

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

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## **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 cause a shift in 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, we find that the conventions caused a roughly 30% increase in advertisements on the larger of two advertisement sites in the affected markets. Given the key role prostitution plays in the transmission of STIs, these results imply a focus of public health resources on men in transit.

## Introduction

Organizers estimated that between 45,000<sup>1</sup> and 50,000<sup>2</sup> 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 to examine 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 two widely used prostitution advertising websites compiled over a 35-day period for Denver and Minneapolis (the “treatment” group) and Seattle and Philadelphia (the “control” group), and we estimate effects using a difference-in-difference (DD) framework. Our results provide evidence for the hypothesis. Specifically, we find a net increase of 30% in prostitution advertisements in Denver and Minneapolis during the convention days, depending on the city and website examined. 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 contributions. First, we offer what we believe is the first direct test of the hypothesis that males in transit are causally related to increased prostitution in an area, independent of common confounding factors, such as migration’s relationship with

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<sup>1</sup> <http://www.gopconvention2008.com/features/numbersfactsheet.pdf> (Last checked 11/2/09).}

<sup>2</sup> <http://www.demconvention.com/frequently-asked-questions/#4> (Last checked 11/15/08).

economic factors like higher incomes. 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 US, with one major law enforcement official referring to craigslist.org, one of the sites we study in this paper, as “the single largest source of prostitution in the nation.”<sup>3</sup> However, little is known of this new market; most studies of prostitution have focused on street prostitutes and brothel inmates, particularly in developing countries (Rao, et al. 2003, Gertler, et al. 2005, Levitt and Venkatesh 2007, Gertler and Shah 2009), although a new literature has begun to examine online sex work (e.g., Cunningham and Kendall forthcoming a, Edlund, et al. 2009). Third, we illustrate the value of large 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.<sup>4</sup>

## **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

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<sup>3</sup> 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.

<sup>4</sup> 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.

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, which Edlund and Korn treat as mutually exclusive opportunities.<sup>5</sup>

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 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.

## **Political Convention Attendees**

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<sup>5</sup> However, see Arunachalam and Shah(2008) and Cunningham and Kendall (forthcoming b) for evidence that many prostitutes are, in fact, married.

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), 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. At both conventions, the average age of delegates was 54, and roughly 80% of delegates were college-educated.<sup>6</sup> 34% of RNC delegates, and 22% of DNC delegates reported net worth of at least \$1 million.

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.

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<sup>6</sup> These figures are derived from New York Times / CBS News (2008); see similar estimates in Heaney et al. (2009).

## **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 corresponding drug use, have all been independently identified as possible risk factors concentrated among the sex worker population when an STI epidemic is driven by prostitution (Thomas and Tucker 1996; Morris and Kretzschmar 1997; Aral, et al. 2005; Gomes and Etheredge 2005; Aral and Leichter 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 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).

While indoor sex workers may engage in less high-risk behavior than streetwalking prostitutes (Church, et al. 2001; Weitzer 2005), 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 (Cunningham and Kendall 2010a).

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 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 are available for most cities.

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, another case in which available transaction data is poor.

Online classified ads have had a major impact on the market for prostitution (Cunningham and Kendall forthcoming a). In contrast with older methods of solicitation, such as streetwalking, the Internet allows prostitutes to advertise for clients at low cost. It also allows customers to browse and “comparison shop” to a much greater degree. While there are other sites that escorts use to advertise, craigslist.org<sup>7</sup> and Eros.com<sup>8</sup> are among the largest and most widely used sites used by prostitutes for solicitation.<sup>9</sup> Unlike other sites, these two also offer nationwide coverage, with comparable affiliated craigslist and Eros posting boards in most major U.S. cities, including the convention cities.

Craigslist is a centralized network of websites that feature free online classified advertisements. People use the site to buy and sell a variety of goods and services ranging

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<sup>7</sup> <http://www.craigslist.org>

<sup>8</sup> <http://www.eros.com>

<sup>9</sup> Logan and Shah (2009) use data from a prominent advertising site that caters only to gay male escorts to test a signaling model of prostitution behavior.

from jobs, housing, furniture, pets and automobiles, to prostitution and other “erotic services.” Craigslist postings are localized on separate, city-specific posting boards.<sup>10</sup> Unlike craigslist, Eros.com is a fee-based service with prices that vary by city and advertisement size. A full-page ad that includes eight photographs with text in San Francisco costs \$150 per month, for instance. While the sites do not allow any simple method of collecting demographic statistics on the sex workers who post ads, ethnographic interviews with market participants suggest that Eros generally represents a “mid-price” range in the market, while craigslist represents a lower price range. During the conventions, many ads on these sites 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 and the two websites we study are shown in Table 1, covering the period between August 16 and September 19, 2008. Seattle had the most active craigslist site during these dates, while Philadelphia had the most active Eros site.

Figure 1 shows the distribution of advertisements across weekdays over the entire sample period (excluding those cities and dates of the convention). The weekday dynamics visible

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<sup>10</sup> In November, 2008, craigslist implemented a \$5 fee for advertisements 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” site, and implemented greater surveillance of advertisers. In September 2010, craigslist completely closed the “adult services” sites in all US cities.

in Figure 1 suggest possible differences among advertisers, and also heterogeneity in clients. If traveling businessmen make up a substantial share of clientele for Eros advertisers, this could explain the higher rates of advertisement on Mondays when business traveling begins for the week. If craigslist services primarily middle-class locals, then its peak on Friday may reflect increased leisure time on weekends or end-of-week paychecks.

Figures 2 and 3 plot 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 during this period meant that we had to drop these days from our analyses.<sup>11</sup>

### *Empirical Strategy*

Daily advertisement counts at Eros and craigslist were observed for Denver, Minneapolis-St. Paul, Philadelphia and Seattle from August 16th to September 19th, 2008. During this 35-day period, Denver (Aug 25-29) and Minneapolis (Sept 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.

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<sup>11</sup> See Musil (2008). The listings outage did not impact any of the other three cities.

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 and Eros posting boards during the relevant period. Appendix A employs data from a national prostitution database to check for differences in prostitution markets between the control group cities and treatment cities.<sup>12</sup> We show that the control cities are not significantly different from the treatment cities in most key demographic and economic variables.

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

$$Y_{it} = \beta_0 + \beta_0(\mathbf{City}_i) + \beta_2(\mathbf{Convention}_{it}) + \gamma(\mathbf{City}_i \times \mathbf{Convention}_{it}) + \beta_3\mathbf{x}_{it} + \varepsilon_{it},$$

where  $Y_{it}$  is the natural log number of advertisements posted on a particular day ( $t$ ) in a city ( $i$ ) if estimated with OLS and the count if estimated with Poisson,  $\mathbf{City}_i$  is a dummy variable if the city is a convention city,  $\mathbf{Convention}_{it}$  is an indicator for the days of the convention,  $\mathbf{City}_i \times \mathbf{Convention}_{it}$  is an interaction between  $\mathbf{City}_i$  and  $\mathbf{Convention}_{it}$ , and  $\mathbf{x}_{it}$  is a vector of weekday fixed effects (i.e., Monday-Saturday) and city fixed effects. In some specifications below, we also include a city-specific trend, and a city-specific quadratic in

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<sup>12</sup> Edlund, et al. (2009), and Cunningham and Kendall (forthcoming b, 2010b) examine these data in detail.

trend, in order to distinguish the effects of the conventions from secular movements in online advertising. The difference-in-difference estimate is equal to:

$$\hat{\gamma} = (\overline{Y_{T,W}} - \overline{Y_{T,OW}}) - (\overline{Y_{C,W}} - \overline{Y_{C,OW}}),$$

where subscripts **T** and **C** refer to the treatment cities (Minneapolis and Denver) and the control cities (Seattle and Philadelphia), respectively, and **W** and **OW** refer to the week of the convention and the off-week, respectively. 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. We estimate an additional 100 craigslist postings because of the convention using sample means, which represents a 41% increase in Minneapolis and a 165% increase in Denver. This represents an increase of 1.7 standard deviations in the case of Denver, and 2.2 standard deviations in the case of Minneapolis. 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, a level increase in advertisement in both cities, but a larger percentage increase relative to

baseline in Denver. The effect of the convention on Eros ads is less clear. Minneapolis appears to have seen a small increase, but Denver does not.

In Table 3, we report results from estimating equation 1 on craigslist advertisements, including control variables. Regressions were estimated using OLS, transforming the dependent variable in natural log, and using the robust-cluster standard error correction at the city level to account for within-city serial correlation in the disturbances.<sup>13</sup> 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 and quadratic trends. The last four columns in Table 3 perform similar specifications, but focusing 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, although the estimated effect of the DNC on advertisements is only marginally statistically significant when we include city-specific trends. Our point estimates indicate a 27% -37% increase in craigslist ads in Minneapolis during the RNC, and a 22%-57% increase in Denver. A 30% increase in each city would be associated with roughly 44 prostitution advertisements

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<sup>13</sup> As a robustness check, we estimated 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.

during the week of the Democratic National Convention (compared to a standard deviation of 58.7 over this time) and 79 for the Republican National Convention (compared to a standard deviation of 49.5).

In Table 4, we perform exercises identical to those in Table 3, but focusing on Eros advertisements in the two cities. Because of the relatively infrequent posting rate at Eros, we used a Poisson model to estimate semi-elasticities, with robust standard errors clustered at the city level, as before.<sup>14</sup> As in the no-controls specification in Table 2, the estimated effects of conventions on Eros ads are ambiguous. The first two columns of Table 4 indicate a 16%-24% increase in Eros ads in Minneapolis; however, this effect becomes negative and insignificant when city-specific trends are included.<sup>15</sup> All four specifications indicate no increase in Eros ads in Denver during the DNC, and a significant negative effect when city-specific trends are included.

Overall, the results from our analyses appear to show increases in prostitution activity on craigslist (particularly during the RNC), but not on Eros. Given the demographics of the delegates and members of the media who constituted the bulk of visitors to the convention cities, we were somewhat surprised at this result, since Eros is generally thought to appeal to a wealthier demographic of sex buyers. We provide two speculative opinions to

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<sup>14</sup> We also estimated the Eros regressions using a negative binomial specification, which did not change our results.

<sup>15</sup> In unreported analysis, we replicated Tables 3 and 4 using binary variables for each separate day of the conventions (Day 1, Day 2, etc.) in place of the aggregate indicator for all four days. Doing so, we learned that while the coefficient on the aggregate model in Table 4 changed signs for Minneapolis when city-trends were included, there was no such change that occurred when using the daily model. There was, though, an increase in the magnitude estimated for day 3 when we included city-trends for Minneapolis, and that appears to have been the cause of the reversal of the sign that we observe in Table 4 for Minneapolis.

reconcile these unexpected results. First, as a general rule, the lower-priced sex workers who populate craigslist are also more likely to be local to the city where they advertise, as opposed to professionals who tour nationally. Many convention attendees are regular travelers (e.g., news reporters) and therefore may have used craigslist intensively in order to “sample” sex workers who they would not otherwise have the opportunity to meet. Second, ad pricing at Eros is based on 15-day intervals, so for four-day conventions, Eros ads may become uneconomical.<sup>16</sup> For this reason, as well as because craigslist is better known among the general population as a location for prostitution advertisements, craigslist may have functioned as more of a focal point for a temporarily large market such as that created by the conventions. Third, it may also be the case that, in the politically-sensitive environment surrounding a political convention, lower-priced, local sex workers may present less risk of discovery relative to the more prominent, higher-priced workers who advertise on Eros. This effect may even be responsible for the negative effects of conventions on Eros advertising that we observe during the DNC. Nevertheless, these results may also imply a cautionary note in the interpretation of our findings.

### *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.<sup>17</sup> Finding positive effects of the conventions on advertisement rates in these regressions would

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<sup>16</sup> In each of the cities analyzed in our data, Eros charges \$125 per ad, running for up to 15 days. This is roughly \$8.33 per day if the ad runs for all 15 days, but \$31.25 per day for an ad running only four days.

<sup>17</sup> 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.

suggest spurious correlation, although it might alternatively represent activity associated with attendees who arrived early or lingered after the convention. Table 5 presents the results of these tests, both with and without city-specific trends. In all cases except one (craigslist ads in Denver during the RNC dates, excluding city-specific trends), there is no positive significant measured effect. Interestingly, some of the estimated placebo effects for Eros advertisements are negative and statistically significant. This could reflect movement between the two cities, if some sex workers decided to visit both conventions. Alternatively, these coefficients may point to other factors not fully captured in our analyses; in this case, our identification strategy for estimating the causal effects of the conventions may be limited by these factors.

## **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 ads by roughly 30%. Evidence for increased activity on another site, Eros.com, was not robust, however.

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 craigslist results are substantially suggestive of the men-in-transit hypothesis, and reveal the importance of additional study of this under-researched segment of the prostitution labor market. Our

results also emphasize the importance of transitory male migrations as a focus for public health efforts, and illustrate the value of conventions for the design of future research on sex markets.

## **Appendix A**

To investigate the validity of Philadelphia and Seattle as controls for Denver and Minneapolis, we collected data from the most popular national online prostitute ratings board, TheEroticReview.com (“TER”),<sup>18</sup> where clients leave detailed descriptions of sex workers they have visited, including information on race, age, type of services offered, and measures of “professionalism”. There were 2,066 sex workers reviewed on TER during 2007 and 2008 in the four cities studied; roughly 55% of these were located in Minneapolis and Denver, and the remainder were located in Philadelphia and Seattle. For a set of key variables reported in these reviews, we conducted simple t-tests of the equality of sample means between the treatment and control cities. Specifically, we were unable to reject the null hypothesis of equal means for sexual services offered, Black or Asian race, the frequency of delivering services “as promised” and on time, and most of the age distribution (ages 18-20, 26-30, 36-40, 41-45, and 45+). There were, however, statistically significant differences between the control and treatment cities for the share of prostitutes who operate independently of third-party management (such as a pimp or escort agency), the share of workers who are White, the share of workers who are aged 21-25 and 31-35, and average wages. Wages are around 8% higher in the control cities, possibly representative of differences in the cost of housing or, particularly, hotel rooms, between cities.

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<sup>18</sup> For a detailed description of these data, see Cunningham and Kendall (forthcoming b).

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**Table 1 – Summary Statistics**

	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>
<b>Denver</b>				
Craigslist	147.23	58.69	46	255
Eros	1.77	1.97	0	9
<b>Seattle</b>				
Craigslist	465.37	93.43	307	670
Eros	2.34	1.75	0	7
<b>Philadelphia</b>				
Craigslist	248.09	53.63	143	342
Eros	5.6	4.59	0	17
<b>Minneapolis</b>				
Craigslist	264.26	49.50	173	344
Eros	2.23	1.72	0	6

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

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

<b>Craigslist</b>				
<b>Group</b>	<b>Period</b>	<b>Average Outcome</b>	<b>First Difference</b>	<b>Treatment Effect</b>
Minneapolis	RNC Week	296.00	$D_t = 35.84$	$T = D_t - D_c = 106.94 (+41\%)$
	Off-Week	260.16		
Seattle/Philadelphia	RNC Week	293.75	$D_c = -71.10$	
	Off-Week	364.85		
Denver	DNC Week	226.00	$D_t = 93.09$	$T = D_t - D_c = 98.85 (+165\%)$
	Off-Week	132.91		
Seattle/Philadelphia	DNC Week	351.63	$D_c = -5.76$	
	Off-Week	357.39		
<b>Eros</b>				
<b>Group</b>	<b>Period</b>	<b>Average Outcome</b>	<b>First Difference</b>	<b>Treatment Effect</b>
Minneapolis	RNC Week	2.75	$D_t = 0.43$	$T = D_t - D_c = 0.12 (+5\%)$
	Off-Week	2.32		
Seattle/Philadelphia	RNC Week	4.38	$D_c = 0.31$	
	Off-Week	4.06		
Denver	DNC Week	2.00	$D_t = 0$	$T = D_t - D_c = -1.864 (-93\%)$
	Off-Week	2.00		
Seattle/Philadelphia	DNC Week	5.375	$D_c = 1.86$	
	Off-Week	3.935		

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

Dependent Variable: ln(craigslist advertisements)

	RNC				DNC			
Convention X Convention Date	0.271* (2.476)	0.367** (5.878)	0.305*** (7.669)	0.300** (4.713)	0.536** (5.839)	0.570* (4.041)	0.221* (2.420)	0.233 (1.592)
Convention Date	-0.190** (-4.424)	-0.193 (-2.211)	-0.194** (-3.500)	-0.171 (-2.266)	0.094 (0.764)	0.028 (0.167)	0.172 (1.320)	0.143 (0.726)
Denver	-1.211*** (-67.243)		-1.512*** (-101.838)		-1.300*** (-63.008)	-1.305*** (-40.965)	-1.592*** (-75.780)	-1.606*** (-62.800)
Philadelphia	-0.634*** (-8.459e+13)	-0.634*** (-1.678e+15)	-0.517*** (-9.791e+12)	-0.517*** (-6.905e+13)	-0.634*** (-7.844e+13)	-0.634*** (-2.341e+14)	-0.517*** (-1.599e+13)	-0.517*** (-1.475e+13)
Minneapolis	-0.595*** (-47.511)	-0.606*** (-84.868)	-0.649*** (-80.550)	-0.650*** (-50.334)	-0.564*** (-7.066e+13)		-0.711*** (-1.543e+13)	
Sunday	-0.167 (-1.276)	-0.289*** (-24.538)	-0.189 (-1.626)	-0.289*** (-23.992)	-0.156 (-1.125)	-0.104 (-0.551)	-0.175 (-1.385)	-0.128 (-0.727)
Monday	0.033 (0.313)	-0.067 (-2.591)	0.002 (0.030)	-0.067 (-2.534)	-0.048 (-0.685)	-0.025 (-0.270)	-0.074 (-1.281)	-0.062 (-0.765)
Tuesday	0.072 (0.542)	-0.051 (-1.402)	0.043 (0.380)	-0.051 (-1.371)	-0.008 (-0.092)	0.015 (0.131)	-0.033 (-0.505)	-0.021 (-0.230)
Wednesday	0.087 (0.853)	-0.001 (-0.028)	0.097 (0.849)	-0.001 (-0.027)	0.013 (0.226)	0.026 (0.303)	0.022 (0.325)	0.035 (0.368)
Thursday	0.093 (1.366)	0.034 (1.304)	0.092 (1.329)	0.034 (1.275)	0.020 (0.424)	0.046 (0.811)	0.020 (0.419)	0.046 (0.784)

Saturday	-0.010 (-0.072)	-0.142* (-3.822)	-0.030 (-0.225)	-0.142* (-3.737)	-0.002 (-0.013)	0.037 (0.172)	-0.019 (-0.135)	0.016 (0.076)
August	0.025 (0.555)	0.040 (0.657)	0.012 (0.229)	0.040 (0.642)	-0.037 (-0.300)	0.045 (0.345)	-0.052 (-0.392)	0.025 (0.167)
City-specific linear and quadratic 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	0.849	0.847	0.857	0.765	0.782	0.853	0.871

Notes: Observations are daily counts of advertisements on city-specific craigslist “erotic services” posting boards. Standard errors are presented in parentheses below each coefficient. \* indicates statistical significance at the 10% level; \*\* indicates significance at 5% level; \*\*\* indicates significance at 1% level.

**Table 4: Difference-in-Difference Estimation of Convention Effect on Eros Prostitution Advertisements, including Controls**

Dependent Variable: ln(Eros advertisements)

	RNC				DNC			
Convention X Convention Date	0.266** (2.145)	0.164*** (2.909)	-0.084 (-0.456)	-0.143 (-0.626)	-0.188 (-1.346)	-0.211 (-1.203)	-0.246*** (-2.708)	-0.305*** (-5.729)
Convention Date	-0.533* (-1.874)	-0.454 (-1.299)	-0.497 (-1.578)	-0.432 (-1.082)	-0.285 (-1.288)	-0.145 (-0.848)	-0.283 (-1.317)	-0.136 (-0.991)
Denver	-0.280*** (-1.260e+08)		0.248*** (7.410)		-0.253*** (-11.945)	-0.250*** (-9.198)	0.276*** (17.144)	0.263*** (23.243)
Philadelphia	0.871*** (3.771e+08)	0.871*** (1.931e+08)	0.389*** (15.258)	0.396*** (12.058)	0.871*** (3.433e+08)	0.871*** (1.260e+09)	0.418*** (45.429)	0.423*** (47.502)
Minneapolis	-0.084*** (-6.024)	-0.072*** (-10.382)	-1.147*** (-35.080)	-1.157*** (-27.263)	-0.050*** (-1.778e+07)		-1.097*** (-54.777)	
Sunday	-0.900*** (-3.503)	-1.100*** (-7.545)	-0.897*** (-3.509)	-1.090*** (-7.105)	-0.916*** (-3.456)	-0.837** (-2.435)	-0.915*** (-3.458)	-0.831** (-2.408)
Monday	0.369*** (4.180)	0.326*** (3.087)	0.378*** (4.611)	0.338*** (3.457)	0.446*** (3.913)	0.414*** (3.029)	0.454*** (4.090)	0.423*** (3.150)
Tuesday	-0.151 (-0.685)	-0.199 (-0.806)	-0.140 (-0.620)	-0.186 (-0.723)	-0.098 (-0.324)	-0.143 (-0.371)	-0.090 (-0.292)	-0.135 (-0.347)
Wednesday	-0.018 (-0.277)	-0.037 (-0.471)	-0.007 (-0.111)	-0.024 (-0.320)	0.011 (0.170)	0.001 (0.012)	0.018 (0.274)	0.008 (0.086)
Thursday	0.032 (0.206)	-0.085 (-1.064)	0.043 (0.270)	-0.072 (-0.804)	0.037 (0.165)	0.041 (0.136)	0.042 (0.185)	0.046 (0.150)

Saturday	-0.463*** (-3.222)	-0.498*** (-3.121)	-0.464*** (-3.230)	-0.492*** (-3.042)	-0.455*** (-2.970)	-0.487** (-2.539)	-0.456*** (-2.955)	-0.483** (-2.441)
August	-0.300 (-1.029)	-0.261 (-0.741)	-0.323 (-1.131)	-0.319 (-0.941)	0.333 (1.148)	0.137 (0.598)	0.346 (1.113)	0.134 (0.567)
City-specific linear and quadratic trends?	No	No	Yes	Yes	No	No	Yes	Yes
Exclude other convention city as control?	No	Yes	No	Yes	No	Yes	No	Yes
N	140	105	140	105	140	105	140	105
Pseudo R-sq	0.233	0.234	0.266	0.257	0.230	0.244	0.263	0.276

Notes: Observations are daily counts of advertisements on city-specific Eros.com posting boards. Standard errors are presented in parentheses below each coefficient. \* indicates statistical significance at the 10% level; \*\* indicates significance at 5% level; \*\*\* indicates significance at 1% level.

**Table 5: Difference-in-Difference Estimation of Opposite City's Convention on Eros Prostitution Advertisements, including Controls, (Falsification Test)**

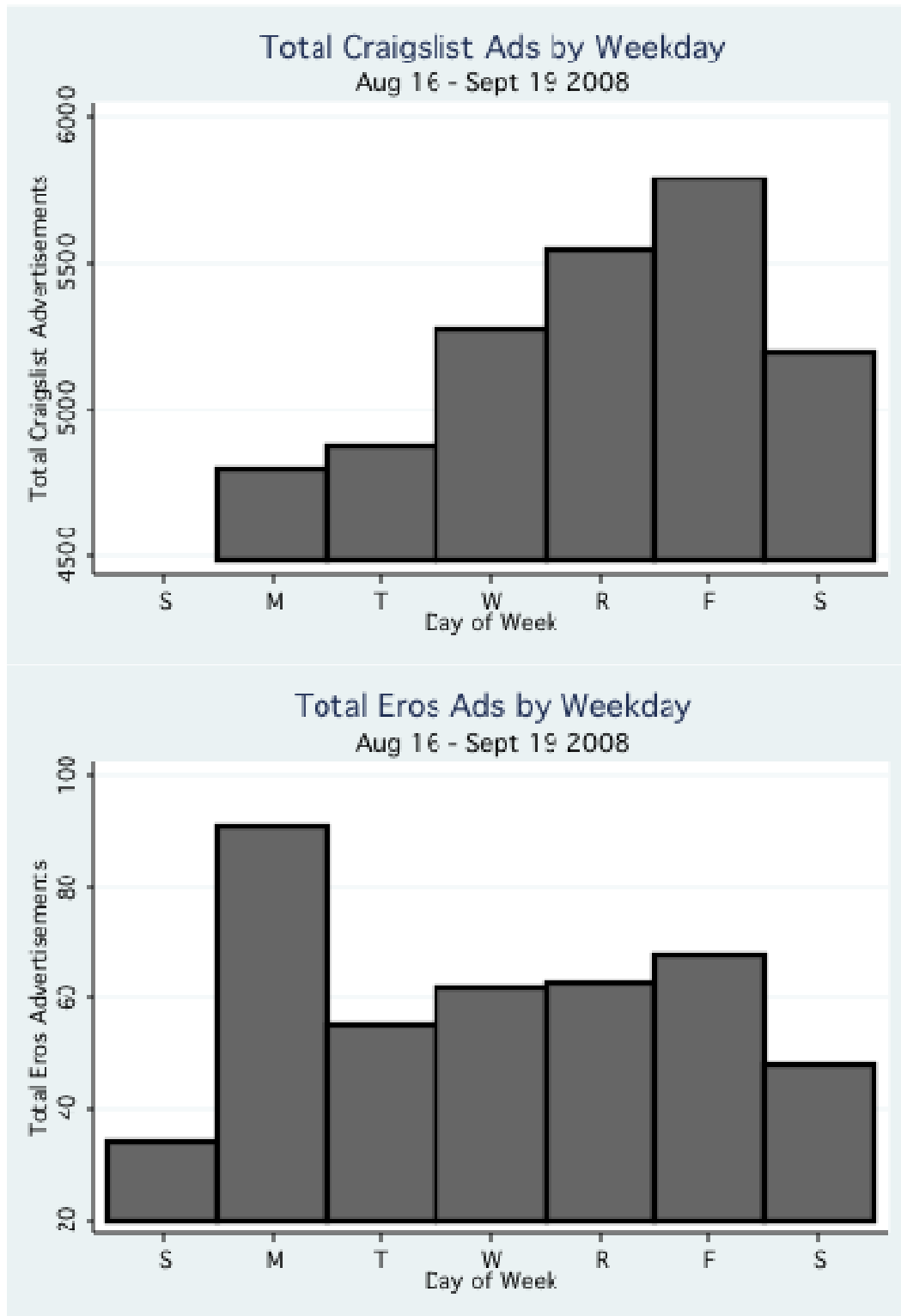
	Craigslist				Eros			
	Minn (DNC Dates)		Denver (RNC Dates)		Minn (DNC Dates)		Denver (RNC Dates)	
Non-Convention City x Convention Date	0.098 (0.715)	0.025 (0.175)	0.301** (4.367)	-0.015 (-0.219)	-0.108 (-0.618)	-0.239*** (-5.184)	-0.703*** (-12.477)	-0.458** (-2.091)
City-specific linear and quadratic trends?	No	Yes	No	Yes	No	Yes	No	Yes
N	105	105	96	96	105	105	105	105
R-sq	0.831	0.848	0.762	0.864	0.230	0.253	0.254	0.285

**Table A - Equality of Means Hypothesis Tests for Treatment and Control Cities**

		Treatment Cities (n=1,140)		Control Cities (n=926)		Pr( T > t )
		Mean	Std. Error	Mean	Std. Error	
Services Offered	Vaginal and Oral Sex	0.746	0.014	0.775	0.014	0.116
	Anal Sex	0.029	0.005	0.033	0.006	0.555
	Independent	0.711	0.013	0.568	0.016	0.000
Professionalism	Delivered “as promised”	0.901	0.009	0.886	0.010	0.260
	On-time	0.907	0.009	0.897	0.010	0.464
Race	Black	0.153	0.011	0.161	0.012	0.607
	White	0.619	0.014	0.537	0.016	0.000
	Hispanic	0.096	0.009	0.139	0.011	0.002
	Asian	0.081	0.008	0.082	0.009	0.910
Age Group	18-20 (age)	0.146	0.010	0.150	0.012	0.818
	21-25	0.392	0.014	0.464	0.016	0.001
	26-30	0.244	0.013	0.222	0.014	0.254
	31-35	0.124	0.010	0.094	0.010	0.032
	36-40	0.054	0.007	0.041	0.007	0.187
	41-45	0.020	0.004	0.012	0.004	0.141
	46+	0.019	0.004	0.016	0.004	0.598
Wage	Calculated hourly wage	\$255.72	4.844	\$282.33	5.140	0.000

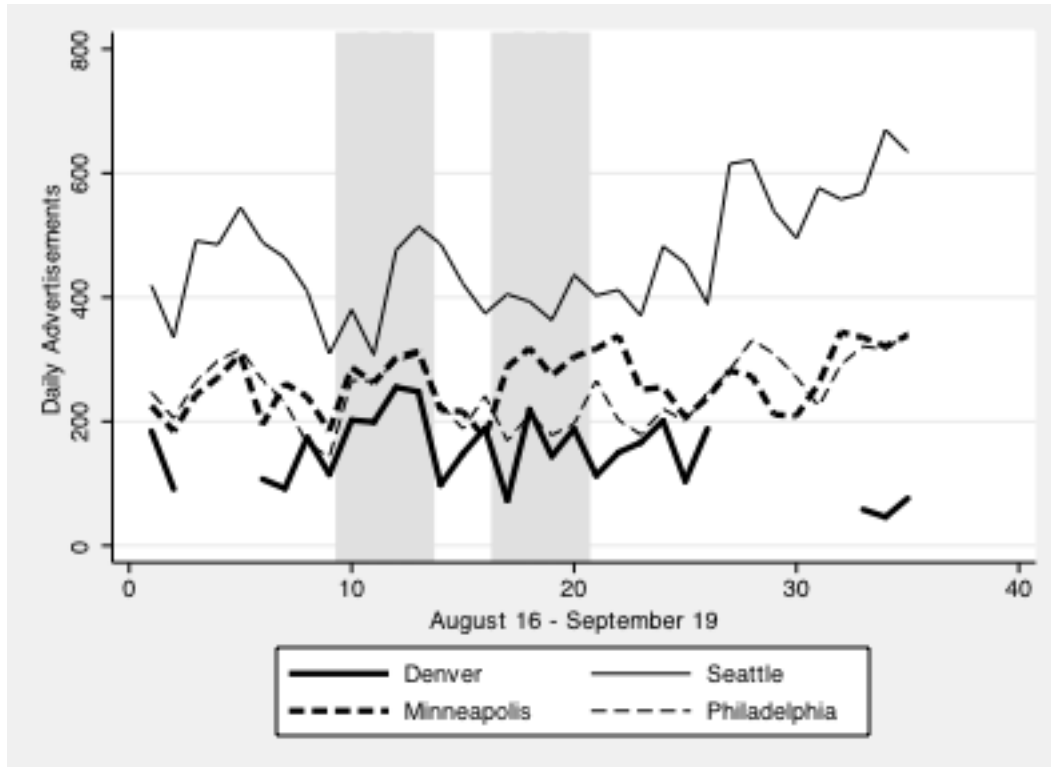
Notes: Values in table represent shares of sex workers reviewed on TheEroticReview.com in 2007 and 2008 with the specified characteristics in the treatment cities (Denver, Minneapolis) and control cities (Philadelphia, Seattle). Far right column displays t-test for equality of sample means.

**Figure 1 - Distribution of Daily Advertisement Counts, by Weekday**



Notes: Counts plotted exclude dates of RNC and DNC conventions.

**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).

**Figure 3: Daily Eros Advertisements, by City**

