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overlooked in research on trade because of a focus on wages as the sole channel of trade adjustment. The consequences of Chinese trade for U.S. employment, household income, and government benefit programs may contribute to public ambivalence toward globalization and specific anxiety about increasing trade with China.

¹ R. C. Feenstra, and G. H. Hanson. "Productivity Measurement and the Impact of Trade and Technology of Wages: Estimates for the U.S. 1972–1990," NBER Working Paper No. 6052, June 1997, published as "The Impact of Outsourcing and High-Technology Capital on Wages: Estimates for the U.S., 1979–1990," *Quarterly Journal of Economics*, 114 (3) (1999), pp. 907–40; and L. F. Katz and D. H. Autor, "Changes in the Wage Structure and Earnings Inequality," in O. Ashenfelter and D. Card, eds., *Handbook of Labor Economics*, Vol. 3A, Amsterdam: Elsevier Science, (1999), pp. 1463–555.

² Important precursors to our work

include G. J. Borjas and V. A. Ramey, "Foreign Competition, Market Power, and Wage Inequality: Theory and Evidence," NBER Working Paper No. 4556, November 1993, and *Quarterly Journal of Economics*, 110 (4) (1995), pp. 1075–110; and P. Topalova, "Trade Liberalization, Poverty, and Inequality: Evidence from Indian Districts," NBER Working Paper No. 11614, September 2005, and in A. Harrison, ed., *Globalization and Poverty*, Chicago, IL: University of Chicago Press, (2007), pp. 291–336.

³ D. H. Autor, D. Dorn, and G. H. Hanson. "The China Syndrome: Local Labor Market Effects of Import Competition in the United States," NBER Working Paper No. 18054, May 2012, and *American Economic Review*, 103 (6) (2013), pp. 2121–68.

⁴ Two related papers include D. H. Autor, D. Dorn, and G. H. Hanson, "The Geography of Trade and Technology Shocks in the United States," NBER Working Paper No. 18940, April 2013, and *American Economic Review: Papers and Proceedings*, 103

(3) (2013), pp. 220–5; and "Untangling Trade and Technology: Evidence from Local Labor Markets," NBER Working Paper No. 18938, April 2013. In this work, we juxtapose the effects of trade and technology on employment in U.S. local labor markets between 1990 and 2007. Regional exposures to trade and technology are uncorrelated, conditional on initial manufacturing employment.

⁵ D. Acemoglu, D. H. Autor, D. Dorn, G. H. Hanson, and B. Price, "Import Competition and the Great U.S. Employment Sag of the 2000s," MIT Working Paper, September 2013; and D. Acemoglu, D. H. Autor, D. Dorn, G. H. Hanson, and B. Price, "Return of the Solow Paradox? IT, Productivity, and Employment in U.S. Manufacturing," NBER Working Paper No. 19837, January 2014, and forthcoming in *American Economic Review: Papers and Proceedings*.

⁶ D. H. Autor, D. Dorn, G. H. Hanson, and J. Song, "Trade Adjustment: Worker Level Evidence," NBER Working Paper No. 19226, July 2013.

Economic Consequences of Gender Identity

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An increasingly discussed explanation for why women and men experience different labor markets is the existence and persistence of gender identity norms. Influential research by George Akerlof and Rachel Kranton¹ has imported into

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economics insights from social psychology regarding an individual's social identity and how it can influence behaviors and choices. These researchers define identity as one's sense of belonging to one or multiple social categories. One's identity encompasses a clear view about how people who belong to that category should behave. In their model, identity directly enters the utility function: identity influences economic outcomes because deviating from the behavior that is expected for one's social category is assumed to decrease utility. Hence, people's economic

actions can in part be explained by a desire to conform with their sense of self. Akerlof and Kranton apply their model to the concept of gender identity. In this case, the two relevant social categories are those of "man" and "woman," and these two categories are associated with specific behavioral prescriptions which, if violated, will decrease utility.

Gender identity norms may help to explain why occupational segregation by gender has been slow to disappear. Women may feel discomfort entering certain professions, and men may feel dis-

comfort if women enter these professions if the professions are strongly “gendered” (for example, only men, not women, are bankers). This is related to Claudia Goldin’s pollution theory of discrimination,² which also assumes that men derive utility from their work not just because of the wage they earn but also because of how their image is affected by where they work and with whom they work. In Goldin’s model, men want to keep women away from certain jobs because broad female participation in those jobs would reduce the prestige men obtain from working in them. The reduction in prestige in Goldin’s case is driven by the signals that might be sent to outsiders about the qualifications required to perform these jobs if too many women enter them. In other words, Goldin’s model is closer to a statistical discrimination model while Akerlof and Kranton’s is more directly reminiscent of a taste-based discrimination model.

Another application is women’s labor force participation. As long as there is a strong behavioral prescription indicating that “men work in the labor force and women work in the home,” gender identity norms could explain why women have been slow to increase their labor force participation. Nicole Fortin uses data from the World Values Surveys to assess how women’s sense of self relates to their labor force participation in a sample of OECD countries.³ She shows that the social representation of women as homemakers and men as breadwinners appears quite predictive of women’s labor force participation across countries. Fortin re-examines a similar question in a single country, the United States, over a longer time period (1977 to 2006).⁴ A more central motivation in this particular paper is to provide an explanation for the slowdown in the closing of the gender gap in labor force participation in the United States since the mid-1990s (see for example Francine Blau and Lawrence Kahn⁵). Fortin shows that the evolution of gender role attitudes over time appears to map well with the evolution of female labor force participation. Women’s gender role attitudes steadily became less traditional,

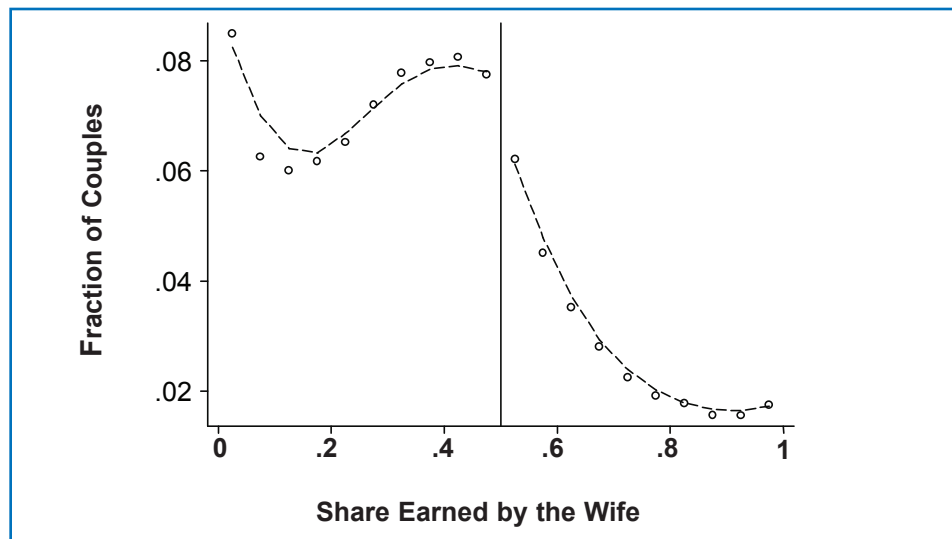


Figure 1: Distribution of Relative Income within Couples

with more and more women disagreeing with the notion that husbands should be the breadwinners and wives should be the homemakers, and more egalitarian, with more and more women agreeing with the notion that they are as capable as men in the workforce, until the mid-1990s when these trends reversed. Raquel Fernandez and Alessandra Fogli study the labor force participation of second-generation American women.⁶ They use past values of female labor force participation in these women’s country of ancestry as cultural proxies for gender identity norms. Controlling for individual and spousal socioeconomic backgrounds, they find that American women whose ancestry is from higher labor force participation countries work more. Spousal culture also appears to matter in explaining the labor force participation of these women.

Motherhood has been shown to be particularly disruptive to women’s labor force participation and earnings. With Lawrence Katz and Goldin, I demonstrate that much of the large gender gap that emerges over time between male and female graduates of top MBA programs is attributable to gender differences in hours worked and frequency of career interruptions; the presence of children is the main contributor to women’s shorter work hours and greater career discontinuity.⁷ The fact that work-family balance considerations are more binding for mothers

than for fathers could be seen as another manifestation of gender identity norms (for example, “a working mom cannot have a warm relationship with her child”) that have not fully adjusted to improving educational and labor market opportunities for women.

Another behavioral prescription often associated with gender identity is that “a man should earn more than his wife.” With Emir Kamenica and Jessica Pan, I explore the possible manifestations of this gender identity norm in patterns of relative income within households, marriage formation, wives’ labor force participation, marital satisfaction, and the division of home production.⁸ Using U.S. administrative data on individual income, we show that the distribution of relative income within couples (wife income / (wife income + husband income)) exhibits a sharp drop to the right of .5, for example, when a wife starts to earn more than her husband. This is shown in Figure 1, above.

In U.S. Census data, we also show that within a marriage market over time, when a randomly chosen woman becomes more likely to earn more than a randomly chosen man, the marriage rate declines (see also Tara Watson and Sara McLanahan⁹). Looking within couples, we show that when the probability that the wife’s potential income exceeds her husband’s actual income is higher, the

wife is less likely to participate in the labor force. We also provide suggestive evidence that this specific gender identity norm might influence the quality of marriage, with couples where the wife earns more than the husband reporting being less happy. Finally, using the American Time Use Surveys, we show that the gender gap in home production, how much more time the wife spends on non-market work than the husband, is larger in couples where the wife earns more than the husband, a finding that runs counter to standard models of the division of labor within the household.

One could also ask whether gender identity norms are responsible for gender differences in psychological attributes, such as attitudes toward risk, negotiation, and competition, which have been related to differences in career choices and earnings between men and women¹⁰ and might contribute to women's underrepresentation at the very top of the corporate hierarchy.¹¹ Psychologists have shown that people expect women to be docile and men to be confident and self-assertive. Some have argued that a higher degree of risk aversion is viewed as the norm for females while part of the male identity is to be a risk-taker. These expectations could be part of socially constructed gender norms, rather than a reflection on innate differences; behaving according to these expectations may reflect a willingness to conform to what is expected from one's social category.

In a laboratory setting, Daniel Benjamin, James Choi, and A. Joshua Strickland study how making salient a specific aspect of one's gender or racial identity affects a subject's likelihood of making riskier choices or more patient choices.¹² The study consists of generating exogenous variation in identity effects by temporarily making more salient ("priming") a certain social category and seeing how the subjects' choices are affected by this priming. The gender identity salience manipulation is done through a questionnaire at the beginning of the experiment in which subjects are asked to identify their gender and whether they are living on a coed versus a single-sex dormitory

floor. While the study uncovers some rich patterns with respect to racial identity, making gender salient appears to have no significant effects on either men's or women's patience, or their level of risk aversion. Of course, it is possible that the experimental priming was too weak to temporarily affect preferences.

Assuming that the gender identity model is relevant to women's labor market outcomes, one is left with the question of what drives the strength of gender identity norms. In an identity model, the changes in women's labor market outcomes over the last decades could only have occurred in conjunction with deep societal changes in the strength and meaning of the male and female social categories. Innovations in contraception may have contributed to altering women's identity in the 1960s and 1970s. As Goldin and Katz show, the introduction of the birth control pill led to both an increase in women's investment in schooling and an increase in the age at first marriage.¹³ This, Goldin argues, meant that women's adult identities were less influenced by traditional gender roles, as these identities were now more likely to be formed before marriage and more influenced by career considerations.¹⁴

Other papers have discussed the influence of nurturing in the formation of gender identities. Many believe that gender role attitudes are largely determined in early childhood, and several papers have documented something akin to an intergenerational transmission of gender identity norms. Fernandez, Fogli, and Claudia Olivetti¹⁵ provide an explanation for why men may differ in how traditional their views are with respect to whether women belong at home or in the workplace. They argue that a significant factor in the steady increase of women's involvement in the labor force has been the growing number of men being raised in families with working mothers. These men may have developed less stereotypical gender role attitudes, with weaker association between their masculinity and being the only or main breadwinner in their household. In particular, they show that men whose mothers worked are more

likely to have working wives. This finding suggests a virtuous cycle: with more of these "new" men around, women should rationally invest more in labor market skills and thereby expose their sons to this less traditional family structure.

Olivetti, Eleonora Patacchini, and Yves Zenou explore how the work behavior of a teenager's own mother, as well as that of her friends' mothers, affect the work decisions of that teenager once she becomes an adult.¹⁶ They find that both intergenerational channels positively affect a woman's work hours in adulthood, but the cross effect is negative, indicating the existence of cultural substitutability. That is, the mother's role model effect is larger the more distant she is (in terms of working hours) from the friends' mothers.

While the literature discussed above suggests the malleability of gender identity norms over rather short horizons (one generation), other work suggests stickiness of these norms in the longer term. Alberto Alesina, Paola Giuliano, and Nathan Nunn show that ethnicities and countries where ancestors practiced plough cultivation, which required more physical strength than shifting cultivation and hence was less suited to female labor, today have beliefs that exhibit greater gender inequality as well as lower rates of female labor force participation.¹⁷ They identify the causal impact of plough cultivation use by exploiting variation in the historical geo-climatic suitability of the environment for growing crops that differentially benefited from the adoption of the plough.

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⁴ N. Fortin, "Gender Role Attitudes and Women's Labor Market Participation: Opting Out, AIDS, and the Persistent Appeal of Housewifery," *University of British Columbia Working Paper*, December 2013.

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⁸ M. Bertrand, J. Pan, and E. Kamenica, "Gender Identity and Relative Income within Households," NBER Working

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⁹ T. Watson and S. McLanahan, "Marriage Meets the Joneses: Relative Income, Identity, and Marital Status," NBER Working Paper No. 14773, March 2009, and *Journal of Human Resources*, 46 (2011), pp. 482–517.

¹⁰ See M. Niederle and L. Vesterlund, "Do Women Shy Away From Competition? Do Men Compete Too Much?" NBER Working Paper No. 11474, July 2005, and *Quarterly Journal of Economics*, 122 (2007), pp. 1067–101; and T. Buser, M. Niederle, and H. Oosterbeek, "Gender, Competitiveness and Career Choices," NBER Working Paper No. 18576, November 2012, and forthcoming in *Quarterly Journal of Economics*, 129 (2014).

¹¹ M. Bertrand and K. F. Hallock, "The Gender Gap in Top Corporate Jobs," NBER Working Paper No. 7931, October 2000, and *Industrial and Labor Relations Review*, 55 (2001), pp. 3–21.

¹² D. J. Benjamin, J. J. Choi, and A. J. Strickland, "Social Identity and Preferences," NBER Working Paper No. 13309, August 2007, and *American Economic Review*, 100 (2010), pp. 1913–28.

¹³ C. Goldin and L. F. Katz, "The Power of the Pill: Oral Contraceptives and Women's Career and Marriage Decisions," NBER Working Paper No. 7527,

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¹⁴ C. Goldin, "The Quiet Revolution that Transformed Women's Employment, Education, and Family," NBER Working Paper No. 11953, January 2006, and *American Economic Review: Papers and Proceedings*, 96 (2006), pp. 1–21.

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¹⁶ C. Olivetti, E. Patacchini, Y. Zenou, "Mothers, Friends, and Gender Identity," NBER Working Paper No. 19610, November 2013.

¹⁷ A. F. Alesina, P. Giuliano, and N. Nunn, "On the Origins of Gender Roles: Women and the Plough," NBER Working Paper No. 17098, May 2011, and *Quarterly Journal of Economics*, 128 (2013), pp. 469–530.