

Oreffice, Sonia; Bercea, Brighita

Working Paper

Quality of Available Mates, Education and Intra-Household Bargaining Power

Nota di Lavoro, No. 133.2006

Provided in Cooperation with:

Fondazione Eni Enrico Mattei (FEEM)

Suggested Citation: Oreffice, Sonia; Bercea, Brighita (2006) : Quality of Available Mates, Education and Intra-Household Bargaining Power, Nota di Lavoro, No. 133.2006, Fondazione Eni Enrico Mattei (FEEM), Milano

This Version is available at:

<https://hdl.handle.net/10419/74207>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

**Quality of Available Mates,
Education and Intra-Household
Bargaining Power**

Brighita Bercea and Sonia Oreffice

NOTA DI LAVORO 133.2006

NOVEMBER 2006

ETA – Economic Theory and Applications

Brighita Bercea and Sonia Oreffice, *Clemson University*

This paper can be downloaded without charge at:

The Fondazione Eni Enrico Mattei Note di Lavoro Series Index:
<http://www.feem.it/Feem/Pub/Publications/WPapers/default.htm>

Social Science Research Network Electronic Paper Collection:
<http://ssrn.com/abstract=944469>

Quality of Available Mates, Education and Intra-Household Bargaining Power

Summary

This paper further explores the role of sex ratios on spouses' bargaining power, by focusing on educational attainment in order to capture the qualitative aspect of mate availability. Using Census and Current Population Survey data for U.S. metropolitan areas in year 2000, a quality sex ratio is constructed by education brackets to test the effect on the intra-household bargaining power of couples in the corresponding education bracket. We argue that a relative shortage of suitably educated women in the spouse's potential marriage market increases wives' bargaining power in the household while it lowers their husbands'. Additionally, we test the prediction that this bargaining power effect is greater as the assortative mating order by education increases. We consider a collective labor supply household model, in which each spouse's labor supply is negatively related to their level of bargaining power. We find that higher relative shortage of comparably educated women in the couple's metropolitan area reduces wives' labor supply and increases their husbands'. Also, the labor supply impact is stronger for couples in higher education groups. No such effects are found for unmarried individuals, which is consistent with bargaining theory.

Keywords: Education, Intra-Household Bargaining Power, Labor Supply

JEL Classification: D12, J12

We thank Pierre-André Chiappori, Curtis Simon and Robert Tollison for helpful comments and suggestions. Errors are ours.

Address for correspondence:

Sonia Oreffice
Clemson University
201 Sikes Hall
Clemson, SC 29634
USA
E-mail: oreffice@clemson.edu

I. Introduction

This paper examines the effects that quality sex ratios by educational attainment have on spouses' labor supply and bargaining power. There is evidence in the literature that the availability of potential mates in local marriage markets, measured by the raw number of men relative to the number of women, affects the bargaining power and allocation of resources in already formed couples (e.g. Chiappori et al. 2002, Angrist 2002). In this study, we want to further explore the role of sex ratios on bargaining power by constructing a refined measure of the availability of men and women based on mate quality. We utilize educational attainment, a valuable trait in marriage by which individuals appear to assortatively match, as a qualitative indicator (Weiss and Willis 1997, Qian 1998). We consider local marriage markets by metropolitan area and construct a sex ratio by three education brackets (high-school graduates, some college and college-college plus), within which individuals usually sort. Within the framework of a collective labor supply household model, we test whether this quality sex ratio affects the intra-household bargaining power of couples in the corresponding education bracket through an income effect on both spouses (Chiappori et al. 2002). That is, when the sex ratio is favorable to the wife, (i.e. there is a relative scarcity of women in her education bracket) the distribution of gains from marriage is shifted in her favor. In particular, according to models of collective household behavior, if a higher number of qualified men in the wife's marriage group of reference increases female intra-household bargaining power, then one would expect a reduction in wives' labor supply, and an increase in husbands' labor supply. Additionally, we also test the theoretical prediction that the bargaining power effect of such a sex ratio is greater as the assortative mating order by education increases (Iyigun and Walsh 2005).

Do local sex ratios by education group represent an outside opportunity affecting spousal bargaining power? Do spouses' labor supplies depend on what happens in their neighborhood? Is it better to be the only educated woman in a world of men? Common sense would answer no, however matching theory and our results actually yield the opposite answer: one is better off when is in short supply!

We use Census data by metropolitan area for the year 2000 to build our sex ratios and data from the March Supplement of the Current Population Survey (CPS) for the year

2000 to test our labor supply prediction on married couples (using unmarried individuals as control group). Our identification strategy consists of estimating the effects of education sex ratios on husbands' and wives' labor supply for households that were married prior to the year 2000 and comparing changes in their labor supply behavior cross-sectionally across the US metropolitan areas.

Our empirical analysis reveals that married women significantly reduce their supply of market labor, while their husbands increase theirs as the corresponding education sex ratio becomes more favorable to women: a decrease of 78 and 166 annual hours for "some college" and "college-college plus" wives, respectively, and an increase of 53 and 129 in their husbands' (high-school graduates do not exhibit any significant impact). Consistent with the hypothesis of a stronger effect for higher education brackets, we also find that couples with "college-college plus" wives exhibit a significantly stronger impact of the quality sex ratio on their bargaining power than couples with "some college" wives, whose estimated quality sex ratio coefficient is in turn larger than that for high school graduates. Our bargaining power interpretation is strengthened by the fact that unmarried men and women do not exhibit any significant reaction to the quality sex ratio on their labor supply.

The findings presented here are consistent with theories where higher sex ratios increase female bargaining power in the marriage market. Additionally, this evidence represents the first empirical support of the bargaining power effect of a quality sex ratio by education, and its stronger impact on couples with higher levels of educational attainment.

A number of alternative explanations are also considered. The geographical variation in the relative number of men and women by education may capture differences in local labor market opportunities for women, in marital gains from specialization and in welfare programs. Also, our quality sex ratio includes married and same-sex partners, who do not represent available mates. We argue that those phenomena cannot consistently explain our results, given their patterns, our intra-household bargaining predictions and the empirical evidence.

The paper is organized as follows. Section II describes the theoretical framework. Section III describes the empirical specification and data. Section IV presents the

empirical results. Section V considers alternative explanations for the findings. Section VI concludes the paper.

II. Theoretical Background

There are two strands of economic literature that relate to our study. One strand focuses on the impact of distribution factors, such as the sex ratio on intra-household bargaining power, and tests their effects on spouses' labor supply behavior (Chiappori et al. 2002, Chiappori et al. 2005). While most empirical research on sex ratios examines the effects of marriage, those studies develop the collective household model and demonstrate theoretically that favorable outside marriage market opportunities increase a spouse's bargaining power through an income effect, measured as a reduction in labor supply (the opposite happening to the other spouse). Because married men and women have the option of seeking a divorce and re-marrying, more numerous potential mates in the spouse's marriage market of reference should enhance the bargaining power of those already married to the extent that it enhances their opportunities outside the marriage (Chiappori et al. 2002, Lundberg and Pollak 1996). Our paper specifically refers to this theoretical framework. Empirically, Chiappori et al. (2002) find that higher sex ratios reduce wives' labor supply and increase the husbands', using 1990 state Census and PSID data. In a study on immigrants to the United States, Angrist (2002) argues that his empirical results are consistent with theories where higher sex ratios increase female bargaining power in the marriage market. He finds that higher sex ratios are associated with lower female labor force participation; the effect is larger where marriage within the same ethnic group is more prevalent. Using data at both household and aggregate level, Grossbard-Shechtman (1993) and Grossbard-Shechtman and Neideffer (1997) show that a sex ratio increase reduces the labor force participation and hours worked of married women. Finally, a relevant theoretical result is provided by Iyigun and Walsh (2005), who incorporate assortative spousal matching into the collective household model and find that sex ratios have a stronger impact on intra-household allocations as the assortative rank of couples rises.

The second strand of literature that relates our paper concerns the spousal sorting by educational attainment and the gains to marriage from education. Spouses have

increasingly similar educational attainment than in the past, especially among highly educated people (Qian 1998). Mare and Schwartz (2005) report that today husbands and wives are roughly 4 times as likely to have a spouse who shares their educational background as they are to be married to someone who does not, educational homogamy being particularly strong for college graduates. Strong sorting based on educational attainment is also documented by Weiss and Willis (1997), with the additional finding that similarity in schooling increases marriage stability. Schooling also has cross-productivity effects on spouses; wives' education is found to increase the productivity and wages of their husbands and vice-versa (Tiefenthaler 1997, Benham 1974, Chiappori et al. 2005).

However, none of those studies explores how the distribution of educational attainment of men and women in the marriage market affects intra-household bargaining power, nor tests whether the impact is increasing with higher educational rank of couples. Analyzing those effects of *quality* sex ratios by education is the focus of our paper.

III. Empirical Specification and Data

Identification Strategy

Our main sample consists of married couples with both spouses between 22 and 60 years of age. According to the theory, if the scarcity of educated women in the local marriage market enhances women's bargaining power in the household, then the labor supply of wives should decline and the labor supply of their husbands should rise. Additionally, couples in higher education categories should experience a stronger impact on their labor supplies relative to other education categories. We also consider unmarried men and women in the same age bracket, focusing on singles as a "control" group. Singles' labor supplies should not be affected by changes in intra-household bargaining power¹. We include intact couples only if both spouses are actually present. We exclude widowed and separated couples to keep a clear distinction between multiple and one decision maker households. For the same reason, we exclude singles that are not the head of their own household, even though their sample size significantly decreases.

¹ If they plan to marry in the future they may mildly experience a possible bargaining power effect in expected value.

The following equations for labor supply were estimated separately for wives and husbands:

$$h^f = h^f(\ln w^f, \ln w^m, y, X, \text{EduRatio}, \text{EduRatio} * dySC, \text{EduRatio} * dyCC) + \varepsilon^f$$

$$h^m = h^m(\ln w^f, \ln w^m, y, X, \text{EduRatio}, \text{EduRatio} * dySC, \text{EduRatio} * dyCC) + \varepsilon^m$$

We have also estimated a corresponding labor supply equation for unmarried women and men, using the same specification (without spousal variables):

$$h^u = h^u(\ln w^u, y, X^u, \text{EduRatio}, \text{EduRatio} * dySC, \text{EduRatio} * dyCC) + \varepsilon^u$$

EduRatio is our sex ratio, which is constructed by three education categories, two races and metropolitan areas. To each individual, we assign the corresponding ratio of the number of men over the number of women in his/her own race and educational category, living in his/her metropolitan area. For couples, our sex ratio, EduRatio corresponds to the number of men over women that are of the same race and education category as the wife of each household. As to race, we focus on black and white individuals and on couples where spouses are of the same race, assuming that the relevant marriage market is limited to one's own race². The coefficient of EduRatio will be common to both races, since to each observation we assign the sex ratio of its own race, and we include both races in our main sample. We consider the following education categories: high-school graduates (HS), some college (SC) and college graduate- college plus (CC). HS includes people with high-school diploma, or equivalent; SC includes individuals with some college, but no degree or associate degree; and CC refers to bachelor's degree and above. We exclude high-school dropouts from our analysis because our sample should be homogeneous, and high-school dropouts are reported to have different traits, socioeconomic characteristics and marriage market prospects from graduates (Wolpin 1999, Rumberger 1983). Moreover, the hardest marriage market barrier to cross is between dropouts and high school graduates (Qian 1998). We compute our sex ratio including men and women aged 18 to 64. It is reported that measures of the sex ratio

² Our results are robust to the inclusion of Asians, with the white sex ratio as marriage market of reference for them.

based on broad age ranges are satisfactory and may be preferable to sex ratios computed for narrower age ranges (Fosset and Kiecolt 1991)³.

The interactions of EduRatio with the dummy variables for the education brackets SC and CC (dySC and dyCC) capture the differential effect of our sex ratio for higher education categories. The education dummies refer to the education of the wife. Our identification strategy of the bargaining power effect consists of estimating the coefficient of EduRatio and capturing the differential effect by education category through the coefficients of the interaction terms. The impact of the education sex ratio on the labor supply of high-school graduates is captured by the coefficient of EduRatio (impact for the omitted category). The summation of this coefficient and the coefficient of the interaction term SC (CC) measures the impact of the education sex ratio on the labor supply of some-college (college-college plus) people. Therefore, checking the significance of the interaction terms tests for the additional impact on couples in the SC (CC) category.

The other regressors are the wage rate w^i (of spouse i or of unmarried individual u), household non-labor income y , and X . X includes age, experience, education of each spouse, a dummy variable for race, number of household members and number of (young) children in the family. X also includes state unemployment rate, state total labor force participation and female labor force participation (with children younger than six), to control for the level of economic activity in a state and especially for employment opportunities. We add two measures of the prevalence of same-sex unmarried households by metropolitan area, for homosexuals and for lesbians, in order to keep our education sex ratio as closely related to the heterosexual marriage markets as possible. The dependent variable in our labor supply regressions is annual hours worked, which is defined as total annual hours worked on the longest job held in 1999. Only households in which both spouses have positive hours of work are included in our samples. All female

³ Research shows that people consider mates drawn from relatively broad age ranges. While mean age differences between husbands and wives are relatively small, there is considerable variation around this central tendency as many marriages involve larger age differences. Competition and substitution across age categories is considerable (Fosset and Kiecolt 1993). Sex ratios accounting for wives being younger than husbands are reported to have the same impact (Chiappori et al. 2002). We also computed the sex ratio for the age bracket 18 to 44 and got similar results.

labor supply regressions also exhibit the same results when run with Heckman MLE to correct for sample selection.

The labor supply estimation uses robust standard errors clustered by metropolitan area, which allow for correlation of household observations within metropolitan areas. Our specifications do not use a differences-in-differences estimator since husbands' and wives' regressions, as well as singles', are run separately from one another. As such, they should not suffer from the understated standard errors highlighted by Bertrand, Duflo, Mullainathan 2004. At any rate, clustering by metropolitan area should rectify such an underestimation, if at all present.

We assume sorting within education brackets. We computed the extent of sorting in our own sample, and found that the spouses' correlation across education brackets is about .53, and 58 % of our couples have spouses within the same bracket (high-school graduates, some college and college-college plus). Those figures are very similar to the literature acknowledging education assortative mating, so our assumption seems plausible. In fact, Weiss and Willis (1997) find that the correlation in educational attainments of spouses is on average .57 and report that this strong correlation is similar in magnitude to the correlations found in many other samples in the United States and other countries. We further checked for sorting by education brackets by empirically testing whether spouses in our main sample are at all affected by sex ratios of other education groups. A labor supply regression with one sex ratio for each education bracket and no interaction term yields a non-significant impact of those ratios for either spouse. We interpret this outcome as evidence of marital sorting within education brackets⁴.

Data

Estimation is carried out on the March Supplement of the Current Population Survey (CPS) for the year 2000. The 2000 U.S. Census is used to construct our education sex ratio by education brackets, race, and age groups. Husbands and wives from single-family households were extracted from the CPS into separate files. Records in these files were then matched on the household ID code to create a single observation for each

⁴ We also tried to include one sex ratio for each education bracket in our main specification and found the same pattern of results for our EduRatios of interest and three non-significant coefficients for the additional common ratios.

married couple. Data on labor force activity, income and any variable of interest at the household level are taken from the March Supplement, to which we merge data on education ratios from the Summary File 4 of the Census. Summary File 4 (SF4) contains information compiled from the questions asked to a sample of all people and housing units and is released as individual files for each of the 50 states, the District of Columbia, Puerto Rico, and for the United States overall. We use the cross-tabulations by sex, age, race and educational attainment to construct separate education ratios for the black and white population, aged 18 to 64 by metropolitan area⁵. There are 276 U.S. metropolitan areas excluding Puerto Rico. Merging those to the CPS data and excluding the metropolitan ratios' outliers (top and bottom 2 %) leave us with 173 metropolitan areas. The state unemployment rate, state total labor force participation and female labor force participation are retrieved from the Bureau of Labor Statistics. The two measures of the prevalence of same-sex unmarried households come from table PCT21 of SF4 and are at the metropolitan level. The Census records a household as a same-sex union if the relationship to the householder is specified as "unmarried partner". We construct two ratios, the number of homosexual unions out of the total number of households and the number of lesbian unions out of the total number of households. In our sample, the covariate education is derived from the education categories that the CPS provides⁶. Finally, CPS weights are used to make the sample representative of the US population and economy.

Table 1 presents the descriptive statistics for the main variables by demographic. In our sample, men on average work more annual hours than women and earn a higher hourly wage, while they have very similar levels of education. On average, husbands are two years older than wives. As to our education sex ratio by metropolitan area, there are more white women graduating from high school, or having some college education, than

⁵ The age brackets in SF4 (PCT65) are 18-24; 25-34; 35-44 and 45-64 and the education categories are: less than 9th grade; 9th- 12th grade-no diploma; high school graduate-high school diploma, or the equivalent; some college but no degree; Associate degree; Bachelor's degree; Master's degree; Graduate or professional degree.

⁶ Those are: less than 1st grade; 1st-4th grade; 5th or 6th grade; 7th or 8th grade; 10th grade; 11th grade; 12th grade-no diploma; high school graduate-high school diploma, or the equivalent; some college but no degree; associate degree in college-occupational/vocational program; associate degree in college-academic program; bachelor's degree; master's degree; professional school degree and doctorate degree.

white men. On the other hand, there are more white men than women holding a college degree or above. The pattern is somewhat different for the black population: fewer black women hold a high school diploma relative to black men but they are more numerous in the “some college” and “college-college plus” categories.

IV. Results

IV.1 Main evidence

The main results are shown in **Table 2**. The estimated effects of our quality sex ratio are positive for husbands and negative for wives, as predicted by the theory. Additionally, couples with CC wives exhibit a stronger response to the quality sex ratio on their bargaining power than couples with “some college” wives. In turn, SC wives estimated quality sex ratio coefficient is larger than for high school graduates wives. The point estimates in our sample indicate that a 10 percentage point increase in the education sex ratio reduces SC wives’ annual labor supply by about 7.8 hours (p-value = .01), while their husbands’ is increased by 5.4 hours per year (p-value = .006). As to couples with CC wives, their coefficients for the education sex ratio show a decline in wives’ labor supply by 16.6 hours (p-value = .009), and an increase in their husbands’ by 13.0 hours per year (p-value = .005). The evidence clearly shows that for both husbands and wives the estimates for the “college-college plus” are greater than for “some college”, the coefficients being statistically different from each other for each spouse. This suggests that changes in the sex ratio of one’s education group have a stronger effect on bargaining power if one is highly educated.

The signal conveyed by the education sex ratio about the quality of outside marriage market opportunities is more powerfully received by highly educated wives and husbands because education is positively related to other important mate attributes such as wealth, income and success in life. The availability of valuable mates in the marriage market represents a more credible threat for spouses that are per se high-quality mates than the sex ratio for lower education brackets. This is in line with the prediction by Iyigun, Walsh (2005), in which imbalances in the sex ratios become more relevant for intra-household allocations as the rank of couples in the assortative order rises, measured here by educational attainment. Moreover, our results also match evidence in the

literature of stronger educational homogamy for highly educated men and women (Qian 1998). For instance, today college graduates have become increasingly likely to marry one another rather than marry non-college graduates. The probability of having a spouse with the same educational background is 4 times higher than the possibility of marrying to someone who does not (Mare, Schwartz 2005). Finally, high-school graduates do not show any significant response to changing ratios⁷.

As to the size of our sex ratio effects, those changes correspond to a 4.4 (9.3) percent reduction of the average annual hours worked by “some college” (“college-college plus”) married women⁸ and to a 2.3 (5.7) percent increase for their corresponding husbands’. These effects are sizable, given the acknowledged rigidities in the husbands’ labor supply and the frequency of the reported labor supply peaking around 40 hours of work per week. In particular, the impact on husbands is remarkable since traditional family analyses do not emphasize husbands’ response to the sex ratio, even less so, their labor supply increasing with it.

We also estimated the impact of our quality sex ratio on a sub-sample of couples that did actually sort in marriage by education bracket, i.e. on couples where wives’ education belongs to the same education bracket as their husbands’. We found a similar pattern of results as in our main specification.

The bargaining power effect is also estimated on unmarried individuals, separately for men and women. Their labor supply regressions show no significant impact of the education sex ratio, as theory would predict. Both men and women exhibit economically negligible and statistically insignificant coefficients of the sex ratio by education brackets and of its interactions (**Table 2**). No additional impact is found for “some college” and “college-college plus”. At any rate, all their coefficients are different from the couples’ sample, which emphasizes the bargaining power effect on husbands and wives. Only the coefficient concerning the impact on high-school graduates has a

⁷ Couples where the wife is a high-school graduate do not seem to be affected by the relative number of men and women that are high-school graduates in their metropolitan area. The absence of such a bargaining power effect may be due to the lack of sorting behavior by this demographic group; it may also be due to strong rigidities in the labor supply schedules of such low-educated couples. See subsection IV for a more detailed discussion.

⁸ This decline in wives’ labor supply does not appear to be driven by women less attached to the labor force being in the labor market and working fewer hours. Female participation in the labor market does not exhibit any positive significant impact of the bargaining power effect of the quality sex ratio.

large magnitude, especially for single men. However, the coefficients are never significant and the singles' very small sample size may explain the imprecise estimate⁹.

The empirical results are consistent with theories where higher sex ratios increase female bargaining power in the marriage market. Furthermore, this evidence represents the first empirical support of the bargaining power effect of a quality sex ratio by education and of its stronger impact especially as higher levels of educational attainment are considered. Further evidence presented below, together with the discussion of various alternative explanations, should help making this claim convincing.

IV.2 Race

Running our main labor supply specification on the sub-sample of white couples yields the same results as the full sample regressions (**Table 4**). The education sex ratio¹⁰ has a negative effect on wives' labor supply and positive effects on husbands', with a significantly stronger impact for the "college-college plus" than for "some college". The coefficient of high-school graduates is not significant. Specifically, "some college" wives experience a reduction in their annual hours of 76.6 (p-value = 0.03) while their spouses increase theirs by 42.2 (p-value = 0.05). Moreover, wives in the highest education category reduce their annual hours worked by 171.7 hours (p-value = 0.01), and their spouses experience an increase of 136.3 annual hours (p-value = 0.01). The very small black population in the CPS didn't allow us to run the same regressions for only black couples. Nevertheless, in our full sample, we ran a similar regression to check whether the bargaining power effect of our within-race quality sex ratio varies across races. Each of the three variables concerning the sex ratio by education is interacted with a dummy variable for race, in order to capture a possible differential effect. No evidence of a different impact across races was detected; however, the several sex ratio coefficients in that regression became highly collinear.

IV.3 Impact for older and younger couples

⁹ The estimated negative coefficient for single women and positive for single men may be due to some of them planning to marry in the future and thus mildly experiencing a possible bargaining power effect in expected value (although not different across education brackets).

¹⁰ For the white sub-sample, EduRatio is computed using data only for white men and women.

The bargaining power effect of our sex ratio by education is also estimated on sub-samples of older couples and younger couples, using the same specification as above. We actually find an interesting pattern (**Table 3**). Couples in their late thirties and above exhibit a stronger impact of the sex ratio for “some college” than in the entire sample, and an even higher response for the “college-college plus” category, especially for wives. The associated decline in wives’ labor supply is 82 annual hours for SC and 259 annual hours for CC. The role of high-school graduates sex ratio is still negligible. On the contrary, for couples in their twenties and early thirties the bargaining power effect is significant for high-school graduates while not being different across education brackets, and it is greater than all the coefficients for the entire sample and for the “old” sub-sample (the decline in wives’ labor supply is 750). We believe that those results reflect different informational values about the quality of potential mates that educational attainment conveys at different stages of life. When young, education is not yet a good predictor of quality such as wealth and success in life because one hasn’t had time to extract the benefits from education yet. The sex ratio in one’s education group matters, also for high-school graduates, but there is no stronger impact for high brackets because more education cannot convey much more prosperity information. Also, high-school graduates do show a sorting behavior, probably because at such young an age, high-school graduates are actually more likely to marry individuals in their education category, if not because they know and interact with more such people. Instead, at older ages education becomes a better proxy for economic prosperity because there was time to establish social status and wealth. Especially if one has a high educational attainment, the signal given by the education sex ratio is very quality-informative, so that the effect of such outside marriage market opportunities on bargaining power is very strong. Education matters more in marriage choices when prosperity is directly at stake: this is the case for “older” couples looking at their marriage prospects, since the benefits from education are already present. Evidence from the literature actually suggests that later age at union promotes stronger educational homogamy. In particular, men and women aged 30 or above are less likely to be with partners with a different level of educational attainment than are persons in their twenties (Qian 1998).

IV.4 High-school graduates

Bargaining power in households where the wife is a high-school graduate does not seem to be affected by the relative number of men and women that are high-school graduates in their metropolitan area. Possibly, those individuals do not exhibit assortative sorting behavior by education because the bracket is too narrow and they may also look for mates “above”, in the “some college” pool. To test this hypothesis, we thus constructed a modified quality sex ratio, in which couples with a high-school graduate wife are associated with the sex ratio of high-school graduates plus “some college” men and women. We kept the assumptions about the assortative mating of the other two groups of individuals “some college” and “college-college plus”. There is no evidence to support the hypothesis. The bargaining power effect for them is not significant for husband or wife, while for “some college” and “college-college plus” couples it remains significant, and with an increasing impact along educational brackets. High-school graduates do not appear to “think” assortatively in terms of outside marriage market opportunities or match with “some college” individuals. We suggest that this lack of an education sex ratio effect on current high-school graduates could be due to the fact that high-school graduates do not have good marital prospects in terms of their educational attainment, so they just do not sort and are not affected by the specific quality dimension “education”. This is in line with the empirical evidence from the literature that mainly highly educated men and women are likely to marry each other (Qian 1998). Additionally, it is compatible with the theoretical prediction (Iyigun Walsh 2005) of an increasing bargaining power effect of the sex ratios as the assortative order rises, which is empirically supported by our main results: for low ranks such as high-school-graduates, the impact can be negligible.

V. Alternative explanations

Sex ratios as proxy of local labor market opportunities

It may be possible that the labor supply of married women falls not as a result of the bargaining power effect of mate availability by education brackets, but due to poor local economic opportunities for women. High values of our quality sex ratio by metropolitan area may suggest male workers outnumbering female workers and a local

labor market with gloomy perspectives in female opportunities. Similarly, it could be that more educated women, whose labor supply is high, live in metropolitan areas where there are better job opportunities for them, so that the negative coefficient of our education ratio represents labor market fluctuations instead of bargaining power. There are at least three reasons to believe that local economy does not provide a plausible alternative explanation for our findings. First, our labor supply regressions include individuals' wages and experience, state unemployment rate, total labor force participation rate and female labor force participation rate, which help account for the effects of variation in labor market opportunities, specifically for women. Second, it is difficult to understand why the labor supply of men married to those women, but not other men, should be higher in those metropolitan areas if it were just a labor market fluctuation. Third, single women with similar demographic and labor market characteristics did not experience the same impact of the sex ratios as married women.

Sex ratio including married and same-sex partners

It may seem that our education sex ratio does not capture the actual availability of mates in a local marriage market because both married individuals and same-sex partners, are included in the computation of our variable. Its lack of significance in our unmarried samples may be attributed to large percentages of unmarried men or women having same-sex partners. We believe that our ratio of the total number of men and women present in a metropolitan area does represent a reliable sex-ratio for three main reasons. First, there is considerable evidence in the literature that relatively little benefit is realized from refinements such as computing sex ratios separately by marital status (Fosset and Kiecolt 1991; Freiden 1974). Second, we control for the prevalence of same-sex unmarried households using Census data and constructing two ratios: the number of homosexual relationships out of the total number of households and the number of lesbian relationships out of the total number of households. With those measures at the metropolitan area, we make sure that our education sex ratio is an index of the tightness of the heterosexual marriage markets. Finally, to the extent that the sizes of the male and female homosexual populations vary together, their impact on the validity of the sex ratio would be reduced (Fosset and Kiecolt 1991).

Marital gains from specialization

It is well known that if the education of the husband is higher than the wife's, there are gains from the wife specializing in household production and thus working less in the labor market (Becker 1981, Chiappori et al. 2006). Our quality sex ratio may capture the presence of those gains, showing that when the education gap of married couples increases (i.e. the number of highly educated men increases, married women's labor supply decreases and their husbands' increases). However, this link cannot represent an alternative explanation to our bargaining power interpretation for three reasons. First, our sample consists of already married couples, and the sex ratio counts all men and women regardless of their marital status, while the specialization effect should be present only for couples formed after any sex ratio change. When we restrict our sample to "older" couples, likely to have married many years prior to 2000, our bargaining power interpretation still holds. Second, we consider positive assortative mating within education brackets, so that men and women are affected by fluctuations in the sex ratio only in their own education group. In this case, the education gap of potential spouses, and the corresponding gains from specialization would be very small. Third, when we restrict our sample to couples that did indeed perfectly sort by those education brackets, (i.e. no peculiar gain from specialization should be present for them) our results still hold.

Welfare programs for women

Welfare programs favorable to women may discourage female labor supply or increase the bargaining power of married women by enhancing the value of single motherhood. However, by definition, welfare programs benefit only low-income households, while our results hold for all levels of income. In particular, when low-income households are removed from our samples, there is still a significant decrease in married women's labor supply and increase in their husbands', with differential impacts across education brackets, also in the white sub-sample. Additionally, there is no reason why the pattern of the main welfare benefits such as AFDC, EITC and mandated benefits should vary across metropolitan areas to be more favorable to women in areas where women are relatively scarce. Regardless, the controls for income, wages, and number of

children should capture welfare mechanisms and effects of welfare eligibility in our main regressions.

VI. Conclusions

This paper further explores the role of sex ratios on bargaining power, by constructing a quality sex ratio by education brackets and testing whether it affects the intra-household bargaining power of couples in the corresponding education brackets, within the framework of a collective labor supply household model. Additionally, we also test the prediction that the bargaining power effect of our sex ratio is greater as the assortative mating order by education increases. Using CPS and Census data for year 2000, we find that married women significantly reduce their supply of market labor, while their husbands increase theirs as the corresponding education sex ratio becomes more favorable to women. Consistent with the hypothesis of a stronger effect for higher education brackets, couples with “college-college plus” wives exhibit a stronger impact of the quality sex ratio on their bargaining power than couples with “some college” wives, whose estimated quality sex ratio coefficient is in turn larger than for high-school graduates. Our bargaining power interpretation is strengthened by the fact that unmarried men and women do not exhibit any significant impact of the sex ratio on their labor supply. Alternative explanations such as local labor market opportunities, marital gains from specialization, welfare programs, and inclusion of married and same-sex partners in the sex ratio, are rejected.

The findings presented here are consistent with theories where higher sex ratios increase female bargaining power in the marriage market. Additionally, this evidence represents the first empirical support of the bargaining power effect of a quality sex ratio by education and of its stronger impact as higher levels of educational attainment are considered.

References

1. Angrist, J. (2002), “How do sex ratios affect marriage and labor markets? Evidence from America’s second generation”, *Quarterly Journal of Economics*, ? 997-1038.
2. Becker, G. (1981), “A treatise on the family”, *Harvard University Press*
3. Chiappori, P.-A., Iyigun, M., Weiss, Y. (2006), “Gender inequality, spousal careers and divorce”, mimeo, Columbia University
4. Chiappori, P.-A., Iyigun, M., Weiss, Y. (2005), “Spousal matching, marriage contracts and property division in divorce”, mimeo, Columbia University
5. Chiappori, P.-A. (1992), “Collective Labor Supply and Welfare”, *Journal of Political Economy*, 100, 437–467.
6. Chiappori, P.-A, Fortin, B. and G. Lacroix (2002), “Household Labor Supply, Sharing Rule and the Marriage Market”, *Journal of Political Economy*, 110-1, 37-72
7. Fossett, M., Kiecolt, J. (1993), “Mate Availability and Family Structure among African Americans in U.S. Metropolitan Areas”, *Journal of Marriage and the Family*, 55, 288-302
8. Fossett, M., Kiecolt, J. (1991), “A Methodological Review of the Sex Ratio: Alternatives for Comparative research”, *Journal of Marriage and the Family*, 53, 941-957
9. Grossbard-Shechtman, S., Neideffer, M. (1997), “Women’s hours of work and marriage market imbalances”, *Economics of the Family and Family Policies*, *Routledge*
10. Iyigun, M., Walsh, R. (2005), “Building the family nest: pre-marital investments, marriage markets and spousal allocations”, mimeo, University of Colorado
11. Mare, R., Schwartz, C. (2005), “Trends in educational assortative marriage from 1940 to 2003”, California Center for Population Research, 017-05
12. Qian, Z. (1998), “Changes in Assortative Mating: The Impact of Age and Education”, *Demography*, 35, 279-292

13. South, S., Lloyd, K. (1992), "Marriage Opportunities and Family Formation: Further Implications of Imbalanced Sex Ratios", *Journal of Marriage and the Family*, 54, 440-451
14. Tiefenthaler, J. (1997), "The Productivity Gains of Marriage: Effects of Spousal Education on Own Productivity across Market Sectors in Brazil", *Economic Development and Cultural Change*, 45, 633-650
15. Weiss, Y., Willis, R. (1997), "Match Quality, New Information, and Marital Dissolution", *Journal of Labor Economics*, 15, S293-S329

Table 1. Summary Statistics

Variable	White		Black	
	mean	std. dev	mean	std. dev
Education Ratio High School Graduates	0.98	0.06	1.22	0.63
Education Ratio Some College	0.89	0.04	0.94	0.43
Education Ratio College and above	1.02	0.06	0.95	0.48
Number of observations	173		173	

Variable	Couples	
	mean	std. dev
Hours worked by wife*	1775.59	679.24
Hours worked by husband*	2287.7	510
Log of wage of wife*	2.55	0.66
Log of wage of husband*	2.93	0.56
Age of husband	40.9	8.13
Age of wife	38.9	7.97
Education of husband	14.3	2.28
Education of wife	14.2	2.15
Household non-labor income	5396.18	13685.73
Number of children below age 6	0.34	0.63
Number of family members	3.39	1.15
Dummy for black	0.1	0.3
Number of observations	6198	

Variable	Single Women		Single Men	
	mean	std. dev	mean	std. dev
Hours worked*	1792.02	630.98	2122.07	556.56
Log of wage*	2.24	0.66	2.63	0.53
Age	33.35	8.01	37.1	8.27
Education	13.29	1.69	13.71	2.11
Household non-labor income	3016.43	5789.97	4326.6	9537.48
Number of children below age 6	0.47	0.69	0.1	0.39
Number of family members	2.73	1.01	2.38	0.84
Dummy for black	0.59	0.49	0.32	0.46
Number of observations	540		129	

The sample contains data from the March supplement year 2000 and U.S. Census 2000.

*For women and men with positive hours of work.

Table 2. Effect of Education Ratio on Annual Hours Worked, Couples and Singles

Estimated Coefficient / robust standard errors / sample size (significant estimates in bold)

	Wives	Husbands
Edu Ratio	-65.32 (-89.87)	-86.68 (-96.13)
Edu Ratio*dy SC	-78.29 (-30.01)	53.56 (19.33)
Edu Ratio*dy CC	-166.21 (-62.87)	129.80 (46.05)
Number of observations	6198	6198
	Single Women	Single Men
Edu Ratio	186.71 (271.31)	784.78 (707.54)
Edu Ratio*dy SC	-29.56 (99.45)	-109.27 (246.57)
Edu Ratio*dy CC	37.36 (242.40)	-431.90 (316.20)
Number of observations	540	129

The sample contains data from the March supplement year 2000

All tables report regressions run on the same set of covariates described in Section III

Single individuals are defined as those with marital status "never married".

Table 3. Effect of Education Ratio on Annual Hours Worked, White Couples

Estimated Coefficient / robust standard errors / sample size (significant estimates in bold)

	Wives	Husbands
Edu Ratio	78.42 (178.04)	-179.71 (152.75)
Edu Ratio*dy SC	-76.58 (35.19)	42.17 (21.79)
Edu Ratio*dy CC	-171.71 (69.31)	136.29 (52.51)
Number of observations	5762	5762

The sample contains data from the March supplement year 2000

All tables report regressions run on the same set of covariates described in Section III.

Table 4. Effect of Education Ratio on Annual Hours Worked by Wives, by Age Group

Estimated Coefficient / robust standard errors / sample size (significant estimates in bold)

	Young couples	Old Couples
Edu Ratio	-750.33 (363.82)	26.96 (83.65)
Edu Ratio*dy SC	-113.90 (75.14)	-82.13 (34.09)
Edu Ratio*dy CC	30.33 (144.90)	-259.54 (88.67)
Number of observations	1204	4074

The sample contains data from the March supplement year 2000

All tables report regressions run on the same set of covariates described in Section III.

Young couples are those with wives aged 22 to 31 and husbands aged 25 to 35; old couples wives are aged 32 to 55 and husbands 37 to 57.

NOTE DI LAVORO DELLA FONDAZIONE ENI ENRICO MATTEI

Fondazione Eni Enrico Mattei Working Paper Series

Our Note di Lavoro are available on the Internet at the following addresses:

<http://www.feem.it/Feem/Pub/Publications/WPapers/default.html>

<http://www.ssrn.com/link/feem.html>

<http://www.repec.org>

<http://agecon.lib.umn.edu>

NOTE DI LAVORO PUBLISHED IN 2006

SIEV	1.2006	<i>Anna ALBERINI: Determinants and Effects on Property Values of Participation in Voluntary Cleanup Programs: The Case of Colorado</i>
CCMP	2.2006	<i>Valentina BOSETTI, Carlo CARRARO and Marzio GALEOTTI: Stabilisation Targets, Technical Change and the Macroeconomic Costs of Climate Change Control</i>
CCMP	3.2006	<i>Roberto ROSON: Introducing Imperfect Competition in CGE Models: Technical Aspects and Implications</i>
KTHC	4.2006	<i>Sergio VERGALLI: The Role of Community in Migration Dynamics</i>
SIEV	5.2006	<i>Fabio GRAZI, Jeroen C.J.M. van den BERGH and Piet RIETVELD: Modeling Spatial Sustainability: Spatial Welfare Economics versus Ecological Footprint</i>
CCMP	6.2006	<i>Olivier DESCHENES and Michael GREENSTONE: The Economic Impacts of Climate Change: Evidence from Agricultural Profits and Random Fluctuations in Weather</i>
PRCG	7.2006	<i>Michele MORETTO and Paola VALBONESE: Firm Regulation and Profit-Sharing: A Real Option Approach</i>
SIEV	8.2006	<i>Anna ALBERINI and Aline CHIABAI: Discount Rates in Risk v. Money and Money v. Money Tradeoffs</i>
CTN	9.2006	<i>Jon X. EGUIA: United We Vote</i>
CTN	10.2006	<i>Shao CHIN SUNG and Dinko DIMITRO: A Taxonomy of Myopic Stability Concepts for Hedonic Games</i>
NRM	11.2006	<i>Fabio CERINA (lxxviii): Tourism Specialization and Sustainability: A Long-Run Policy Analysis</i>
NRM	12.2006	<i>Valentina BOSETTI, Mariaester CASSINELLI and Alessandro LANZA (lxxviii): Benchmarking in Tourism Destination, Keeping in Mind the Sustainable Paradigm</i>
CCMP	13.2006	<i>Jens HORBACH: Determinants of Environmental Innovation – New Evidence from German Panel Data Sources</i>
KTHC	14.2006	<i>Fabio SABATINI: Social Capital, Public Spending and the Quality of Economic Development: The Case of Italy</i>
KTHC	15.2006	<i>Fabio SABATINI: The Empirics of Social Capital and Economic Development: A Critical Perspective</i>
CSRM	16.2006	<i>Giuseppe DI VITA: Corruption, Exogenous Changes in Incentives and Deterrence</i>
CCMP	17.2006	<i>Rob B. DELLINK and Marjan W. HOFKES: The Timing of National Greenhouse Gas Emission Reductions in the Presence of Other Environmental Policies</i>
IEM	18.2006	<i>Philippe QUIRION: Distributional Impacts of Energy-Efficiency Certificates Vs. Taxes and Standards</i>
CTN	19.2006	<i>Somdeb LAHIRI: A Weak Bargaining Set for Contract Choice Problems</i>
CCMP	20.2006	<i>Massimiliano MAZZANTI and Roberto ZOBOLI: Examining the Factors Influencing Environmental Innovations</i>
SIEV	21.2006	<i>Y. Hossein FARZIN and Ken-ICHI AKAO: Non-pecuniary Work Incentive and Labor Supply</i>
CCMP	22.2006	<i>Marzio GALEOTTI, Matteo MANERA and Alessandro LANZA: On the Robustness of Robustness Checks of the Environmental Kuznets Curve</i>
NRM	23.2006	<i>Y. Hossein FARZIN and Ken-ICHI AKAO: When is it Optimal to Exhaust a Resource in a Finite Time?</i>
NRM	24.2006	<i>Y. Hossein FARZIN and Ken-ICHI AKAO: Non-pecuniary Value of Employment and Natural Resource Extinction</i>
SIEV	25.2006	<i>Lucia VERGANO and Paulo A.L.D. NUNES: Analysis and Evaluation of Ecosystem Resilience: An Economic Perspective</i>
SIEV	26.2006	<i>Danny CAMPBELL, W. George HUTCHINSON and Riccardo SCARPA: Using Discrete Choice Experiments to Derive Individual-Specific WTP Estimates for Landscape Improvements under Agri-Environmental Schemes: Evidence from the Rural Environment Protection Scheme in Ireland</i>
KTHC	27.2006	<i>Vincent M. OTTO, Timo KUOSMANEN and Ekko C. van IERLAND: Estimating Feedback Effect in Technical Change: A Frontier Approach</i>
CCMP	28.2006	<i>Giovanni BELLA: Uniqueness and Indeterminacy of Equilibria in a Model with Polluting Emissions</i>
IEM	29.2006	<i>Alessandro COLOGNI and Matteo MANERA: The Asymmetric Effects of Oil Shocks on Output Growth: A Markov-Switching Analysis for the G-7 Countries</i>
KTHC	30.2006	<i>Fabio SABATINI: Social Capital and Labour Productivity in Italy</i>
ETA	31.2006	<i>Andrea GALLICE (lxxix): Predicting one Shot Play in 2x2 Games Using Beliefs Based on Minimax Regret</i>
IEM	32.2006	<i>Andrea BIGANO and Paul SHEEHAN: Assessing the Risk of Oil Spills in the Mediterranean: the Case of the Route from the Black Sea to Italy</i>
NRM	33.2006	<i>Rinaldo BRAU and Davide CAO (lxxviii): Uncovering the Macrostructure of Tourists' Preferences. A Choice Experiment Analysis of Tourism Demand to Sardinia</i>
CTN	34.2006	<i>Parkash CHANDER and Henry TULKENS: Cooperation, Stability and Self-Enforcement in International Environmental Agreements: A Conceptual Discussion</i>
IEM	35.2006	<i>Valeria COSTANTINI and Salvatore MONNI: Environment, Human Development and Economic Growth</i>
ETA	36.2006	<i>Ariel RUBINSTEIN (lxxix): Instinctive and Cognitive Reasoning: A Study of Response Times</i>

ETA	37.2006	<i>Maria SALGADEO</i> (lxxx): <u>Choosing to Have Less Choice</u>
ETA	38.2006	<i>Justina A.V. FISCHER and Benno TORGLER</i> : <u>Does Envy Destroy Social Fundamentals? The Impact of Relative Income Position on Social Capital</u>
ETA	39.2006	<i>Benno TORGLER, Sascha L. SCHMIDT and Bruno S. FREY</i> : <u>Relative Income Position and Performance: An Empirical Panel Analysis</u>
CCMP	40.2006	<i>Alberto GAGO, Xavier LABANDEIRA, Fidel PICOS And Miguel RODRÍGUEZ</i> : <u>Taxing Tourism In Spain: Results and Recommendations</u>
IEM	41.2006	<i>Karl van BIERVLIET, Dirk Le ROY and Paulo A.L.D. NUNES</i> : <u>An Accidental Oil Spill Along the Belgian Coast: Results from a CV Study</u>
CCMP	42.2006	<i>Rolf GOLOMBEK and Michael HOEL</i> : <u>Endogenous Technology and Tradable Emission Quotas</u>
KTHC	43.2006	<i>Giulio CAINELLI and Donato IACOBUCCI</i> : <u>The Role of Agglomeration and Technology in Shaping Firm Strategy and Organization</u>
CCMP	44.2006	<i>Alvaro CALZADILLA, Francesco PAULI and Roberto ROSON</i> : <u>Climate Change and Extreme Events: An Assessment of Economic Implications</u>
SIEV	45.2006	<i>M.E. KRAGT, P.C. ROEBELING and A. RUIJS</i> : <u>Effects of Great Barrier Reef Degradation on Recreational Demand: A Contingent Behaviour Approach</u>
NRM	46.2006	<i>C. GIUPPONI, R. CAMERA, A. FASSIO, A. LASUT, J. MYSLIAK and A. SGOBBI</i> : <u>Network Analysis, Creative System Modelling and DecisionSupport: The NetSyMoD Approach</u>
KTHC	47.2006	<i>Walter F. LALICH</i> (lxxx): <u>Measurement and Spatial Effects of the Immigrant Created Cultural Diversity in Sydney</u>
KTHC	48.2006	<i>Elena PASPALANOVA</i> (lxxx): <u>Cultural Diversity Determining the Memory of a Controversial Social Event</u>
KTHC	49.2006	<i>Ugo GASPARINO, Barbara DEL CORPO and Dino PINELLI</i> (lxxx): <u>Perceived Diversity of Complex Environmental Systems: Multidimensional Measurement and Synthetic Indicators</u>
KTHC	50.2006	<i>Aleksandra HAUKE</i> (lxxx): <u>Impact of Cultural Differences on Knowledge Transfer in British, Hungarian and Polish Enterprises</u>
KTHC	51.2006	<i>Katherine MARQUAND FORSYTH and Vanja M. K. STENIUS</i> (lxxx): <u>The Challenges of Data Comparison and Varied European Concepts of Diversity</u>
KTHC	52.2006	<i>Gianmarco I.P. OTTAVIANO and Giovanni PERI</i> (lxxx): <u>Rethinking the Gains from Immigration: Theory and Evidence from the U.S.</u>
KTHC	53.2006	<i>Monica BARNI</i> (lxxx): <u>From Statistical to Geolinguistic Data: Mapping and Measuring Linguistic Diversity</u>
KTHC	54.2006	<i>Lucia TAJOLI and Lucia DE BENEDICTIS</i> (lxxx): <u>Economic Integration and Similarity in Trade Structures</u>
KTHC	55.2006	<i>Suzanna CHAN</i> (lxxx): <u>“God’s Little Acre” and “Belfast Chinatown”: Diversity and Ethnic Place Identity in Belfast</u>
KTHC	56.2006	<i>Diana PETKOVA</i> (lxxx): <u>Cultural Diversity in People’s Attitudes and Perceptions</u>
KTHC	57.2006	<i>John J. BETANCUR</i> (lxxx): <u>From Outsiders to On-Paper Equals to Cultural Curiosities? The Trajectory of Diversity in the USA</u>
KTHC	58.2006	<i>Kiflemariam HAMDE</i> (lxxx): <u>Cultural Diversity A Glimpse Over the Current Debate in Sweden</u>
KTHC	59.2006	<i>Emilio GREGORI</i> (lxxx): <u>Indicators of Migrants’ Socio-Professional Integration</u>
KTHC	60.2006	<i>Christa-Maria LERM HAYES</i> (lxxx): <u>Unity in Diversity Through Art? Joseph Beuys’ Models of Cultural Dialogue</u>
KTHC	61.2006	<i>Sara VERTOMMEN and Albert MARTENS</i> (lxxx): <u>Ethnic Minorities Rewarded: Ethnostratification on the Wage Market in Belgium</u>
KTHC	62.2006	<i>Nicola GENOVESE and Maria Grazia LA SPADA</i> (lxxx): <u>Diversity and Pluralism: An Economist's View</u>
KTHC	63.2006	<i>Carla BAGNA</i> (lxxx): <u>Italian Schools and New Linguistic Minorities: Nationality Vs. Plurilingualism. Which Ways and Methodologies for Mapping these Contexts?</u>
KTHC	64.2006	<i>Vedran OMANOVIĆ</i> (lxxx): <u>Understanding “Diversity in Organizations” Paradigmatically and Methodologically</u>
KTHC	65.2006	<i>Mila PASPALANOVA</i> (lxxx): <u>Identifying and Assessing the Development of Populations of Undocumented Migrants: The Case of Undocumented Poles and Bulgarians in Brussels</u>
KTHC	66.2006	<i>Roberto ALZETTA</i> (lxxx): <u>Diversities in Diversity: Exploring Moroccan Migrants’ Livelihood in Genoa</u>
KTHC	67.2006	<i>Monika SEDENKOVA and Jiri HORAK</i> (lxxx): <u>Multivariate and Multicriteria Evaluation of Labour Market Situation</u>
KTHC	68.2006	<i>Dirk JACOBS and Andrea REA</i> (lxxx): <u>Construction and Import of Ethnic Categorisations: “Allochthones” in The Netherlands and Belgium</u>
KTHC	69.2006	<i>Eric M. USLANER</i> (lxxx): <u>Does Diversity Drive Down Trust?</u>
KTHC	70.2006	<i>Paula MOTA SANTOS and João BORGES DE SOUSA</i> (lxxx): <u>Visibility & Invisibility of Communities in Urban Systems</u>
ETA	71.2006	<i>Rinaldo BRAU and Matteo LIPPI BRUNI</i> : <u>Eliciting the Demand for Long Term Care Coverage: A Discrete Choice Modelling Analysis</u>
CTN	72.2006	<i>Dinko DIMITROV and Claus-JOCHEN HAAKE</i> : <u>Coalition Formation in Simple Games: The Semistrict Core</u>
CTN	73.2006	<i>Ottorino CHILLEM, Benedetto GUI and Lorenzo ROCCO</i> : <u>On The Economic Value of Repeated Interactions Under Adverse Selection</u>
CTN	74.2006	<i>Sylvain BEAL and Nicolas QUÉROU</i> : <u>Bounded Rationality and Repeated Network Formation</u>
CTN	75.2006	<i>Sophie BADE, Guillaume HAERINGER and Ludovic RENO</i> : <u>Bilateral Commitment</u>
CTN	76.2006	<i>Andranik TANGIAN</i> : <u>Evaluation of Parties and Coalitions After Parliamentary Elections</u>
CTN	77.2006	<i>Rudolf BERGHAMMER, Agnieszka RUSINOWSKA and Harrie de SWART</i> : <u>Applications of Relations and Graphs to Coalition Formation</u>
CTN	78.2006	<i>Paolo PIN</i> : <u>Eight Degrees of Separation</u>
CTN	79.2006	<i>Roland AMANN and Thomas GALL</i> : <u>How (not) to Choose Peers in Studying Groups</u>

CTN	80.2006	<i>Maria MONTERO</i> : <u>Inequity Aversion May Increase Inequity</u>
CCMP	81.2006	<i>Vincent M. OTTO, Andreas LÖSCHEL and John REILLY</i> : <u>Directed Technical Change and Climate Policy</u>
CSRM	82.2006	<i>Nicoletta FERRO</i> : <u>Riding the Waves of Reforms in Corporate Law, an Overview of Recent Improvements in Italian Corporate Codes of Conduct</u>
CTN	83.2006	<i>Siddhartha BANDYOPADHYAY and Mandar OAK</i> : <u>Coalition Governments in a Model of Parliamentary Democracy</u>
PRCG	84.2006	<i>Raphaël SOUBEYRAN</i> : <u>Valence Advantages and Public Goods Consumption: Does a Disadvantaged Candidate Choose an Extremist Position?</u>
CCMP	85.2006	<i>Eduardo L. GIMÉNEZ and Miguel RODRÍGUEZ</i> : <u>Pigou's Dividend versus Ramsey's Dividend in the Double Dividend Literature</u>
CCMP	86.2006	<i>Andrea BIGANO, Jacqueline M. HAMILTON and Richard S.J. TOL</i> : <u>The Impact of Climate Change on Domestic and International Tourism: A Simulation Study</u>
KTHC	87.2006	<i>Fabio SABATINI</i> : <u>Educational Qualification, Work Status and Entrepreneurship in Italy an Exploratory Analysis</u>
CCMP	88.2006	<i>Richard S.J. TOL</i> : <u>The Polluter Pays Principle and Cost-Benefit Analysis of Climate Change: An Application of Fund</u>
CCMP	89.2006	<i>Philippe TULKENS and Henry TULKENS</i> : <u>The White House and The Kyoto Protocol: Double Standards on Uncertainties and Their Consequences</u>
SIEV	90.2006	<i>Andrea M. LEITER and Gerald J. PRUCKNER</i> : <u>Proportionality of Willingness to Pay to Small Risk Changes – The Impact of Attitudinal Factors in Scope Tests</u>
PRCG	91.2006	<i>Raphaël SOUBEYRAN</i> : <u>When Inertia Generates Political Cycles</u>
CCMP	92.2006	<i>Alireza NAGHAVI</i> : <u>Can R&D-Inducing Green Tariffs Replace International Environmental Regulations?</u>
CCMP	93.2006	<i>Xavier PAUTREL</i> : <u>Reconsidering The Impact of Environment on Long-Run Growth When Pollution Influences Health and Agents Have Finite-Lifetime</u>
CCMP	94.2006	<i>Corrado Di MARIA and Edwin van der WERF</i> : <u>Carbon Leakage Revisited: Unilateral Climate Policy with Directed Technical Change</u>
CCMP	95.2006	<i>Paulo A.L.D. NUNES and Chiara M. TRAVISI</i> : <u>Comparing Tax and Tax Reallocations Payments in Financing Rail Noise Abatement Programs: Results from a CE valuation study in Italy</u>
CCMP	96.2006	<i>Timo KUOSMANEN and Mika KORTELAINEN</i> : <u>Valuing Environmental Factors in Cost-Benefit Analysis Using Data Envelopment Analysis</u>
KTHC	97.2006	<i>Dermot LEAHY and Alireza NAGHAVI</i> : <u>Intellectual Property Rights and Entry into a Foreign Market: FDI vs. Joint Ventures</u>
CCMP	98.2006	<i>Inmaculada MARTÍNEZ-ZARZOSO, Aurelia BENGOCHEA-MORANCHO and Rafael MORALES LAGE</i> : <u>The Impact of Population on CO2 Emissions: Evidence from European Countries</u>
PRCG	99.2006	<i>Alberto CAVALIERE and Simona SCABROSETTI</i> : <u>Privatization and Efficiency: From Principals and Agents to Political Economy</u>
NRM	100.2006	<i>Khaled ABU-ZEID and Sameh AFIFI</i> : <u>Multi-Sectoral Uses of Water & Approaches to DSS in Water Management in the NOSTRUM Partner Countries of the Mediterranean</u>
NRM	101.2006	<i>Carlo GIUPPONI, Jaroslav MYSLAK and Jacopo CRIMI</i> : <u>Participatory Approach in Decision Making Processes for Water Resources Management in the Mediterranean Basin</u>
CCMP	102.2006	<i>Kerstin RONNEBERGER, Maria BERRITTELLA, Francesco BOSELLO and Richard S.J. TOL</i> : <u>Klum@Gtap: Introducing Biophysical Aspects of Land-Use Decisions Into a General Equilibrium Model A Coupling Experiment</u>
KTHC	103.2006	<i>Avner BEN-NER, Brian P. McCALL, Massoud STEPHANE, and Hua WANG</i> : <u>Identity and Self-Other Differentiation in Work and Giving Behaviors: Experimental Evidence</u>
SIEV	104.2006	<i>Aline CHIABAI and Paulo A.L.D. NUNES</i> : <u>Economic Valuation of Oceanographic Forecasting Services: A Cost-Benefit Exercise</u>
NRM	105.2006	<i>Paola MINOIA and Anna BRUSAROSCO</i> : <u>Water Infrastructures Facing Sustainable Development Challenges: Integrated Evaluation of Impacts of Dams on Regional Development in Morocco</u>
PRCG	106.2006	<i>Carmine GUERRIERO</i> : <u>Endogenous Price Mechanisms, Capture and Accountability Rules: Theory and Evidence</u>
CCMP	107.2006	<i>Richard S.J. TOL, Stephen W. PACALA and Robert SOCOLOW</i> : <u>Understanding Long-Term Energy Use and Carbon Dioxide Emissions in the Usa</u>
NRM	108.2006	<i>Carles MANERA and Jaume GARAU TABERNER</i> : <u>The Recent Evolution and Impact of Tourism in the Mediterranean: The Case of Island Regions, 1990-2002</u>
PRCG	109.2006	<i>Carmine GUERRIERO</i> : <u>Dependent Controllers and Regulation Policies: Theory and Evidence</u>
KTHC	110.2006	<i>John FOOT (lxxx)</i> : <u>Mapping Diversity in Milan. Historical Approaches to Urban Immigration</u>
KTHC	111.2006	<i>Donatella CALABI</i> : <u>Foreigners and the City: An Historiographical Exploration for the Early Modern Period</u>
IEM	112.2006	<i>Andrea BIGANO, Francesco BOSELLO and Giuseppe MARANO</i> : <u>Energy Demand and Temperature: A Dynamic Panel Analysis</u>
SIEV	113.2006	<i>Anna ALBERINI, Stefania TONIN, Margherita TURVANI and Aline CHIABAI</i> : <u>Paying for Permanence: Public Preferences for Contaminated Site Cleanup</u>
CCMP	114.2006	<i>Vivekananda MUKHERJEE and Dirk T.G. RÜBBELKE</i> : <u>Global Climate Change, Technology Transfer and Trade with Complete Specialization</u>
NRM	115.2006	<i>Clive LIPCHIN</i> : <u>A Future for the Dead Sea Basin: Water Culture among Israelis, Palestinians and Jordanians</u>
CCMP	116.2006	<i>Barbara BUCHNER, Carlo CARRARO and A. Denny ELLERMAN</i> : <u>The Allocation of European Union Allowances: Lessons, Unifying Themes and General Principles</u>
CCMP	117.2006	<i>Richard S.J. TOL</i> : <u>Carbon Dioxide Emission Scenarios for the Usa</u>

NRM	118.2006	<i>Isabel CORTÉS-JIMÉNEZ and Manuela PULINA: <u>A further step into the ELGH and TLGH for Spain and Italy</u></i>
SIEV	119.2006	<i>Beat HINTERMANN, Anna ALBERINI and Anil MARKANDYA: <u>Estimating the Value of Safety with Labor Market Data: Are the Results Trustworthy?</u></i>
SIEV	120.2006	<i>Elena STRUKOVA, Alexander GOLUB and Anil MARKANDYA: <u>Air Pollution Costs in Ukraine</u></i>
CCMP	121.2006	<i>Massimiliano MAZZANTI, Antonio MUSOLESI and Roberto ZOBOLI: <u>A Bayesian Approach to the Estimation of Environmental Kuznets Curves for CO₂ Emissions</u></i>
ETA	122.2006	<i>Jean-Marie GREETHER, Nicole A. MATHYS, and Jaime DE MELO: <u>Unraveling the World-Wide Pollution Haven Effect</u></i>
KTHC	123.2006	<i>Sergio VERGALLI: <u>Entry and Exit Strategies in Migration Dynamics</u></i>
PRCG	124.2006	<i>Bernardo BORTOLOTTI and Valentina MILELLA: <u>Privatization in Western Europe Stylized Facts, Outcomes and Open Issues</u></i>
SIEV	125.2006	<i>Pietro CARATTI, Ludovico FERRAGUTO and Chiara RIBOLDI: <u>Sustainable Development Data Availability on the Internet</u></i>
SIEV	126.2006	<i>S. SILVESTRI, M PELLIZZATO and V. BOATTO: <u>Fishing Across the Centuries: What Prospects for the Venice Lagoon?</u></i>
CTN	127.2006	<i>Alison WATTS: <u>Formation of Segregated and Integrated Groups</u></i>
SIEV	128.2006	<i>Danny CAMPBELL, W. George HUTCHINSON and Riccardo SCARPA: <u>Lexicographic Preferences in Discrete Choice Experiments: Consequences on Individual-Specific Willingness to Pay Estimates</u></i>
CCMP	129.2006	<i>Giovanni BELLA: <u>Transitional Dynamics Towards Sustainability: Reconsidering the EKC Hypothesis</u></i>
IEM	130.2006	<i>Elisa SCARPA and Matteo MANERA: <u>Pricing and Hedging Illiquid Energy Derivatives: an Application to the JCC Index</u></i>
PRCG	131.2006	<i>Andrea BELTRATTI and Bernardo BORTOLOTTI: <u>The Nontradable Share Reform in the Chinese Stock Market</u></i>
IEM	132.2006	<i>Alberto LONGO, Anil MARKANDYA and Marta PETRUCCI: <u>The Internalization of Externalities in The Production of Electricity: Willingness to Pay for the Attributes of a Policy for Renewable Energy</u></i>
ETA	133.2006	<i>Brighta BERCEA and Sonia OREFFICE: <u>Quality of Available Mates, Education and Intra-Household Bargaining Power</u></i>

(lxxviii) This paper was presented at the Second International Conference on "Tourism and Sustainable Economic Development - Macro and Micro Economic Issues" jointly organised by CRENoS (Università di Cagliari and Sassari, Italy) and Fondazione Eni Enrico Mattei, Italy, and supported by the World Bank, Chia, Italy, 16-17 September 2005.

(lxxix) This paper was presented at the International Workshop on "Economic Theory and Experimental Economics" jointly organised by SET (Center for advanced Studies in Economic Theory, University of Milano-Bicocca) and Fondazione Eni Enrico Mattei, Italy, Milan, 20-23 November 2005. The Workshop was co-sponsored by CISEPS (Center for Interdisciplinary Studies in Economics and Social Sciences, University of Milan-Bicocca).

(lxxx) This paper was presented at the First EURODIV Conference "Understanding diversity: Mapping and measuring", held in Milan on 26-27 January 2006 and supported by the Marie Curie Series of Conferences "Cultural Diversity in Europe: a Series of Conferences."

2006 SERIES

CCMP	<i>Climate Change Modelling and Policy</i> (Editor: Marzio Galeotti)
SIEV	<i>Sustainability Indicators and Environmental Valuation</i> (Editor: Anna Alberini)
NRM	<i>Natural Resources Management</i> (Editor: Carlo Giupponi)
KTHC	<i>Knowledge, Technology, Human Capital</i> (Editor: Gianmarco Ottaviano)
IEM	<i>International Energy Markets</i> (Editor: Matteo Manera)
CSRM	<i>Corporate Social Responsibility and Sustainable Management</i> (Editor: Giulio Sapelli)
PRCG	<i>Privatisation Regulation Corporate Governance</i> (Editor: Bernardo Bortolotti)
ETA	<i>Economic Theory and Applications</i> (Editor: Carlo Carraro)
CTN	<i>Coalition Theory Network</i>