American Economic Review 2020, 110(8): 2586–2624
https://doi.org/10.1257/aer.20181047

Bartik Instruments: What, When, Why, and How[†]

By Paul Goldsmith-Pinkham, Isaac Sorkin, and Henry Swift*

The Bartik instrument is formed by interacting local industry shares and national industry growth rates. We show that the typical use of a Bartik instrument assumes a pooled exposure research design, where the shares measure differential exposure to common shocks, and identification is based on exogeneity of the shares. Next, we show how the Bartik instrument weights each of the exposure designs. Finally, we discuss how to assess the plausibility of the research design. We illustrate our results through two applications: estimating the elasticity of labor supply, and estimating the elasticity of substitution between immigrants and natives. (*JEL* C51, F14, J15, J22, L60, R23, R32)

The Bartik instrument is named after Bartik (1991), and popularized in Blanchard and Katz (1992).[1] These papers define the instrument as the local employment growth rate predicted by interacting local industry employment shares with national industry employment growth rates. The Bartik approach and its formally identical variants have since been used across many fields in economics, including labor, public, development, macroeconomics, international trade, and finance.

In our exposition, we focus on the canonical setting of estimating the labor supply elasticity, but our results apply more broadly wherever Bartik-like instruments

* Goldsmith-Pinkham: Yale School of Management (email: paul.goldsmith-pinkham@yale.edu); Sorkin: Stanford University and NBER (email: sorkin@stanford.edu); Swift: Unaffiliated (email: henryswift@gmail.com). Thomas Lemieux was the coeditor for this article. Thanks to the anonymous referees, Rodrigo Adao, Isaiah Andrews, David Autor, Tim Bartik, Paul Beaudry, Kirill Borusyak, Jediphi Cabal, Arun Chandrasekhar, Gabriel Chodorow-Reich, Damon Clark, Richard Crump, Rebecca Diamond, Mark Duggan, Matt Gentzkow, Andrew Goodman-Bacon, David Green, Gordon Hanson, Caroline Hoxby, Peter Hull, Guido Imbens, Xavier Jaravel, Pat Kline, Magne Mogstad, Maxim Pinkovskiy, Luigi Pistaferri, Giovanni Righi, Ben Sand, Pedro Sant'Anna, Juan Carlos Suárez Serrato, Jan Stuhler, Melanie Wallskog, Kenneth West, Wilbert van der Klaauw, Eric Zwick, and numerous seminar participants for helpful comments. Thanks to Maya Bidanda, Jacob Conway, and Victoria de Quadros for research assistance. Thanks to David Card for sharing code, and Rodrigo Adao, Kirill Borusyak, Peter Hull, Xavier Jaravel, Michal Kolesár, and Eduardo Morales for sharing data. Swift was supported by the National Science Foundation Graduate Research Fellowship. Part of the work on this paper was completed while Goldsmith-Pinkham was employed by the Federal Reserve Bank of New York. The views expressed are those of the authors and do not necessarily reflect those of the Federal Reserve Bank of New York or the Federal Reserve Board. All errors are our own, please let us know about them.

[†] Go to https://doi.org/10.1257/aer.20181047 to visit the article page for additional materials and author disclosure statements.

[1] The intellectual history of the Bartik instrument is complicated. The earliest use of a shift-share type decomposition we have found is Perloff (1957, Table 6), which shows that industrial structure predicts the *level* of income. Freeman (1980) is one of the earliest uses of a shift-share decomposition interpreted as an instrument: it uses the change in industry composition (rather than differential growth rates of industries) as an instrument for labor demand. What is distinctive about Bartik (1991) is that the book not only treats it as an instrument, but also, in the Appendix, explicitly discusses the logic in terms of the national component of the growth rates.

are used. For simplicity, consider the cross-sectional structural equation linking wage growth to employment growth,

$$y_l = \rho + \beta_0 x_l + \epsilon_l,$$

where y_l is wage growth in location l between two time periods, x_l is the employment growth rate, ρ is a constant, and ϵ_l is a structural error term that is correlated with x_l. Our parameter of interest is β_0, the inverse elasticity of labor supply. We use the Bartik instrument to estimate β_0.

The Bartik instrument combines two accounting identities. The first is that employment growth is the inner product of industry shares and local industry growth rates:

$$x_l = \sum_k z_{lk} g_{lk},$$

where z_{lk} is the share of location l's employment in industry k, and g_{lk} is the growth rate of industry k in location l. The second is that we can decompose the industry-growth rates as

$$g_{lk} = g_k + \tilde{g}_{lk},$$

where g_k is the industry growth rate and $\tilde{g}_{lk}$ is the idiosyncratic industry-location growth rate. The Bartik instrument is the inner product of the industry-location shares and the industry component of the growth rates; formally, $B_l = \sum_k z_{lk} g_k$.

Because the Bartik instrument combines two accounting identities, it is always possible to construct it. It is not plausible, however, that the Bartik instrument always provides a valid identification strategy. In this paper, we open the black box of the Bartik instrument by formalizing its structure and unpacking the variation that the instrument uses. Our goal is to enable researchers to use familiar tools to distinguish between situations where the Bartik instrument would and would not be valid.

In this paper, we discuss the Bartik instruments' identification as coming from the shares. The basis of this view is a numerical equivalence result: we show that the two-stage least squares (TSLS) estimator with the Bartik instrument (the Bartik estimator) is numerically equivalent to a generalized method of moments (GMM) estimator with the local industry shares as instruments and a weight matrix constructed from the national growth rates. We interpret this result as saying that using the Bartik instrument is "equivalent" to using local industry shares as instruments, and so the exogeneity condition should be interpreted in terms of the shares. In contrast, Borusyak, Hull, and Jaravel (2019) emphasizes that under some assumptions the consistency of the estimator can also come from the shocks,[2] and they also provide a motivating numerical equivalence result. How can researchers tell which quasi-experimental design they are using? We argue that a researcher is likely using a research design based on the shares assumption if they (i) describe their research design as reflecting differential exogenous exposure to common

[2] Adao, Kolesár, and Morales (2019) discusses inferential issues in this setup.

shocks, (ii) emphasize a two-industry example, and/or (iii) emphasize shocks to specific industries as central to their research design.

Once we think about the shares as the instruments, the implied empirical strategy is an exposure research design, where the industry shares measure the differential exogenous exposure to the common shock. In settings where the researcher has a pre-period, this empirical strategy is just difference-in-differences. Because the shares are typically equilibrium objects and likely codetermined with the level of the outcome of interest, it can be hard to assume that the shares are uncorrelated with the levels of the outcome. But this assumption is not necessary for the empirical strategy to be valid. Instead, the strategy asks whether differential exposure to common shocks leads to differential *changes* in the outcome. For example, in the canonical setting, the outcome is wage *growth*, in the China shock setting the outcome is *change* in manufacturing employment, and in the immigrant enclave setting it is *changes* in the residual log wage gap between immigrants and natives. Hence, the empirical strategy can be valid even if the shares are correlated with the levels of the outcomes.

How does one build the credibility of such an exposure design? The central identification worry is that the industry shares predict outcomes through channels other than those posited by the researcher. One way to assess this possibility is to look at correlates of the shares. If these correlates suggest other channels through which the shares affect outcomes in the relevant period, then we might be skeptical of the identifying assumption. Second, in some settings there is a pre-period, as in a standard difference-in-differences design. In this case, we can test for parallel pretrends. Given that the design exploits level differences in the shares, by exploring trends in changes we can assess the plausibility of the assumption that the common shock caused the change in the changes, or whether there were preexisting differences in the changes.

There is a third way to explore the validity of the research design, based on the observation that the Bartik instrument is a particular way of combining many instruments. Under the null of constant effects, a researcher can consider alternative estimators which combine multiple instruments or run overidentification tests. One interpretation of the divergence between estimators and the failure of overidentification tests is that the null of constant effects is unreasonable, and to instead interpret these tests as pointing to the presence of treatment effect heterogeneity, rather than failure of exogeneity. We follow Borusyak, Hull, and Jaravel (2019) and Adao, Kolesár, and Morales (2019) and consider a restricted form of linear heterogeneity where there are constant effects within each location. We highlight that even if each instrument separately places convex weights on each location's parameter, it is possible that the Bartik estimator would not have a local average treatment effect-like interpretation as a weighted average of treatment effects. To the extent that researchers wish to embrace a treatment effect heterogeneity interpretation of the Bartik instrument, they should be comfortable with the patterns of underlying heterogeneity. We develop a visual diagnostic to aid researchers in this task.

How does the Bartik instrument combine the exposure designs? We build on Rotemberg (1983) and decompose the Bartik estimator into a weighted sum of the just-identified instrumental variable estimators that use each industry share (z_{lk}) as a separate instrument. The weights, which we refer to as Rotemberg weights, are

simple to compute and sum to 1. They depend on the covariance between the kth instrument's fitted value of the endogenous variable and the endogenous variable itself. The weights are a scaled version of the Andrews, Gentzkow, and Shapiro (2017) sensitivity-to-misspecification parameter, and tell us how sensitive the overidentified estimate of β_0 is to misspecification (i.e., endogeneity) in any instrument. Heuristically, they also tell us which exposure design gets more weight in the overall estimate, and thus which of these identifying assumptions is most worth testing. If the high-weight designs, where it is concrete what comparisons the researcher is doing, pass basic specification tests, then researchers should feel reassured about the overall empirical strategy.

In many contexts where researchers use Bartik instruments, they are used in the reduced form, whereas in our analysis we discuss the instrumental variables setting. We note that the insights of this paper still apply when Bartik is used in the reduced form. Specifically, the relevant moment condition (exclusion restriction) is still the same. Moreover, it is still possible to compute the Rotemberg weights.

We note two limitations to our analysis. First, we assume locations are independent and so ignore the possibility of spatial spillovers or correlation.[3] Second, we assume that the data consist of a series of steady states.[4]

To summarize, we view our contribution as explaining identification in the context of Bartik instruments in two ways. First, our GMM result shows that Bartik is numerically equivalent to using industry shares as instruments. Hence, we argue that the typical identifying assumption is best interpreted in terms of industry shares, rather than growth rates. Second, we build on Andrews, Gentzkow, and Shapiro (2017) to provide tools to measure the "identifying variation," and formalize how to use Rotemberg weights to highlight the subset of instruments to which the estimated parameter is most sensitive to endogeneity.

Applications.—We illustrate our results through two applications. In our first application, we look at the canonical example of estimating the inverse elasticity of labor supply in US Census data using decadal differences from 1980–2010 and instrumenting for labor demand with the Bartik instrument. We first show that the national growth rates explain less than 1 percent of the variance of the Rotemberg weights. Hence, the growth rates are a poor guide to understanding what variation in the data is driving estimates. Second, the weights are skewed, with over 40 percent of the weight on the top five industries. In the particular, the oil and gas extraction industry receives the largest weight. Hence, a concrete example of the comparisons being made by the estimator is between changes in employment growth and wage growth in places with more and less oil and gas extraction. Third, industry shares, including oil and gas extraction, are correlated with many observables, including the immigrant share, which potentially predicts innovations in labor supply. Fourth, alternative estimators deliver substantively different point estimates and overidentification tests reject the null of exogeneity. Fifth,

[3] This force is standard in spatial equilibrium models: see Redding and Rossi-Hansberg (2017) for a recent survey. Monte, Redding, and Rossi-Hansberg (2018) presents evidence for the presence and economic importance of spatial spillovers through changes in commuting patterns in response to local labor demand shocks.

[4] See Jaeger, Ruist, and Stuhler (2019) for discussion of out-of-steady-state dynamics in the context of immigration.

consistent with the overidentification tests rejecting, we find substantial visual dispersion in the estimates from each individual instrument. Moreover, some of the outlying point estimates receive negative Rotemberg weights, which suggests that, under the treatment effect heterogeneity interpretation, some of the underlying effects receive negative weight so that there is unlikely to be a LATE-like interpretation of the parameter estimate.

In our second application, we estimate the inverse elasticity of substitution between immigrants and natives in 2000 (following the empirical strategy of Card 2009). Here, the relevant shares are the share of migrants from an origin country who live in a particular location in the base year, and the shocks are the immigrant inflows. First, we find that for high school equivalent workers, the Rotemberg weights are almost completely explained by the immigrant inflows. For the college equivalent workers, the explanatory power of the inflows is higher than in our other two examples. Hence, the growth rates (the shocks) are a good guide to the variation in the data that drives estimates. Second, for high school equivalent workers, the share of Mexican immigrants in a city in 1980 gets almost one-half of the weight in the estimator, a possibility that Card (2009) acknowledges. Hence, for high school equivalent workers, a concrete example of the comparison the estimator is making is between places with more and fewer Mexican immigrants in 1980. For college equivalent workers, the highest weight instrument is the Philippines, and so the comparison is between places with higher and lower Philippines share. Third, among the covariates used by Card (2009), we do not find any systematic patterns of correlations with the immigrant shares. Fourth, unlike in our other examples, most overidentification tests fail to reject and we do not find differences among estimators. Fifth, we find limited evidence of statistically significant pretrends for the high school equivalent workers. In contrast, we find statistically significant pretrends for the estimates involving the college equivalent workers, consistent with the concerns emphasized by Jaeger, Ruist, and Stuhler (2019).

Besides these two examples, a much broader set of instruments is Bartik-like. We define a Bartik-like instrument as one that uses the inner product structure of the endogenous variable to construct an instrument. In online Appendix Section A, we discuss the China shock of Autor, Dorn, and Hanson (2013) and present our complete set of diagnostics in this application. In online Appendix Section B, we discuss two additional examples. First, researchers, such as Greenstone, Mas, and Nguyen (2020), interact preexisting bank lending shares with changes in bank lending volumes to instrument for credit supply. Second, Acemoglu and Linn (2004) interacts age-group spending patterns with demographic changes to instrument for market size.

Literature.—A vast literature uses Bartik-like instruments, and many of these papers discuss the identifying assumptions in ways that are close to the benchmark results here. For example, Baum-Snow and Ferreira (2015, p. 50) surveys the literature and states that the "validity [of the Bartik instrument] … relies on the assertion that neither industry composition nor unobserved variables correlated with it directly predict the outcomes of interest conditional on controls." Similarly, Beaudry, Green, and Sand (2012) provides a careful discussion of identifying assumptions in the

context of an economic model. Given the vast diversity of ways in which Bartik instruments are discussed and understood in the literature, we can only claim novelty for the formalism along this dimension.

Beyond the vast literature of papers using Bartik-like instruments, this paper is also related to a growing literature that comments on specific papers (or literatures) that use Bartik-like instruments. This literature includes at least three papers: Christian and Barrett (2017), which comments on Nunn and Qian (2014); Jaeger, Joyce, and Kaestner (2020), which comments on Kearney and Levine (2015); and Jaeger, Ruist, and Stuhler (2019), which comments on the use of the immigrant enclave instrument. Relative to this literature, our goal is to develop a formal econometric understanding of the Bartik instrument and provide methods to increase transparency in its use.

I. Equivalence between Bartik IV and GMM with Industry Shares

We first show that the Bartik instrument is numerically equivalent to using industry shares as instruments, which we use to argue that the identification condition is best interpreted in terms of industry shares. We begin this section by setting up the most general case: panel data with K industries, T time periods, and controls. Through a series of special cases, we then build up to the main result. To focus on identification issues, we discuss infeasible Bartik, where we assume that we know the common national component of industry growth rates. Section II discusses consistency and identifying assumptions.

A. *Full Panel Setup*

We begin by setting up the general panel data case with K industries and T time periods. This setup most closely matches that used in empirical work. It allows for the inclusion of both location and time fixed effects as well as other controls.

We are interested in the following structural equation:

$$y_{lt} = D_{lt}\rho + x_{lt}\beta_0 + \epsilon_{lt}. \tag{1}$$

In the canonical setting, l indexes a location, t a time period, y_{lt} is wage growth, D_{lt} is a vector of Q controls which could include location and time fixed effects, x_{lt} is employment growth, and ϵ_{lt} is a structural error term. The parameter of interest is β_0. We assume that the ordinary least squares (OLS) estimator for β_0 is biased and we need an instrument to estimate β_0.

The Bartik instrument exploits the inner product structure of employment growth. Specifically, employment growth is the inner product of industry shares and industry-location growth rates

$$x_{lt} = Z_{lt}G_{lt} = \sum_{k=1}^{K} z_{lkt}\, g_{lkt},$$

where Z_{lt} is a $1 \times K$ vector of industry-location-time period shares, and G_{lt} is a $K \times 1$ vector of industry-location-time period growth rates where the kth entry is g_{lkt}.

We decompose the industry-location-period growth rate into an industry-period and an idiosyncratic industry-location-period component:

$$g_{lkt} \;=\; g_{kt} + \tilde{g}_{lkt},$$

where we now define $\tilde{G}_{lt}$ as the $K \times 1$ vector of the $\tilde{g}_{lkt}$. In some applications it is natural to use the sample mean (or a leave-one-out sample mean) of g_{lkt} as an estimator for g_{kt}, but none of our results are specific to this choice. We fix industry shares to an initial time period. We do this for two reasons. First, this choice follows convention. Second, this choice makes the analogy to difference-in-differences clearer: by fixing the shares to an initial time period prior to the shock, there is a single cross-sectional exposure difference that the design is exploiting. Then the Bartik instrument is the inner product of the initial industry-location shares and the industry-period growth rates:

$$B_{lt} \;=\; Z_{l0}\, G_t \;=\; \sum_k z_{lk0}\, g_{kt},$$

where G_t is a $K \times 1$ vector of the industry growth rates in period t (the kth entry is g_{kt}), and Z_{l0} is the $1 \times K$ vector of industry shares in location l. Hence, we have a standard two-stage least squares setup where the first stage is a regression of employment growth on the controls and the Bartik instrument:

$$x_{lt} \;=\; D_{lt}\tau + B_{lt}\gamma + \eta_{lt},$$

and the structural equation is given by (1).

Let $y_l = (y_{l1},\ldots,y_{lT})$, $x_l = (x_{l1},\ldots,x_{lT})$, $Z_l = (Z_{l1},\ldots,Z_{lT})$, $\tilde{G}_l = (\tilde{G}_{l1},\ldots,\tilde{G}_{lT})$, $G_K = (G_1,\ldots,G_T)$, $D_l = (D_{l1},\ldots,D_{lT})$, and $\epsilon_l = (\epsilon_{l1},\ldots,\epsilon_{lT})$. We assume that the data

$$\left\{y_l, D_l, \tilde{G}_l, Z_l, Z_{l0}\right\}_{l=1}^{L}$$

are drawn i.i.d. across l, and view G_K as fixed.[5]

We assume that D_{lt} is strictly exogenous, and focus on estimating β_0 using residual regression. Define $Y_L = (y_1,\ldots,y_L)$, $X_L = (x_1,\ldots,x_L)$, $D_L = (D_1,\ldots,D_L)$, and $\boldsymbol{\epsilon}_L = (\epsilon_1,\ldots,\epsilon_L)$. Let $M_D = I_L - D_L(D_L'D_L)^{-1}D_L'$ denote the annihilator matrix for D, the $L \times Q$ matrix of controls, where I_L is the $L \times L$ identity matrix. We define $X_L^{\perp} \equiv M_D X_L$ and $Y_L^{\perp} \equiv M_D Y_L$ to be the residualized X_L and Y_L such that $M_D(Y_L - X_L\beta_0) = M_D(D_L\rho + \epsilon_L) = M_D\epsilon_L$, since $M_D D_L = 0$. Finally, define $\epsilon_L^{\perp} \equiv M_D\epsilon_L$.

B. *Equivalence in Three Special Cases*

We build up to the general result that the Bartik instrument is numerically equivalent to using industry shares as instruments for a particular weight matrix

[5] This assumption allows for dependence within l: the data are *not* i.i.d. within l.

in GMM through three special cases. Each of these special cases also illustrates a research design implicit in using a Bartik instrument and suggests a specification test.

Two Industries and One Time Period.—With two industries whose shares sum to 1 within each location and one time period, the Bartik instrument is identical to using one of the industry shares as an instrument. To see this, expand the Bartik instrument:

$$B_l = z_{l1} g_1 + z_{l2} g_2,$$

where g_1 and g_2 are the industry components of growth. Since the shares sum to 1, we can write the second industry share in terms of the first, $z_{l2} = 1 - z_{l1}$, and simplify the Bartik instrument to depend only on the first industry share:

$$B_l = g_2 + (g_1 - g_2) z_{l1}.$$

Because the only term on the right-hand side with a location subscript is the first industry share, the cross-sectional variation in the instrument comes from the first industry share. Substitute into the first stage

$$x_l = \gamma_0 + \gamma B_l + \eta_l = \underbrace{\gamma_0 + \gamma g_2}_{\text{constant}} + \underbrace{\gamma(g_1 - g_2)}_{\text{coefficient}} z_{l1} + \eta_l.$$

This equation shows that the difference between using the first industry share and Bartik as the instrument is to rescale the first-stage coefficients by the difference in the growth rates between the two industries $(1/(g_1 - g_2))$. But whether we use the Bartik instrument or the first industry share as an instrument, the predicted employment growth (and hence the estimate of the inverse elasticity of labor supply) would be the same. Hence, with two industries, using the Bartik instrument in TSLS is numerically identical to using z_{l1} (or z_{l2}) as an instrument.

What is the research design inherent in this special case? Here, z_{l1} measures exposure to the policy that affects industry 1, and $g_1 - g_2$ is the size of the policy. The outcome is y_l, which is the *change* in outcomes between two periods. Hence, in this special case the empirical strategy asks about the effects of levels of z_{l1} on changes in y_l. The identification concern is whether z_{l1} is correlated with *changes* in the outcome, and not *levels* of the outcome. As we discuss more in Test 1 in Section V, studying correlates of z_{l1} is helpful in making clear the types of concerns one might have. Concretely, while z_{l1} might be correlated with many variables that predict the level of the outcome, this correlation is not necessarily a problem for the research design. Instead, the central question a researcher should have in mind is whether these correlates predict changes in the outcome in the relevant period.

Why would OLS be biased but Bartik be a valid instrument? The form of endogeneity that Bartik can address is correlation between ϵ_l and the location-specific portions of the growth rates: $\tilde{g}_{l1}$ and $\tilde{g}_{l2}$. For example, if there are amenity shocks in an area, then these shocks show up as local industries growing faster than the

national average. But these amenity shocks also directly affect wage growth and so generate endogeneity.

Two Industries and Two Time Periods.—In a panel with two time periods, if we interact the time-invariant industry shares with time, then Bartik is equivalent to a special case of using industry shares as instruments. To see this result, we again specialize to two industries, and define the Bartik instrument so that it varies over time:

$$B_{lt} \;=\; g_{1t} z_{l10} + g_{2t} z_{l20} \;=\; g_{2t} + \big(g_{1t} - g_{2t}\big) z_{l10},$$

where g_{1t} and g_{2t} are the industry-by-time growth rate for industry 1 and 2. Because we fix the shares to an initial time-period, denoted by z_{lk0}, the time variation in B_{lt} comes from the difference between g_{1t} and g_{2t}.

To see the relationship between the cross-sectional and panel estimating equations, we restrict our panel setup to have the vector of controls consist solely of time fixed effects. Then the first stage is

$$x_{lt} \;=\; \tau_t + B_{lt}\gamma + \eta_{lt}.$$

Now substitute in the Bartik instrument and rearrange the first stage:

$$x_{lt} \;=\; \underbrace{\big(\tau_t + g_{2t}\gamma\big)}_{\equiv \tilde{\tau}_t} + z_{l10}\big(g_{1t} - g_{2t}\big)\gamma + \eta_{lt}. \tag{2}$$

This first stage is more complicated than in the cross-sectional case because there is a time-varying growth rate multiplying the time-invariant industry share.

To recover the equivalence between Bartik and using shares as instruments in the panel setting, write $g_{1t} - g_{2t} \;=\; \mathbf{1}\big(t \;=\; 1\big)\big(g_{11} - g_{21}\big) + \mathbf{1}\big(t \;=\; 2\big)\big(g_{12} - g_{22}\big)$, where $\mathbf{1}\big(\,\cdot\,\big)$ is the indicator function. Then, rewrite the first stage as

$$x_{lt} \;=\; \underbrace{\big(\tau_t + g_{2t}\gamma\big)}_{\equiv \tilde{\tau}_t} + z_{l10}\mathbf{1}\big(t \;=\; 1\big)\big(g_{11} - g_{21}\big)\gamma + z_{l10}\mathbf{1}\big(t \;=\; 2\big)\big(g_{12} - g_{22}\big)\gamma + \eta_{lt}. \tag{3}$$

We can now see the equivalence between Bartik and using the shares as instruments. Since we fix the industry shares in the initial time period, to create time variation in our industry shares regression, consider the regression with initial industry shares interacted with time fixed effects:

$$\text{(Bartik)} \quad x_{lt} \;=\; \tilde{\tau}_t + z_{l10}\underbrace{\big(g_{11} - g_{21}\big)\mathbf{1}\big(t \;=\; 1\big)\gamma}_{\equiv \tilde{\gamma}_1} + z_{l10}\underbrace{\big(g_{12} - g_{22}\big)\mathbf{1}\big(t \;=\; 2\big)\gamma}_{\equiv \tilde{\gamma}_2} + \eta_{lt},$$

$$\text{(Industry Shares)} \qquad x_{lt} \;=\; \tau_t + z_{l10}\mathbf{1}\big(t \;=\; 1\big)\tilde{\gamma}_1 + z_{l10}\mathbf{1}\big(t \;=\; 2\big)\tilde{\gamma}_2 + \tilde{\eta}_{lt}.$$

In this case, the panel regression (with the industry share) gives us two parameters, $\tilde{\gamma}_1$ and $\tilde{\gamma}_2$. When will they be identical to γ (the parameter from the Bartik equation)? If

we restrict $\tilde{\gamma}_1 = \gamma/(g_{11} - g_{21})$, and $\tilde{\gamma}_2 = \gamma/(g_{12} - g_{22})$, then both parameters will be proportional to the underlying Bartik parameter, γ. If we view z_{l10} as the effect of exposure to a policy, then each $\tilde{\gamma}$ captures the "unscaled" effect on x_{lt}, while γ is rescaled by the size of the policy, where the size of the policy is the difference in national industry growth rates, $g_{1t} - g_{2t}$.

What is the research design inherent in this special case? Viewing the growth rates as a measure of policy size and the industry shares as measures of exposure emphasizes a useful connection to difference-in-differences. In the equations above, a researcher is already considering outcomes and regressors in *changes*, which allows for the possibility of level differences across locations. By using initial industry shares as the right-hand-side regressor in the panel regression, the researcher is asking whether locations with high shares of a particular industry experience differential changes in outcomes following shocks whose effect depends on the size of that industry.

With the two time periods, we can consider period 1 to be a pre-period before a policy takes effect. That is, $g_{11} - g_{21} = 0$. In this case, a researcher can test whether $\tilde{\gamma}_1$ is zero (a test of the parallel pretrends assumption). Intuitively, a researcher is asking whether in the pre-period, the level of z_{l1} predicts changes in the outcome. Failing to find a pretrend gives credence to a research design where the researcher assumes that z_{l1} is relevant for predicting the change in period 2. We return to this point in Test 2 in Section V.

K Industries and One Time Period.—Finally, we show that with K industries as instruments in a generalized method of moments (GMM) estimator setup with a specific weight matrix, the Bartik estimator is identical to using the set of industry shares as instruments.

To show this result, recall that G is the $K \times 1$ vector of industry growth rates, Z is the $L \times K$ matrix of industry shares, Y is the $L \times 1$ vector of outcomes, X is the $L \times 1$ vector of endogenous variables, and $B = ZG$ is the $L \times 1$ vector of Bartik instruments. Let W be an arbitrary $K \times K$ matrix.

We define the Bartik and the GMM estimator using industry shares as instruments:

$$\hat{\beta}_{Bartik} = \frac{B'Y^{\perp}}{B'X^{\perp}}; \quad \text{and} \quad \hat{\beta}_{GMM} = \frac{X^{\perp\prime}ZWZ'Y^{\perp}}{X^{\perp\prime}ZWZ'X^{\perp}}.$$

PROPOSITION 1: *If* $W = GG'$, *then* $\hat{\beta}_{GMM} = \hat{\beta}_{Bartik}$.

PROOF:

See online Appendix Section C.

Proposition 1 says the Bartik instrument and industry shares as instruments are numerically equivalent for a particular choice of weight matrix.

What is the research design inherent in this special case? Under the shares interpretation that we discuss further below, if there is a shock in a single period, then this research design pools many different exposure designs. In Section III, we show the way that Bartik pools these designs. The tools for building the credibility of any given share are the same as in the single instrument case. Moreover, the many

instruments provide the researcher with the opportunity to test whether the parameter estimates from all of these instruments are the same using overidentification tests. Alternatively, if these parameters are not similar, the researcher might be interested in trying to characterize this heterogeneity. In Test 3 in Section V, we discuss overidentification tests. In Section IV, we discuss heterogeneity.

Remark 1: When $\sum_{k=1}^{K} z_{lk} = 1$, there are $K-1$ instruments and not K instruments. In practice, any of the K industries can be dropped by subtracting off that industry's growth rate from the G vector, and the Bartik instrument will maintain its numerical equivalence from Proposition 1. To see the intuition behind this, suppose that $\sum_k z_{lk} = \mathbf{1}\ \forall l$. Consider the first-stage regression:

$$x_l = \gamma_0 + \gamma_1 B_l + \eta_l.$$

Now add and subtract $\gamma_1 \sum_k z_{lk} g_j$ from the right-hand side:

$$x_l = \underbrace{\gamma_0 + \gamma_1 \sum_k z_{lk} g_j}_{\gamma_0 + \gamma_1 g_j} + \underbrace{\gamma_1 \sum_k z_{lk}\left(g_k - g_j\right)}_{B_l - g_j} + \eta_l. \tag{4}$$

This expression generalizes our result from the two industry and one time period example. It says that normalizing the growth rates by a constant g_j changes the first-stage intercept and does not affect the slope estimate. Hence, the first-stage prediction is unaffected.

C. *Summary*

With K industries and T time periods, the numerical equivalence involves creating $K \times T$ instruments (industry shares interacted with time periods). Then, an identical GMM result holds as we proved in the cross section with K industries. Extending the result is notationally cumbersome so we leave the formal details to online Appendix Section D. We now turn to discussing how these finite sample results map into identification conditions.

II. Asymptotic Consistency and Identifying Assumptions

We now consider consistency of the TSLS estimator that uses the Bartik instrument. In the previous section, we established a finite sample equivalence result between the TSLS estimator using the Bartik instrument, and the GMM estimator using industry shares as instruments and a weight matrix defined by the industry growth rates. Here, we use this equivalence to show that a sufficient condition for consistency is strict exogeneity of the shares.

To fix ideas, consider the difference between the TSLS estimator and the parameter of interest:

$$\hat{\beta} - \beta_0 = \frac{\sum_{t=1}^{T}\sum_{k=1}^{K} g_{kt} \sum_{l=1}^{L} z_{lk0}\, \epsilon_{lt}^{\perp}}{\sum_{t=1}^{T}\sum_{k=1}^{K} g_{kt} \sum_{l=1}^{L} z_{lk0}\, x_{lt}^{\perp}}. \tag{5}$$

Broadly, conditions for the consistency of $\hat{\beta}$ can be stated either in terms of the *shares*, the z_{lk0}, or the *shocks*, the g_{kt}. In this paper, we consider a setting where we observe increasingly larger samples of locations, but a fixed number of time periods and industries (fixed T and K). As we show below, in this setting it is natural to state conditions for consistency in terms of the shares.

A natural extension of this setup studied by Borusyak, Hull, and Jaravel (2019) considers a setting where we not only observe increasingly larger samples of locations, but also of industries. They show that while a sufficient condition for consistency of $\hat{\beta}$ is exogeneity of the shares, it is not necessary. With many industries, it is possible to use the exogeneity of the shocks, e.g., g_{kt}, instead.

In this section, we first state the sufficient conditions in our setting, highlighting the relevance and exogeneity assumptions. We then discuss when these exogenous shares assumptions are reasonable, and how they contrast to the exogenous shocks assumptions.

A. *Identifying Assumptions*

Two assumptions must hold for consistency. First, the denominator must converge to a nonzero term. Intuitively, for this assumption to hold, there must be an industry and time period when the industry share has predictive power for x_{lt}, conditional on the controls, and the growth rates g_{kt} cannot weight the covariances in such a way that they exactly cancel. This first condition holds under the following low-level assumption.

ASSUMPTION 1 (Relevance): *For all* $k \in \{1,\ldots,K\}$ *and* $s \in \{1,\ldots,T\}$,

$$x_{lt} = D_{lt}\tau + z_{lk0}\mathbf{1}(t = s)C_{k,s} + \eta_{lt},$$

where $E[\eta_{lt}|z_{lk0}, D_{lt}] = 0$, $C_{k,s}$ *is finite for all* k *and* s, *and* $\sum_s \sum_k g_{ks} C_{ks} \neq 0$.

The second necessary assumption for consistency is that the numerator must converge to zero. This assumption is the exclusion restriction, and to hold generically, the industry share must be uncorrelated with the structural error term, *after controlling for* D_{lt}, for industries that have nonzero growth rates. The following identifying assumption ensures that the numerator converges to 0.

ASSUMPTION 2 (Strict Exogeneity): $E[\epsilon_{lt} z_{lk0}|D_{lt}] = 0$ *for all* k *where* $g_k \neq 0$.

This assumption is standard in empirical settings that use exposure designs. For example, this assumption is made in difference-in-differences designs that use location fixed effects.[6]

[6] Even if $E[\epsilon_l z_{lk0}|D_{lt}] \neq 0$, then the numerator can still converge to zero nongenerically if the g_{kt} are such that these biases cancel out exactly. For fixed K and T, this case is unlikely to hold in practice. When K increases, Borusyak, Hull, and Jaravel (2019) shows that this can hold generically. We discuss this point below.

It is now straightforward to show consistency.

PROPOSITION 2: *Given Assumptions 1 and 2*,

$$\underset{L\to\infty}{p\lim}\,\hat{\beta} - \beta_0 = \underset{L\to\infty}{p\lim}\frac{\sum_{t=1}^{T}\sum_{k=1}^{K} g_{kt} L^{-1}\sum_{l=1}^{L} z_{lk0}\epsilon_{lt}^{\perp}}{\sum_{t=1}^{T}\sum_{k=1}^{K} g_{kt} L^{-1}\sum_{l=1}^{L} z_{lk0} x_{lt}^{\perp}} = 0.$$

PROOF:

This is a standard GMM consistency result (e.g., Wooldridge 2002, Theorem 8.1).

As a result, the Bartik TSLS IV estimator is consistent.

These results have two implications. First, under our sampling process, strict exogeneity of the industry shares is necessary for the Bartik estimator to be generically consistent. This assumption is standard in many difference-in-differences settings. Second, it highlights that the Bartik estimator uses a particular weighting of these exogeneity conditions; other weightings would imply other estimators.

B. *When Are These Assumptions Plausible?*

The exogenous shares assumption discussed in the last section might seem implausible because shares are equilibrium objects likely codetermined with the level of the outcome of interest. But this reasoning does not reflect the assumption that is typically being made. Instead, the assumption is about exogeneity *conditional on observables*, which typically controls for level differences either by focusing on changes (as in our baseline setup where we define y_{lt} and x_{lt} to be in changes), or else by operating in levels but including unit fixed effects. Hence, in typical specifications, the assumption is that the shares are exogenous to *changes* in the error term (i.e., changes in the outcome variable), rather than *levels* of the outcome variable.

The plausibility of the substantive restrictions implied by this identifying assumption might be more intuitive in a setting with two industries and a differential exposure design, which we discussed in Section I. In this setting, the identifying assumption is that the differential effect of higher exposure of one industry (compared to another) only affects the change in the outcome (y_{lt}) through the endogenous variable of interest, and not through any potential confounding channel. This assumption is standard in difference-in-differences. In the shares view, the identifying assumption underlying the Bartik setting is simply this differential exposure design applied to each industry separately.

This type of identification assumption is natural to make when the shares create differential exposure to a common economic or policy shock (or sets of shocks). In these cases, the most natural description of the identification comes from highlighting a few key industries which best illustrate the exposure design. In Section III, we show how to do this. While natural to make, this type of assumption may not always be satisfied. For example, areas with high versus low exposure may have other features that predict change in the outcome through channels other than the endogenous variable, violating the exclusion restriction.

In cases when the assumption of exogenous shares is not plausible, consistency of the estimator can instead come from many exogenous shocks. As proved

in Borusyak, Hull, and Jaravel (2019), exogenous independent shocks to many industries lead the Bartik estimator to be consistent, even when the shares are not exogenous. The core intuition to this result can be seen in equation (5). In cases when the shares are not exogenous, the numerator does not converge to zero. As a result, the weighted sum of the industry shocks and the shares are nonzero. With many exogenous and independent shocks, however, Borusyak, Hull, and Jaravel (2019) shows that the estimator is still consistent. The reason is that the random shocks are uncorrelated with the bias from the shares ($E[\epsilon_{lt} z_{lk0} | D_{lt}]$), and the presence of many shocks causes this bias to average out to zero (see also Kolesár et al. 2015).

How can researchers tell which quasi-experimental design they are using? When a researcher explains her research design (and hence, implicitly, her estimator) using a two-industry example, she is emphasizing differential exogenous exposure, which underlies a research design based on the shares assumption. The reason is that under the shocks view the Bartik estimator is only consistent as the number of industries grows. Hence, the logic of how consistency in this research design works is not captured by the two-industry example. Similarly, if a researcher emphasizes the performance of a particular industry (or a small handful of industries), then this reasoning also suggests that she is appealing to a research design based on the shares. In contrast, when having a large number of industries is central to how the researcher thinks about consistency (and identification), then it is likely that she is building a research design based on the shocks assumption.

While a best case scenario for a researcher using a Bartik instrument is for both the exogenous shares and shocks assumptions to hold, in practice, this coincidence seems unlikely. Typically, a researcher will only have one identification strategy at their disposal. We encourage researchers to pick one or the other, be clear about why, and then defend the relevant assumptions in their setting.

III. Opening the Black Box of the Bartik Estimator

The previous sections showed that under standard panel asymptotics, the Bartik instrument is equivalent to using industry shares as instruments. Thus, the Bartik *estimator* combines many instruments using a specific weight matrix.

Empirical work using a single instrument is transparent because there is a small number of covariances that enter the estimator. With many instruments, it is less intuitive how the estimator combines the different instruments. This lack of intuition underlies much of the empirical work using Bartik instruments, where it is hard to explain what variation in the data drives estimates, and can often feel like a black box.

In this section, we show how to open the black box of the Bartik estimator. First, we decompose the Bartik estimator into a weighted combination of just-identified estimates based on each instrument. This decomposition increases the transparency of the estimator because the weights highlight the industries whose variation in the data drives the overall Bartik estimate. Building on Andrews, Gentzkow, and Shapiro (2017), we show that these weights can be interpreted as sensitivity-to-misspecification elasticities. The Bartik estimate is most sensitive to

misspecification in high-weight instruments, and hence these are the instruments that are most important for researchers to defend.

A. *Decomposing the Bartik Estimator*

We first present a finite sample decomposition of the linear overidentified GMM estimator due to Rotemberg (1983).[7] For expositional simplicity, we use a single cross section, though it is straightforward to extend results to a panel with T time periods.

PROPOSITION 3: *We can write*

$$\hat{\beta}_{Bartik} = \sum_k \hat{\alpha}_k \hat{\beta}_k,$$

where

$$\hat{\beta}_k = \left(Z_k' X^{\perp}\right)^{-1} Z_k' Y^{\perp} \quad \textit{and} \quad \hat{\alpha}_k = \frac{g_k Z_k' X^{\perp}}{\sum_{k'} g_{k'} Z_{k'}' X^{\perp}},$$

so that $\sum_k \hat{\alpha}_k = 1$.

PROOF:
See online Appendix Section C.

Proposition 3 has two implications. First, mirroring our results from Section II, the validity of each just-identified $\hat{\beta}_k$ depends on the exogeneity of a given Z_k. Second, for some k, $\hat{\alpha}_k$ can be negative. Under the constant effects assumption we have maintained so far, these negative weights do not pose a conceptual problem. In Section IV, we introduce a restricted form of treatment effect heterogeneity and revisit the implications of the negative Rotemberg weights.

In online Appendix Section E, we discuss how to interpret the Rotemberg weights in terms of sensitivity-to-misspecification following work by Conley, Hansen, and Rossi (2012) and Andrews, Gentzkow, and Shapiro (2017). The basic intuition is that if any particular instrument is misspecified, then α_k tells us how much that misspecification translates into the overall bias of the estimator. For example, if α_k is small, then bias in the kth instrument does not affect the overall bias in the estimator very much. We also show that this measure is different than simply dropping instruments and seeing how estimates change, since dropping an instrument combines sensitivity-to-misspecification (i.e., α_k) as well as the relative misspecification of different instruments (i.e., how far $\hat{\beta}_k$ diverges from $\hat{\beta}$).

We recommend researchers report the instruments associated with the largest values of α_k for two reasons. First, reporting the instruments with the largest α_k provides a more concrete way to describe the empirical strategy. Second, to the extent that the researcher is concerned about misspecification, these are the instruments that are most worth probing.

[7] Andrews (2019, Section 3.1) reports this decomposition for constant-effect linear instrumental variables.

In our applications, we report the share of the variance in the Rotemberg weights that can be explained by the g_k. The primary reason is that the α_k are nonlinear functions of g_k, x_l, and z_{lk} and so there is not a simple decomposition which shows why the α_k end up with the particular patterns that they do. The share of the variance of the α_k that can be explained by the g_k quantifies the extent to which it is explained by g_k. For similar reasons, we also report the correlation between $\text{var}(z_{lk})$ (across l) and α_k. A secondary reason to focus on the g_k is that there is a common intuition that the variation in the g_k explains the "sources of variation" in the empirical design. Given that the α_k is a formal way of quantifying the "sources of variation," we find it helpful to contrast this intuition with our formal measure.

Similarly, we also relate the Rotemberg weight to the first stage F-statistic. In online Appendix Section F we show that the first-stage F-statistic on the kth instrument is related to Rotemberg weight by the following formula:

$$\frac{\hat{F}_k}{\hat{F}} = \hat{\alpha}_k^2 \left(\frac{\widehat{\text{var}}(B^{\perp})}{g_k \widehat{\text{var}}(Z_k^{\perp})} \right)^2 \frac{\hat{\Sigma}_{\pi\pi}}{\hat{\Sigma}_{\pi_k\pi_k}}, \tag{6}$$

where $\hat{\Sigma}_{\pi_k\pi_k}$ is the estimated sampling variance around the first-stage coefficient on the kth instrument, $\hat{\Sigma}_{\pi\pi}$ is the estimated sampling variance around the first-stage coefficient on the Bartik instrument, and $\hat{F}$ is the first-stage F-statistic when using the Bartik instrument. This equation helps explain when and how the Rotemberg weight differs from the (relative) first-stage F-statistic. If the precision of the first-stage coefficient (third term) is proportional to the variance of the instrument (second term), then the product of the last two terms will be constant across instruments and hence the relative F-statistic will be proportional to the Rotemberg weight. In contrast, when the estimation noise does not vary proportionally with the variance of the instrument (perhaps because the instrument varies, but is not correlated with the endogenous variable), then the Rotemberg weight and relative F-statistic will be less strongly related.

B. *Normalization*

When the industry shares sum to 1 within a location, the instruments are linearly dependent and so we can write each instrument as a function of the remaining $K - 1$ instruments. This fact has a couple implications. First, following Remark 1, we can drop any industry through normalization by subtracting off g_j from all the growth rates, and leave our point estimates unchanged. Second, the fact that we can drop any one industry means that the Rotemberg weights are not invariant to the choice of which industry to drop. To take an extreme example, suppose industry j has the largest weight. Then, by dropping industry j through normalization, a researcher could make industry j have a weight of zero, but the Bartik estimate would remain the same.

To address this issue, in applications where the industry shares sum to 1, we report Rotemberg weights that come from demeaning the (unweighted) industry

growth rates. In online Appendix Section G, we show that this normalization is the average of the K possible normalizations of dropping each of the industries.[8]

C. *Aggregation*

Below, we consider applications with panel data and multiple time periods. As a result, the underlying instruments are industry shares interacted with time fixed effects. Rather than reporting results at the level of k,t, we aggregate to the k level. The reason is that it is typically easier to think about the variation coming from a cross-sectional difference, rather than the variation coming from a cross-sectional difference in a particular time period. Formally, we define

$$\alpha_k \equiv \sum_t \alpha_{k,t},$$

and

$$\beta_k \equiv \sum_t \frac{\alpha_{k,t}}{\alpha_k}\beta_{k,t},$$

where the empirical estimator versions are defined analogously.[9] Note that we could analogously aggregate to the time level and define $\alpha_t \equiv \sum_k \alpha_{k,t}$ and $\beta_t \equiv \sum_k \left(\alpha_{k,t}/\alpha_t\right)\beta_{k,t}$.

To interpret such an aggregated α in terms of the underlying misspecification, suppose that $\tilde{\beta}_{kt} = \tilde{\beta}_k$ for all t. Then,

$$\tilde{\beta} = \sum_k \alpha_k \sum_t \frac{\alpha_{kt}}{\alpha_k}\tilde{\beta}_{kt} = \sum_k \alpha_k \tilde{\beta}_k \sum_t \frac{\alpha_{kt}}{\alpha_k} = \sum_k \alpha_k \tilde{\beta}_k.$$

These equations say that the α_k measures the sensitivity-to-misspecification where we assume that the endogeneity associated with the kth industry is constant across time.

IV. Heterogeneous Effects

In previous sections, we showed that the Bartik estimator combines many instruments with a specific weight matrix. A key assumption was that of constant effects. In many contexts, a researcher might prefer to think that there are heterogeneous effects that vary across locations or time. For example, in the canonical labor supply elasticity application that we discuss below, some locations might have more elastic labor supply than others.

In this section, we discuss a heterogeneous effects interpretation of the Bartik instrument. Because the Bartik instrument combines multiple unordered instruments, it is difficult to allow unrestricted heterogeneity of the form discussed in Imbens

[8] In cases when the shares sum to 1, if a researcher suspects that one instrument is invalid, then simply dropping that instrument does not fix the problem. Instead, the researcher would need to drop that instrument and then renormalize the shares to sum to 1.

[9] A numerically identical way of arriving at $\hat{\beta}_k$ is to use $B_{lkt} = z_{lk0}g_{kt}$, the Bartik instrument built from just the kth industry, as the instrument.

and Angrist (1994) and ensure interpretable estimates.[10] Specifically, assuming monotonicity as in Imbens and Angrist (1994) is not sufficient to ensure estimates reflect nonnegative weights on the underlying heterogeneity. For further lucid discussion of these issues, see Kirkeboen, Leuven, and Mogstad (2016), among others. Instead, we impose a restricted form of linear heterogeneity and then state assumptions to ensure interpretable just-identified estimates. We also emphasize that even if each just-identified IV estimate produces a convex combination of heterogeneous effects, the overall Bartik instrument can produce negative weights if there are negative Rotemberg weights.

A. *Setup with Restricted Heterogeneity*

We follow Borusyak, Hull, and Jaravel (2019) and expand our model to include location specific coefficients.[11] Formally, consider the structural model:

$$y_l = D_l \rho + x_l \beta_l + \epsilon_l, \tag{7}$$

where now β_l replaces β_0.[12] For the purposes of the results below, we focus on discrete saturated controls (i.e., dummies) for D_l in order to ignore differences in specification error when residualizing. We also assume the following linear relationship between z_{lk} and x_l:

$$x_l = D_l \tau + z_{lk} \pi_{lk} + u_{lk}, \tag{8}$$

where π_{lk} is the location-industry specific first-stage coefficient and u_{lk} is the location-industry specific error. We assume that β_l is a random variable with well-defined moments.

Relative to Imbens and Angrist (1994), this setup is restricted because it assumes constant linear effects within a location over the whole support of $x_l^{\perp}$. One substantive restriction it imposes is that identically sized shocks have identical effects regardless of the level of employment in the location.

We now impose assumptions which are sufficient to ensure that in this linear model the weights on the β_l are all weakly positive. In this sense, they are analogous to monotonicity assumptions in nonparametric models.

ASSUMPTION 3:

(*i*) *For each k,* π_{lk} *is* (*weakly*) *the same sign for all l.*

(*ii*) $E[z_{lk} u_{lk} \beta_l | D_l] = 0.$

[10] To see why industry shares are unordered instruments, note that increasing the share of an industry can increase the predicted growth rates in some locations and decrease it in others depending on which industry share decreases to offset.

[11] Adao, Kolesár, and Morales (2019) includes location-industry coefficients. For simplicity, we maintain location specific coefficients.

[12] We focus on a single time period, but these points generalize.

We now state the result that the just-identified IV estimates represents a convex combination of the β_l.

PROPOSITION 4: *Suppose that equations* (7) *and* (8) *are true*, *and Assumption* 3 *holds*, *then we can write*

$$\underset{L\to\infty}{p\lim}\,\hat{\beta}_k \;=\; E\big[\omega_{lk}\beta_l\big] \tag{9}$$

where $\omega_{lk} \;=\; \big(z_{lk} - E\big[z_{lk}|D_l\big]\big)^2\pi_{lk}/E\Big[\big(z_{lk} - E\big(z_{lk}|D_l\big)\big)^2\pi_{lk}\Big] \;\geq\; 0$ *and* $E\big[\omega_{lk}\big] \;=\; 1.$

PROOF:

See online Appendix Section C.

This result explains why in the presence of heterogeneity using different instruments (i.e., z_{lk}) would generate different point estimates (i.e., $\hat{\beta}_k$) even without misspecification. Each instrument estimates a parameter that is a different weighted combination of location-specific parameters. Because these parameters differ (i.e., there is heterogeneity), different instruments generate different estimates.

B. *The Bartik Estimator with Heterogeneity*

In this heterogeneous effects interpretation of Bartik, we can combine the Rotemberg weights and the ω_{lk} to write the Bartik estimate in terms of the location-specific coefficients:

$$\hat{\beta}_{Bartik} \;=\; \sum_l \beta_l \sum_k \alpha_k \omega_{lk} + o_p(1). \tag{10}$$

When $\sum_k \alpha_k \omega_{lk}$ is nonnegative for all l, the Bartik estimator thus reflects a convex combination of the β_l. When are these weights nonnegative? In the previous section, we discussed assumptions such that the ω_{lk} are nonnegative. These assumptions, however, do not imply that the α_k are all positive. Thus, negative α_k are possible, which raises the possibility (but does not necessarily imply) nonconvex weights on the β_l, in which case the overall Bartik estimate does not have a LATE-like interpretation as a weighted average of treatment effects.

When are negative weights on the β_l likely to arise? We note first that we cannot estimate the ω_{lk} and hence we cannot directly compute the weights on the β_l. We can, however, estimate the α_k and the β_k, and use information in these two estimates to gauge the possibility of negative weights on the β_l.

If the $\hat{\beta}_k$ are all similar, then the negative weights on the k are unlikely to generate negative weights on the β_l. The reason is that the similarity of the β_k suggests that the ω_{lk} are similar across k, so that each instrument is likely estimating a similar weighted combination of effects. Hence, the negative α_k are likely just subtracting off the same β_l, with the overall weight on each β_l remaining positive.

In contrast, if the β_k are very different, then the ω_{lk} are different across k and each instrument is estimating a different weighted combination of effects. It is then more likely that there are negative weights on the β_l, as the negative α_k place weight

on β_l that do not receive positive weight from other instruments. A way to assess the quantitative importance of these negative weights is to split the instruments into those with positive and negative α_k and compare their weighted sums; i.e., to compare $\sum_{k|\alpha_k>0}\hat{\alpha}_k\hat{\beta}_k$ and $\sum_{k|\alpha_k<0}\hat{\alpha}_k\hat{\beta}_k$. If the weighted sum of the instruments with the negative α_k is relatively large, then it is more likely that there are negative weights on the β_l that are important in the overall estimate.

V. Testing the Plausibility of the Identifying Assumptions

The identifying assumptions necessary for consistency are typically not directly testable. However, it is possible to partially assess their plausibility. We focus on the assumptions from Section II; in the context of the canonical setting of estimating the inverse elasticity of labor supply, the identifying assumption is that initial industry composition (Z_{l0}) does not predict innovations to labor supply (ϵ_{lt}).

A. *Empirical Test 1: Correlates of Industry Composition*

It is helpful to explore the relationship between industry composition and location characteristics that may be correlated with innovations to supply shocks. This relationship provides an empirical description of the variation and the types of mechanisms that may be problematic for the exclusion restriction. In particular, the key question researchers should have in mind is whether the correlates of the levels of the shares predict *changes* in the outcome. For the empirical strategy to be valid, it is fine if the level of the correlates are related to the level of the outcome.

Since convention suggests fixing industry shares to an initial time period (Z_{l0}), we recommend considering the correlation with initial period characteristics, as this reflects the instruments' cross-sectional variation. This exercise is instructive for two reasons. First, the correlation in levels helps describe the cross-sectional variation the researcher is using, and so makes the variation more concrete. Second, if Z_{l0} is correlated with factors that predict changes (and not just levels), then this finding hints at omitted variables biasing estimation. Naturally, it is always possible to control for observable confounders, but following the logic of Altonji, Elder, and Taber (2005) and Oster (2019), movements in point estimates when conditioning on observable confounders suggest the potential importance of unobserved confounders. Looking at industries with the largest Rotemberg weights focuses attention on the instruments where confounding variables are most problematic.

One set of controls worth considering is shares at coarser levels. Intuitively, if the industry shares are at the 4-digit level, then it might be that places with different 2-digit compositions are on different trends (i.e., places with more and less manufacturing) and so the shares would not look like valid instruments. The variation in composition within each 2-digit sector (i.e., types of manufacturing) might generate comparisons of places that look more similar in trends.

B. *Empirical Test 2: Pretrends*

In some applications, there is a policy change in period s_0. As we discussed in Section IB, a researcher can use this sharp policy change to implement a

difference-in-differences research design. The analogy to difference-in-differences is most straightforward when the shares are fixed over time. In this case, the industry shares measure the exposure to the policy change, while the national growth rates proxy for the size of the policy change.[13] In these settings, it is natural to test for pretrends. We recommend looking at pretrends in terms of the instruments with the largest Rotemberg weights, as well as looking at pretrends in terms of the overall Bartik instrument. We suspect that researchers will be more comfortable with the plausibility of their empirical design if parallel pretrends are satisfied for the instruments to which their estimates are most sensitive to misspecification.

This test would typically use a measure of industry shares that is fixed in time, prior to the policy change. Analogous to industry shares, it also makes sense to measure controls in the same time period as the industry shares, and interact these time-invariant controls with time fixed effects. The reason to fix controls is that using controls measured after the policy change can biasing estimates by controlling for an intermediate outcome affected by the policy change. For more details on pretrends tests, see DiNardo and Lee (2011). We additionally present examples below.

C. *Empirical Test 3: Alternative Estimators*, *Overidentification Tests*, *and Patterns of Heterogeneity*

So far, we have emphasized that the Bartik estimator combines many moment conditions with a particular weight matrix. In this section, we discuss how researchers can use these moment conditions. Broadly speaking, there are two directions that a researcher can go. Under homogeneous effects, researchers can consider alternative estimators that combine the moment conditions in potentially more efficient ways. Additionally, researchers can use overidentification tests. If alternative estimators yield different estimates and overidentification tests reject, then these findings point to misspecification. In contrast, under heterogeneous effects, each instrument will converge to a different estimate (say, β_k) as discussed in Section IV. Under this assumption, it is important that the patterns of heterogeneity make sense, and we discuss some ways of assessing this.

Homogeneous Effects.—We begin in a world of homogeneous effects. Because the overidentified TSLS estimator (i.e., the one using each industry share as a separate instrument) is biased in finite samples, we encourage researchers to use three alternative estimators which have better properties with many instruments: the Modified Bias-corrected TSLS (MBTSLS) estimator from Anatolyev (2013) and Kolesár et al. (2015), the Limited Information Maximum Likelihood (LIML) estimator, and the HFUL estimator from Hausman et al. (2012). These estimators may not give the same estimates, as their underlying assumptions are different.[14]

[13] Some examples of this include Autor, Dorn, and Hanson (2013) and Lucca, Nadauld, and Shen (2019).

[14] The LIML estimator, as discussed in Hausman et al. (2012), is inconsistent under heteroskedasticity and many instruments. The HFUL estimator is consistent under both heteroskedasticity and many instrument asymptotics, while the literature on MBTSLS has not developed yet under heteroskedasticity. Inference under clustering asymptotics has not, to our knowledge, been worked out for any of these estimators under many instrument asymptotic settings.

Comparing these estimates, along with the Bartik TSLS estimate, provides a useful first pass diagnostic for misspecification concerns. If these estimators agree, then researchers can be more confident in their identifying assumption. In our applications, we follow Kolesár et al. (2015) and interpret differences between HFUL and LIML on the one hand, and MBTSLS and overidentified TSLS on the other, as pointing in the direction of potential misspecification. The reason is that LIML and HFUL are maximum likelihood estimators and so exploit cross-equation restrictions while both MBTSLS and overidentified TSLS are two-step estimators and so do not exploit these cross-equation restrictions.

Overidentification tests provide more formal tests for misspecification. These estimators permit test statistics under different assumptions. For the HFUL estimator, we suggest the overidentification test from Chao et al. (2014); for LIML estimator, we use the Anderson and Rubin (1950) χ^2-test; and for overidentified TSLS, we use the Sargan (1958) χ^2-test. Again, these tests may not give the same results, as their underlying assumptions are different.[15] Conceptually, the overidentification test asks whether the instruments are correlated with the error term beyond what would be expected by chance, and relies on the validity of at least one of the instruments.

Heterogeneous Effects.—When overidentification tests reject, and when HFUL and LIML differ from MBTSLS and Bartik TSLS, under homogeneous effects these findings point to misspecification. An alternative interpretation of these results is that they point to heterogeneous effects of the form we outlined in Section IV. Under these assumptions, researchers may wish to probe the patterns of heterogeneity and see if there is a reasonable interpretation.

We now outline a visual diagnostic to help researchers assess the pattern of heterogeneity. The fundamental feature of the data that illustrates the heterogeneity is to consider the distribution of the just identified IV estimates (i.e., the $\hat{\beta}_k$). In order to visualize this dispersion, we advocate a particular figure. Here we describe the figure and discuss our reasoning, and below we present examples of it (see Figures 1 and 4 and online Appendix Figure A2).[16] Briefly, the x-axis is the first-stage F-statistic and the y-axis is the $\hat{\beta}_k$ associated with each instrument. So as to not visually overstate dispersion, the figure only includes instruments with reasonable first-stage power (in our applications, we plot instruments with first-stage F-statistics greater than 5). To show how the $\hat{\beta}_k$ compare to the Bartik estimate, the figure includes a horizontal line that reflects the overall Bartik estimate. Because first-stage power does not perfectly explain the Rotemberg weights, we weight the individual points of β_k by the absolute size of the α_k from the Bartik Rotemberg weights. Finally, to illustrate the role of negative Rotemberg weights, we shade the points differently depending on the sign of the Rotemberg weights.

[15] Specifically, the Anderson-Rubin and Sargan tests are only valid under homoskedasticity, which is likely not satisfied in this setting. The HFUL overidentification test does require the assumption of homoskedasticity, but is not solved for the general clustering setting. Code to implement the HFUL overid test is available on request and is posted at https://github.com/paulgp/gpss_replication.

[16] Code to create this figure is included in the package that computes the Rotemberg weights and is posted on GitHub and the replication archive.

Researchers can use this figure to think about three questions. First, why do the overidentification tests reject, and what industries drive the rejection? Intuitively, a researcher might be less concerned by a rejection where the β_k are less rather than more dispersed around the Bartik estimate. Similarly, the figure helps isolate which industries are driving the failure of overidentification tests. Researchers should feel comfortable with why the comparisons implied by some instruments are outliers relative to the comparisons implied by other instruments. Second, why does the Bartik estimate end up where it does relative to the underlying β_k? The relative Rotemberg weights help explain why the Bartik estimate lies where it does relative to the underlying distribution. As we emphasized in Section III, a researcher should feel comfortable that the largest Rotemberg weight industries make sense with the causal mechanism in the paper. Third, how plausible is it that there are negative weights on some β_l? Visualizing the industries with the negative Rotemberg weights helps to highlight which industries would potentially generate negative weights on β_l, as we discussed further in Section IV. Naturally, whether the patterns of heterogeneity make sense will rely on application-specific knowledge, and so we view this figure as providing a useful starting point for an application-specific investigation, rather than an ending point.

A Comment on Alternative Approaches to Overidentifying Tests.—An alternative approach to overidentification tests (e.g., by Beaudry, Green, and Sand 2012 and others) is to construct multiple Bartik instruments using different vectors of national growth rates, and then to test whether these different weighted combinations of instruments estimate the same parameter. Often, the correlation between the Bartik instruments constructed with different growth rates is quite low. This fact is interpreted as reassuring because it suggests that exploiting "different sources of variation" gives the same answer.

We recommend instead that researchers use the Rotemberg weights to quantify what variation each Bartik instrument is using, and whether the two Bartik instruments use different sources of variation. Specifically, researchers can report the top-5 Rotemberg weights across the two instruments and also their rank correlation. If these statistics are low, then the two Bartik instruments are likely using different sources of variation and the conclusion discussed above is warranted.[17]

VI. Empirical Example I: Canonical Setting

We now present two empirical examples to make our theoretical ideas concrete, focusing on our empirical tests from Section V (online Appendix Section A presents a third empirical example). Our first example is the canonical setting of estimating the inverse elasticity of labor supply. We begin by reporting the main estimates and

[17] To illustrate the theoretical distinction between looking at correlations between Bartik instruments and comparing Rotemberg weights implied by the two instruments, in online Appendix Section H we produce an example where only one industry has identifying power, but the two instruments are uncorrelated and find the same $\hat{\beta}$. While this example might seem like a theoretical curiosity, in our empirical settings we typically find that a small number of industries provide most of the identifying variation and the variation in the growth rates explains little of the variation in the Rotemberg weights. Hence, there is typically scope for different national growth rates that produce weakly correlated Bartik instruments to rely on the same "identifying variation" (that is, have similar Rotemberg weights).

then report the industries with the highest Rotemberg weight. We then probe the plausibility of the identifying assumption for these instruments.

A. *Dataset and Specification*

We use the 5 percent sample of IPUMS of US Census Data (Ruggles et al. 2015) for 1980, 1990, and 2000 and we pool the 2009–2011 ACSs for 2010. We look at continental US commuting zones (Autor and Dorn 2013) and 3-digit IND1990 industries.[18] In the notation given above, our y variable is earnings growth, and x is employment growth. We use people aged 18 and older who report usually working at least 30 hours per week in the previous year. We fix industry shares at the 1980 values, and then construct the Bartik instrument using 1980 to 1990, 1990 to 2000, and 2000 to 2010 leave-one-out growth rates. To construct the industry growth rates, we weight by employment. We weight all regressions by 1980 population.

We use the leave-one-out means to construct the national growth rates to address the finite sample bias that comes from using own-observation information. Specifically, using own-observation information allows the first stage to load on the idiosyncratic industry-location component of the growth rate, $\tilde{g}_{lk}$, which is endogenous. This finite sample bias is generic to overidentified instrumental variable estimators and is the motivation for jackknife instrument variable estimators (e.g., Angrist, Imbens, and Krueger 1999). In practice, because we have 722 locations, using leave-one-out to estimate the national growth rates matters little in point estimates (compare rows 2 and 3 in Table 3).[19]

B. *Form of Endogeneity that the Instrument Addresses*

OLS is biased but the Bartik instrument is valid when the idiosyncratic industry-location components of growth are correlated with the error term. In this setting, an amenity shock is an example because it would jointly draw people into a location (increasing employment growth in each industry beyond the national average) and directly affect wage growth (i.e., it appears in the error term in the wage equation).

C. *Rotemberg Weights*

We compute the Rotemberg weights of the Bartik estimator with controls, aggregated across time periods. The distribution of sensitivity is skewed, so that a small number of instruments have a large share of the weight. Table 1 shows that the top five instruments account for over 40 percent (0.587/1.368) of the positive weight

[18] There are 228 nonmissing 3-digit IND1990 industries in 1980. There are 722 continental US commuting zones.

[19] In online Appendix Section I, we show that with a leave-one-out estimator of the g_k component, the Rotemberg weights do not sum to 1. In our applications below, when we compute the Rotemberg weights we use simple averages so that the weights sum to 1.

Table 1—Summary of Rotemberg Weights: Canonical Setting

	Sum	Mean	Share		
Panel A. Negative and positive weights					
Negative	−0.368	−0.004	0.212		
Positive	1.368	0.010	0.788		
	$\hat{\alpha}_k$	g_k	$\hat{\beta}_k$	$\hat{F}_k$	$\text{var}(z_k)$
Panel B. Correlations					
$\hat{\alpha}_k$	1				
g_k	−0.015	1			
$\hat{\beta}_k$	0.017	−0.495	1		
$\hat{F}_k$	0.476	−0.032	0.016	1	
$\text{var}(z_k)$	0.549	−0.036	−0.003	0.316	1
	Sum	Mean			
Panel C. Variation across years in $\hat{\alpha}_k$					
1980	0.458	0.002			
1990	0.182	0.001			
2000	0.360	0.002			
	$\hat{\alpha}_k$	g_k	$\hat{\beta}_k$	95 percent CI	Ind. Share
Panel D. Top five Rotemberg weight industries					
Oil + gas extraction	0.229	0.034	1.170	(0.80, 1.90)	0.568
Motor vehicles	0.140	−0.017	1.525	(1.30, 1.90)	1.404
Other	0.091	−0.062	0.759	(0.10, 1.70)	1.697
Guided missiles	0.069	0.047	0.115	(−2.20, 0.70)	0.236
Blast furnaces	0.058	−0.078	1.084	(0.60, 5.10)	0.800
	α-weighted sum	Share of overall β	Mean		
Panel E. Estimates of β_k for positive and negative weights					
Negative	−0.074	−0.061	1.622		
Positive	1.290	1.061	−0.584		

Notes: This table reports statistics about the Rotemberg weights. In all cases, we report statistics about the aggregated weights with normalized growth rates, where we aggregate a given industry across years as discussed in Section IIIC and normalize growth rates to the per-period average as discussed in Section IIIB. Panel A reports the share and sum of negative weights. Panel B reports correlations between the weights ($\hat{\alpha}_k$), the national component of growth (g_k), the just-identified coefficient estimates ($\hat{\beta}_k$), the first-stage *F*-statistic of the industry share ($\hat{F}_k$), and the variation in the industry shares across locations ($\text{var}(z_k)$). Panel C reports variation in the weights across years. Panel D reports the top five industries according to the Rotemberg weights. The g_k is the national industry growth rate, $\hat{\beta}_k$ is the coefficient from the just-identified regression, the 95 percent confidence interval is the weak instrument robust confidence interval using the method from Chernozhukhov and Hansen (2008) over a range from −10 to 10, and *Ind. Share* is the industry share (multiplied by 100 for legibility). Panel E reports statistics about how the values of $\hat{\beta}_k$ vary with the positive and negative Rotemberg weights. The Other industry is the N/A code in the IND1990 classification system and includes full-time military personnel.

in the estimator.[20] These top five instruments are: oil and gas extraction, motor vehicles, other,[21] guided missiles, and blast furnaces.

These weights give a way of describing the research design that reflects the variation in the data that the estimator is using, and hence makes concrete for the reader what types of deviations from the identifying assumption are likely to be important. In this canonical setting, one of the important comparisons is across places with greater and smaller shares of oil and gas extraction. Hence, the estimate is very sensitive to deviations from the identifying assumption related to geographic variation in employment share in oil and gas extraction. Interestingly, a common short-hand to talk about Bartik is to discuss the fate of the automobile industry (e.g., Bound and Holzer 2000), and this analysis confirms that the motor vehicle industry plays a large role in the Bartik instrument.

Finally, panel B shows that the national growth rates are weakly correlated with the sensitivity-to-misspecification elasticities. Hence, the growth rates provide a poor guide to understanding what variation in the data drives estimates. In contrast, the elasticities are quite related to the variation in the industry shares across locations ($\text{var}(z_{lk})$). This observation explains why the industries with high weight tend to be tradables: almost by definition, tradables have industry shares that vary across locations, while nontradables do not.[22]

D. *Discussion of the Identifying Assumption in Terms of the Shares*

As we discussed in Section II, a heuristic for figuring out which identifying assumption researchers have in mind is whether they mention particular industries. It is common in the canonical setting to discuss particular industries (e.g., as mentioned above, Bound and Holzer 2000 discusses the automobile industry). Hence, we think that in many settings researchers have in mind this differential exposure design.

E. *Testing the Plausibility of the Identifying Assumption*

Test 1: Correlates of 1980 Industry Shares.—Table 2 shows the relationship between 1980 characteristics of commuting zones and the share of the top 5 industries in Table 1, as well the overall Bartik instrument using 1980 to 1990 growth rates. First, the R^2 in these regressions are quite high: for example, we can explain 46 percent of the variation in share of the Other industry via our covariates. Second, Other, oil and gas extraction, blast furnaces, and the overall Bartik instrument are statistically significantly correlated with the share of native-born workers. The complement of the native-born share is the immigrant share. In the immigrant enclave literature, and under the shares interpretation, the

[20] The calculation is to sum the five $\hat{\alpha}_k$: $0.229 + 0.14 + 0.091 + 0.069 + 0.058 = 0.587$ and divide by the total positive weight 1.368.

[21] The Other industry is the N/A code in the IND1990 classification system. Our understanding is that in 1980 the Other code includes full-time military personnel. Hence, in 1990 and 2000, we place full-time military personnel in the Other category to compute growth rates.

[22] This logic is the basis of Jensen and Kletzer's (2005) measure of the offshorability of services; as Jensen and Kletzer (2005) recognizes, there are other reasons for concentration besides tradability.

Table 2—Relationship between Industry Shares and Characteristics: Canonical Setting

	Oil and gas extraction	Motor vehicles	Other	Guided missiles	Blast furnaces	Bartik (1980 shares)
Male	1.319	−0.501	4.076	0.126	0.344	−0.178
	(0.242)	(0.160)	(0.600)	(0.063)	(0.159)	(0.035)
White	0.043	−0.714	−1.310	0.057	−0.681	−0.088
	(0.102)	(0.653)	(0.281)	(0.043)	(0.256)	(0.029)
Native born	0.364	−0.129	0.824	−0.157	−0.312	−0.172
	(0.092)	(0.110)	(0.281)	(0.133)	(0.129)	(0.019)
12th grade only	−1.096	1.283	1.040	−0.193	0.202	0.036
	(0.218)	(0.392)	(0.356)	(0.091)	(0.150)	(0.030)
Some college	−0.311	0.687	1.060	0.033	−0.808	0.376
	(0.143)	(0.520)	(0.288)	(0.072)	(0.254)	(0.042)
Veteran	−0.295	0.895	−5.793	0.202	2.526	0.000
	(0.227)	(0.917)	(0.879)	(0.126)	(0.714)	(0.072)
Number of children	−0.043	0.954	−2.409	−0.006	0.003	−0.070
	(0.142)	(0.538)	(0.558)	(0.047)	(0.223)	(0.034)
R^2	0.24	0.08	0.46	0.27	0.23	0.77
Observations	722	722	722	722	722	722

Notes: Each column reports results of a single regression of a 1980 industry share on 1980 characteristics. The final column is the Bartik instrument constructed using the growth rates from 1980 to 1990. Results are weighted by 1980 population. Standard errors in parentheses. The Other industry is the N/A code in the IND1990 classification system and includes full-time military personnel.

immigrant share is used to predict inflows of immigrants, which are interpreted as labor supply shocks. Hence, an industry share which is interpreted as predicting labor demand shocks is correlated with something that also predicts labor supply shocks.

Test 2: Parallel Pretrends.—We note that in this setting there is no pre-period and so it is not possible to test for parallel pretrends without further assumptions.

Test 3: Alternative Estimators and Overidentification Tests.—Rows 1, 2, and 3 of Table 3 report the OLS and IV estimates (row 2 leaves out the own-CZ growth rate to construct the instrument, while row 3 uses all CZs to construct the growth rates), with and without for the 1980 covariates as controls and makes two main points. First, the IV estimates are bigger than the OLS estimates. Second, the Bartik results are sensitive to the inclusion of controls, though these are not statistically distinguishable.

Rows 4–7 of Table 3 report alternative estimators as well as overidentification tests. We focus on column 2, where we control for covariates. TSLS with the Bartik instrument and LIML are quite similar. This finding is typically viewed as reassuring. In contrast, overidentified TSLS and MBTSLS are similar, while HFUL is substantially larger. The different point estimates suggest the presence of misspecification. In column 4, we see that the overidentification tests reject the null that all instruments are exogenous, which also points to misspecification.

Table 3—OLS and IV Estimates: Canonical Setting

	Δ Emp		Coefficient equal	Over ID test
	(1)	(2)	(3)	(4)
OLS	0.71	0.63	[0.04]	
	(0.06)	(0.07)		
TSLS (leave-out Bartik)	1.76	1.28	[0.23]	
	(0.33)	(0.42)		
TSLS (Bartik)	1.65	1.22	[0.19]	
	(0.34)	(0.15)		
TSLS	0.74	0.67	[0.10]	1,014.05
	(0.05)	(0.07)		[0.00]
MBTSLS	0.76	0.69	[0.13]	
	(0.06)	(0.07)		
LIML	1.60	1.42	[0.76]	2,820.96
	(0.00)	(0.57)		[0.00]
HFUL	2.85	2.69	[0.00]	804.19
	(0.14)	(0.13)		[0.00]
Year and CZone FE	Yes	Yes		
Controls	No	Yes		
Observations	2,166	2,166		

Notes: This table reports a variety of estimates of the inverse elasticity of labor supply. The regressions are at the commuting zone level and the instruments are 3-digit industry-time periods (1980–1990, 1990–2000, and 2000–2010). Column 1 does not contain controls, while column 2 does. The *TSLS* (*Bartik*) row uses the Bartik instrument. The *TSLS* row uses each industry share (times time period) separately as instruments. The *MBTSLS* row uses the estimator of Anatolyev (2013) and Kolesár et al. (2015) with the same set of instruments. The *LIML* row shows estimates using the limited information maximum likelihood estimator with the same set of instruments. Finally, the *HFUL* row uses the HFUL estimator of Hausman et al. (2012) with the same set of instruments. The *J*-statistic for HFUL comes from Chao et al. (2014). The *p*-value for the equality of coefficients compares the adjacent columns with and without controls. The controls are the 1980 characteristics (interacted with time) displayed in Table 2. Results are weighted by 1980 population. Standard errors are in parentheses and are constructed by bootstrap over commuting zones. *p*-values are in brackets.

Visualizing the Overidentification Tests.—If one wishes to interpret the failure of the overidentification tests as pointing to heterogeneity of the form outlined in Section IV rather than as evidence of misspecification, then Figure 1 shows some of the heterogeneity in treatment effects underlying the overall Bartik estimate (online Appendix Figure A5 shows the relationship between the Rotemberg weights and the first-stage *F*-statistic). First, the figure shows that among the "high-powered" (i.e., those with a first-stage *F*-statistic above 5) industries, there is substantial dispersion around the Bartik $\hat{\beta}$. Second, the largest weight industries do tend to be closest to the overall Bartik $\hat{\beta}$. Third, if a researcher wishes to adopt a heterogeneous effects interpretation of the rejection of the null in the overidentification tests, then the patterns of heterogeneity suggest that there are likely to be negative weights on some of the underlying location-specific coefficients. In particular, there is substantial dispersion in the $\hat{\beta}_k$ and some of the outlier $\hat{\beta}_k$ have negative weights. Thus, the underlying location-specific effects (the β_l) that lead to a negative coefficient likely receive negative weights so that the overall Bartik estimate does not reflect convex weights. To see this more generally, panel E of Table 1 shows that the mean of

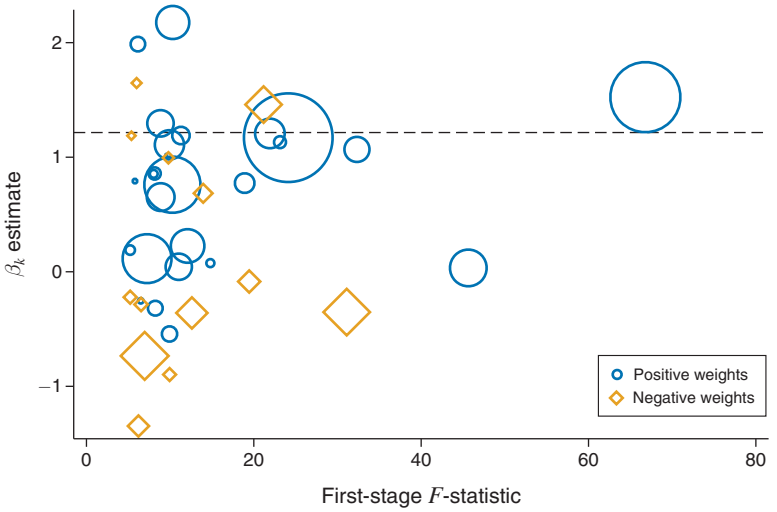

FIGURE 1. HETEROGENEITY OF β_k: CANONICAL SETTING

Notes: This figure plots the relationship between each instruments' $\hat{\beta}_k$, first-stage F-statistics, and the Rotemberg weights. Each point is a separate instrument's estimates (industry share). The figure plots the estimated $\hat{\beta}_k$ for each instrument on the y-axis and the estimated first-stage F-statistic on the x-axis. The size of the points are scaled by the magnitude of the Rotemberg weights, with the circles denoting positive Rotemberg weights and the diamonds denoting negative weights. The horizontal dashed line is plotted at the value of the overall $\hat{\beta}$ reported in the second column in the *TSLS* (*Bartik*) row in Table 3. The figure excludes instruments with first-stage F-statistics below 5.

the β_k among the negative weight industries is very different than the mean of the β_k among the industries with positive weights.

VII. Empirical Example II: Immigrant Enclave

For our second empirical example, we estimate the (negative) inverse elasticity of substitution between immigrants and natives following Card (2009). In particular, we focus on the results in Table 6 of that paper (in particular columns 3 and 7), which provides two sets of results: one for high-school equivalent workers, and one for college equivalent workers.

A. *Dataset and Specification*

We use the 5 percent sample of US Census data for 1980, 1990, and 2000 and following Card (2009) use the ICPSR version (US Census Bureau 2000).[23] It is helpful to convert Card's (2009) specification into our notation. The paper is interested in a regression:

$$y_{lj} = \beta_0 + \beta \ln x_{lj} + \beta_2 \mathbf{X}_l + \epsilon_{lj}, \tag{11}$$

[23] To build the dataset, we use code provided by Card (2019).

where l is a location (a city) and j is a skill group (either high school or college equivalent). Here, y_{lj} is the residual log wage gap between immigrant and native men in skill group j, x_{lj} is the ratio of immigrant to native hours in skill group j (of both men and women), and $\mathbf{X}_l$ is a vector of city-level controls. Hence, β is the (negative) inverse elasticity of substitution between immigrants and natives in the relevant skill group. Unlike other examples, the controls do not include place and time fixed effects because the paper considers a single cross section of outcomes in 2000 in 124 cities. The paper does, however, explore robustness to including the lagged dependent variable.

The first stage is

$$\ln x_{lj} = \gamma_0 + \gamma_1 B_{lj} + \gamma_2 \mathbf{X}_l + \eta_l , \tag{12}$$

where $B_{lj} = \sum_k z_{lk,1980}\, g_{kj}$. Here, $z_{lk,1980} = \left(N_{lk,1980}/N_{k,1980}\right) \times \left(1/P_{l,2000}\right)$, where $N_{k,1980}$ is the number of immigrants from 1 of 38 country (groups) k in the United States in 1980, $N_{lk,1980}$ is the number of immigrants from country (group) k in location l in 1980, and $P_{l,2000}$ is the population of location l in 2000. Here, g_{kj} is the number of people arriving in the United States from 1990 to 2000 from country (group) k and skill group j. Notice that the shares, the immigrant enclave, are not skill-specific, while the shocks, the immigrant inflows, are skill-specific. Relative to our other examples, the shares do not sum to 1 within a location.

B. *Form of Endogeneity that the Instrument Addresses*

A form of endogeneity that the instrument addresses is a positive labor demand shock that draws immigrants into a location disproportionately relative to natives: a positive labor demand shock to immigrants will increase ϵ_{lj} (relative earnings) as well as x_{lk} (relative supply).

C. *Rotemberg Weights*

In this setting, there are 38 country groups. For high school equivalent workers, panel A of Table 4 shows that the top country is Mexico, which by itself receives almost one-half of the weight, and the top five countries (in order: Mexico, El Salvador, Philippines, China, and country group of West Europe, Israel, Cyprus, Australia, and New Zealand) get almost two-thirds of the overall weight. The large weight on Mexico is perhaps unsurprising. Indeed, Card (2009) emphasizes that one might be concerned that for high-school equivalent workers the instrument is largely just initial Mexican immigrant shares. Unlike in the other examples, all the weights are positive. One reason the weights accord so closely with intuition is that for this instrument the weights are almost perfectly explained by the shocks, the immigrant inflows. Panel AII shows that the correlation between the weights and the g_k is 0.991, which is dramatically higher than in the other examples.

For college equivalent workers, panel B of Table 4 shows that the top five sending countries receive almost one-half (45 percent) of the weight and all the weights are

TABLE 4—SUMMARY OF ROTEMBERG WEIGHTS: IMMIGRANT ENCLAVE

Panel A. High school equivalent	$\hat{\alpha}_k$	g_k	$\hat{\beta}_k$	$\hat{F}_k$	var(z_k)
I. Correlations					
$\hat{\alpha}_k$	1				
g_k	0.991	1			
$\hat{\beta}_k$	0.169	0.164	1		
$\hat{F}_k$	0.203	0.173	0.181	1	
var(z_k)	0.043	−0.032	−0.106	−0.260	1
	$\hat{\alpha}_k$	g_k	$\hat{\beta}_k$	95 percent CI	
II. Top five Rotemberg weight origin countries					
Mexico	0.482	4.95e+06	−0.026	(−0.040, 0.000)	
El Salvador	0.054	4.65e+05	−0.046	(−0.070, −0.030)	
Philippines	0.050	5.31e+05	−0.023	(−0.040, 0.130)	
China	0.038	4.28e+05	−0.041	(−0.070, −0.010)	
West Europe and others	0.031	6.41e+05	−0.067	(−0.110, −0.050)	

Panel B. College equivalent	$\hat{\alpha}_k$	g_k	$\hat{\beta}_k$	$\hat{F}_k$	var(z_k)
I. Correlations					
$\hat{\alpha}_k$	1				
g_k	0.766	1			
$\hat{\beta}_k$	0.293	0.255	1		
$\hat{F}_k$	−0.028	−0.055	0.230	1	
var(z_k)	0.033	−0.381	−0.075	−0.225	1
	$\hat{\alpha}_k$	g_k	$\hat{\beta}_k$	95 percent CI	
II. Top five Rotemberg weight origin countries					
Philippines	0.151	6.32e+05	−0.065	(−0.125, −0.040)	
Mexico	0.102	5.44e+05	−0.062	(−0.095, 0.000)	
China	0.082	3.74e+05	−0.084	(−0.125, −0.060)	
West Europe and others	0.066	5.31e+05	−0.090	(−0.145, −0.065)	
Cuba	0.049	1.86e+05	−0.008	(−0.045, 0.500)	

Notes: This table reports statistics about the Rotemberg weights, which are all positive in this application. Panels AI and BI report correlations between the weights $(\hat{\alpha}_k)$, the national component of growth (g_k), the just-identified coefficient estimates $(\hat{\beta}_k)$, the first-stage F-statistics $(\hat{F}_k)$, and the variation in the origin country shares across locations (var(z_k)). Panels AII and BII report the top five origin countries according to the Rotemberg weights. The *Others* are Australia, Cyprus, Israel, and New Zealand. The g_k is the number of immigrants from 1990 to 2000, $\hat{\beta}_k$ is the coefficient from the just-identified regression, the 95 percent confidence interval is the weak instrument robust confidence interval using the method from Chernozhukhov and Hansen (2008) over a range from −10 to 10.

positive. The top five countries are similar to the high-school equivalent workers, with El Salvador replaced by Cuba. The top country is the Philippines, with 15 percent of the weight. Relative to our other examples, the shocks have much more explanatory power for the weights (the shocks explain about 60 percent $(= 0.766^2)$ of the weights), though this explanatory power is lower than for the high-school equivalent workers.

D. *Discussion of the Identifying Assumption in Terms of the Shares*

We think that it is typically reasonable to interpret the immigrant enclave setting as having an identifying assumption in terms of the shares. The Card (2009) setting considers a single cross section but emphasizes the analogy to difference-in-differences by showing robustness to controlling for the lagged dependent variable so that the effect of the instrument is similar to changes. More broadly, a natural way to think of the immigrant enclave instrument is that in any period there are immigrants arriving from different countries and this then naturally affects places differently. For example, even though in Card (1990) the boatlift was not caused by trends in Miami, the shock only hits Miami because of the strong "pull" factor of the immigrant enclave and the discussion of identification is thus about whether Miami would counterfactually have evolved similarly to places without an existing stock of Cuban immigrants. We view it is as reasonable to interpret the immigrant enclave instrument, especially when applied to a particular time period, as pooling this logic. Hence, a researcher should explain and defend why places with different initial stocks of immigrants would have counterfactually evolved in a similar way.

If a researcher does not feel comfortable embracing the shares view, then it is important to understand what the shocks view means in this setting. To embrace the shocks view of identification in the immigrant enclave setting requires not only that there are random "push" factors, but also that there are enough independent push factors that the endogeneity of the shares averages out. Making this case typically requires a large number of independent "push" factors.

E. *Testing the Plausibility of the Identifying Assumption*

Test 1: Correlates of 1980 Origin Country Shares.—Table 5 shows the relationship between the 1980 covariates used in Card (2009) and the top origin countries reported in Table 4. First, similar to the canonical setting, the characteristics explain a fair amount of the cross-sectional variation in the shares, especially for the overall instrument. Second, and related to the canonical setting, we tend not to find a significant relationship between manufacturing share and any of the individual country shares or the aggregate instruments (the only exception is *West Europe and others*).

Test 2: Parallel Pretrends.—We construct our pretrend figures using the reduced-form regression of equations (11) and (12) with their 1980, 1990, and 2000 values (that is, we include all the controls in Card 2009 in Table 6, columns 3 and 7 and re-estimate year-by-year).[24] Hence, the 2000 coefficient corresponds to the reduced-form coefficient estimated in Table 6.

Figure 2 shows that for the high school equivalent native-immigrant wage gap, the variation in 1980 shares of Mexican immigrants did not predict statistically or economically larger wage gaps in 1980 or 1990. That is, conditional on controls, the figures suggest that there was a shock in the 1990s that led to a widening gap

[24] Because of the structure of the data and the specification in Card (2009), it is not feasible to fix controls in each time period as we discuss in Section VB.

Table 5—Relationship between Origin Country Shares and Characteristics: Immigrant Enclave

	Mexico	Philippines	El Salvador	China	Cuba	West Europe and others	Bartik high school	Bartik college
City size	0.054	0.026	0.106	0.057	0.049	0.039	0.059	0.023
	(0.018)	(0.021)	(0.027)	(0.019)	(0.060)	(0.009)	(0.009)	(0.004)
College share	−0.545	0.559	0.692	1.318	−0.828	0.530	−0.021	0.157
	(0.370)	(0.416)	(0.554)	(0.389)	(1.206)	(0.175)	(0.189)	(0.072)
Mean wage residuals for all natives	0.601	−0.428	0.595	−0.212	−0.199	0.052	0.267	0.041
	(0.388)	(0.437)	(0.582)	(0.408)	(1.266)	(0.184)	(0.199)	(0.076)
Mean wage residuals for all immigrants	−0.652	0.596	−0.856	0.152	−0.079	−0.209	−0.385	−0.061
	(0.361)	(0.406)	(0.540)	(0.379)	(1.175)	(0.170)	(0.185)	(0.070)
Mfg. share	0.059	−0.379	0.268	−0.192	−0.653	0.230	−0.006	−0.010
	(0.202)	(0.228)	(0.303)	(0.213)	(0.660)	(0.096)	(0.104)	(0.039)
Observations	124	124	124	124	124	124	124	124
R^2	0.150	0.095	0.216	0.246	0.020	0.294	0.371	0.430

Notes: Each column reports results of a single regression of a 1980 origin country share on 1980 characteristics. Results are weighted by 1990 population. Standard errors in parentheses. For legibility, coefficients and standard errors of the first six columns are multiplied by 10,000,000. Coefficients and standard errors of the last two columns are not scaled. The *Others* are Australia, Cyprus, Israel, and New Zealand.

in 2000. Given the large weight on Mexico, it is not surprising that the aggregate instrument looks like Mexico. Perhaps more surprisingly, all the other countries look similar to Mexico.

Figure 3 shows less reassuring patterns for the college equivalent regressions. To take the Philippines (the highest weight instrument) as an example, the 1980 variation in the share of people from the Philippines implies as large an effect of the native-immigrant ratio on the native-immigrant wage gap in 1980 and 1990 as in 2000. That is, there is no evidence of change in 2000. Similarly, for other countries there are statistically significant pretrends. This evidence is consistent with the argument in Jaeger, Ruist, and Stuhler (2019) that the immigrant inflows are typically serially correlated and so the immigrant enclave instrument does not generate a well-defined shock to the supply of immigrants.

Test 3: Alternative Estimators and Overidentification Tests.—Panel A of Table 6 shows the results of alternative estimators and some overidentification tests for high school equivalent workers. Unlike in our other examples, the results are quite stable across estimators, with Bartik, overidentified TSLS, LIML, and MBTSLS all giving the same point estimate (HFUL, in contrast, is quite different). Similarly, the overidentification tests on the overidentified TSLS estimator fail to reject (though on LIML it does). This result can be approximately anticipated from Table 4 where the β_k on each individual instrument are quite similar.

Panel B of Table 6 shows that the results are broadly similar for college equivalent workers. Namely, the results are quite stable across estimators and the overidentification test fails to reject for both TSLS and LIML. Again, this result can be approximately anticipated from Table 4.

Table 6—OLS and IV Estimates: Immigrant Enclave

	Δ Emp		Coefficients equal	Over ID test
	(1)	(2)	(3)	(4)
Panel A. High school equivalent				
OLS	−0.02	−0.03	[0.00]	
	(0.01)	(0.01)		
TSLS (Bartik)	−0.02	−0.04	[0.07]	
	(0.01)	(0.01)		
TSLS	−0.02	−0.04	[0.02]	43.30
	(0.01)	(0.01)		[0.22]
MBTSLS	−0.03	−0.04	[0.08]	
	(0.01)	(0.01)		
LIML	−0.03	−0.04	[0.06]	73.16
	(0.01)	(0.01)		[0.00]
HFUL	0.03	0.02	[0.26]	82.45
	(0.01)	(0.00)		[0.00]
Panel B. College equivalent				
OLS	−0.06	−0.06	[0.65]	
	(0.01)	(0.01)		
TSLS (Bartik)	−0.08	−0.08	[0.93]	
	(0.01)	(0.01)		
TSLS	−0.06	−0.06	[0.71]	35.54
	(0.01)	(0.01)		[0.54]
MBTSLS	−0.06	−0.07	[0.71]	
	(0.01)	(0.01)		
LIML	−0.06	−0.06	[0.72]	33.67
	(0.01)	(0.01)		[0.63]
HFUL	0.04	0.04	[0.23]	67.95
	(0.01)	(0.00)		[0.00]
Controls	No	Yes		
Observations	124	124		

Notes: This table reports a variety of estimates of the negative of the inverse elasticity of substitution between immigrants and natives. The regressions are at the city level and include a single time period (2000). The *TSLS* row is our replication of column 3 and column 7 of Table 6 in Card (2009). Column 1 does not contain controls, while column 2 does. The *TSLS* (*Bartik*) row uses the Bartik instrument. The *TSLS* row uses each origin country share separately as instruments. The *MBTSLS* row uses the estimator of Anatolyev (2013) and Kolesár et al. (2015) with the same set of instruments. The *LIML* row shows estimates using the limited information maximum likelihood estimator with the same set of instruments. Finally, the *HFUL* row uses the HFUL estimator of Hausman et al. (2012) with the same set of instruments. The *J*-statistic for HFUL comes from Chao et al. (2014). The *p*-value for the equality of coefficients compares the adjacent columns with and without controls. The controls are the contemporaneous characteristics displayed in Table 5. Results are weighted by 1990 population. Standard errors are in parentheses and are constructed by bootstrap over commuting zones. *p*-values are in brackets.

Visualizing the Overidentification Tests.—Given that for several of the estimators the overidentification tests fail to reject, it is not surprising that visually there is not a great deal of dispersion in the point estimates across instruments. Figure 4 shows the heterogeneity in the $\hat{\beta}_k$ and the relationship to the first stage *F*-statistic. To compare to our other examples, note that the *y*-axis is dramatically compressed. Moreover, the high-weight industries are all very close to the overall estimate.

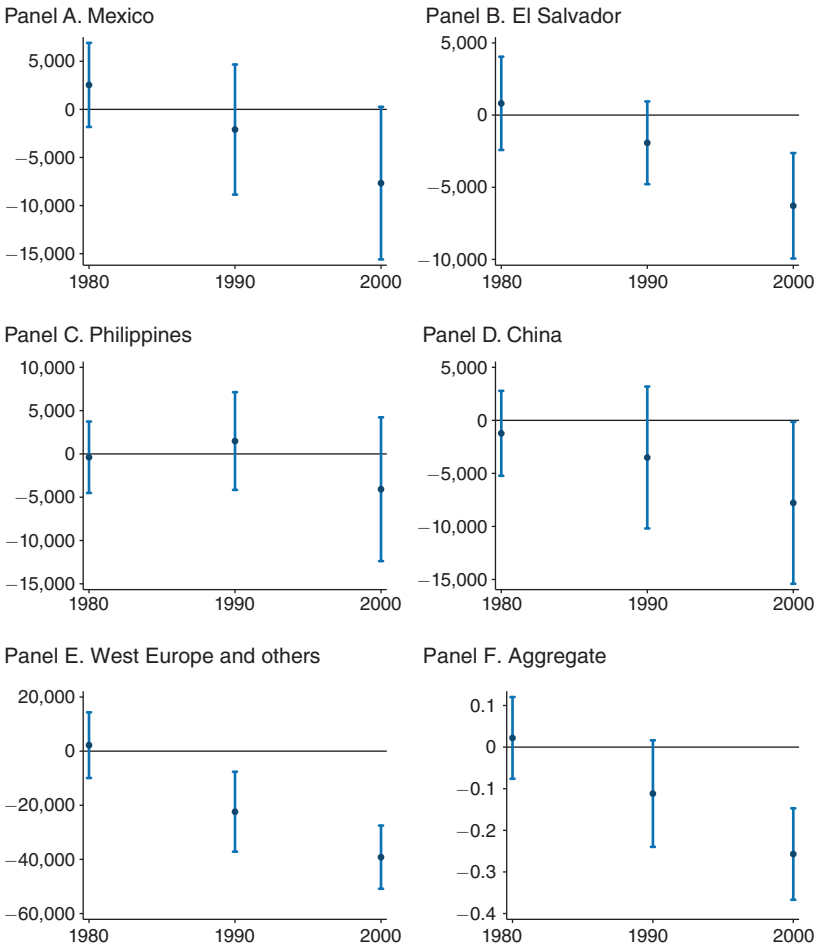

FIGURE 2. PRETRENDS FOR HIGH ROTEMBERG WEIGHT ORIGIN COUNTRIES: IMMIGRANT ENCLAVE, HIGH SCHOOL EQUIVALENT

Notes: These figures report pretrends for the overall instrument and the top-5 Rotemberg weight origin countries as reported in panel B of Table 4. The coefficients are estimated using the reduced-form regression of equations (11) and (12) with their 1980, 1990, and 2000 values (that is, we include all the controls in Card 2009 in Table 6, columns 3 and 7, and re-estimate year-by-year). Hence, the 2000 coefficient corresponds to the reduced-form coefficient estimated in Table 6. The *Others* are Cyprus, New Zealand, Israel, and Australia.

VIII. Summary

The central contribution of this paper revolves around understanding identification and the Bartik instrument. Our first set of formal results relate to identification in the sense typically used by econometricians. We show that Bartik is numerically equivalent to a GMM estimator with the industry shares as instruments. We use this equivalence to argue that in many settings the way to interpret the research design implicit in a Bartik instrument is a pooled exposure design. The shares measure the differential exposure to common shocks (the national growth rates), and so the relevant identification assumption, familiar from difference-in-differences, is that there are no other shocks correlated with this differential exposure.

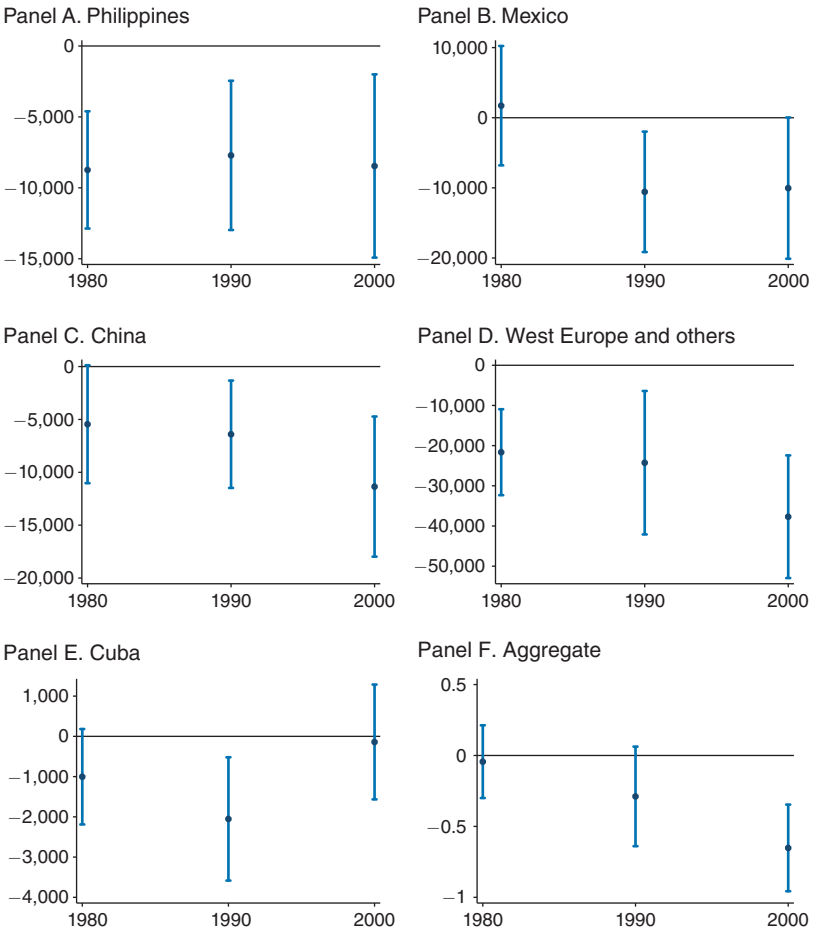

FIGURE 3. PRETRENDS FOR HIGH ROTEMBERG WEIGHT ORIGIN COUNTRIES: IMMIGRANT ENCLAVE, COLLEGE EQUIVALENT

Notes: These figures report pretrends for the overall instrument and the top-5 Rotemberg weight origin countries as reported in panel B of Table 4. The coefficients are estimated using the reduced-form regression of equations (11) and (12) with their 1980, 1990, and 2000 values (that is, we include all the controls in Card 2009 in Table 6, columns 3 and 7, and re-estimate year-by-year). Hence, the 2000 coefficient corresponds to the reduced-form coefficient estimated in Table 6. The *Others* are Cyprus, New Zealand, Israel, and Australia.

Our second set of formal results relates to identification in the sense often used by practitioners: we show how to compute which of the many instruments "drive" the estimates. Building on Andrews, Gentzkow, and Shapiro (2017) we show that these weights can be interpreted as sensitivity-to-misspecification elasticities and so highlight which identifying assumptions are most worth discussing and probing.

We then elaborated on a number of specification tests that researchers can carry out, and illustrated these tests through a number of applications. Our results clarify the set of reasonable concerns a consumer of the Bartik literature should have. We hope that researchers will use the results and tools in this paper to be clearer about how identification works in their papers, both in the econometric sense of stating the identifying assumption and in the practical sense of showing what variation drives estimates.

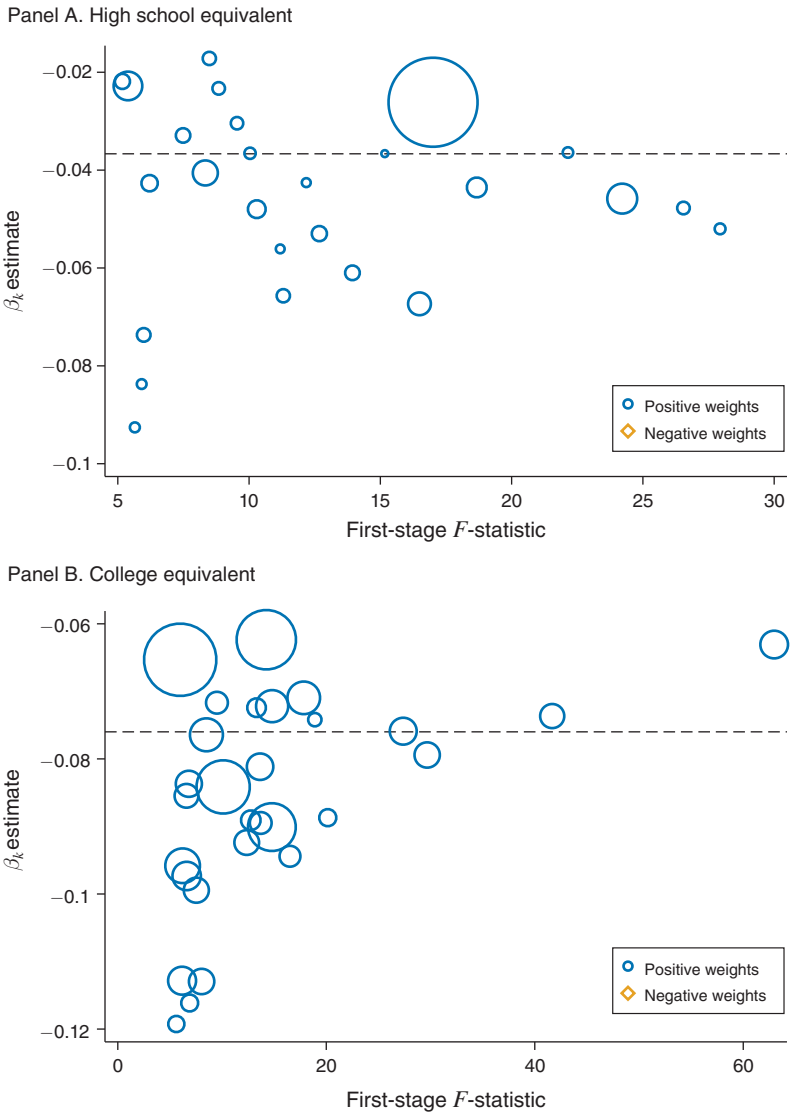

FIGURE 4. HETEROGENEITY OF β_k: IMMIGRANT ENCLAVE

Notes: This figure plots the relationship between each instruments' $\hat{\beta}_k$, first-stage F-statistics and the Rotemberg weights. Each point is a separate instrument's (country of origin) estimates. The figure plots the estimated $\hat{\beta}_k$ for each instrument on the y-axis and the estimated first-stage F-statistic on the x-axis. The size of the points are scaled by the magnitude of the Rotemberg weights, with the circles denoting positive Rotemberg weights and the diamonds denoting negative weights. The horizontal dashed line is plotted at the value of the overall $\hat{\beta}$ reported in the second column in the *TSLS* (*Bartik*) row in Table 6. The figure excludes instruments with first-stage F-statistics below 5.

REFERENCES

Acemoglu, Daron, and Joshua Linn. 2004. "Market Size in Innovation: Theory and Evidence from the Pharmaceutical Industry." *Quarterly Journal of Economics* 119 (3): 1049–90.

Adao, Rodrigo, Michal Kolesár, and Eduardo Morales. 2019. "Shift-Share Designs: Theory and Inference." *Quarterly Journal of Economics* 134 (4): 1949–2010.

Altonji, Joseph G., Todd E. Elder, and Christopher R. Taber. 2005. "Selection on Observed and Unobserved Variables: Assessing the Effectiveness of Catholic Schools." *Journal of Political Economy* 113 (1): 151–84.

Anatolyev, Stanislav. 2013. "Instrumental Variables Estimation and Inference in the Presence of Many Exogenous Regressors." *Econometrics Journal* 16 (1): 27–72.

Anderson, T. W., and Herman Rubin. 1950. "The Asymptotic Properties of Estimates of the Parameters of a Single Equation in a Complete System of Stochastic Equations." *Annals of Mathematical Statistics* 21 (4): 570–82.

Andrews, Isaiah. 2019. "On the Structure of IV Estimands." *Journal of Econometrics* 211 (1): 294–307.

Andrews, Isaiah, Matthew Gentzkow, and Jesse M. Shapiro. 2017. "Measuring the Sensitivity of Parameter Estimates to Estimation Moments." *Quarterly Journal of Economics* 132 (4): 1553–92.

Angrist, Joshua D., Guido W. Imbens, and Alan B. Krueger. 1999. "Jackknife Instrumental Variables Estimation." *Journal of Applied Econometrics* 14 (1): 57–67.

Autor, David, and David Dorn. 2013. "Replication Data for: The Growth of Low Skill Service Jobs and the Polarization of the U.S. Labor Market." American Economic Association [publisher]. https://www.ddorn.net/data.htm. Last accessed February 22, 2020 [distributor].

Autor, David H., David Dorn, and Gordon H. Hanson. 2013. "The China Syndrome: Local Labor Market Effects of Import Competition in the United States." *American Economic Review* 103 (6): 2121–68.

Bartik, Timothy J. 1991. *Who Benefits from State and Local Economic Development Policies?* Kalamazoo, MI: W.E. Upjohn Institute.

Baum-Snow, Nathaniel, and Fernando Ferreira. 2015. "Causal Inference in Urban and Regional Economics." In *Handbook of Regional and Urban Economics*, Vol. 5, edited by Gilles Duranton, J. Vernon Henderson, and William C. Strange, 3–68. Amsterdam: Elsevier.

Beaudry, Paul, David A. Green, and Benjamin Sand. 2012. "Does Industrial Composition Matter for Wages? A Test of Search and Bargaining Theory." *Econometrica* 80 (3): 1063–1104.

Blanchard, Olivier Jean, and Lawrence F. Katz. 1992. "Regional Evolutions." *Brookings Papers on Economic Activity* (1).

Borusyak, Kirill, Peter Hull, and Xavier Jaravel. 2019. "Quasi-Experimental Shift-Share Research Designs." Unpublished.

Bound, John, and Harry J. Holzer. 2000. "Demand Shifts, Population Adjustments, and Labor Market Outcomes during the 1980s." *Journal of Labor Economics* 18 (1): 20–54.

Card, David. 1990. "The Impact of the Mariel Boatlift on the Miami Labor Market." *Industrial and Labor Relations Review* 43 (2): 245–57.

Card, David. 2009. "Immigration and Inequality." *American Economic Review* 99 (2): 1–21.

Card, David. 2019. "Code to Build Datasets Underlying Card (2009)." Unpublished code.

Chao, John C., Jerry A. Hausman, Whitney K. Newey, Norman R. Swanson, and Tiemen Woutersen. 2014. "Testing Overidentifying Restrictions with Many Instruments and Heteroskedasticity." *Journal of Econometrics* 178 (1): 15–21.

Chernozhukhov, Victor, and Christian Hansen. 2008. "The Reduced Form: A Simple Approach to Inference with Weak Instruments." *Economics Letters* 100 (1): 68–71.

Christian, Paul, and Christopher B. Barrett. 2017. "Revisiting the Effect of Food Aid on Conflict: A Methodological Caution." World Bank Policy Research Working Paper 8171.

Conley, Timothy G., Christian B. Hansen, and Peter E. Rossi. 2012. "Plausibly Exogenous." *Review of Economics and Statistics* 94 (1): 260–72.

DiNardo, John, and David S. Lee. 2011. "Program Evaluation and Research Designs." In *Handbook of Labor Economics*, Vol. 4A, edited by Orley Ashenfelter and David Card, 463–536. Amsterdam: Elsevier.

Freeman, Richard B. 1980. "An Empirical Analysis of the Fixed Coefficient 'Manpower Requirements' Model, 1960–1970." *Journal of Human Resources* 15 (2): 176–99.

Goldsmith-Pinkham, Paul, Isaac Sorkin, and Henry Swift. 2020. "Replication Data for: Bartik Instruments: What, When, Why, and How." American Economic Association [publisher], Inter-university Consortium for Political and Social Research [distributor]. https://doi.org/10.3886/E117405V1.

Greenstone, Michael, Alexandre Mas, and Hoai-Luu Nguyen. 2020. "Do Credit Market Shocks Affect the Real Economy? Quasi-Experimental Evidence from the Great Recession and 'Normal' Economic Times." *American Economic Journal: Economic Policy* 12 (1): 200–25.

Hausman, Jerry A., Whitney K. Newey, Tiemen Woutersen, John C. Chao, and Norman R. Swanson. 2012. "Instrumental Variable Estimation with Heteroskedasticity and Many Instruments." *Quantitative Economics* 3 (2): 211–55.

Imbens, Guido W., and Joshua D. Angrist. 1994. "Identification and Estimation of Local Average Treatment Effects." *Econometrica* 62 (2): 467–75.

Jaeger, David A., Theodore J. Joyce, and Robert Kaestner. 2020. "A Cautionary Tale of Evaluating Identifying Assumptions: Did Reality TV Really Cause a Decline in Teenage Childbearing?" *Journal of Business & Economic Statistics* 38 (2): 317–26.

Jaeger, David A., Joakim Ruist, and Jan Stuhler. 2019. "Shift-Share Instruments and Dynamic Adjustments: The Case of Immigration." NBER Working Paper 24285.

Jensen, J. Bradford, and Lori G. Kletzer. 2005. "Tradable Services: Understanding the Scope and Impact of Services Offshoring." *Brookings Trade Forum: Offshoring White-Collar Work*: 75–133.

Kearney, Melissa S., and Phillip B. Levine. 2015. "Media Influences on Social Outcomes: The Impact of MTV's *16 and Pregnant* on Teen Childbearing." *American Economic Review* 105 (12): 3597–3632.

Kirkeboen, Lars J., Edwin Leuven, and Magne Mogstad. 2016. "Field of Study, Earnings, and Self-Selection." *Quarterly Journal of Economics* 131 (3): 1057–1111.

Kolesár, Michal, Raj Chetty, John Friedman, Edward Glaeser, and Guido W. Imbens. 2015. "Identification and Inference with Many Invalid Instruments." *Journal of Business & Economic Statistics* 33 (4): 474–84.

Lucca, David O., Taylor Nadauld, and Karen Shen. 2019. "Credit Supply and the Rise in College Tuition: Evidence from the Expansion in Federal Student Aid Programs." *Review of Financial Studies* 32 (2): 423–66.

Monte, Ferdinando, Stephen J. Redding, and Esteban Rossi-Hansberg. 2018. "Commuting, Migration, and Local Employment Elasticities." *American Economic Review* 108 (12): 3855–90.

Nunn, Nathan, and Nancy Qian. 2014. "US Food Aid and Civil Conflict." *American Economic Review* 104 (6): 1630–66.

Oster, Emily. 2019. "Unobservable Selection and Coefficient Stability: Theory and Evidence." *Journal of Business & Economic Statistics* 37 (2): 187–204.

Perloff, Harvey S. 1957. "Interrelations of State Income and Industrial Structure." *Review of Economics and Statistics* 39 (2): 162–71.

Redding, Stephen J., and Esteban Rossi-Hansberg. 2017. "Quantitative Spatial Economics." *Annual Review of Economics* 9: 21–58.

Rotemberg, Julio J. 1983. "Instrumental Variable Estimation of Misspecified Models." MIT Sloan Working Paper 1508-83.

Ruggles, Steven, Katie Genadek, Ronald Goeken, Josiah Grover, and Matthew Sobek. 2015. Integrated Public Use Microdata Series: Version 6.0 [Machine-readable database]. Minneapolis: University of Minnesota.

Sargan, J. D. 1958. "The Estimation of Economic Relationships Using Instrumental Variables." *Econometrica* 26 (3): 393–415.

US Census Bureau. 2000. "Census of Population: Public-Use Microdata Sample, 1980–2000." United States Department of Commerce (Publisher). ICPSR (Distributor).

Wooldridge, Jeffrey M. 2002. *Econometric Analysis of Cross Section and Panel Data.* Cambridge, MA: MIT Press.

This article has been cited by:

1. Mauro Caselli, Andrea Fracasso, Sergio Scicchitano, Silvio Traverso, Enrico Tundis. 2025. What workers and robots do: An activity-based analysis of the impact of robotization on changes in local employment. *Research Policy* **54**:1, 105135. [Crossref]
2. Zihao Ma, Pingdan Zhang. 2025. Myth of the digital economy: Can it continually contribute to a low-carbon status and sustainable development?. *Environmental Impact Assessment Review* **110**, 107688. [Crossref]
3. Yingmei Zhao, Wenping Wang. 2025. The multiple empowerment effects of digital transformation on carbon emissions in manufacturing industry from the prospective of factor allocation: Theoretical analysis and empirical evidence. *Environmental Impact Assessment Review* **110**, 107698. [Crossref]
4. Kai Wu, Yufei Lu, Donghui Li. 2025. Contingent cash crunch: How do performance commitments affect acquirer liquidity?. *Research in International Business and Finance* **73**, 102592. [Crossref]
5. Yumi Koh, Jing Li, Yifan Wu, Junjian Yi, Hanzhe Zhang. 2025. Young women in cities: Urbanization and gender-biased migration. *Journal of Development Economics* **172**, 103378. [Crossref]
6. Wei Luo, Lixin Tang, Yaxin Yang, Xianqiang Zou. 2025. Robots as guardians: Industrial automation and workplace safety in China. *Journal of Development Economics* **172**, 103381. [Crossref]
7. José Francisco Baños-Pino, David Boto-García, Emma Zapico, Matías Mayor. 2024. Optimal carrying capacity in rural tourism: Crowding, quality deterioration, and productive inefficiency. *Tourism Management* **105**, 104968. [Crossref]
8. Javier Miranda, Wolfgang Britz, Jan Börner. 2024. Impacts of commodity prices and governance on the expansion of tropical agricultural frontiers. *Scientific Reports* **14**:1. . [Crossref]
9. Kaizhi Yu, Yao Shi, Jiahan Feng. 2024. The influence of robot applications on rural labor transfer. *Humanities and Social Sciences Communications* **11**:1. . [Crossref]
10. Guillaume M. A. Morlet, Thomas Bolli. 2024. Working from home is here to stay, but how does it affect workplace learning?. *Swiss Journal of Economics and Statistics* **160**:1. . [Crossref]
11. Mahuaqing Zuo, Yuhan Zhao, Shasha Yu. 2024. Industrial robot applications and individual migration decision: evidence from households in China. *Humanities and Social Sciences Communications* **11**:1. . [Crossref]
12. Bo Yuan, Pengbo Sun. 2024. Does the high-tech foreign investment spark robot adoption in the developing world? Evidence from China. *Structural Change and Economic Dynamics* **71**, 302-314. [Crossref]
13. Shuai Ling, Shurui Jin, Qing Wang, Paul M. Schonfeld. 2024. Can smart transportation reduce carbon emission intensity? — An empirical study from macro and micro perspectives in China. *Journal of Management Science and Engineering* **9**:4, 490-509. [Crossref]
14. Imran Aziz. 2024. Skill-biased technological change and intergenerational education mobility. *Economics of Education Review* **103**, 102596. [Crossref]
15. Rabia Akram, Qiyuan Li, Mohit Srivastava, Yulu Zheng, Muhammad Irfan. 2024. Nexus between green technology innovation and climate policy uncertainty: Unleashing the role of artificial intelligence in an emerging economy. *Technological Forecasting and Social Change* **209**, 123820. [Crossref]
16. Yuyuan Yu, Muhammad Qayyum, Shijie Li. 2024. Trade dynamics of environmental goods within global energy economy and their impacts on green technological innovation: A complex network analysis. *Energy Economics* **140**, 107957. [Crossref]
17. Yong Wang, Wenhao Zhao, Xuejiao Ma. 2024. The spatial spillover impact of artificial intelligence on energy efficiency: Empirical evidence from 278 Chinese cities. *Energy* **312**, 133497. [Crossref]

18. Takiko Igarashi, Sandy Maulana, Daniel Suryadarma. 2024. Mother tongue-based education in a diverse society and the acquisition of foundational skills: Evidence from the Philippines. *Labour Economics* **91**, 102641. [Crossref]
19. Huanhuan Wang, Zhenglian Zhang, Zhiqiang Zhang. 2024. The dynamic impact of trade on environment. *Journal of Economic Surveys* **38**:5, 1731-1759. [Crossref]
20. Sydnee Caldwell, Oren Danieli. 2024. Outside Options in the Labour Market. *Review of Economic Studies* **91**:6, 3286-3315. [Crossref]
21. Michael-David Mangini. 2024. How effective is trade conditionality? Economic coercion in the Generalized System of Preferences. *The Review of International Organizations* **24**. . [Crossref]
22. Sanna Bergvall. 2024. Women's economic empowerment and intimate partner violence. *Journal of Public Economics* **239**, 105211. [Crossref]
23. Jason Cook. 2024. Race-blind admissions, school segregation, and student outcomes. *Journal of Public Economics* **239**, 105237. [Crossref]
24. XiaoHong Dong, YinWei Jiang. 2024. Does enterprise digital transformation affect audit opinion type?—Based on business evidence of Chinese listed companies. *Economics & Politics* **36**:3, 1143-1163. [Crossref]
25. Giulia Sabbadini. 2024. Firm-level prices, quality, and markups: The role of immigrant workers. *Review of International Economics* **32**:5, 2259-2295. [Crossref]
26. Ling Li, Yang Liang. 2024. Can exports be pain relievers? The effect of exports on workplace safety and health. *Review of International Economics* **32**:5, 1993-2024. [Crossref]
27. Difei Ouyang, Weidi Yuan. 2024. The flip side of the China syndrome: Local labor market effects in China. *Review of International Economics* **32**:5, 2051-2094. [Crossref]
28. Jie Jiang, Julian Seng, Wenjin Huo, Jingwen Shi. 2024. Mitigating managerial short-sightedness in green technology innovation and corporate financial performance: The role of "National Team" shareholding. *International Review of Financial Analysis* **96**, 103622. [Crossref]
29. Katja Mann, Dario Pozzoli. 2024. Robots and immigration. *Journal of Economic Behavior & Organization* **227**, 106708. [Crossref]
30. Annalisa Tassi. 2024. Do community needs affect the decision to volunteer? The case of refugees in Germany. *Journal of Economic Behavior & Organization* **227**, 106758. [Crossref]
31. Nadav Ben Zeev, Daniel Nathan. 2024. The widening of cross-currency basis: When increased FX swap demand meets limits of arbitrage. *Journal of International Economics* **152**, 103984. [Crossref]
32. Kenneth S. Rogoff, Yuanchen Yang. 2024. A tale of tier 3 cities. *Journal of International Economics* **152**, 103989. [Crossref]
33. Anders Akerman, Rikard Forslid, Ossian Prane. 2024. Imports and the CO2 emissions of firms. *Journal of International Economics* **152**, 104004. [Crossref]
34. Brett A. McCully. 2024. Immigrants, legal status, and illegal trade. *Journal of International Economics* **152**, 104016. [Crossref]
35. Jiafeng Pan, Te Du, Chao Fang. 2024. Besides tit for tat: The effect of US 301 tariffs on Chinese local government spending. *Economics Letters* **244**, 112030. [Crossref]
36. Ara Jo. 2024. SUBSTITUTION BETWEEN CLEAN AND DIRTY ENERGY WITH BIASED TECHNICAL CHANGE. *International Economic Review* **66**. . [Crossref]
37. Guidong Zhang, Jianlong Wang, Yong Liu. 2024. Energy transition in China: Is there a role for climate policy uncertainty?. *Journal of Environmental Management* **370**, 122814. [Crossref]

38. Hong-shan Ai, Bo Fan, Zheng-qing Zhou, Jianhui Liu. 2024. The impact of nitrogen Fertilizer application on air Pollution: Evidence from China. *Journal of Environmental Management* **370**, 122880. [Crossref]
39. Maotao Liu, Xubing Fang. 2024. Does green financing promote outward FDI in enterprises? Evidence from China. *Journal of Environmental Management* **370**, 122991. [Crossref]
40. Song Nie, Gang Zeng, Hongying Zhang, Jianwen Ji. 2024. The local government fiscal pressure's effect on green total factor productivity: Exploring mechanisms from the perspective of government behavior. *International Review of Economics & Finance* **96**, 103702. [Crossref]
41. Ben Gilbert, Ben Hoen, Hannah Gagarin. 2024. Distributional Equity in the Employment and Wage Impacts of Energy Transitions. *Journal of the Association of Environmental and Resource Economists* **11**:S1, S261-S298. [Crossref]
42. Yang Nan, Li Shanmin, Huang Zhihong, Wang Caiping. 2024. The role of digital transformation in mergers and acquisitions. *The North American Journal of Economics and Finance* **14**, 102306. [Crossref]
43. Carola Conces Binder, Rupal Kamdar, Jane M. Ryngaert. 2024. Partisan expectations and COVID-era inflation. *Journal of Monetary Economics* **148**, 103649. [Crossref]
44. Weiping Li, Chang Shi, Zhongyi Xiao, Xuezhi Zhang. 2024. Bridging the green gap: How digital financial inclusion affects corporate ESG greenwashing. *Finance Research Letters* **69**, 106018. [Crossref]
45. Lijuan CUI, Yekun XU. 2024. Technological Change and Entrepreneurial Activities: Evidence from China. *Structural Change and Economic Dynamics* **4**. . [Crossref]
46. Matthieu Crozet, Laura Hering, Sandra Poncet. 2024. Is There a Bright Side to the China Syndrome? Rising Export Opportunities and Life Satisfaction in China. *The World Bank Economic Review* **38**:4, 708-740. [Crossref]
47. Stefano Fusaro, Enrique López-Bazo. 2024. Geographic differences in the effect of immigration on the native wage distribution: Evidence from Italian provinces. *Journal of Regional Science* **57**. . [Crossref]
48. Chinchih Chen, Carl Benedikt Frey. 2024. Robots and reshoring: a comparative study of automation, trade, and employment in Europe. *Industrial and Corporate Change* **33**:6, 1331-1377. [Crossref]
49. Yanhong Qian, Lei Yan, Wenli Huang. 2024. How Does Digital Inclusive Finance Affect Household Financial Vulnerability?. *Emerging Markets Finance and Trade* **19**, 1-22. [Crossref]
50. Pia Andres. 2024. Adapting to Competition: Solar PV Innovation in Europe and the Impact of the 'China Shock'. *Environmental and Resource Economics* **102**. . [Crossref]
51. Mengling Zhou, Zizhen Huang, Kangqi Jiang. 2024. Environmental, social, and governance performance and corporate debt maturity in China. *International Review of Financial Analysis* **95**, 103349. [Crossref]
52. Xing Li, Zimin Liu, Honglei Wu, Dan Yang. 2024. Calculation and optimization of China's power distortion under carbon peaking target. *Energy* **306**, 132487. [Crossref]
53. Mika Akesaka, Nobuyoshi Kikuchi. 2024. The effects of gender-specific local labor demand on birth and later outcomes. *Labour Economics* **90**, 102546. [Crossref]
54. Roland Beck, Virginia Di Nino, Livio Stracca. 2024. Globalisation and the efficiency-equity trade-off. *Journal of International Money and Finance* **148**, 103157. [Crossref]
55. Aixiong Gao, Shubin Wang, Quan Zhang. 2024. Impact of industrial intelligence on income inequality of urban residents in China. *Alexandria Engineering Journal* **104**, 328-338. [Crossref]
56. Zhensheng Li, Junpeng Zhu, Shuqiong Wang. 2024. Environmental regulation, intelligent manufacturing and corporate investment & financing: Evidence from industrial robot investment. *Pacific-Basin Finance Journal* **87**, 102477. [Crossref]

57. Francesco Amodio, Nicolás de Roux. 2024. Measuring Labor Market Power in Developing Countries: Evidence from Colombian Plants. *Journal of Labor Economics* **42**:4, 949-977. [Crossref]
58. Sylvie Démurger, Eric A. Hanushek, Lei Zhang. 2024. Employer Learning and the Dynamics of Returns to Universities: Evidence from Chinese Elite Education during University Expansion. *Economic Development and Cultural Change* **73**:1, 339-379. [Crossref]
59. Irvin Rojas, Jisang Yu. 2024. A Pandemic Crossing the Border: The Impact of COVID-19 in the US on the Mexican Labor Market. *Economic Development and Cultural Change* **73**:1, 195-219. [Crossref]
60. Jiantao Zhou, Eddie Chi-Man Hui, Huiwen Peng. 2024. Are robots crowding out migrant workers? Evidence from urban China. *Habitat International* **152**, 103154. [Crossref]
61. Elisabeth Leduc, Ilan Tojerow. 2024. Home work: Exploring the labor market effects of subsidizing domestic services. *Labour Economics* **90**, 102595. [Crossref]
62. Paolo Coccorese. 2024. EU regional policy and local economic growth: Does banking development matter?. *Papers in Regional Science* **103**:5, 100049. [Crossref]
63. Yan Ma, Gen-Fu Feng, Zhu-jia Yin, Chun-Ping Chang. 2024. ESG disclosures, green innovation, and greenwashing: All for sustainable development?. *Sustainable Development* **31**. . [Crossref]
64. Le Wang, Xin (Robert) Luo, Liangfei Qiu, Feng Xu, Xueying Cui. 2024. Win by Hook or Crook? Self-Injecting Favorable Online Reviews to Fight Adjacent Rivals. *Information Systems Research* **42**. . [Crossref]
65. Eugen Dimant, Tim Krieger, Daniel Meierrieks. 2024. Paying Them to Hate US: The Effect of US Military Aid on Anti-American Terrorism, 1968–2018. *The Economic Journal* **134**:663, 2772-2802. [Crossref]
66. Fei Fan, Zilin Wen, Xiaoyu Shao, Hong Zhang, Bihong Yang. 2024. Do Technology Transfer Networks Impact Urban Innovation Capacity? Evidence From Chinese Cities. *International Regional Science Review* **73**. . [Crossref]
67. Nicolas Apfel. 2024. Relaxing the exclusion restriction in shift-share instrumental variable estimation. *Journal of the Royal Statistical Society Series A: Statistics in Society* **187**:3, 748-771. [Crossref]
68. Yaozhi Xu, Jiakang Fan, Ying Hua. 2024. The Impact of Trade Credit on Global Value Chain Position: Evidence from Chinese Manufacturing Firms. *Emerging Markets Finance and Trade* **10**, 1-16. [Crossref]
69. Hyunju Lee, Sunyoung Lee, Radoslaw Paluszynski. 2024. Capital Regulation and Shadow Finance: A Quantitative Analysis. *Review of Economic Studies* **91**:5, 3047-3084. [Crossref]
70. Nadav Ben Zeev, Daniel Nathan. 2024. Shorting the Dollar When Global Stock Markets Roar: The Equity Hedging Channel of Exchange Rate Determination. *Review of Asset Pricing Studies* . [Crossref]
71. Zhili Du, Jie Xu, Boqiang Lin. 2024. What does the digital economy bring to household carbon emissions? – From the perspective of energy intensity. *Applied Energy* **370**, 123613. [Crossref]
72. MATTHIAS BREUER, ED DEHAAN. 2024. Using and Interpreting Fixed Effects Models. *Journal of Accounting Research* **62**:4, 1183-1226. [Crossref]
73. Wenyi Lu, Siyuan Fan. 2024. Drinking in despair: Unintended consequences of automation in China. *Health Economics* **33**:9, 2088-2104. [Crossref]
74. Baogui Xin, Xiaopu Ye. 2024. Robotics applications, inclusive employment and income disparity. *Technology in Society* **78**, 102621. [Crossref]
75. Hyejin Kim. 2024. The impact of robots on labor demand: evidence from job vacancy data in South Korea. *Empirical Economics* **67**:3, 1185-1209. [Crossref]
76. Shunlin Jin, Teng Ma, Xinyu Tan. 2024. Digital financial inclusion and household energy poverty: Evidence from China. *Economic Analysis and Policy* **83**, 436-456. [Crossref]

77. Shiwei Xu, Siyuan Zhang, Yilei Ren, Qijun Jiang, Dan Wu. 2024. Can Digital Transformation Restrain Corporate ESG Greenwashing—A Test Based on Internal and External Joint Perspectives. *Systems* **12**:9, 334. [Crossref]
78. Michael Gilraine, Angela Zheng. 2024. JUE insight: Air pollution and student performance in the U.S. *Journal of Urban Economics* **143**, 103686. [Crossref]
79. Wei Luo, Xianqiang Zou. 2024. Demographic impacts of China's trade liberalization: marriage, spousal quality, and fertility. *Journal of Population Economics* **37**:3. . [Crossref]
80. Tong Li, Nengsheng Luo. 2024. Dividend Payments and Persistence of Firms' Green Innovation: Evidence from China. *Sustainability* **16**:18, 7975. [Crossref]
81. Na Tan, Xiaojun Liang, Liang Chang. 2024. Growing older and growing technologically backward? Population ageing and high-technology exports of 171 countries. *The Journal of the Economics of Ageing* **128**, 100530. [Crossref]
82. Yang Shen, Pengfei Zhou. 2024. Technological anxiety: Analysis of the impact of industrial intelligence on employment in China. *Chinese Journal of Population, Resources and Environment* **22**:3, 343-355. [Crossref]
83. Julián Costas-Fernández, Simón Lodato. 2024. Distributional effects of immigration and imperfect labour markets. *Economics Letters* **242**, 111832. [Crossref]
84. Hongshan Ai, Bo Fan, Zhengqing Zhou. 2024. Hunger or Illness? a trade-off on fertilizer use. *Ecological Indicators* **166**, 112432. [Crossref]
85. Qihang Li, Yituan Liu, Wenjie Li, Linman Zheng. 2024. Will Industrial Robots Terminate Enterprise Innovation?—An Empirical Evidence from China's Enterprise Robot Penetration. *Journal of the Knowledge Economy* **4**. . [Crossref]
86. Laura Barros, Manuel Santos Silva. 2024. Between Sticky Floors and Glass Ceilings: Trade Liberalization and Wage Inequality by Gender and Race in Brazil. *Economic Development and Cultural Change* **4**. . [Crossref]
87. Anne Jurkat, Rainer Klump, Florian Schneider. 2024. Wie Roboter die Welt (und das Wirtschaften) verändern: Ein Überblick über Daten, Forschungsergebnisse und wirtschaftspolitische Strategien. *Perspektiven der Wirtschaftspolitik* . [Crossref]
88. Irene Brambilla, Andrés César, Guillermo Falcone, Guido Porto. 2024. Organizational Hierarchies and Export Destinations. *The World Bank Economic Review* **134**. . [Crossref]
89. George Borjas, Anthony Edo. 2024. Gender, Selection into Employment and the Wage Impact of Immigration. *Journal of Labor Economics* **80**. . [Crossref]
90. Federico Antonioli, Simone Severini, Mauro Vigani. 2024. Foreign labor, peer-networking and agricultural efficiency in the Italian dairy sector. *Agribusiness* **50**. . [Crossref]
91. Wen Chen, Wei Xue. 2024. The impact of capital goods trade liberalization on regional labor market in China. *China Economic Review* **86**, 102205. [Crossref]
92. Zexian Chen, Liang Wan, Qiaoqiao Zheng, Shanyong Wang. 2024. Life makes cities greener: The impact of dual-policy of China in urban transformation on residents' green lifestyles. *Journal of Environmental Management* **365**, 121469. [Crossref]
93. Cihan Artunç, Mohamed Saleh. 2024. The demand for extraterritoriality: Religious minorities in nineteenth-century Egypt. *The Economic History Review* **77**:3, 895-927. [Crossref]
94. Chan Yu. 2024. The impacts of trade liberalization on the local labor market: Older women are especially vulnerable. *Review of International Economics* **32**:3, 693-777. [Crossref]
95. Ye Liu, Yiyun Wu, Xiwei Zhu. 2024. Industrial clusters and carbon emission reduction: evidence from China. *The Annals of Regional Science* **73**:2, 557-597. [Crossref]

96. Daniel Goya. 2024. Marshallian and Jacobian externalities in creative industries: Evidence from Chile. *Papers in Regional Science* **103**:4, 100028. [Crossref]
97. Feiyang Shi. 2024. Import shock and local labour market outcomes: A Sino-Indian case study. *Empirical Economics* **13**. . [Crossref]
98. Alvaro Remesal. 2024. Clawback enforcement heterogeneity and the horizon of executive pay: empirical evidence. *International Journal of Accounting & Information Management* **33**. . [Crossref]
99. Martin Paul Jr. Tabe-Ojong, Ibrahim Nana, Andrea Zimmermann, Yaghoob Jafari. 2024. Trends and evolution of global value chains in food and agriculture: Implications for food security and nutrition. *Food Policy* **127**, 102679. [Crossref]
100. Xinzhen Ma, Shimei Weng, Xin Zhao, Jing Li, Sajjad Haider. 2024. Investigating the impact of artificial intelligence development on water pollution in China. *Gondwana Research* **132**, 182-192. [Crossref]
101. Andreas Hatzigeorgiou, Patrik Karpaty, Richard Kneller, Magnus Lodefalk. 2024. Immigrant employment and the contract enforcement costs of offshoring. *Review of World Economics* **160**:3, 953-981. [Crossref]
102. Jonathan Cook, Noah Newberger, Sami Smalling. 2024. COVID vaccination and social norms. *Contemporary Economic Policy* . [Crossref]
103. Sheida Teimouri, Joachim Zietz. 2024. Housing prices and import competition. *Empirical Economics* **34**. . [Crossref]
104. Yan Chen, Ruiqi Sun, Tianyu Zhang. 2024. Enterprise digital transformation and maturity mismatch: evidence from China. *Applied Economics Letters* 1-5. [Crossref]
105. Nicolas Apfel, Xiaoran Liang. 2024. Agglomerative hierarchical clustering for selecting valid instrumental variables. *Journal of Applied Econometrics* **80**. . [Crossref]
106. David Atkin. 2024. Trade and price-index inequality. *Oxford Open Economics* **3**:Supplement_1, i1069-i1075. [Crossref]
107. Carlos Rodríguez-Castelán, Emmanuel Vazquez, Hernan Winkler. 2024. Exports and Income Inequality in Mexico. *The Journal of Development Studies* **60**:7, 1131-1159. [Crossref]
108. Boning Li, Wen-Chi Liao, Weizeng Sun, Yongxuan Zeng, Siqi Zheng. 2024. The US–China Trade War: Quantify the Negative Shocks to Local Housing Markets and Land-Based Finance in Chinese Cities. *Journal of Real Estate Research* **46**:3, 308-335. [Crossref]
109. Max-Sebastian Dovì, Anders Bredahl Kock, Sophocles Mavroeidis. 2024. A Ridge-Regularized Jackknifed Anderson-Rubin Test. *Journal of Business & Economic Statistics* **42**:3, 1083-1094. [Crossref]
110. Brad Hershbein, Bryan A. Stuart. 2024. The Evolution of Local Labor Markets after Recessions. *American Economic Journal: Applied Economics* **16**:3, 399-435. [Abstract] [View PDF article] [PDF with links]
111. Alan J. Auerbach, Yuriy Gorodnichenko, Daniel Murphy. 2024. Macroeconomic Frameworks: Reconciling Evidence and Model Predictions from Demand Shocks. *American Economic Journal: Macroeconomics* **16**:3, 190-229. [Abstract] [View PDF article] [PDF with links]
112. Fei Wu, Yan Hu, Me Shen. 2024. The color of FinTech: FinTech and corporate green transformation in China. *International Review of Financial Analysis* **94**, 103254. [Crossref]
113. Yunjia Liang, Bo Zhou, Shaoyang Zhao. 2024. Risking or de-risking? The effect of banking competition on large state-owned banks and small and medium-sized enterprise lending: Evidence from China. *International Review of Financial Analysis* **94**, 103258. [Crossref]
114. Nicola Benatti, Martin Groiss, Petra Kelly, Paloma Lopez-Garcia. 2024. Environmental regulation and productivity growth in the euro area: Testing the porter hypothesis. *Journal of Environmental Economics and Management* **126**, 102995. [Crossref]

115. Simon Galle, Linnea Lorentzen. 2024. The unequal effects of trade and automation across local labor markets. *Journal of International Economics* **150**, 103912. [Crossref]
116. Davin Chor, Bingjing Li. 2024. Illuminating the effects of the US-China tariff war on China's economy. *Journal of International Economics* **150**, 103926. [Crossref]
117. Dan Wu, Rong Li, Yingting Li. 2024. Impact of Off-Balance-Sheet Activities on the Effectiveness of Monetary Policy. *The North American Journal of Economics and Finance* **73**, 102176. [Crossref]
118. Benjamin Krebs, Simon Luechinger. 2024. Air Pollution, Cognitive Performance, and the Role of Task Proficiency. *Journal of the Association of Environmental and Resource Economists* **11**:4, 921-958. [Crossref]
119. Jing Bu, Julan Du, Jiancai Pi. 2024. Do zombie firms affect healthy firms' exporting? Evidence from China. *Economics of Transition and Institutional Change* **32**:3, 707-738. [Crossref]
120. Lei Pan, Richard Adjei Dwumfour, Veasna Kheng. 2024. Lightening the path to financial development: The power of electricity. *Scottish Journal of Political Economy* **71**:3, 276-294. [Crossref]
121. Kenneth Rogoff, Yuanchen Yang. 2024. Rethinking China's growth. *Economic Policy* **39**:119, 517-548. [Crossref]
122. Yaru Yang, Yingming Zhu, Yao Zhang. 2024. The impact of digital industry agglomeration on firms' carbon emissions: new micro-evidence from Chinese manufacturing firms. *Environmental Science and Pollution Research* **31**:35, 48332-48350. [Crossref]
123. Carlo Corradini, Jesse Matheson, Enrico Vanino. 2024. Neighbourhood labour structure, lockdown policies, and the uneven spread of COVID-19: within-city evidence from England. *Economica* **91**:363, 944-979. [Crossref]
124. Eleonora Porreca, Alfonso Rosolia. 2024. Immigration and unemployment. Do natives get it right?. *Journal of Economic Behavior & Organization* **45**. . [Crossref]
125. Xiaoke Zhu, Hanqi Wu, Qiyun Deng. 2024. Quantity or quality: Novel insights into the impact of digital finance on innovation. *Finance Research Letters* **65**, 105603. [Crossref]
126. Zijun Liu, Bingjie Liu, Hang Luo, Sheng Chen. 2024. Digital economy and fiscal decentralization: Drivers of green innovation in China. *Heliyon* **10**:13, e33870. [Crossref]
127. Gregory Ombito, Nanyama Rosemary Mumaraki, Jackline Odero. 2024. Effect of Resource Orientation on Service Delivery of Public Level Four Hospitals in Kakamega County Kenya. *Journal of Business and Social Review in Emerging Economies* **10**:2. . [Crossref]
128. Younjun Kim, Eric Thompson. 2024. Information technology adoption and the growth of nonemployer businesses. *Journal of Economics & Management Strategy* **14**. . [Crossref]
129. Patrick E. Shea, Bernhard Reinsberg, Andreas Kern. 2024. China Lending and the Political Economy of Leader Survival. *Journal of Conflict Resolution* **23**. . [Crossref]
130. Liang Zhang, Jian-kun Liu, Zi-hang Li, Jun-yan Yu, Chante Jian Ding. 2024. Inclusive or Fraudulent: Digital Inclusive Finance and Urban–Rural Income Gap. *Asia-Pacific Financial Markets* **77**. . [Crossref]
131. Jung Hyuk Lee. 2024. Changing gender norms and household resource allocation. *Oxford Economic Papers* **76**:3, 686-707. [Crossref]
132. Kouming Liu, Xiaobin Guo, Aiyun Nie, Chante Jian Ding. 2024. Technological progress and labour welfare: evidence from robot adoption in China. *Applied Economics* **56**, 1-16. [Crossref]
133. Yuansen Zhang, Hui Zhang. 2024. How does the digital economy affect the sustainability of pensions? Evidence from China. *Applied Economics* **2**, 1-15. [Crossref]
134. Jiaming Soh, Myrto Oikonomou, Carlo Pizzinelli, Ippei Shibata, Marina M. Tavares. 2024. Did the Covid-19 Recession Increase the Demand for Digital Occupations in the USA? Evidence from Employment and Vacancies Data. *IMF Economic Review* **118**. . [Crossref]

135. Roberto Bonfatti, Björn Brey. 2024. Trade Disruption, Industrialisation, and the Setting Sun of British Colonial Rule in India. *Journal of the European Economic Association* **22**:3, 1407-1451. [Crossref]

136. Karim Bekhtiar, Benjamin Bittschi, Richard Sellner. 2024. Robots at work? Pitfalls of industry-level data. *Journal of Applied Econometrics* **118**. . [Crossref]

137. Danial Lashkari, Arthur Bauer, Jocelyn Boussard. 2024. Information Technology and Returns to Scale. *American Economic Review* **114**:6, 1769-1815. [Abstract] [View PDF article] [PDF with links]

138. László Erdey, Laisha Liu, Adrián Nagy. 2024. The nonlinear relationship between digital affordances and firm-level export performance: The moderating role of organizational ambidexterity. *Managerial and Decision Economics* **45**:4, 1944-1964. [Crossref]

139. Lukas Delgado-Prieto. 2024. Immigration, wages, and employment under informal labor markets. *Journal of Population Economics* **37**:2. . [Crossref]

140. Ruini Zhu, Ye Yuan, Yaojing Wang. 2024. Love, health, and robots: Automation, migration, and family responses in rural China. *China Economic Review* **85**, 102145. [Crossref]

141. Wenshou Yan, Ruoxuan Wang, Kaixing Huang, Wenlu Ouyang. 2024. Does exporting to China spur firm innovation activities in developing countries?. *China Economic Review* **85**, 102188. [Crossref]

142. Hui Jiang, Xiaolei Qian, Daling Ren, Cheng Peng. 2024. Tunneling motivation or legitimacy motivation? The impact of digital transformation on controlling shareholders' share pledging. *Economic Analysis and Policy* **82**, 1204-1224. [Crossref]

143. Christoph Basten, Steven Ongena. 2024. Mortgage lending through a fintech web platform. The roles of competition, diversification, and automation. *Journal of Banking & Finance* **163**, 107194. [Crossref]

144. Pia Heckl. 2024. Import Shocks and Gendered Labor Market Responses: Evidence from Mexico. *Labour Economics* **88**, 102536. [Crossref]

145. Mengru Liu, Shixiang Li, Yi Li, Jianru Shi, Jun Bai. 2024. Evaluating the synergistic effects of digital economy and government governance on urban low-carbon transition. *Sustainable Cities and Society* **105**, 105337. [Crossref]

146. Alberto Hidalgo, Massimo Riccaboni, Francisco J. Velázquez. 2024. The effect of short-term rentals on local consumption amenities: Evidence from Madrid. *Journal of Regional Science* **64**:3, 621-648. [Crossref]

147. VIRAL V. ACHARYA, MATTEO CROSIGNANI, TIM EISERT, CHRISTIAN EUFINGER. 2024. Zombie Credit and (Dis-)Inflation: Evidence from Europe. *The Journal of Finance* **79**:3, 1883-1929. [Crossref]

148. Yang Yang, Zibo Lin, Zhaoyi Xu, Shuwen Liu. 2024. The impact of digital finance on regional economic resilience. *Pacific-Basin Finance Journal* **85**, 102353. [Crossref]

149. Joël Cariolle, Yasmine Elkhateeb, Mathilde Maurel. 2024. Misinformation technology: Internet use and political misperceptions in Africa. *Journal of Comparative Economics* **52**:2, 400-433. [Crossref]

150. Leonardo Bonilla-Mejía, Leonardo F. Morales, Didier Hermida, Luz A. Flórez. 2024. The Labor Market Effect of South-to-South Migration: Evidence From the Venezuelan Crisis. *International Migration Review* **58**:2, 764-799. [Crossref]

151. Taylor J. Wright. 2024. Replication of "How much does immigration boost innovation?". *Economic Inquiry* . [Crossref]

152. Jianghong Xu, Chenguang Wang, Xukang Yin, Weixin Wang. 2024. Digital economy and rural household resilience: Evidence from China. *Agricultural Economics (Zemědělská ekonomika)* **70**:5, 244-263. [Crossref]

153. Qingqing Niu, Zhi Shao, Wentao Wu. 2024. The effect of software registration on manufacturing export. *Applied Economics* **4**, 1-17. [Crossref]

154. Paulo Bastos, Jacob Greenspon, Katherine Stapleton, Daria Taglioni. Did the 2022 Global Energy Crisis Accelerate the Diffusion of Low-Carbon Technologies? **2022**, . [Crossref]

155. Christian Ambrosius. 2024. Violent Crime and the Long Shadow of Immigration Enforcement. *Journal of Conflict Resolution* **20**. . [Crossref]

156. Yuan Tian. 2024. International Trade Liberalization and Domestic Institutional Reform: Effects of WTO Accession on Chinese Internal Migration Policy. *Review of Economics and Statistics* **106**:3, 794-813. [Crossref]

157. Philippe Aghion, Antonin Bergeaud, Matthieu Lequien, Marc J. Melitz. 2024. The Heterogeneous Impact of Market Size on Innovation: Evidence from French Firm-Level Exports. *Review of Economics and Statistics* **106**:3, 608-626. [Crossref]

158. Richard Hornbeck, Enrico Moretti. 2024. Estimating Who Benefits from Productivity Growth: Local and Distant Effects of City Productivity Growth on Wages, Rents, and Inequality. *Review of Economics and Statistics* **106**:3, 587-607. [Crossref]

159. Umut Unal, Bernd Hayo, Isil Erol. 2024. The Effect of Immigration on Housing Prices: Evidence from 382 German Districts. *The Journal of Real Estate Finance and Economics* **45**. . [Crossref]

160. Andrew Garin, Filipe Silvério. 2024. How Responsive Are Wages to Firm-Specific Changes in Labour Demand? Evidence from Idiosyncratic Export Demand Shocks. *Review of Economic Studies* **91**:3, 1671-1710. [Crossref]

161. John Cruzatti C. 2024. Free Trade and Subnational Development: Economic Activity and Human Welfare. *The World Bank Economic Review* **148**. . [Crossref]

162. Xingqiang Du, Jing Hong, Hexin Tao, Yongkui Zhang. 2024. Is digital finance always beneficial to accounting information transparency? Evidence from China. *China Journal of Accounting Studies* **91**, 1-35. [Crossref]

163. Andreas Kern, Bernhard Reinsberg, Claire Lee. 2024. The unintended consequences of IMF programs: Women left behind in the labor market. *The Review of International Organizations* **124**. . [Crossref]

164. Leonardo Becchetti, Sara Mancini, Nazaria Solferino. 2024. Relational Skills and Corporate Productivity in a Comparative Size Class Perspective. *Italian Economic Journal* **74**. . [Crossref]

165. Savannah Adkins. 2024. Shifting the Balance: Examining the Impact of Local Labor Market Opportunities on Female Household Bargaining Power in India. *The Journal of Development Studies* **60**:5, 685-704. [Crossref]

166. Manoj Atolia, Shuang Feng. 2024. World commodity prices and partial default in emerging markets: an empirical analysis. *Review of World Economics* **160**:2, 389-425. [Crossref]

167. Shufei Wang, Xinyu Ma, Xiang Zhang, Meiling Kang. 2024. Can foreign demand shocks reduce the pollution emission intensity? Evidence from exporters in China. *Energy Economics* **133**, 107515. [Crossref]

168. Boqiang Lin, Yongjing Xie. 2024. How feed-in-tariff subsidies affect renewable energy investments in China? New evidence from firm-level data. *Energy* **294**, 130853. [Crossref]

169. Jiaxin Wang, Mu Zhao, Xiang Huang, Zilong Song, Di Sun. 2024. Supply chain diffusion mechanisms for AI applications: A perspective on audit pricing. *International Review of Financial Analysis* **93**, 103113. [Crossref]

170. Kerstin Unfried, Feicheng Wang. 2024. Importing air pollution? Evidence from China's plastic waste imports. *Journal of Environmental Economics and Management* **125**, 102996. [Crossref]

171. Leah Boustan, Christine Cai, Tammy Tseng. 2024. JUE Insight: White flight from Asian immigration: Evidence from California Public Schools. *Journal of Urban Economics* **141**, 103541. [Crossref]

172. Matthias Busse, Tim Vogel. 2024. Trade Liberalization, IMF Conditionality, and Policy Substitution in Developing Countries. *Kyklos* **77**:2, 256-284. [Crossref]
173. Dongil Daniel Keum, Stephan Meier. 2024. License to Layoff? Unemployment Insurance and the Moral Cost of Layoffs. *Organization Science* **35**:3, 994-1014. [Crossref]
174. Soumyatanu Mukherjee, Soumya Roy. 2024. Urban Unemployment Duration Analysis in Post-Reform China. *American Business Review* **27**:1, 302-325. [Crossref]
175. Xinchun Zhang, Murong Sun, Jianxu Liu, Aijia Xu. 2024. The nexus between industrial robot and employment in China: The effects of technology substitution and technology creation. *Technological Forecasting and Social Change* **202**, 123341. [Crossref]
176. Sonia Bhalotra, Manuel Fernández. 2024. The Rise in Women's Labor-Force Participation in Mexico —Supply vs. Demand Factors. *The World Bank Economic Review* **38**:2, 319-350. [Crossref]
177. Preeya Mohan, Eric Strobl. 2024. Tourism and tax revenue: evidence from stay-over tourists in the Eastern Caribbean. *Current Issues in Tourism* **27**:8, 1185-1207. [Crossref]
178. Silvia Marchesi, Tania Masi, Saumik Paul. 2024. Aid Projects and Firm Performance. *Economic Development and Cultural Change* **13**. . [Crossref]
179. Francesco Campo, Giuseppe Forte, Jonathan Portes. 2024. The Impact of Migration on Productivity: Evidence from the United Kingdom. *The B.E. Journal of Economic Analysis & Policy* **24**:2, 537-564. [Crossref]
180. Ping Zhou, Jin Xiang, Decai Tang, Jiannan Li, Bright Obuobi. 2024. Intelligence level evaluation and influencing factors analysis of equipment manufacturing industry in the Yangtze River Delta. *PLOS ONE* **19**:4, e0299119. [Crossref]
181. Gemma Dipoppa. 2024. How Criminal Organizations Expand to Strong States: Local Agreements and Migrant Exploitation in Northern Italy. *The Journal of Politics* **87**. . [Crossref]
182. Jie Xie, Jia Guo, Xianbin Chen. 2024. Automation and value-chain embedment: evidence from Chinese manufacturing firms. *Applied Economics* **41**, 1-18. [Crossref]
183. Oscar Barrera-Rodríguez, Isabelle Bensidoun, Anthony Edo. 2024. Second-generation immigrants and native attitudes toward immigrants in Europe. *Migration Studies* **90**. . [Crossref]
184. Melanie Morten, Jaqueline Oliveira. 2024. The Effects of Roads on Trade and Migration: Evidence from a Planned Capital City. *American Economic Journal: Applied Economics* **16**:2, 389-421. [Abstract] [View PDF article] [PDF with links]
185. Tobias Renkin, Gabriel Züllig. 2024. Credit Supply Shocks and Prices: Evidence from Danish Firms. *American Economic Journal: Macroeconomics* **16**:2, 1-28. [Abstract] [View PDF article] [PDF with links]
186. Daria Denti, Alessandra Faggian. 2024. Welcome to the Punch. Local exposure to refugees and hate events in Italy. *The Annals of Regional Science* **72**:4, 1415-1442. [Crossref]
187. Austin Landini. 2024. An uneven landscape of public services for people of color: identifying endogeneity in the relationship between local race composition and public expenditure. *The Annals of Regional Science* **72**:4, 1047-1078. [Crossref]
188. Xiaohui Xin, Ruoyu Zhu, Guoli Ou. 2024. Does digital transformation lower equity financing costs? An explanation based on the "return-risk-expectation" framework. *Economic Change and Restructuring* **57**:2. . [Crossref]
189. Kaixia Zhang, Weibing Li. 2024. Understanding the puzzle of polluting companies' social responsibility. *China Economic Review* **84**, 102128. [Crossref]
190. Christopher Lowenstein. 2024. "Deaths of despair" over the business cycle: New estimates from a shift-share instrumental variables approach. *Economics & Human Biology* **53**, 101374. [Crossref]

191. Delia Furtado, Haiyang Kong. 2024. How do low-education immigrants adjust to Chinese import shocks? Evidence using English language proficiency. *European Economic Review* **163**, 104681. [Crossref]
192. Raja Kali, Andrew Yizhou Liu. 2024. Labor market power and worker turnover. *European Economic Review* **163**, 104701. [Crossref]
193. Wenjie Wang, Yichong Zhang. 2024. Wild bootstrap inference for instrumental variables regressions with weak and few clusters. *Journal of Econometrics* **241**:1, 105727. [Crossref]
194. Weiping Li, Tingyu Li, Dequan Jiang, Xuezhi Zhang. 2024. Bridging the information gap: How digitalization shapes stock price informativeness. *Journal of Financial Stability* **71**, 101217. [Crossref]
195. Jiangying Wei, Xiuwu Zhang, Takashi Tamamine. 2024. Digital transformation in supply chains: Assessing the spillover effects on midstream firm innovation. *Journal of Innovation & Knowledge* **9**:2, 100483. [Crossref]
196. Lutz Kilian, Xiaoqing Zhou. 2024. Heterogeneity in the pass-through from oil to gasoline prices: A new instrument for estimating the price elasticity of gasoline demand. *Journal of Public Economics* **232**, 105099. [Crossref]
197. Flavia Cavallini. 2024. Not the right time for children: Unemployment, fertility, and abortion. *Labour Economics* **87**, 102492. [Crossref]
198. Daisuke Adachi, Daiji Kawaguchi, Yukiko U. Saito. 2024. Robots and Employment: Evidence from Japan, 1978–2017. *Journal of Labor Economics* **42**:2, 591-634. [Crossref]
199. Jaime Arellano-Bover. 2024. Career Consequences of Firm Heterogeneity for Young Workers: First Job and Firm Size. *Journal of Labor Economics* **42**:2, 549-589. [Crossref]
200. Caterina Alacevich, Catia Nicodemo. 2024. The Effect of Immigration on Occupational Injuries: Evidence from Administrative Data*. *Oxford Bulletin of Economics and Statistics* **86**:2, 209-235. [Crossref]
201. Klaus S. Friesenbichler, Agnes Kügler, Andreas Reinstaller. 2024. The impact of import competition from China on firm-level productivity growth in the European Union *. *Oxford Bulletin of Economics and Statistics* **86**:2, 236-256. [Crossref]
202. Santiago Bonilla, Sašo Polanec. 2024. The impact of foreign demand shocks on organisational hierarchies. *The World Economy* **47**:4, 1741-1767. [Crossref]
203. Concepción Betrán, Michael Huberman. 2024. Unintended consequences: International trade shocks and electoral outcomes during the Second Spanish Republic, 1931–1936. *Explorations in Economic History* **92**, 101556. [Crossref]
204. Shefali Khanna, Kevin Rowe. 2024. The long-run value of electricity reliability in India. *Resource and Energy Economics* **77**, 101425. [Crossref]
205. Pooya Ghorbani, Rachel Meltzer. 2024. Are local retail services an amenity or a nuisance?. *Journal of Economic Geography* **24**:2, 193-218. [Crossref]
206. Chunyang Wang. 2024. Politics and entry deterrence: Evidence from China's industrial land market. *Journal of Economics & Management Strategy* **48**. . [Crossref]
207. Bilge Erten, Pinar Keskin. 2024. Trade-offs? The Impact of WTO Accession on Intimate Partner Violence in Cambodia. *Review of Economics and Statistics* **106**:2, 322-333. [Crossref]
208. Banu Demir, Beata Javorcik, Tomasz K. Michalski, Evren Ors. 2024. Financial Constraints and Propagation of Shocks in Production Networks. *Review of Economics and Statistics* **106**:2, 437-454. [Crossref]
209. Paul Christian, Christopher B Barrett. 2024. Spurious Regressions and Panel IV Estimation: Revisiting the Causes of Conflict. *The Economic Journal* **134**:659, 1069-1099. [Crossref]

210. Parag Mahajan. 2024. Immigration and Business Dynamics: Evidence from U.S. Firms. *Journal of the European Economic Association* **134**. . [Crossref]
211. Wenhan Liu, Wei Xiao, Yuheng Li, Hans Westlund. 2024. How internet access impacts rural households' income in China: evidence from the China family panel survey. *Applied Economics* **56**, 1-16. [Crossref]
212. Pedro Ogeda, Emanuel Ornelas, Rodrigo R Soares. 2024. Labor Unions and the Electoral Consequences of Trade Liberalization. *Journal of the European Economic Association* **134**. . [Crossref]
213. Yuchen Liu, Yinguo Dong, Hui Zhou. 2024. The impact of the agricultural digital economy on China's agricultural export growth: Examining mechanisms from supply- and demand-side path perspectives. *Agribusiness* **13**. . [Crossref]
214. Paul Charruau. 2024. Spatial wage disparities and human capital externalities in France. *Journal of Regional Science* **52**. . [Crossref]
215. Dongri Han, Hongshuang Wu, Yue Zhu, Yanxia Diao. 2024. The road to carbon win, the wise first: evidence of robot impact enabling the synergistic effects of pollution reduction and carbon emissions. *Air Quality, Atmosphere & Health* **128**. . [Crossref]
216. Hong Jiang, Yingfan Ge, Chunhao Yang, Hongxin Yu. 2024. How automated machines influence employment in manufacturing enterprises?. *PLOS ONE* **19**:3, e0299194. [Crossref]
217. Andreas Maschke. 2024. Exporting unemployment? Assessing the impact of German import competition on regional manufacturing employment in France. *Regional Studies* **58**:3, 455-468. [Crossref]
218. Alberto Alesina, Marco Tabellini. 2024. The Political Effects of Immigration: Culture or Economics?. *Journal of Economic Literature* **62**:1, 5-46. [Abstract] [View PDF article] [PDF with links]
219. Yacouba Kassouri. 2024. Capital flight and public health outcomes in Africa. *Health Economics* **33**:3, 576-593. [Crossref]
220. Andreas Kern, Bernhard Reinsberg, Patrick E. Shea. 2024. Why cronies don't cry? IMF programs, Chinese lending, and leader survival. *Public Choice* **198**:3-4, 269-295. [Crossref]
221. Zhihao He, Qilin Zhang, Yinghao Pan. 2024. Bequest motives in the housing wealth effect: A new perspective from China. *Cities* **146**, 104771. [Crossref]
222. Qiren Liu, Sen Luo, Robert Seamans. 2024. Pain or anxiety? The health consequences of rising robot adoption in China. *Economics Letters* **236**, 111582. [Crossref]
223. Wei Zhou, Yan Zhuang, Yan Chen. 2024. How does artificial intelligence affect pollutant emissions by improving energy efficiency and developing green technology. *Energy Economics* **131**, 107355. [Crossref]
224. Li Yu, Zhuoyang Lyu, Hao Duan. 2024. Plugging the gap: Debt pressure and the rise of forfeiture revenues in local governments. *Finance Research Letters* **61**, 105015. [Crossref]
225. Davide Dottori, Giacinto Micucci, Laura Sigalotti. 2024. Trade debts and bank lending in years of crisis. *International Review of Financial Analysis* **92**, 103082. [Crossref]
226. Hui Ding, Fuwei Jiang, Shan Zhang, Zhining Zhang. 2024. Managerial myopia and corporate social responsibility#Evidence from the textual analysis of Chinese earnings communication conferences. *Journal of Behavioral and Experimental Finance* **41**, 100886. [Crossref]
227. Lucas Bretschger, Ara Jo. 2024. Complementarity between labor and energy: A firm-level analysis. *Journal of Environmental Economics and Management* **124**, 102934. [Crossref]
228. Dominik Jurek. 2024. Patents, innovation, and market entry. *Journal of Open Innovation: Technology, Market, and Complexity* **10**:1, 100246. [Crossref]

229. Timothy J. Bartik. 2024. Long-run effects on county employment rates of demand shocks to county and commuting zone employment. *Regional Science and Urban Economics* **105**, 103988. [Crossref]
230. Yajun Liu, Xiuwu Zhang, Yang Shen. 2024. Technology-driven carbon reduction: Analyzing the impact of digital technology on China's carbon emission and its mechanism. *Technological Forecasting and Social Change* **200**, 123124. [Crossref]
231. Zhongsheng Zhou, Zhuo Li, Shanzhong Du, June Cao. 2024. Robot adoption and enterprise R&D manipulation: Evidence from China. *Technological Forecasting and Social Change* **200**, 123134. [Crossref]
232. Andrew Hanson, Shawn Rohlin. 2024. Local employment multipliers for large publicly subsidized firms: Evidence from a synthetic control approach. *Journal of Regional Science* **64**:2, 491-526. [Crossref]
233. Xiaolan Chen, Qiuyue Xie, Xiang Cao, Qilin Li. 2024. Examining the effectiveness of China's energy poverty alleviation policies: A text analysis on inter-provincial panel data. *Energy Policy* **186**, 113978. [Crossref]
234. Rowena Gray, Greg C. Wright. 2024. A rising tide? The local incidence of the second wave of globalization. *Journal of International Economics* **148**, 103819. [Crossref]
235. Emily J. Blanchard, Chad P. Bown, Davin Chor. 2024. Did Trump's trade war impact the 2018 election?. *Journal of International Economics* **148**, 103891. [Crossref]
236. Xiaowen Wang, Mingyue Chen, Nanxu Chen. 2024. How artificial intelligence affects the labour force employment structure from the perspective of industrial structure optimisation. *Heliyon* **10**:5, e26686. [Crossref]
237. Penglong Li, Xuan Ye. 2024. Research on the promotion effect and mechanisms of digital empowerment of food enterprises. *Agricultural Economics (Zemědělská ekonomika)* **70**:2, 60-72. [Crossref]
238. Fangzhi Liang, Gary Gang Tian, Zhihua Wei, Aimin Zeng. 2024. All That Glitters is Not Gold: Examining the Negative Impact of Real Estate Value on Companies' Market Competitiveness. *The Journal of Real Estate Finance and Economics* **103**. . [Crossref]
239. Luca Bittarello, Francis Kramarz, Alexis Maitre. 2024. The Task Content of Occupations. *Revue économique* **Vol. 51**:1, 31-53. [Crossref]
240. Yan Ma, Gen-Fu Feng, Chun-Ping Chang. 2024. The impact of energy security on energy innovation: a non-linear analysis. *Applied Economics* 1-21. [Crossref]
241. Michael Amior. 2024. The Contribution of Immigration to Local Labor Market Adjustment. *Journal of Labor Economics* **18**. . [Crossref]
242. Yuanyuan Gu, Jhorland Ayala García. 2024. Higher education exports and household consumption: evidence from China. *Asia Pacific Education Review* **134**. . [Crossref]
243. Zhimin Li, Leslie Sheng Shen, Calvin Zhang. 2024. Local Effects of Global Capital Flows: A China Shock in the U.S. Housing Market. *The Review of Financial Studies* **37**:3, 761-801. [Crossref]
244. JIN CAO, CHAO CUI, VALERIYA DINGER, MARTIN B. HOLM, SHULONG KANG. 2024. Identifying the Depreciation Rate of Durables from Marginal Spending Responses. *Journal of Money, Credit and Banking* **131**. . [Crossref]
245. Yusun Kim, Yilin Hou. 2024. Property Valuation – Cycle Length and Assessment Outcome. *The Journal of Real Estate Finance and Economics* **72**. . [Crossref]
246. Tianchu Feng, Andrea Appolloni, Jiayu Chen. 2024. How does corporate digital transformation affect carbon productivity? Evidence from Chinese listed companies. *Environment, Development and Sustainability* **41**. . [Crossref]
247. Zainab Hans, Michael H. Belzer. 2024. Gender wage gap and male perpetrated child abuse. *Review of Economics of the Household* **56**. . [Crossref]

248. Yanchi Zou. 2024. The impact of fiscal stimulus on employment: Evidence from China's four-trillion RMB package. *Economic Modelling* **131**, 106598. [Crossref]
249. Lorena M. D'Agostino, Stefano Schiavo. 2024. Using trademarks to fend off import competition: Evidence from the top R&D-spending companies. *International Business Review* **33**:1, 102206. [Crossref]
250. Wang Litan, Qian Minxun, Wang Yongzhe. 2024. Does audit quality affect firm innovation?. *Industrial Marketing Management* **117**, 402-417. [Crossref]
251. Kai Cheng, Zhuiqiao Jin, Guo Wu. 2024. Unveiling the role of artificial intelligence in influencing enterprise environmental performance: Evidence from China. *Journal of Cleaner Production* **440**, 140934. [Crossref]
252. Wenyi Lu, Shilong Zhuang, Siyuan Fan. 2024. Losing trust when pursuing development: How automation hindered political trust in China?. *Journal of Economic Behavior & Organization* **218**, 406-422. [Crossref]
253. Cheng Zhang, Xiyan Weng, Yilin Guo. 2024. Digital infrastructure construction and household energy efficiency: Based on a quasi-natural experiment in China. *Science of The Total Environment* **911**, 168544. [Crossref]
254. Linhui Wang, Qi Chen, Zhiqing Dong, Lu Cheng. 2024. The role of industrial intelligence in peaking carbon emissions in China. *Technological Forecasting and Social Change* **199**, 123005. [Crossref]
255. Chien-Chiang Lee, Jingyang Yan, Fuhao Wang. 2024. Impact of population aging on food security in the context of artificial intelligence: Evidence from China. *Technological Forecasting and Social Change* **199**, 123062. [Crossref]
256. Andre Groeger, Gianmarco León-Ciliotta, Steven Stillman. 2024. Immigration, labor markets and discrimination: Evidence from the Venezuelan Exodus in Perú. *World Development* **174**, 106437. [Crossref]
257. Xiao Ma. 2024. COLLEGE EXPANSION, TRADE, AND INNOVATION: EVIDENCE FROM CHINA. *International Economic Review* **65**:1, 315-351. [Crossref]
258. Nathalie Ferrière. 2024. Filling the "Decency Gap"? Donors' Reaction to US Policy on International Family Planning Aid. *The World Bank Economic Review* **38**:1, 185-207. [Crossref]
259. Kirill Borusyak, Peter Hull, Xavier Jaravel. 2024. Design-based identification with formula instruments: A review. *The Econometrics Journal* . [Crossref]
260. Shuai Wang, Xin Huang, Mengyue Xia, Xing Shi. 2024. Does Artificial Intelligence Promote Firms' Innovation Efficiency: Evidence from the Robot Application. *Journal of the Knowledge Economy* **108**. . [Crossref]
261. Katharina Fietz, Matteo Morgandi, Gabriel Lyrio De Oliveira, Luiz Henrique Superti. Exit Patterns from Brazil's Bolsa Familia and the Role of the Local Labor Market **2**, . [Crossref]
262. Stefan Jestl. 2024. Industrial robots, and information and communication technology: the employment effects in EU labour markets. *Regional Studies* **12**, 1-18. [Crossref]
263. Philipp Ager, James J Feigenbaum, Casper W Hansen, Hui Ren Tan. 2024. How the Other Half Died: Immigration and Mortality in U.S. Cities. *Review of Economic Studies* **91**:1, 1-44. [Crossref]
264. Paolo Abarcar, Caroline Theoharides. 2024. Medical Worker Migration and Origin-Country Human Capital: Evidence from U.S. Visa Policy. *Review of Economics and Statistics* **106**:1, 20-35. [Crossref]
265. Jingying Linghu. 2024. The impact of robots on informal employment: evidence from China. *Applied Economics Letters* 1-7. [Crossref]
266. Mathilde Muñoz. 2024. Trading Nontradables: The Implications of Europe's Job-Posting Policy. *The Quarterly Journal of Economics* **139**:1, 235-304. [Crossref]

267. Jun Sung Kim, Liang Choon Wang. 2024. The differential effects of exchange rate fluctuations on local housing price growth: evidence from Australia. *Regional Studies* **58**:1, 135-150. [Crossref]
268. Zifeng Feng. 2024. Household Income Growth and Firm Valuation: Evidence from REITs. *Journal of Real Estate Research* **46**:1, 55-81. [Crossref]
269. Yimeng Niu, Zhibin Jiang. 2024. Servitization in cross-border relationships: investigating the effects of global supply chain dependence on the servitization level of the manufacturers. *International Journal of Operations & Production Management* **44**:1, 260-291. [Crossref]
270. Neda Trifkovic. 2024. Certifiable management standards, labor productivity, and worker wages: Evidence from the food sector in Vietnam. *Agribusiness* **40**:1, 161-184. [Crossref]
271. Stelios Roupakias. 2024. Government employment and local multipliers in Greek municipalities. *The Annals of Regional Science* **72**:1, 195-221. [Crossref]
272. Jing Li, Huihua Nie, Rui Ruan, Xinyi Shen. 2024. Subjective perception of economic policy uncertainty and corporate social responsibility: Evidence from China. *International Review of Financial Analysis* **91**, 103022. [Crossref]
273. Jeremy Lebow. 2024. Immigration and occupational downgrading in Colombia. *Journal of Development Economics* **166**, 103164. [Crossref]
274. Zibin Huang, Xu Jiang, Ang Sun. 2024. Fertility and delayed migration: How son preference protects young girls against mother–child separation. *Journal of Development Economics* **166**, 103191. [Crossref]
275. Carlos Charris, Danyelle Branco, Bladimir Carrillo. 2024. Economic shocks and infant health: Evidence from a trade reform in Brazil. *Journal of Development Economics* **166**, 103193. [Crossref]
276. Priyam Verma. 2024. Optimal Infrastructure after Trade Reform in India. *Journal of Development Economics* **166**, 103208. [Crossref]
277. Dennis Lim, Wenjie Wang, Yichong Zhang. 2024. A conditional linear combination test with many weak instruments. *Journal of Econometrics* **238**:2, 105602. [Crossref]
278. Melinda Fremerey, Lukas Hörnig, Sandra Schaffner. 2024. Becoming neighbors with refugees and voting for the far-right? The impact of refugee inflows at the small-scale level. *Labour Economics* **86**, 102467. [Crossref]
279. Alberto Chong, Daniel Velásquez. 2024. Does Trade Liberalization Foster Intimate Partner Violence?. *Economic Development and Cultural Change* **72**:2, 563-602. [Crossref]
280. Tushar Bharati, Adnan M. S. Fakir, Wina Yoman. 2024. Internal Migration and Labor Market Outcomes in Indonesia. *Economic Development and Cultural Change* **72**:2, 997-1040. [Crossref]
281. Joshua Linn, Chang Shen. 2024. The Effect of Income on Vehicle Demand: Evidence from China's New Vehicle Market. *Journal of the Association of Environmental and Resource Economists* **11**:1, 41-73. [Crossref]
282. Julia Brewer, Ashley Larsen, Frederik Noack. 2024. The land use consequences of rural to urban migration*. *American Journal of Agricultural Economics* **106**:1, 177-205. [Crossref]
283. Jiwon Park. 2024. Outsource to India: The impact of service outsourcing to India on the labor market in the United States. *Bulletin of Economic Research* **76**:1, 203-222. [Crossref]
284. Eugenio Levi, Isabelle Sin, Steven Stillman. 2024. The lasting impact of external shocks on political opinions and populist voting. *Economic Inquiry* **62**:1, 349-374. [Crossref]
285. Raghav Rakesh. 2024. The Local Economic Impacts of Foreign Students. *SSRN Electronic Journal* **55**. . [Crossref]
286. Wei Luo, Lixin Tang, Yaxin Yang, Xianqiang Zou. 2024. Robots as Guardians: Industrial Automation and Workplace Safety in China. *SSRN Electronic Journal* **128**. . [Crossref]

287. Yongqiang Chu, David Hao Zhang, Tim Zhang. 2024. Small Mortgages and the Rise of FinTech and Shadow Banks. *SSRN Electronic Journal* **132**. . [Crossref]
288. Gene Ambrocio, Iftekhar Hasan, Xiang Li. 2024. Global Political Ties and the Global Financial Cycle. *SSRN Electronic Journal* **121**. . [Crossref]
289. Jacelly Cespedes, Erica Xuewei Jiang, Carlos Parra, Jinyuan Zhang. 2024. Branching Out Inequality: The Impact of Credit Equality Policies. *SSRN Electronic Journal* **25**. . [Crossref]
290. William D. Larson, Christos Makridis, Chad Redmer. 2024. Borrower Expectations and Mortgage Performance: Evidence from the COVID-19 Pandemic. *SSRN Electronic Journal* **86**. . [Crossref]
291. Johannes Breckenfelder, Veronica De Falco. 2024. Investor Heterogeneity and Large-Scale Asset Purchases. *SSRN Electronic Journal* **48**. . [Crossref]
292. Tobias Hellmundt, Elías Cisneros, Krisztina Kis-Katos. 2024. Land-use transformation and conflict: The effects of oil palm expansion in Indonesia. *SSRN Electronic Journal* **98**. . [Crossref]
293. Chao Liu, Edmund Lou, Wei Xiang. 2024. Income Inequality, House Prices, and Housing Regulations. *SSRN Electronic Journal* **107**. . [Crossref]
294. Eleanor Krause. 2024. Simulation of Hydrology in Ungauged Watershedsjob Loss, Selective Migration, and the Accumulation of Disadvantage: Evidence From Appalachia's Coal Country. *SSRN Electronic Journal* **13**. . [Crossref]
295. Wenyi Lu, Haotian Bai, Siyuan Fan. 2024. Robot Insurgency: Socialist Legacy and Protest Geography in China. *SSRN Electronic Journal* **126**. . [Crossref]
296. Adam Levai, Riccardo Turati. 2024. International Immigration and Labor Regulation. *SSRN Electronic Journal* **6**. . [Crossref]
297. Lisa Capretti, Joanna Kopinska, Rama Dasi Mariani, Furio C. Rosati. 2024. Caring Connections: Immigrant Caregivers and Long-Term Elderly Care in Italy. *SSRN Electronic Journal* **45**. . [Crossref]
298. Weizheng Lai, Xun Li. 2024. Human Capital Development under Trade Conflict. *SSRN Electronic Journal* **4**. . [Crossref]
299. Dahai Fu, Yi Lu, Shufei Wang. 2024. Export Expansion, Demand for External Finance, and Regional Financial Development: Evidence from China. *SSRN Electronic Journal* **50**. . [Crossref]
300. Michael Andrew Clemens, Ethan G. Lewis. 2024. The Effect of Low-skill Immigration Restrictions on US Firms and Workers: Evidence From a Randomized Lottery. *SSRN Electronic Journal* **8**. . [Crossref]
301. Evangelina Dardati, Jorge Sabat. 2024. Water Markets and Drought Adaptation: Insights from Policy Interventions. *SSRN Electronic Journal* **54**. . [Crossref]
302. Guido Ascari, Jakob Grazzini, Domenico Massaro. 2024. Great Layoff, Great Retirement and Post-pandemic Inflation. *SSRN Electronic Journal* **134**. . [Crossref]
303. Paul Hufe. 2024. The Parental Wage Gap and the Development of Socio-Emotional Skills in Children. *SSRN Electronic Journal* **134**. . [Crossref]
304. Johannes Breckenfelder, Veronica De Falco. 2024. Investor Heterogeneity and Large-Scale Asset Purchases. *SSRN Electronic Journal* **48**. . [Crossref]
305. Paul Hufe. 2024. The Parental Wage Gap and the Development of Socio-Emotional Skills in Children. *SSRN Electronic Journal* **134**. . [Crossref]
306. Pablo Egana-delSol, Alejandro Micco. 2024. The Role of Technological Change in the Evolution of the Employment to Output Elasticity. *SSRN Electronic Journal* **1**. . [Crossref]
307. Diego R. Känzig, Julian Marenz, Marcel Olbert. 2024. Carbon Leakage to Developing Countries. *SSRN Electronic Journal* **63**. . [Crossref]

308. Vasundhara Sharma, Ashish Agarwal, Anitesh Barua. 2024. Demand-Side Effects of Open Innovation: The Case of Cryptocurrency Forking. *SSRN Electronic Journal* **45**. . [Crossref]
309. Marcos Nakaguma, Arthur Viaro. 2024. Trade Shocks and Human Capital: Evidence from Brazil's Trade Liberalization. *SSRN Electronic Journal* **34**. . [Crossref]
310. Gilbert Cette, Jimmy Lopez, Jacques Mairesse, giuseppe nicoletti. 2024. Trust, Intangible Assets, and Productivity. *SSRN Electronic Journal* **12**. . [Crossref]
311. Gueyon Kim, Colin Merritt, Giovanni Peri. 2024. Measuring and Predicting "New Work" in the United States: The Role of Local Factors and Global Shocks. *SSRN Electronic Journal* **4**. . [Crossref]
312. Evan Eastman, Kyeonghee Kim, Tingyu Zhou. 2024. Homeowners Insurance and Housing Prices. *SSRN Electronic Journal* **34**. . [Crossref]
313. Chad P. Bown, Paola Conconi, Aksel Erbahar, Lorenzo Trimarchi. 2024. Politically Motivated Trade Protection. *SSRN Electronic Journal* **134**. . [Crossref]
314. Sangmin Aum, Yongseok Shin. 2024. Is Software Eating the World?. *SSRN Electronic Journal* **90**. . [Crossref]
315. Carola Binder, Rupal Kamdar, Jane Ryngaert. 2024. Partisan Expectations and Covid-Era Inflation. *SSRN Electronic Journal* **41**. . [Crossref]
316. Mikko Silliman, Alexander Willén. 2024. Worker Power, Immigrant Sorting, and Firm Dynamics. *SSRN Electronic Journal* **138**. . [Crossref]
317. Maria Petrova, Gregor Schubert, Bledi Taska, Pinar Yildirim. 2024. Automation, Career Values, and Political Preferences. *SSRN Electronic Journal* **91**. . [Crossref]
318. Hala Moussawi. 2024. Regulation and Competition in Global Banking. *SSRN Electronic Journal* **68**. . [Crossref]
319. Lior Strahilevitz, Lisa Yao Liu. 2024. Cash Substitution and Deferred Consumption as Data Breach Harms. *SSRN Electronic Journal* **5**. . [Crossref]
320. Bernadette A. Minton, Alvaro G. Taboada, Rohan G. Williamson. 2024. Is the Decline in the Number of Community Banks Detrimental to Community Economic Development?. *SSRN Electronic Journal* **144**. . [Crossref]
321. Marco Leonardi, Elena Meschi. 2024. Non-tariff barriers to trade. *The Journal of Law, Economics, and Organization* . [Crossref]
322. Juliane Begenau, Pauline Liang, Emil Siriwardane. 2024. The Rise of Alternatives. *SSRN Electronic Journal* **30**. . [Crossref]
323. Li Azinovic-Yang. 2024. Innovation and Welfare Impacts of Disclosure Regulation: A General Equilibrium Approach . *SSRN Electronic Journal* **108**. . [Crossref]
324. jaume vives-i-bastida, Ahmet Gulek. 2024. Synthetic instruments in DiD designs with unmeasured confounding. *SSRN Electronic Journal* **105**. . [Crossref]
325. Ekaterina Prytkova, Fabien Petit, Deyu Li, Sugat Chaturvedi, Tommaso Ciarli. 2024. The Employment Impact of Emerging Digital Technologies. *SSRN Electronic Journal* **40**. . [Crossref]
326. Christos Makridis. The Geography and Returns to Private Arts Organizations **46**, . [Crossref]
327. Ronize Cruz, Francisco Nobre, João Pereira dos Santos. The Economic Footprint of Short-Term Rentals on Local Businesses: Evidence from Portugal **73**, . [Crossref]
328. Sebastian Hanson. 2024. Institutional Investors In The Market For Single-Family Housing: Where Did They Come From, Where Did They Go?. *SSRN Electronic Journal* **32**. . [Crossref]
329. Hani Mansour, Pamela Medina, Andrea Velásquez. 2023. When Women's Work Disappears: Marriage and Fertility Decisions in Peru. *Journal of Globalization and Development* **14**:2, 385-412. [Crossref]

330. Arthur Mendes, Wataru Miyamoto, Thuy Lan Nguyen, Steven Pennings, Leo Feler. The Macroeconomic Effects of Cash Transfers: Evidence from Brazil **72**, . [Crossref]

331. Richard Bräuer, Felix Kersting. 2023. Trade Shocks, Labour Markets and Migration in the First Globalisation. *The Economic Journal* **134**:657, 135-164. [Crossref]

332. Janjala Chirakijja, Seema Jayachandran, Pinchuan Ong. 2023. The Mortality Effects of Winter Heating Prices. *The Economic Journal* **134**:657, 402-417. [Crossref]

333. Anna Matysiak, Daniela Bellani, Honorata Bogusz. 2023. Industrial Robots and Regional Fertility in European Countries. *European Journal of Population* **39**:1. . [Crossref]

334. Guangzheng Jing, Shanshan Meng, Miaojie Yu. 2023. Digital economy and the domestic supply chain network. *Digital Economy and Sustainable Development* **1**:1. . [Crossref]

335. Jin Feng, Zitai Wang, Qiang Xie. 2023. Does trade liberalization improve child health? Evidence from China. *China Economic Review* **82**, 102068. [Crossref]

336. Yini Geng, Zhiqiang Zheng, Yongjian Ma. 2023. Digitization, perception of policy uncertainty, and corporate green innovation: A study from China. *Economic Analysis and Policy* **80**, 544-557. [Crossref]

337. Dionissi Aliprantis, Kyle Fee, Mark E. Schweitzer. 2023. Opioids and the labor market. *Labour Economics* **85**, 102446. [Crossref]

338. Songman Kang, Hyelim Son, B.K. Song. 2023. The effect of housing price inequality on mental health. *Labour Economics* **85**, 102460. [Crossref]

339. Mi Dai. 2023. Recent developments on trade and inequality. *Journal of Economic Surveys* **37**:5, 1636-1659. [Crossref]

340. Fabienne Helfer, Volker Grossmann, Aderonke Osikominu. 2023. How does immigration affect housing costs in Switzerland?. *Swiss Journal of Economics and Statistics* **159**:1. . [Crossref]

341. Astrid Marinoni. 2023. Immigration and Entrepreneurship: The Role of Enclaves. *Management Science* **69**:12, 7266-7284. [Crossref]

342. Andrea La Nauze. 2023. Motivation Crowding in Peer Effects: The Effect of Solar Subsidies on Green Power Purchases. *Review of Economics and Statistics* **105**:6, 1465-1480. [Crossref]

343. Mary Kate Batistich, Timothy N Bond. 2023. Stalled Racial Progress and Japanese Trade in the 1970s and 1980s. *Review of Economic Studies* **90**:6, 2792-2821. [Crossref]

344. Michael Coelli, James Maccarrone, Jeff Borland. 2023. The dragon Down Under: the regional labour market impact of growth in Chinese imports to Australia. *Regional Studies* **57**:11, 2148-2163. [Crossref]

345. Philippe Aghion, Antonin Bergeaud, John Van Reenen. 2023. The Impact of Regulation on Innovation. *American Economic Review* **113**:11, 2894-2936. [Abstract] [View PDF article] [PDF with links]

346. Emilio Gutierrez, David Jaume, Martín Tobal. 2023. Do Credit Supply Shocks Affect Employment in Middle-Income Countries?. *American Economic Journal: Economic Policy* **15**:4, 1-36. [Abstract] [View PDF article] [PDF with links]

347. David N. Figlio, Cassandra M. D. Hart, Krzysztof Karbownik. 2023. Effects of Maturing Private School Choice Programs on Public School Students. *American Economic Journal: Economic Policy* **15**:4, 255-294. [Abstract] [View PDF article] [PDF with links]

348. Maximilian Koppenberg, Ashok K. Mishra, Stefan Hirsch. 2023. Food aid and violent conflict: A review and Empiricist's companion. *Food Policy* **121**, 102542. [Crossref]

349. Shuaizhang Feng, Jingliang Lu, Leilei Shen. 2023. Hukou Matters: The heterogeneous local labor market effects of export expansions in China. *Journal of Comparative Economics* **103**. . [Crossref]

350. Jihee Kim, Kyoochul Kim, Sangyoon Park, Chang Sun. 2023. The economic costs of trade sanctions: Evidence from North Korea. *Journal of International Economics* **145**, 103813. [Crossref]

351. María Esther Caballero, Brian C. Cadena, Brian K. Kovak. 2023. The international transmission of local economic shocks through migrant networks. *Journal of International Economics* **145**, 103832. [Crossref]

352. Henry Stemmler. 2023. Automated Deindustrialization: How Global Robotization Affects Emerging Economies—Evidence from Brazil. *World Development* **171**, 106349. [Crossref]

353. Zhonghai Zheng, Boqiang Lin, Nan Ye, Chaofeng Zheng, Yongjing Xie. 2023. Impact of renewable energy technology innovation on green industrial structure upgrading: evidence from 284 cities in China. *Environmental Research Communications* **5**:11, 115020. [Crossref]

354. Luguang Zhang, Qitaisong Shen. 2023. Carbon Emission Performance of Robot Application: Influencing Mechanisms and Heterogeneity Characteristics. *Discrete Dynamics in Nature and Society* **2023**, 1-18. [Crossref]

355. Jacques Bughin, Michele Cincera. Does Working from Home Work? . [Crossref]

356. Jing Tan, Yaqiao Zhang, Hui Cao. 2023. The FDI-spawned technological spillover effects on innovation quality of local enterprises: evidence from industrial firms and the patents in China. *Applied Economics* **55**:49, 5800-5815. [Crossref]

357. Filipe R Campante, Davin Chor, Bingjing Li. 2023. The Political Economy Consequences of China's Export Slowdown. *Journal of the European Economic Association* **21**:5, 1721-1771. [Crossref]

358. Carl T Kitchens, Luke P Rodgers. 2023. The Impact of the WWI Agricultural Boom and Bust on Female Opportunity Cost and Fertility. *The Economic Journal* **133**:656, 2978-3006. [Crossref]

359. Ahmad Lashkaripour, Volodymyr Lugovskyy. 2023. Profits, Scale Economies, and the Gains from Trade and Industrial Policy. *American Economic Review* **113**:10, 2759-2808. [Abstract] [View PDF article] [PDF with links]

360. Nicolás Ajzenman, Patricio Dominguez, Raimundo Undurraga. 2023. Immigration, Crime, and Crime (Mis)Perceptions. *American Economic Journal: Applied Economics* **15**:4, 142-176. [Abstract] [View PDF article] [PDF with links]

361. Giovanni Peri, Reem Zaiour. 2023. Changes in international immigration and internal native mobility after COVID-19 in the USA. *Journal of Population Economics* **36**:4, 2389-2428. [Crossref]

362. Yinjunjie Zhang, Robert Breunig. 2023. Female breadwinning and domestic abuse: evidence from Australia. *Journal of Population Economics* **36**:4, 2925-2965. [Crossref]

363. Peihao Shi, Lihui Yin, Chuanqing Wu. 2023. Voting by mouth: media attention and environmental governance. *Environmental Science and Pollution Research* **30**:47, 103996-104014. [Crossref]

364. Jeremy Jackson, Scott Beaulier. 2023. Economic freedom and philanthropy. *Journal of Economic Behavior & Organization* **214**, 148-183. [Crossref]

365. Div Bhagia, Carter Bryson. 2023. Understanding the racial employment gap: The role of sectoral shifts. *Labour Economics* **84**, 102413. [Crossref]

366. Jost Sieweke, Denefa Bostandzic, Svenja-Marie Smolinski. 2023. The influence of top management team gender diversity on firm performance during stable periods and economic crises: An instrumental variable analysis. *The Leadership Quarterly* **34**:5, 101703. [Crossref]

367. Gianluca Pallante, Emanuele Russo, Andrea Roventini. 2023. Does public R&D funding crowd-in private R&D investment? Evidence from military R&D expenditures for US states. *Research Policy* **52**:8, 104807. [Crossref]

368. Sai Yuan, Ran Zhou, Mengna Li, Chengchao Lv. 2023. Investigating the influence of digital technology application on employee compensation. *Technological Forecasting and Social Change* **195**, 122787. [Crossref]

369. Irene Brambilla, Andrés César, Guillermo Falcone, Leonardo Gasparini. 2023. The impact of robots in Latin America: Evidence from local labor markets. *World Development* **170**, 106271. [Crossref]
370. Ivette Contreras. 2023. Following your lead: Migration networks and immigrants' education decisions. *World Development* **170**, 106320. [Crossref]
371. Elena Pupaza, Joachim Wehner. 2023. From Low-Cost Flights to the Ballot Box: How Eastern European Migration Shaped Far-Right Voting in London. *The Journal of Politics* **85**:4, 1214-1228. [Crossref]
372. Aksel Erbahar, Ömer Tarık Gençosmanoğlu. 2023. Migrants and imports: Evidence from Dutch firms. *Economica* **90**:360, 1204-1228. [Crossref]
373. Qingyang Wu. 2023. Sustainable growth through industrial robot diffusion: Quasi-experimental evidence from a Bartik shift-share design. *Economics of Transition and Institutional Change* **31**:4, 1107-1133. [Crossref]
374. HUI CHEN, ZHUO CHEN, ZHIGUO HE, JINYU LIU, RENGMING XIE. 2023. Pledgeability and Asset Prices: Evidence from the Chinese Corporate Bond Markets. *The Journal of Finance* **78**:5, 2563-2620. [Crossref]
375. Christian Gunadi, Hanbyul Ryu. 2023. How Do People Respond When They Know That Robots Will Take Their Jobs?. *Oxford Bulletin of Economics and Statistics* **85**:5, 939-958. [Crossref]
376. Mengling Zhou, Kangqi Jiang, Zhongfei Chen. 2023. The side effects of local government debt: Evidence from urban investment bonds and corporate pollution in China. *Journal of Environmental Management* **344**, 118739. [Crossref]
377. Christiane Kneer, Alexander Raabe. 2023. Tracking Foreign Capital: The Effect of Capital Inflows on Bank Lending in the UK. *IMF Economic Review* **125**. . [Crossref]
378. Christopher Severen. 2023. Commuting, Labor, and Housing Market Effects of Mass Transportation: Welfare and Identification. *Review of Economics and Statistics* **105**:5, 1073-1091. [Crossref]
379. Lorenzo Caliendo, Fernando Parro. 2023. Lessons from US–China Trade Relations. *Annual Review of Economics* **15**:1, 513-547. [Crossref]
380. Steven Liao. 2023. Chinese Foreign Real Estate Investment and Local Voting in US Presidential Elections. *International Studies Quarterly* **67**:4. . [Crossref]
381. Erling Barth, Henning Finseraas, Anders Kjelsrud, Kalle Moene. 2023. Openness and the welfare state: risk and income effects in protection without protectionism. *European Journal of Political Economy* **79**, 102405. [Crossref]
382. Chan Yu. 2023. The role of immigrants in the United States labor market and Chinese import competition. *Journal of International Economics* **144**, 103792. [Crossref]
383. Hyunbae Chun, Hailey Hayeon Joo, Jisoo Kang, Yoonsoo Lee. 2023. E-commerce and local labor markets: Is the "Retail Apocalypse" near?. *Journal of Urban Economics* **137**, 103594. [Crossref]
384. Benjamin Ramkissoon, Regan Deonanan. 2023. How do remittances impact child mortality and are there preconditions?. *Social Science & Medicine* **333**, 116178. [Crossref]
385. MARCEL OLBERT, PETER H. SEVERIN. 2023. Private Equity and Local Public Finances. *Journal of Accounting Research* **61**:4, 1313-1362. [Crossref]
386. Andreas M. Fischer, Philipp Herkenhoff, Philip Sauré. 2023. Identifying Chinese supply shocks: Effects of trade on labor markets. *Review of International Economics* **31**:4, 1476-1507. [Crossref]
387. Juan Blyde, Matias Busso, Kyunglin Park, Dario Romero. 2023. Short- and long-run labor market adjustment to import competition. *Review of International Economics* **31**:4, 1552-1569. [Crossref]
388. Ricardo Duque Gabriel, Mathias Klein, Ana Sofia Pessoa. 2023. The Effects of Government Spending in the Eurozone. *Journal of the European Economic Association* **21**:4, 1397-1427. [Crossref]

389. Luca Bettarelli, Julia Estefania-Flores, Davide Furceri, Prakash Loungani, Pietro Pizzuto. 2023. Energy inflation and consumption inequality. *Energy Economics* **124**, 106823. [Crossref]

390. Maggie Y. Liu. 2023. How does globalization affect educational attainment? Evidence from China. *International Economics* **174**, 138-159. [Crossref]

391. Richard Bräuer, Matthias Mertens, Viktor Slavtchev. 2023. Import competition and firm productivity: Evidence from German manufacturing. *The World Economy* **46**:8, 2285-2305. [Crossref]

392. Silke J. Forbes, Renáta Kosová. 2023. Does Competition Benefit Complements? Evidence from Airlines and Hotels. *Management Science* **69**:8, 4733-4752. [Crossref]

393. Larry Liu, Han Zhang. 2023. Robots and protest: does increased protest among Chinese workers result in more automation?. *Socio-Economic Review* **21**:3, 1751-1772. [Crossref]

394. Paul Mohnen. 2023. The Impact of the Retirement Slowdown on the U.S. Youth Labor Market. *Journal of Labor Economics* **20**. . [Crossref]

395. Isil Erol, Umut Unal. 2023. Internal migration and house prices in Australia. *Regional Studies* **57**:7, 1207-1222. [Crossref]

396. Shiqin Liu, Haifeng Qian. 2023. Entrepreneurship and income inequality in cities: differentiated impacts of new firm formation and self-employment. *Regional Studies* **57**:7, 1318-1333. [Crossref]

397. Karsten Müller, Carlo Schwarz. 2023. From Hashtag to Hate Crime: Twitter and Antiminority Sentiment. *American Economic Journal: Applied Economics* **15**:3, 270-312. [Abstract] [View PDF article] [PDF with links]

398. Davide Furceri, Michael Ganslmeier, Jonathan Ostry. 2023. Are climate change policies politically costly?. *Energy Policy* **178**, 113575. [Crossref]

399. Bangzheng Wu, Pengpeng Yue, Shengqiang Zuo. 2023. Borrow to be the poor or the rich? It depends: Credit market and wealth accumulation. *International Review of Economics & Finance* **86**, 804-821. [Crossref]

400. Xiaoyu He, Yixin Mei. 2023. Can arms breed peace? The consequence of arms imports from the US on civil wars. *Journal of Comparative Economics* **134**. . [Crossref]

401. Rui Sun, Junfei Guo, Wensong Yu. 2023. Sponsor, institutional investor, and quotation behavior: Theory and evidence from China. *Journal of Economic Behavior & Organization* **211**, 411-428. [Crossref]

402. Yang Shen, Xiuwu Zhang. 2023. Intelligent manufacturing, green technological innovation and environmental pollution. *Journal of Innovation & Knowledge* **8**:3, 100384. [Crossref]

403. Martín Besfamille, Diego A. Jorrat, Osmel Manzano, Bernardo F. Quiroga, Pablo Sanguinetti. 2023. How do subnational governments react to shocks to different revenue sources? Evidence from hydrocarbon-producing provinces in Argentina. *Journal of Urban Economics* **136**, 103558. [Crossref]

404. Andrew McNeil, Davide Luca, Neil Lee. 2023. The long shadow of local decline: Birthplace economic adversity and long-term individual outcomes in the UK. *Journal of Urban Economics* **136**, 103571. [Crossref]

405. Greg Howard, Jack Liebersohn. 2023. Regional divergence and house prices. *Review of Economic Dynamics* **49**, 312-350. [Crossref]

406. John Cruzatti C., Axel Dreher, Johannes Matzat. 2023. Chinese aid and health at the country and local level. *World Development* **167**, 106214. [Crossref]

407. Nelly Elmallakh, Jackline Wahba. 2023. Syrian Refugees and the Migration Dynamics of Jordanians: Moving In or Moving Out?. *Economic Development and Cultural Change* **71**:4, 1283-1330. [Crossref]

408. Antonella Bandiera, Lelys Dinarte Diaz, Sandra V. Rozo, Carlos Schmidt-Padilla, María Micaela Sviatschi, Hernan Winkler. 2023. The Unintended Consequences of Deportations: Evidence from Firm Behavior in El Salvador. *Economic Development and Cultural Change* **71**:4, 1331-1358. [Crossref]
409. Andrew Mountford, Jonathan Wadsworth. 2023. 'Good jobs', training and skilled immigration. *Economica* **90**:359, 851-881. [Crossref]
410. Lihua Zhang, Tian Gan, Jiachen Fan. 2023. Do industrial robots affect the labour market? Evidence from China. *Economics of Transition and Institutional Change* **31**:3, 787-817. [Crossref]
411. José-Ignacio Antón, Enrique Fernández-Macías, Rudolf Winter-Ebmer. 2023. Does robotization affect job quality? Evidence from European regional labor markets. *Industrial Relations: A Journal of Economy and Society* **62**:3, 233-256. [Crossref]
412. Xiuyun Yang, Qi Han. 2023. Nonlinear Effects of Environmental Data Disclosure on Urban Pollution Emissions: Evidence from China. *Sustainability* **15**:14, 10999. [Crossref]
413. Samuel Bazzi, Andreas Ferrara, Martin Fiszbein, Thomas Pearson, Patrick A Testa. 2023. The Other Great Migration: Southern Whites and the New Right. *The Quarterly Journal of Economics* **138**:3, 1577-1647. [Crossref]
414. Alessia Matano, Paolo Naticchioni, Francesco Vona. 2023. The institutional wage adjustment to import competition: evidence from the Italian collective bargaining system. *Oxford Economic Papers* **75**:3, 631-651. [Crossref]
415. Maria Bas, Caroline Paunov. 2023. Do US top executives benefit from market concentration?. *Oxford Economic Papers* **75**:3, 652-680. [Crossref]
416. Xiangyu Feng, Nir Jaimovich, Krishna Rao, Stephen J Terry, Nicolas Vincent. 2023. Location, Location, Location: Manufacturing and House Price Growth. *The Economic Journal* **133**:653, 2055-2067. [Crossref]
417. Daria Denti, Alessandro Crociata, Alessandra Faggian. 2023. Knocking on Hell's door: dismantling hate with cultural consumption. *Journal of Cultural Economics* **47**:2, 303-349. [Crossref]
418. Masahiro Endoh. 2023. The China shock and job reallocation in Japan. *Journal of the Japanese and International Economies* **68**, 101257. [Crossref]
419. Matthew J. Kotchen, Katherine R.H. Wagner. 2023. Crowding in with impure altruism: Theory and evidence from volunteerism in national parks. *Journal of Public Economics* **222**, 104879. [Crossref]
420. Boqiang Lin, Yongjing Xie. 2023. Does digital transformation improve the operational efficiency of Chinese power enterprises?. *Utilities Policy* **82**, 101542. [Crossref]
421. Nicolas Berman, Mathieu Couttenier, Antoine Leblois, Raphael Soubeyran. 2023. Crop prices and deforestation in the tropics. *Journal of Environmental Economics and Management* **119**, 102819. [Crossref]
422. Rosa Sanchis-Guarner. 2023. Decomposing the impact of immigration on house prices. *Regional Science and Urban Economics* **100**, 103893. [Crossref]
423. KENNETH SCHEVE, THEO SERLIN. 2023. The German Trade Shock and the Rise of the Neo-Welfare State in Early Twentieth-Century Britain. *American Political Science Review* **117**:2, 557-574. [Crossref]
424. Carlos Garriga, Pedro Gete, Athena Tsouderou. 2023. The economic effects of real estate investors. *Real Estate Economics* **51**:3, 655-685. [Crossref]
425. Damien Dussaux, Francesco Vona, Antoine Dechezleprêtre. 2023. Imported carbon emissions: Evidence from French manufacturing companies. *Canadian Journal of Economics/Revue canadienne d'économique* **56**:2, 593-621. [Crossref]
426. Bo Chen, Dong Tan. 2023. Industrial Robots and the Employment Quality of Migrant Workers in the Manufacturing Industry. *Sustainability* **15**:10, 7998. [Crossref]

427. Yang Shen, Zhihong Yang, Xiuwu Zhang. 2023. Impact of digital technology on carbon emissions: Evidence from Chinese cities. *Frontiers in Ecology and Evolution* **11**. . [Crossref]

428. João Granja, Sara Moreira. 2023. Product Innovation and Credit Market Disruptions. *The Review of Financial Studies* **36**:5, 1930-1969. [Crossref]

429. Sofía Fernández Guerrico. 2023. Trade Shocks, Population Growth, and Migration. *The World Bank Economic Review* **37**:2, 305-330. [Crossref]

430. Enrico Berkes, Ruben Gaetani. 2023. Income Segregation and the Rise of the Knowledge Economy. *American Economic Journal: Applied Economics* **15**:2, 69-102. [Abstract] [View PDF article] [PDF with links]

431. Massimo Anelli, Gaetano Basso, Giuseppe Ippedico, Giovanni Peri. 2023. Emigration and Entrepreneurial Drain. *American Economic Journal: Applied Economics* **15**:2, 218-252. [Abstract] [View PDF article] [PDF with links]

432. Nicole Maestas, Kathleen J. Mullen, David Powell. 2023. The Effect of Population Aging on Economic Growth, the Labor Force, and Productivity. *American Economic Journal: Macroeconomics* **15**:2, 306-332. [Abstract] [View PDF article] [PDF with links]

433. Hyejin Kim, Jongkwan Lee. 2023. Task specialization and low-skilled immigration in a highly educated country: Evidence from Korea. *Southern Economic Journal* **89**:4, 1078-1101. [Crossref]

434. Saqib Amin, Marko Korhonen, Sanna Huikari. 2023. Unemployment and Mental Health: An Instrumental Variable Analysis Using Municipal-level Data for Finland for 2002–2019. *Social Indicators Research* **166**:3, 627-643. [Crossref]

435. Oleg Firsin. 2023. How does offshoring affect the wage impact of immigration?. *Economic Modelling* **121**, 106216. [Crossref]

436. Pietro Bomprezzi, Silvia Marchesi. 2023. A firm level approach on the effects of IMF programs. *Journal of International Money and Finance* **132**, 102819. [Crossref]

437. Xuan Jiang, Kendall Kennedy, Jiatong Zhong. 2023. When Opportunity Knocks: China's Open Door Policy and Declining Educational Attainment. *Labour Economics* **81**, 102312. [Crossref]

438. Raymundo M. Campos-Vazquez, Gerardo Esquivel, Priyasmita Ghosh, Eduardo Medina-Cortina. 2023. Long-lasting effects of a depressed labor market: Evidence from Mexico after the great recession. *Labour Economics* **81**, 102332. [Crossref]

439. Sotiris Blanas, Rigas Oikonomou. 2023. COVID-induced economic uncertainty, tasks and occupational demand. *Labour Economics* **81**, 102335. [Crossref]

440. Isabelle Cohen. 2023. Crowd in or crowd out? The subnational fiscal response to aid. *World Development* **164**, 106180. [Crossref]

441. Shuichiro Nishioka, Eric Olson. 2023. The political effects of trade with Japan in the 1980s. *Economic Inquiry* **61**:2, 451-471. [Crossref]

442. Xiyan Bai, Chan Lyu. 2023. Environmental Information Disclosure and Corporate Green Innovation: The Moderating Effect of Formal and Informal Institutions. *Sustainability* **15**:7, 6169. [Crossref]

443. Massimiliano Cali, Giorgio Presidente. Product Market Monopolies and Labor Market Monopsonies **132**, . [Crossref]

444. Julian Pedrazzi, Leonardo Peñaloza-Pacheco. 2023. Heterogeneous Effects of Forced Migration on the Female Labor Market: The Venezuelan Exodus in Colombia. *The Journal of Development Studies* **59**:3, 324-341. [Crossref]

445. Federico Maria Ferrara. 2023. Why does import competition favor republicans? Localized trade shocks and cultural backlash in the US. *Review of International Political Economy* **30**:2, 678-701. [Crossref]

446. Philippe Aghion, Roland Bénabou, Ralf Martin, Alexandra Roulet. 2023. Environmental Preferences and Technological Choices: Is Market Competition Clean or Dirty?. *American Economic Review: Insights* **5**:1, 1-19. [Abstract] [View PDF article] [PDF with links]

447. Ana Paula Cusolito, Alvaro Garcia-Marin, William F. Maloney. 2023. Proximity to the Frontier, Markups, and the Response of Innovation to Foreign Competition: Evidence from Matched Production-Innovation Surveys in Chile. *American Economic Review: Insights* **5**:1, 35-53. [Abstract] [View PDF article] [PDF with links]

448. Zhiyuan Li, Qianqian Tang, Yuan Zhang. 2023. Effect of export opportunity on the demand for skilled migrants and their next generation's education: Evidence from China. *China Economic Quarterly International* **3**:1, 1-12. [Crossref]

449. Guobing Shen, Binchao Shen, Ruochen Wu, Zhengyu Yuan. 2023. Internetization and the markups of export firms: Evidence from China. *Economic Modelling* **120**, 106184. [Crossref]

450. Xiang Ye, Pengpeng Yue. 2023. Financial literacy and household energy efficiency: An analysis of credit market and supply chain. *Finance Research Letters* **52**, 103563. [Crossref]

451. Yang Jiao, Leilei Shen, Yuyun Liu. 2023. Melting pot or salad bowl: Cultural effects on industrial similarity during trade liberalization. *Journal of Comparative Economics* **51**:1, 235-258. [Crossref]

452. Ohyun Kwon, Hao Zhao, Min Qiang Zhao. 2023. Global firms and emissions: Investigating the dual channels of emissions abatement. *Journal of Environmental Economics and Management* **118**, 102772. [Crossref]

453. Lingzheng Yu, Yao Wang, Xiahai Wei, Chenyu Zeng. 2023. Towards low-carbon development: The role of industrial robots in decarbonization in Chinese cities. *Journal of Environmental Management* **330**, 117216. [Crossref]

454. William Gamber, James Graham, Anirudh Yadav. 2023. Stuck at home: Housing demand during the COVID-19 pandemic. *Journal of Housing Economics* **59**, 101908. [Crossref]

455. Niels-Jakob H. Hansen, Rui C. Mano. 2023. COVID-19 Vaccines: A Shot in the Arm for the Economy. *IMF Economic Review* **71**:1, 148-169. [Crossref]

456. Timothy Watson, Paul Buckingham. 2023. Australian Government COVID-19 Business Supports. *Australian Economic Review* **56**:1, 124-140. [Crossref]

457. James Graham, Alistair Read. 2023. House Prices, Monetary Policy and Commodities: Evidence from Australia*. *Economic Record* **99**:324, 1-31. [Crossref]

458. Zachariah Rutledge, Pierre Mérel. 2023. Farm labor supply and fruit and vegetable production. *American Journal of Agricultural Economics* **105**:2, 644-673. [Crossref]

459. Fei Wang, Linwei Ye. 2023. Digital Transformation and Export Quality of Chinese Products: An Analysis Based on Innovation Efficiency and Total Factor Productivity. *Sustainability* **15**:6, 5395. [Crossref]

460. John Chung, Yong Suk Lee. 2023. The Evolving Impact of Robots on Jobs. *ILR Review* **76**:2, 290-319. [Crossref]

461. Doris Kwon, Olav Sorenson. 2023. The Silicon Valley Syndrome. *Entrepreneurship Theory and Practice* **47**:2, 344-368. [Crossref]

462. Francisco Costa, Angelo Marcantonio, Rudi Rocha. 2023. Stop Suffering! Economic Downturns and Pentecostal Upsurge. *Journal of the European Economic Association* **21**:1, 215-250. [Crossref]

463. Peikang Zhang, Huailiang Liang, Changjun Yue. 2023. Technological anxiety: How robots impact college graduates' informal employment?. *Journal of Asian Public Policy* **57**, 1-17. [Crossref]

464. Vinzent Ostermeyer. 2023. Local multipliers and the growth of services: evidence from late nineteenth century USA, Great Britain, and Sweden. *European Review of Economic History* **27**:1, 70-90. [Crossref]

465. Elisa M. Maffioli. 2023. The local health impacts of natural resource booms. *Health Economics* **32**:2, 462-500. [Crossref]
466. Timothy N. Bond, Osea Giuntella, Jakub Lonsky. 2023. Immigration and work schedules: Theory and evidence. *European Economic Review* **152**, 104358. [Crossref]
467. Nils D. Steiner, Philipp Harms. 2023. Trade shocks and the nationalist backlash in political attitudes: panel data evidence from Great Britain. *Journal of European Public Policy* **30**:2, 271-290. [Crossref]
468. David Klenert, Enrique Fernández-Macías, José-Ignacio Antón. 2023. Do robots really destroy jobs? Evidence from Europe. *Economic and Industrial Democracy* **44**:1, 280-316. [Crossref]
469. Yantuan Yu, Nengsheng Luo. 2023. DOES LAND MARKETIZATION IMPROVE ECO-EFFICIENCY? EVIDENCE FROM CHINA. *Technological and Economic Development of Economy* **29**:2, 539-563. [Crossref]
470. Alvaro Calderon, Vasiliki Fouka, Marco Tabellini. 2023. Racial Diversity and Racial Policy Preferences: The Great Migration and Civil Rights. *The Review of Economic Studies* **90**:1, 165-200. [Crossref]
471. Simon Galle, Andrés Rodríguez-Clare, Moises Yi. 2023. Slicing the Pie: Quantifying the Aggregate and Distributional Effects of Trade. *The Review of Economic Studies* **90**:1, 331-375. [Crossref]
472. Katrina Kosec, Jie Song, Hongdi Zhao, Brian Holtemeyer. 2023. The Gendered Impacts of Income Fluctuations on Household Departure, Labor Supply, and Human Capital Decisions: Evidence from Kyrgyzstan. *Feminist Economics* **29**:1, 205-235. [Crossref]
473. Ran Abramitzky, Philipp Ager, Leah Boustan, Elior Cohen, Casper W. Hansen. 2023. The Effect of Immigration Restrictions on Local Labor Markets: Lessons from the 1920s Border Closure. *American Economic Journal: Applied Economics* **15**:1, 164-191. [Abstract] [View PDF article] [PDF with links]
474. James Graham, Christos A. Makridis. 2023. House Prices and Consumption: A New Instrumental Variables Approach. *American Economic Journal: Macroeconomics* **15**:1, 411-443. [Abstract] [View PDF article] [PDF with links]
475. Vikram Dayal, Anand Murugesan. Instrumental Variables 135-168. [Crossref]
476. Mingyue Fang, Huihua Nie, Xinyi Shen. 2023. Can enterprise digitization improve ESG performance?. *Economic Modelling* **118**, 106101. [Crossref]
477. Xianbo Zhou, Yucheng Sun, Ying Tao. 2023. Does Digital Finance Upgrade Trickle-down consumption effect in China?. *Economic Modelling* **118**, 106103. [Crossref]
478. Luca Pieroni, Melcior Rosselló Roig, Luca Salmasi. 2023. Italy: Immigration and the evolution of populism. *European Journal of Political Economy* **76**, 102260. [Crossref]
479. JunJie Wu, Kathleen Segerson, Chunhua Wang. 2023. Is environmental regulation the answer to pollution problems in urbanizing economies?. *Journal of Environmental Economics and Management* **117**, 102754. [Crossref]
480. Justin H. Leung, Hee Kwon Seo. 2023. How do government transfer payments affect retail prices and welfare? Evidence from SNAP. *Journal of Public Economics* **217**, 104760. [Crossref]
481. Michele Cantarella, Nicolò Fraccaroli, Roberto Volpe. 2023. Does fake news affect voting behaviour?. *Research Policy* **52**:1, 104628. [Crossref]
482. Bernhard Reinsberg, Thomas Stubbs, Louis Bujnoch. 2023. Structural adjustment, alienation, and mass protest. *Social Science Research* **109**, 102777. [Crossref]
483. Yantuan Yu, Kai Tang. 2023. Does financial inclusion improve energy efficiency?. *Technological Forecasting and Social Change* **186**, 122110. [Crossref]
484. Giorgio Barba Navaretti, Anna Cecilia Rosso. 2023. Access to capital markets and the geography of productivity leaders and laggards. *Journal of Regional Science* **63**:1, 64-113. [Crossref]

485. Erling Barth, Henning Finseraas, Anders Kjelsrud, Kalle Moene. 2023. Hit by the Silk Road: how wage coordination in Europe mitigates the China shock*. *The Scandinavian Journal of Economics* **125**:1, 32-72. [Crossref]
486. Da Huang. 2023. The Rise of Passive Investing and Active Mutual Fund Skill. *SSRN Electronic Journal* **240**. . [Crossref]
487. Lukas Diebold. 2023. Golden Fetters or Credit Boom Gone Bust? A Reassessment of Capital Flows in the Interwar Period. *SSRN Electronic Journal* **69**. . [Crossref]
488. Jeremy Bertomeu, Xiumin Martin, Sheryl Zhang. 2023. Uncle Sam's Stimulus and Crypto Boom. *SSRN Electronic Journal* **69**. . [Crossref]
489. Umut Unal, Bernd Hayo, Isil Erol. 2023. The Effect of Immigration on the German Housing Market. *SSRN Electronic Journal* **45**. . [Crossref]
490. Paul Beaumont, Clemence Lenoir. 2023. Customer Loyalty in Times of Crisis. *SSRN Electronic Journal* **134**. . [Crossref]
491. Yi-Ju Hung. 2023. Immigration and Native Children's Long-Term Outcomes. *SSRN Electronic Journal* **55**. . [Crossref]
492. Guillaume Vuillemey. 2023. From the Saving Glut to Financial Instability: Evidence from the Silicon Valley Bank Failure. *SSRN Electronic Journal* **109**. . [Crossref]
493. Anna Minasyan, Gabriella Montinola. 2023. Gendered Aid and Women's Rights. *SSRN Electronic Journal* **11**. . [Crossref]
494. Rene M. Stulz, Alvaro G. Taboada, Mathijs A. van Dijk. 2023. Why are bank holdings of liquid assets so high?. *SSRN Electronic Journal* **6**. . [Crossref]
495. Carl Hase. 2023. Minimum Wage Pass-through to Wholesale and Retail Prices: Evidence from Cannabis Scanner Data. *SSRN Electronic Journal* **83**. . [Crossref]
496. Atul Gupta, Joseph R. Martinez, Amol Navathe. 2023. Selection and Causal Effects in Voluntary Programs: Bundled Payments in Medicare. *SSRN Electronic Journal* **113**. . [Crossref]
497. Yongzhe Wang, Recardo Hwing. 2023. Financial Investment and Shrinking Employment: A New Approach. *SSRN Electronic Journal* **13**. . [Crossref]
498. Gerard Domènech-Arumí. 2023. Neighborhoods, Perceived Immigration, and Preferences for Redistribution: Evidence from Barcelona. *SSRN Electronic Journal* **2**. . [Crossref]
499. Leonardo Becchetti, Sara Mancini, Nazaria Solferino. 2023. Relational Skills and Corporate Productivity in a Comparative Size Class Perspective. *SSRN Electronic Journal* **74**. . [Crossref]
500. Eleanor Jawon Choi, Jisoo Hwang, Hyelim Son. 2023. The Effects of Exposure to a Large-Scale Recession on Higher Education and Early Labor Market Outcomes. *SSRN Electronic Journal* **138**. . [Crossref]
501. Robert Minton, Brian Wheaton. 2023. Delayed Inflation in Supply Chains: Theory and Evidence. *SSRN Electronic Journal* **107**. . [Crossref]
502. Samuel Bazzi, Andreas Ferrara, Martin Fiszbein, Thomas Pearson, Patrick Testa. 2023. The Confederate Diaspora. *SSRN Electronic Journal* **13**. . [Crossref]
503. Michael Gilraine, James Graham, Angela Zheng. 2023. Public Education and Intergenerational Housing Wealth Effects. *SSRN Electronic Journal* **107**. . [Crossref]
504. Joshua D. Gottlieb, David Hemous, Jeffrey Hicks. 2023. The Spillover Effects of Top Income Inequality. *SSRN Electronic Journal* **134**. . [Crossref]
505. Jingting Fan, Lei Li. 2023. Skill-Biased Imports, Skill Acquisition, and Migration. *SSRN Electronic Journal* **50**. . [Crossref]

506. Joshua D. Gottlieb, David Hemous, Jeffrey Hicks, Morten Olsen. 2023. The Spillover Effects of Top Income Inequality. *SSRN Electronic Journal* **134**. . [Crossref]
507. Xun Bian, N. Edward Coulson, Xiaojin Sun. 2023. Warmth of the Welcome: Immigration and Local Housing Returns. *SSRN Electronic Journal* **45**. . [Crossref]
508. Jingting Fan, Lei Li. 2023. Skill-Biased Imports, Skill Acquisition, and Migration. *SSRN Electronic Journal* **50**. . [Crossref]
509. Leah Platt Boustan, Christine Cai, Tammy Tseng. 2023. White Flight from Asian Immigration: Evidence from California Public Schools. *SSRN Electronic Journal* **110**. . [Crossref]
510. Amanda Ang, Eunjee Kwon, Siqi Zheng. 2023. The Impacts of Asian Immigrants on School Performance and Local Housing Markets in the Us. *SSRN Electronic Journal* **130**. . [Crossref]
511. Ruochen Dai, Dilip Mookherjee, Kaivan Munshi, Xiaobo Zhang. 2023. Entrepreneurship in China's Structural Transitions: Network Expansion and Overhang. *SSRN Electronic Journal* **4**. . [Crossref]
512. Yi Zhang, Wei Xue, Chun Liu. 2023. Go Global, Act Digital: The Impact of Digitalization on Global Value Chain Positioning. *SSRN Electronic Journal* **33**. . [Crossref]
513. Jess Cornaggia, Peter Iliev. 2023. Renewable Energy and Municipal Finance. *SSRN Electronic Journal* **101**. . [Crossref]
514. Daniel Keum, Nandil Bhatia. 2023. Do Nice Guys Finish Last? Prosociality in the CEO Labor Market. *SSRN Electronic Journal* **58**. . [Crossref]
515. Michael Becher, Daniel Stegmueller. 2023. Global Competition, Local Unions, and Political Representation: Disentangling Mechanisms. *SSRN Electronic Journal* **17**. . [Crossref]
516. Matthias Breuer, Anthony Le, Felix Vetter. 2023. Audit Mandates, Audit Firms, and Auditors. *SSRN Electronic Journal* **4**. . [Crossref]
517. Shiying Zhang, Peng Zhang. 2023. The Dark Side of Automation: Robot and Crime. *SSRN Electronic Journal* **128**. . [Crossref]
518. Peter Han. 2023. The Edge of Banks is Still Sharp: Pricing Power in the Local Conforming Mortgage Markets. *SSRN Electronic Journal* **35**. . [Crossref]
519. Elizaveta Sizova. 2023. Banks' Next Top Model. *SSRN Electronic Journal* **49**. . [Crossref]
520. Zheyuan Cui. 2023. Tradeoff between Segmentation and Asset Fragility -- Evidence from Municipal Bond Market. *SSRN Electronic Journal* **34**. . [Crossref]
521. Eugenie Dugoua, Todd Gerarden. 2023. Induced Innovation, Inventors, and the Energy Transition. *SSRN Electronic Journal* **102**. . [Crossref]
522. Eugenie Dugoua, Todd Gerarden. 2023. Induced Innovation, Inventors, and the Energy Transition. *SSRN Electronic Journal* **102**. . [Crossref]
523. Martin Groiss, David Sondermann. 2023. Help Wanted: The Drivers and Implications of Labour Shortages. *SSRN Electronic Journal* **41**. . [Crossref]
524. Maximilian Koppenberg, Ashok K. Mishra, Stefan Hirsch. 2023. Food Aid and Violent Conflict: A Review of Literature. *SSRN Electronic Journal* **33**. . [Crossref]
525. Peter Han. 2023. Information Spillover Across Credit Products. *SSRN Electronic Journal* **96**. . [Crossref]
526. Angie Natalia Moreno-Ardila. 2023. Choques migratorios y mercado de crédito formal: evidencia de Colombia (Migration Shocks and Formal Credit Market: Evidence from Colombia). *SSRN Electronic Journal* **146**. . [Crossref]
527. Miriam Fritzsche, Nikolaus Wolf. 2023. Fickle Fossils. Economic Growth, Coal and the European Oil Invasion, 1900-2015. *SSRN Electronic Journal* **12**. . [Crossref]

528. Gene Ambrocio, Iftekhar Hasan, Xiang Li. 2023. Global Political Ties and the Global Financial Cycle. *SSRN Electronic Journal* **121**. . [Crossref]

529. Ruixue Jia, Xiao Ma, Jianan Yang, Yiran Zhang. 2023. Improving Regulation for Innovation: Evidence from China's Pharmaceutical Industry. *SSRN Electronic Journal* **119**. . [Crossref]

530. Dominique C. Badoer, Evan Dudley. 2023. Financing Emissions. *SSRN Electronic Journal* **28**. . [Crossref]

531. Antonio Falato, Jasmine Xiao. 2023. Expectations and Credit Slumps. *SSRN Electronic Journal* **89**. . [Crossref]

532. Meijuan Wang, Mingzhi Zhang, Haiqian Chen, Donghua Yu. 2023. How Does Digital Economy Promote the Geographical Agglomeration of Manufacturing Industry?. *Sustainability* **15**:2, 1727. [Crossref]

533. Yumi Koh, Jing Li, Yifan Wu, Junjian Yi, Hanzhe Zhang. 2023. Young Women in Cities. *SSRN Electronic Journal* **39**. . [Crossref]

534. Lin Cong, Pulak Ghosh, Jiasun Li, Qihong Ruan. 2023. Inflation Expectation and Cryptocurrency Investment. *SSRN Electronic Journal* **32**. . [Crossref]

535. Hao Jiang, Sheridan Titman, Takeshi Yamada, Terry Zhang. 2023. Investor Composition, Trading Styles and Liquidity: An Analysis of Japanese Stocks. *SSRN Electronic Journal* **30**. . [Crossref]

536. Jarrad Harford, Qiyang He, Buhui Qiu. 2023. Firm-Level Labor-Shortage Exposure. *SSRN Electronic Journal* **33**. . [Crossref]

537. Wenyi Lu, Shilong Zhuang, Siyuan Fan. 2023. Losing Trust when Pursuing Development: How Automation Hindered Political Trust in China?. *SSRN Electronic Journal* **107**. . [Crossref]

538. Dan Luo, Michael Weber, Zhishu Yang, Qi Zhang. 2023. Transmission Of Quantity-based Monetary Policy Through Heterogeneous Banks In China. *SSRN Electronic Journal* **149**. . [Crossref]

539. Hei Sing Chan, Yichen Zhou. 2023. Charged Up? Distributional Impacts of Green Energy on Local Labor Markets. *SSRN Electronic Journal* **108**. . [Crossref]

540. Victor Saint-Jean. 2023. Exit or Voice? Divestment, Activism, and Corporate Social Responsibility. *SSRN Electronic Journal* **112**. . [Crossref]

541. Daniel Osuna Gomez, Eduardo Medina-Cortina. 2023. THE EFFECT OF IMMIGRATION ENFORCEMENT ABROAD ON IMMIGRANTS' HOME COUNTRY FIRMS. *SSRN Electronic Journal* **XV**. . [Crossref]

542. Aditya Chaudhry. 2023. Prices Impact Analyst Cash Flow Expectations. *SSRN Electronic Journal* **14**. . [Crossref]

543. Elin Molin, Paula Roth. 2023. Does Income Inequality Lead to Increased Household Debt? An Instrumental Variable Approach. *SSRN Electronic Journal* **99**. . [Crossref]

544. Neil R. Meredith, Anne Macy, Amy Meredith. 2022. Income elasticity of demand for tanning bed usage: evidence from survey data. *Journal of Applied Economics* **25**:1, 1156-1181. [Crossref]

545. Christoph E. Boehm, Nitya Pandalai-Nayar. 2022. Convex Supply Curves. *American Economic Review* **112**:12, 3941-3969. [Abstract] [View PDF article] [PDF with links]

546. Sunghun Lim, Sie Won Kim. 2022. Global agricultural value chains and employment growth. *Journal of the Agricultural and Applied Economics Association* **1**:4, 402-418. [Crossref]

547. Daiji Kawaguchi, Sagiri Kitao, Manabu Nose. 2022. The impact of COVID-19 on Japanese firms: mobility and resilience via remote work. *International Tax and Public Finance* **29**:6, 1419-1449. [Crossref]

548. Joel Kaiyuan Han. 2022. Parental involvement and neighborhood quality: evidence from public housing demolitions in Chicago. *Review of Economics of the Household* **20**:4, 1193-1238. [Crossref]

549. Jose Arias, Oleksandr Talavera, Andriy Tsapin. 2022. Bank liquidity and exposure to industry shocks: Evidence from Ukraine. *Emerging Markets Review* **53**, 100942. [Crossref]

550. Chinchih Chen, Carl Benedikt Frey, Giorgio Presidente. 2022. Automation or globalization? The impacts of robots and Chinese imports on jobs in the United Kingdom. *Journal of Economic Behavior & Organization* **204**, 528-542. [Crossref]

551. David Kunst, Richard B. Freeman, Remco Oostendorp. 2022. Occupational Skill Premia around the World: New Data, Patterns and Drivers. *Labour Economics* **79**, 102255. [Crossref]

552. R. D. Mariani, F. C. Rosati. 2022. Immigrant supply of marketable child care and native fertility in Italy. *Journal of Demographic Economics* **88**:4, 503-533. [Crossref]

553. Wei Chen, Zaiyan Wei, Karen Xie. 2022. The Battle for Homes: How Does Home Sharing Disrupt Local Residential Markets?. *Management Science* **68**:12, 8589-8612. [Crossref]

554. Beata Javorcik, Katherine Stapleton, Benjamin Kett, Layla O'Kane. Did the 2018 Trade War Improve Job Opportunities for US Workers? **134**, . [Crossref]

555. David McKenzie, Dean Yang. Field and Natural Experiments in Migration **32**, . [Crossref]

556. Félix Modrego, Jorge Ortega, Lenia Planas, Álvaro Astudillo. 2022. Foreign Direct Investment Elasticities of Output, Labor, and Wages in Chile: A Simultaneous Equations Approach. *Economies* **10**:12, 295. [Crossref]

557. Hamish Fitchett, Dennis Wesselbaum. 2022. Does Aid Drive Migration? Evidence from a Shift-Share Instrument. *International Migration Review* **56**:4, 1236-1254. [Crossref]

558. Yali Li, Kangli Gao. 2022. The impact of green urbanization on carbon emissions: The case of new urbanization in China. *Frontiers in Environmental Science* **10**. . [Crossref]

559. Gilbert Cette, Sandra Nevoux, Loriane Py. 2022. The impact of ICTs and digitalization on productivity and labor share: evidence from French firms. *Economics of Innovation and New Technology* **31**:8, 669-692. [Crossref]

560. Timothy M. Komarek, Kyle Butts, Gary A. Wagner. 2022. Government Contracting, Labor Intensity, and the Local Effects of Fiscal Consolidation: Evidence from the Budget Control Act of 2011. *Journal of Urban Economics* **132**, 103506. [Crossref]

561. Jing Zhang, Wei Yan. 2022. The Economic Impact of Public Capital: Evidence from Chinese Prefectures and Firms. *Regional Science and Urban Economics* **97**, 103818. [Crossref]

562. Qian Wang, Zhuo-Ya Du. 2022. Changing the impact of banking concentration on corporate innovation: The moderating effect of digital transformation. *Technology in Society* **71**, 102124. [Crossref]

563. Olivier Bargain, Victor Stephane, Jérôme Valette. 2022. Another brick in the wall. Immigration and electoral preferences: Direct evidence from state ballots. *Review of International Economics* **30**:5, 1452-1477. [Crossref]

564. Laurent Bossavie, Daniel Garrote-Sanchez, Mattia Makovec, Çağlar Özden. 2022. Do immigrants shield the locals? Exposure to COVID -related risks in the European Union. *Review of International Economics* **30**:5, 1478-1514. [Crossref]

565. Diego A. Cerdeiro, Andras Komaromi. 2022. Supply spillovers during the pandemic: Evidence from high-frequency shipping data. *The World Economy* **45**:11, 3451-3474. [Crossref]

566. Chang'an Liang, Guoming Du, Zhaoda Cui, Bonoua Faye. 2022. Does Digital Inclusive Finance Enhance the Creation of County Enterprises? Taking Henan Province as a Case Study. *Sustainability* **14**:21, 14542. [Crossref]

567. Fandi Yang, Peng Yuan, Gongxiong Jiang. 2022. Knowledge Spillovers, Institutional Environment, and Entrepreneurship: Evidence from China. *Sustainability* **14**:22, 14938. [Crossref]

568. Christos A Makridis, Maury Gittleman. 2022. On the Cyclicality of Real Wages and Employment: New Evidence and Stylized Facts from Performance Pay and Fixed Wage Jobs. *The Journal of Law, Economics, and Organization* **38**:3, 889-920. [Crossref]

569. Francesco Campo, Mariapia Mendola, Andrea Morrison, Gianmarco Ottaviano. 2022. Talents and Cultures: Immigrant Inventors and Ethnic Diversity in the Age of Mass Migration. *Journal of the European Economic Association* **20**:5, 1971-2012. [Crossref]

570. Amanda Chuan. 2022. The impact of oil and gas job opportunities during youth on human capital. *Southern Economic Journal* **89**:2, 406-439. [Crossref]

571. Yalin Jiang, Chong Guo, Yingyu Wu. 2022. Does digital finance improve the green investment of Chinese listed heavily polluting companies? The perspective of corporate financialization. *Environmental Science and Pollution Research* **29**:47, 71047-71063. [Crossref]

572. Mitchell Watkins. 2022. Undermining conditionality? The effect of Chinese development assistance on compliance with World Bank project agreements. *The Review of International Organizations* **17**:4, 667-690. [Crossref]

573. Ruiyu Wang, Jinchuan Shi, Bing Ye. 2022. Can robots reshape gender role attitudes?. *China Economic Review* **75**, 101852. [Crossref]

574. Jisang Yu, Nelson B. Villoria, Nathan P. Hendricks. 2022. The incidence of foreign market tariffs on farmland rental rates. *Food Policy* **112**, 102343. [Crossref]

575. Jongkwan Lee, Myungkyu Shim, Hee-Seung Yang. 2022. The rise of low-skill service employment: The role of dual-earner households. *Journal of Economic Behavior & Organization* **202**, 255-273. [Crossref]

576. Isil Erel, Jack Liebersohn. 2022. Can FinTech reduce disparities in access to finance? Evidence from the Paycheck Protection Program. *Journal of Financial Economics* **146**:1, 90-118. [Crossref]

577. Paul M. Kindsgrab. 2022. Do higher income taxes on top earners trickle down? A local labor markets approach. *Journal of Public Economics* **214**, 104689. [Crossref]

578. Christian Eggenberger, Simon Janssen, Uschi Backes-Gellner. 2022. The value of specific skills under shock: High risks and high returns. *Labour Economics* **78**, 102187. [Crossref]

579. Rania Gihleb, Osea Giuntella, Luca Stella, Tianyi Wang. 2022. Industrial robots, Workers' safety, and health. *Labour Economics* **78**, 102205. [Crossref]

580. Dany Bahar, Hillel Rapoport, Riccardo Turati. 2022. Birthplace diversity and economic complexity: Cross-country evidence. *Research Policy* **51**:8, 103991. [Crossref]

581. Noah Zucker. 2022. Group Ties amid Industrial Change. *World Politics* **74**:4, 610-650. [Crossref]

582. Eva-Maria Egger. 2022. Internal Migration and Crime in Brazil. *Economic Development and Cultural Change* **71**:1, 223-259. [Crossref]

583. Lingzheng Yu, Chenyu Zeng, Xiahai Wei. 2022. The impact of industrial robots application on air pollution in China: Mechanisms of energy use efficiency and green technological innovation. *Science Progress* **105**:4. . [Crossref]

584. El-Mehdi Aboulkacem, Clément Nedoncelle. 2022. Wage variations and commuting distance. *Journal of Economic Geography* **22**:5, 1097-1123. [Crossref]

585. Emiko Inoue, Hiroya Taniguchi, Ken Yamada. 2022. Measuring energy-saving technological change: International trends and differences. *Journal of Environmental Economics and Management* **115**, 102709. [Crossref]

586. João Granja, Christos Makridis, Constantine Yannelis, Eric Zwick. 2022. Did the paycheck protection program hit the target?. *Journal of Financial Economics* **145**:3, 725-761. [Crossref]

587. Xinyao Ma, Chao Mao, Guiwen Liu. 2022. Can robots replace human beings? —Assessment on the developmental potential of construction robot. *Journal of Building Engineering* **56**, 104727. [Crossref]

588. RAPHAEL DUGUAY. 2022. The Economic Consequences of Financial Audit Regulation in the Charitable Sector. *Journal of Accounting Research* **60**:4, 1463-1498. [Crossref]

589. Dawn Matsumoto, Matthew Serfling, Sarah Shaikh. 2022. Geographic Peer Effects in Management Earnings Forecasts*. *Contemporary Accounting Research* **39**:3, 2023-2057. [Crossref]

590. Jackie M. L. Chan, Huanhuan Zheng. 2022. FDI on the move: cross-border M&A and migrant networks. *Review of World Economics* **158**:3, 947-985. [Crossref]

591. VASILIKI FOUKA, MARCO TABELLINI. 2022. Changing In-Group Boundaries: The Effect of Immigration on Race Relations in the United States. *American Political Science Review* **116**:3, 968-984. [Crossref]

592. Derek Messacar. 2022. Community attachment, job loss and regional labour mobility in Canada: Evidence from the Great Recession. *Canadian Journal of Economics/Revue canadienne d'économique* **55**:3, 1404-1430. [Crossref]

593. Davide Luca. 2022. National elections, sub-national growth: the politics of Turkey's provincial economic dynamics under AKP rule. *Journal of Economic Geography* **22**:4, 829-851. [Crossref]

594. Tim Zhang. 2022. Uniform Mortgage Regulation and Distortion in Capital Allocation. *Review of Finance* **26**:4, 1011-1050. [Crossref]

595. Shu Cai, Albert Park, Winnie Yip. 2022. Migration and experienced utility of left-behind parents: evidence from rural China. *Journal of Population Economics* **35**:3, 1225-1259. [Crossref]

596. Faisal Z. Ahmed. 2022. From grievances to civil war: The impact of geopolitics. *The Review of International Organizations* **17**:3, 427-451. [Crossref]

597. Yan Guo, Haochen Zhang. 2022. Spillovers of innovation subsidies on regional industry growth: Evidence from China. *Economic Modelling* **112**, 105869. [Crossref]

598. Po-Hsuan Hsu, Mark P. Taylor, Zigan Wang, Qi Xu. 2022. Currency volatility and global technological innovation. *Journal of International Economics* **137**, 103607. [Crossref]

599. Stuart Donovan, Thomas de Graaff, Arthur Grimes, Henri L.F. de Groot, David C. Maré. 2022. Cities with forking paths? Agglomeration economies in New Zealand 1976–2018. *Regional Science and Urban Economics* **95**, 103799. [Crossref]

600. Michael R. Strain, Stan Veuger. 2022. Economic shocks and clinging. *Contemporary Economic Policy* **40**:3, 456-475. [Crossref]

601. Jose Maria Serena, Marina-Eliza Spaliara, Serafeim Tsoukas. 2022. International bank credit, nonbank lenders, and access to external financing. *Economic Inquiry* **60**:3, 1214-1232. [Crossref]

602. Peter Hull, Michal Kolesár, Christopher Walters. 2022. Labor by design: contributions of David Card, Joshua Angrist, and Guido Imbens*. *The Scandinavian Journal of Economics* **124**:3, 603-645. [Crossref]

603. Benjamin U. Friedrich. 2022. Trade Shocks, Firm Hierarchies, and Wage Inequality. *The Review of Economics and Statistics* **104**:4, 652-667. [Crossref]

604. Besart Avdiu, Karan Singh Bagavathinathan, Ritam Chaurey, Gaurav Nayyar. India's Services Sector Growth: The Impact of Services Trade on Non-tradable Services **7**, . [Crossref]

605. Justin H. Leung, Hee Kwon (Samuel) Seo. How do Government Transfer Payments Affect Retail Prices and Welfare? Evidence from SNAP **84**, . [Crossref]

606. Clement Imbert, Marlon Seror, Yifan Zhang, Yanos Zylberberg. 2022. Migrants and Firms: Evidence from China. *American Economic Review* **112**:6, 1885-1914. [Abstract] [View PDF article] [PDF with links]

607. Ha Nguyen, Shawheen Rezaei, Divya Agarwal. 2022. The great recession and job loss spillovers: impact of tradable employment shocks on supporting services. *The Annals of Regional Science* **68**:3, 789-815. [Crossref]

608. Remi Jedwab, Felix Meier zu Selhausen, Alexander Moradi. 2022. The economics of missionary expansion: evidence from Africa and implications for development. *Journal of Economic Growth* **27**:2, 149-192. [Crossref]

609. Shuaizhang Feng, Xiaoyu Xia. 2022. Heterogeneous firm responses to increases in high-skilled workers: Evidence from China's college enrollment expansion. *China Economic Review* **73**, 101791. [Crossref]

610. Peizhen Jin, Sachin Kumar Mangla, Malin Song. 2022. The power of innovation diffusion: How patent transfer affects urban innovation quality. *Journal of Business Research* **145**, 414-425. [Crossref]

611. Hani Mansour, Pamela Medina, Andrea Velásquez. 2022. Import competition and gender differences in labor reallocation. *Labour Economics* **76**, 102149. [Crossref]

612. Hiroya Taniguchi, Ken Yamada. 2022. ICT capital–skill complementarity and wage inequality: Evidence from OECD countries. *Labour Economics* **76**, 102151. [Crossref]

613. Ege Aksu, Refik Erzan, Murat Güray Kırdar. 2022. The impact of mass migration of Syrians on the Turkish labor market. *Labour Economics* **76**, 102183. [Crossref]

614. Anna Boucher, Robert Breunig, Cecilia Karmel. 2022. A Preliminary Literature Review on the Effect of Immigration On Australian Domestic Employment and Wages. *Australian Economic Review* **55**:2, 263-272. [Crossref]

615. SEHWA KIM. 2022. Delays in Banks' Loan Loss Provisioning and Economic Downturns: Evidence from the U.S. Housing Market. *Journal of Accounting Research* **60**:3, 711-754. [Crossref]

616. M Ali Choudhary, Nicola Limodio. 2022. Liquidity Risk and Long-Term Finance: Evidence from a Natural Experiment. *The Review of Economic Studies* **89**:3, 1278-1313. [Crossref]

617. Nicolás Ajzenman, Patricio Dominguez, Raimundo Undurraga. 2022. Immigration and Labor Market (Mis)Perceptions. *AEA Papers and Proceedings* **112**, 402-408. [Abstract] [View PDF article] [PDF with links]

618. Ying Shi, Daniel Hartley, Bhash Mazumder, Aastha Rajan. 2022. The effects of the Great Migration on urban renewal. *Journal of Public Economics* **209**, 104647. [Crossref]

619. Khoa Vu, Nguyen Dinh Tuan Vuong, Tu-Anh Vu-Thanh, Anh Ngoc Nguyen. 2022. Income shock and food insecurity prediction Vietnam under the pandemic. *World Development* **153**, 105838. [Crossref]

620. Hong Jiang, Xue Wang, Qian Xiao, Silin Li. 2022. Investment Behavior Related to Automated Machines and Biased Technical Change: Based on Evidence From Listed Manufacturing Companies in China. *Frontiers in Psychology* **13**. . [Crossref]

621. Terry Gregory, Anna Salomons, Ulrich Zierahn. 2022. Racing With or Against the Machine? Evidence on the Role of Trade in Europe. *Journal of the European Economic Association* **20**:2, 869-906. [Crossref]

622. Kieran Byrne, Florence Kondylis, John Loeser, Denis Mukama. A Few Good Masks: Evidence from Mask Manufacturing in Rwanda during the COVID-19 Pandemic . [Crossref]

623. Mengmeng Xu, Ruipeng Tan, Xinju He. 2022. How does economic agglomeration affect energy efficiency in China?: Evidence from endogenous stochastic frontier approach. *Energy Economics* **108**, 105901. [Crossref]

624. Luis Armona, Rajashri Chakrabarti, Michael F. Lovenheim. 2022. Student debt and default: The role of for-profit colleges. *Journal of Financial Economics* **144**:1, 67-92. [Crossref]

625. Monica Langella, Alan Manning. 2022. Residential mobility and unemployment in the UK. *Labour Economics* **75**, 102104. [Crossref]

626. Lena Edlund, Cecilia Machado, Maria Sviatschi. 2022. Gentrification and the Rising Returns to Skill. *Economica* **89**:354, 258-292. [Crossref]

627. Rourke O'Brien, Elizabeth F. Bair, Atheendar S. Venkataramani. 2022. Death by Robots? Automation and Working-Age Mortality in the United States. *Demography* **59**:2, 607-628. [Crossref]

628. Andre Groeger, Gianmarco León-Ciliotta, Steven Stillman. Immigration, Labor Markets and Discrimination: Evidence from the Venezuelan Exodus in Perú . [Crossref]

629. Christoph Wigger. 2022. Who with whom? Untangling the effect of high-skilled immigration on innovation*. *Journal of Economic Geography* **22**:2, 449-476. [Crossref]

630. George Joseph, Qiao Wang, Gnanaraj Chellaraj, Emcet Oktay Tas, Luis Alberto Andres, Syed Usman Javaid, Irudaya Rajan. Beyond Money: Does Migration Experience Transfer Gender Norms? Empirical Evidence from Kerala, India **3**, . [Crossref]

631. Vasiliki Fouka, Soumyajit Mazumder, Marco Tabellini. 2022. From Immigrants to Americans: Race and Assimilation during the Great Migration. *The Review of Economic Studies* **89**:2, 811-842. [Crossref]

632. Yan Liu. Does Foreign Direct Investment Catalyze Local Structural Transformation and Human CapitalAccumulation? Evidence from China **2**, . [Crossref]

633. Antoine Berthou, Guillaume Horny, Jean-Stéphane Mésonnier. 2022. The real effects of invoicing exports in dollars. *Journal of International Economics* **135**, 103569. [Crossref]

634. Daria Denti. 2022. Looking ahead in anger: The effects of foreign migration on youth resentment in England. *Journal of Regional Science* **62**:2, 578-603. [Crossref]

635. Matthias Breuer. 2022. Bartik Instruments: An Applied Introduction. *Journal of Financial Reporting* **7**:1, 49-67. [Crossref]

636. Decio Coviello, Immacolata Marino, Tommaso Nannicini, Nicola Persico. 2022. Demand Shocks and Firm Investment: Micro-Evidence from Fiscal Retrenchment in Italy. *The Economic Journal* **132**:642, 582-617. [Crossref]

637. Ellora Derenoncourt. 2022. Can You Move to Opportunity? Evidence from the Great Migration. *American Economic Review* **112**:2, 369-408. [Abstract] [View PDF article] [PDF with links]

638. Pinar Mine Gunes, Magda Tsaneva. 2022. Labour market conditions and adult health in Mexico. *Canadian Journal of Economics/Revue canadienne d'économique* **55**:1, 106-137. [Crossref]

639. Sirus H. Dehdari. 2022. Economic Distress and Support for Radical Right Parties—Evidence From Sweden. *Comparative Political Studies* **55**:2, 191-221. [Crossref]

640. Kirill Borusyak, Peter Hull, Xavier Jaravel. 2022. Quasi-Experimental Shift-Share Research Designs. *The Review of Economic Studies* **89**:1, 181-213. [Crossref]

641. Patrick S. Turner. 2022. High-Skilled Immigration and the Labor Market: Evidence from the H-1B Visa Program. *Journal of Policy Analysis and Management* **41**:1, 92-130. [Crossref]

642. Stephen J. Redding. Trade and geography 147-217. [Crossref]

643. Lorenzo Caliendo, Fernando Parro. Trade policy 219-295. [Crossref]

644. Simone Moriconi, Giovanni Peri, Riccardo Turati. 2022. Skill of the immigrants and vote of the natives: Immigration and nationalism in European elections 2007–2016. *European Economic Review* **141**, 103986. [Crossref]

645. Fernando Alvarez, David Argente, Rafael Jimenez, Francesco Lippi. 2022. Cash: A Blessing or a curse?. *Journal of Monetary Economics* **125**, 85-128. [Crossref]

646. Jorgen Harris. 2022. Do wages fall when women enter an occupation?. *Labour Economics* **74**, 102102. [Crossref]

647. Taner Osman, Tom Kemeny. 2022. Local job multipliers revisited. *Journal of Regional Science* **62**:1, 150-170. [Crossref]
648. Xiaoran Ni, Yi Si, Bohui Zhang. 2022. Climate Vulnerability and Stock Price Crash Risk Worldwide. *SSRN Electronic Journal* **28**. . [Crossref]
649. Alberto Hidalgo, Massimo Riccaboni, Francisco J. Velázquez. 2022. The Effect of Short-Term Rentals on Local Consumption Amenities: Evidence from Madrid. *SSRN Electronic Journal* **40**. . [Crossref]
650. Hyejin Kim, Jongkwan Lee. 2022. Immigration and Natives' Task Specialization: Evidence from Korea. *SSRN Electronic Journal* **18**. . [Crossref]
651. Thomas T. Wiemann, Robin L. Lumsdaine. 2022. Effects of Health Care Policy Uncertainty on Households' Portfolio Choice. *SSRN Electronic Journal* **45**. . [Crossref]
652. Tom Mayock, Kelly Vosters. 2022. Rental Housing, Household Sorting, and Academic Achievement. *SSRN Electronic Journal* **126**. . [Crossref]
653. Adam Levai, Riccardo Turati. 2022. The Impact of Immigration on Workers' Protection. *SSRN Electronic Journal* **95**. . [Crossref]
654. Kevin Smith. 2022. The Anti-Competitive Effects of Common Institutional Ownership in Health Insurance Markets. *SSRN Electronic Journal* **159**. . [Crossref]
655. Gaurav Khanna, Emir Murathanoglu, Caroline Theoharides, Dean Yang. 2022. Abundance from Abroad: Migrant Income and Long-Run Economic Development. *SSRN Electronic Journal* **134**. . [Crossref]
656. Marcus Dillender, Eliza Forsythe. 2022. Computerization of White Collar Jobs. *SSRN Electronic Journal* **4**. . [Crossref]
657. Daniel Green, Boris Vallee. 2022. Can Finance Save the World? Measurement and Effects of Coal Divestment Policies by Banks. *SSRN Electronic Journal* **5**. . [Crossref]
658. Elliott Ash, Massimo Morelli, Matia Vannoni. 2022. More Laws, More Growth? Evidence from U.S. States. *SSRN Electronic Journal* **119**. . [Crossref]
659. Fang Xia. 2022. Migration and Agricultural Production in Source Households: Evidence from China Using Instruments Based on Processing Exports. *SSRN Electronic Journal* **134**. . [Crossref]
660. Kaizhao Guo. 2022. Automation, Skill and Job Creation. *SSRN Electronic Journal* **4**. . [Crossref]
661. Haichao Fan, Yichuan Hu, Lixin Tang, Shang-Jin Wei. 2022. Is the American Soft Power a Casualty of the Trade War?. *SSRN Electronic Journal* **134**. . [Crossref]
662. German Pupato, Ben Sand, Jeanne Tschopp. 2022. Estimating the Gains from Trade in Frictional Local Labor Markets. *SSRN Electronic Journal* **34**. . [Crossref]
663. Hillel Rapoport, Sulin Sardoschau. 2022. Migration and Cultural Change. *SSRN Electronic Journal* **122**. . [Crossref]
664. Jonathan Hawkins, Katherine R. H. Wagner. 2022. Technology Lock-In and Optimal Carbon Pricing. *SSRN Electronic Journal* **102**. . [Crossref]
665. Ben Li, Yi Lu, Pasquale Michael Sgro, Xing Xu. 2022. Trump, China, and the Republicans. *SSRN Electronic Journal* **34**. . [Crossref]
666. Yufei Lu, Kai Wu. 2022. Corporate Liquidity Effect of Performance Commitment Clauses in Acquisitions. *SSRN Electronic Journal* **16**. . [Crossref]
667. Xuelin Li, Zihan Ye. 2022. Propagation of the Opioid Epidemic through the Banking Network. *SSRN Electronic Journal* **137**. . [Crossref]
668. Donggyu Lee, Sebastian Doerr, Thomas Drechsel. 2022. Income Inequality and Job Creation. *SSRN Electronic Journal* **128**. . [Crossref]

669. Alejandro Estefan. 2022. Export Manufacturing, Female Labor Force Participation, and Demographic Change: Evidence from Mexico. *SSRN Electronic Journal* **134**. . [Crossref]
670. Davide Dottori, Giacinto Micucci, Laura Sigalotti. 2022. Trade debts and bank lending in years of crisis. *SSRN Electronic Journal* **21**. . [Crossref]
671. Atul Gupta, Amol S. Navathe, Joseph Martinez. 2022. Selection and Causal Effects in Voluntary Programs: Bundled Payments in Medicare. *SSRN Electronic Journal* **113**. . [Crossref]
672. Ricardo Duque Gabriel, Mathias Klein, Ana Sofia Pessoa. 2022. The Political Costs of Austerity. *SSRN Electronic Journal* **38**. . [Crossref]
673. Lisa Tarquninio. 2022. The Politics of Drought Relief: Evidence from Southern India. *SSRN Electronic Journal* **102**. . [Crossref]
674. Rene M. Stulz, Alvaro G. Taboada, Mathijs A. Van Dijk. 2022. The Determinants of Bank Liquid Asset Holdings. *SSRN Electronic Journal* **70**. . [Crossref]
675. René Stulz, Alvaro G. Taboada, Mathijs A. van Dijk. 2022. Why are Bank Holdings of Liquid Assets so High?. *SSRN Electronic Journal* **70**. . [Crossref]
676. David Jaume, David Heres, Everardo Tellez de la Vega, Martin Tobal. 2022. Do Remittances Complement or Substitute for Consumer Credit? The Relevance of Heterogeneous Effects in the Mexican Context. *SSRN Electronic Journal* **54**. . [Crossref]
677. Masahiro Endoh. 2022. The China Shock and Local Job Reallocation in Japan. *SSRN Electronic Journal* **34**. . [Crossref]
678. David H. Autor, Caroline Chin, Anna Salomons, Bryan Seegmiller. 2022. New Frontiers: The Origins and Content of New Work, 1940–2018. *SSRN Electronic Journal* **113**. . [Crossref]
679. Naila Shofia. 2022. Why Veil? Religious Headscarves and The Public Role of Women. *SSRN Electronic Journal* **134**. . [Crossref]
680. Diana Bonfim, Miguel Almeida Ferreira, Francisco Queiro, Sujiao Zhao. 2022. Fiscal policy and credit supply: The procurement channel. *SSRN Electronic Journal* **69**. . [Crossref]
681. Antonio Accetturo, Giorgia Barboni, Michele Cascarano, Emilia Garcia-Appendini, Marco Tomasi. 2022. Credit Supply and Green Investments. *SSRN Electronic Journal* **102**. . [Crossref]
682. Qingkai Dong, Anthony Le. 2022. The Impact of Financial Reporting Mandates on Labor Unions. *SSRN Electronic Journal* **73**. . [Crossref]
683. Andrés Sarto, Olivier Wang. 2022. The Secular Decline in Interest Rates and the Rise of Shadow Banks. *SSRN Electronic Journal* **89**. . [Crossref]
684. Georgios Nikolakoudis. 2022. Heterogeneous Deleveraging. *SSRN Electronic Journal* **109**. . [Crossref]
685. Paul Beaumont, Huan Tang, Eric Vansteenberghe. 2022. Collateral Effects: The Role of FinTech in Small Business Lending. *SSRN Electronic Journal* **27**. . [Crossref]
686. Motoaki Takahashi. 2022. The Aggregate Effects of the Great Black Migration. *SSRN Electronic Journal* **83**. . [Crossref]
687. Alvaro Remesal. 2022. Clawback Enforcement Heterogeneity and the Horizon of Executive Pay: Empirical Evidence. *SSRN Electronic Journal* **33**. . [Crossref]
688. Jeremy Lebow. 2022. The labor market effects of Venezuelan migration to Colombia: reconciling conflicting results †. *IZA Journal of Development and Migration* **13**:1. . [Crossref]
689. Mark Colas, John M. Morehouse. 2022. The environmental cost of land-use restrictions. *Quantitative Economics* **13**:1, 179-223. [Crossref]
690. James Lake, Ding Liu. 2022. Local Labor Market Effects of the 2002 Bush Steel Tariffs. *SSRN Electronic Journal* . [Crossref]

691. Chuck Fang. 2022. Monetary Transmission through Bond Funds. *SSRN Electronic Journal* **29**. . [Crossref]

692. Xiangyu Shi. 2022. Local protectionism, regional production networks, and spatial allocation of firms in China. *SSRN Electronic Journal* **88**. . [Crossref]

693. Erica Xuewei Jiang, Gloria Yang Yu, Jinyuan Zhang. 2022. Bank Competition amid Digital Disruption: Implications for Financial Inclusion. *SSRN Electronic Journal* **25**. . [Crossref]

694. John Gallemore, Martin Jacob. 2022. Corporate Tax Enforcement and Business Activity. *SSRN Electronic Journal* **127**. . [Crossref]

695. Hengguo Da. 2022. Trade Shocks Through Banking Lending Channel. *SSRN Electronic Journal* **34**. . [Crossref]

696. Dong Cheng. 2021. Housing boom and non-housing consumption: evidence from urban households in China. *Empirical Economics* **61**:6, 3271-3313. [Crossref]

697. Cristina Bellés-Obrero, Emma Duchini. 2021. Who benefits from general knowledge?. *Economics of Education Review* **85**, 102122. [Crossref]

698. Tom Mayock, Konstantinos Tzioumis. 2021. New construction and mortgage default. *Journal of Banking & Finance* **133**, 106276. [Crossref]

699. Anna Maria Koukal, Patricia Schafer, Reiner Eichenberger. 2021. Enfranchising non-citizens: What drives natives' willingness to share power?. *Journal of Comparative Economics* **49**:4, 1088-1108. [Crossref]

700. Sofia Fernández Guerrico. 2021. The effects of trade-induced worker displacement on health and mortality in Mexico. *Journal of Health Economics* **80**, 102538. [Crossref]

701. Andrés César, Guillermo Falcone, Leonardo Gasparini. 2021. Costs and benefits of trade shocks: Evidence from Chilean local labor markets. *Labour Economics* **73**, 102075. [Crossref]

702. Paul Maarek, Elliot Moiteaux. 2021. Polarization, employment and the minimum wage: Evidence from European local labor markets. *Labour Economics* **73**, 102076. [Crossref]

703. Christos A. Makridis, Joo Hun Han. 2021. Future of work and employee empowerment and satisfaction: Evidence from a decade of technological change. *Technological Forecasting and Social Change* **173**, 121162. [Crossref]

704. Miguel Almunia, Pol Antràs, David Lopez-Rodriguez, Eduardo Morales. 2021. Venting Out: Exports during a Domestic Slump. *American Economic Review* **111**:11, 3611-3662. [Abstract] [View PDF article] [PDF with links]

705. Daniel Avdic, Sonja C. de New, Daniel A. Kamhöfer. 2021. Economic downturns and mental health in Germany. *European Economic Review* **140**, 103915. [Crossref]

706. Maria Bas, Pamela Bombarda, Sébastien Jean, Gianluca Orefice. 2021. Firms' exports, volatility and skills: Evidence from France. *European Economic Review* **140**, 103941. [Crossref]

707. Karol Jan Borowiecki, Kathryn Graddy. 2021. Immigrant artists: Enrichment or displacement?. *Journal of Economic Behavior & Organization* **191**, 785-797. [Crossref]

708. Simon Büchler, Maximilian v. Ehrlich, Olivier Schöni. 2021. The amplifying effect of capitalization rates on housing supply. *Journal of Urban Economics* **126**, 103370. [Crossref]

709. Matthew Sharp. 2021. The labour market impacts of female internal migration: Evidence from the end of Apartheid. *Regional Science and Urban Economics* **91**, 103624. [Crossref]

710. Willian Boschetti Adamczyk, Leonardo Monasterio, Adelar Fochezatto. 2021. Automation in the future of public sector employment: the case of Brazilian Federal Government. *Technology in Society* **67**, 101722. [Crossref]

711. Zheng Wang. 2021. Blame the Foreigners? Exports and Sulfur Dioxide Emissions in China. *Environmental and Resource Economics* **80**:2, 279-309. [Crossref]

712. Yang Liang. 2021. Job creation and job destruction: The effect of trade shocks on U.S. manufacturing employment. *The World Economy* **44**:10, 2909-2949. [Crossref]

713. Christian Gunadi, Hanbyul Ryu. 2021. Does the rise of robotic technology make people healthier?. *Health Economics* **30**:9, 2047-2062. [Crossref]

714. Katrina Kosec, Jie Song. 2021. The effects of income fluctuations on undernutrition and overnutrition across the lifecycle. *Health Economics* **30**:10, 2487-2509. [Crossref]

715. Ryan M. Gallagher. 2021. Income segregation's impact on local public expenditures: Evidence from municipalities and school districts, 1980–2010. *Regional Science and Urban Economics* **90**, 103710. [Crossref]

716. Marcus Biermann. 2021. Trade and the size distribution of firms: Evidence from the German Empire. *German Economic Review* **22**:3, 289-322. [Crossref]

717. Daniel Auer, Daniel Meierrieks. 2021. Merchants of death: Arms imports and terrorism. *European Economic Review* **137**, 103813. [Crossref]

718. Fei Shen, Bei Liu, Fang Luo, Changchang Wu, Hao Chen, Wendong Wei. 2021. The effect of economic growth target constraints on green technology innovation. *Journal of Environmental Management* **292**, 112765. [Crossref]

719. Ann M. Gansemer-Topf, Peter F. Orazem, Darin R. Wohlgemuth. 2021. Do liberal arts colleges maximize profit?. *Southern Economic Journal* **88**:1, 274-294. [Crossref]

720. Davide Dottori. 2021. Robots and employment: evidence from Italy. *Economia Politica* **38**:2, 739-795. [Crossref]

721. Francesco Iacoella, Bruno Martorano, Laura Metzger, Marco Sanfilippo. 2021. Chinese official finance and political participation in Africa. *European Economic Review* **136**, 103741. [Crossref]

722. Elías Cisneros, Krisztina Kis-Katos, Nunung Nuryartono. 2021. Palm oil and the politics of deforestation in Indonesia. *Journal of Environmental Economics and Management* **108**, 102453. [Crossref]

723. Rowena Crawford, George Stoye, Ben Zaranko. 2021. Long-term care spending and hospital use among the older population in England. *Journal of Health Economics* **78**, 102477. [Crossref]

724. Mathijs de Vaan, Saqib Mumtaz, Abhishek Nagaraj, Sameer B. Srivastava. 2021. Social Learning in the COVID-19 Pandemic: Community Establishments' Closure Decisions Follow Those of Nearby Chain Establishments. *Management Science* **67**:7, 4446-4454. [Crossref]

725. Juan Esteban Carranza, Maria Marta Ferreyra, Ana Gazmuri, Andrea Franco. Entry and Competition in the Market for Short-Cycle Programs . [Crossref]

726. Sandra Orozco-Aleman, Heriberto Gonzalez-Lozano. 2021. Return Migration and Self-Employment: Evidence from Mexican Migrants. *Journal of Labor Research* **42**:2, 148-183. [Crossref]

727. Vahagn Jerbashian. 2021. Trade in information technologies and changes in the demand for occupations. *China Economic Review* **67**, 101603. [Crossref]

728. Giovanni Marin, Francesco Vona. 2021. The impact of energy prices on socioeconomic and environmental performance: Evidence from French manufacturing establishments, 1997–2015. *European Economic Review* **135**, 103739. [Crossref]

729. Alyssa G. Anderson, Wenxin Du, Bernd Schlusche. 2021. Arbitrage Capital of Global Banks. *Finance and Economics Discussion Series* **2021**:032, 1-66. [Crossref]

730. Axel Dreher, Andreas Fuchs, Bradley Parks, Austin Strange, Michael J. Tierney. 2021. Aid, China, and Growth: Evidence from a New Global Development Finance Dataset. *American Economic Journal: Economic Policy* **13**:2, 135-174. [Abstract] [View PDF article] [PDF with links]

731. Sandra V. Rozo, Juan F. Vargas. 2021. Brothers or invaders? How crisis-driven migrants shape voting behavior. *Journal of Development Economics* **150**, 102636. [Crossref]

732. Ana Tur-Prats. 2021. Unemployment and intimate partner violence: A Cultural approach. *Journal of Economic Behavior & Organization* **185**, 27-49. [Crossref]

733. Patrick Carter, Nicolas Van de Sijpe, Raphael Calel. 2021. The elusive quest for additionality. *World Development* **141**, 105393. [Crossref]

734. Magda Tsaneva, Uttara Balakrishnan. 2021. Local Labor Markets and Child Learning Outcomes in India. *The B.E. Journal of Economic Analysis & Policy* **21**:2, 723-750. [Crossref]

735. Stefano Fusaro, Enrique López-Bazo. 2021. Immigration and Native Employment. Evidence from Italian Provinces in the Aftermath of the Great Recession. *Papers in Regional Science* **100**:2, 405-429. [Crossref]

736. Huberto M. Ennis, Elizabeth Klee. 2021. The Fed's Discount Window in "Normal" Times. *Finance and Economics Discussion Series* **2021**:015, 1-72. [Crossref]

737. Belal Fallah, Marcelo Bergolo, Iman Saadeh, Arwa Abu Hashhash, Mohamad Hattawy. 2021. The Effect of Labour-Demand Shocks on Women's Participation in the Labor Force: Evidence from Palestine. *The Journal of Development Studies* **57**:3, 400-416. [Crossref]

738. Geoffrey Barrows, Hélène Ollivier. 2021. Foreign demand, developing country exports, and CO2 emissions: Firm-level evidence from India. *Journal of Development Economics* **149**, 102587. [Crossref]

739. Brett Watson, Matthew N. Reimer, Mouhcine Guettabi, Alan Haynie. 2021. Commercial fisheries & local economies. *Journal of Environmental Economics and Management* **106**, 102419. [Crossref]

740. Gregori Galofré-Vilà, Christopher M. Meissner, Martin McKee, David Stuckler. 2021. Austerity and the Rise of the Nazi Party. *The Journal of Economic History* **81**:1, 81-113. [Crossref]

741. Timothy M. Komarek, Gary A. Wagner. 2021. Local Fiscal Adjustments From Depopulation: Evidence From The Post–Cold War Defense Contraction. *National Tax Journal* **74**:1, 9-43. [Crossref]

742. MATTHIAS BREUER. 2021. How Does Financial-Reporting Regulation Affect Industry-Wide Resource Allocation?. *Journal of Accounting Research* **59**:1, 59-110. [Crossref]

743. Mauro Caselli, Andrea Fracasso, Silvio Traverso. 2021. Globalization, robotization, and electoral outcomes: Evidence from spatial regressions for Italy. *Journal of Regional Science* **61**:1, 86-111. [Crossref]

744. Timothy Bartik. 2021. How Long-Run Effects of Local Demand Shocks on Employment Rates Vary with Local Labor Market Distress. *SSRN Electronic Journal* **108**. . [Crossref]

745. Matthias Busse, Tim Vogel. 2021. Trade Liberalization, IMF Conditionality and Policy Substitution in Developing Countries. *SSRN Electronic Journal* **4**. . [Crossref]

746. Matthias Breuer. 2021. Bartik Instruments: An Applied Introduction. *SSRN Electronic Journal* **134**. . [Crossref]

747. Zhimin Li, Leslie Sheng Shen, Calvin Zhang. 2021. Local Effects of Global Capital Flows: A China Shock in the U.S. Housing Market. *SSRN Electronic Journal* **34**. . [Crossref]

748. Daniel Ershov, Jean-William P. Laliberté, Mathieu Marcoux, Scott Orr. 2021. Estimating Complementarity With Large Choice Sets: An Application to Mergers. *SSRN Electronic Journal* **65**. . [Crossref]

749. Osea Giuntella, Lorenzo Rotunno, Luca Stella. 2021. Trade Shocks, Fertility, and Marital Behavior. *SSRN Electronic Journal* **34**. . [Crossref]

750. Andrea Hamaui, Pierre Jaffard. 2021. Chasing the Beta, Losing the Alpha. *SSRN Electronic Journal* **38**. . [Crossref]

751. Arnab Dutta, Sahil Gandhi, Richard K. Green. 2021. Distant Shocks, Migration, and Housing Supply in India. *SSRN Electronic Journal* **21**. . [Crossref]

752. Shaoqing Huang, Weisi Xie, Xiaoshu Xu. 2021. Industrial Policy, Productivity and Zombie Firms. *SSRN Electronic Journal* **83**. . [Crossref]

753. Zifeng Feng. 2021. Household Income, Asset Location and Real Estate Value: Evidence from REITs. *SSRN Electronic Journal* **72**. . [Crossref]

754. François Seyler, Arthur Silve. 2021. Frontier planters, immigrants, and the abolition of slavery in Brazil. *SSRN Electronic Journal* **40**. . [Crossref]

755. Diana Bonfim, Miguel Almeida Ferreira, Francisco Queiro, Sujiao Zhao. 2021. Sovereign-Bank Diabolic Loop: The Government Procurement Channel. *SSRN Electronic Journal* **69**. . [Crossref]

756. Christopher Blair, Austin L. Wright. 2021. Refugee Return and Conflict: Evidence from a Natural Experiment. *SSRN Electronic Journal* **64**. . [Crossref]

757. Hans Lueders. 2021. Rooted at Home: How Domestic Migration Separates Voters into National and Local Electorates. *SSRN Electronic Journal* **41**. . [Crossref]

758. Daniel Da Mata, Mario Dotta. 2021. Commodity Booms and The Environment. *SSRN Electronic Journal* **134**. . [Crossref]

759. Daiji Kawaguchi, Sagiri Kitao, Manabu Nose. 2021. The Impact of COVID-19 on Japanese Firms: Mobility and Resilience Via Remote Work. *SSRN Electronic Journal* **117**. . [Crossref]

760. Sunghun Lim, Sie Won Kim. 2021. Global Agricultural Value Chains and Employment Growth. *SSRN Electronic Journal* **34**. . [Crossref]

761. Jonathan Meer, Hedieh Tajali. 2021. Charitable Giving Responses to Education Budgets. *SSRN Electronic Journal* **183**. . [Crossref]

762. Davin Chor, Bingjing Li. 2021. Illuminating the Effects of the Us-China Tariff War on China's Economy. *SSRN Electronic Journal* **134**. . [Crossref]

763. Mirjam Bächli, Teodora Tsankova. 2021. Does Labor Protection Increase Support for Immigration? Evidence from Switzerland. *SSRN Electronic Journal* **113**. . [Crossref]

764. Tanmoy Majilla, Abhiman Das. 2021. Household Income Shocks, Demand for Deposits, and Real Activities. *SSRN Electronic Journal* **104**. . [Crossref]

765. Pedro Molina Ogeda, Emanuel Ornelas, Rodrigo R. Soares. 2021. Labor Unions and the Electoral Consequences of Trade Liberalization. *SSRN Electronic Journal* **134**. . [Crossref]

766. William Gamber, James Graham, Anirudh Yadav. 2021. Stuck at Home: Housing Demand During the COVID-19 Pandemic. *SSRN Electronic Journal* **121**. . [Crossref]

767. Wenbiao Sha. 2021. The Political Economy of Trade Deliberalization: A Social Identity Analysis of the US-China Trade War. *SSRN Electronic Journal* **115**. . [Crossref]

768. William Gamber, James Graham, Anirudh Yadav. 2021. Stuck at home: Housing demand during the COVID- 19 pandemic. *SSRN Electronic Journal* **121**. . [Crossref]

769. Fabrizio Mazzonna, Giuliano Masiero, Sandro Steinbach. 2021. Happy Pills? The Health Consequences of the Dramatic Increase in Antidepressant Use. *SSRN Electronic Journal* **91**. . [Crossref]

770. Domininkas Mockus. 2021. The Effect of Immigration on the Living Arrangements of Elderly Natives. *SSRN Electronic Journal* **11**. . [Crossref]

771. Mika Akesaka, Nobuyoshi Kikuchi. 2021. The Effects of Gender-Specific Local Labor Demand on Birth and Later Outcomes. *SSRN Electronic Journal* **25**. . [Crossref]

772. Hyejin Kim. 2021. The Impact of Robots on Labor Demand: Evidence from Job Vacancy Data for South Korea. *SSRN Electronic Journal* **128**. . [Crossref]

773. Yimeng Niu, Jing Wu, Shenyang Jiang, Zhi-bin Jiang. 2021. The Bullwhip Effect in Servicized Manufacturers. *SSRN Electronic Journal* **63**. . [Crossref]

774. N. Aaron Pancost, Garrett Schaller. 2021. Measuring Measurement Error. *SSRN Electronic Journal* **72**. . [Crossref]

775. Paul Rintamäki. 2021. Comprehensive evaluation of wealth effects on local labor market outcomes. *SSRN Electronic Journal* **134**. . [Crossref]

776. Jason Cook. 2021. Race-Blind Admissions, School Segregation, and Student Outcomes: Evidence from Race-Blind Magnet School Lotteries. *SSRN Electronic Journal* . [Crossref]

777. Lucy C. Sorensen, Moontae Hwang. 2021. The Importance of Place: Effects of Community Job Loss on College Enrollment and Attainment Across Rural and Metropolitan Regions. *AERA Open* **7**. . [Crossref]

778. Claudio Costanzo. 2021. Industrial Robots and Fertility Timing. *SSRN Electronic Journal* **128**. . [Crossref]

779. Leming Lin. 2021. Depositing Corporate Payout. *SSRN Electronic Journal* **70**. . [Crossref]

780. Da Zhao, Yifan Chen, Jim.H. Shen. 2020. Mortgage payments and household consumption in urban China. *Economic Modelling* **93**, 100-111. [Crossref]

781. Giulia Bettin, Agnese Sacchi. 2020. Health spending in Italy: The impact of immigrants. *European Journal of Political Economy* **65**, 101932. [Crossref]

782. Timothy M. Komarek, Gary A. Wagner. 2020. The distributional effects of job loss from fiscal consolidation: Evidence from the Budget Control Act of 2011. *Economics Letters* **196**, 109515. [Crossref]

783. Anthony Edo, Lionel Ragot, Hillel Rapoport, Sulin Sardoschau, Andreas Steinmayr, Arthur Sweetman. 2020. An introduction to the economics of immigration in OECD countries. *Canadian Journal of Economics/Revue canadienne d'économique* **53**:4, 1365-1403. [Crossref]

784. Mi Dai, Wei Huang, Yifan Zhang. 2020. Persistent effects of initial labor market conditions: The case of China's tariff liberalization after WTO accession. *Journal of Economic Behavior & Organization* **178**, 566-581. [Crossref]

785. Kai Gehring, Valentin Lang. 2020. Stigma or cushion? IMF programs and sovereign creditworthiness. *Journal of Development Economics* **146**, 102507. [Crossref]

786. Miquel-Àngel Garcia-López, Jordi Jofre-Monseny, Rodrigo Martínez-Mazza, Mariona Segú. 2020. Do short-term rental platforms affect housing markets? Evidence from Airbnb in Barcelona. *Journal of Urban Economics* **119**, 103278. [Crossref]

787. W.C. Bunting. 2020. Does increased access to home mortgage money reduce local crime rates? Evidence from San Diego County. *Regional Science and Urban Economics* **84**, 103570. [Crossref]

788. Georg Hirte, Christian Lessmann, André Seidel. 2020. International trade, geographic heterogeneity and interregional inequality. *European Economic Review* **127**, 103427. [Crossref]

789. Pawel Krolikowski, Mike Zabek, Patrick Coate. 2020. Parental proximity and earnings after job displacements. *Labour Economics* **65**, 101877. [Crossref]

790. Axel Dreher, Sarah Langlotz. 2020. Aid and growth: New evidence using an excludable instrument. *Canadian Journal of Economics/Revue canadienne d'économique* **53**:3, 1162-1198. [Crossref]

791. Vasiliki Fouka, Soumyajit Mazumder, Marco Tabellini. 2020. Changing In-Group Boundaries: The Effect of Immigration on Race Relations in the US. *SSRN Electronic Journal* **6**. . [Crossref]

792. Joao Granja, Christos Makridis, Constantine Yannelis, Eric Zwick. 2020. Did the Paycheck Protection Program Hit the Target?. *SSRN Electronic Journal* **125**. . [Crossref]
793. Joao Granja, Christos Makridis, Constantine Yannelis, Eric Zwick. 2020. Did the Paycheck Protection Program Hit the Target?. *SSRN Electronic Journal* **125**. . [Crossref]
794. Eugen Dimant, Tim Krieger, Daniel Meierrieks. 2020. Paying Them to Hate US: The Effect of U.S. Military Aid on Anti-American Terrorism, 1968-2014. *SSRN Electronic Journal* **96**. . [Crossref]
795. Daniel Keum, Stephan Meier. 2020. License to Fire? Unemployment Insurance and the Moral Cost of Layoffs. *SSRN Electronic Journal* **34**. . [Crossref]
796. Isil Erel, Jack Liebersohn. 2020. Does Fintech Substitute for Banks? Evidence from the Paycheck Protection Program. *SSRN Electronic Journal* **23**. . [Crossref]
797. Nicolás Ajzenman, Patricio Dominguez-Rivera, Raimundo Undurraga. 2020. Immigration, Crime, and Crime (Mis)Perceptions. *SSRN Electronic Journal* **134**. . [Crossref]
798. Rania Gihleb, Osea Giuntella, Luca Stella, Tianyi Wang. 2020. Industrial Robots, Workers' Safety, and Health. *SSRN Electronic Journal* **128**. . [Crossref]
799. Rajashri Chakrabarti, Nicole Gorton, Michael Lovenheim. 2020. State Investment in Higher Education: Effects on Human Capital Formation, Student Debt, and Long-Term Financial Outcomes of Students. *SSRN Electronic Journal* **134**. . [Crossref]
800. Alice Xu. 2020. Segregation and the Spatial Externalities of Inequality: A Theory of Collateral Cooperation for Public Goods in Cities. *SSRN Electronic Journal* **114**. . [Crossref]
801. Gustavo Joaquim, Felipe Netto. 2020. Bank Incentives and the Impact of the Paycheck Protection Program. *SSRN Electronic Journal* **10**. . [Crossref]
802. Janet Gao, Joseph Pacelli, Jan Schneemeier, Yufeng Wu. 2020. Dirty Money: How Banks Influence Financial Crime. *SSRN Electronic Journal* **30**. . [Crossref]
803. Mehdi Beyhaghi, Cesare Fracassi, Gregory Weitzner. 2020. Bank Loan Markups and Adverse Selection. *SSRN Electronic Journal* **52**. . [Crossref]
804. Ricardo Duque Gabriel, Mathias Klein, Ana Sofia Pessoa. 2020. The Effects of Government Spending in the Eurozone. *SSRN Electronic Journal* **104**. . [Crossref]
805. Viral V. Acharya, Matteo Crosignani, Tim Eisert, Christian Eufinger. 2020. Zombie Credit and (Dis-)Inflation: Evidence from Europe. *SSRN Electronic Journal* **45**. . [Crossref]
806. Jeremy Lebow. 2020. Refugees in the Colombian Labor Market: The Consequences of Occupational Downgrading. *SSRN Electronic Journal* **39**. . [Crossref]
807. Shohini Kundu. 2020. The Externalities of Fire Sales: Evidence from Collateralized Loan Obligations. *SSRN Electronic Journal* **44**. . [Crossref]
808. Paola Giuliano, Marco Tabellini. 2020. The Seeds of Ideology: Historical Immigration and Political Preferences in the United States. *SSRN Electronic Journal* **55**. . [Crossref]
809. Alexander W. Butler, Irem Demirci, Umit Gurun, Yessenia Tellez. 2020. Hand to Mouth: Financial Stress and Food Insecurity. *SSRN Electronic Journal* **119**. . [Crossref]
810. Wei Chen, Zaiyan Wei, Karen Xie. 2019. The Battle for Homes: How Does Home Sharing Disrupt Local Residential Markets?. *SSRN Electronic Journal* **72**. . [Crossref]
811. Elena Cottini, Paolo Ghinetti, Simone Moriconi. 2019. On the Productivity Effects of Higher Education Supply: Evidence from Italian History. *SSRN Electronic Journal* **1**. . [Crossref]
812. Xavier Gabaix, Ralph S. J. Koijen. 2019. Granular Instrumental Variables. *SSRN Electronic Journal* **80**. . [Crossref]
813. Nadia Kotova, Anthony Lee Zhang. 2019. Search Frictions and Idiosyncratic Price Dispersion in the US Housing Market. *SSRN Electronic Journal* **48**. . [Crossref]

814. Sehwa Kim. 2019. Do Delays in Banks' Loan Loss Provisioning Affect Economic Downturns? Evidence from the U.S. Housing Market. *SSRN Electronic Journal* **54**. . [Crossref]

815. Saumya Deojain, David Lindequist. 2019. Diversity Taxes. *SSRN Electronic Journal* **115**. . [Crossref]

816. Nicolas Apfel. 2019. Relaxing the Exclusion Restriction in Shift-Share Instrumental Variable Estimation. *SSRN Electronic Journal* **134**. . [Crossref]

817. Christoph Basten, Steven R. G. Ongena. 2019. Mortgage Lending through a FinTech Web Platform. The Roles of Competition, Diversification, and Automation. *SSRN Electronic Journal* **55**. . [Crossref]

818. Paul Beaumont, Camille Hebert, Victor Lyonnet. 2019. Build or Buy? Human Capital and Corporate Diversification. *SSRN Electronic Journal* **113**. . [Crossref]

819. Daniel Mejia, Mounu Prem, Juan F. Vargas. 2019. The Rise and Persistence of Illegal Crops: Evidence from a Naive Policy Announcement. *SSRN Electronic Journal* **1**. . [Crossref]

820. Aytekin Ertan. 2019. Expected Losses, Unexpected Costs?. *SSRN Electronic Journal* **54**. . [Crossref]

821. Astrid Marinoni. 2019. Immigration and Entrepreneurship: the Role of Enclaves. *SSRN Electronic Journal* **134**. . [Crossref]

822. Francesco Agostinelli, Giuseppe Sorrenti. 2018. Money vs. Time: Family Income, Maternal Labor Supply, and Child Development. *SSRN Electronic Journal* **100**. . [Crossref]

823. Yifei Mao, Xuan Tian, Kailei Ye. 2018. The Real Effects of Sharing Economy: Evidence from Airbnb. *SSRN Electronic Journal* **117**. . [Crossref]

824. Dionissi Aliprantis, Mark E. Schweitzer. 2018. Opioids and the Labor Market. *SSRN Electronic Journal* **1**. . [Crossref]

825. Paul Beaumont, Camille Hebert, Victor Lyonnet. 2018. Build or Buy? Human Capital and Corporate Diversification. *SSRN Electronic Journal* **113**. . [Crossref]

826. Vasiliki Fouka, Soumyajit Mazumder, Marco Tabellini. 2018. From Immigrants to Americans: Race and Assimilation During the Great Migration. *SSRN Electronic Journal* **55**. . [Crossref]

827. Alessandro Ferrari. 2018. Global Value Chains and Business Cycle. *SSRN Electronic Journal* **30**. . [Crossref]

828. Raphael Duguay. 2018. The Economic Consequences of Financial Audit Regulation in the Charitable Sector. *SSRN Electronic Journal* **95**. . [Crossref]

829. Hui Chen, Zhuo Chen, Zhiguo He, Jinyu Liu, Rengming Xie. 2018. Pledgeability and Asset Prices: Evidence from the Chinese Corporate Bond Markets. *SSRN Electronic Journal* **9**. . [Crossref]

830. Michela Carlana, Marco Tabellini. 2018. Happily Ever after: Immigration, Natives' Marriage, and Fertility. *SSRN Electronic Journal* **15**. . [Crossref]

831. Eve Colson-Sihra, Clement Bellet. 2018. The Conspicuous Consumption of the Poor: Forgoing Calories for Aspirational Goods. *SSRN Electronic Journal* **134**. . [Crossref]

832. Ahmad Lashkaripour, Volodymyr Lugovskyy. 2017. National Differentiation and Industry-Wide Scale Effects. *SSRN Electronic Journal* **134**. . [Crossref]

833. Christos Andreas Makridis, Maury Gittleman. 2017. Does Performance Payy Pay? Wage Flexibility Over the Great Recession. *SSRN Electronic Journal* **23**. . [Crossref]

834. Tom Mayock, Konstantinos Tzioumis. 2017. New Construction and the Mortgage Crisis. *SSRN Electronic Journal* **128**. . [Crossref]

835. Donna Rothstein, Evan Starr. 1915. Noncompete agreements, bargaining, and wages: evidence from the National Longitudinal Survey of Youth 1997. *Monthly Labor Review* . [Crossref]