

# Research Update

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## Land-Use Regulations, Property Values, and Rents: Decomposing the Effects of the California Coastal Act

Land-use regulations can lower real estate prices by imposing costs on property owners but may raise prices by restricting supply and generating amenities. We study the effects of the California Coastal Act, one of the nation's most stringent land-use regulations, on the price and rental income of multifamily housing. The Coastal Act applies to a narrow section of the California coast, allowing us to compare properties on either side of the jurisdictional boundary. The Coastal Act offers several advantages for measuring the effects of land-use regulations, including plausible exogeneity of the boundary location, which we confirm using historical data on boundary placement, and orthogonality of the boundary to other jurisdictional divisions. Extending previous studies, we decompose the effects of the regulation into a local effect, the net price effect of restrictions on the subject property and its immediate neighbors, and an external effect, the value of amenities generated by restrictions on all properties within the regulated area. Data on rental

income are used to isolate the effect of restrictions on adjacent properties (the neighbor effect). Our analysis of multifamily housing prices reveals local and external effects of approximately +6% and +13%, respectively. The rent analysis indicates a zero neighbor effect. Together with the positive local effect on price, this suggests that the protections the Coastal Act affords property owners from undesirable development on adjacent properties have not yet resulted in material differences, but are expected to in the future. This interpretation is supported by additional evidence on building ages and assessed building and land values, and emphasizes important dynamic effects of land-use regulation.

Working Paper 17–33 Revised. Christopher Severen, Federal Reserve Bank of Philadelphia Research Department; Andrew J. Plantinga, University of California–Santa Barbara.

## Do Fintech Lenders Penetrate Areas That Are Underserved by Traditional Banks?

Fintech has been playing an increasing role in shaping financial and banking landscapes. In this paper, we use account-level data from LendingClub and Y-14M data reported by U.S. banks with assets over \$50 billion to examine whether the fintech lending platform could expand credit access to consumers. We find that LendingClub's consumer lending activities have penetrated areas that may be underserved by traditional banks, such as in highly concentrated markets and in areas that have fewer bank branches per capita. We also find that the portion of LendingClub loans increases in areas where the local economy is not performing well.

Supersedes Working Paper 17–17.

Working Paper 18–13. Julapa Jagtiani, Federal Reserve Bank of Philadelphia Supervision, Regulation, and Credit; Catharine Lemieux, Federal Reserve Bank of Chicago.

## Commuting, Labor, and Housing Market Effects of Mass Transportation: Welfare and Identification

This paper studies the effects of Los Angeles Metro Rail on the spatial distribution of people and prices. Using a panel of bilateral commuting flows, I estimate a quantitative spatial general equilibrium model to quantify the welfare benefits of urban rail transit and distinguish the benefits of reduced commuting frictions from other channels. The subway causes a 7%–13% increase in commuting between pairs of connected tracts; I select plausible control pairs using proposed subway and historical streetcar lines to identify this effect. The structural parameters of the model are also estimated and are identified using a novel strategy that interacts tract-specific labor demand shocks with the spatial configuration of the city. These parameters indicate people are relatively unresponsive to changes in local prices and characteristics, implying that the commuting response corresponds to a large utility gain. The welfare benefits by 2000 are significant: LA Metro Rail increases aggregate welfare by \$246 million annually. However, these benefits are only about one-third of annualized costs. While benefits did not outweigh costs by 2000, I employ more recent data to show that there are dynamic effects: Commuting continues to increase between connected locations.

Working Paper 18–14. Christopher Severen, Federal Reserve Bank of Philadelphia Research Department.

## The Roles of Alternative Data and Machine Learning in Fintech Lending: Evidence from the LendingClub Consumer Platform

Fintech has been playing an increasing role in shaping financial and banking landscapes. There have been concerns about the use of alternative data sources by fintech lenders and the impact on financial inclusion. We compare loans made by a large fintech lender and similar loans that were originated through traditional banking channels. Specifically, we use account-level data from LendingClub and Y-14M data reported by bank holding companies with total assets of \$50 billion or more. We find a high correlation with interest rate spreads, LendingClub rating grades, and loan performance. Interestingly, the correlations between the rating grades and FICO scores have declined from about 80 percent (for loans that were originated in 2007) to only about 35 percent for recent vintages (originated in 2014–2015), indicating that nontraditional alternative data have been increasingly used by fintech lenders.

Furthermore, we find that the rating grades (assigned based on alternative data) perform well in predicting loan performance over the two years after origination. The use of alternative data has allowed some borrowers who would have been classified as subprime by traditional criteria to be slotted into “better” loan grades, which allowed them to get lower-priced credit. In addition, for the same risk of default, consumers pay smaller spreads on loans from LendingClub than from credit card borrowing.

Supersedes Working Paper 17–17.

Working Paper 18–15. Julapa Jagtiani, Federal Reserve Bank of Philadelphia Supervision, Regulation, and Credit; Catharine Lemieux, Federal Reserve Bank of Chicago.

### Regulating a Model

We study a situation in which a regulator relies on risk models that banks produce in order to regulate them. A bank can generate more than one model and choose which models to reveal to the regulator. The regulator can find out the other models by monitoring the bank, but in equilibrium, monitoring induces the bank to produce less information. We show that a high level of monitoring is desirable when the bank’s private gain from producing more information is either sufficiently high or sufficiently low. When public models are more precise, banks produce more information, but the regulator may end up monitoring more.

Working Paper 16–31 Revised. Yaron Leitner, Federal Reserve Bank of Philadelphia Research Department; Bilge Yilmaz, Wharton School, University of Pennsylvania.

### Stress Tests and Information Disclosure

We study an optimal disclosure policy of a regulator that has information about banks (e.g., from conducting stress tests). In our model, disclosure can destroy risk-sharing opportunities for banks (the Hirshleifer effect). Yet, in some cases, some level of disclosure is necessary for risk sharing to occur. We provide conditions under which optimal disclosure takes a simple form (e.g., full disclosure, no disclosure, or a cutoff rule). We also show that, in some cases, optimal disclosure takes a more complicated form (e.g., multiple cutoffs or nonmonotone rules), which we characterize. We relate our results to the Bayesian persuasion literature.

Supersedes Working Paper 15–10/R. Working Paper 17–28 Revised. Itay Goldstein, Wharton School, University of Pennsylvania; Yaron Leitner, Federal Reserve Bank of Philadelphia Research Department.

### Does the Relative Income of Peers Cause Financial Distress? Evidence from Lottery Winners and Neighboring Bankruptcies

We examine whether relative income differences among peers can generate financial distress. Using lottery winnings as plausibly exogenous variations in the relative income of peers, we find that the dollar magnitude of a lottery win of one neighbor increases subsequent borrowing and bankruptcies among other neighbors. We also examine which factors may mitigate lenders’ bankruptcy risk in these neighborhoods. We show that bankruptcy filers can obtain secured but not unsecured debt, and lenders provide secured credit to low-risk but not high-risk debtors. In addition, we find evidence consistent with local lenders reducing bankruptcy risk using soft information.

Supersedes Working Paper 16–04/R. Working Paper 18–16. Sumit Agarwal, Georgetown University; Vyacheslav Mikhed, Federal Reserve Bank of Philadelphia Payment Cards Center; Barry Scholnick, University of Alberta.