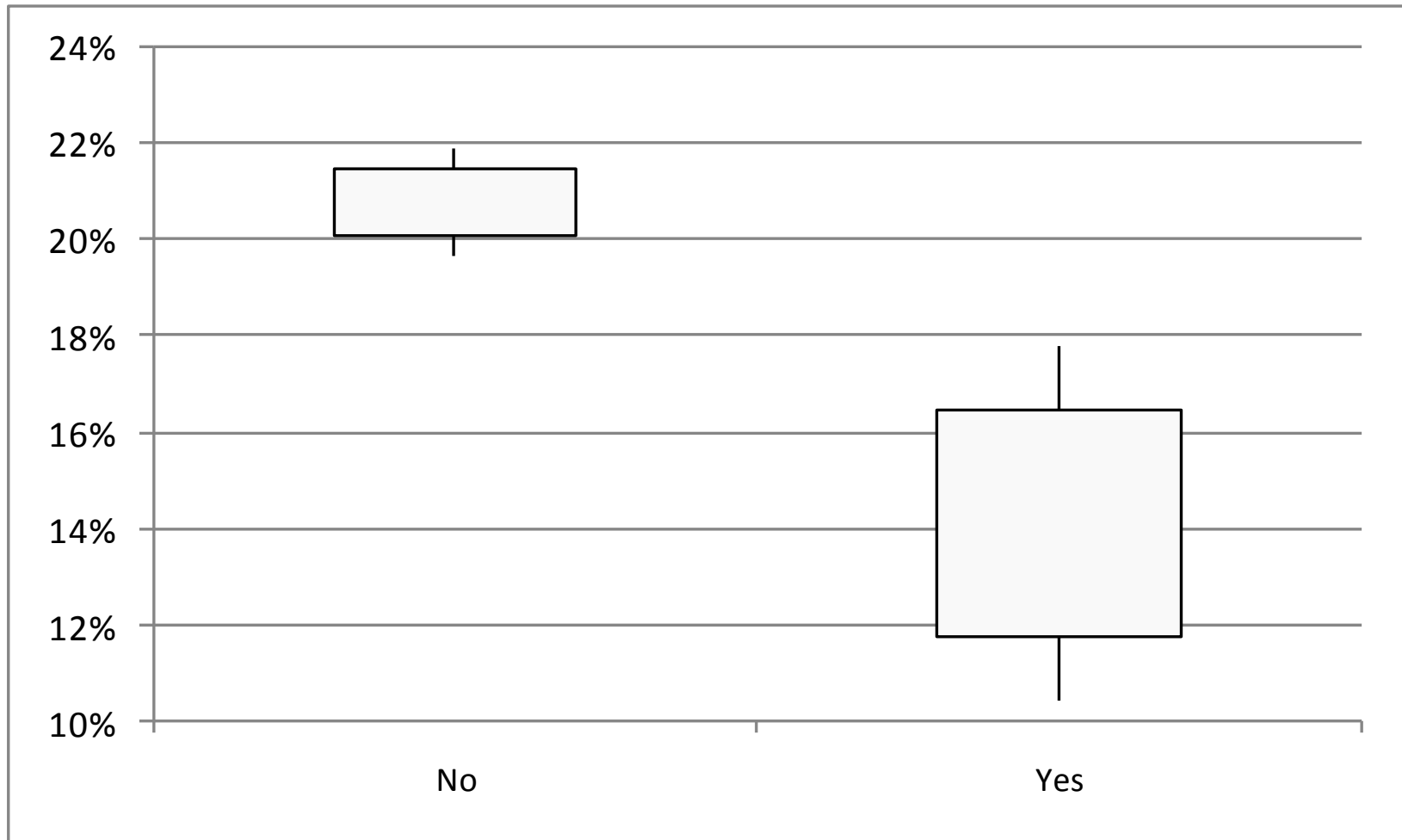
# Unexplained Ethnic Gaps

By type of employment



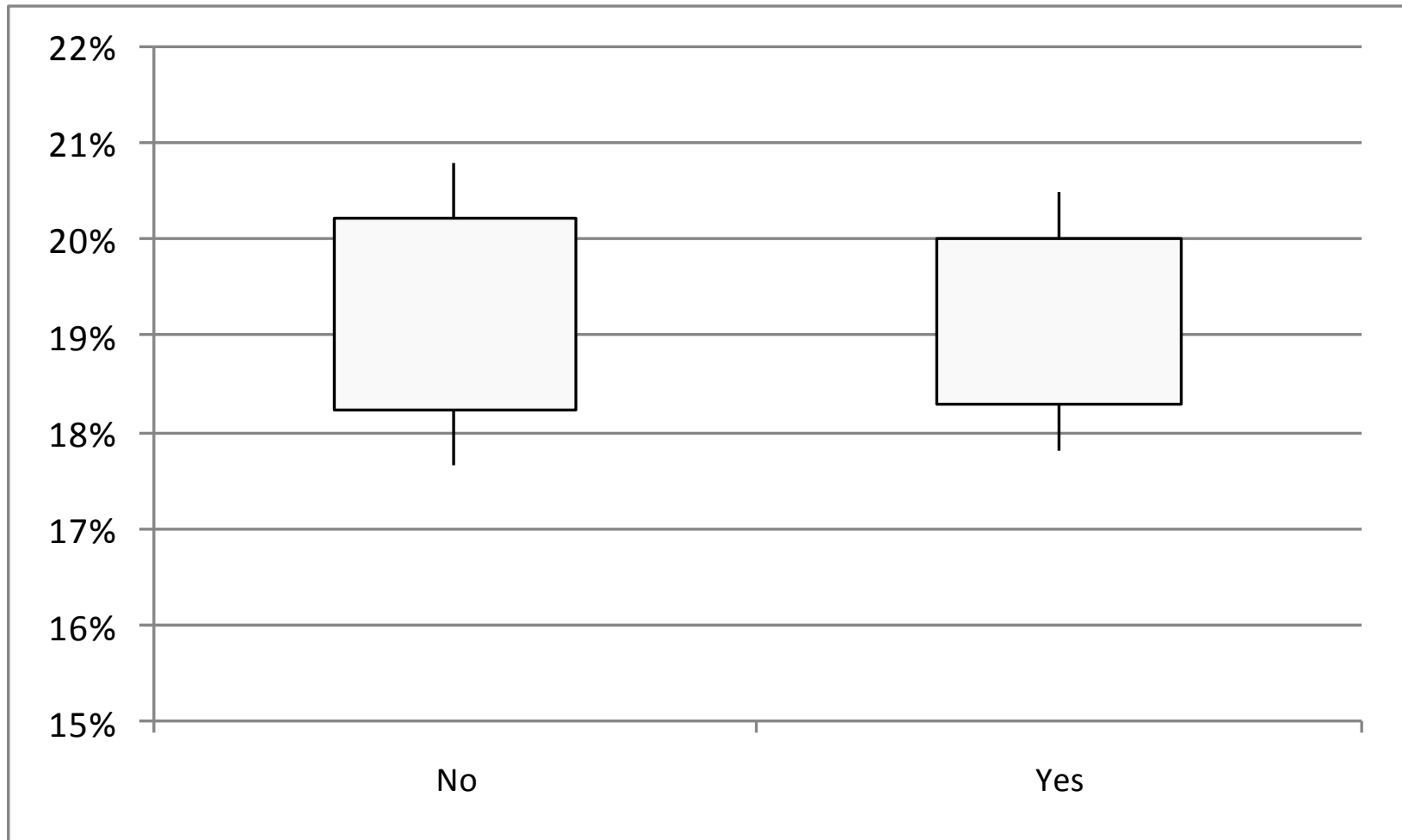
# Unexplained Ethnic Gaps

By part time



# Unexplained Ethnic Gaps

By formality



# Before jumping in to the gender gaps for the 18 countries in LA...

## Gender Wage Gap Decompositions (BOL, BRA, CHI, ECU, GUA, PRY, PER)

	Ethnicity	Ethnicity and age	Ethnicity, age and education	Ethnicity, age, education and children	Ethnicity, age, education, children and other with income	Ethnicity, age, education, children, other with income and urban	Ethnicity, age, education, children, other with income, urban and type of emp.	Ethnicity, age, education, children, other with income, urban, type of emp. And part-time	Ethnicity, age, education, children, other with income, urban, type of emp., part-time and formality
$\Delta$	15.49%	15.49%	15.49%	15.49%	15.49%	15.49%	15.49%	15.49%	15.49%
$\Delta O$	16.94%	16.62%	24.27%	24.17%	24.53%	26.22%	23.69%	33.44%	29.74%
$\Delta M$	0.00%	0.00%	0.29%	0.63%	0.75%	-1.05%	0.44%	-0.25%	1.34%
$\Delta F$	0.00%	0.00%	-0.09%	-0.33%	-0.82%	-0.90%	-1.90%	-4.68%	-6.24%
$\Delta X$	-1.45%	-1.13%	-8.98%	-8.99%	-8.97%	-8.79%	-6.75%	-13.02%	-9.36%
% Men in CS	100.00%	100.00%	99.38%	98.40%	95.58%	90.33%	82.60%	77.29%	71.47%
% Women in CS	100.00%	100.00%	99.77%	99.34%	98.45%	96.92%	93.66%	84.71%	80.36%



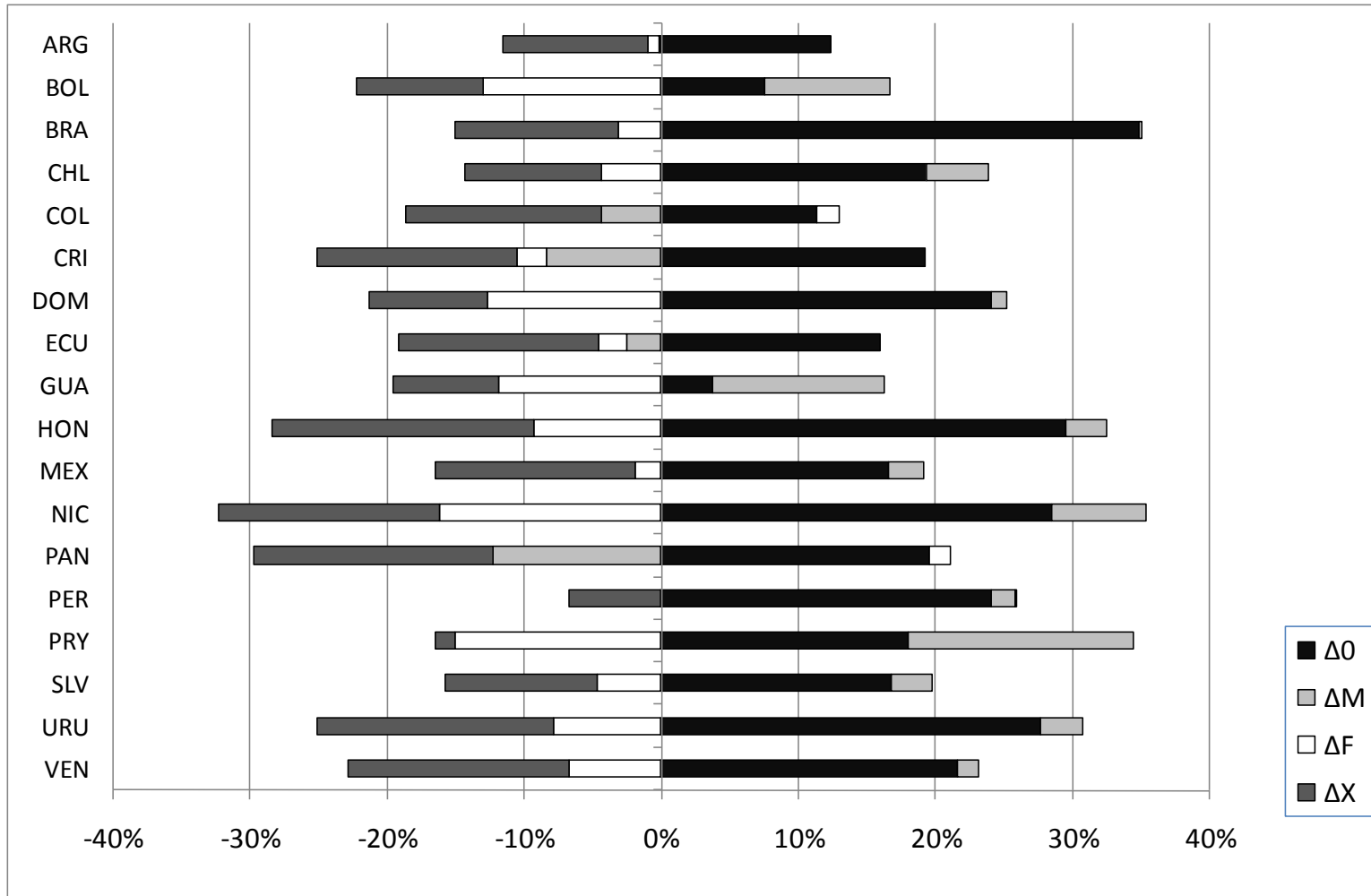
# Gender Wage Gap Decompositions (18 countries)

	Age	Age and education	Age, education and children	Age, education, children and other with income	Age, education, children, other with income and urban	Age, education, children, other with income, urban and type of emp.	Age, education, children, other with income, urban, type of emp. And part-time	Age, education, children, other with income, urban, type of emp., part-time and formality
$\Delta$	9.52%	9.52%	9.52%	9.52%	9.52%	9.52%	9.52%	9.52%
$\Delta 0$	8.44%	17.05%	16.93%	17.02%	18.23%	16.41%	25.29%	23.05%
$\Delta M$	0.00%	0.08%	0.20%	0.26%	-0.51%	0.29%	-0.15%	0.32%
$\Delta F$	0.00%	-0.03%	-0.11%	-0.30%	-0.43%	-0.74%	-2.12%	-3.00%
$\Delta X$	1.08%	-7.59%	-7.50%	-7.46%	-7.77%	-6.44%	-13.50%	-10.84%
% Men in CS	100.00%	99.82%	99.38%	97.91%	94.94%	88.66%	84.30%	79.78%
% Women in CS	100.00%	99.94%	99.79%	99.43%	98.49%	96.24%	89.76%	86.33%

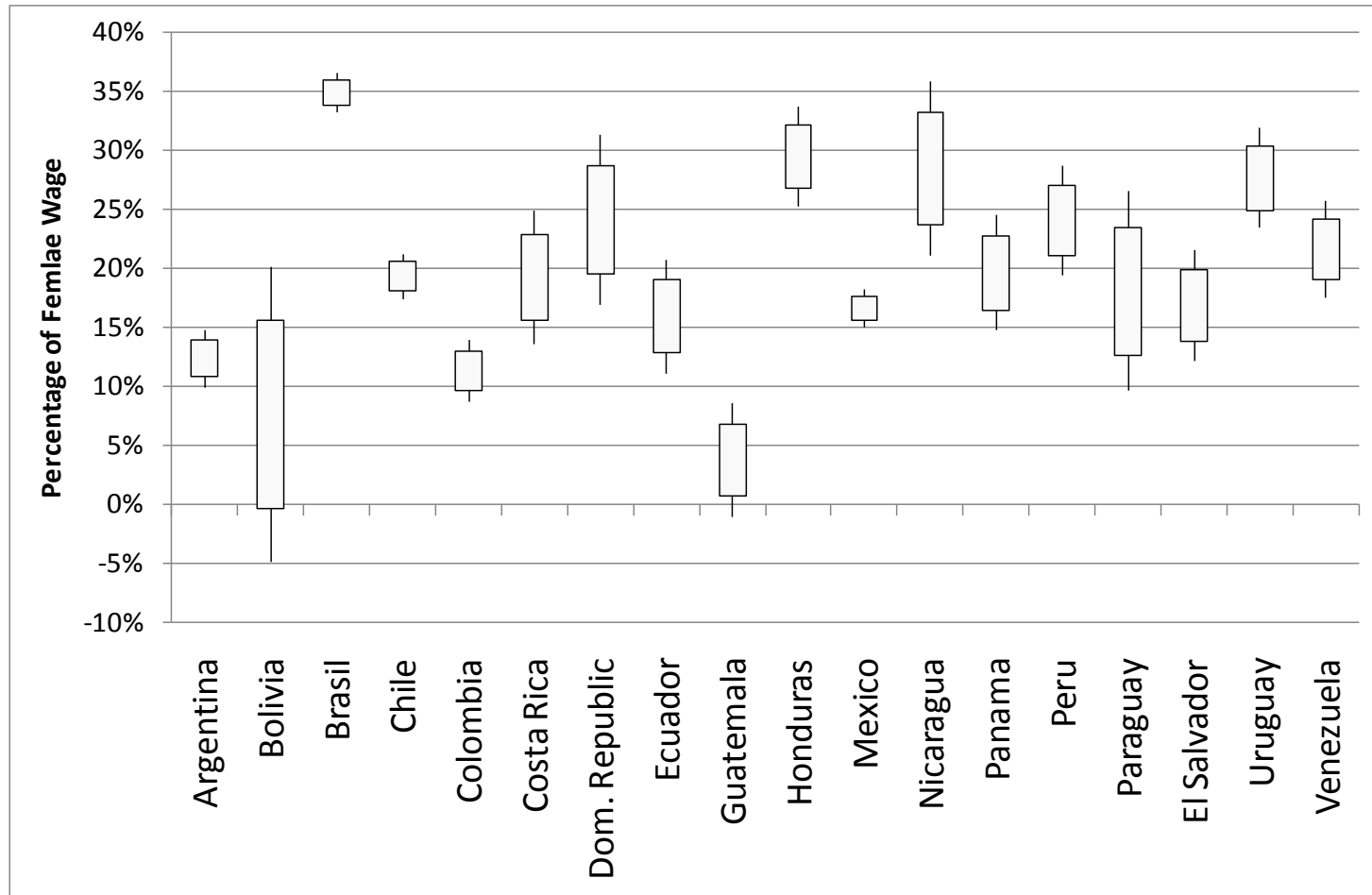
# Unexplained Gender Wage Gaps by country

Country	$\Delta$	$\Delta 0$	
			Age, education, children, other with income, urban, type of emp., part-time and formality
		Age and education	
Argentina	0.7%	14.6%	12.3%
Bolivia	-5.5%	-1.8%	7.6%
Brasil	20.0%	29.4%	34.9%
Chile	9.5%	18.1%	19.3%
Colombia	-5.7%	7.0%	11.3%
Costa Rica	-5.9%	13.6%	19.2%
Dominican Republic	4.0%	20.4%	24.1%
Ecuador	-3.2%	16.4%	15.9%
Guatemala	-3.3%	0.3%	3.7%
Honduras	4.1%	15.7%	29.5%
Mexico	2.6%	7.8%	16.6%
Nicaragua	3.1%	22.8%	28.5%
Panama	-8.6%	13.6%	19.6%
Peru	19.3%	19.0%	24.0%
Paraguay	18.0%	21.9%	18.1%
El Salvador	4.0%	10.7%	16.8%
Uruguay	5.6%	26.3%	27.6%
Venezuela	0.4%	13.9%	21.6%
<b>Pooled Data</b>	<b>9.52%</b>	<b>17.05%</b>	<b>23.05%</b>

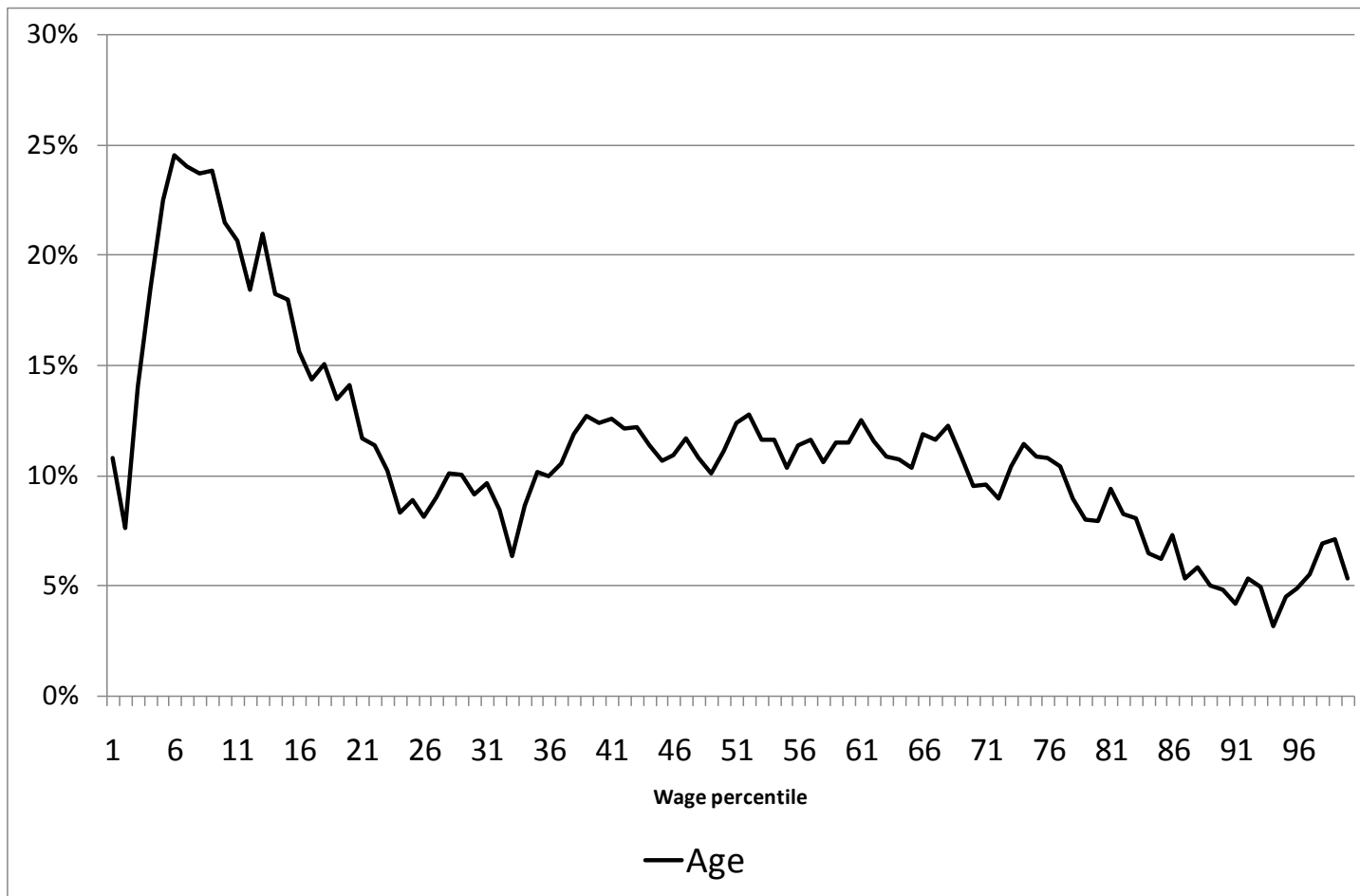
# Gender Wage gap Decompositions by Country



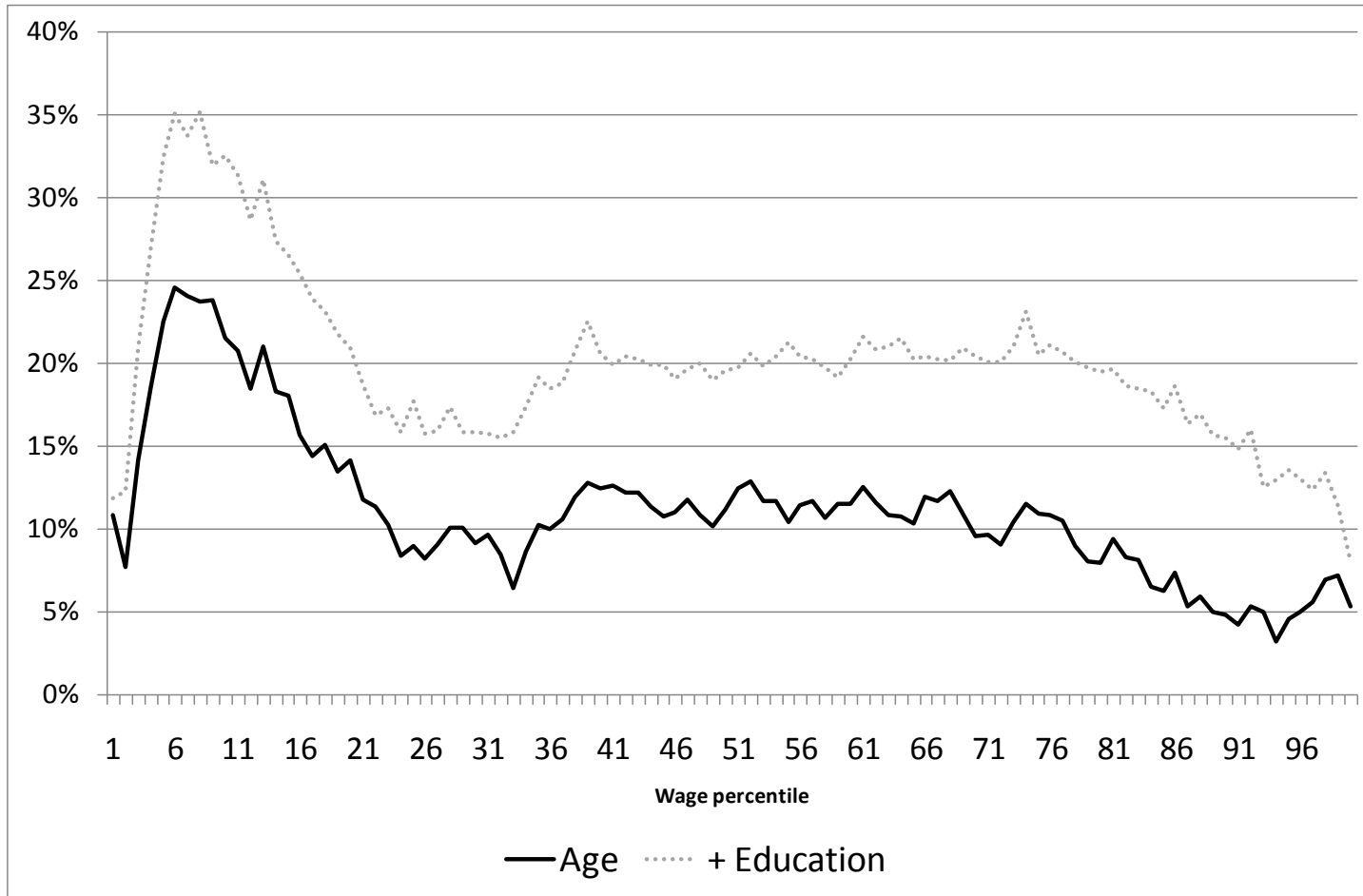
# Confidence Intervals for the Unexplained Gender Gap



# Unexplained Gender Wage Gaps by Percentiles of the Wage Distribution

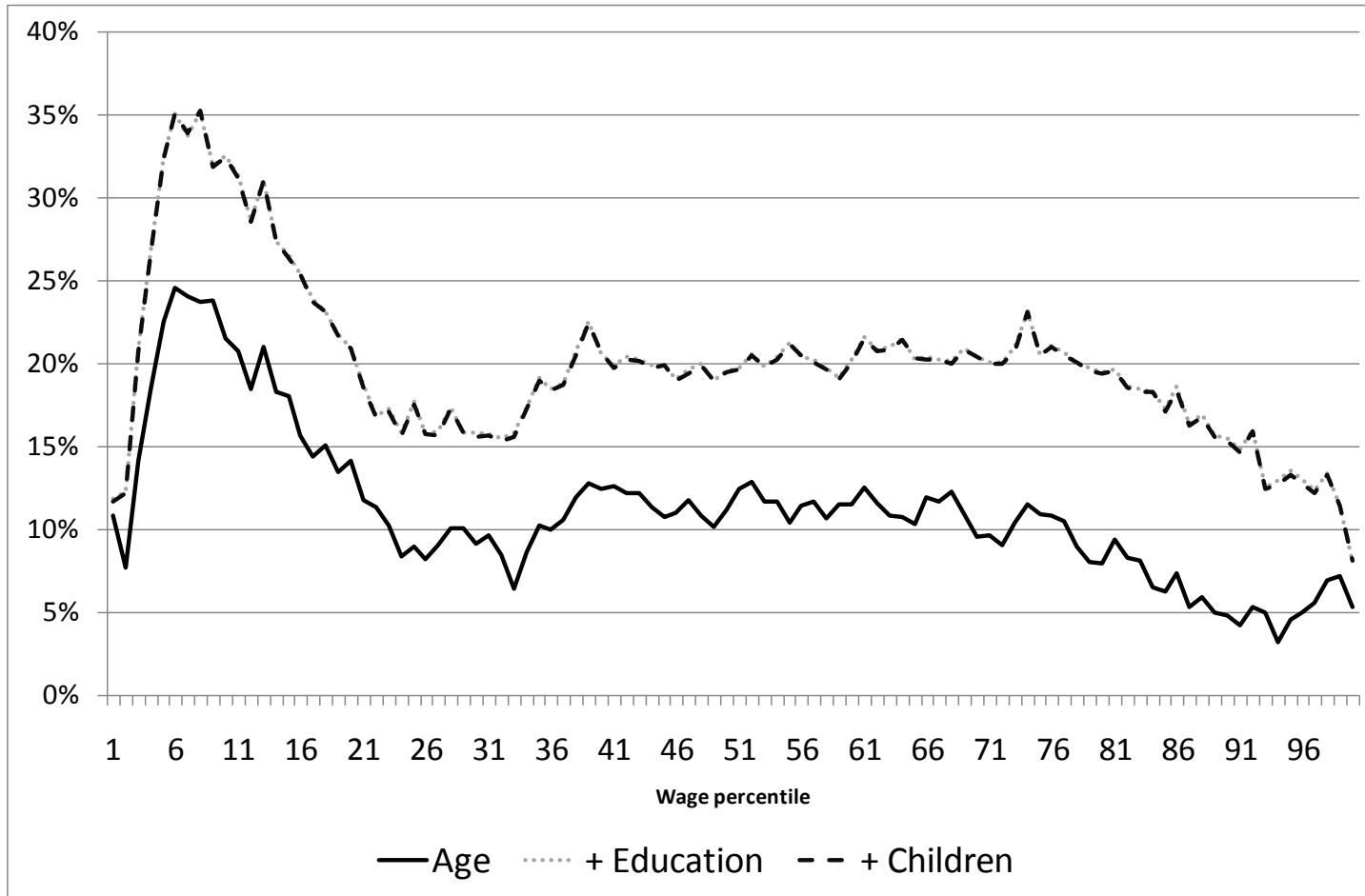


# Unexplained Gender Wage Gaps by Percentiles of the Wage Distribution

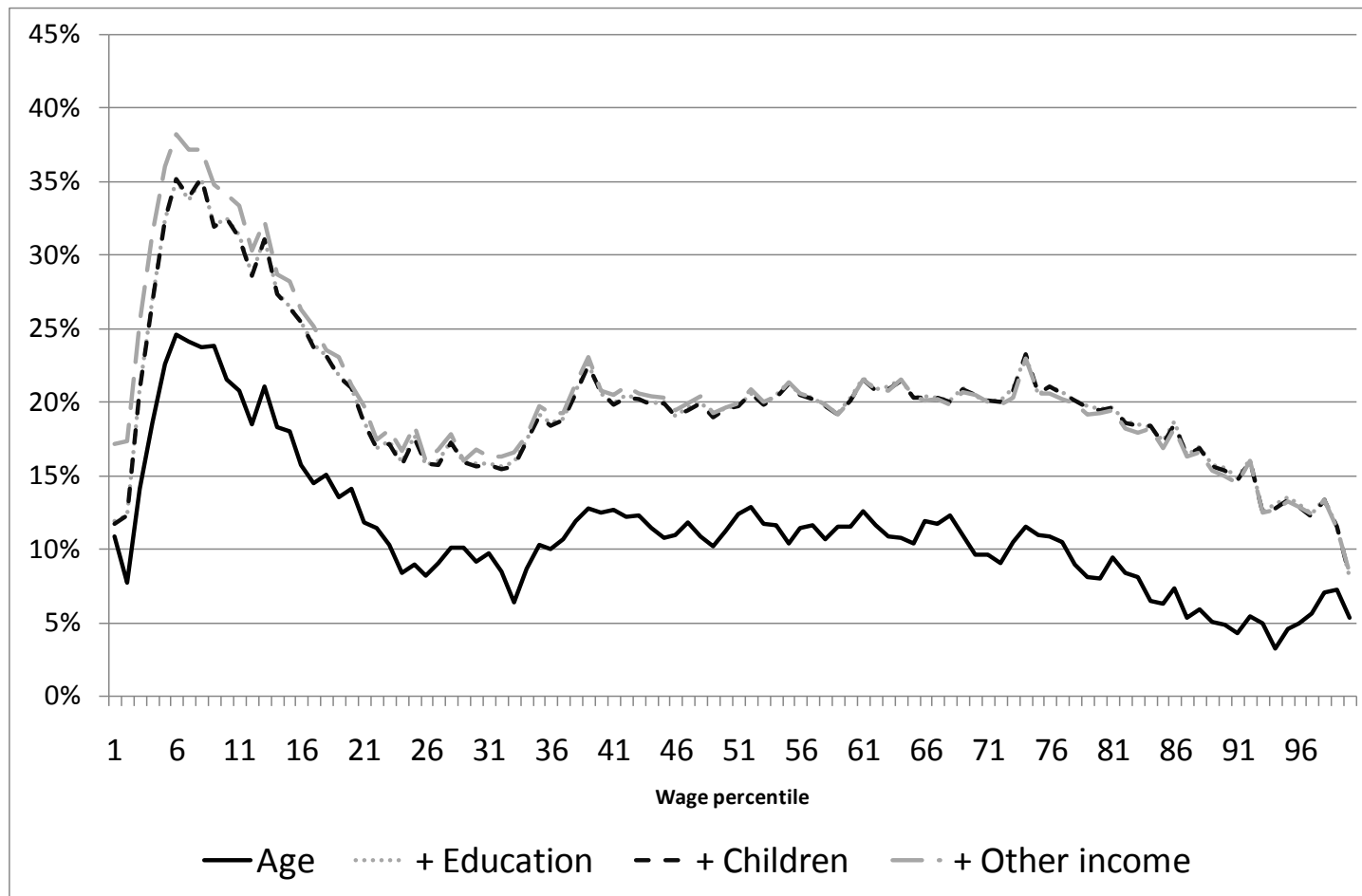


Females have more schooling, but they do not earn more

# Unexplained Gender Wage Gaps by Percentiles of the Wage Distribution

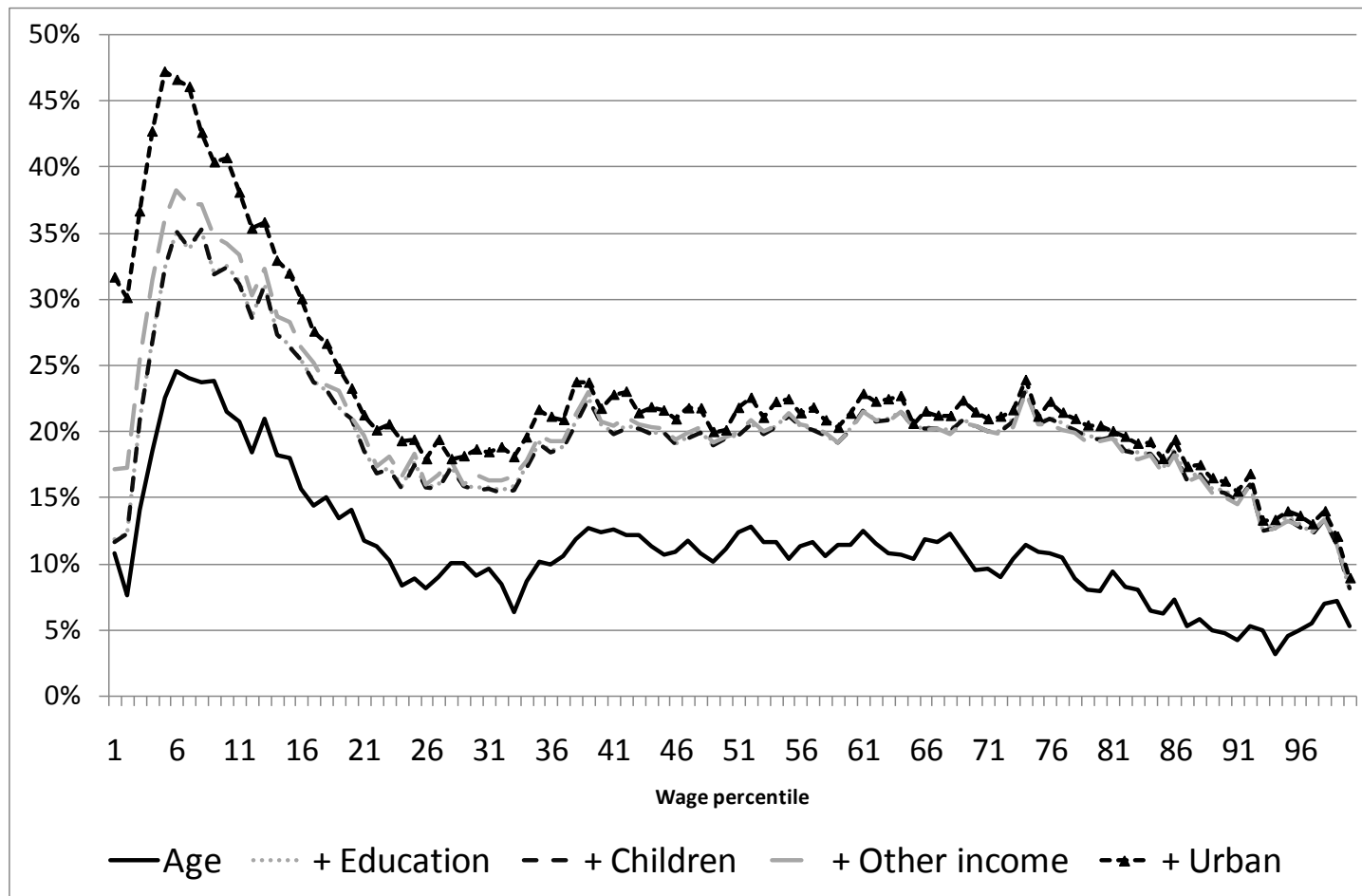


# Unexplained Gender Wage Gaps by Percentiles of the Wage Distribution

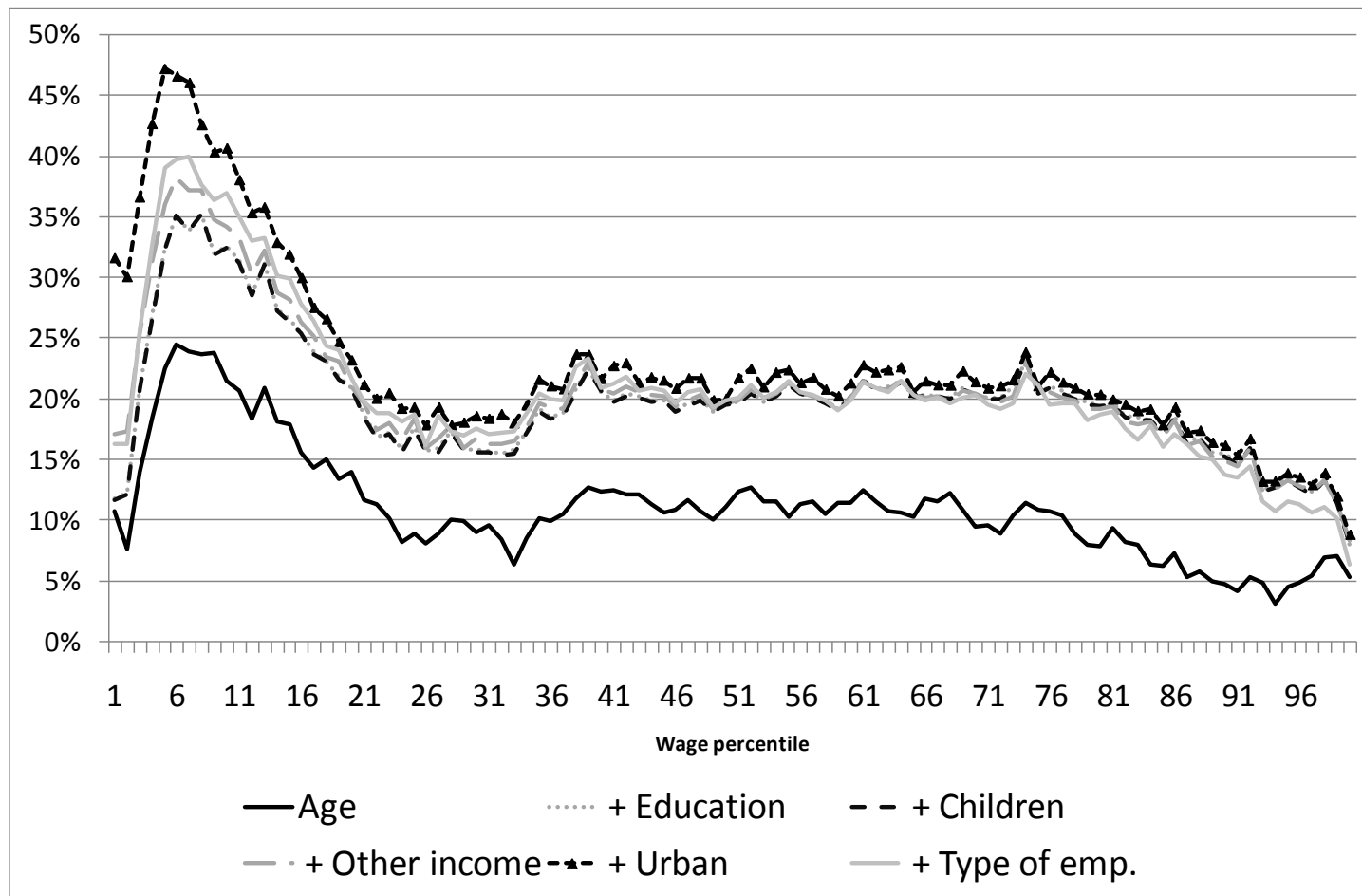




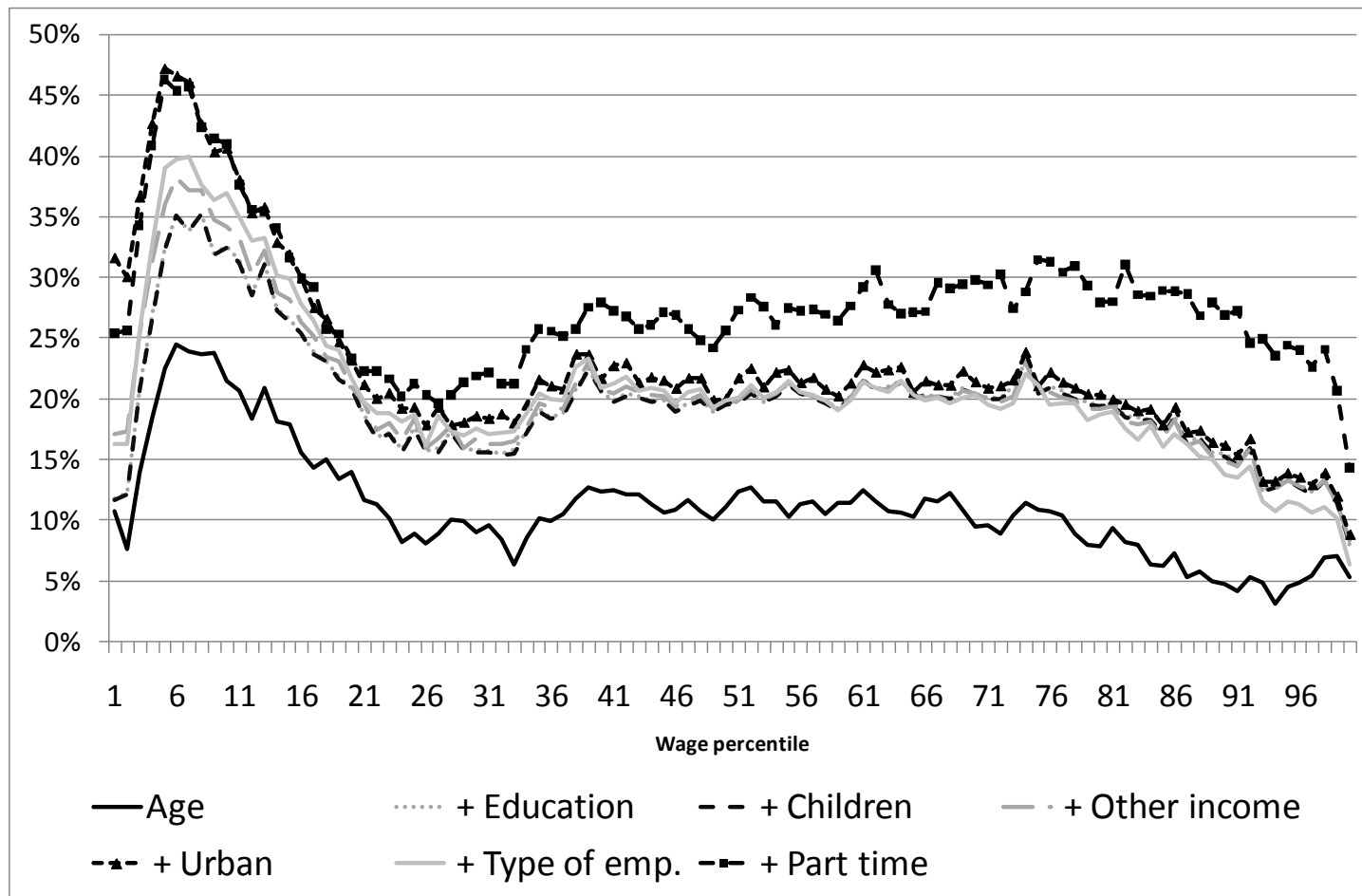
# Unexplained Gender Wage Gaps by Percentiles of the Wage Distribution



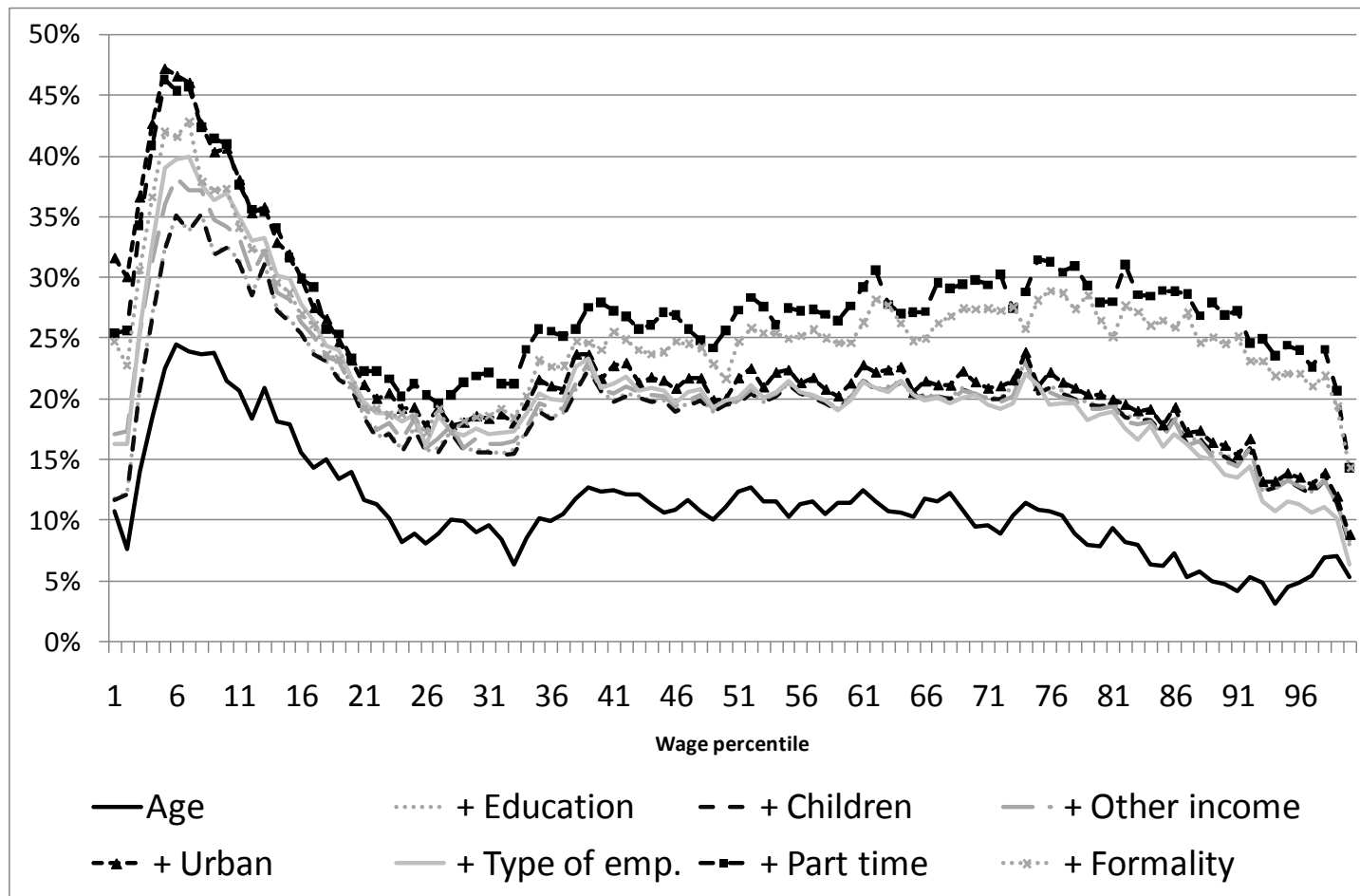
# Unexplained Gender Wage Gaps by Percentiles of the Wage Distribution



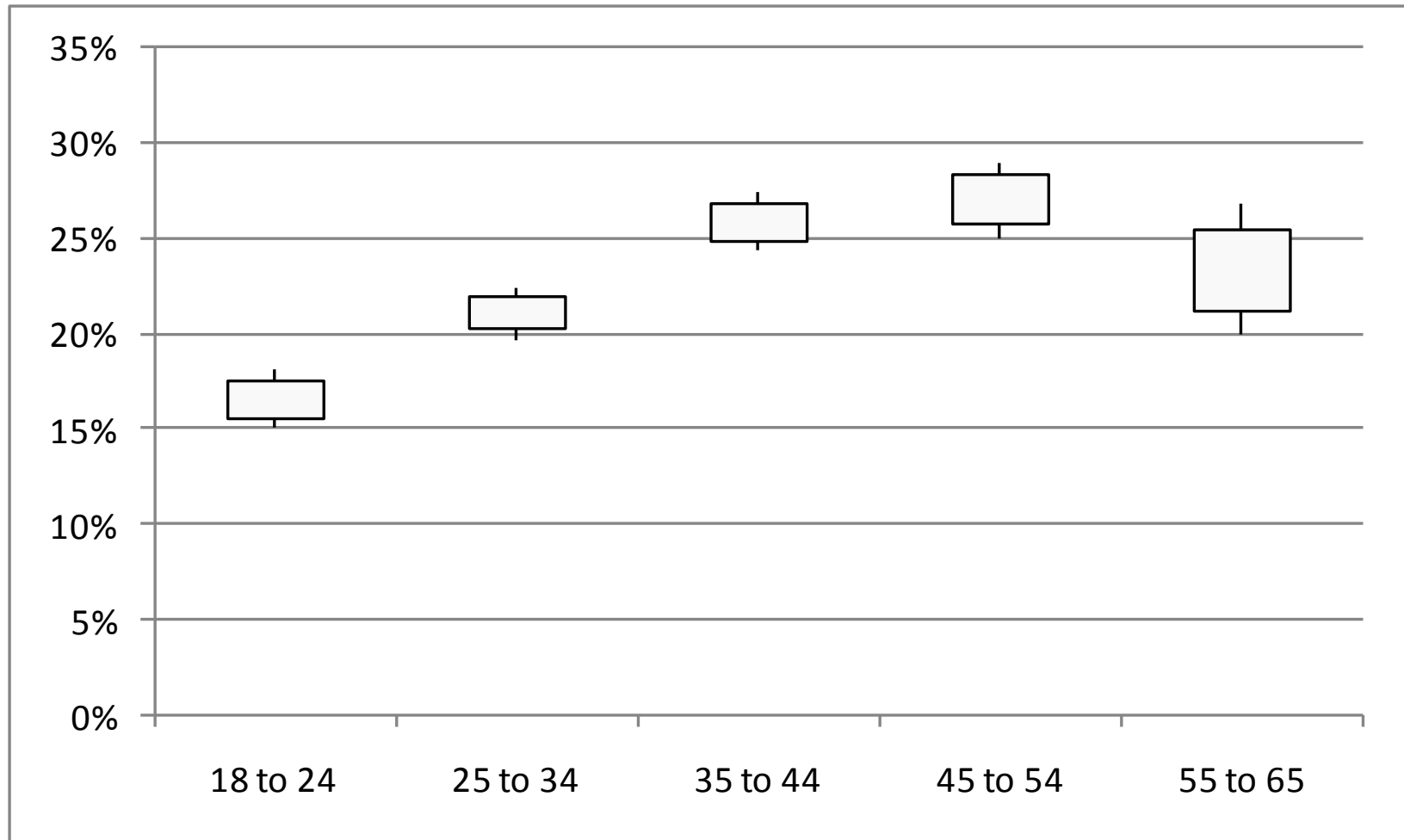
# Unexplained Gender Wage Gaps by Percentiles of the Wage Distribution



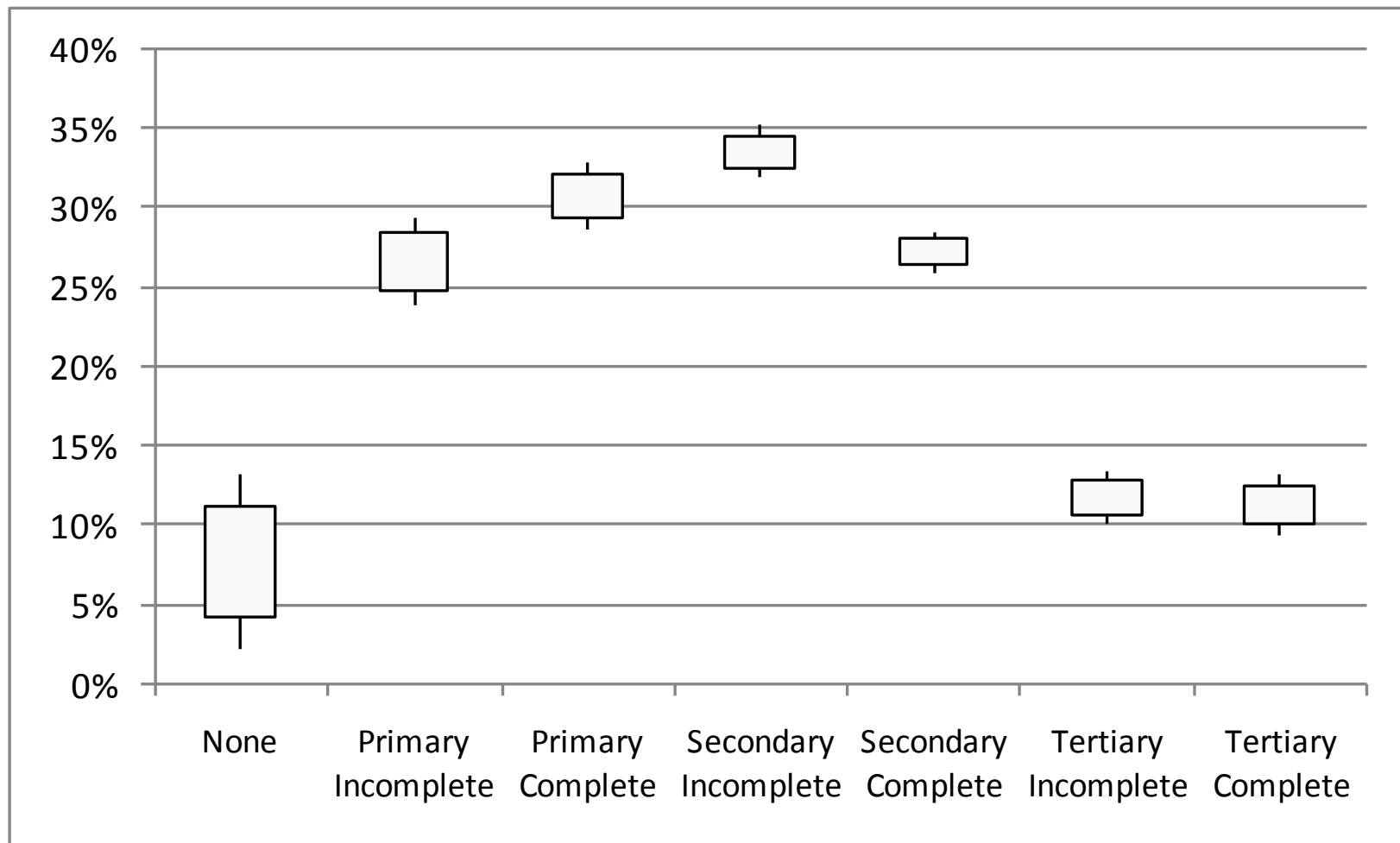
# Unexplained Gender Wage Gaps by Percentiles of the Wage Distribution



# Unexplained Gender Gaps By Age

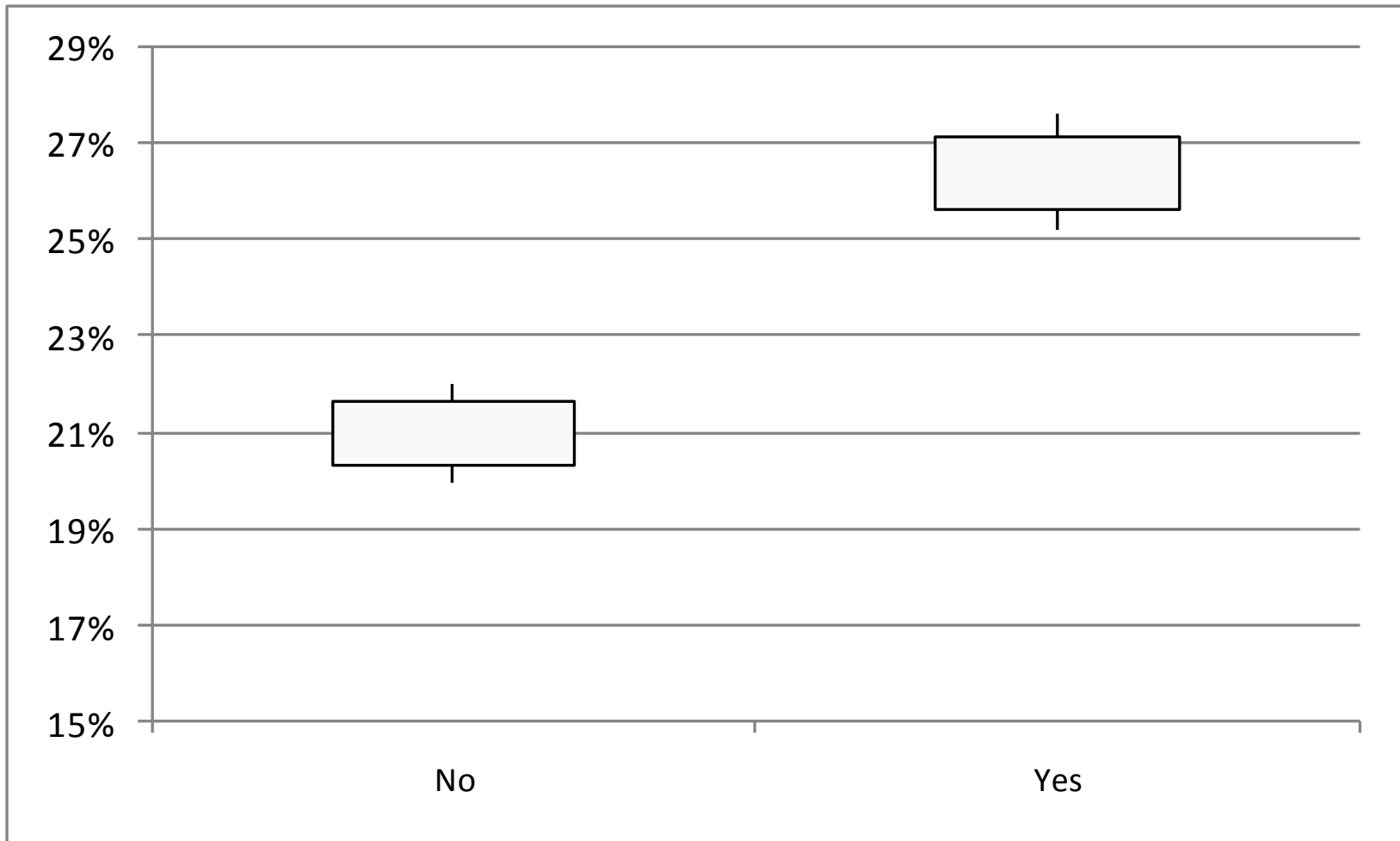


# Unexplained Gender Gaps By Education



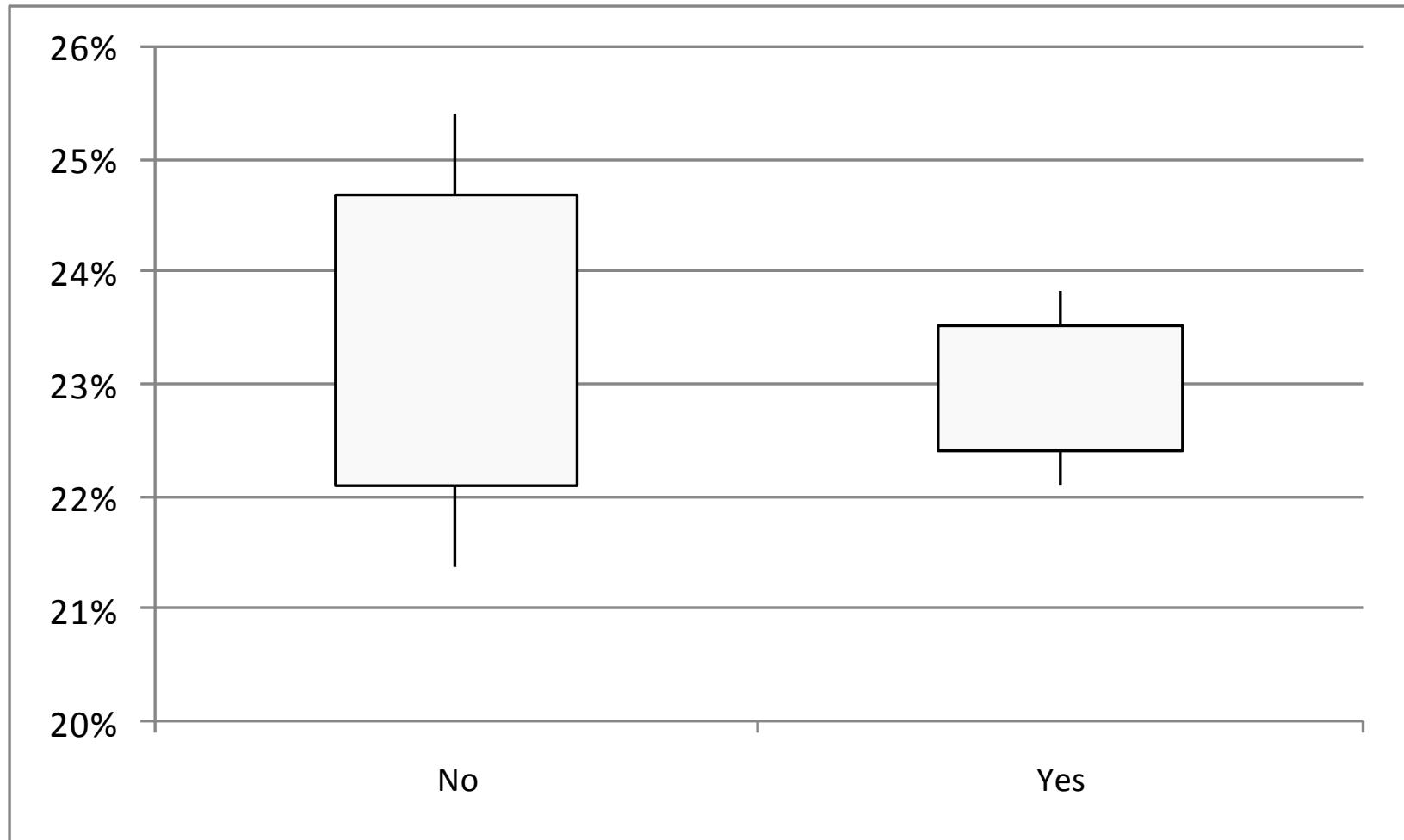
# Unexplained Gender Gaps

## By presence of kids in the household



# Unexplained Gender Gaps

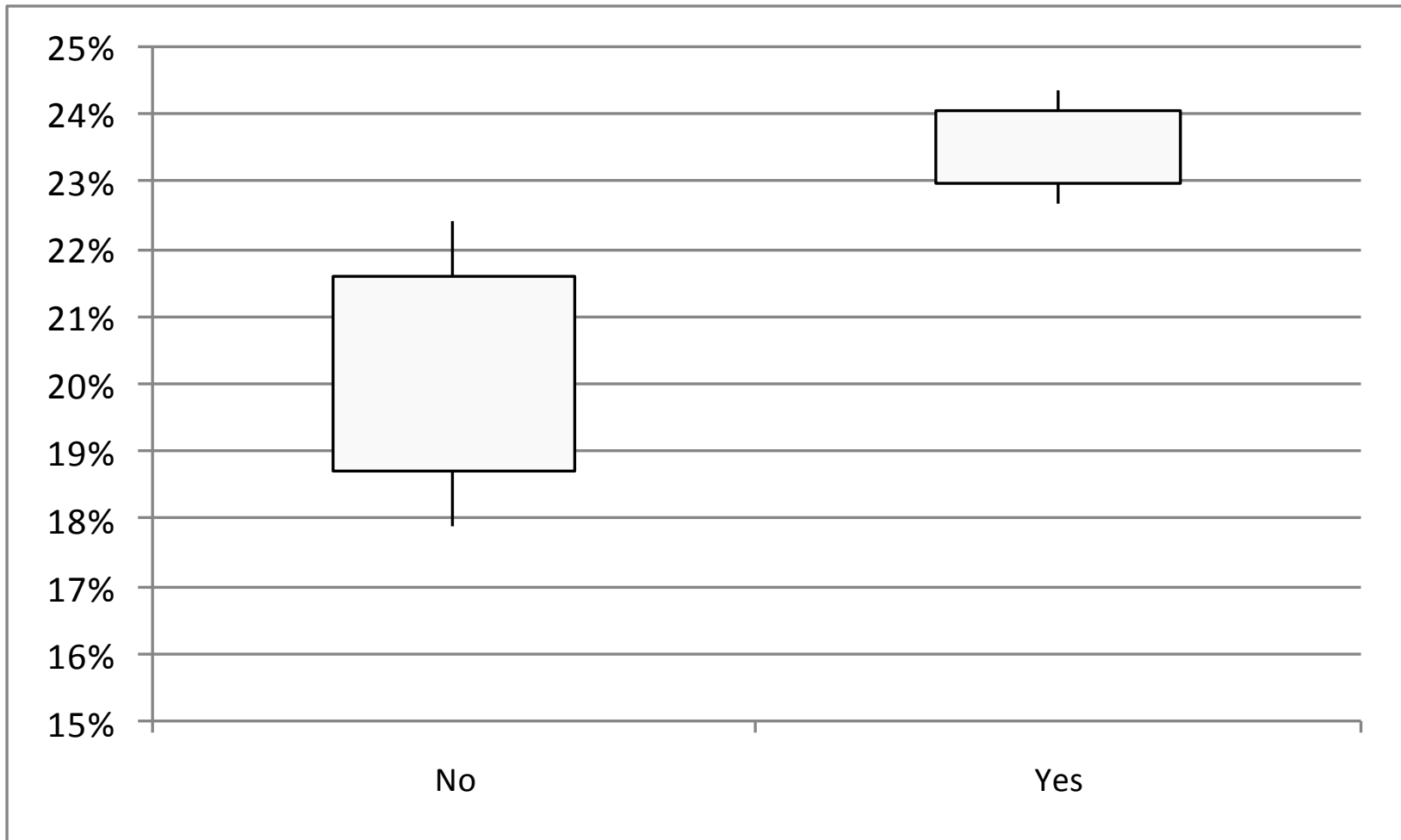
By presence of other income earner in the household





# Unexplained Gender Gaps

## By Zone (urban)



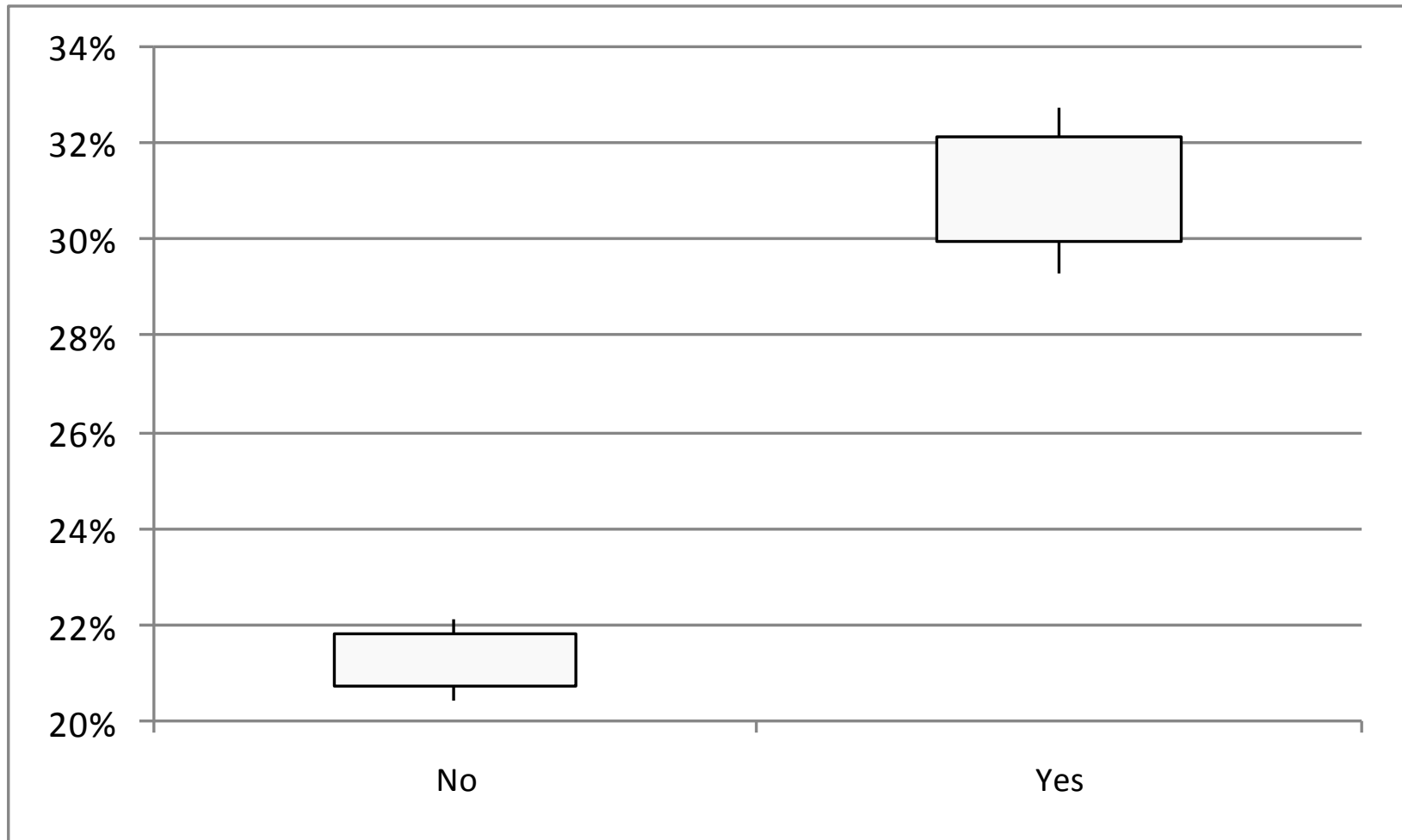
# Unexplained Gender Gaps

By type of employment



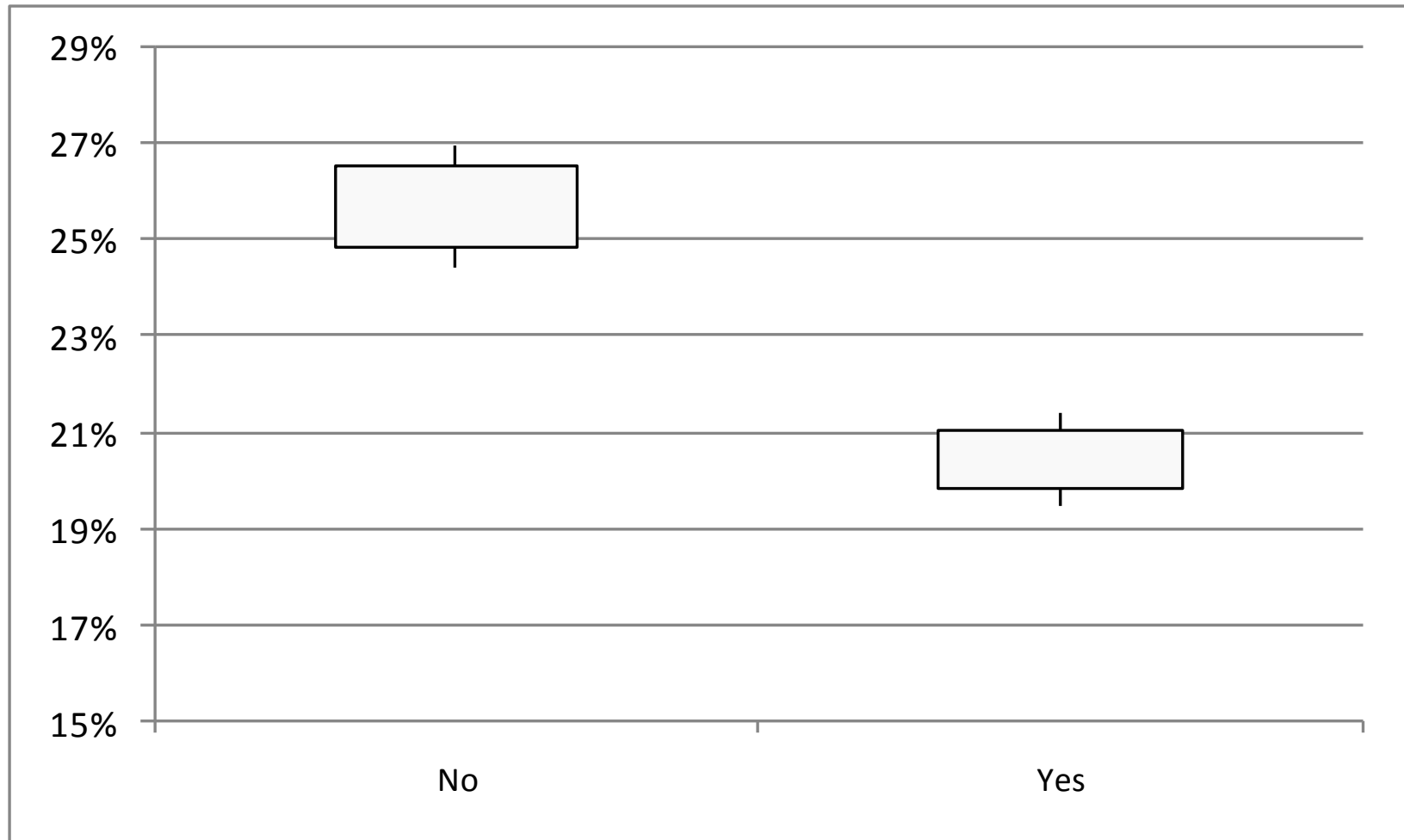
# Unexplained Gender Gaps

By part-time



# Unexplained Gender Gaps

By formality



# The Role of Occupational and Sector Segregation

# List of occupations and sectors for main activity

## » Occupations (ocupa\_ci)

1. Professionals and technicians
2. Directors and upper management
3. Administrative personnel and intermediary level
4. Merchants and sellers
5. Service workers
6. Agricultural workers and similar
7. Non-agricultural blue-collars, drivers and similar
8. Armed forces
9. Occupations not classified above

## » Economic Sectors (rama\_ci)

1. Agriculture, hunting, fishing
2. Mining
3. Manufacturing industries
4. Electricity, gas and water
5. Housing
6. Commerce, restaurants and hotels
7. Transportation and storage
8. Financial services, insurance, real estate
9. Social, communal and personal services

# Gender: Reducing occupational segregation (to zero) would not necessarily reduce the wage gap

	Age	+ education	+ children	+ other with income	+ urban	+ type of empl.	+ part-time	+ formality
$\Delta$	11.05%	11.05%	11.05%	11.05%	11.05%	11.05%	11.05%	11.05%
$\Delta O$	9.45%	17.61%	17.56%	17.69%	18.88%	17.00%	26.65%	24.36%
$\Delta M$	0.00%	0.06%	0.16%	0.23%	-0.45%	0.37%	0.16%	0.61%
$\Delta F$	0.00%	-0.03%	-0.08%	-0.26%	-0.43%	-0.83%	-2.23%	-3.07%
$\Delta X$	1.61%	-6.60%	-6.58%	-6.61%	-6.94%	-5.49%	-13.52%	-10.85%
% Men in CS	100.00%	99.87%	99.52%	98.49%	95.99%	90.59%	87.04%	82.90%
% Women in CS	100.00%	99.95%	99.81%	99.52%	98.75%	96.91%	91.33%	88.17%

	Occupation	+ age	+ education	+ children	+ other with income	+ urban	+ type of empl.	+ part-time	+ formality
$\Delta$	11.05%	11.05%	11.05%	11.05%	11.05%	11.05%	11.05%	11.05%	11.05%
$\Delta O$	18.08%	18.28%	18.12%	17.54%	17.04%	16.95%	16.46%	22.62%	21.15%
$\Delta M$	0.01%	0.43%	0.75%	0.11%	-0.57%	-1.78%	-0.74%	-0.27%	-0.37%
$\Delta F$	0.00%	-0.05%	-0.40%	-0.67%	-1.20%	-0.43%	-0.88%	-3.54%	-2.83%
$\Delta X$	-7.04%	-7.60%	-7.42%	-5.92%	-4.21%	-3.69%	-3.79%	-7.76%	-6.90%
% Men in CS	100.00%	98.60%	93.74%	90.27%	83.51%	77.89%	68.44%	63.42%	56.92%
% Women in CS	100.00%	99.90%	98.46%	97.11%	94.58%	90.91%	85.50%	75.14%	68.84%

# Gender: Reducing sector segregation (to zero) would increase the wage gap

	Age	+ education	+ children	+ other with income	+ urban	+ type of empl.	+ part-time	+ formality
$\Delta$	11.05%	11.05%	11.05%	11.05%	11.05%	11.05%	11.05%	11.05%
$\Delta 0$	9.45%	17.61%	17.56%	17.69%	18.88%	17.00%	26.65%	24.36%
$\Delta M$	0.00%	0.06%	0.16%	0.23%	-0.45%	0.37%	0.16%	0.61%
$\Delta F$	0.00%	-0.03%	-0.08%	-0.26%	-0.43%	-0.83%	-2.23%	-3.07%
$\Delta X$	1.61%	-6.60%	-6.58%	-6.61%	-6.94%	-5.49%	-13.52%	-10.85%
% Men in CS	100.00%	99.87%	99.52%	98.49%	95.99%	90.59%	87.04%	82.90%
% Women in CS	100.00%	99.95%	99.81%	99.52%	98.75%	96.91%	91.33%	88.17%

	Sector	+ age	+ education	+ children	+ other with income	+ urban	+ type of empl.	+ part-time	+ formality
$\Delta$	11.05%	11.05%	11.05%	11.05%	11.05%	11.05%	11.05%	11.05%	11.05%
$\Delta 0$	27.74%	28.23%	24.95%	24.39%	24.32%	24.36%	22.16%	28.81%	26.49%
$\Delta M$	0.00%	0.20%	-1.35%	-2.37%	-4.08%	-5.47%	-4.25%	-4.70%	-5.75%
$\Delta F$	0.00%	-0.02%	-0.28%	-0.35%	-0.54%	0.25%	0.10%	-2.15%	-1.39%
$\Delta X$	-16.69%	-17.36%	-12.27%	-10.62%	-8.66%	-8.10%	-6.96%	-10.92%	-8.30%
% Men in CS	100.00%	97.59%	86.91%	82.55%	75.24%	69.90%	60.70%	56.26%	50.61%
% Women in CS	100.00%	99.96%	98.63%	97.28%	94.99%	91.65%	85.99%	76.47%	70.29%



# Ethnicity: Reducing occupational segregation (to zero) would reduce the wage gap

	Gender	+ age	+ education	+ children	+ other with income	+ urban	+ type of empl.	+ part-time	+ formality
$\Delta$	39.75%	39.75%	39.75%	39.75%	39.75%	39.75%	39.75%	39.75%	39.75%
$\Delta 0$	38.86%	38.43%	28.56%	27.56%	26.79%	25.66%	23.06%	23.86%	19.98%
$\Delta M$	0.00%	0.00%	0.76%	1.62%	2.96%	3.38%	7.15%	8.92%	11.57%
$\Delta F$	0.00%	0.00%	-0.19%	-0.46%	-0.92%	-0.85%	-1.69%	-3.16%	-3.60%
$\Delta X$	0.89%	1.31%	10.62%	11.03%	10.91%	11.56%	11.23%	10.13%	11.80%
% Non Minority in CS	100.00%	100.00%	98.99%	97.99%	96.36%	93.95%	89.14%	86.07%	80.71%
% Minority in CS	100.00%	100.00%	99.71%	99.27%	98.27%	96.17%	92.32%	88.30%	83.70%

	Occupation	+ gender	+ age	+ education	+ children	+ other with income	+ urban	+ type of empl.	+ part-time	+ formality
$\Delta$	39.75%	39.75%	39.75%	39.75%	39.75%	39.75%	39.75%	39.75%	39.75%	39.75%
$\Delta 0$	25.91%	26.57%	25.95%	18.48%	18.54%	18.02%	17.99%	16.55%	16.77%	14.31%
$\Delta M$	0.01%	0.01%	0.81%	3.85%	5.86%	8.44%	8.40%	12.26%	14.92%	17.45%
$\Delta F$	0.00%	0.00%	-0.15%	-1.12%	-1.65%	-1.99%	-1.24%	-2.20%	-4.60%	-4.43%
$\Delta X$	13.83%	13.17%	13.14%	18.53%	17.00%	15.27%	14.59%	13.14%	12.66%	12.42%
% Non Minority in CS	99.99%	99.99%	99.10%	94.22%	90.82%	86.26%	81.99%	75.48%	71.37%	64.37%
% Minority in CS	100.00%	100.00%	99.67%	97.40%	95.11%	91.10%	86.46%	79.78%	74.59%	67.35%

# Ethnicity: Reducing sector segregation (to zero) would reduce the wage gap

	Gender	+ age	+ education	+ children	+ other with income	+ urban	+ type of empl.	+ part-time	+ formality
$\Delta$	39.75%	39.75%	39.75%	39.75%	39.75%	39.75%	39.75%	39.75%	39.75%
$\Delta 0$	38.86%	38.43%	28.56%	27.56%	26.79%	25.66%	23.06%	23.86%	19.98%
$\Delta M$	0.00%	0.00%	0.76%	1.62%	2.96%	3.38%	7.15%	8.92%	11.57%
$\Delta F$	0.00%	0.00%	-0.19%	-0.46%	-0.92%	-0.85%	-1.69%	-3.16%	-3.60%
$\Delta X$	0.89%	1.31%	10.62%	11.03%	10.91%	11.56%	11.23%	10.13%	11.80%
% Non Minority in CS	100.00%	100.00%	98.99%	97.99%	96.36%	93.95%	89.14%	86.07%	80.71%
% Minority in CS	100.00%	100.00%	99.71%	99.27%	98.27%	96.17%	92.32%	88.30%	83.70%

	Sector	+ gender	+ age	+ education	+ children	+ other with income	+ urban	+ type of empl.	+ part-time	+ formality
$\Delta$	39.75%	39.75%	39.75%	39.75%	39.75%	39.75%	39.75%	39.75%	39.75%	39.75%
$\Delta 0$	34.01%	34.20%	33.00%	24.17%	23.63%	23.02%	23.08%	20.13%	20.51%	17.63%
$\Delta M$	0.00%	0.00%	0.71%	4.67%	6.20%	7.82%	7.21%	12.16%	14.42%	16.76%
$\Delta F$	0.00%	0.00%	-0.17%	-1.37%	-1.82%	-2.12%	-1.47%	-2.37%	-4.64%	-4.55%
$\Delta X$	5.74%	5.55%	6.21%	12.28%	11.73%	11.02%	10.93%	9.83%	9.45%	9.91%
% Non Minority in CS	100.00%	99.99%	98.91%	93.26%	89.63%	85.31%	81.12%	73.82%	69.92%	63.02%
% Minority in CS	100.00%	100.00%	99.66%	96.92%	94.37%	90.00%	85.29%	77.76%	72.85%	65.40%

## 3. Conclusions

Methodological Advantages/Disadvantages  
Messages

# Advantages/Disadvantages

- ☺ It is not necessary to estimate earnings equations (no functional form assumption)
- ☺ Better assessment. The traditional approach seems to deliver biased results when the differences in supports are not taken into account
- ☺ Once the matching has been done, it is straightforward to:
  - » Explore the distribution of the unexplained wage gap
  - » Explore not only wage gaps but also gaps for other labor market outcomes (participation, unemployment, unemployment spells, segregation)
- ☹ Curse of Dimensionality. The method does not allow us to use too many explanatory variables.
- ☹ It does not take into account selection into the labor markets

# Summary

## Gender wage gaps

- » Between 8% and 25%.
- » Higher gaps among those with lower income, head of households, secondary incomplete and out of the capital cities
- » Some “CEO effects” (in some countries)
- » Somewhat surprising segregation effects

## Ethnic wage gaps

- » Between 20% and 40%.
- » Higher gaps both at the top and the bottom of the wage distribution, among those head of households, with no education, out of the capital cities and older.
- » Stronger “CEO effects”

## 2 Messages

For ethnicity: education, education, education

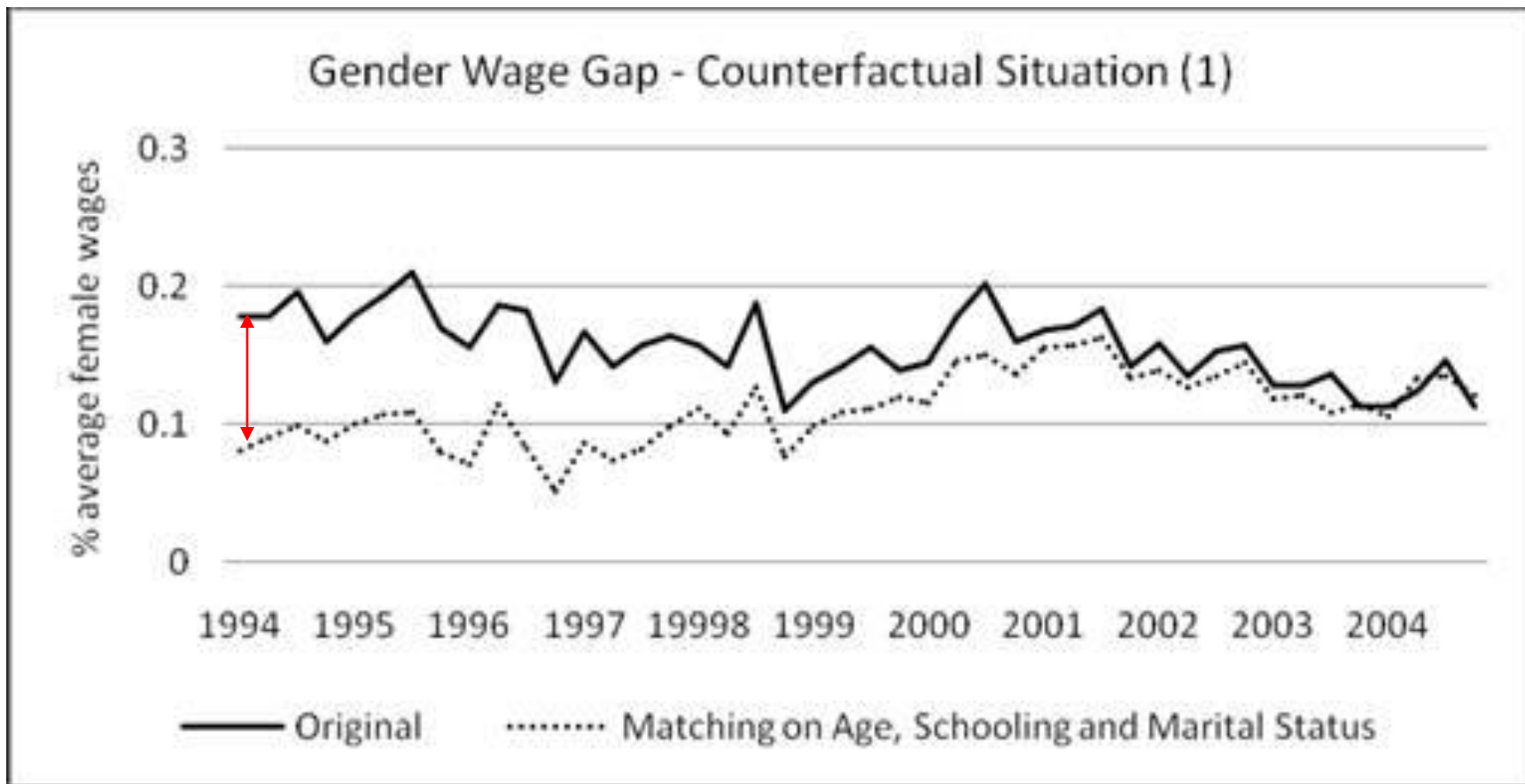
For gender: segregation is probably a wrong target

- » Education is the most important driver of ethnic wage gaps
  - » Both, in the common support (distribution) and in the uncommon part (access barriers)
  - » And this is specially more pronounced at the lowest income percentiles
- » Segregation, surprisingly, seems to be a factor that does not contribute to the gender wage gaps (it is actually the other way around)
  - » Evidence for Mexico suggests that this is a relatively recent phenomenon

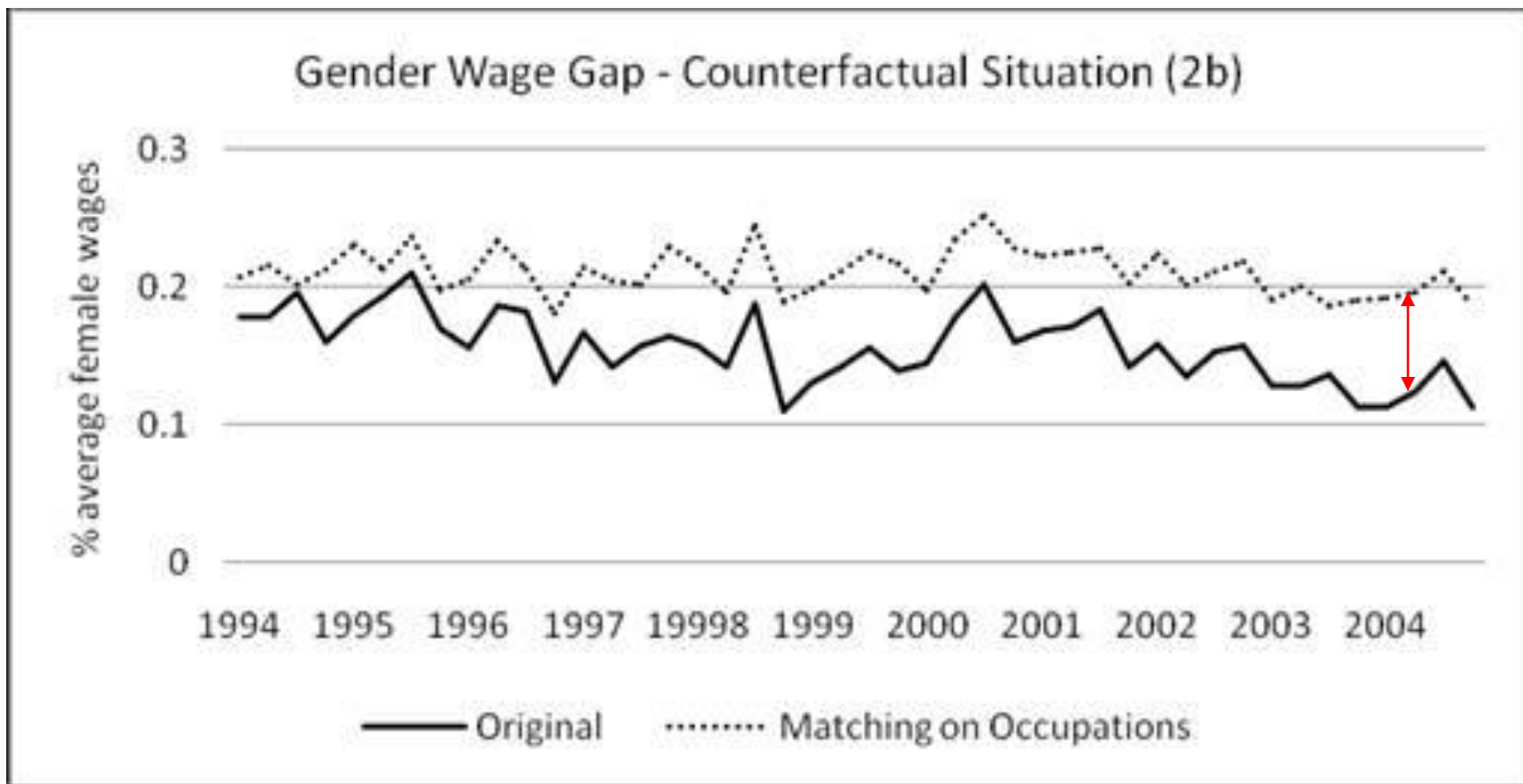


# The changing role of segregation (Mexico 1994-2004)





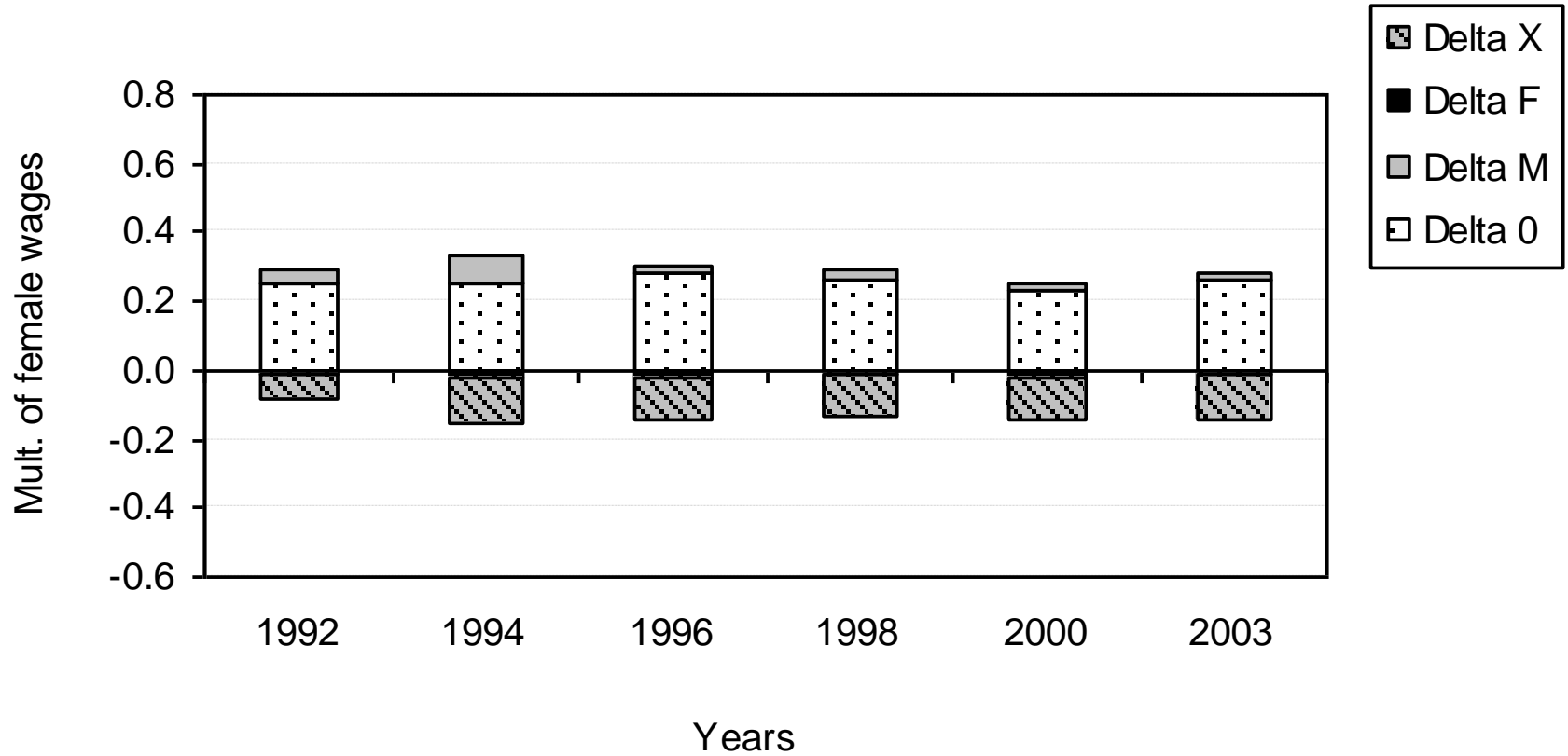
Source: Calónico and Ñopo (forthcoming)



Source: Calónico and Ñopo (forthcoming)

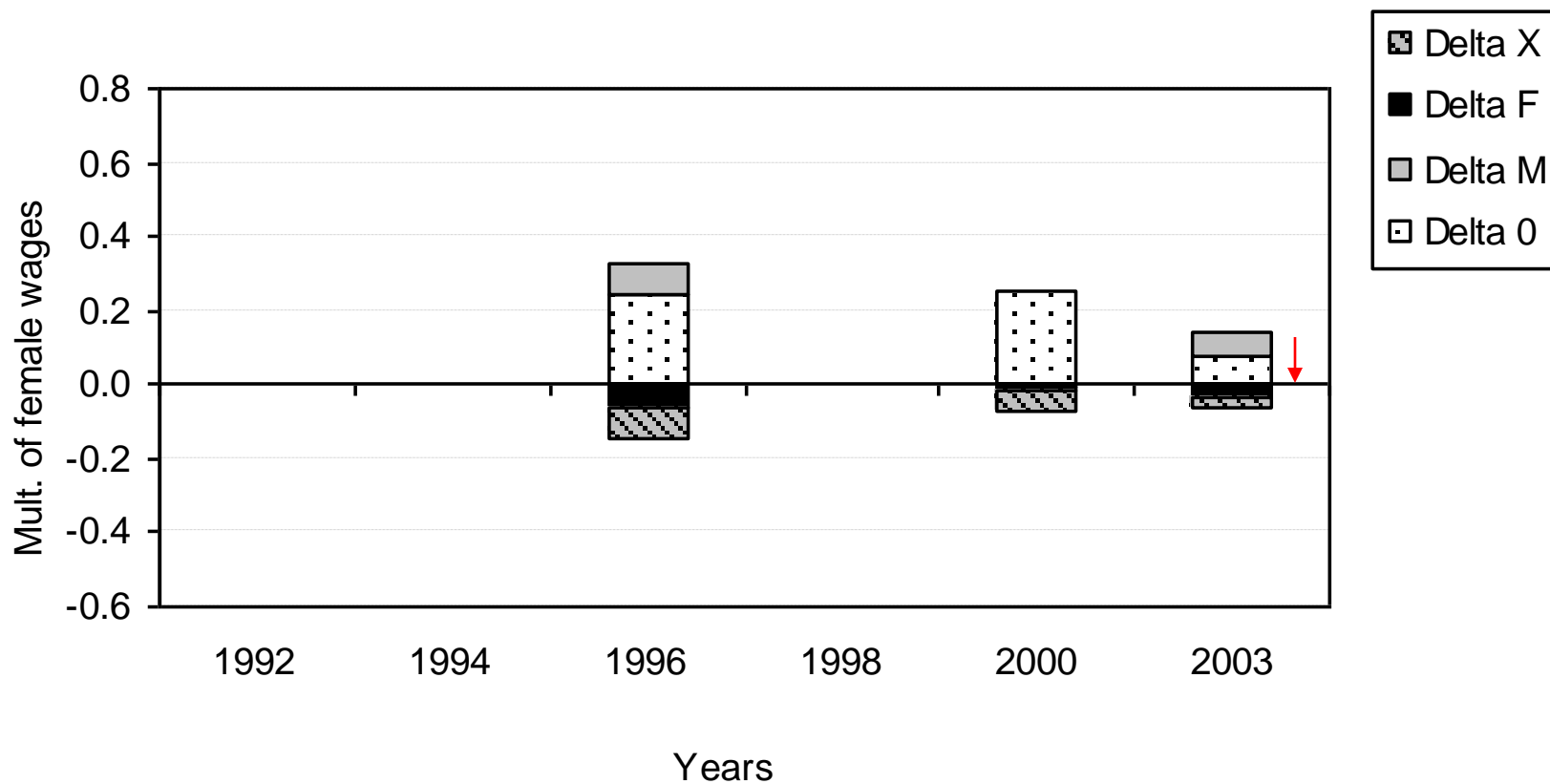
# The role of experience (Chile 1992-2003)

## Gender Wage Gap and Controlling Components (Controlling for age, marital status and education)



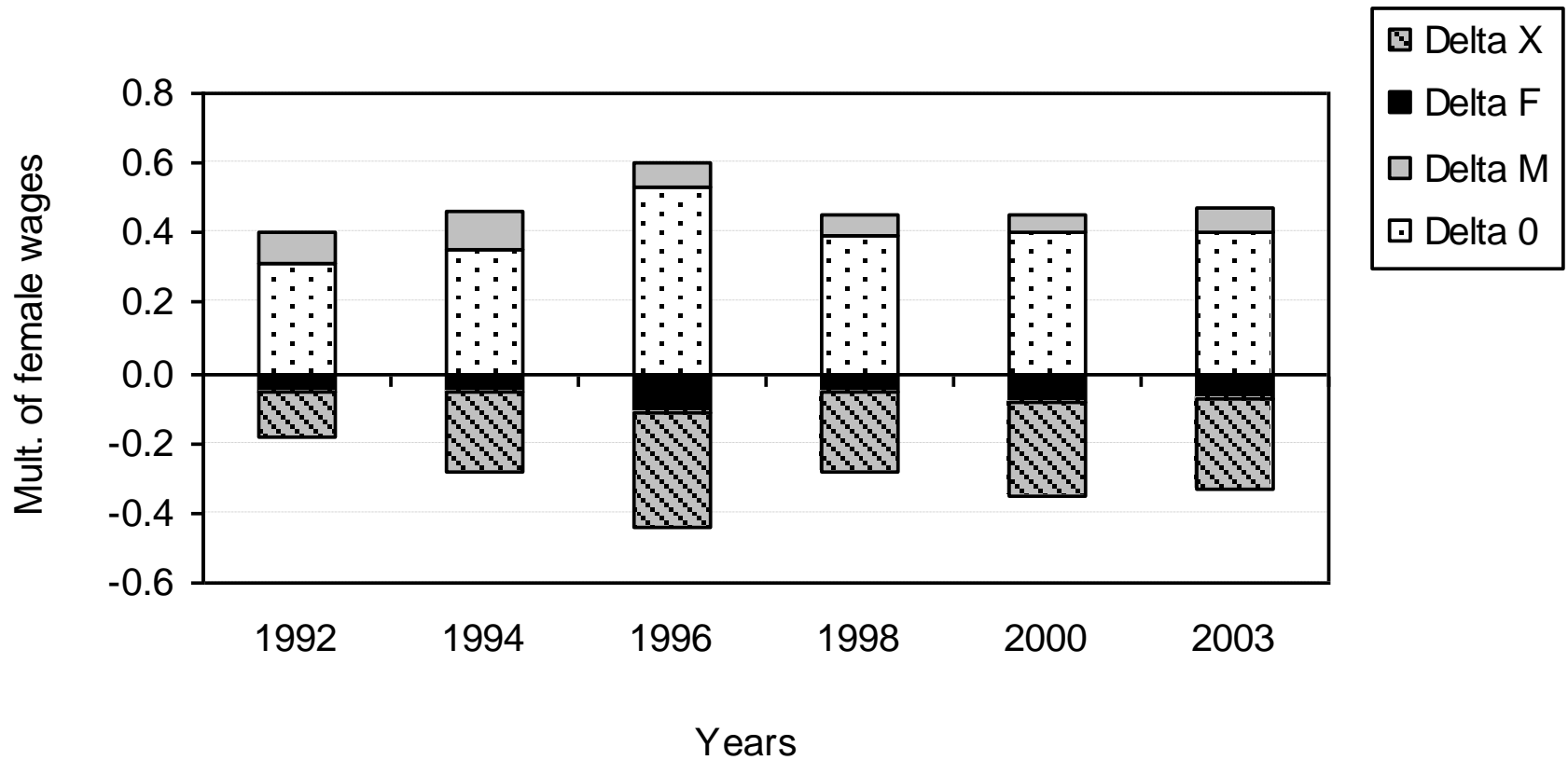
Source: Ñopo (2007)

## Gender Wage Gap and Controlling Components (Controlling for age, marital status, education and years at the same occup.)



Source: Ñopo (2007)

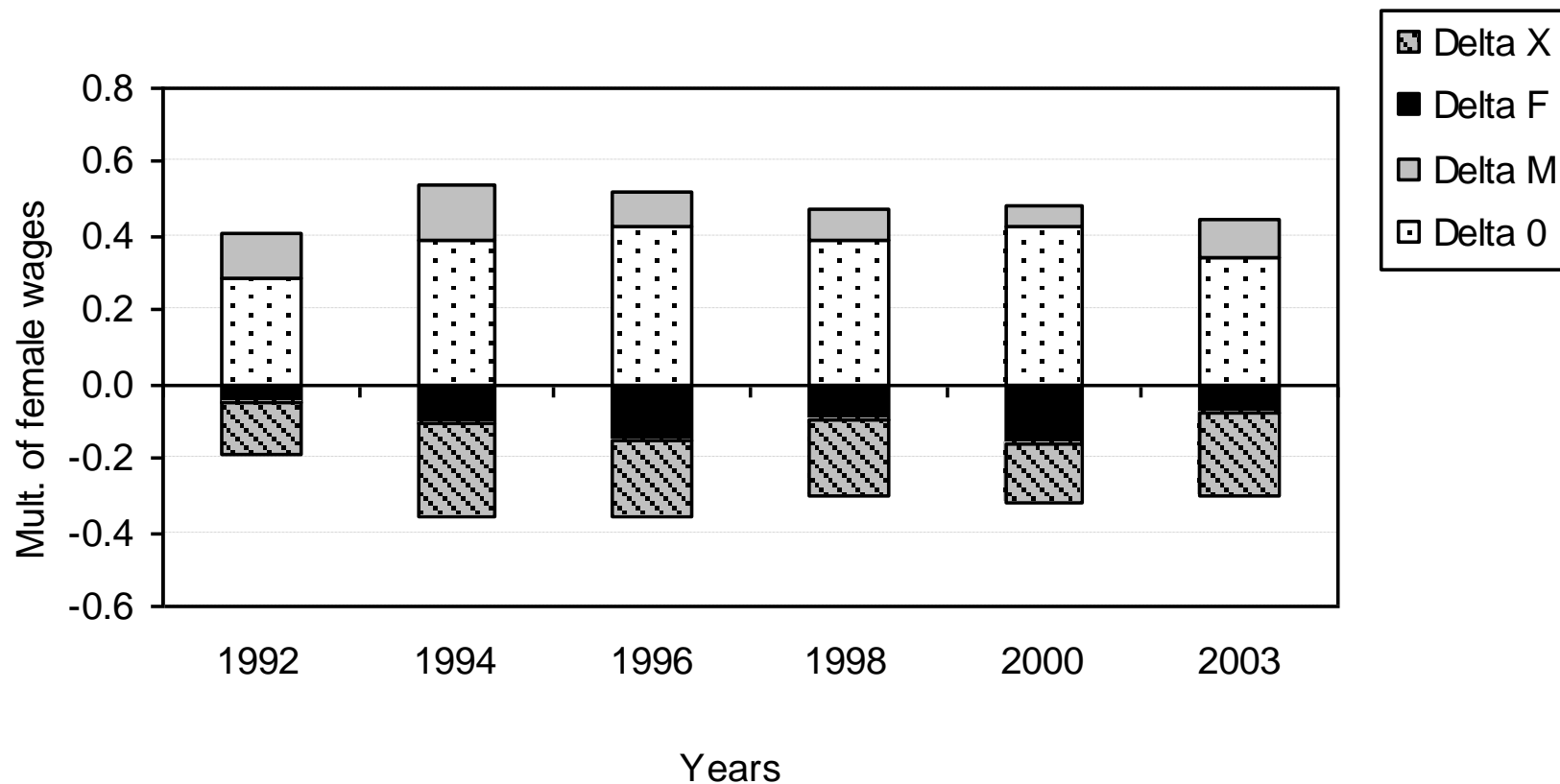
## Gender Wage Gap and Controlling Components (Controlling for age, marital status, education and full time worker)



Source: Ñopo (2007)

## Gender Wage Gap and Controlling Components

(Controlling for age, marital status, education, full time worker and occupation)



Source: Ñopo (2007)