# *Do Women Mayors Enhance Patent Innovation?*

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Despite a persistent gender gap, female political leadership has increased in both the United States and around the world over the past 40 years. A robust extant literature has empirically tested whether the shift to female political leadership has affected policy outcomes such as employment or crime rates (Ferreira and Gyourko, 2014); spending on public investments, such as providing clean water and enhancing educational attainment (Chattopadhyay and Duflo, 2004; Clots-Figueras, 2012), and spending in state legislatures on education and health issues (Besley and Case, 2003).

One economic variable that has been ignored, however, is innovation. We fill this gap, by measuring how the rapid increase in female mayorships in U.S. cities has impacted local innovation, as measured by patenting activity. We collect data on over 5,000 mayoral elections in 800 U.S. cities between 1975–2014, including the name, vote share, and gender of the winner and runner-up.

To address endogeneity, we employ a regression discontinuity (RD) design and compare patent filings and grants based on inventor and assignee firm location in U.S. cities where a female candidate barely won a mayoral election with applications and grants in cities where the female candidate barely lost. Following Lee (2008) and Lee and Lemieux (2010), such narrowly decided elections provide quasi-random variation in election winners, because the gender of the candidate that wins is likely to be determined by pure chance, so long as contestants cannot systematically manipulate the election outcome. We augment our election dataset with rich patent-level data, including information on inventor gender, assignee firm, and the monetary value of patents.

Our preliminary results indicate female mayors with long tenures (i.e., two or more terms) significantly outperform long-tenured male mayors in terms of local innovation activity. These findings are robust to different bandwidth choices, polynomial orders of the assignment variable, and discontinuity checks in covariates.