Online Appendices

Appendix A. Invitation Emails

Control Invitation Email

Subject: Reviewer Invitation from JPubE
Ref. No.: JPUBE-D-10-00001
Title: TITLE
Editor: CO-EDITOR
Author(s): AUTHORS

Dear REFEREE,

You are invited to review the above-mentioned manuscript for publication in the Journal of Public Economics. The manuscript's abstract is at the end of this email.

If you accept this invitation, I would be very grateful if you would return your review by **July 21, 2010** (6 weeks from now).

Please choose one of the following options to proceed:

1) If you are willing to review this manuscript, please click: Agree to Review

2) If you are not able to review this manuscript, please click: Decline to Review

3) If you would like to view the manuscript before making a decision, please click: View Manuscript

To assist you in the reviewing process, I am delighted to offer you full access to Scopus (the largest abstract and citation database of research information) for 30 days. With Scopus you can search for related articles, references and papers by the same author. You may also use Scopus for your own purposes at any time during the 30-day period. If you already use Scopus at your institute, having this 30 day full access means that you will also be able to access Scopus from home. Access instructions will follow once you have accepted this invitation to review.

Yours sincerely,

Liz Anderson
Senior Editorial Assistant
Journal of Public Economics

Four-Week Invitation Email

Subject: Reviewer Invitation from JPubE
Ref. No.: JPUBE-D-10-00001
Title: TITLE
Editor: CO-EDITOR
Author(s): AUTHORS

Dear REFEREE,

You are invited to review the above-mentioned manuscript for publication in the Journal of Public Economics. The manuscript's abstract is at the end of this email.

If you accept this invitation, I would be very grateful if you would return your review by **July 4, 2010** (4 weeks from now).

Please choose one of the following options to proceed:

1) If you are willing to review this manuscript, please click: Agree to Review

2) If you are not able to review this manuscript, please click: Decline to Review

3) If you would like to view the manuscript before making a decision, please click: View Manuscript

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Yours sincerely,

Liz Anderson
Senior Editorial Assistant
Journal of Public Economics

Cash Invitation Email

Subject: Reviewer Invitation from JPubE
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Title: TITLE
Editor: CO-EDITOR
Author(s): AUTHORS

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If you accept this invitation, I would be very grateful if you would return your review by **July 4, 2010** (4 weeks from now). As a token of appreciation for timely reviews, you will receive a **$100** Amazon.com® Gift Card* if you submit your report before the due date. The Journal of Public Economics will automatically email you a gift card code within a day after we get your report (no paperwork required).

Please choose one of the following options to proceed:

1) If you are willing to review this manuscript, please click: Agree to Review

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Yours sincerely,

Liz Anderson
Senior Editorial Assistant
Journal of Public Economics

Social Invitation Email

Subject: Reviewer Invitation from JPubE
Ref. No.: JPUBE-D-10-00001
Title: TITLE
Editor: CO-EDITOR
Author(s): AUTHORS

Dear REFEREE,

You are invited to review the above-mentioned manuscript for publication in the Journal of Public Economics. The manuscript's abstract is at the end of this email.

If you accept this invitation, I would be very grateful if you would return your review by **July 21, 2010** (6 weeks from now). In the interest of improving transparency and efficiency in the review process, Elsevier will **publish referee times by referee name**, as currently done by the Journal of Financial Economics at this website. The referee times for reports received between Jan 1, 2010 and Dec 31, 2010 will be posted on the Journal of Public Economics website in January 2011. Note that referee anonymity will be preserved as authors only know the total time from submission to decision (and not individual referee's times).

Please choose one of the following options to proceed:

1) If you are willing to review this manuscript, please click: Agree to Review

2) If you are not able to review this manuscript, please click: Decline to Review

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Yours sincerely,

Liz Anderson
Senior Editorial Assistant
Journal of Public Economics

Appendix B. Reminder and Thank You Emails

Control Group Reminder Email

Subject: Reminder to review for JPubE
Ref. No.: JPUBE-D-10-00001
Title: TITLE
Editor: CO-EDITOR
Author(s): AUTHORS
Journal of Public Economics

Dear REFEREE,

Thank you for agreeing to review this manuscript for the JPubE. I am writing to remind you that I would appreciate receiving your review **by July 21, 2010**, in a week.

You may submit your comments online in our editorial system by clicking here. Please login as a Reviewer using the username and password I sent you in my first email.

You may access the manuscript by selecting the "Pending Assignments" link on your Main Menu page. To submit your comments, please click on the "Submit Reviewer Recommendation" link.

With kind regards,

Liz Anderson
Senior Editorial Assistant
Journal of Public Economics

Four-Week Deadline Reminder Email

Subject: Reminder to review for JPubE
Ref. No.: JPUBE-D-10-00001
Title: TITLE
Editor: CO-EDITOR
Author(s): AUTHORS
Journal of Public Economics

Dear REFEREE,

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You may submit your comments online in our editorial system by clicking here. Please login as a Reviewer using the username and password I sent you in my first email.

You may access the manuscript by selecting the "Pending Assignments" link on your Main Menu page. To submit your comments, please click on the "Submit Reviewer Recommendation" link.

With kind regards,

Liz Anderson
Senior Editorial Assistant
Journal of Public Economics

Subject: Reminder to review for JPubE
Ref. No.: JPUBE-D-10-00001
Title: TITLE
Editor: CO-EDITOR
Author(s): AUTHORS
Journal of Public Economics

Cash Incentive Reminder Email

Dear REFEREE,

Thank you for agreeing to review this manuscript for the JPubE. I am writing to remind you that I would appreciate receiving your review **by July 4, 2010**, in a week. As a token of gratitude for timely reviews, you will receive a **$100** Amazon.com® Gift Card* if you submit your report before the due date. The Journal of Public Economics will automatically email you a gift card code within a day after we get your report (no paperwork required).

You may submit your comments online in our editorial system by clicking here. Please login as a Reviewer using the username and password I sent you in my first email.

You may access the manuscript by selecting the "Pending Assignments" link on your Main Menu page. To submit your comments, please click on the "Submit Reviewer Recommendation" link.

With kind regards,

Liz Anderson
Senior Editorial Assistant
Journal of Public Economics

Social Incentive Reminder Email

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Ref. No.: JPUBE-D-10-00001
Title: TITLE
Editor: CO-EDITOR
Author(s): AUTHORS
Journal of Public Economics

Dear REFEREE,

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You may access the manuscript by selecting the "Pending Assignments" link on your Main Menu page. To submit your comments, please click on the "Submit Reviewer Recommendation" link.

With kind regards,

Liz Anderson
Senior Editorial Assistant
Journal of Public Economics

Control Group Thank You Email

Subject: Reminder to review for JPubE
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Title: TITLE
Editor: CO-EDITOR
Author(s): AUTHORS
Journal of Public Economics

Dear REFEREE,

Thank you for your review of this manuscript.

You may access your review comments and the decision letter (when available) by logging onto the Elsevier Editorial System. Please login as a Reviewer.

Kind regards,

Liz Anderson
Senior Editorial Assistant
Journal of Public Economics

Four Week Deadline Thank You Email

Subject: Reminder to review for JPubE
Ref. No.: JPUBE-D-10-00001
Title: TITLE
Editor: CO-EDITOR
Author(s): AUTHORS
Journal of Public Economics

Dear REFEREE,

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Kind regards,

Liz Anderson
Senior Editorial Assistant
Journal of Public Economics

Cash Incentive Thank You Email

Subject: Reminder to review for JPubE
Ref. No.: JPUBE-D-10-00001
Title: TITLE
Editor: CO-EDITOR
Author(s): AUTHORS
Journal of Public Economics

Dear REFEREE,

Thank you for your review of this manuscript. As a token of appreciation for timely reviews, here is your $100 Amazon.com® Gift Card* code: Claim Code. You are able to use it any time to make purchases at Amazon.com without any paperwork. If you experience any problems with it, please do not hesitate to contact me at jpubec@gmail.com.

You may access your review comments and the decision letter (when available) by logging onto the Elsevier Editorial System. Please login as a Reviewer.

Kind regards,

Liz Anderson
Senior Editorial Assistant
Journal of Public Economics

Social Incentive Thank You Email

Subject: Reminder to review for JPubE
Ref. No.: JPUBE-D-10-00001
Title: TITLE
Editor: CO-EDITOR
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Journal of Public Economics

Dear REFEREE,

Thank you for your review of this manuscript.

You may access your review comments and the decision letter (when available) by logging onto the Elsevier Editorial System. Please login as a Reviewer.

As you may remember, Elsevier will **publish referee times by referee name**, as currently done by the Journal of Financial Economics at this website. Your time of 27 days for this review will be posted on the Journal of Public Economics website in January 2011. Note that referee anonymity will be preserved as authors only know the total time from submission to decision (and not individual referee's times).

Kind regards,

Liz Anderson
Senior Editorial Assistant
Journal of Public Economics

Appendix C. Data Sources and Variable Definitions

Data from the Journal of Public Economics. Our primary source of data is the Elsevier online editorial system. We downloaded data from this system on July 22, 2012 for the analysis reported in the paper. We use data on all referees invited to review a new submission between February 15, 2010 and October 26, 2011. We exclude 15 observations that were contaminated (e.g. by letters with errors) and 5 observations in which the referee did not receive the email invitation. Referee requests for revisions are excluded from the experiment and are always subject to the 6 week deadline.

The Elsevier data system records time of invitation, agreement and submission of the report. Using these data, we generate an indicator for accepting the invitation, the turnaround time in days, and month of invitation. We obtain data on referees' review invitations and turnaround times prior to the start of the experiment from the same database, which contains information going back to November 1, 2005. The online system uses a single numerical identifier for a referee; we consolidate a few cases where referees have multiple ID's manually using the reviewer's name and affiliation.

The editorial system also stores all referee reports, which are submitted either as file attachments or as plain text via an online form. We define word counts for the referee reports as the sum of the words in the online text forms and any attachments. We use a similar procedure to measure the word count of manuscripts as well as the number of tables and equations in each manuscript. Note that these automated counting procedures do not always deliver accurate counts, but we expect such measurement error to be balanced across the treatment groups.

Each referee must select a recommendation for the manuscript on an online menu (accept, revise-and-resubmit, or reject). We use this information to define an indicator for whether the editor follows the referee's recommendation on whether or not to reject the submission, grouping the accept and revise-and-resubmit categories into a single category.

Demographics. We collected demographic information by locating referees' CVs online. We downloaded these CVs during Fall 2010, with an update for new referees in November 2011. We use these CVs to define indicators for gender, tenure status, working in the U.S., and working in an academic position. Tenure status is defined as being a full professor at a university or mentioning tenure on the CV for any other position. Working in the U.S. is based on the employer's address and an academic position is defined as having an affiliation with a university. We code these variables as missing for referees for whom we were unable to locate CVs online or whose CVs did not contain the relevant information. We located CVs for 92.9% of the 1,606 referee reports in our primary (February 15, 2010 to May 9, 2011) sample.

Data from Other Journals. We obtain data from other Elsevier journals (listed in Appendix F) from the Elsevier editorial system. We compiled the longest histories available in the system for each journal. The available data vary across the journals, with the earliest records going back to November 2005. We use data up to December 31, 2011 from other journals. Elsevier does not use a unique identifier for referees across journals. We therefore linked referees to their performance at other journals based on email addresses (after extensive manual cleaning to match text fields).

Appendix D. Reweighting Methodology

This appendix describes the reweighting procedure used to construct Figure 2b. We first discretize each referee's most recent pre-experiment review time into eight bins, $b=1,...,8$: seven monthly indicators for the pre-experiment review time if available (<30, 30-59, 60-89, 90-119, 120-149, 150-179, and $\geq$180 days) and an indicator for having no pre-experiment data.

To reweight the social incentive group to match the six-week control group, we take the referees assigned to those two groups and calculate the fraction of observations in bin *b* in the social incentive group, which we denote by p_b. The fraction of observations in bin *b* in the six-week control group is $1-p_b$. We weight each observation *i* by $(1-p_{b(i)})/p_{b(i)}$ when estimating the survival curve for the social group, where *b(i)* denotes the bin to which observation *i* belongs.

We reweight the cash and four-week groups to match the control group on pre-experiment durations using the same approach. The survival curve for the six-week (control) group is unchanged by definition.

To adjust for differences in pre-experiment durations when testing for the equality of the survival curves, we conduct unweighted Wilcoxon tests that are stratified by the bin variable *b*.

Appendix E. Hazard Model Estimates of Treatment Effects on Review Times

This appendix presents estimates of the impacts of the treatments on review times using Cox hazard models. Let h_{it} denote the hazard rate of submitting a referee report *t* days after the invitation (i.e., the probability of submitting a report on day *t* conditional on not submitting prior to day *t*). Let α_{mt} denote the baseline hazard rate for referees in the six-week control group who receive an invitation to review a paper in month *m* of the experiment. We stratify the baseline hazards by invitation month to account for any differences over time in referee behavior. The Cox hazard model specification is

$$h_{it} = \alpha_{mt}\exp(\beta_1 fourweek_i + \beta_2 cash_i + \beta_3 social_i + \beta_4 postcash_i + \gamma X_i)$$

In this specification, the *fourweek* indicator is 1 for both the four-week and cash incentive groups, who face four-week deadlines. Hence, the coefficients on the cash variables represent the effect of the cash treatment over and above the four-week deadline effect. The *cash* variable is an indicator for being in the cash incentive group while cash rewards were offered (prior to May 9); it is defined as 0 for all review invitations after May 9. The *social* variable is an indicator for being in the social incentive group. The *postcash* variable is an indicator for previously being in the cash incentive group; it is defined as 0 for all review invitations before May 9. The vector X_i is a set of controls that we vary across specifications. We censor spells that last for more than 20 weeks at 140 days to reduce the influence of outliers and we cluster standard errors by referee.

We report estimates from variants of this model in Appendix Table 4. We begin in Column 1 by estimating the hazard model with no additional controls (no *X* vector). We use the extended sample, which includes all invitations from February 15, 2010 to October 26, 2011, in this specification. Consistent with the results in Figure 2, we find that both the four week deadline and the cash incentive substantially increase hazard rates of submitting reports, i.e. reduce review times. The estimates β_j can be interpreted as the percentage impact of the variable on the baseline hazard rate. For example, the coefficient of 0.266 on the four-week indicator implies that the hazard rate is 26.6% higher on average for referees facing a four-week deadline relative to those facing a six-week deadline. The point estimate on the post-cash indicator is positive and marginally significant, supporting the view that there is no crowd-out of intrinsic motivation for referees who previously received cash incentives. The estimated impact of social incentives is small and statistically insignificant. This is consistent with Figure 2a, which shows that we do not detect significant differences between the social incentive and control groups when comparing raw distributions of review times.

Column 2 adds a rich set of controls for referee and manuscript characteristics to the specification in Column 1. We control for a referee's pre-experiment review times by including bi-monthly indicator variables (up to 6 months) for the review time for each of the previous three

referee reports. We also include controls for tenure, working in the U.S., working in academia, and referees' agreement rates to invitations in the available history of the *Journal of Public Economics*, as well as the number of words, tables, and equations in the article reviewed by the referee. The covariates are set to 0 if they are missing and all specifications include indicators for the observation having a missing value of the covariate. Hence, the sample is exactly the same as in column 1.

The inclusion of the controls increases the estimated impact of the social incentive treatment significantly. This result confirms the pattern in Figure 2b, showing that referees who agree to review manuscripts under the social incentive treatment are slightly negatively selected in terms of review times.   Adjusting for these differences in pre-experiment turnaround times and other observables, we find that the social incentive treatment increases hazard rates by approximately 18% relative to the six-week deadline. The cash and four-week treatments continue to have highly significant impacts on hazard rates with controls.

Column 3 replicates Column 2 restricting the sample to the primary experimental period from February 15, 2010 to May 9, 2011, when the cash reward was offered, as in the main text. We find that the impacts of the shorter deadline, cash incentives, and social incentives are all very similar when we restrict to this subset of referee reports.

The preceding specifications all assume that the treatments have a constant percentage impact on hazard rates throughout the spell. However, the non-parametric survival curves in Figure 2 show that this proportional hazards assumption is not a good approximation. In particular, the four week deadline and cash incentives have much greater effects before the deadline than after the deadline, as one would expect. To account for these responses, in Column 4 we estimate a Cox model that extends Column 2 to permit time-varying covariates. We include indicators for being near the deadline and past the deadline, which represent the period one week before and after the due date, respectively. We also interact these indicators with the cash and post-cash indicators to capture the greater impacts of the cash treatment before the deadline.

Consistent with the patterns in Figure 2, the time varying covariates are highly significant: hazard rates are 86% higher in the week before the deadline and 119% higher in the week after the deadline. The cash treatment increases hazard rates by 100% in the week before the deadline but does not have a statistically significant effect in the week after the deadline. The post-cash treatment has no time-varying effect, as one would expect. The estimated impact of the social incentive remains similar to the other specifications. Overall, the model with time-varying covariates confirms the results in Figure 2 and shows that all three treatments have significant effects on referee behavior.

Appendix F. List of Other Journals Used to Assess Spillover Effects

Economics & Human Biology
Economics Letters
Energy Economics
European Economic Review
European Journal of Political Economy
Games and Economic Behavior
Journal of Banking & Finance
Journal of Comparative Economics
Journal of Corporate Finance
Journal of Development Economics
Journal of Economic Behavior & Organization
Journal of Economic Psychology
Journal of Environmental Economics and Management

Journal of Health Economics
Journal of International Economics
Journal of Monetary Economics
Journal of Urban Economics
Labour Economics
Regional Science and Urban Economics
Resource and Energy Economics

Appendix G. Summary of Appendix Tables and Figures.

Appendix Figure 1 depicts the timeline of the refereeing process during the experiment.

Appendix Figure 2 replicates Figure 2 from the text using the full experimental period from February 15, 2010 to October 26, 2011. This figure includes the period after May 9, when the cash reward was stopped, for the four week, six week, and social incentive groups. For the cash group, we continue to use data only up to May 9.

Appendix Figure 3 plots a subset of the survival curves reported in Figure 4 in the main text on a single figure to show that tenured referees have longer turnaround times than untenured referees in the control group, but behave like untenured referees when facing social pressure.

Appendix Figure 4 shows survival curves for review times at other Elsevier journals by the treatment group to which referees were assigned at the Journal of Public Economics.

Appendix Table 1 presents the summary statistics for referee invitations sent between February 15, 2010 and May 9, 2011, the time period when the cash reward was offered.

Panel A of Appendix Table 2 presents randomization tests for the set of referees invited during the primary experimental period. Panel B replicates Panel A in the subsample of referees who accept the invitations to test for selection effects.

Appendix Table 3 presents estimates of treatment effects on median review times.

Appendix Table 4 presents Cox hazard model estimates of the effects of the treatments on review times.

Appendix Table 5 reports estimates of the effects of the treatments at the Journal of Public Economics on acceptance rates and review times at other Elsevier journals during the experimental period.

Appendix Table 1

Summary Statistics for Experimental Sample

Variable	Mean (1)	Std. Dev. (2)	Median (3)
Invitation to Referee (N = 2,423)			
Agreed to submit review	66.2%	47.3%	
Refereeing statistics conditional on agreement (N = 1,605)			
Reviews censored (not submitted)	6.3%	24.3%	
Review time conditional on submitting review (days)	44.9	28.6	41.0
New referee (no historical data)	32.7%	46.9%	
Referee Characteristics (N = 1,157)			
Agreed to do 1 job during experiment	74.9%	43.4%	
Agreed to do 2 jobs during experiment	16.4%	37.1%	
Agreed to do 3+ jobs during experiment	8.6%	28.1%	
Tenured	54.6%	49.8%	
Academic	92.4%	26.5%	
American	52.5%	50.0%	
Female	12.3%	32.9%	

Notes: This table reports summary statistics for referee invitations sent between February 15, 2010 and May 9, 2011, the time period when the cash reward was offered. The first section of the table shows the fraction of referee requests that were accepted. The second section reports statistics for the subsample of referee requests that were accepted. A review is defined as censored if it is not submitted before the editor makes a decision on the paper. The summary statistics for review times are based on the subsample of submitted reviews. The third section of the table reports statistics on the referees who accepted the invitation and for whom the relevant information is available. See Appendix C for the definitions of the variables used in this table.

Appendix Table 2
Randomization and Selection Tests

Group:	6 Week	Social	4 Week	Cash	Equality test p-value
	(1)	(2)	(3)	(4)	(5)

A. Randomization Tests: Full Sample of All Invited Referees

Has pre-experiment data	58.2%	63.6%	66.0%	66.6%	0.07
Prior agreement rate	73.8%	70.3%	77.4%	73.8%	0.17
Prior median turnaround time	54.1	57.1	55.2	58.6	0.24
Tenured	60.2%	68.4%	59.8%	65.9%	0.07
Academic	90.2%	93.4%	93.0%	93.4%	0.51
American	53.4%	58.6%	53.8%	51.2%	0.30
Female	12.2%	8.3%	13.4%	11.8%	0.20
Observations	639	568	626	590	

B. Selection Tests: Sample of Referees who Accepted Invitations

Has pre-experiment data	64.1%	65.1%	71.6%	68.2%	0.25
Prior agreement rate	82.5%	79.2%	87.3%	81.5%	0.03
Prior median turnaround time	52.1	57.1	53.8	57.0	0.19
Tenured	50.8%	59.9%	50.9%	59.4%	0.09
Academic	91.0%	96.2%	91.8%	93.0%	0.09
American	56.5%	57.9%	55.9%	51.1%	0.51
Female	14.1%	9.9%	16.1%	12.6%	0.30
Observations	432	347	401	425	

Notes: This table reports summary statistics of pre-experiment variables by treatment group. Panel A uses all referees invited to review a paper between February 15, 2010 and May 9, 2011 (the period when the cash reward was offered). Panel B replicates Panel A for the selected sample of referees who accepted the invitation to review. Column (5) reports the p-value for a test of equality of the coefficients across all four groups, clustering standard errors by referee (except for median review times). Has pre-experiment data is an indicator for having information in the editorial system at some point between November 1, 2005 and February 15, 2010, when the experiment began. Prior agreement rate is the fraction of reviews that the referee accepted during that period. Prior median review time is the median review time for the three most recent manuscripts reviewed before the experiment (among referees who reviewed manuscripts before the experiment). Tenured is an indicator for having tenure (based on CV's posted online) when the referee received the invitation; academic is an indicator for being in an academic position. American is an indicator for a US-based employer, and Female is a gender indicator from data collected manually. The number of observations in Panel A is the number of referee report invitations; in Panel B, it is the number of accepted invitations.

Appendix Table 3

Median Review Times by Treatment Group

Sample	Group: 6 Week (1)	Social (2)	4 Week (3)	Cash (4)
Full Sample	47.8	45.9	35.5	27.5
	(1.02)	(0.84)	(1.60)	(0.24)
	432	347	401	425
Tenured Referees	50.4	46.8	44.1	27.7
	(1.58)	(1.62)	(2.67)	(0.49)
	203	199	189	236
Untenured Referees	45.9	45.5	31.7	27.3
	(0.83)	(0.75)	(1.70)	(0.27)
	197	133	182	161

Notes: This table shows the effects of the treatments on median review times. These estimates are reported in Figure 2a and Figure 4 and are reproduced here with standard errors as a reference. The sample includes all referees who accepted invitations sent between Feb. 15, 2010 and May 9, 2011 (the period when the cash reward was offered). Standard errors and number of observations are reported below each estimate. The first row of estimates uses the full-sample; the second and third rows restrict the sample to referees who were tenured vs. untenured at the time of the experiment. Tenure status was collected from CV's posted online and hence is not available for all referees. See Appendix C for further details.

Appendix Table 4
Cox Hazard Model Estimates of Treatment Effects on Review Times

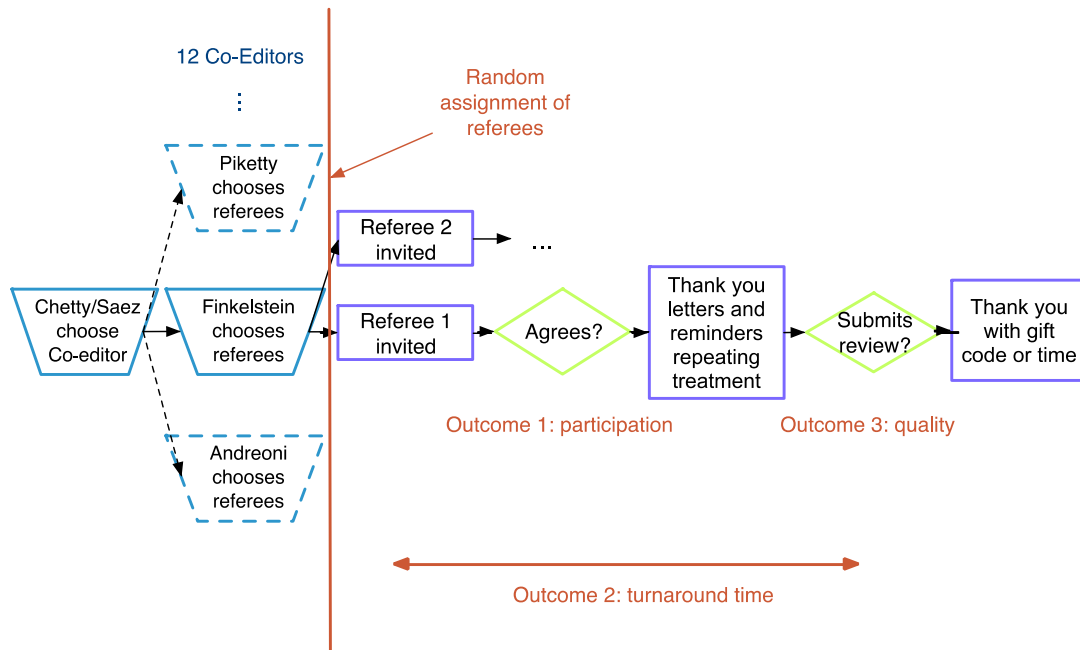|	Extended Sample No Controls (1)	Extended Sample With Controls (2)	Primary Sample (3)	Time-Varying Covariates (4)
4 week deadline	0.266***	0.393***	0.418***	0.391***
	(0.0720)	(0.0720)	(0.0783)	(0.0738)
Cash	0.388***	0.502***	0.485***	0.161
	(0.0969)	(0.0953)	(0.0968)	(0.113)
Social	0.0769	0.179**	0.152*	0.187**
	(0.0637)	(0.0657)	(0.0746)	(0.0693)
Post-cash	0.185	0.255*		0.242
	(0.111)	(0.114)		(0.139)
Near deadline				0.864***
				(0.0921)
Past deadline				1.188***
				(0.0972)
Cash near deadline				1.007***
				(0.169)
Cash past deadline				0.362
				(0.216)
Post-cash near deadline				0.00595
				(0.231)
Post-cash past deadline				-0.109
				(0.269)
Controls		X	X	X
Number of spells	2,212	2,212	1,605	2,212

Notes: This table reports coefficients from Cox proportional hazard models, with standard errors clustered by referee in parentheses. The asterisks represent statistical significance: * $p<0.05$, ** $p<0.01$, *** $p<0.001$. The point estimates can be interpreted as the percentage impact of the variable on the baseline hazard rate (which measures hazards in the 6 week control group). Columns 1, 2 and 4 report estimates from the extended sample, which includes all invitations from February 15, 2010 to October 26, 2011. Column 3 reports estimates from the baseline sample, which includes invitations from February 15, 2010 to May 9, 2011 (the period during which the cash reward was offered). In all four columns, baseline hazards are stratified by invitation month and spells that last for more than 20 weeks (140 days) are censored at 140 days. The 4 week deadline indicator is 1 for both the four-week and cash incentive groups, who face four-week deadlines. The cash variable is an indicator for being in the cash incentive group while cash rewards were offered (prior to May 9); it is defined as 0 for all review invitations after May 9. The post-cash variable is an indicator for previously being in the cash incentive group; it is defined as 0 for all review invitations before May 9. The social variable is an indicator for being in the social incentive group. Columns 2-4 control for a referee's pre-experiment review times by including bimonthly indicator variables (up to 6 months) for the review time for each of the previous three referee reports. They also include controls for tenure, U.S. residence, working in academia, and the fraction of reviews the referee accepted prior to the start of the experiment at the *Journal of Public Economics*, as well as the number of words, tables, and equations in the article reviewed by the referee. See Appendix C for definitions of all of these variables. Covariates are set to 0 if they are missing and all specifications include indicators for the observation having a missing value of the covariate. Column 4 includes terms allowing for time-varying hazard rates. Near and past deadline represent the period one week before and after the due date, respectively. These indicators are also interacted with the cash and post-cash indicators.

Appendix Table 5

Spillover Effects on Other Journals

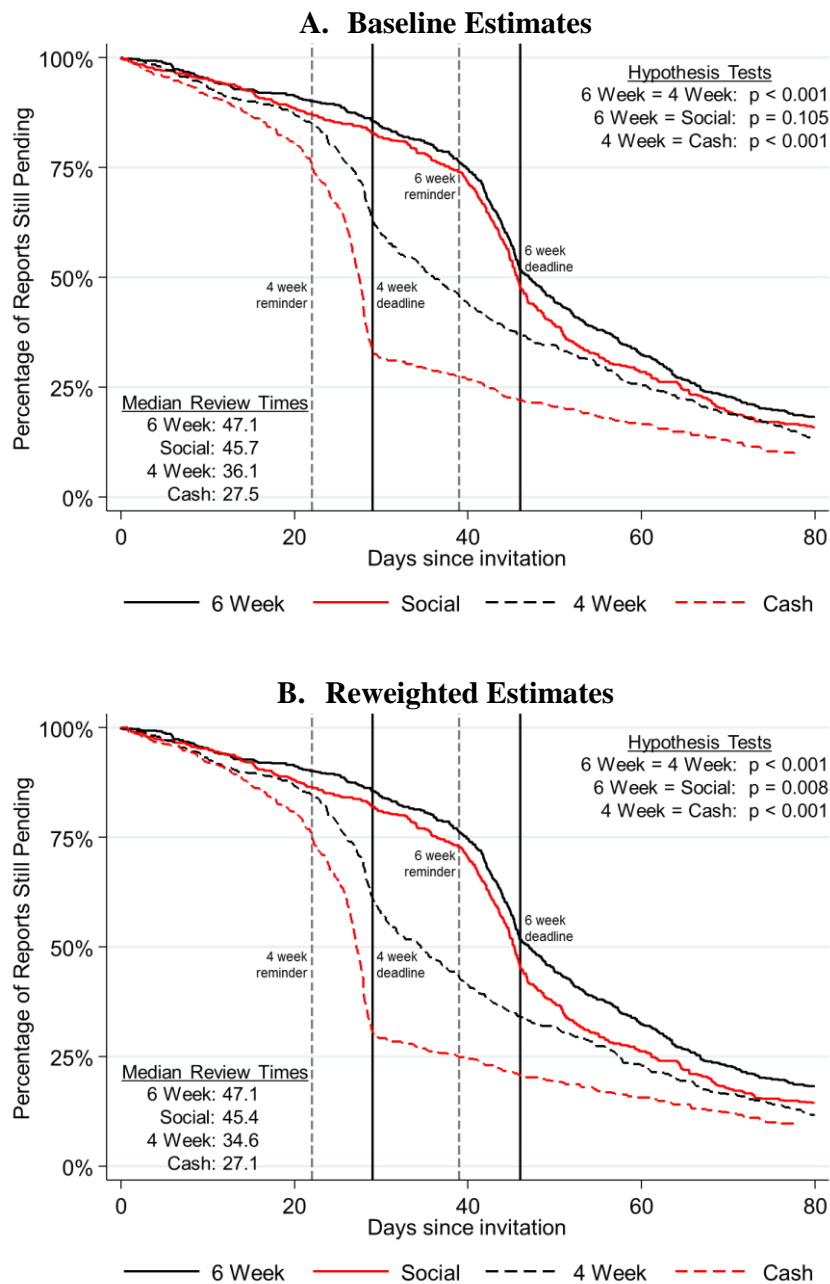| Group:	6 Week	Social	4 Week	Cash
	(1)	(2)	(3)	(4)
A. Reviewer Invitation Acceptance Rate at Other Journals				
Percent accepting invitation	62.1%	58.8%	60.6%	61.8%
	(2.31)	(2.55)	(2.38)	(2.26)
p-value for equality with control		0.344	0.654	0.702
Observations	999	806	969	993
B. Review Times at Other Journals				
Median review time (days)	56.2	54.0	56.5	57.0
	(1.39)	(1.72)	(1.81)	(1.71)
p-value for equality with control		0.562	0.596	0.894
Observations	620	474	587	614

Notes: This table reports estimates of spillover effects of the treatments on referee behavior at other Elsevier journals during the experimental period. The sample includes all referees who accepted invitations to review papers for the Journal of Public Economics between February 15, 2010 and May 9, 2011 (the period when the cash reward was offered). We use data from other Elsevier journals in related fields (see Appendix F for a list) in this table, restricting attention to reviewer invitations received after the first invitation during the experimental period at the Journal of Public Economics and before December 31, 2011. In Panel A, the outcome is the percentage of referees who accept invitations to review papers at other journals. We report standard errors, clustered by referee, in parentheses. We also report p-values for the null hypothesis that the percentages are the same in each treatment group and its corresponding control group. For the social and 4 week groups, the control group is defined as the 6 week deadline group. For the cash incentive group, the control group is defined as the 4 week deadline group, which is the relevant comparison because the cash incentive group also faced a 4 week deadline. There is one observation for each review invitation that referees received from other Elsevier journals. In Panel B, the outcome is the median number of days taken to submit a review conditional on accepting the invitation to referee. Standard errors are reported in parentheses and the p-values are for hypothesis tests analogous to those in Panel A. The number of observations is the number of referee reports submitted to the other journals.

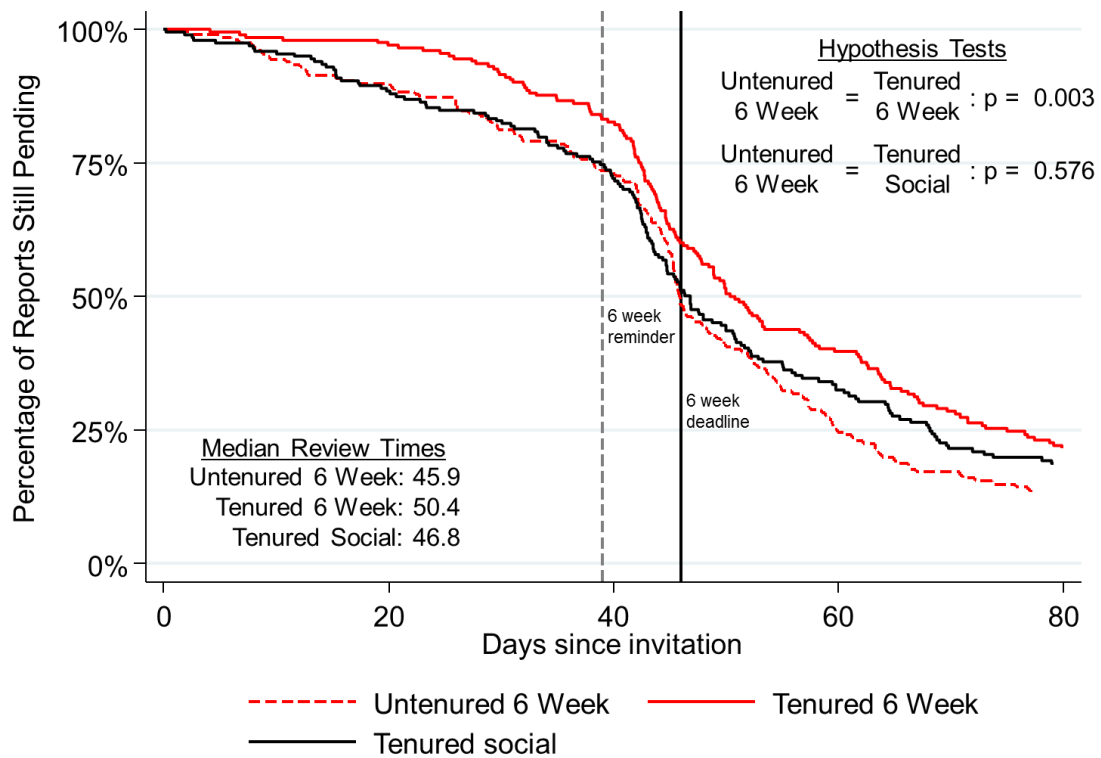**Appendix Figure 1: Timeline of Interventions and Outcomes**

Notes: The figure depicts the timeline of the refereeing process during the experiment. Once a submission is received, editors assign a co-editor in charge who then chooses referees. Invited referees are randomly assigned to one of the four groups (six-week, four-week, cash, social) and receive an email invitation tailored to their group (shown in Appendix A). Referees accept or decline the invitation, which is the first outcome we study. If they accept, we send group-specific reminders one week before the deadline (shown in Appendix B). We then measure the time taken to submit a review, the second outcome we study. If a review is submitted, we send a thank you letter with the cash reward (to eligible referees) and measure the quality of the report, the third outcome we study.

Appendix Figure 2: Review Times by Treatment Group in Extended Sample

A. Baseline Estimates
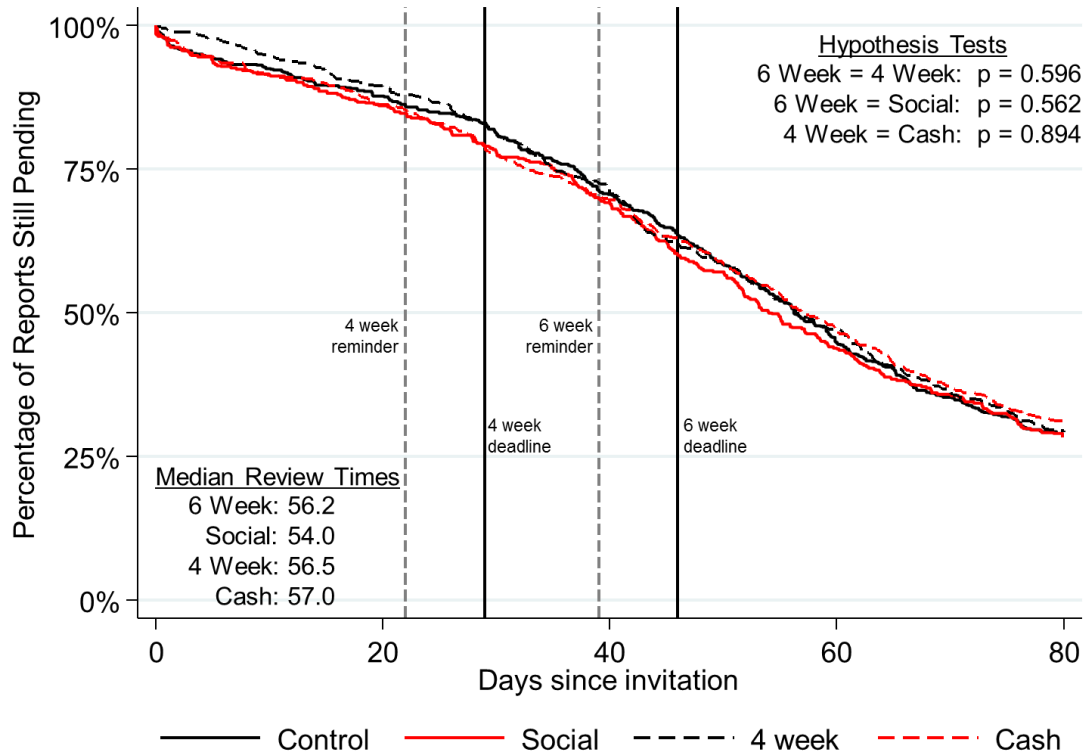

B. Reweighted Estimates

Notes: This figure replicates Figure 2 using the full experimental period from February 15, 2010 to October 26, 2011, including the period after May 9, when the cash reward was stopped. The cash group in this figure still includes only referee invitations up to May 9, 2011. The other groups include all invitations during the full experiment. See notes to Figure 2 for details on the construction of this figure and Appendix Table 4 for Cox hazard model estimates corresponding to these survival curves.

Appendix Figure 3: Social Incentives and Tenured vs. Untenured Referees

Notes: This figure plots a subset of the survival curves reported in Figure 4 on a single figure to show that tenured referees have longer turnaround times than untenured referees in the control group, but behave like untenured referees when facing social pressure. We replicate the series in Figure 4 for (a) untenured referees in the six-week group, (b) tenured referees in the six-week group, and (c) tenured referees in the social group. The solid vertical line depicts the six week deadline relevant for these groups. The dashed vertical line depicts the deadline reminders sent one week before this deadline. We report median review times, defined as the point at which the fraction of reports pending is 50 percent, for each group. We also report p-values from non-parametric Wilcoxon tests for the hypothesis that review times are the same in the untenured six-week group and the two tenured groups. We truncate the x-axis at 80 days in the figure for scaling purposes, but use all available data for the hypothesis tests.

Appendix Figure 4: Spillover Effects: Review Times at Other Journals

Notes: This figure shows the effects of our experimental interventions at the *Journal of Public Economics* on referees' review times at other Elsevier journals (listed in Appendix F). The sample includes all referees who accept a refereeing invitation at another Elsevier journal (before December 31, 2011) *after* receiving an invitation to referee at the *Journal of Public Economics* during our primary experimental period, February 15, 2010 to May 9, 2011. Each survival curve plots the percentage of reports still pending vs. the number of days elapsed since the referee received the invitation from the other journal. As a reference, the solid vertical lines depict the six week deadline (45 days) and the four week deadline (28 days) used at the *Journal of Public Economics* during the experiment. The dashed vertical lines depict the reminders sent one week before each deadline. Other journals have different deadlines and reminder policies. We report median review times, defined as the point at which the fraction of reports pending is 50 percent, for each group. We also report p-values from non-parametric Wilcoxon tests for the hypothesis that review times at other journals are the same in each treatment group and its corresponding control group. We compare the four-week and social incentive groups to the six week group. We compare the cash group to the four-week group because the cash group also faced a four week deadline. We truncate the x-axis at 80 days in the figure for scaling purposes, but use all available data for the hypothesis tests.