

The FIFA World Cup and the Hours of Work of American Males

*** Very preliminary ***

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In this paper I document changes in the hours worked by American males during the FIFA Soccer World Cup. The World Cup is a natural experiment that can be used to estimate the sensitivity of a worker's allocation between leisure and market work during events whose timing overlaps with the workday. To estimate the effect that an event like the world cup has on hours of work my empirical strategy exploits two sources of exogenous variation: the first one is the calendar timing of the World Cup as it occurs in June/July every four years, this allows me to compare labor market outcomes in June/July for a worker in World Cup year t , with the outcomes in June/July for a worker in non-World Cup years $t+1$, $t+2$ and $t+3$. The second type of variation is the scheduled time at which games are played. The hour of the day when games are played differentially affects hours of work across different regions of the United States. For example during the Korea-Japan 2002 World Cup most of the games were at 8:30 pm Eastern Asia time, this is 7:30 am on the East Coast and 4:30 am on the West Coast. My results show that after controlling for observable demographic characteristics the average American male reduces his weekly number of hours of work during the World Cup by statistically significant estimates that range from $\frac{1}{5}$ hour to $\frac{1}{2}$ hour, depending on specification choice and time of the day in which games are played.

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1. Introduction

Economists have long been concerned with understanding how economic agents allocate their time between leisure and paid labor. Recent research that addresses this question include Connolly (2008) who shows that the weather determines a worker's allocation of market hours as they supply more hours during rainy days than in sunny days, or Gonzalez-Chapela (2007) who shows that as prices of recreation goods (complements of leisure) raise, the number of hours of work of American workers also increase. While the above papers document changes in the number of hours of work due to changes in the prices of substitutes (good weather) or complements (recreation) goods, we cannot say anything whether workers would decrease their hours of labor when there is an event that overlaps with market work during the workday. If workers value such event enough, then it is conceivable that they choose to consume the event rather than show up to work. In this paper I use the FIFA World Cup (world cup, hereafter) to analyze how people change their time allocation in the face of an event that requires skipping work to consume it. As the World Cup is played every four years in a different host country which is determined exogenously from the U.S. labor markets, it presents a useful natural experiment that should contribute to our understanding of this labor-leisure tradeoff.

The world cup has recently received some attention by economists. For example, Dohmen et al (2007) use an opinion survey in Germany to argue that the performance of the German national team improved in the 2006 world cup, the economic sentiments and expectations of Germans increased. Similarly Edmans et al (2007), use a cross section of countries to show that when a country's national team loses in the world cup, the country's stock market will observe a loss of 64 basis points in the following trading

day. Differently to these papers, I focus my attention in workers living in the United States. While it has been argued that American workers don't care much about soccer, maybe due to the over saturation of the American sports scene with already four professional established leagues (Markovits and Hellerman, 2001), this does not seem to be true during the world cup. For example, for the 2006 soccer world cup television ratings in the U.S. indicate that almost 17 million Americans watched the final match (New York Times, 2006); this figure is equivalent to the viewership in the same year for the NCAA Basketball finals, and surpasses by 4 million the NBA finals in that same year.

My empirical strategy to estimate the causal effect that the world cup has on a worker's market hours consists in taking advantage of two independent sources of variation: the calendar timing and the schedule timing of the world cup. Specifically, since the world cup occurs every four years during the summer, this allows me to compare the hours of work in world cup year t with the hours of work of a demographically equivalent worker in non-world cup year $t+1$. Furthermore, FIFA (international soccer's governing body) determines exogenously the place where the world cup is played and due to differences in U.S. local times, changes in the hours of work of American workers should vary according to which country hosts the tournament. That is games played in different countries are televised live at different local times, and the time games are televised locally will determine whether the timing of the world cup overlaps with the worker's regular work schedule. For example in France 1998 most of the games were played at 9:00 pm Central European Time; this is 4:00 pm on the U.S. East Coast and 1:00 pm on the Pacific Coast. In contrast, in Korea-Japan 2002 most of the games were at 8:30 pm Eastern Asia time, this is 7:30 am on the East Coast and 4:30

am on the West Coast. In a sense, my strategy is similar to Hamermesh et al (2008) who analyze the timing and coordination between a person's activities and local television schedules. They show that the timing of market work is determined by coordination with people in other times zones and their local television schedules. Similarly, I hypothesize that when the world cup is played in different host countries, the effect on the work decision of American workers varies accordingly to the time games are televised in the U.S.: when the games are televised early in the morning or late in the afternoon, Americans will not reduce their hours of work as much as if games are televised between 9 am and 4 pm locally.

My results show that after controlling for observable demographic characteristics, as well as year and monthly fixed effects American males reduced their weekly hours of work on average during the world cup up to $\frac{1}{2}$ hour – or one of every three workers reduces their weekly hours by the time it takes to watch a complete soccer match (90 minutes plus fifteen minutes half time intermission). Interestingly, this reduction in hours of work is concentrated among salary paid workers. This is perhaps significant because the opportunity cost of leisure in the short run among these workers is arguably zero or very small, while for hourly paid workers the short run opportunity cost of leisure is their hourly wage. Further my results suggest that this reduction in hours of work is heterogeneous across different income levels: differences between world cup periods and all other times are zero among the lowest earners, and the hours of market work during the World Cup decrease as we move to the right of the distribution of observed wages.

Finally in this paper I investigate whether any reduction in hours of work during the world cup is compensated with an increase in the hours worked either in the month

before the world cup, or the month after it. This would be the case if salaried paid workers contracted with their employers to work for a set number of hours during certain period, and reducing their number of hours in during the world cup period t will imply an increase in period $t-1$ or $t+1$. The results in the paper show that among salaried paid workers reductions of labor during the world cup are not accompanied with an increase in hours in either the next time period or in the period before.

The rest of the paper is structured as follows: section two introduces the data and my measurement strategy. Section three introduces my empirical specification. The results are presented in section four, and section 5 concludes.

2. Data

In this paper I use data from the 1994-2006 NBER Collection of the Current Population Survey Outgoing Rotations Groups (CPS OGR). The CPS ORG is a nationally representative survey of American households. It is collected each month during the week containing the 19th of each month and the labor market questions in it refer to the week that contains the 12th of each month. Each monthly collection of the CPS is composed of eight nationally representative samples called rotations, which enter sequentially into the survey. Each rotation stays in the survey for 4 consecutive months, then is taken out of the survey for 8 months, and then returns into the survey for 4 extra months. In the 4th and 8th time a household is interviewed, the CPS administers a special supplement that asks about the respondent's labor market questions, including usual hours worked in the main job, actual hours worked last week in the main job, and weekly earnings.

In order to identify variations in hours of work between households that are surveyed during the world cup and not, I estimate the difference between the respondent's hours worked last week and his usual hours of work. These two questions are consistent as they refer to the hours of work in the respondent's main job, and the only difference is the time frame they refer to¹. A negative difference between last week hours and usual hours means that the hours of work last week were less than the hours in the usual week – a positive difference means that hours in the usual week are less than hours last week. The null hypothesis to test is whether the difference between usual and last week hours is zero, and during the world cup I expect these difference in hours of work to be negative. Hereafter I will refer to this difference as the “weekly working gap.”

The sample in this paper includes all employed males in the CPS between 1994 and 2006. Notice that during this time four world cups were played: USA 1994, France 1998, Korea-Japan 2002 and Germany 2006. To control for outliers, I drop observations weekly working gap are greater than the 99th percentile and observations that are smaller than the 1st percentile. I also drop all observations whose hourly wage is smaller than \$2.00. All monetary units are in real dollars where the base period is January 1994. Basic summary statistics are presented in Table 2, the first column presents means for observations surveyed in months other than a world cup month and the second column presents means for observations surveyed in months during the world cup. The top panel presents means for all observations in the sample, and the bottom panel presents

¹ The question for usual hours is *HRUSL1: How many hours per week (do/does) (name/you) USUALLY work at (your/his/her) (job?/main job? By main job we mean) (the one at which (you/he/she) usually) ((work/works) the most hours.)* and the question for actual hours is *HRACT1: ((LAST WEEK/THE WEEK BEFORE LAST)/So, for (LAST WEEK/THE WEEK BEFORE LAST)), how many hours did (you/he/she) ACTUALLY work at (your/his/her) (job?/MAIN job?)*

observations that are salary paid. There are two important points to note in these raw estimates when analyzing the complete sample: first usual hours worked are 0.22 hours greater when the world cup is at play than during other months -- this is most likely because the world cup is played during summers--, while hours worked last week are shorter during world cup months by 0.31 hours. Second, the proportion of employed workers who did not work last week is greater during the world cup months as well – and this difference is 1.3 percentage points. If I restrict the sample exclusively to salaried paid workers, usual hours of work are indistinguishable between world cup and non world cup surveys, but the difference in hours worked last week is almost an hour worked shorter during the world cup months. Importantly, the proportion of employed workers reporting zero hours last week is twice as big during world cup months than at other times.

Figure 1 shows differences between last week hours and usual hours for 48 periods of time between 1994 and 2006. The top panel refers to salary paid workers, and the bottom panel refers to hourly paid workers. Each period is composed as follows: Period 1 contains observations surveyed during March(t), April(t) and May(t); Period 2 contains observations surveyed during June (t) and July(t); Period 3 contains observations from the August(t), September(t), and October(t) surveys and Period 4 from the November(t), December(t) and January($t+1$) surveys. The data in these figures highlights three facts: First, differences in hours of work between last week's hours and a usual week's hours tend to be negative, this is not surprising as workers tend to take days off, holidays, sick leave and vacation. Figure 1 also shows that American workers do tend to work less hours last week on average during the world cup than at other periods, but these differences do not seem greater than differences in other June/July periods. Finally,

these data shows that the variance in difference between last week and usual hours is greater among salaried paid workers than among hourly paid workers – which is not surprising salaried paid workers have more discretion over their hours of work in the short run than hourly paid workers (Bureau of Labor Statistics, 2005).

3. The FIFA World Cup

The FIFA Soccer World Cup is played every 4 years. All countries that are members of FIFA must qualify in regional tournaments to play in the final round where are games are played in he host country over the span of a month. Until the 1998 world cup the final round consisted of 24 teams, and since then the number of teams playing in the final round has increased to 32. For example the 2006 finals were played by 5 African teams, 4 Asian teams (including the Middle East), 1 team from Oceania, 4 teams from Central America, North America or the Caribbean, 4 from South America and 14 teams from Europe. These 32 teams are divided into 8 groups of 4. The top two teams in each group (16 total) qualify to the second round, where the tournament takes a format of direct elimination. The second round is followed by the quarterfinals (third round) which consist of every winner of the second round (8 in total). The winners from each quarterfinal play in the semifinals, and finally the grand final ad third place match that are played a month after the tournament started.

Table 1 presents information on local times and dates in which games were played for each of the four world cups covered by the sample. Importantly, note that even within world cup years there is variation in the calendar dates that the world cup is played, and hence the CPS will observe different stages of the world cup in different

years. In particular, USA 1994 was played from June 17 to July 17, and two CPS surveys capture world cup games in these days. The June survey, whose reference week refers to the days 12-18, includes the inauguration and first round games and the July survey includes the semifinals, the third place game and the grand final. France 1998 was played from June 12 to July 10 and also includes observations on the June survey when the first round was played (reference week June 7 to June 13) and the July surveys as the tournament's final took place on Sunday of the reference week (July 12 to July 18). In contrast, Korea-Japan was played from May 31st to June 30th, and the June survey's reference week includes 23 first round games. Germany 2006 was played between June 9th and July 9th, and the June survey includes first round games from the week of June 11-17 plus the final match who was played on Sunday of the July survey's reference week.

The identification strategy on this paper assumes that FIFA's decision of where and when the world cup is played is independent from the U.S. labor markets. If the choice of host country is done to maximize television viewership in the U.S then using variation in the time at which games are televised in the U.S.'s fails to identify workers' decision between market hours and time spent watching the world cup. If such is the case, then it is conceivable that the world cup games are scheduled at times that maximize viewership, and in the absence of those games American workers will consume other types of leisure anyway, and observed decreases of hours of work during the world cup will be spurious. This seems unlikely: First, the world cup's host country is chosen 7 years in advance of each tournament by FIFA's executive committee. The host country is chosen by a single transferable vote system, and each candidate country must fulfill the

requisite of not belonging to the regional federation that hosted any of the previous two world cups². But even if the decision by FIFA's executive committee is made by forecasting the best time to maximize U.S. viewership, variation across different local time zones across different world cups will identify the effect of the world cup on hours of work.

4. Empirical Strategy

The empirical strategy in this paper consists in comparing the difference between hours of work last week and usual hours of work – heuristically this is similar as a match pairs estimation where we observe for the same observation's hours during the world cup (hours last week) and hours at other times (usual hours of work). Specifically I estimate the following equation:

$$G_{iyt} = \gamma WC_{iyt} + x_{iyt}'\theta + \varepsilon_{iyt} \quad (1)$$

where G_{iyt} represents the gap between last week and usual hours, WC_{iyt} is an indicator variable that takes a value of one during a world cup month, and zero otherwise; x_{iyt} is a vector of demographic characteristics that may or may not vary with time (age, age square, education, state, year dummies and occupation fixed effects). The subscript i represents each worker, y represents each year and t represents each month. The parameter of interest is γ which represents the change in hours of work during the world cup, $\gamma < 0$ means that hours last week are smaller than usual hours in the main job.

Equation 1 will estimate γ consistently as long as $\text{cov}(WC_{iyt}, \varepsilon_{iyt}) = 0$ which is an

² This is a recent change followed a rotation system until 2002 world the host nation alternated between Europe and America.

implausible assumption. As suggested with Figure 1 it is quite possible that hours of work are lower during the World Cup because this event takes place during the summer, and hours of work decrease during summers anyway even in the absence of the world cup. Alternatively it may be that hours of work are less during the world cup because of some idiosyncratic macroeconomic phenomenon during 1994, 1998, 2002 and 2006 – a time variant characteristic. To control for this I decompose $\varepsilon_{iyt} = \mu_t + \nu_y + v_{iyt}$ where ν_y is a year specific component, μ_t is a month specific component and v_{iyt} is a random variable assumed to have mean zero and iid across observations. Estimating equation 1 with year and month fixed effects estimates γ consistently as long as differences in hours of work within each period of time are time invariant and $\text{cov}(WC_{iyt}, v_{iyt}) = 0$.

An alternative specification, that relaxes the time invariance assumption, is to take advantage of the scheduled times the world cup is played. As mentioned above, the world cup is played in a different country every four years, which generates variation in the time games are televised in the United States. For example, during the USA 94 World Cup most games were played at 4:35 pm eastern time, and 1:35 pm in the pacific coast. In the other hand, during the Korea-Japan 02 World Cup games that were played at 20:30 pm Asian Standard Time, were televised at 7:30 am in the United States' East Coast, and at 4:30 am in the Pacific Coast. As argued in the previous section, the variation in the choice of host country and therefore times games are televised in the United States is assumed to be exogenous because FIFA's Executive Committee chooses the country where the world cup will be played arbitrarily. To take advantage of this variation I estimate the following equation:

$$G_{ijt} = \beta_1 T1_{ijt} + \beta_2 T2_{ijt} + \beta_3 T3_{ijt} + x_{ijt}^1 \theta + \varepsilon_{ijt} \quad (2)$$

where $T1_{ijt}$ equals one if games were televised in region j between 12 am and 6 am and zero otherwise, $T2_{ijt}$ takes a value of one if games were televised in region j between 6 am and 12 pm, and $T3_{ijt}$ takes a value of one if games were televised between 12 pm and 6 pm in region j . For this specification I use the time when most of the games were played during the reference week of the World Cup month, and this is the time marked with a star in Table 1. Under this strategy, note that none of the games were played between 6 pm and 12 am in the different U.S. local times, and the control group is all observations in months when the world cup is not played.

5. Results

Raw estimates of equations 1 and 2 are presented in Table 2, the first two columns correspond to all workers in the United States, and the second two columns are salaried paid workers only. The first row represents the difference between actual hours and usual hours in times when the word is not in play. Across all groups and specifications, this number is robust at values of -0.736 hours worked less for all workers and -0.781 for salary paid workers. These estimates translate roughly to 45 minutes per week. It makes intuitive sense that these differences are negative as hours last week are likely zero sometimes because people take vacations, sick leave, and temporary separations from the job – and as long as the separation is temporary and the job is still the respondent's main job usual hours will be non-zero. The second row presents estimates of γ for equation 1, suggesting that workers reduce their hours of work by half an hour during the world cup before any type of controls are added, and salaried paid workers decrease their market hours by a little bit more than an hour. The third, fourth and fifth

row represent the estimates for β_1 , β_2 and β_3 in equation 2. These estimates suggest that all American workers do not reduce their hours of work when games are played between 12 am and 6 am, they do reduce their hours by $\frac{4}{10}$ of an hour (24 minutes per week) when games are played between 6 am and 12 pm, and by $\frac{6}{10}$ of an hour (36 minutes per week) when games are played between 12 pm and 6 pm. The estimates for salary paid workers suggest that any differences in market labor during the world cup is concentrated among this group. In particular, there are no observed statistically significant differences when games are played between 12 am and 6 am, but there is a statistically significant reduction of almost an hour (54 minutes per week) when games are played between 6 am and 12 pm, and a reduction of more than an hour (70 minutes per week) when games are played between 12 pm and 6 pm.

Table 3 presents ordinary least squares estimates when controls are added to equations 1 and 2. The first two columns present estimates for all workers that include education, age, age squared, state, month fixed effects, and year fixed effects. The third and fourth column present estimates for all workers that include occupation-year cross product fixed effects. The next four columns replicate the first four, but for salaried paid workers exclusively. The estimates across specifications are quite robust and suggest that even after controlling for month and year fixed effects American workers reduce their number of hours of work during the world cup. For example, column 3 suggests that after controlling for observable characteristics all American workers reduce their hours of work by an average of 15 weekly minutes during the world cup. Column 4 suggest that after controlling for demographic characteristics all American workers supply 12 minutes *more* per week if the games are between 12 am and 6 am, if games are between 6 am and

12 pm American workers supply on average a little bit less than 15 minutes per week, and if games are between 12 pm and 6 pm workers supply on average 15 minutes less per week. These estimates do not seem out of line, and make intuitive sense, as they suggest that one out of eight American workers watch a world cup game every week when the world cup is played between 6 am and 6 pm. It is worth noting that the coefficient for world cup games between 12 am and 6 am is positive for all American workers. While I am not sure what may be the reason for this, I can conjecture, that some workers especially those on the hospitality business, supplied longer hours of work during the world cup when the games were played at such an unorthodox time³. When I restrict from my sample salary paid workers, the estimates of the hours gap during the world cup are zero when games are played between 12 am and 6 am, and half an hour when games are played between 6 am and 6 pm. Again, these results suggest that 1 of every 3 salaried paid Americans watch a world cup game per week.

Finally, it is not clear whether wages should be included in equations 1 and 2, as wages may determine changes in the hours of work during the world cup, and preferences for leisure may determine jointly the number hours of work and wages for a given worker. Furthermore, when using CPS data wages are calculated by dividing usual weekly earnings over usual weekly hours of work, and the denominator will be part of the dependent variable in equations 1 and 2. Nevertheless, and assuming that we can identify the role that wages have on the gap between hours last week and usual hours, I estimate equations 1 and 2 to include up to a quartic term in log wages, plus interactions between

³ If I remove from my sample workers in the services and hospitality industry this coefficient becomes statistically zero.

the world cup variables and log wages⁴. The results are presented in Figure 2: the top panel shows the estimated gap for equation 1 and the lower panel shows the same gap for equation 2. In both cases, and as in Table 3, the bulk of the differences are concentrated among salaried paid workers. Furthermore as we move across the distribution of wages from lowest earners to highest earners the magnitude of the difference between usual and actual hours increases. That is salaried paid American workers with higher income are more likely to watch a soccer world cup match game than lower income Americans, suggesting that the income elasticities of leisure during the world cup are positive.

A different issue to address is whether salaried workers have a contract with their employers that specifies a fixed number of hours of work in a set period of time, as suggested by the results in Conolly (2008). If this is the case, then it must be that reductions of hours of work during the world cup shall be accompanied by increases in hours of work in the periods before or after the world cup. To address this question I estimate the following equation for salaried workers exclusively:

$$G_{iyt} = \gamma_B B_{iyt} + \gamma_{WC} WC_{iyt} + \gamma_A A_{iyt} + x_{iyt}^1 \theta + \varepsilon_{iyt} \quad (3)$$

where B_{iyt} represents a dummy variable that takes a value of one if the observation was surveyed in the month before the world cup started, and A_{iyt} represents a dummy variable that takes a value of n if the observation was surveyed in the month after the world cup. If salaried paid workers do have a contract that specifies a set number of hours then it is possible that $\gamma_B + \gamma_A \approx -\gamma_{WC}$. Alternatively, I estimate whether changes in labor supply during the world cup are compensated with changes in the hours of work in the months

⁴ As usual hours enters in the left side of the equation with a negative sign and in the denominator on the right side of the equation my intuition with higher hourly wage due to relatively low usual hours will bias the estimate of γ towards zero as higher earnings will be associated with longer actual worked hours.

after and before the world cup across different times when the world cup is played. To do so I estimate the following equation for salaried workers:

$$G_{ijt} = \sum_{k=1,2,3} (\beta_k^B BTk_{ijt} + \beta_k^{WC} WCTk_{ijt} + \beta_k^A ATk_{ijt}) + x_{ijt}^1 \theta + \varepsilon_{ijt} \quad (4)$$

Equation (4) is analogous to equation (2) and $BT1_{ijt}$ takes a value of one if the observation was surveyed during the month *before* to a world cup where most of the matches were played between 12 am and 6 am local US time; $WCT1_{ijt}$ takes a value of one if an observation was surveyed during a month when the world cup was played between 12 am and 6 am local U.S. time; $AT1_{ijt}$ takes a value of one if the observation was surveyed during the month *after* a world cup where most of the matches were played between 12 am and 6 am local US time. Similarly $BT2_{ijt}$, $WCT2_{ijt}$, $AT2_{ijt}$ are defined for world cups when games are played between 6 am and 12 pm local time, and $BT3_{ijt}$, $WCT3_{ijt}$, $AT3_{ijt}$ are defined for world cup when games are played 12 pm and 6 pm.

Estimates of equation (3) are presented in Table 5. The estimates in the first and third columns represent results from estimating equation (3) and results in the second and fourth columns present estimates from equation 4. Specifically, the top panel presents estimates of γ_B, γ_{WC} and γ_A ; the second panel presents estimates of β_1^B, β_1^{WC} and β_1^A ; similarly the third and fourth panel present estimates when $k=2$ and $k=3$ respectively. The results in the first two columns, which do not control for any observed demographic characteristics suggests that hours of work are lower during months when the world cup is played and in months after the world cup is played as well. This is not surprising as the world cup occurs mostly during June/July and the month following it will be either July

or August. In contrast, estimates for the month before the world cup are positive in all cases but when games are played between 12 am and 6 am local U.S. time.

Adding controls for observable demographic characteristics and year occupation fixed effects suggest that reductions in hours of work during the world cup are not accompanied with increases in hours of work in the month before or after the world cup. For example, without controlling for differences in hours of work for when the games are played in the U.S. local times, a reduction of 0.41 hours of work during the world cup are accompanied with statistically insignificant estimates that are not different to zero in the months before and after the world cup. When I differentiate between different U.S. times the games are played the results vary little: When games are played between 6 am and 12 pm, American workers reduce their hour of work by $\frac{6}{10}$ of an hour, while the months after and before do not report statistically significant changes in hours of work. When games are played between 12 pm and 6 pm, workers reduce their hours of work by $\frac{4}{10}$ of an hour – this estimate is marginally statistically significant with a p-value of 0.06 – while there are no changes in the hours of work before or after the world cup. In contrast, estimates when the world cup is played between 12 am and 6 am U.S. local time show no differences in hours of work during the world cup or the month after the world cup, but in May 2002 salaried paid workers supplied almost half an hour less than at other times. This estimate is surprisingly statistically significant and cannot be explained with worker's adapting their hours of work due to the world cup⁵.

⁵ While I cannot explain this variation in the data, note that month and year fixed effects control for time invariant differences in hours of work, but if there is a time variant factor that changes hours of work in May 2002, my model fails to distinguish this.

6. Summary

In this paper I show that American workers will reduce their hours of work when the timing of an event they care to see overlaps with their market labor. The FIFA soccer world cup presents a good natural experiment to show that this hypothesis is true. In here I take advantage of two exogenous sources of variation: the place where the world cup is played which determines that the games will be televised in the United States at different hours during the day, and the fact that the world cup is played every four years which allows for inter-annual comparisons. My results suggest that American males supply 15 minutes of work less during the world cup, a result that indicates that 1 in 9 Americans watch a weekly game. The magnitude of these estimates is greater among salaried paid workers, who reduce their hours of work by half an hour on average per week, this indicates that 1/3 of all salarypaid workers watch a world cup game per week. Further, my results do not present any evidence that reductions of hours of work during the world cup are accompanied with rises in the number of hours of work in the month before or after the world cup. This suggests that salaried paid workers have more discretion over the number of hours they work, and that their contracts do not necessarily stipulate a fixed number of hours of work.

A back of the envelope calculation suggests that the forgone market labor due to the world cup is rather modest in terms of wages. If the average salary paid worker in the U.S. had an hourly wage of \$16 dollars, and the total number of salary paid American males is approximately 38,000,000, then the approximate value of forgone market labor by Americans during a week of world cup play is $16 \times 38,000,000 \times \frac{1}{2} = 300,000,000$, which multiplied by 4 weeks it comes out to \$1.2 billion per world cup. In an economy

that annually produces more than 13 trillion dollars per year, these effects are modest and even more so as these reductions in hours of work occur every four years. One only wonders, whether these results are robust if some of the other principal American sports events were to occur during the work day and what will be the trade-off between consumption for such an event and paid market work.

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Figure 1. Differences in Hours Worked Last Week and Usual Hours of Work

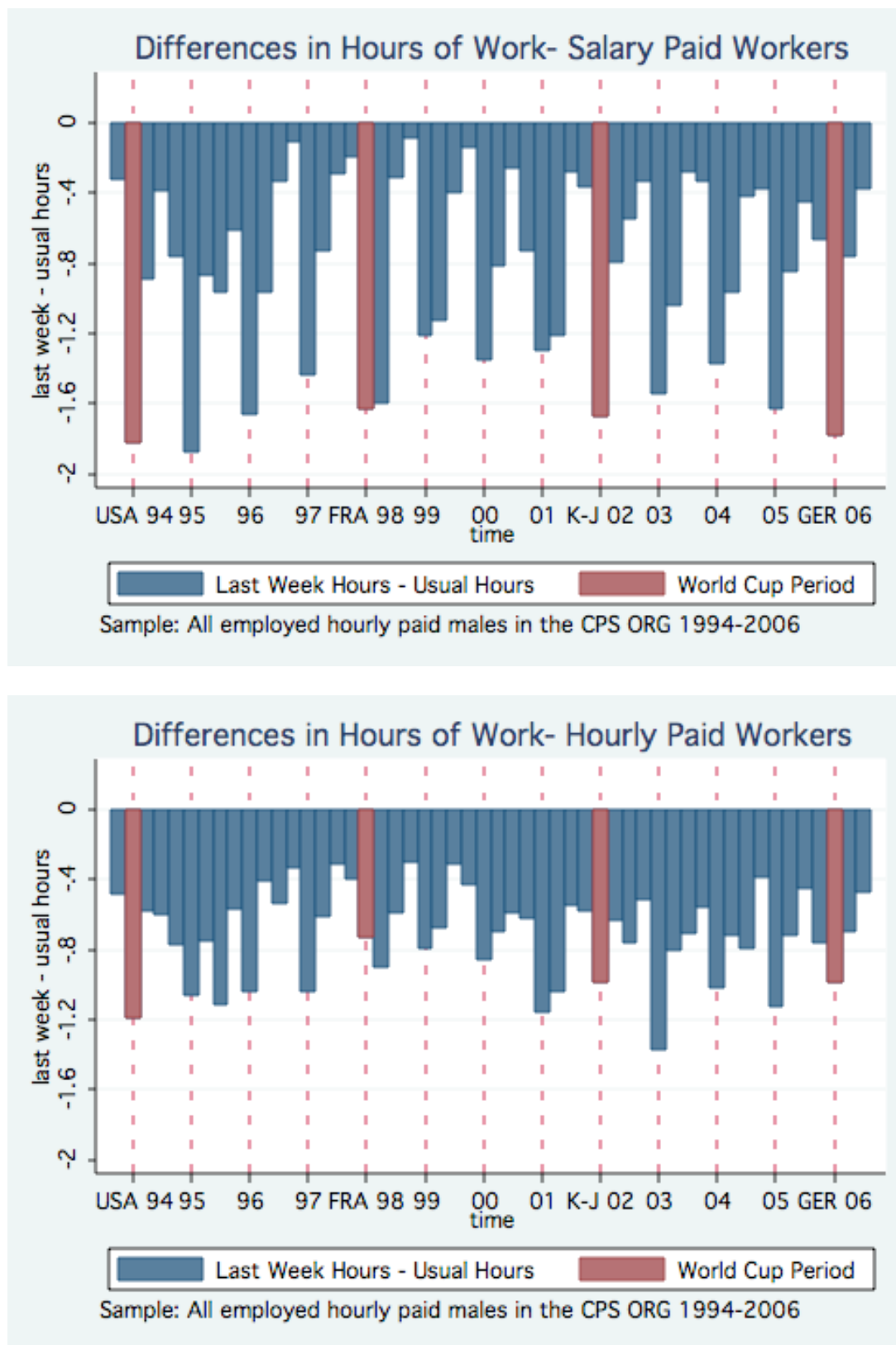


Figure 2 Predicted Differences in Hours of Work (With Quartic on Wages)

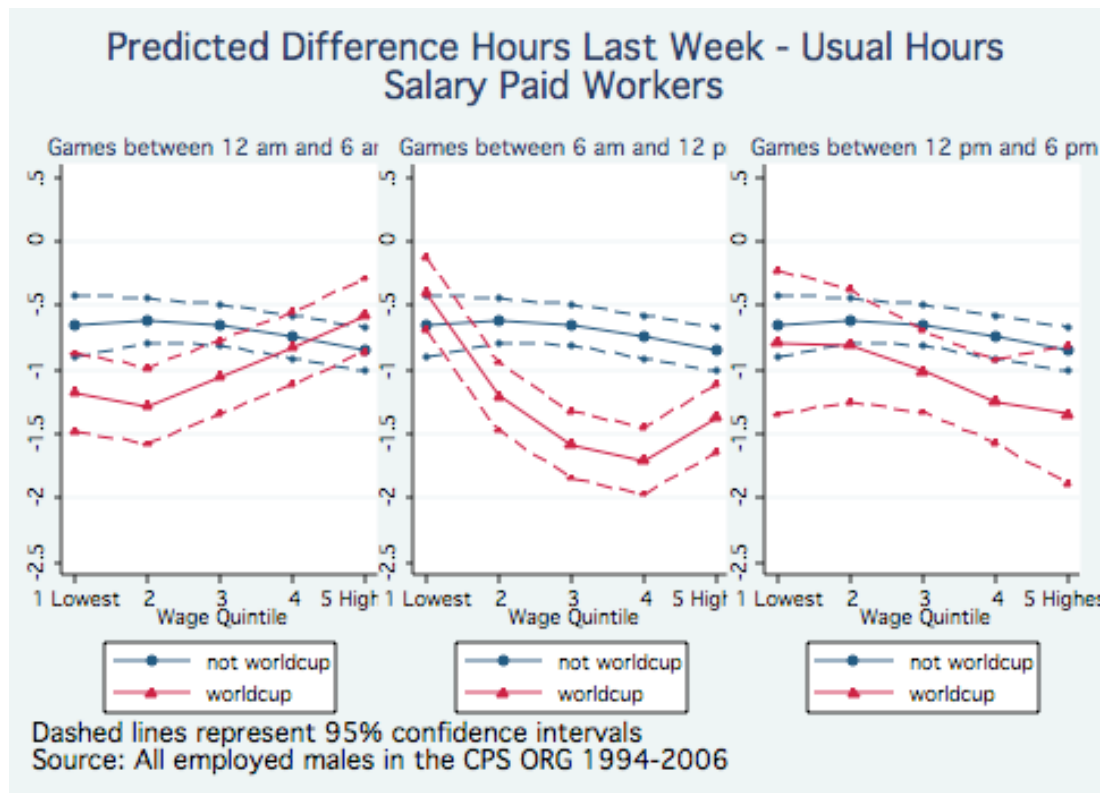
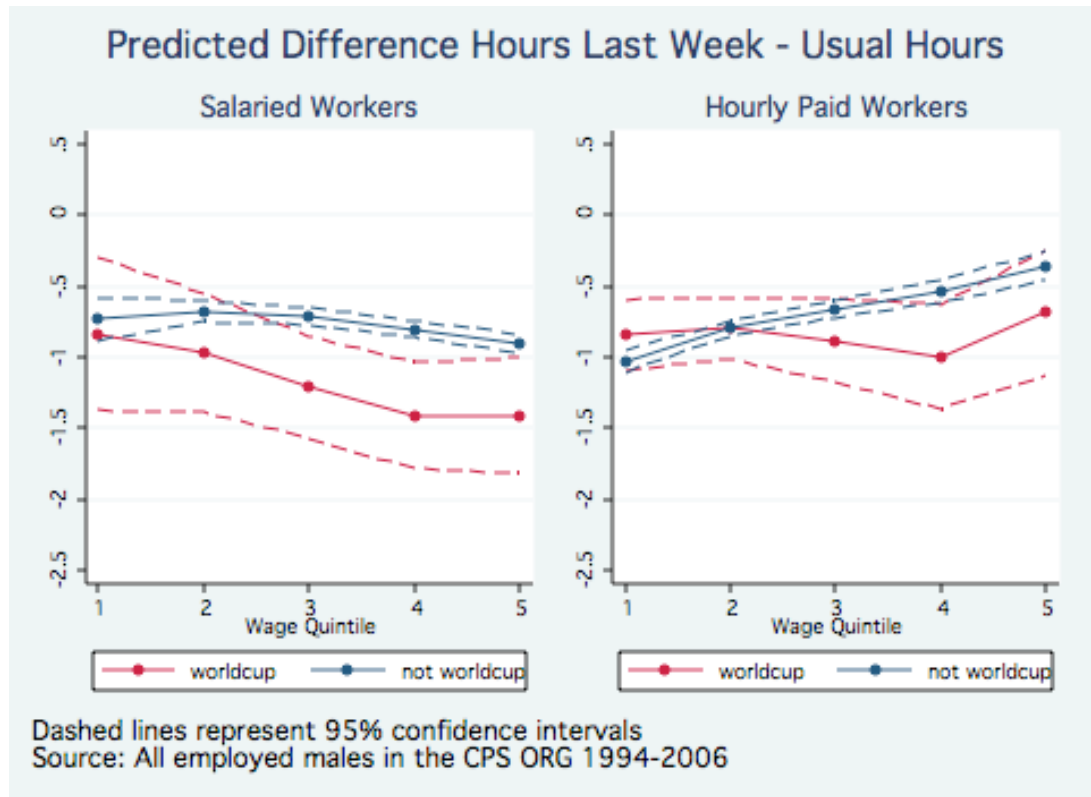


Table 1. Schedule of games during the CPS reference week

a) USA 1994 June 17 to July 17

Reference week(s) June 12-18 and July 10-17

Hours Games Played	Number Matches at Hour
11:35 EDT	1
12:05 EDT	1
16:05 EDT	3
16:35 EDT	3
18:35 EDT*	3

b) France 1998 June 10-July 12

Reference week(s) June 7-13 and July 12-18

Hours Games Played	Number Matches at Hour
14:30 CEST (UTC+2)	1
17:30 CEST	3
21:00 CEST*	4

c) Korea-Japan 2002 May 31 to June 30

Reference week(s) June 5-12

Hours Games Played	Number Matches at Hour
15:30 AST (UCT+9)	9
18:00 AST	5
20:30 AST*	9

d) Germany 2006 June 9 to July 9

Reference week(s) June 11-17 and July 9-15

Hours Games Played	Number Matches at Hour
15:00 CEST (UCT+2)	7
18:00 CEST	7
21:00 CEST	7

Source: www.fifa.org