Men in Transit and Prostitution: Using Political Conventions as a Natural Experiment

Scott Cunningham[*]   Todd D. Kendall[†]

[*]Baylor University, scunning@gmail.com

[†]Compass Lexecon, todddavidkendall@gmail.com

Men in Transit and Prostitution: Using Political Conventions as a Natural Experiment[*]

Scott Cunningham and Todd D. Kendall

Abstract

Approximately 100,000 visitors came to Denver, Colorado and Minneapolis, Minnesota to attend the 2008 Democratic and Republican National Conventions. Economic theory suggests that men in transit can shift demand for commercial sex work. We estimate the responsiveness of labor supply to these two conventions, focusing on a previously neglected but increasingly important segment of the prostitution market: indoor sex workers who advertise on the Internet. Using a differences-in-differences estimator of prostitution advertisements posted on a major classified ads website, we find that the conventions caused a 29-44 percent increase in advertisements in Minneapolis and a 47-77 percent increase in Denver. Given the key role prostitution plays in the transmission of STIs, these results imply that focusing public health resources on men in transit may be beneficial.

KEYWORDS: prostitution, migration, natural experiment, difference-in-difference

---

Introduction

Organizers estimated that between 45,000[1] and 50,000[2] outside visitors came to Denver and Minneapolis for the Democratic and Republican National Convention in 2008 (hereafter, "DNC" and "RNC"). The visitors stayed for a few days before returning to their homes, creating a natural experiment that allows an examination of the impact of temporary increases in non-residential men on prostitution activity. Theoretical discussions of prostitution emphasize men in transit as a key source of prostitution demand (Edlund and Korn 2002); this paper is the first to offer a clear test of this theory.

Our outcome variable is the number of advertisements posted at a widely used classified advertising website for Denver and Minneapolis (the "treatment" group) and for Seattle and Philadelphia (the "control" group). We estimate effects on the number of ads posted using a difference-in-difference (DD) framework. Our results provide evidence for the "men-in-transit" hypothesis. Specifically, we find a net increase of between 29%-44% in prostitution advertisements in Minneapolis and a 47%-77% increase in Denver during the convention days. Given the association between prostitution and the spread of sexually transmitted infections, these results also imply a particular focus for public health efforts on transitory males.

Our paper makes three key contributions. First, we offer what we believe is the first direct test of the hypothesis that men in transit are causally related to increased prostitution in an area, independent of common confounding factors, such as migration's relationship with economic factors like income or urbanization. Second, in comparison with most previous literature, we study a different and increasingly important segment of the prostitution market: indoor sex workers who advertise on the Internet. Online solicitation has recently attracted substantial public attention in the U.S., with one major law enforcement official referring to craigslist.org,[3] the classified ad site we study in this paper, as "the single largest source of prostitution in the nation."[4] However, little is known of this new market; most studies of prostitution have focused on street prostitutes and brothel workers, particularly in developing countries (Rao, et al. 2003, Gertler, et al. 2005, Levitt and Venkatesh 2007, Gertler and Shah forthcoming), although a new literature has begun to examine online sex work (e.g., Cunningham and Kendall 2011, Edlund, et al. 2009). Third, we illustrate the value of large

---

[1] Minneapolis Saint Paul Host Committee (2008).
[2] Democratic Convention Host Committee (2008).
[3] http://www.craigslist.org.
[4] The official was Tom Dart, sheriff of Cook County, Illinois, which includes Chicago. Craigslist closed the "adult services" section of its website that was used for prostitution advertising in September 2010.

meetings as temporal instruments for demand in sex markets; we believe this approach may be of value to future health researchers in search of a quasi-experimental research design for testing social epidemiological theories of disease transmission.[5]

Theoretical Background

Economic literature has suggested several possible mechanisms by which men in transit can trigger an increase in demand for prostitution services. First, in a recent theoretical paper, Edlund and Korn (2002) note the effect of male residence on relative occupational returns for women:

> "[A] substantial surplus of men may have a stronger impact on prostitution than if these men resided there more permanently. The proposed reason is that while residing men participate in the marriage and the sex markets, *men in transit* are only in the latter. Hence, returns in the sex market rise disproportionately and induce a greater supply response than if these men had been in both markets." (our emphasis, Edlund and Korn 2002, p. 206).

In other words, men in transit do not seek wives, and so induce a change in the relative returns received by prostitutes, relative to wives.[6]

Second, the enforcement of social norms against prostitution is likely to be weak in the presence of a substantial transitory population. Della Guista, et al. (2009) argue that social stigma is a key factor limiting both demand and supply of prostitution services. Transience implies lower stigma, since the application of stigma requires that an individual be identifiable for future shaming. A third explanation, which we have not seen discussed explicitly in the academic literature, but which the authors' ethnographic surveys (see Cunningham and Kendall 2010b) have indicated, is that consumers of prostitution services have a strong preference for variety in sex worker services, and use the opportunity of visiting new cities to broaden their range of sex partners. Finally, Over (1999) notes that reduced spousal monitoring (and the inability to write complete marital contracts), independent of other factors, can itself explain the connection between non-residential movements of men and prostitution demand.

---

[5] Similar to this paper, Levitt and Venkatesh (2007) instrument for demand using a holiday (July 4th) in order to estimate the responsiveness of labor supply.

[6] Edlund and Korn (2002) assume that prostitution and spouse are mutually exclusive opportunities. However, see Arunachalam and Shah(2008) and Cunningham and Kendall (forthcoming) for evidence that many prostitutes are, in fact, married.

Political Convention Attendees

Political conventions attract three main groups to a hosting city: convention delegates, politicians, and members of the media. In addition, individuals in all three groups are often accompanied by family members. The DNC convention brought 4,440 delegates to Denver, while the RNC convention brought 2,380 delegates to Minneapolis. Both conventions also included several hundred "alternate" delegates. Some estimates indicate roughly 15,000 members of the media descended on each city (Denver.org 2008; Democratic Convention Host Committee 2008), meaning that the plurality of visitors to the convention cities were generally associated with the media. We are not aware of any available data on the number of (non-delegate) politicians who attended the conventions.

Some statistics are available on the characteristics of delegates who attended the conventions. A CBS/New York Times poll of convention delegates revealed that males constituted 51% of DNC delegates, compared with 67% of RNC delegates – a difference in sex ratio between parties attributable to the Democratic Party's charter requiring gender parity. Surveys conducted on-site at each convention found the average age of delegates was 54 and 80% of all delegates were college-educated. Furthermore, 34% of RNC and 22% of DNC delegates reported a net worth of at least $1 million.[7]

We are not aware of similar data on members of the media who attended the convention. Overall, 63% of newspaper staff are male (ASNE 2010), while television news staff are slightly more evenly distributed (Ryan and Mapaye 2010). However, these statistics may not accurately represent the traveling reporters who attended the conventions.

Previous Empirical Literature

A large literature finds that commercial sex workers play a central role in the epidemiology of sexually transmitted infection (STI) transmission, due to their presence in the "core group" of agents responsible for epidemics (Blanchard and Moses 1999). The high rates of concurrent sex partners among both prostitutes and their clients and the incidence of inconsistent condom use and drug use have been independently identified as possible risk factors concentrated among the sex worker population affecting STI transmission (Thomas and Tucker 1996; Morris and Kretzschmar 1997; Aral, et al. 2005; Gomes and Etheredge 2005; Aral and Leichliter 2010). In the U.S., prostitutes have prevalence rates of gonorrhea several orders of magnitudes above that of the general population (Rosenberg and Weiner 1988, Table 1). Researchers have also identified prostitution as a key

---

[7] These figures are derived from New York Times / CBS News (2008); see similar estimates in Heaney et al. (2009).

factor in the rapid spread of syphilis during the mid-1980s, associated with the crack cocaine-for-sex trade (Rolfs, et al. 1990; Gunn, et al. 1995), as well as an increase in transmission rates for AIDS (Rosenberg and Weiner 1988; Holmes, et al. 1990) and Hepatitis B Virus (Bratos, et al. 1993).

Table 1 – Summary Statistics on Daily Counts of craigslist Prostitution Advertisements, by City

	Mean	SD	Min	Max
Denver	147.23	58.69	46	255
Seattle	465.37	93.43	307	670
Philadelphia	248.09	53.63	143	342
Minneapolis	264.26	49.50	173	344

Notes: Observations are daily counts of advertisements posted at each site between August 16 and September 19, 2008.

While indoor sex workers may engage in less high-risk behavior than streetwalking prostitutes (Church, et al. 2001; Weitzer 2005), recent estimates in Cunningham and Kendall (2010a) show that they still typically see 5-6 clients per week, and offer unprotected fellatio in 51% of transactions, and unprotected vaginal or anal sex in 6.3% of transactions.

Other literature has implicitly implicated migration as an important factor in the demand for prostitutes, but has not tested this hypothesis directly. Parker, et al. (2000) hypothesize that migration patterns explain differential rates of local STI infection. Focusing specifically on men in transit, Bwayo, et al. (1991) and Singh and Malaviya (1994) surveyed truck drivers and found them to be sources of demand for high-risk sex with prostitutes in Africa. Brockerhoff and Biddlecom (1999) found that migrants in Africa were significantly more likely than non-migrants to have multiple sexual partners and to not use condoms with those partners, though they did not specifically examine prostitution. Similarly, Oster (forthcoming) empirically linked local HIV prevalence with export activity, and hypothesized that prostitution may be a part of the causal mechanism.

These results, while suggestive of the men-in-transit hypothesis, do not directly test it. Moreover, the implications of these studies for the hypothesis are not fully distinguishable from factors related to migration patterns, such as income differences between locations. In addition, most research linking migration with disease transmission has focused on developing countries, with the exception of some literature on prostitution associated with military bases and personnel deployment (Pivar 1981; Malone, et al. 1993; Raymond 2004).

Empirical Methodology

Description of Data

A proper test of the men-in-transit hypothesis requires measures of prostitution activity in various cities before and after an exogenous increase in non-residential males occurs. We proxy for prostitution activity with prostitution advertisements, both because advertisements are likely correlated with prostitution activity, and because daily data on ads at a major classified ads site are available for the relevant cities. Online classified ads have had a major impact on the market for prostitution (Cunningham and Kendall 2011). In contrast with older methods of solicitation, such as streetwalking, these sites allow prostitutes to advertise for clients at significantly lower cost. They also allow customers to browse and "comparison shop" to a much greater degree.

Classified ads have been shown to be a reasonable measure of labor market activity generally by Amoah (2000), who correlated help-wanted ads in major metropolitan areas with local hirings data and the employment rate. Simon (2001) used data from help-wanted and situations-wanted ads to study wages during the Great Depression in another case in which available transaction data are poor.

Craigslist is a centralized network of websites that feature free online classified advertisements.[8] People use the site to buy and sell a variety of goods and services ranging from jobs, housing, furniture, pets and automobiles, to prostitution and other "erotic services." Craigslist postings are localized on separate, city-specific posting boards, which are then broken out into general product categories. While there are other sites that sex workers use to advertise, we believe that the "erotic services" subsection of craigslist.org was the most widely used such site for female sex workers during 2008.[9] Since 2008, "erotic services" has changed dramatically, eventually becoming obsolete in 2010 under pressure from law enforcement agents.[10] During the conventions, many adult

---

[8] In unreported analyses, we also analyzed the effects of the conventions on daily postings at another sex worker advertisement site, Eros.com. Daily postings on Eros.com are far lower than on craigslist, generally fewer than 10 per day in the convention cities, and possibly for that reason, we found ambiguous effects from the conventions on that site. In addition, advertisements on Eros.com are not free, and some evidence suggests that it appeals to a different demographic of sex buyer.

[9] Male sex workers are not as prominent at craigslist. Logan and Shah (2009) describe a different site widely used by male sex workers.

[10] In November, 2008, craigslist first implemented a fee for advertisements ($5) and required advertisers to use an identifiable credit card to pay. Cunningham and Kendall (2010b) show that this policy had a large and immediate effect on the number of ads. In June, 2009, under pressure from 40 state attorneys general, craigslist replaced its "erotic services" section with an "adult

services ads on craigslist in the convention cities specifically referenced the events, although it is unclear whether this reflected a specific attempt to target convention visitors, or whether this was simply a marketing device intended to attract attention generally.

Summary statistics on average daily advertisement counts for the four cities are shown in Table 1, covering the 35-day period between August 16 and September 19, 2008. Figure 1 shows the distribution of advertisements by weekday over the entire sample period, excluding those cities and dates of the convention. The "Friday peak" visible in Figure 1 may reflect increased leisure time on weekends for sex buyers or end-of-week paychecks.

Figure 1 - Distribution of Daily Advertisement Counts, by Weekday
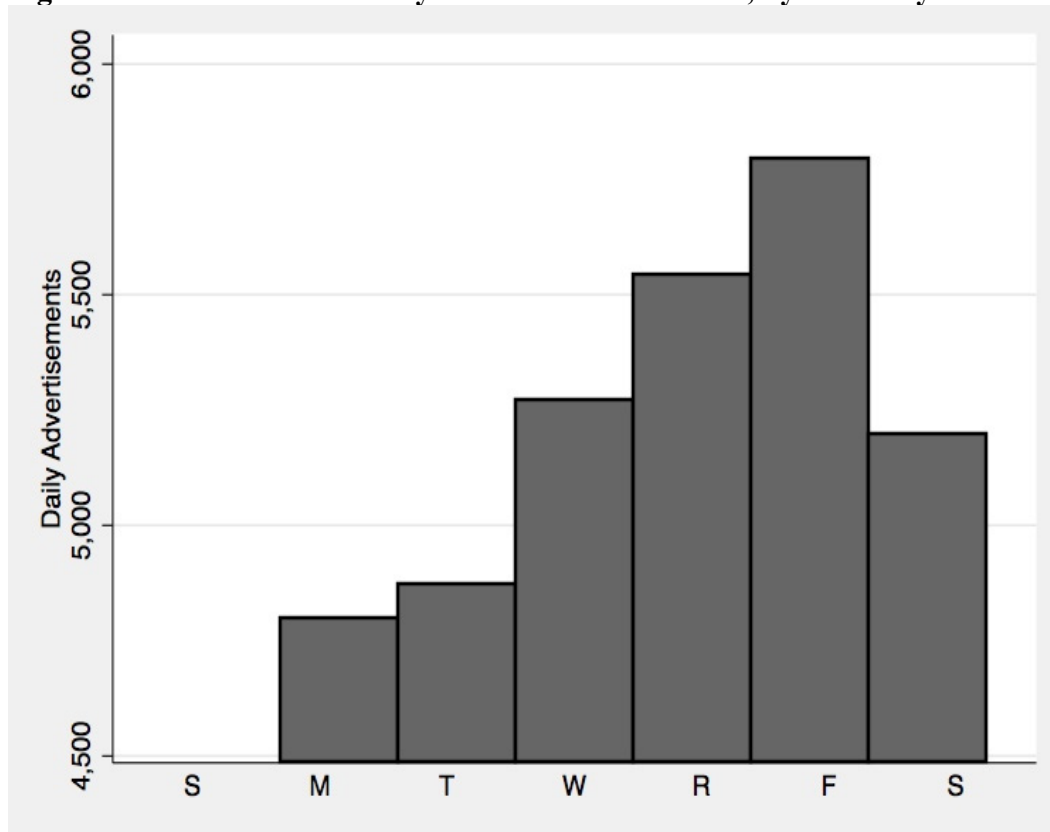
Notes: Counts plotted exclude dates of RNC and DNC conventions.

services" site, and implemented greater surveillance of advertisers. In September 2010, craigslist completely closed the "adult services" sites in all U.S. cities. Since then, prostitution advertising has increased at a number of other sites (see Cunningham and Kendall 2010b for details).

Figure 2 shows daily counts of advertisements in each city over the relevant period before and after the conventions. In Denver, listings outages on craigslist during nine days meant that we had to drop these days from our analyses.[11]

Figure 2: Daily craigslist Advertisements, by City
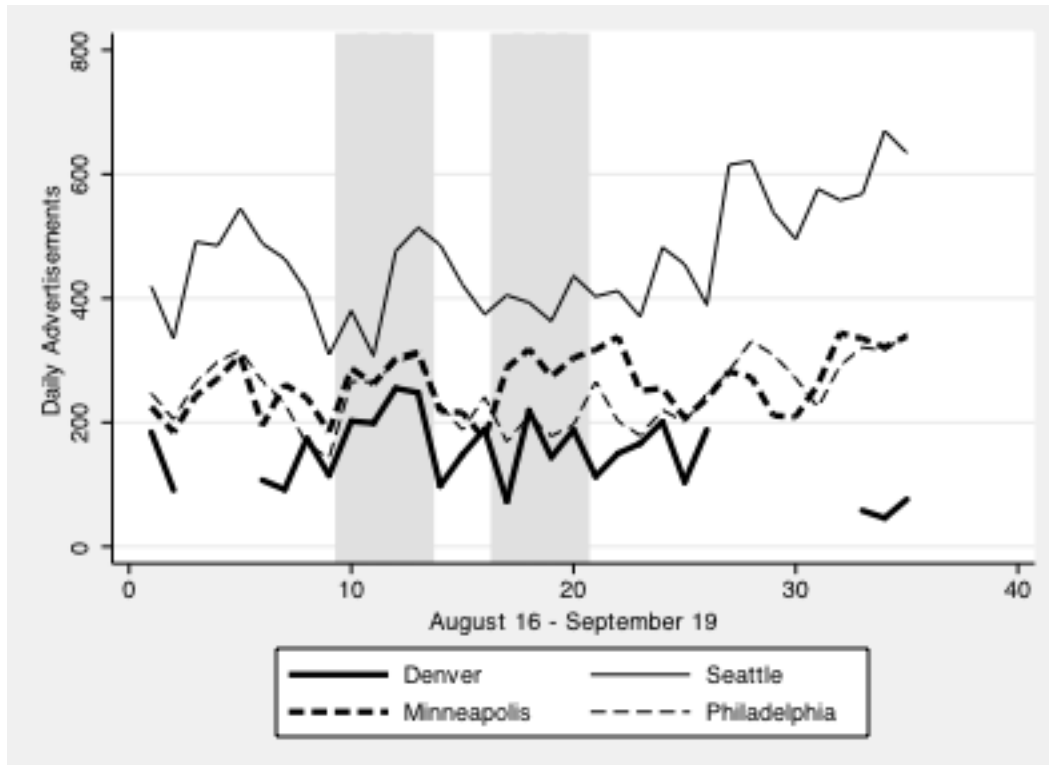
Notes: Missing observations for Denver reflect dates of craigslist site outage in that city. The first shaded date corresponds to Aug 25-28 2008 (DNC) and the second to Sept 1-4 2008 (RNC).

---

[11] See Musil (2008). The listings outage did not impact any of the other three cities. In a robustness exercise, we replicated our key results using multiple imputation simulation techniques for handling the missing data. Both the parameter estimates and precision were virtually unchanged (results available from authors upon request).

Empirical Strategy

During the 35-day period over which we collected daily advertisement counts, Denver (August 25-29) and Minneapolis (September 1-4) held widely-attended political conventions for the 2008 Presidential general election which resulted in roughly 50,000 people coming to each city for only a few days. The other two cities in our sample did not experience any major conventions during that period, and therefore function as controls. In addition, it is also possible to think of each convention city as an additional control during the period of the other city's convention, and in some of our regression specifications below, we employ such a methodology.

Besides the lack of a major convention during the sample period, Philadelphia and Seattle were selected as control cities because (a) they are major metropolitan areas with populations as large or larger than the control cities; (b) they are geographically distant from the convention cities, limiting the degree of direct supplier movement between control and convention cities; and (c) they each had active craigslist "erotic services" sites during the relevant period.[12]

To identify the effect of political conventions on the numbers of advertisements posted, we implemented a differences-in-differences estimator using the following regression model:

$$Y_{it} = \beta_0 + \beta_1(City_i) + \beta_2(Convention_t) + \gamma(City_{i*} \times Convention_t) + \beta_3 Day_t + \varepsilon_{it},$$

where Y_{it} is the natural log number of advertisements posted on a particular day (t) in a city (i); $City_i$ is a vector of dummy variables for each city, with i^* denoting the specific convention city being analyzed; $Convention_t$ is a dummy variable for convention dates in any city, and $City_{i*}$ X $Convention_t$ is an interaction between the $City_{i*}$ and $Convention_t$ variables. We also include Day_t, a vector of weekday dummy variables (i.e., Monday-Saturday). The interaction variable is labeled "Presidential Convention" in the tables which summarize our results. In some specifications below, we also include a city-specific linear trend in order to distinguish the effects of the conventions from secular movements in online advertising.[13]

---

[12] Using data from a national prostitution database described in Cunningham and Kendall (forthcoming a), we checked for differences in prostitution markets between the control groups and convention cities. We found that control cities were not significantly different from treatment cities in most key demographic and economic variables.

[13] In unreported analyses, we also considered quadratic city-specific trends. Our results are robust to the inclusion of such trends.

       Since the conventions were scheduled years in advance, it seems likely that the choice of convention week is uncorrelated with the underlying data generating process that produces advertisements, making our estimate of the treatment effect consistent.

Results

In Table 2, we report the results of a simple DD exercise using sample means and no controls. Using this methodology, we estimate an additional 107 craigslist postings in Minneapolis, and an additional 99 postings in Denver because of the conventions. This represents a 41% increase (or 2.2 standard deviations relative to the sample period) in Minneapolis and a 74% increase in Denver (or 1.7 standard deviations). The larger percentage increase in advertising in Denver appears to reflect the lower number of advertisements posted during non-convention periods. If a given set of sex workers decided to visit both convention cities, this could therefore account for the difference in results across the two cities, by causing a level increase in advertisement in both cities, but a larger percentage increase relative to baseline in Denver.[14]

Table 2 - Differences-in-Differences Estimates of Convention Effect on craigslist Prostitution Advertisements, No Controls

Group	Period	Average Outcome	First Difference	Treatment Effect
Minneapolis	RNC Week	296.00		
			$D_t = 35.84$	
	Off-Week	260.16		
				$T=D_t\text{-}D_c=106.94$ (+41%)
Seattle/Philadelphia	RNC Week	293.75		
			$D_c = -71.10$	
	Off-Week	364.85		
Denver	DNC Week	226.00		
			$D_t = 93.09$	
	Off-Week	132.91		
				$T=D_t\text{-}D_c=98.85$ (+74%)
Seattle/Philadelphia	DNC Week	351.63		
			$D_c = -5.76$	
	Off-Week	357.39		

---

[14] The lower levels of postings at Minneapolis may also reflect differences with regards to the usefulness of craigslist for coordinating prostitution activities between the two cities.

In Table 3, we report results from estimating equation 1 on daily craigslist advertisement counts, including control variables. For each city, analysis of correlograms indicated evidence of first-order autocorrelation, but no higher-order autocorrelation. Therefore, regressions were estimated using OLS, transforming the dependent variable in natural log, and using the Newey-West robust standard error correction at the city level to account for the one-day autocorrelation in the disturbances. [15] The first four columns focus on the effect on craigslist advertisements in Minneapolis (RNC). The first column excludes city-specific trends from the regression, and uses all three of the other cities (Philadelphia, Seattle, and Denver) as controls. In column 2, we include only Philadelphia and Seattle as controls. Columns 3 and 4 are identical to columns 1 and 2, respectively, but include city-specific linear trends. The last four columns in Table 3 display results from similar specifications, but focus on the effect on craigslist advertisements in Denver (DNC).

Consistent with the simple no-controls estimate, we find statistically significant effects of both the RNC and the DNC on craigslist advertisements in those cities. Our point estimates indicate a 29% - 44% increase in craigslist ads in Minneapolis during the RNC, and a 47% - 77% increase in Denver. [16] The estimated increases would be associated with 77-116 additional advertisements compared to the mean in Minneapolis (compared with a standard deviation of 50), and similarly 69-113 additional advertisements in Denver (compared with a standard deviation of 59). These results are within the range estimated in Table 2.

---

[15] As a robustness check, we estimated our models with Huber-White heteroskedastic robust standard errors, within-city clustering, and wild cluster bootstrapped t-statistics since we have only 3-4 clusters (Bertrand, et al. 2004; Cameron, et al. 2008). These tests reveal a statistical significance comparable to that shown here. Results are available from the authors upon request.

[16] We calculate these effects by taking the exponential of the coefficients in Table 3 and subtracting 1.

Table 3: Difference-in-Difference Estimation of Convention Effect on craigslist Prostitution Advertisements, including Controls

Dependent Variable: ln(advertisements)

	RNC				DNC			
Presidential Convention	0.272***	0.367***	0.258**	0.368***	0.539***	0.572***	0.384***	0.417***
	(0.101)	(0.068)	(0.107)	(0.068)	(0.142)	(0.158)	(0.129)	(0.143)
Convention Date	-0.175*	-0.281***	-0.181	-0.281***	0.067	0.011	0.080	0.030
	(0.098)	(0.069)	(0.111)	(0.070)	(0.084)	(0.113)	(0.084)	(0.115)
Denver	-1.210***		-0.685***		-1.303***	-1.307***	-0.834***	-0.848***
	(0.119)		(0.233)		(0.122)	(0.124)	(0.210)	(0.215)
Philadelphia	-0.634***	-0.634***	-0.555***	-0.555***	-0.634***	-0.634***	-0.555***	-0.555***
	(0.050)	(0.045)	(0.096)	(0.094)	(0.057)	(0.058)	(0.118)	(0.119)
Minneapolis	-0.595***	-0.606***	-0.532***	-0.543***	-0.564***		-0.505***	
	(0.050)	(0.044)	(0.074)	(0.073)	(0.049)		(0.089)	
Sunday	-0.167**	-0.293***	-0.183**	-0.293***	-0.158**	-0.106	-0.172**	-0.123
	(0.077)	(0.055)	(0.086)	(0.056)	(0.074)	(0.095)	(0.081)	(0.104)
Monday	0.032	-0.058	0.034	-0.058	-0.042	-0.022	-0.032	-0.009
	(0.076)	(0.049)	(0.077)	(0.048)	(0.076)	(0.102)	(0.075)	(0.101)
Tuesday	0.072	-0.042	0.074	-0.042	-0.003	0.018	0.007	0.031
	(0.085)	(0.063)	(0.079)	(0.064)	(0.079)	(0.100)	(0.074)	(0.093)
Wednesday	0.086	0.010	0.109	0.010	0.019	0.029	0.044	0.061
	(0.099)	(0.057)	(0.082)	(0.058)	(0.094)	(0.123)	(0.079)	(0.103)

Table 3, continued.

Thursday	0.090	0.048	0.090	0.048	0.025	0.049	0.030	0.055
	(0.097)	(0.049)	(0.087)	(0.050)	(0.087)	(0.115)	(0.076)	(0.100)
Saturday	-0.010	-0.144***	-0.028	-0.144***	-0.002	0.037	-0.017	0.018
	(0.073)	(0.049)	(0.074)	(0.050)	(0.071)	(0.091)	(0.071)	(0.092)
August	0.029	0.017	0.012	0.017	-0.009	0.064	-0.002	0.073
	(0.116)	(0.096)	(0.116)	(0.097)	(0.136)	(0.169)	(0.122)	(0.151)
City-specific linear trends?	No	No	Yes	Yes	No	No	Yes	Yes
Exclude other convention city as control?	No	Yes	No	Yes	No	Yes	No	Yes
N	131	105	131	105	131	96	131	96
R-sq	0.739	0.827	0.783	0.830	0.764	0.782	0.792	0.809

Notes: Observations are daily counts of advertisements on city-specific craigslist sex worker posting boards. Standard errors are Newey-West robust standard errors with autocorrelation of one-day lag, and are presented in parentheses below each coefficient. * indicates statistical significance at the 10% level; ** indicates significance at 5% level; *** indicates significance at 1% level.

Placebo Test

As a test for spurious correlation in our findings, we implemented a simple "placebo" test in which the dates of the two conventions and convention cities were switched.[18] Finding positive effects of the conventions on advertisement rates in these regressions would suggest spurious correlation, although it might alternatively represent activity associated with attendees who arrived early or lingered after the convention. Table 4 presents the results of these tests, both with and without city-specific trends. In all cases, there is no statistically significant measured effect.

Table 4: Difference-in-Difference Estimation of Opposite City's Convention on craigslist Prostitution Advertisements, including Controls, (Falsification Test)

	Minneapolis (DNC Dates)		Denver (RNC Dates)	
	0.098	0.095	0.298	0.341
Presidential Convention	(0.093)	(0.093)	(0.221)	(0.223)
City-specific linear trends?	No	Yes	No	Yes
N	105	105	96	96
R-sq	0.793	0.795	0.761	0.806

Notes: Observations are daily counts of advertisements on city-specific craigslist sex worker posting boards. Standard errors are Newey-West robust standard errors with autocorrelation of one-day lag, and are presented in parentheses below each coefficient. * indicates statistical significance at the 10% level; ** indicates significance at 5% level; *** indicates significance at 1% level.

Conclusion

This paper provides a direct test of the hypothesis that men in transit form a key source of prostitution activity. We show that a temporary increase in non-residential males during two political conventions increased the count of craigslist sex worker ads by a substantial amount during the conventions.

To be sure, our measure of labor supply, advertisements, counts only "attempts" to increase business, not actual transactions; nevertheless, because of the literature showing a positive correlation between advertising and labor market activity, we believe that this may be a reasonable proxy, particularly in the absence of better data. Our results are substantially suggestive of the hypothesis

---

[18] Since the conventions took place in consecutive weeks, this test essentially examines the robustness of the results in Table 3 when the controls are temporally limited to a week close to, but not during, the convention, as opposed to all non-convention weeks.

that men in transit impact the demand for prostitution, and support additional study of the indoor, online segment of the prostitution labor market. Our results also emphasize the relevance of transitory males as a focus for public health efforts, and illustrate the value of conventions for the design of future research on sex markets.

References

Amoah B. (2000) "Help-wanted index". *Perspectives*; Summer, Catalogue no. 75-001-XPE.

Aral SO, et al. (2005) "Commercial sex work, drug use, and sexually transmitted infections in St. Petersburg, Russia". *Social Science and Medicine*; 60(10): 2181-2190.

Aral SO, Leichliter JS. (2010) "Non-monogamy: risk factor for STI transmission and acquisition and determinant of STI spread in populations". *Sexually Transmitted Infections*; 86(Suppl 3): iii29 – iii36.

Arunachalam R, Shah M. (2008) "Prostitutes and brides?". *American Economic Review Papers and Proceedings*; 98(2): 516-522.

ASNE (2010). "Decline in newsroom jobs slows". Press Release, April 11, 2010. On-line: http://asne.org/article_view/articleid/763/decline-in-newsroom-jobs-slows.aspx.

Bertrand M, Duflo E, Mullainathan S. (2004) "How much should we trust differences-in-differences estimates?". *Quarterly Journal of Economics*; 119(1): 249-275.

Blanchard JF, Stephen M. (1999). "Female sex workers and their clients in the epidemiology and control of sexually transmitted diseases" in: Holmes KK, et al. (Eds.) Sexually Transmitted Diseases, 3rd edition. New York: McGraw-Hill.

Bratos MA, et al. (1993) "Influence of syphilis in Hepatitis B transmission in a cohort of female prostitutes". *Sexually Transmitted Diseases*; 20(5): 257-261.

Brockerhoff M, Biddlecom AE. (1999) "Migration, sexual behavior and the risk of HIV in Kenya". *International Migration Review*; 33(4): 833-856.

Bwayo JJ, et al. (1991) "Long distance truck drivers: knowledge and attitudes concerning sexuality transmitted diseases and sexual behavior". *East African Medical Journal*; 68(9): 714-719.

Cameron AC, Gelbach JB, Miller DL. (2008) "Bootstrap-based improvements for inference with clustered errors". *Review of Economics and Statistics;* 90(3): 414-427.

Church S, et al. (2001) "Violence by clients towards female prostitutes in different work settings: questionnaire survey". *British Medical Journal*; 322(7285): 524-525.

Cunningham S, Kendall TD. (forthcoming) "Prostitution, technology and the law: new data and directions" in: Wright JD, Cohen LR (Eds.) Research Handbook on The Economics of Family Law. Northampton, MA: Edward Elgar.

Cunningham S, Kendall TD. (2010a) "Risk behaviors among internet-facilitated sex workers: evidence from two new datasets". *Sexually Transmitted Infections*; 86(iii): 100-105.

Cunningham S, Kendall TD. (2010b) "Sex for sale: online commerce in the world's oldest profession" in: Holt, TJ (Ed.) Crime Online: Causes, Context, and Correlates. Durham, NC: Carolina Academic Press.

Cunningham S, Kendall TD. (2011) "Prostitution 2.0: the changing face of sex work". *Journal of Urban Economics*; 69(3): 273-287.

Della Guista M, di Tommaso ML, Strom S. (2009) "Who's watching? The market for prostitution services". *Journal of Population Economics*; 22(2):501-516.

Denver Convention Host Committee. (2008) "2008 Democratic National Convention Impact Report". On-line: http://www.denvergov.org/Portals/0/documents/ConventionImpactReport_FINAL.pdf.

Denver.org. (2008) "Democratic national convention overview". June 11, 2008. On-line: http://www.denver.org/metro/dnc/news-detail?bid=14.

Edlund L, Engleberg J, Parsons CA. (2009) "The wages of sin". Unpublished manuscript, Columbia University.

Edlund L, Korn E. (2002) "A theory of prostitution". *Journal of Political Economy*; 110(1): 181-214.

Gertler P, Shah M. (forthcoming) "Sex work and infection: what's law enforcement got to do with it?". *Journal of Law and Economics*.

Gertler P, Shah M, Bertozzi SM. (2005) "Risky business: the market for unprotected commercial sex". *Journal of Political Economy*; 113(3): 518-550.

Gomes do Espirito Santo ME, Etheredge GD. (2005) "Male clients of brothel prostitutes as a bridge for HIV infection between high risk and low risk groups of women in Senegal". *Sexually Transmitted Infections*; 81(4): 342-344.

Gunn RA, et al. (1995) "Syphilis in San Diego County 1983-1992: crack cocaine, prostitution, and the limitations of partner notification". *Sexually Transmitted Diseases*; 22(1): 60-66.

Heaney MT, et al. (2009) "Healing the rift? Social networks and reconciliation between Obama and Clinton convention delegates in 2008". Southern Illinois University Carbondale Political Networks Paper Archive Working Paper Series.

Holmes KK, Karon JM, Kreiss J. (1990) "The increasing frequency of heterosexually acquired AIDS in the United States, 1983-1988". *American Journal of Public Health*; 80(7): 858-863.

Levitt S, Venkatesh SA. (2007) "An empirical analysis of street-level prostitution". Unpublished manuscript, University of Chicago.

Logan T, Shah M. (2009) "Face value: information and signaling in an illegal market". NBER Working Paper 14841.

Malone J, et al. (1993) "Risk factors for sexually-transmitted diseases among deployed US military personnel". *Sexually Transmitted Diseases*; 20(5): 257-261.

Musil S. (2008) "Craigslist experiences listings outage". *CNET News*, August 10, 2008. On-line: http://news.cnet.com/8301-1023_3-10012806-93.html?tag=mncol;txt.

Morris M, Kretzschmar M. (1997) "Concurrent partnerships and the spread of HIV". *AIDS*; 11(5):641-648.

Minneapolis Saint Paul Host Committee. (2008) "Minnesota's Conventional Wisdom Pays Off". On-line: http://minnesota.publicradio.org/features/2009/09/01_rncimpact/report.pdf.

New York Times / CBS News. (2008) "2008 Republican delegates: who are they?". Press Release, August 31, 2008. On-line: http://www.cbsnews.com/htdocs/pdf/RNCDelegates_who_are_they.pdf.

Oster E. (forthcoming) "Routes of infection: exports and HIV incidence in Sub-Saharan Africa". *Journal of the European Economic Association*.

Over M. (1999) "The public interest in a private disease: an economic perspective on the government role in STD and HIV control" in: Holmes KK, et al. (Eds.) Sexually Transmitted Diseases, 3rd edition. New York: McGraw-Hill.

Parker R, Easton D, Klein C. (2000) "Structural barriers and facilitators in HIV prevention: a review of international research". *AIDS*; 14(Suppl 1): S22-S32.

Pivar DJ. (1981) "The military, prostitution, and colonial peoples: India and the Philippines, 1885-1917". *The Journal of Sex Research*; 17(3): 256-269.

Rao V, et al. (2003) "Sex workers and the cost of safe sex: the compensating differential for condom use among Calcutta prostitutes". *Journal of Development Economics*; 71(2):583-603.

Raymond J. (2004) "Prostitution on demand: legalizing the buyers as sexual consumers". *Violence Against Women*; 10(10): 1156-1186.

Rolfs RT, Goldberg M, Sharrar RG. (1990) "Risk factors for syphilis: cocaine use and prostitution". *American Journal of Public Health*; 80(7): 853-857.

Rosenberg MJ, Weiner JM. (1988) "Prostitutes and AIDS: a health department priority?" *American Journal of Public Health*; 78(4): 418-422.

Ryan KM, Mapaye JC. (2010) "Beyond 'Anchorman': a comparative analysis of race, gender, and correspondent roles in network news". *Electronic News*; 4(2): 97-117.

Simon CJ. (2001) "The supply price of labor during the Great Depression". *The Journal of Economic History*; 61(4): 877-903.

Singh YN, Malaviya AN. (1994) "Long distance truck drivers in India: HIV infection and their possible role in disseminating HIV into rural areas". *International Journal of STD and AIDS*; 5(2): 137-138.

Thomas JC, Tucker MJ. (1996) "The development and use of the concept of a sexually transmitted disease core". *The Journal of Infectious Diseases*; 174(Supp. 2): S134-S143.

Weitzer R. (2005) "New directions in research on prostitution". *Crime, Law & Social Change*; 43(4-5): 211-235.