On the Geography of Demography: Why Women Live in Cities*

Lena Edlund†

January 28, 2000
Very Preliminary

Abstract

Young women go to prosperous areas, leaving economically backward places with a deficit of fertile women. This phenomenon is common throughout the developed world. The proposed reason is that women have two sources of income men and employment – and both the good men and the good jobs tend to be in cities. Urban sex-ratios (men to women) may be further depressed if married women drop out of the labor force and women in good jobs drop out of marriage. The paper presents Swedish municipality level data supporting the argument.

Key words: Sex-ratios; Marriage; Migration.

JEL article classification: J11; J61; R23

*I thank James Albrecht, Marcus Asplund, Tore Ellingsen, Jonathan Heathcote, Brendan O'Flaherty, and Susan Vroman. Financial support from the Swedish Council for Research in the Humanities and Social Sciences is gratefully acknowledged

†Lena.Edlund@columbia.edu; Columbia University, 420 W 118th Street, New York, NY 10027.

1 Introduction

Big cities are not only replete with bright lights; women, especially young women, also abound. According to one newspaper report, for each single man one counts three single women in Paris and five single women in Manhattan.[1] Although more pronounced in big cities, this is a general phenomenon. Women outnumber men in urban areas in the age group 25-34 in almost all industrialised countries (Table A.1 in Appendix). These women come from somewhere: less prosperous regions. The surplus of women begs the question why women move to cities in greater numbers than men? This paper will argue that this phenomenon results from a combination of marriage and labor market factors.

The first thing to note is that labor markets in urban or metropolitan areas tend to offer better opportunities for skilled or professional workers. An immediate implication is that people working in urban areas tend to have higher earnings than people working elsewhere.

Fertile women are scarce (e.g. Trivers [7]; Siow [6]). It is well established that men value both the possibility to reproduce and traits that are associated with female fecundity, such as youthful and healthy looks. Hence, fertile women have a choice of partners. There is substantial evidence that women value financial security when evaluating a partner (e.g. Wiederman and Allgeier [8]). Consequently, richer or more successful men face not only better but also greater partner availability. Combined, these observations imply that where the men with the money are, the fertile women also tend to be. If fertile women congregate on successful men, and these men are not randomly located, then we would expect sex-ratios across locations to vary with the economic status of men, with more women per man where men have high earnings.

This paper argues that urban areas hold two attractions to women, better jobs and better marriages (husbands with higher wages). As an immediate implication, urban areas can attract more women than men. It might be argued that since women congregate on urban areas, urban areas also hold similar advantages to men. The difference is that for men, marriage enters the expense account and hence follows from good job market opportunities, while for women marriage and wage work are two are alternative sources

[1] Le Nouvel Observateur, no. 1789, February 1999.

of income.

The assumption that men pay to marry follows from biological differences between men and women. Women are bottlenecks in reproduction. Intra male competition for mating opportunities result in a net transfer of material resources from men to women (e.g. Trivers [7]; Wright [9]). In addition, a child has by default only one known parent, the mother. Consequently, most societies also vest her with default parental rights. Marriage transfer some of these rights from the mother to the father, e.g. custodial rights are solely with the mother if she is unmarried, but shared or father only if the mother is married (Edlund [2]).

The remainder of the paper is organised as follows. Section 2 spells out the formal argument, section 3 presents an empirical illustration using Swedish municipality data, and section 4 concludes the paper.

2 Model

Consider a population with M men and F women, where for simplicity $M = F$. The sex-ratio is defined as men over women. Men and women come in two skill types, unskilled and skilled, respectively. There are M_L (F_L) unskilled men (women), and M_H (F_H) skilled men (women). Consistent with the current empirical situation, and without much loss of generality, I assume that there are at least as many skilled men as women, i.e. $M_H \geq F_H$. Skilled workers have higher potential labor market productivity than unskilled. Jobs also come in two types, skilled and unskilled. Skilled jobs pay w_H, and unskilled jobs w_L, where $w_H > w_L$.[2]

There are two locations, an urban and a rural area, henceforth Urban and Rural. Labor demand is perfectly elastic. Skilled jobs are only available in Urban. Unskilled jobs, however, can be had in both locations. Either type of worker can hold an unskilled job, while only skilled workers hold skilled job.

Urban (Rural) has an initial population of m^U (m^R) men and f^U (f^R) women. For simplicity, let initial sex-ratios balance in Urban and Rural, and let there be no difference

[2]Note that we do not need to assume men to be inherently more skilled than women. As long as men are more or as likely as women to be given high paying jobs, the model would be valid.

in the proportion of skilled workers by gender between locations.

The decision problem facing men and women is whether to migrate. People migrate if they achieve strictly higher expected payoff from so doing.[3] Location matters because both the labor and the marriage markets are local, i.e. one can neither marry someone who is not in the same location, nor can one hold a job outside the location. M^U and M^R (F^U and F^R) are the number of men (women) in Urban and Rural, after possible migration.

In the marriage market, women are assumed identical, and men pay for marriage. Male valuation of marriage, z, is a function of his income, where $z(w_H) > z(w_L) > 0$. To further simplify the discussion I assume: i) monogamy; ii) men in unskilled jobs pay their valuation of marriage, i.e. $z_L = z(y_L)$; and iii) men in skilled jobs may pay less than their full valuation, but more than men in unskilled jobs, i.e. $z_H \in (z(w_L), z(w_H)]$.[4]

I assume random quantity rationing on the Urban and Rural marriage markets as follows. The short side of the market always marry. If men are on the long side of the market, and there are high and low wage men, then the high wage men have priority over low wage men, who face the residual female population. Otherwise, all mating is random.

In a Nash equilibrium, no one can achieve higher expected payoff from a different location decision, given the others' location decision.

Let p_j^i denote probability that man in location $i = R, U$ with wage $j = L, H$ marries. Furthermore, let ρ^i denote the female probability of marriage in location $i = R, U$, and ρ_j^i, the probability of marrying a man with wage $j = L, H$ if in location $i = R, U$.

The payoffs to different location decisions are the following.

If a skilled man locates in Urban, his payoff is

$$\pi_H^U = p_H^U \cdot (z(w_H) - z_H) + w_H. \tag{1}$$

[3] Risk neutrality and an epsilon relocation cost could justify this.

[4] One way of justifying $z_H > z_L$ withing the framework of the model is that if $z_H \leq z_L$ then there would be no reason for a surplus of women in Urban and in fact there would be a deficit of women. But since high wage men value marriage at more than z_L they would be willing to pay to increase their probability of marriage. If $z_H = z_L$ then high wage men would not marry with some probability less than one, since they pay the same price as low wage men, and there would be a surplus of men. Only a price $z_H > z_L$ would ensure marriage with certainty.

If he locates in Rural, his payoff is

$$\pi_H^R = w_L, \tag{2}$$

since there are no skilled jobs in Rural. Clearly, even if he would not marry, he would like to locate in Urban.

The unskilled men's payoff is independent of location choice, since he would hold an unskilled job in either location and he is indifferent between marriage and bachelorhood. Hence, $\pi_L^U = \pi_L^R = w_L$.

The skilled woman's payoff from locating in Urban is

$$\Pi_H^U = \rho^U \cdot z_L + \rho_H^U \cdot (z_H - z_L) + w_H. \tag{3}$$

Her payoff from locating in Rural is

$$\Pi_H^R = \rho^R \cdot z_L + w_L, \tag{4}$$

since there are neither high wage men nor high wage jobs there.

The unskilled woman's payoff from locating in Urban is

$$\Pi_L^U = \rho^U \cdot z_L + \rho_H^U \cdot (z_H - z_L) + w_L. \tag{5}$$

Her payoff if in Rural, Π_L^R, is the same as the skilled woman's, given by eq. (4).

We are interested in the post-migration sex-ratio, M^U/F^U. To start with Urban men, $M^U = m_L^U + m_H^U + m_H^R$, since no Urban born men, or Rural unskilled men, can gain by migrating and hence remain put, while rural skilled men gain by moving to Urban. Now turn to the women. Rural skilled woman will, like her male counterpart, also migrate to Urban. However, this does not suffice to establish a surplus of women in Urban, since there are at least as many skilled men as skilled women. The interesting group for our purposes is the unskilled women. Note that they face the same labor market in either location, hence it must be the marriage that determines their choice. From eqs. (4) and (5), we know that Urban is more attractive than Rural, as long as

$$\frac{\rho^R - \rho^U}{\rho_H^U} < \frac{z_H - z_L}{z_L}. \tag{6}$$

The right-hand side of condition (6) is clearly positive. The left-hand side can be rewritten as

$$\frac{\lfloor A,1\rfloor - \lfloor B,1\rfloor}{\lfloor C,1\rfloor} = \phi(\Delta), \tag{7}$$

where $\lfloor x,y\rfloor \equiv \min\{x,y\}$,

$$A = \frac{m_L^R}{f_L^R - \Delta}, B = \frac{m_H^R + m_H^U + m_L^U}{f_H^R + f_H^U + f_L^U + \Delta}, C = \frac{m_H^R + m_H^U}{f_H^R + f_H^U + f_L^U + \Delta},$$

and $\Delta \in [0, f_L^R]$ is the number of rural unskilled women who migrate to Urban. Let Δ^* denote the equilibrium Δ, and $\bar{\Delta}$ the number of unskilled women who need to migrate to Urban for sex ratios to balance. Migration to Urban is attractive until condition (6) no longer holds, hence

$$\Delta^* = \{\Delta : \frac{\rho^R - \rho^U}{\rho_H^U} = \frac{z_H - z_L}{z_L}\}.$$

Note that $\phi'(\Delta) > 0$ and that $\phi(\bar{\Delta}) = 0$. Hence, $\Delta^* > \bar{\Delta}$ (Figure 1). This establishes the main results.

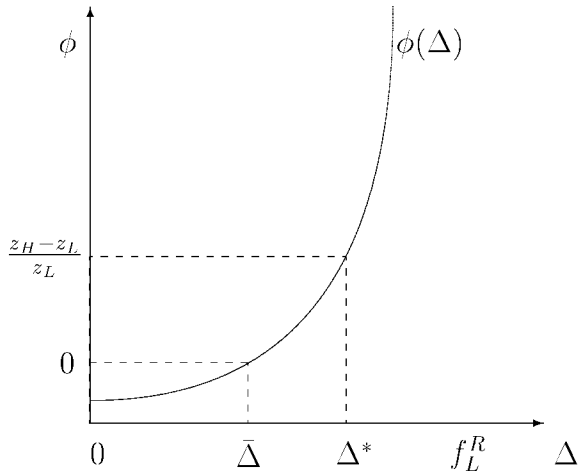

Figure 1: Rural to Urban migration of unskilled women

Proposition 1 *There is a unique Nash equilibrium for which Urban: i) employs all skilled workers; ii) has a surplus of women.*

Corollary 1 *In the Nash equilibrium, Rural: i) has no skilled workers; ii) has a surplus of men.*

Corollary 2 *Employment in Urban is both skilled and unskilled.*

Corollary 3 *Unskilled employment in Urban (Rural) is 'female' ('male').*

Corollary 4 *Female (male) singles are in Urban (Rural).*

Corollary 5 *Female singles have higher earnings than male singles.*

The intuition for Corollary 2 is that the mere fact that skilled men locate in Urban, and the surplus of skilled men over skilled women, gives an incentive for unskilled Rural women to move there.

The relevance of Corollary 3 is that although female employment in cities could be purely demand driven there may also be a supply explanation. It can be argued that the bulk of employment today are neither intrinsically female nor male.[5] Clerical work may provide a case in point. It started as a male occupation. Arguably, its subsequent feminization was due to other factors than a mutation of tasks. Hence, the prevalence of clerical work in cities, and these jobs being taken mostly be females, may be a result of, not an explanation to, a surplus of females in cities.

Corollary 4 follows trivially from monogamy and arithmetics. It also squares with casual observation. Corollary 5 is true because some of the female singles are skilled, while the male singles are invariably unskilled.

2.1 Discussion

The above section assumed that women were identical as partners, and that all women want to marry. These assumptions were made for convenience rather than realism. This section discusses some modifications.

[5] See e.g. Goldin [3].

Positive sorting If skilled men had a preference for skilled women as partners, then the expected payoff to unskilled women locating in Urban would be reduced. Still, as long as there are more skilled men than women, unskilled women would face a better marriage market in Urban than Rural. Consequently, more women than men would find Urban advantageous.

Negative sorting Under this type of sorting, skilled men seek out unskilled women, and, presumably, skilled women seek out unskilled men. While more unskilled women will clearly flock to Urban under this regime, it is less clear what happens to the Urban sex-ratio. The consequences of skilled women preferring unskilled men are *a priori* not clear cut. Skilled women could respond by: i) moving to Rural; ii) having unskilled men come to Urban; or iii) remaining unmarried in Urban. In the first case the sex-ratio may go either way. In the second case everybody is in Urban and the sex-ratios balance. In the third case, the sex-ratio in Urban must fall. Since the last case is the empirically most relevant, see e.g. Edlund [2], I will elaborate on that below.

Non marriage of skilled women This could be one of the reasons for the low sex-ratios in the cities referred to in the introduction. Empirically, negative sorting has been one sided, that is men married down, but not women. This could be another facet of the fact that men, not women, support their partners. When men hold well paid jobs, they support (at least) one woman, and this tends to lower the sex-ratio. When women hold well paid jobs, they do not support men (which in practice typically means that they marry up or not at all). Hence, if women in high paying jobs renounce marriage, then this will tend to depress the sex-ratio further (i.e. raise the number of women per men).

Labor supply and demand So far I have assumed both that all women work and that employment is not an issue. Two possible objections are that i) married women drop out of the labor force; and ii) inflow of workers would depress wages in Urban. Neither observations would, however, change the qualitative results of the model. If women reduce their labor supply when married, and labor demand is inelastic,

this would leave room for more women to move to Urban and live off their wage earnings. Hence, the sex-ratio could fall even further if the model accounted for this explicitly. The effect of inelastic labor demand would tend to raise the sex-ratio, since the out-migration of rural unskilled women would depress wages in Urban and raise them in Rural (maintaining the assumption that $w_H > w_L$, skilled workers' decision is not affected). However, as long as labor demand is not perfectly inelastic, there would be room for migration of the type discussed, and the qualitative flavor of the model would remain intact.

2.2 Alternative explanations

The surplus of females in cities has received relatively little attention by the social sciences. Still, its mere existance has merited speculations about its possible causes. The two leading hypotheses can be labled as the 'occupational structure' and a 'taste' hypotheses. It may be instructive to look at their merits and weaknesses before continuing to the empirical investigation.

Occupational structure This explanation says that sex-ratios arise from the industry or occupational structure of the locality. The argument is that some jobs are more female, such as clerical work, and these jobs are located in big cities, hence the surplus of females. Conversely, young men, stay in the rural area to a greater extent than young women because they fish, hunt, or log timber, for a living. Possible criticism includes: i) women are less skilled than men and from that alone one would not expect women to be in cities; and ii) it is typically thought to be men, not women, who move for professional reasons (e.g. Mincer [5]; Bowlus [1]); and iii) gender identity of jobs possibly endogeneous, cf. Corollary 3.[6]

Taste This explanation simply says that women may want to move to cities because they cities are more geared to females' interests (other than marriage). Women may have greater interest in culture and the arts, may have more heterogeneous tastes or enjoy

[6]Exceptions might include e.g. military installations.

leisure activities with scale economies, e.g. the movies, and are thus better served in a large community.

3 Empirical Illustration

This section investigates the empirical relationship between incomes and sex-ratios using Swedish municipality level data for the 25-44 year age group in 1996. The data is from the Statistical data bases provided by Statistics Sweden. The ages 25-44 were chosen because they cover the prime family formation years for both men and women, but perhaps more importantly, female fecundity drops off sharply around age 40.[7]

3.1 Variables

The unit of observation is the municipality. In 1996 there were 288 municipalities. The dependent variable, $SEXRATIO$, is the ratio of men to women aged 25-44 in the municipality.

$MINC$ ($FINC$) is average annual earnings in the municipality for men (women) aged 25-44, and $MAOFE = MINC/FINC$. Ideally, one would like to have measures of male and female wages in the municipalities instead of average earnings. For men this is less of a problem, since men typically work close to full time. Inclusion of female income $FINC$ as an explanatory variable is problematic for a variety of reasons. First, the cross wage effect on women's labor supply may be fairly high, so that women married to high wage men work less than women married to low wage men. If there is positive sorting on wages, this has a levelling effect on women's earnings. Second, the marriage rate might be endogenous to the sex ratio, so that in places with more men, women are more likely to marry, and hence work less (although date suggest that the cross wage effect dominates). Third, on a technical note, $FINC$ is highly correlated with male income $MINC$.

Even if we had more direct measures of wages, a possible objection is that male and female wages could be endogeneous to the sex ratio. For instance, high male wages could be driven by a shortage of men. This logic presumes that occupations for some reason are

[7] The age group 25-34 was used in an earlier version, and the results were similar.

inherently male or female. We know that there is a fair degree of occupational segregation between men and women, but it is less clear that this stems from imutable requirements of the trade.[8] However, the fact that municipalities in Stockholm county exhibit the same pattern as municipalities in the whole country (Appendix) suggests that this effect is not quantitatively important, since Stockholm county is geographically compressed and share a *de facto* common labor market.

POP is the number of men and women aged 25-44 in the muncipality. This variable is a measure of the size of the municipality, and may capture the taste effect discussed above. MIL is a dummy variable indicating a military base. The reasons for including this variable is that the military employs mainly males, and thereby biases the labor market towards male employment.[9] $LARGE$ is a dummy variable indicating that the municipality is large ('större städer'), e.g. the seat of the county administration. SUB is a dummy variable indicating that the municipality is a suburb. The reason for including this dummy is that labor and marriage markets for suburbs almost by definition extend beyond the municipality. $UNIV$ is a dummy variable indicating that the municipality is one of the Sweden's five major university towns.[10] The reason for including this variable is that the student body is female and this could result in a female population. On the otherhand, higher education employs mainly males, and we are looking at an age group that by and large has completed their eduction, so it is *a priori* not clear which way the sex-ratio is affected. It can be noted that these municipalities double as central towns in the major con-urbations, and hence $UNIV$ also proxies for that. The coding of $LARGE$ and SUB follows the classification suggested by the Swedish Association of Local Authorities ('Svenska Kommunförbundet'). The note to Table 1 lists municipalities coded MIL, $LARGE$, SUB, and $UNIV$.

[8] Exceptions might include modelling and prostitution.

[9] The reason for including military installations, but not hospitals (which employ more women than men) is that military installations are typically in small municipalities where their presence could have a significant impact on the sex-ratio, while this is typically not the case for hospitals. Moreover, location of major hospitals and major universities tend to coincide.

[10] That is: Stockholm, Uppsala, Gothenburg, Lund and Umeå. Inclusion of Linköping did not change the results.

3.2 Results

The hypothesis that low sex-ratios (surplus of females) are associated with high male earnings is borne out by the data. This effect remains when controlling for female earnings, $FINC$ (regressions (2),(3),(6), and (7), Table 2). The attentive reader sees that $FINC$ comes in with the wrong sign, but as argued above, its inclusion in the regression is questionable. Hence, the preferred regression is (5).

The population size, POP, was significant and associated with low sex ratios, consistent with the taste hypothesis. The same interpretation may be given the negative coefficient on the dummy for suburb, SUB. The dummies $LARGE$, MIL, and $UNIV$, failed to be significant.

Figures in the Appendix, shows plots of $SEXRATIO$, $MINC$, $FINC$, and $MAOFE$, for Sweden and for Stockholm county.

Table 1 below presents descriptive statistics for the variables, Table 2 regression results and Table 3 the covariance matrix.

Table 1. Descriptive statistics

Variable	Mean	St. D.	Min	Max
$MEN/WOMEN$	1.06	0.05	0.93	1.27
$MINC$ (1000 Skr)	189.3	21.1	145.8	361.8
$FINC$ (1000 Skr)	134.1	8.9	116.2	177.6
$MAOFE$	1.4	0.1	1.2	2.0
POP	8430.4	18051	553	242417
MIL	.03	.2	0	1
$LARGE$	.08	.3	0	1
SUB	.09	.3	0	1
$UNIV$	.02	.1	0	1

Notes: MIL: Boden, Eksjö, Halmstad, Karlskrona, Strängnäs, Gotland, Sollefteå, Kiruna, Hässleholm, and Arvidsjaur.

$LARGE$: Borås, Eskilstuna, Falun, Gävle, Halmstad, Helsingborg, Jönköping, Kalmar, Karlskrona, Karlstad, Kristianstad, Linköping, Luleå, Lund, Norrköping, Örebro, Örnsköldsvik, Östersund, Skellefteå, Södertälje, Sundsvall, Umeå, Uppsala, Västerås, and Växsjö.

SUB: all municipalities in Stockholm county, but Stockholm, and Ale, Håbo, Härryda, Kävlinge, Kungälv, Kungsbacka, Lerum, Lomma, Mölndal, Öckerö, Partille, Staffanstorp, Svedala, and Vellinge.

$UNIV$: Uppsala, Stockholm, Lund, Gothenburg, and Umeå.

Table 2. Dependent variable: municipality sex-ratio, men to women aged 25-44. OLS

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$\log(MINC)$	-0.21	-0.27		-0.12	-0.13	-0.21	
	(8.34)	(7.14)		(4.14)	(4.30)	(5.93)	
$\log(FINC)$	–	0.12	–	–	–	0.23	–
		(2.15)				(4.24)	
$\log(MAOFE)$			-0.28				-0.21
			(7.2)				(6.01)
$\log(POP)$	–	–	–	-0.01	-0.01	-0.01	-0.01
				(3.99)	(3.93)	(4.68)	(4.66)
SUB				-0.04	-0.05	-0.06	-0.05
				(4.54)	(5.11)	(5.86)	(4.66)
$LARGE$				0.02			
				(1.79)			
MIL				0.02			
				(1.35)			
$UNIV$	–	–	–	0.0004	–	–	–
				(0.022)			
Constant	1.18	0.86	0.15	0.80	0.80	0.14	0.23
	(8.76)	(4.56)	(11.47)	(5.35)	(5.27)	(0.618)	(9.21)
$\bar{R}^2$	0.188	0.199	0.164	0.290	0.286	0.329	0.331
N	288	288	288	288	288	288	288

Note: t-ratios in parentheses, based on heteroscedasticity corrected standard errors.

Table 3. Co-variance matrix

	MINC	*FINC*	*MAOFE*	*POP*	*MIL*	*LARGE*	*SUB*
FINK	.72185	1.00000					
MAOFE	.77119	.12217	1.00000				
POP	.05837	.17866	-.07306	1.00000	–	–	–
MIL	-.02364	.03853	-.06684	.01565	1.00000		
STOR	-.03049	.03809	-.07808	.28901	.08406	1.00000	–
SUB	.46814	.47968	.23420	.03446	-.05847	-.09083	1.00000
UNIV	-.04200	.05750	-.11213	.67841	-.02521	.25504	-.04098

4 Discussion

Fertile women disproportionally locate in cities throughout the developed world. This paper has presented evidence of this phenomenon and proposed a marriage *cum* labor market explanation. The proposed reason is that women have two independent income sources — men and wage work — and both the good men and the good jobs tend to be in cities. Sex-ratios (men to women) may be further depressed if for some reason these income sources are substitutes, so that each wife who withdraws from the labor force allows for another women to earn her living as a wage worker. The formal model bears resemblance to Mincer [4].

The stylized fact that women are in surplus in cities is limited to developed countries. The relevance of the proposed model is also limited to that context for a variety of reasons. First, I assumed that jobs were given away on location. This is a stark simplification that may seem even more strained in undeveloped countries with high urban unemployment and little in terms of publicly provided social security. Second, there were no administrative restrictions on migration. Many countries have had fairly strict curbs on domestic migration, in particular rural to urban such. For instance, China has had a household registration system in place that effectively barred internal migration. Third, I implicitly assumed that partners co-reside. In many poor countries, they do not. Individual family members migrate to were there is employment and remit income. For instance, men working in cities may find it advantageous to remit money to their families in the home village instead of settle the whole family in the city. Fourth, I assumed local random matching. In many developed countries, marriage matches are not the result of individual search, but arranged by matchmakers, hence it is not conditioned on being in a particular place at a particular time.

5 Appendix

Table A.1

Urban and rural sex-ratios for the age group 25-34, 1985-1994, latest available year.

North America	Urban	Rural	Diff
Belize	0.97	1.18	0.20
Canada	0.99	1.00	0.01
CostaRica*	0.92	0.97	0.05
Cuba	0.99	1.12	0.13
Greenland	1.11	1.35	0.24
Guatemala	0.92	1.08	0.15
Haiti	0.80	1.01	0.21
Honduras	0.83	1.00	0.18
Nicaragua	0.91	1.11	0.20
Panama	0.89	1.24	0.35
US	1.00	1.01	0.01

South America	Urban	Rural	Diff
Argentina	0.95	1.18	0.23
Bolivia	0.90	1.02	0.12
Brazil	0.92	1.10	0.18
Chili	0.96	1.33	0.37
Colombia	0.87	1.14	0.28
Equador	0.97	1.11	0.14
Falkland	0.96	1.05	0.09
Paraguay	0.91	1.13	0.22
Peru	0.99	1.11	0.12
Uruguay	0.91	1.48	0.57
Venezuela*	1.00	1.21	0.21

Oceania	Urban	Rural	Diff
Australia	0.99	1.05	0.06
Fidji	0.95	1.05	0.10
New Caledonia	0.95	1.09	0.15
New Zealand	0.95	1.03	0.08
Tonga	0.95	0.90	-0.06
Vanuatu	1.05	0.88	-0.17

Europe	Urban	Rural	Diff
Andorra	1.21	1.38	0.17
Armenia	0.84	1.10	0.26
Austria	1.03	1.10	0.07
Belarus	0.94	1.20	0.26
Bulgaria	0.97	1.16	0.19
Croatia	0.92	1.17	0.25
Estonia	0.97	1.11	0.14
Finland	1.02	1.10	0.08
France	0.98	1.02	0.04
Georgia	0.86	1.05	0.19
Hungary	0.99	1.09	0.10
Ireland	0.95	1.09	0.14
Latvia	0.97	1.11	0.14
Lithuania	0.97	1.17	0.19
Moldova	0.91	0.96	0.05
Netherlands	1.05	1.05	0.00
Norway	1.03	1.14	0.11
Poland	0.96	1.15	0.18
Portugal	0.94	1.01	0.07
Romania	0.90	1.30	0.40
Russia	0.99	1.10	0.11
Slovenia	0.79	1.09	0.30
Sweden	1.06	1.06	0.01
Switzerland	1.08	1.08	0.00
Ukraine	0.95	1.08	0.13

Asia	Urban	Rural	Diff
Afganistan	1.00	0.94	-0.06
Azerbaijan	0.93	0.90	-0.03
Bangladesh	1.24	0.97	-0.27
Brunei	1.08	1.35	0.27
China	1.10	0.89	-0.21
HongKong	1.06	1.22	0.16
India*	0.92	0.97	0.05
Indonesia	1.15	1.08	-0.06
Iran	1.03	0.99	-0.04
Iraq	1.09	1.02	-0.07
Israel	1.01	1.07	0.06
Japan	1.03	0.99	-0.03
Jordan	1.09	1.02	-0.07
Kazakstan	0.97	1.05	0.09
Kyrgyzstan	0.94	1.01	0.07
Maldives	1.25	0.90	-0.35
Philippines	0.96	1.05	0.09
S Korea	1.00	1.11	0.11
Syria	1.07	0.76	-0.31
Tajikistan	0.96	1.01	0.05
Thailand	0.92	0.96	0.04
Turkey	1.07	0.99	-0.08
Turkmenistan	0.97	0.96	-0.01
Uzbekistan	0.99	1.01	0.02
Vietnam	0.91	0.79	-0.12
Yemen	1.27	0.67	-0.59

Africa	Urban	Rural	Diff
Benin	0.88	0.69	-0.18
Burkina Faso	0.92	0.65	-0.27
Central African Republic	0.94	0.92	-0.01
Cameroon	1.09	0.98	-0.11
Cape Verde	0.94	0.75	-0.19
Chad	1.10	0.82	-0.28
Cote d'Ivoire	1.15	0.99	-0.16
Egypt	1.06	1.07	0.00
Ethiopia	0.79	0.99	0.20
Malawi	1.33	0.85	-0.48
Mali	0.91	0.74	-0.16
Mauritius	1.04	1.03	-0.01
Morocco	0.97	0.78	-0.18
Namibia	1.07	0.77	-0.29
Niger	0.89	0.82	-0.07
Senegal	0.95	0.79	-0.16
South Africa	1.08	0.98	-0.10
Swaziland	1.13	0.59	-0.54
Uganda	1.10	0.91	-0.19
Zaire	0.97	0.97	0.00
Zimbabwe	1.11	0.72	-0.39

Source: United Nations, Demographic Yearbook. Table 7. 1994.

References

[1] Audra J. Bowlus. A Search Interpretation of Male-Female Wage Differentials. *Journal of Labor Economics*, 15, 1997.

[2] Lena Edlund. Custodial Rights and the Rise in out-of-Wedlock Fertility. Columbia University, 1998.

[3] Claudia Goldin. *Understanding the Gender Gap: An Economic History of American Women.* Oxford University Press, New York, 1990.

[4] Jacob Mincer. Unemployment Effects of Minimum Wages. *Journal of Political Economy*, 84, 1976.

[5] Jacob Mincer. Family Migration Decisions. *Journal of Political Economy*, 86, 1978.

[6] Aloysius Siow. Differential Fecundity, Markets, and Gender Roles. *Journal of Political Economy*, 106, 1998.

[7] Robert L. Trivers. Parental investment and sexual selection. In Bernard Campell, editor, *Sexual Selection and the Descent of Man*, pages 136 179. Aldine de Gruyter, Chicago, 1972.

[8] Michael W. Wiederman and Elizabeth Rice Allgeier. Male economic status and gender differences in mate selection preferences. In Lee Ellis, editor, *Social Stratification and Socioeconomic Inequality: Reproductive and Interpersonal Aspects of Dominance and Status.* Praeger, Westport, CT, 1994.

[9] Robert Wright. *The Moral Animal.* Pantheon, New York, 1994.