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RE: Revision of “Unions and Inequality: Evidence from variation in the lunar and Gregorian calendars”

Dear Prof. XXX,

Thank you for giving us a chance to revise our paper for *The Journal of Very Distinguished Economics*.

Before delving into our point-by-point response to your letter, we wanted to summarize some of the major changes to the draft.

First, we have improved considerably on the identification. We have sharpened our original empirical strategy (using variation from holidays in the lunar and Gregorian holidays as a source of union density) by showing robustness to controlling for minor holidays and holidays from the Chinese calendar.

Second, we have expanded our literature review considerably.

Finally, we have substantially expanded our history of the lunar calendar.

In what follows, we respond point-by-point to questions and concerns raised by you and the referees (original comments from you and the referees are in *blue italics*, our reply in regular font.).

Sincerely,

Ilyana Kuziemko (and Bodie Katz)

Editor's Comments

The referees and I find much to admire in your creative paper using random year-to-year correspondence in the overlap of the lunar and Gregorian calendar to identify shifts to union density.

Authors' reply:

Thank you for the kind words about our paper.

Nevertheless, the referees have somewhat divergent assessments of whether your paper is a large enough contribution for the JVDE. In addition to the referees' concerns, which I would like you to address, I have some additional concerns.

You should show robustness to considering "smaller" holidays, such as Flag Day (June 14th) and Arbor Day (April 30).

Authors' reply:

Thank you for this idea. We now test robustness to including "smaller holidays," as you saw. Besides Flag Day and Arbor Day, we also include Groundhog Day (February 2) and National Maritime Day (May 22) as well as some holidays from the Chinese calendar. We flag this robustness check for readers in footnote 1 in the revised paper.

We show these results in a new Appendix Table A.1, which we reproduce below for your convenience:

You should provide a comprehensive history of the lunar calendar (as well as other calendars) in an Appendix. A short summary in the body of the paper would be useful.

Authors' reply: Thank you for this suggestion. We have now added a new Appendix C to the paper. As it is quite long, we do not quote it here. The appendix borrows heavily from Depuydt (1997) and McKay (2016).

Table Editor.0: Main results, robustness to including minor holidays (Appendix Table A.1 in paper)

	Union density		Labor share		Top 10		Labor share	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lunar & Gregorian holidays	-0.289** [0.122]	-1.154** [0.397]	0.221** [0.0774]	0.563** [0.244]	-0.621** [0.118]	-0.555** [0.136]	0.325** [0.0613]	0.230** [0.0505]
Minor holidays (incl. Chinese)	28.83 [26.18]	-10.06 [6.214]	-9.580 [11.81]	1.670 [3.167]	-5.516** [1.844]	-5.174** [1.804]	1.450 [1.057]	1.143 [0.878]
Dept. var. mean	0.292	-5.554	4.107	0.920	0.643	0.643	0.0320	0.0206
First-stage F -stat	12.68	8.237	12.68	8.237	16.22	24.30	16.22	24.30
Top CI	-.593175	.	-.064511	.244108	-.943238	-.936806	.177024	.072219
Bottom CI	.005594	-.604125	.346269	.	-.402154	-.366746	.385776	.27621
Interval	1929-38	1938-47	1929-38	1938-47	All	All	All	All
Ex. Mich	No	No	No	No	No	Yes	No	Yes
Observations	47	47	47	47	409	400	409	400

Notes: The specifications are identical to those in Table 1 except that here we add controls for minor holidays.

References cited in this response letter

- Depuydt, L. (1997). *Civil calendar and Lunar calendar in Ancient Egypt*. Vol. 77. Peeters Publishers.
- McKay, H. T. (2016). “The Coligny calendar as a metonic lunar calendar”. *Études celtiques* 42.1, pp. 95–121.

Dear Referee #1,

Thank you for your helpful report. We have done our best to reply to each of your concerns, which we feel has dramatically improved the paper.

Before delving into our point-by-point response to your letter, we wanted to summarize some of the major changes to the draft.

First, we have improved considerably on the identification. We have sharpened our original empirical strategy (using variation from holidays in the lunar and Gregorian holidays as a source of union density) by showing robustness to controlling for minor holidays and holidays from the Chinese calendar.

Second, we have expanded our literature review considerably.

Finally, we have substantially expanded our history of the lunar calendar.

In what follows, we respond point-by-point to questions and concerns raised in your report (original comments are in *blue italics*, our replies in regular font).

Sincerely,

Ilyana Kuziemko (and Bodie Katz)

I found the introduction long and meandering. You should have a concise paragraph very early in the paper that spells out your key contributions.

Authors' reply:

Thank you for this advice. We have now have a paragraph (on p. 1 of the paper) that lays out what we think are our key contributions. We reproduce it here for your convenience:

In this paper we make three make contributions. First, we extend the sample period used in the seminal work of Piketty and Saez (2003). Second, we apply re-weighting methods as in DiNardo, Fortin, and Lemieux (1996). Third, we develop an instrumental-variable strategy based on plausibly exogenous variation in differences between the lunar and Gregorian calendars.

References cited in this response letter

- DiNardo, J., N. M. Fortin, and T. Lemieux (1996). "Labor Market Institutions and the Distribution of Wages, 1973-1992: A Semiparametric Approach". *Econometrica* 64.5, pp. 1001–1044.
- Piketty, T. and E. Saez (2003). "Income inequality in the United States, 1913–1998". *The Quarterly journal of economics* 118.1, pp. 1–41.

Dear Referee #2,

Thank you for your helpful report. We have done our best to reply to each of your concerns, which we feel has dramatically improved the paper.

Before delving into our point-by-point response to your letter, we wanted to summarize some of the major changes to the draft.

First, we have improved considerably on the identification. We have sharpened our original empirical strategy (using variation from holidays in the lunar and Gregorian holidays as a source of union density) by showing robustness to controlling for minor holidays and holidays from the Chinese calendar.

Second, we have expanded our literature review considerably.

Finally, we have substantially expanded our history of the lunar calendar.

In what follows, we respond point-by-point to questions and concerns raised in your report (original comments are in *blue italics*, our replies in regular font).

Sincerely,

Ilyana Kuziemko (and Bodie Katz)

The paper would benefit tremendously if you developed a formal model.

Authors' reply: Thank you for this advice. We develop a model in a new Appendix B.

The paper gives little credit to past work using similar identification strategies. Your literature review is woefully incomplete.

Authors' reply:. Obviously we are not the first researchers to think of using the overlap of holidays from the lunar and Gregorian calendars. Our revised draft makes clearer how we build off this seminal literature.

At the request of the editor, we also provide a longer history of ancient calendars (see a new Appendix C). As it is quite long, we do not quote it here. The appendix borrows heavily from Depuydt (1997) and McKay (2016).

References cited in this response letter

- Depuydt, L. (1997). *Civil calendar and Lunar calendar in Ancient Egypt*. Vol. 77. Peeters Publishers.
- McKay, H. T. (2016). "The Coligny calendar as a metonic lunar calendar". *Études celtiques* 42.1, pp. 95–121.