Appendix For Online Publication

Who Benefits from State Corporate Tax Cuts? A Local Labor Market Approach with Heterogeneous Firms: Further Results

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Extending the Framework

This section develops two new approaches for inferring profit effects of local business tax cuts. As in SZ, we continue to infer the incidence on workers and landowners using the estimated effects of local business tax cuts on wages and housing costs. Table 1 recalls these incidence expressions.

A.1. Identifying Incidence on Profits using Reduced-Form Effects

A key goal of SZ was to interpret reduced-form effects of state-corporate-tax cuts through the lens of a model to infer effects on profits, π. While profits are not directly observable, the model in SZ makes it possible to express the percentage change in profits with respect to a percentage change in the net-of-business-tax rate $(1-\tau^b)$ as follows:

$$\dot{\pi} = 1 + (1+\varepsilon^{PD})(\gamma\dot{w} - \delta\phi), \tag{A.1}$$

where γ and δ are the output elasticities of labor and capital, respectively, ε^{PD} is the product demand elasticity, and $\dot{w}$ is the elasticity of local wages with respect to net-of-tax rates. The parameter ϕ is the elasticity of the local cost of capital with respect to the net-of-business-tax rate, i.e., $\rho_c = \frac{\rho}{(1-\tau_c^b)^\phi}$. In the original paper, we set $\phi = 1$, which assumed that when the net-of-tax rate increased by one percent, the local cost of capital decreased by one percent. This expression generalizes and makes more explicit the relationship between the local cost of capital and business taxes.

In equation A.1, the first term in the sum is the number 1, which captures the mechanical effect of keeping more profits. The remaining terms in this expression capture the scale effect of a tax cut, which multiplies the percentage change in unit costs of production, $\gamma\dot{w} - \delta\phi$, by one plus the elasticity of product demand, which governs how firm production responds to output price changes and thus, how it responds to cost changes given fixed markups in the model.

We now provide two novel approaches to identify scale and profit effects. The first uses the micro labor demand elasticity, which we refer to as the intensive margin of labor demand to distinguish it from labor demand due to extensive margin location decisions of firms and compositional changes in firm productivity. The second uses the change in productivity at the local level. Both approaches allow us to identify $\dot{\pi}$ without making assumptions on the product demand elasticity ε^{PD}; these approaches also inform the model parameters.

Setting up the identification argument

Establishing these new ways to identify profit effects requires three inputs.

The first input is the micro labor demand elasticity. Equation 8 in SZ characterizes local labor demand for location c. It is the product of three terms: an extensive margin term that accounts for firm location (E_c), the average idiosyncratic productivity of firms in the location (z_c), and the intensive margin (l_c), which relates costs and average labor demand of firms in the area:

$$L_c^D = E_c \times \underbrace{\left[w_c^{\gamma(\varepsilon^{PD}+1)-1} \rho_c^{\delta(\varepsilon^{PD}+1)} \kappa_0 \left(\exp\left\{ B_c(-\varepsilon^{PD}-1) \right\} \right) \right]}_{\equiv l_c} z_c, \tag{A.2}$$

where B_c is the common component of firm productivity in location c.[12] E_c is determined by Equation 7 in SZ, which relates the fraction of firms to local costs and taxes.

$$E_c = \frac{\exp\left\{\frac{v_c}{\sigma^F}\right\}}{\sum_{c'} \exp\left\{\frac{v_{c'}}{\sigma^F}\right\}}, \tag{A.3}$$

where $v_c = \frac{\ln(1-\tau_c^b)}{-(\varepsilon^{PD}+1)} + B_c - \gamma \ln w_c - \delta \ln \rho_c + \frac{\ln \kappa_1}{-(\varepsilon^{PD}+1)}$ is the mean value of locating in c and where κ_1 is a constant.

Taking logs of the intensive margin of local labor demand and derivating gives:

$$\dot{l} = (1+\varepsilon^{PD})(\gamma\dot{w} - \delta\phi) - \dot{w}, \tag{A.4}$$

where $\dot{l}$ is the micro labor demand elasticity with respect to net-of-business-tax rates. The average percentage change in labor demand for incumbent firms in a given area depends on the scale effect of the tax cut and a substitution effect given by $-\dot{w}$.

The second input relates average idiosyncratic productivity for firms in the local area, z_c, to the share of firms in the local area, E_c. Recall that each firm chooses its location by maximizing its total value $v_c + \zeta_{jc}$, where ζ_{jc} is firm j's idiosyncratic, location-specific productivity in location c. The assumption that the ζ_{jc}'s are i.i.d. with a Type 1 Extreme Value distribution implies that:

$$z_c = \mathbb{E}\left[\exp\left\{-(1+\varepsilon^{PD})\zeta_{jc}\right\}\middle| c\right] = \Gamma\left(1+(1+\varepsilon^{PD})\sigma^F\right) \times E_c^{(1+\varepsilon^{PD})\sigma^F}, \tag{A.5}$$

where Γ is the gamma function and σ^F is the dispersion in firm productivity. This setup delivers the result from Hanemann (1984) that MMM-S highlight, which relates z_c and E_c. In particular, taking logs and derivatives shows that the elasticity of local firm productivity with respect to the net-of-business-tax rate is

$$\dot{z} = (\sigma^F)(1+\varepsilon^{PD})\dot{E}. \tag{A.6}$$

Since $\varepsilon^{PD} < -1$, average local productivity declines as tax cuts attract a larger number of firms with lower levels of productivity.

The third input relates firm location to cost changes. Taking logs of Equation A.3 and derivating gives the following expression for the firm location elasticity:

$$\dot{E} = \frac{1}{-(1+\varepsilon^{PD})}\frac{1}{\sigma^F} - \frac{\gamma}{\sigma^F}\dot{w} + \frac{\delta\phi}{\sigma^F}, \tag{A.7}$$

which shows how firm location responds to tax changes through mechanical effects and effects on costs. For the results below, it is useful to multiply both sides of this equation by $(\sigma^F)(1+\varepsilon^{PD})$:

$$(\sigma^F)(1+\varepsilon^{PD})\dot{E} = -1 - (1+\varepsilon^{PD})(\gamma\dot{w} - \delta\phi). \tag{A.8}$$

Direct approaches for quantifying profit impacts and incidence

We now combine these three ingredients to obtain two new expressions for profit effects in terms of observables.

The first, which we refer to as the "labor approach," uses the fact that the scale effect

[12]The local labor demand elasticity is $\varepsilon^{LD} = -\frac{\gamma}{\sigma^F} - 1$. SZ did not account for the composition margin, which resulted in an elasticity of $\gamma\left(1+\varepsilon^{PD} - \frac{1}{\sigma^F}\right) - 1$.

can be identified by adding the wage effect, $\dot{w}$, to the micro elasticity of labor demand, $\dot{l}$. Equation A.4 implies that $\dot{w} + \dot{l} = (1 + \varepsilon^{PD})(\gamma\dot{w} - \delta\phi)$. Combined with equation A.1, we can express the effect on profits as the sum of one, the intensive margin labor elasticity, and the wage elasticity:

$$\dot{\pi} = 1 + \dot{l} + \dot{w}. \tag{A.9}$$

Intuitively, because the scale effect is identified by wage and employment changes along the intensive margin, we can use intensive margin labor and wage changes to determine the impact on profits.[13] Empirically, we use this expression to estimate the impact on profits as one plus the sum of the effects on wages and on the intensive margin of labor demand. Notably, this expression does not depend on firm location decisions, $\dot{E}$, the composition margin, $\dot{z}$, the effect of taxes on the local cost of capital, ϕ, or the product demand elasticity ε^{PD}.

The second approach for identifying profit effects uses changes in local productivity, $\dot{z}$. We refer to this approach as the productivity approach. Combining Hanemann's result (equation A.6) and the expression for firm location (equation A.8) yields:

$$\dot{z} = -1 - (1 + \varepsilon^{PD})(\gamma\dot{w} - \delta\phi) = -\dot{\pi}. \tag{A.10}$$

Intuitively, firms trade off idiosyncratic location-specific differences in productivity with tax and cost considerations. In equilibrium, the tax and cost changes embedded in $\dot{\pi}$ equal the change in the average productivity of firms in a given area. We can therefore use changes in productivity to infer how profit changes as a second empirical approach. In section I, we conduct a reduced-form estimation of incidence on profits by plugging in the empirical counterparts in equations A.9 and A.10, which are summarized in Table 1.

[13] The result in Equation A.9 relies on the assumption of Cobb-Doulgas production. Curtis et al. (2021) show how to isolate scale and substitution effects using reduced-form effects of taxes and general production functions.

A.2. Extending the Structural Model

This section extends the structural model to include these new ways to identify profit effects and to incorporate the composition margin and consistent cost of capital characterization. We then derive new reduced-form expressions, and describe how these reduced-form effects of business taxes identify parameters and incidence.

Simultaneous equation model

There are six key equations in the updated model that characterize changes in economic activity in location c and year t:

$$\Delta \ln N_{c,t} = \frac{1}{\sigma^W}(\Delta \ln w_{c,t} - \alpha \Delta \ln r_{c,t}) + \frac{\Delta \ln(1-\tau^i_{c,t})}{\sigma^W} + \frac{\Delta A_{c,t}}{\sigma^W} \tag{A.11}$$

$$\Delta \ln N_{c,t} = \Delta \ln E_{c,t} + \Delta \ln l_{c,t} + \Delta \ln z_{c,t} \tag{A.12}$$

$$\Delta \ln r_{c,t} = \frac{\Delta \ln N_c + \Delta \ln w_c + \Delta \ln(1-\tau^i_{c,t})}{1+\eta_c} - \frac{\eta_c \Delta B^h_{c,t}}{1+\eta_c} - \frac{\kappa \Delta \ln(1-\tau^i_{c,t})}{(1+\eta_c)} \tag{A.13}$$

$$\Delta \ln E_{c,t} = -\frac{\gamma}{\sigma^F}\Delta \ln w_{c,t} + \left(\frac{\delta\phi}{\sigma^F} - \frac{1}{\sigma^F(\varepsilon^{PD}+1)}\right)\Delta \ln(1-\tau^b_{c,t}) + \frac{1}{\sigma^F}\Delta B_{c,t} \tag{A.14}$$

$$\begin{aligned}\Delta \ln l_{c,t} = &\left(\gamma(\varepsilon^{PD}+1)-1\right)\Delta \ln w_{c,t} \\ &- (\varepsilon^{PD}+1)\delta\phi\Delta \ln(1-\tau^b_{c,t}) - (\varepsilon^{PD}+1)\Delta B_{c,t}\end{aligned} \tag{A.15}$$

$$\Delta \ln z_{c,t} = (\sigma^F)(1+\varepsilon^{PD})\Delta \ln E_{c,t} \tag{A.16}$$

Recall from SZ that equation A.11 describes labor supply, which increases with the net-of-personal-tax rate $(1-\tau^i_c)$, real wages, and amenities (A_c). The responsiveness to these labor supply shifters depends on the dispersion of idiosyncratic-location preferences σ^W. Real wages depend on the housing expenditure share α and the cost of housing $r_{c,t}$. Equation A.12 is the total derivative of local labor demand in equation A.2.[14] Equation A.13 describes equilibrium rental prices in the local housing market, which depend on the elasticity of housing supply (η_c) and productivity in the housing sector (B^h).[15] Equation A.14 is the firm location equation as in equation A.7, and also includes the productivity shifter B_c. The sensitivity of firm location to profit shifters depends on the dispersion of idiosyncratic-location productivity σ^F. Equation A.15 is the intensive margin labor demand expression as in equation A.2. Finally, equation A.16 accounts for the composition margin through Hanemann's equation as in equation A.6.

For empirical implementation, we project productivity terms $\Delta B_{c,t}$ and $\Delta B^h_{c,t}$ on Bartik shocks.

$$\begin{aligned}\Delta B_{c,t} &= \varphi \Delta \ln BARTIK_{c,t} + v_{c,t} \\ \Delta B^h_{c,t} &= \varphi^h \Delta \ln BARTIK_{c,t} + v^h_{c,t}\end{aligned}$$

Concisely, the updated structural form is as follows: $\mathbf{AY}_{c,t} = \mathbf{BZ}_{c,t} + \epsilon_{c,t}$, where

$$\begin{aligned}\mathbf{Y}_{c,t} &= [\Delta \ln N_{c,t}, \Delta \ln w_{c,t}, \Delta \ln r_{c,t}, \Delta \ln E_{c,t}, \Delta \ln l_{c,t}, \Delta \ln z_{c,t}]' \\ \mathbf{Z}_{c,t} &= [\Delta \ln(1-\tau^b_{c,t}), \Delta \ln BARTIK_{c,t}, \Delta \ln(1-\tau^i_{c,t})]',\end{aligned}$$

[14] This expression includes the composition margin and is equivalent to the wage incidence expression in SZ equation 16 when equated to the labor supply expression in equation A.11.

[15] As in SZ, κ governs the impact of personal taxes on housing supply.

and where **A** and **B** take the following form:

$$\mathbf{A} = \begin{bmatrix} 1 & -\frac{1}{\sigma^W} & +\frac{\alpha}{\sigma^W} & 0 & 0 & 0 \\ 1 & 0 & 0 & -1 & -1 & -1 \\ -\frac{1}{1+\eta_c} & -\frac{1}{1+\eta_c} & 1 & 0 & 0 & 0 \\ 0 & \frac{\gamma}{\sigma^F} & 0 & 1 & 0 & 0 \\ 0 & -\left(\gamma(\varepsilon^{PD}+1)-1\right) & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & -\sigma^F(\varepsilon^{PD}+1) & 0 & 1 \end{bmatrix},$$

$$\mathbf{B} = \begin{bmatrix} 0 & 0 & \frac{1}{\sigma^w} \\ 0 & 0 & 0 \\ 0 & \frac{-\eta_c}{1+\eta_c}\varphi^h & \frac{1-\kappa}{1+\eta_c} \\ \frac{\delta\phi}{\sigma^F} - \frac{1}{\sigma^F(\varepsilon^{PD}+1)} & \frac{\varphi}{\sigma^F} & 0 \\ -(\varepsilon^{PD}+1)\delta\phi & -(\varepsilon^{PD}+1)\varphi & 0 \\ 0 & 0 & 0 \end{bmatrix}.$$

Pre-multiplying by the inverse of the matrix of structural coefficients gives the reduced form:

$$\mathbf{Y}_{c,t} = \underbrace{\mathbf{A}^{-1}\mathbf{B}}_{\equiv\mathbf{C}}\mathbf{Z}_{c,t} + \underbrace{\mathbf{A}^{-1}\epsilon_{c,t}}_{\equiv\mathbf{u}_{c,t}}. \tag{A.17}$$

The matrix of reduced-form effects **C** can be expressed as follows:

Business Taxes	Bartik Shock	Personal Taxes	Outcomes
$\varepsilon^{LS}\beta_1^W$	$\varepsilon^{LS}\beta_2^W + \frac{\alpha\eta_c}{\sigma^W(1+\eta_c)+\alpha}\varphi^h$	$\varepsilon^{LD}\beta_3^W$	$\Delta\ln N$
β_1^W	β_2^W	β_3^W	$\Delta\ln w$
$\frac{1+\varepsilon^{LS}}{1+\eta}\beta_1^W$	$\frac{1+\varepsilon^{LS}}{1+\eta_c}\beta_2^W - \frac{\varphi^h\sigma^W\eta_c}{\sigma^W(1+\eta_c)+\alpha}$	$\frac{(1+\varepsilon^{LS})}{1+\eta_c}\beta_3^W + \frac{1+(1-\kappa)\sigma^W}{\sigma^W(1+\eta_c)+\alpha}$	$\Delta\ln r$
$-\frac{1}{\sigma^F(\varepsilon^{PD}+1)} - \frac{\gamma\beta_1^W-\delta\phi}{\sigma^F}$	$-\frac{1}{\sigma^F}\left(\gamma\beta_2^W-\varphi\right)$	$-\frac{\gamma}{\sigma^F}\beta_3^W$	$\Delta\ln E$
$(\gamma\beta_1^W-\delta\phi)(\varepsilon^{PD}+1)-\beta_1^W$	$(\gamma\beta_2^W-\varphi)(\varepsilon^{PD}+1)-\beta_2^W$	$\left(\gamma(\varepsilon^{PD}+1)-1\right)\beta_3^W$	$\Delta\ln l$
$-1-(\varepsilon^{PD}+1)(\gamma\beta_1^W-\delta\phi)$	$-(\varepsilon^{PD}+1)(\gamma\beta_2^W-\varphi)$	$-\gamma(\varepsilon^{PD}+1)\beta_3^W$	$\Delta\ln z$

where the labor demand elasticity $\varepsilon^{LD} = -\frac{\gamma}{\sigma^F} - 1$ and the labor supply elasticity $\varepsilon^{LS} = \frac{1+\eta-\alpha}{\sigma^W(1+\eta)+\alpha}$. Each element of this matrix represents the reduced form effects of changes in a given outcome to one of the three shocks. For example, the effect of net-of-business-tax rates on local population (β_1^N) equals the effective local labor supply ε^{LS} times the effect on local wages (β_1^W). The wage incidence of net-of-business-tax rates is given by:

$$\beta_1^W = \left(\frac{\delta\phi}{\sigma^F} - 1 - \frac{1}{\sigma^F(\varepsilon^{PD}+1)}\right)\frac{1}{\varepsilon^{LS}-\varepsilon^{LD}}. \tag{A.18}$$

Appendix C.C.1 provides the wage incidence expressions for Bartik, net-of-personal-tax rate, and amenity shocks. Relative to SZ, this system adds the two outcomes below the dashed line: $\Delta\ln l$ and $\Delta\ln z$. Importantly, equation A.18 correctly accounts for the composition margin and for the impact of business taxes on the local cost of capital through the term $\frac{\delta\phi}{\sigma^F}$.

Identifying parameters

The reduced form effect matrix **C** yields several insights about identification of structural parameters and profit effects.

Remark 1: Identifying Labor Supply Parameters with Business Taxes. As in SZ, the labor supply parameters are identified by the effects of the business tax in the first column. Dividing β_1^N by β_1^W identifies ε^{LS}. Together with the effect on rents β_1^R, ε^{LS} and β_1^W pin down the housing supply elasticity η. We obtain the preference dispersion parameter σ^W by solving the equation for ε^{LS}. Intuitively, a business tax cut is a labor demand shock that traces out the supply of workers and housing.

Remark 2: Identifying Labor Demand Parameters with Baseline Moments and Shocks. Column 3 of matrix **C** shows that dividing the effect of net-of-personal-tax rate on population β_3^N by its effect on wages β_3^W identifies $\varepsilon^{LD} = -\frac{\gamma}{\sigma^F} - 1$. In addition, dividing the effect on the number of establishments β_3^E by the wage effect β_3^W identifies the contribution of firm entry to labor demand: $\frac{\gamma}{\sigma^F}$. Intuitively, a personal-income-tax cut is a labor supply shock that traces out the slope of labor demand.[16] Finally, under the assumption in SZ that the elasticity of the cost of capital with respect to the net-of-business-tax rate $\phi = 1$, β_1^E can be used to identify the elasticity of product demand ε^{PD}.[17] These arguments show that the parameters of labor demand are identified by the same four outcomes used in SZ in the baseline structural model with three shocks.

Remark 3: Identifying Labor Demand Parameters with Business Tax Shocks and New Moments. SZ argued that business tax moments alone could identify parameters of labor demand by inverting the equation for β_1^W. The corrections by MMM-S show that this argument is not valid. We now show that business taxes alone can identify labor demand parameters when we include two new outcomes: productivity and intensive margin of labor demand. Under the assumption in SZ that $\phi = 1$, the effect on the intensive margin of labor demand (β_1^l) together with the wage effect (β_1^W) identifies ε^{PD}. Similarly, Hanemann's equation A.6 and the expression for ($\varepsilon^{PD} + 1$) identifies σ^F.[18] Thus, adding these two outcomes allows for full identification of the model using business-tax shocks alone.

Remark 4: Identifying Incidence on Profits with Business Tax Shocks and New Moments. Column 1 of the matrix **C** validates the arguments in Section A.A.1. Equation A.9 follows by adding β_1^W and β_1^l. Equation A.10 is given by the reduced-form effect β_1^z.

Remark 5: Identification of Labor Demand Parameters with All Shocks and New Moments. Column 3 of the matrix **C** shows that personal taxes also identify the elasticity of product demand. Dividing the effect of personal taxes on the intensive margin of labor demand (β_3^l) by the wage effect (β_3^W) identifies the product demand elasticity ε^{PD}. In addition, it is also possible to isolate ε^{PD} after dividing the effect of personal taxes on productivity (β_3^z) by the effect on wages (β_3^W). These results allow us to relax the assumption that $\phi = 1$. Specifically, we can use the effect of business taxes on the intensive margin of labor demand (β_1^l) to solve for ϕ—the effect of business taxes on

[16] Recall that our measure of business taxes includes a component of personal-income taxes for pass-through owners, so this result uses non-business-tax variation that can shift local labor supply.

[17] Specifically, Column 1 implies that $\varepsilon^{PD} = \frac{-1}{\sigma^F \beta_1^E + (\gamma\beta_1^W - \delta)} - 1$ and Column 3 that $\sigma^F = \frac{\beta_3^W}{\gamma\beta_3^E}$.

[18] In particular, adding β_1^l and β_1^W and diving by $(\gamma\beta_1^W - \delta)$ shows that $(1 + \varepsilon^{PD}) = \frac{\beta_1^l + \beta_1^W}{(\gamma\beta_1^W - \delta)}$. Dividing β_1^z by β_1^E and the expression for $(1 + \varepsilon^{PD})$ shows that $\sigma^F = \frac{\beta_1^z}{\beta_1^E}\frac{(\gamma\beta_1^W - \delta)}{\beta_1^l + \beta_1^W}$.

the cost of capital—as a function of ε^{PD}, β_1^W, and calibrated parameters.[19] Thus, adding additional moments yields over-identifying restrictions on key model parameters and allows us to relax prior assumptions in SZ.

Remark 6: Scale Effect and the Effect on the Cost of Capital ϕ. As we discuss in section A, the scale effect of a business tax cut is given by the product of the percentage change in unit costs of production $(\gamma\beta_1^W - \delta\phi)$ and $(\varepsilon^{PD} + 1)$. Column 1 of the matrix **C** shows that the scale effect is equal to the sum of the wage effect and the effect on the intensive margin of labor demand, so that $\beta_1^W + \beta_1^l = (\varepsilon^{PD} + 1)(\gamma\beta_1^W - \delta\phi)$. Since we expect that tax cuts would increase wages $(\beta_1^W > 0)$ and labor demand $(\beta_1^l > 0)$, this expression combined with the restriction that $\varepsilon^{PD} < -1$ implies that $\gamma\beta_1^W - \delta\phi < 0$; that is, we expect business tax cuts to reduce unit costs of production. While this condition may hold when we constrain $\phi = 1$, estimating the parameter ϕ allows the structural model to better fit the data.[20] Importantly, the reduced form expressions for incidence in equations A.9 and A.10 do not depend on this parameter.

Remark 7: Auxiliary Parameters and Role of Bartik Shock Moments. The auxiliary parameters φ, φ^h, and κ are identified by the baseline outcomes in SZ. Together with the prior arguments, β_3^R identifies κ and both β_2^R and β_2^N identify φ^h. Finally, examining the expressions of β_2^E, β_2^l, and β_2^z shows that the Bartik moments provide additional identifying information for model parameters, including φ, σ^F, and ε^{PD}.

A.3. Income Shares and Income-share-weighted Incidence

Another useful extension concerns how to weigh the gains to firm owners, workers, and landowners. After computing the benefits to each of these three agents, SZ then compare the benefits to each one of these agents to the simple sum of the total benefits to the three agents. This calculation implicitly assumes that we have one representative agent of each type with equal income. This calculation is useful from the perspective of understanding the identities of the agents that benefit the most from a tax cut. However, this calculation does not capture the aggregate gains to all workers relative to all landowners and all firm owners in the economy.

This subsection briefly describes how the income shares relate to our structural parameters. We use these shares to compute aggregate gains for workers, firm owners, and land owners. We provide updated incidence estimates with and without using these income share weights.[21] We report both weighted and unweighted results in Section I to show how results change one deviation at time relative to the initial SZ approach.

Consider the three agents in SZ. Workers have income of wN derived from labor earnings. Since workers spend α on housing, landowners receive income of αwN. Firms owners receive profits and returns from capital. Given the CES structure of the model, firm owners' profits are $\pi = \frac{\text{Total Expenditure}}{-\varepsilon^{PD}}$. Returns to capital, ρK, are $\delta\times$ Costs. Costs are $-(\varepsilon^{PD} + 1)\pi$.[22]

Assuming that firm owners and landowners spend their earnings in the product market, total expenditure is given by:

$$\text{Total Expenditure} = (1-\alpha)wN + \alpha wN + \pi - (\varepsilon^{PD} + 1)\pi\delta = wN + \pi\left(1 - (\varepsilon^{PD} + 1)\delta\right).$$

[19]Specifically, $(\varepsilon^{PD} + 1) = \frac{\beta_3^z}{\gamma\beta_3^W}$ and thus $\phi = -\frac{\gamma}{\delta}\left(\beta_1^l \frac{\beta_3^W}{\beta_3^z} + \beta_1^W\left(\frac{\beta_3^W}{\beta_3^z} + 1\right)\right)$.

[20]When calibrating $\frac{\delta}{\gamma} = 0.9$ and $\phi = 1$, these restrictions imply that $\dot{w} \leq 0.9$. This relationship holds in the SZ reduced-form results with Bartik controls (e.g., Table B.4 Column 2), but does not hold in the reduced-form specification without controls (e.g., Table B.4 Column 1). Allowing the elasticity of the cost of capital ϕ to exceed one provides an additional way to rationalize the empirical facts that both wages and employment increase following increases in net-of-business-tax rates and satisfies the assumption that $\varepsilon^{PD} < -1$.

[21]We thank David Albouy for suggesting that we clarify this point and for initial suggestions on how to do so.

[22]This expression follows from the facts that sales equal costs plus profits, and that sales equal $-(\varepsilon^{PD})\pi$.

Since Total Expenditure $= -\varepsilon^{PD}\pi$, profits are $\pi = \frac{wN}{-(\varepsilon^{PD}+1)(1-\delta)}$. Total income is thus $wN\left[1+\alpha+\frac{1-\delta(\varepsilon^{PD}+1)}{-(\varepsilon^{PD}+1)(1-\delta)}\right]$, which results in the following income shares:

$$\text{(A.19)} \qquad \underbrace{\frac{1}{1+\alpha+\frac{1-\delta(\varepsilon^{PD}+1)}{-(\varepsilon^{PD}+1)(1-\delta)}}}_{\text{Workers}}, \quad \underbrace{\frac{\alpha}{1+\alpha+\frac{1-\delta(\varepsilon^{PD}+1)}{-(\varepsilon^{PD}+1)(1-\delta)}}}_{\text{Land Owners}}, \quad \text{and} \quad \underbrace{\frac{\frac{1-\delta(\varepsilon^{PD}+1)}{-(\varepsilon^{PD}+1)(1-\delta)}}{1+\alpha+\frac{1-\delta(\varepsilon^{PD}+1)}{-(\varepsilon^{PD}+1)(1-\delta)}}}_{\text{Firm Owners}}.$$

This expression shows that profits depend on the product demand elasticity. Appendix Figure C1 illustrates how these shares vary with this elasticity.

New Data on Employment and Productivity

B.1. Adding the Intensive Margin Labor Response $\dot{l}$

We use confidential micro data from the U.S. Census Bureau's Longitudinal Business Database (LBD) over the 1980-2010 period to compute changes in incumbent labor demand at the establishment level. The LBD links U.S. Census records on private business activity to create consistent establishment identifiers across time (Chow et al., 2021). Specifically, we identify all establishments that were in operation prior to changes in business taxes, and compute the log difference in employment across ten-year periods for each establishment that was in operation in the previous sample year. We then take the average of this change for the subset of incumbent establishments in each CONSPUMA-year.

B.2. Adding the Compositional Margin $\dot{z}$

To implement the second approach that adds $\dot{z}$, we use productivity data. Unfortunately, establishment-level productivity measures are not readily available across all industries. Instead, we restrict attention for this outcome to manufacturing plants in the U.S. Census Bureau's Annual Survey of Manufactures (ASM). The ASM collects detailed information on plant-level inputs and outputs, which is used to construct measures of total factor productivity (TFP), following Cunningham et al. (2022).[23] We then calculate average TFP among sampled plants in each CONSPUMA-year, and define the percent change in TFP across ten-year sample periods as the log difference in average TFP.

Table B1 shows the reduced-form effects (analogous to those in SZ Table 4) for the original four outcomes as well as these two new outcomes. It provides three panels. The first shows the reduced-form effects of net-of-business-tax rates, the second adds Bartik controls, and the third adds net-of-personal-tax-rate controls. The first two panels re-report the estimates from SZ Table 4 for the original four outcomes. The main new results are for incumbent labor demand in Column 5 and local productivity in Column 6. The table shows that following a business tax cut, establishment-level employment of incumbent establishments increases by 1.2 percentage points. The specification that also includes Bartik shocks results in a similar point estimate of 1.03 and a slightly larger standard error. For productivity, the empirical results show that local TFP does decline following business tax cuts, which is in line with the theory of the composition margin. The point estimate in Panel A is -2.5, which through the lens of the model, suggests that profits increase by 2.5 percentage points. This estimate, however, is somewhat imprecise on its own.

[23] A common challenge in estimating productivity is that output is often measured in terms of revenue rather than in terms of quantities for most industries. To cover most industries in the manufacturing sector, we rely on a measure of revenue productivity.

Table B1—: Effects of Business Tax Cuts on Local Economic Activity Over 10 Years

	(1) Population	(2) Wages	(3) Rents	(4) Number of Establishments	(5) Intensive Margin Labor Demand	(6) TFP
	N	w	r	E	l	z
Panel A						
Δ ln net-of-business-tax rate	4.275	1.451	1.172	4.074	1.240	-2.492
	(1.651)	(0.943)	(1.435)	(1.824)	(0.802)	(2.519)
Panel B						
Δ ln net-of-business-tax rate	3.744	0.777	0.323	3.354	1.028	-3.171
	(1.484)	(0.820)	(1.366)	(1.428)	(0.836)	(2.517)
Bartik	0.439	0.557	0.702	0.595	0.174	0.560
	(0.188)	(0.083)	(0.265)	(0.192)	(0.075)	(0.263)
Panel C						
Δ ln net-of-business-tax rate	1.516	1.534	1.857	1.749	1.766	-4.017
	(1.926)	(1.124)	(1.571)	(1.549)	(1.109)	(5.180)
Bartik	0.446	0.554	0.697	0.600	0.172	0.563
	(0.184)	(0.079)	(0.259)	(0.190)	(0.071)	(0.264)
Δ ln personal income tax rate	1.731	-0.588	-1.192	1.247	-0.573	0.657
	(1.254)	(0.732)	(1.180)	(1.428)	(0.770)	(2.558)
Observations	1,470	1,470	1,470	1,470	1,470	1,470

Notes: This table extends analysis Table 4 in SZ by adding two outcomes: incumbent employment at the establishment level in Column 5 and local TFP in Column 6. The data are decade changes from 1980-1990, 1990-2000, and 2000-2010 for 490 county-groups (CONSPUMAs). Panels A,B, and C shows the reduced-form effects of net-of-business-tax rates, net-of-business-tax rates and Bartik shocks, and net-of-business-tax rates, Bartik shocks, and net-of-personal-tax rates, respectively.

Table B2—: Estimates of Economic Incidence Using Reduced-Form Effects

	(1) Intensive Margin Labor Demand	(2) TFP	(3) Calibrating Product Demand	(4) Average of (1),(2),(3)	(5) Weighted Avg. of (1),(2),(3)	(6) Calibrating Product Demand	(7) Average of (1),(2),(6)	(8) Weighted Avg. of (1),(2),(6)
Panel A. Calibrated parameters								
Output elasticity γ	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
Housing share α	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300
Elasticity of product demand ε^{PD}	-2.500	-2.500	-2.500	-2.500	-2.500	-5.000	-5.000	-5.000
Panel B. Incidence								
Landowners	1.172	1.172	1.172	1.172	1.172	1.172	1.172	1.172
	(1.435)	(1.435)	(1.435)	(1.435)	(1.435)	(1.435)	(1.435)	(1.435)
Workers	1.099	1.099	1.099	1.099	1.099	1.099	1.099	1.099
	(0.593)	(0.593)	(0.593)	(0.593)	(0.593)	(0.593)	(0.593)	(0.593)
Firm Owners	3.691	2.492	0.876	2.353	1.184	0.669	2.284	1.426
	(1.639)	(2.519)	(0.212)	(0.974)	(0.059)	(0.566)	(0.929)	(0.134)
Panel C. Shares of Incidence								
Landowners	0.197	0.246	0.372	0.253	0.339	0.399	0.257	0.317
	(0.140)	(0.257)	(0.263)	(0.202)	(0.239)	(0.307)	(0.209)	(0.235)
Workers	0.184	0.231	0.349	0.238	0.318	0.374	0.241	0.297
	(0.052)	(0.132)	(0.114)	(0.074)	(0.100)	(0.129)	(0.076)	(0.092)
Firm Owners	0.619	0.523	0.278	0.509	0.343	0.228	0.501	0.386
	(0.108)	(0.337)	(0.215)	(0.193)	(0.191)	(0.293)	(0.204)	(0.203)
Test of standard view (p-value)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Panel D. Income Weighted Shares of Incidence								
Landowners	0.072	0.094	0.155	0.097	0.138	0.201	0.143	0.169
	(0.060)	(0.116)	(0.147)	(0.093)	(0.126)	(0.179)	(0.127)	(0.144)
Workers	0.226	0.292	0.486	0.303	0.431	0.629	0.446	0.527
	(0.047)	(0.197)	(0.123)	(0.091)	(0.100)	(0.134)	(0.103)	(0.102)
Firm Owners	0.702	0.614	0.359	0.600	0.431	0.170	0.412	0.304
	(0.056)	(0.288)	(0.205)	(0.144)	(0.163)	(0.211)	(0.156)	(0.144)
Test of standard view (p-value)	0.000	0.000	0.000	0.000	0.000	0.015	0.000	0.000

Notes: This table uses reduced-form effects to estimate incidence using the expressions in Table 1. Each column uses a different approach for estimating firm owner profits using reduced-form effects of net-of-business taxes on local outcomes as in SZ Table 5. Column 1 uses the intensive margin labor demand approach to estimate profit effects. Column 2 uses the productivity approach. Column 3 uses the approach that calibrates the product demand elasticity to scale up wage effects net of capital costs. Column 4 reports the equal-weighted average of these approaches. Column 5 weights each of these three approaches by the inverse variance to put more weight on more precisely estimated profit effects. Column 6 also uses the calibration approach but with a more responsive product demand elasticity. Column 7 and 8 take the simple average and inverse-variance weighted averages of Columns 1, 2, and 6, respectively.

Table B3—: Minimum Distance Estimates of Structural Parameters

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Calibrated parameters							
Output elasticity γ	0.150	0.150	0.150	0.150	0.150	0.150	0.150
Housing share α	0.300	0.300	0.300	0.300	0.650	0.300	0.300
Elasticity of product demand ε^{PD}	-2.500	-2.500	-2.500	-2.500	-2.500	-4.000	-5.000
Estimated parameters							
Idiosyncratic location	0.119	0.402	0.554	0.539	0.557	0.276	0.207
productivity dispersion σ^F	(0.056)	(0.176)	(0.128)	(0.103)	(0.123)	(0.065)	(0.049)
Idiosyncratic location	0.235	0.206	1.022	0.974	0.355	1.027	1.034
preference dispersion σ^W	(0.222)	(0.199)	(0.722)	(0.597)	(0.480)	(0.743)	(0.759)
Elasticity of housing	2.707	2.666	0.527	0.376	1.193	0.529	0.528
supply η	(3.918)	(3.948)	(1.205)	(1.347)	(1.681)	(1.209)	(1.210)
Specification Details							
Number of Outcomes	4	6	6	6	6	6	6
Incumbent Labor and TFP Outcomes	No	Yes	Yes	Yes	Yes	Yes	Yes
Business Tax Shocks	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bartik and Personal Tax Shocks	No	No	Yes	Yes	Yes	Yes	Yes
Number of Moments	4	6	18	18	18	18	18

Notes: This table extends analysis in Panel A of SZ Table 6 using the updated model with two additional $\dot{l}$ and $\dot{z}$ outcomes (i.e., using equation A.17). Column (1) uses the four outcomes in SZ with the updated model and $\phi = 1$ as in SZ. Specifically, it uses the elements of the matrix of reduced-form effects C above the horizontal dashed line and to the left of the vertical dashed line from equation A.17. Column (2) uses only the business tax shocks and includes the incumbent labor and TFP outcomes, i.e., it uses the elements of the matrix of reduced-form effects **C** to the left of the vertical dashed line. Column (3) uses the full six-outcome model with all three shocks and estimates the cost of capital elasticity ϕ. Column (4) uses the same specification as (3), but instead calibrates ϕ at a lower value than its estimate in Column (3). Columns (5), (6), and (7) use the full model with six-outcomes and three shocks, estimated ϕ, and show the results for different values of calibrated parameters.

Theory Appendix

C.1. Wage Incidence of Bartik, Tax, and Amenity Shocks

The full expression for the reduced form effects on local wages is given by:

$$\begin{aligned}\Delta \ln w_{c,t} = & \underbrace{\left(\frac{\delta\phi}{\sigma^F} - 1 - \frac{1}{\sigma^F(\varepsilon^{PD}+1)}\right)\frac{1}{\varepsilon^{LS}-\varepsilon^{LD}}}_{\equiv \beta_1^W} \Delta \ln(1-\tau^b_{c,t}) \\ & + \underbrace{\left[\frac{1}{\sigma^F}\frac{\varphi}{\varepsilon^{LS}-\varepsilon^{LD}} - \frac{\alpha\eta_c}{(\sigma^W(1+\eta_c)+\alpha)}\frac{\varphi^h}{\varepsilon^{LS}-\varepsilon^{LD}}\right]}_{\equiv \beta_2^W} \Delta \ln BK_{c,t} \\ & + \underbrace{\left[-\frac{(1+\eta_c)+\alpha(\kappa-1)}{(\sigma^W(1+\eta_c)+\alpha)}\frac{1}{\varepsilon^{LS}-\varepsilon^{LD}}\right]}_{\equiv \beta_3^W} \Delta \ln(1-\tau^i_{c,t}) \\ & + \underbrace{\frac{-(1+\eta_c)}{(\sigma^W(1+\eta_c)+\alpha)}\frac{1}{\varepsilon^{LS}-\varepsilon^{LD}}}_{\equiv \beta_4^W} \bar{A}_{c,t}.\end{aligned}$$

Table B4—: Estimates of Economic Incidence Using Estimated Structural Parameters

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A. Incidence							
Calibrated parameters							
Output elasticity γ	0.150	0.150	0.150	0.150	0.150	0.150	0.150
Housing share α	0.300	0.300	0.300	0.300	0.650	0.300	0.300
Elasticity of product demand ε^{PD}	-2.500	-2.500	-2.500	-2.500	-2.500	-4.000	-5.000
Estimated incidence							
Wages $\tilde{w}$	1.112	1.026	1.315	1.159	1.145	1.315	1.316
	(0.912)	(0.800)	(1.080)	(0.239)	(1.091)	(1.094)	(1.102)
Landowners $\tilde{r}$	1.172	1.172	1.428	1.395	1.086	1.425	1.424
	(1.435)	(1.435)	(1.464)	(1.388)	(1.131)	(1.459)	(1.457)
Workers $\tilde{w} - \alpha\tilde{r}$	0.760	0.674	0.886	0.741	0.439	0.887	0.889
	(0.559)	(0.511)	(0.837)	(0.255)	(0.674)	(0.851)	(0.860)
Firm owners $\tilde{\pi}$	0.952	3.195	2.644	2.359	2.824	2.631	2.626
	(0.205)	(1.421)	(1.636)	(0.054)	(1.718)	(1.648)	(1.655)
Elasticity of labor supply ε^{LS}	2.909	3.190	0.660	0.656	1.080	0.657	0.653
	(2.832)	(2.965)	(0.406)	(0.433)	(0.905)	(0.415)	(0.419)
Elasticity of labor demand ε^{LD}	-2.263	-1.373	-1.271	-1.278	-1.269	-1.544	-1.726
	(0.599)	(0.163)	(0.062)	(0.053)	(0.060)	(0.128)	(0.173)
Panel B. Share of Incidence							
Landowners $\tilde{r}$	0.406	0.233	0.288	0.310	0.250	0.288	0.288
	(0.270)	(0.170)	(0.185)	(0.231)	(0.172)	(0.185)	(0.185)
Workers $\tilde{w} - \alpha\tilde{r}$	0.263	0.134	0.179	0.165	0.101	0.179	0.180
	(0.112)	(0.065)	(0.089)	(0.093)	(0.111)	(0.090)	(0.090)
Firm owners $\tilde{\pi}$	0.330	0.634	0.533	0.525	0.649	0.532	0.532
	(0.260)	(0.135)	(0.115)	(0.143)	(0.114)	(0.114)	(0.114)
Test of standard view (p-value)	0.078	0.000	0.000	0.000	0.002	0.000	0.000
Panel C. Income-Share Weighted Share of Incidence							
Landowners $\tilde{r}$	0.174	0.086	0.111	0.122	0.183	0.152	0.167
	(0.160)	(0.075)	(0.089)	(0.116)	(0.138)	(0.120)	(0.132)
Workers $\tilde{w} - \alpha\tilde{r}$	0.375	0.165	0.230	0.216	0.114	0.316	0.348
	(0.158)	(0.066)	(0.083)	(0.080)	(0.119)	(0.113)	(0.124)
Firm owners $\tilde{\pi}$	0.452	0.750	0.659	0.662	0.703	0.532	0.484
	(0.257)	(0.073)	(0.059)	(0.051)	(0.095)	(0.066)	(0.066)
Test of standard view (p-value)	0.226	0.000	0.001	0.000	0.004	0.020	0.038
Specification Details							
Number of Outcomes	4	6	6	6	6	6	6
Incumbent Labor and TFP Outcomes	No	Yes	Yes	Yes	Yes	Yes	Yes
Business Tax Shocks	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bartik and Personal Tax Shocks	No	No	Yes	Yes	Yes	Yes	Yes
Number of Moments	4	6	18	18	18	18	18

Notes: This table extends analysis SZ Table 7 using the updated model with additional labor $\dot{l}$ and productivity $\dot{z}$ outcomes (i.e., using equation A.17). Column (1) uses the four outcomes in SZ with the updated model and $\phi = 1$ as in SZ. Specifically, it uses the elements of the matrix of reduced-form effects C above the horizontal dashed line and to the left of the vertical dashed line from equation A.17. Column (2) uses only the business tax shocks and includes the incumbent labor and TFP outcomes, i.e., it uses the elements of the matrix of reduced-form effects **C** to the left of the vertical dashed line. Column (3) uses the full six-outcome model with all three shocks and estimates the cost of capital elasticity ϕ. Column (4) uses the same specification as (3), but instead calibrates ϕ at a lower value than its estimate in Column (3). Columns (5), (6), and (7) use the full model with six-outcomes and three shocks, estimated ϕ, and show the results for different values of calibrated parameters.

The effect of the Bartik shock on wages β_2^W combines two channels. The first term is the effect on the mean productivity term B_c, which depends on the labor demand and supply elasticities and the dispersion of location-specific productivities. The second term accounts for the effect on the housing productivity term B_c^h.

The effect of personal tax changes on wages β_3^W also combines two channels. The first term captures the logic that lower tax rates are an amenity for workers and is identical to β_4^W. The second term (including the terms $\alpha(\kappa - 1)$) captures the impact of local personal tax rates on the supply of housing. When $\kappa = 1$, the housing supply effect cancels out with the direct housing demand channel, so that only the amenity component remains.

Table C1—: Estimates of Economic Incidence Using Reduced-Form Effects with Bartik Controls

	(1) Intensive Margin Labor Demand	(2) TFP	(3) Calibrating Product Demand	(4) Average of (1),(2),(3)	(5) Weighted Avg. of (1),(2),(3)	(6) Calibrating Product Demand	(7) Average of (1),(2),(6)	(8) Weighted Avg. of (1),(2),(6)
Panel A. Calibrated parameters								
Output elasticity γ	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
Housing share α	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300
Elasticity of product demand ε^{PD}	-2.500	-2.500	-2.500	-2.500	-2.500	-5.000	-5.000	-5.000
Panel B. Incidence								
Landowners	0.323	0.323	0.323	0.323	0.323	0.323	0.323	0.323
	(1.366)	(1.366)	(1.366)	(1.366)	(1.366)	(1.366)	(1.366)	(1.366)
Workers	0.680	0.680	0.680	0.680	0.680	0.680	0.680	0.680
	(0.521)	(0.521)	(0.521)	(0.521)	(0.521)	(0.521)	(0.521)	(0.521)
Firm Owners	2.805	3.171	1.028	2.334	1.206	1.074	2.350	1.478
	(1.564)	(2.517)	(0.185)	(0.979)	(0.055)	(0.492)	(0.936)	(0.126)
Panel C. Shares of Incidence								
Landowners	0.085	0.077	0.159	0.097	0.146	0.155	0.096	0.130
	(0.295)	(0.304)	(0.556)	(0.354)	(0.511)	(0.566)	(0.355)	(0.466)
Workers	0.179	0.163	0.335	0.204	0.308	0.327	0.203	0.274
	(0.088)	(0.121)	(0.191)	(0.103)	(0.170)	(0.191)	(0.104)	(0.146)
Firm Owners	0.737	0.760	0.506	0.700	0.546	0.517	0.701	0.596
	(0.237)	(0.347)	(0.469)	(0.333)	(0.425)	(0.536)	(0.341)	(0.415)
Test of standard view (p-value)	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
Panel D. Income Weighted Shares of Incidence								
Landowners	0.029	0.026	0.056	0.033	0.051	0.077	0.053	0.067
	(0.106)	(0.108)	(0.219)	(0.129)	(0.198)	(0.296)	(0.203)	(0.254)
Workers	0.201	0.183	0.393	0.231	0.359	0.542	0.373	0.474
	(0.072)	(0.146)	(0.178)	(0.110)	(0.151)	(0.210)	(0.145)	(0.166)
Firm Owners	0.770	0.791	0.551	0.736	0.590	0.381	0.574	0.458
	(0.099)	(0.216)	(0.306)	(0.183)	(0.259)	(0.357)	(0.240)	(0.268)
Test of standard view (p-value)	0.000	0.000	0.002	0.000	0.000	0.091	0.000	0.006

Notes: This table uses reduced-form effects to estimate incidence using the expressions in Table 1 in the Mathematical Appendix using the reduced-form specification with Bartik controls. Each column uses a different approach for estimating firm owner profits using reduced-form effects of net-of-business taxes on local outcomes as in SZ Table 5. Column 1 uses the intensive margin labor demand approach to estimate profit effects. Column 2 uses the productivity approach. Column 3 uses the approach that calibrates the product demand elasticity to scale up wage effects net of capital costs. Column 4 reports the equal-weighted average of these approaches. Column 5 weights each of these three approaches by the inverse variance to put more weight on more precisely estimated profit effects. Column 6 also uses the calibration approach but with a more responsive product demand elasticity. Column 7 and 8 take the simple average and inverse-variance weighted averages of Columns 1, 2, and 6, respectively.

Table C2—: Estimates of Economic Incidence Using Reduced-Form Effects with Bartik and Personal Tax Controls

	(1) Intensive Margin Labor Demand	(2) TFP	(3) Calibrating Product Demand	(4) Average of (1),(2),(3)	(5) Weighted Avg. of (1),(2),(3)	(6) Calibrating Product Demand	(7) Average of (1),(2),(6)	(8) Weighted Avg. of (1),(2),(6)
Panel A. Calibrated parameters								
Output elasticity γ	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
Housing share α	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300
Elasticity of product demand ε^{PD}	-2.500	-2.500	-2.500	-2.500	-2.500	-5.000	-5.000	-5.000
Panel B. Incidence								
Landowners	1.857	1.857	1.857	1.857	1.857	1.857	1.857	1.857
	(1.571)	(1.571)	(1.571)	(1.571)	(1.571)	(1.571)	(1.571)	(1.571)
Workers	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977
	(0.844)	(0.844)	(0.844)	(0.844)	(0.844)	(0.844)	(0.844)	(0.844)
Firm Owners	4.300	4.017	0.857	3.058	1.210	0.620	2.979	1.493
	(2.072)	(5.180)	(0.253)	(1.896)	(0.084)	(0.674)	(1.852)	(0.190)
Panel C. Shares of Incidence								
Landowners	0.260	0.271	0.503	0.315	0.459	0.538	0.320	0.429
	(0.131)	(0.281)	(0.206)	(0.201)	(0.194)	(0.238)	(0.205)	(0.193)
Workers	0.137	0.143	0.265	0.166	0.241	0.283	0.168	0.226
	(0.069)	(0.127)	(0.168)	(0.098)	(0.148)	(0.198)	(0.101)	(0.140)
Firm Owners	0.603	0.586	0.232	0.519	0.299	0.179	0.512	0.345
	(0.098)	(0.366)	(0.180)	(0.210)	(0.159)	(0.263)	(0.219)	(0.176)
Test of standard view (p-value)	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
Panel D. Income Weighted Shares of Incidence								
Landowners	0.101	0.106	0.239	0.128	0.210	0.308	0.195	0.253
	(0.062)	(0.133)	(0.149)	(0.103)	(0.129)	(0.185)	(0.141)	(0.151)
Workers	0.177	0.186	0.419	0.224	0.368	0.540	0.342	0.444
	(0.077)	(0.190)	(0.223)	(0.130)	(0.186)	(0.257)	(0.166)	(0.197)
Firm Owners	0.722	0.708	0.341	0.649	0.422	0.152	0.464	0.302
	(0.068)	(0.298)	(0.231)	(0.177)	(0.185)	(0.235)	(0.203)	(0.164)
Test of standard view (p-value)	0.000	0.000	0.022	0.000	0.003	0.131	0.000	0.019

Notes: This table uses reduced-form effects to estimate incidence using the expressions in Table 1 in the Mathematical Appendix using the reduced-form specification with Bartik and personal tax controls. Each column uses a different approach for estimating firm owner profits using reduced-form effects of net-of-business taxes on local outcomes as in SZ Table 5. Column 1 uses the intensive margin labor demand approach to estimate profit effects. Column 2 uses the productivity approach. Column 3 uses the approach that calibrates the product demand elasticity to scale up wage effects net of capital costs. Column 4 reports the equal-weighted average of these approaches. Column 5 weights each of these three approaches by the inverse variance to put more weight on more precisely estimated profit effects. Column 6 also uses the calibration approach but with a more responsive product demand elasticity. Column 7 and 8 take the simple average and inverse-variance weighted averages of Columns 1, 2, and 6, respectively.

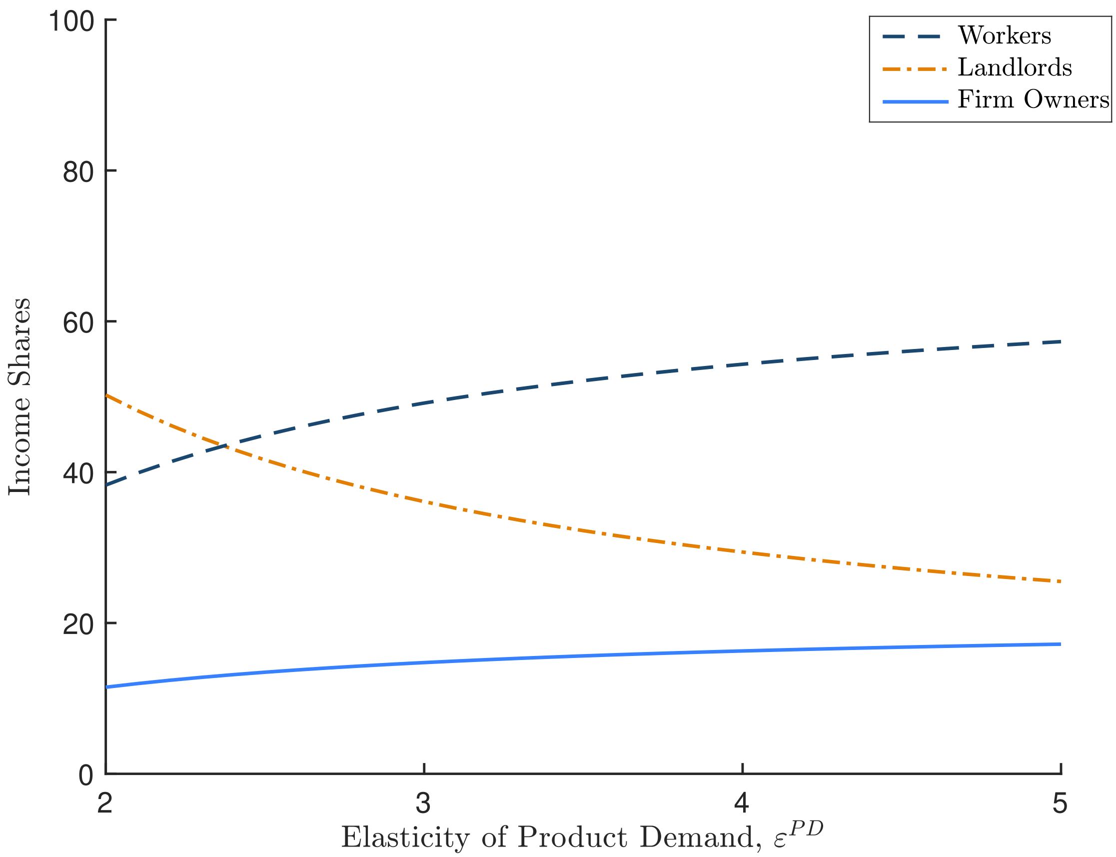

Figure C1. : Income Shares and the Product Demand Elasticity

Note: This figure plots income shares for workers, firm owners, and land owners for different values of the product demand elasticity.

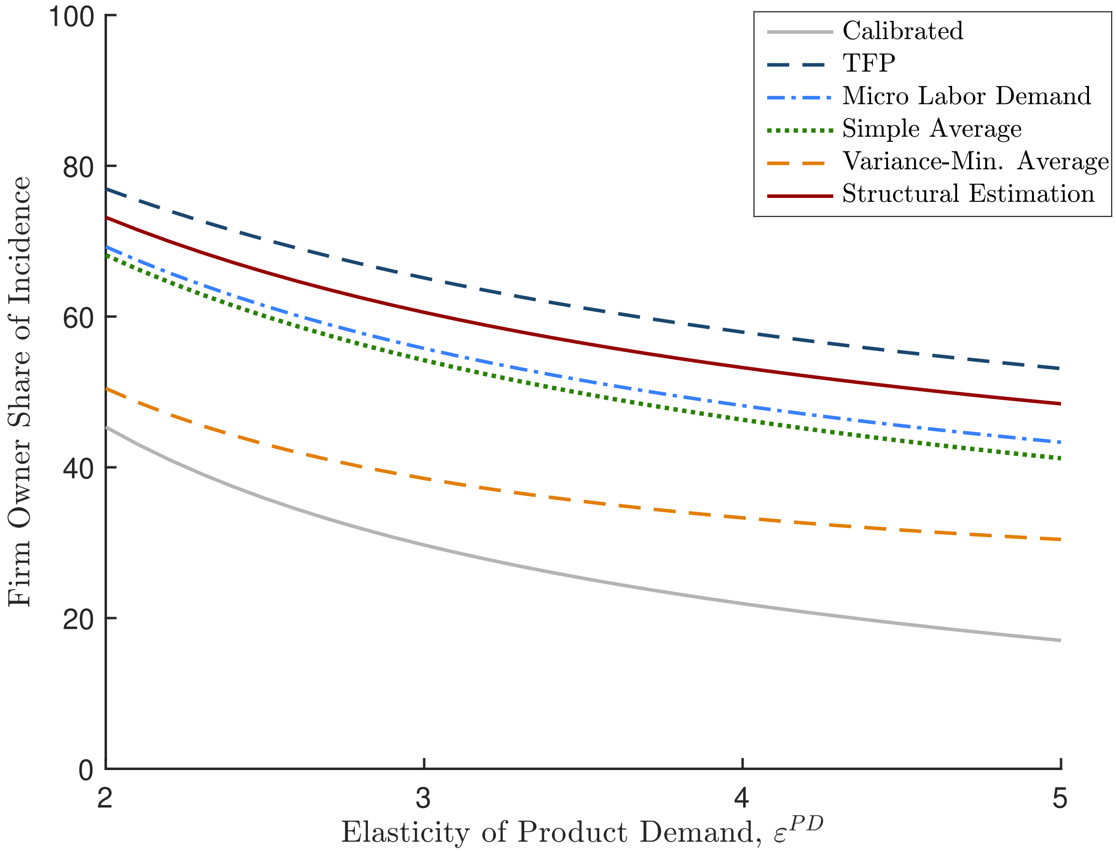

Figure C2. : Firm Owners' Share of Incidence across Approaches Using Income Share Weights

Note: This figure plots the income-share weighted incidence for firm owners across different approaches and different values of the product demand elasticity. It reports the same specifications as Figure 1 in the Mathematical Appendix, but with income-share weights.

*

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