Household Wealth and Local Labor Markets: Which asset classes matter?

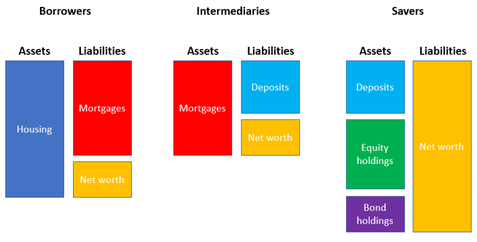
Paul Rintamäki (Aalto University School of Business)

Abstract

Household wealth effects are likely to be heterogeneous between asset classes due to concentrated asset ownership between investor groups with plausibly different marginal propensities to consume. However, wealth effect estimates between asset classes across studies often cannot be directly compared. To allow for this comparison I construct a new data set on U.S. household asset and debt positions at the county-level and estimate wealth effects on local labor market outcomes simultaneously for majority of asset classes. This holistic setup also reveals the quantitative importance of my approach relative to a single asset case that may be prone to endogeneity. I find evidence of large (opposite signed) wealth effects from local house price shocks and mortgage rate shocks, and small positive effects from stock market wealth shocks on per capita payroll and employment, but no cleanly identified effects from bond market or deposit wealth shocks. House price and mortgage effects operate primarily via the construction sector while stock market effects also via the non-tradable sector. A model with heterogeneous agents motivates the empirical analysis.

Conceptual example

Consider a stylized example of an economy with three groups agents: *Borrowers*, *Intermediaries* and *Savers*, who operate in segmented markets and have the balance sheet illustrated in the figure below. If the agents have different marginal propensities to consume (MPCs), then the transmission of different asset price shocks to real economic outcomes such as consumption and employment will depend on the identity of the marginal agent who holds those assets (or liabilities).



For example, if *Borrowers* have high MPC and *Savers* have low MPC then an increase in stock prices will have generate smaller consumption response than an increase in house prices of similar magnitude.

The contribution

Though the possibility of this type of heterogeneity is often acknowledged by prior empirical studies attempting to measure the wealth effects, the focus is usually fully devoted to a single asset class and other asset wealth—if at all—is controlled with imprecise proxies. This poses a two-fold problem: First, the **risk of omitted variable bias** is potentially large since one form of asset may capture the wealth effects of another if these other assets are not properly controlled for in the research design. Second, given that the studies differ in their sample size, identification techniques, geographic coverage and, most importantly, even the assumed underlying economic model, it is often **hard to draw conclusions about how the wealth effects between asset classes compare quantitatively**. In this paper I try to answer the two problems posed above by simultaneously incorporating the most important observable household asset classes to the analysis. I tackle the identification problems using a **new county level panel dataset of household wealth composition** from the US that allows to control for county level differences and aggregate State x Time fixed effects. TO construct the data, I use the best practices from prior work such as capitalizing IRS tax income and using extensive Census Bureau data.

Empirical strategy

Following the logic above, a simple Heterogenous Agent model implies that **different asset price shocks will have differential impact on employment or payroll growth**. I estimate the parameters of the theoretical model using newly constructed granular county level panel data from the US and local projection-instrumental variables (LP-IV) empirical strategy. The baseline regression specification is

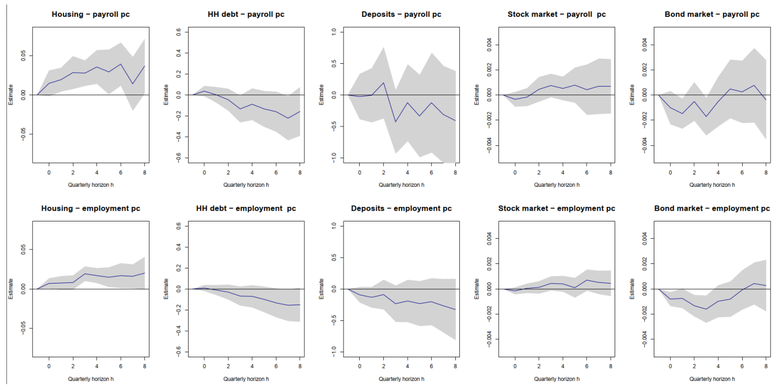
$$\Delta_{c,t-1,t+h}\, y = \sum_f \beta_f^h s_{f,c,t-1} r_{f,c,t-1,t} + C_{c,t-1}^{y\,\prime}\Gamma + \mu_c + \mu_{st} + \varepsilon_{c,t-1,t+h}$$

where $\Delta_{c,t-1,t+h}\, y$ is the log change in employment or payroll per capita in county *c* between quarters *t-1* and *t+h*, where *h=0,..,8*. The identification of the five β_f terms for each asset class *f* relies on Shift-Share instruments for each shock (the interaction) term $s_{f,c,t-1} r_{f,c,t-1}$ which is the total wealth of county *c* held in asset *f* relative to local labor income interacted with the net rate of return on asset *f* in county *c*

The model is separately estimated for each horizon *h* and **the β_f coeffs. reveal the impulse response function of each wealth shock**. The baseline controls in matrix $C_{c,t-1}^{y}$ include a shift-share control for expected outcome growth based on county's industry composition, lagged dependent variables and lagged shocks (Stock & Watson, 2018).

Results

I estimate the model separately for total county outcomes and then for non-tradable, tradable and construction industries. The impulse response functions below summarize the results for total outcome.



An example of the interpretation of the point estimates: fix the shock size to 1 → an increase in housing wealth the size of quarterly labor income in quarter t generates approx. 1.6 pp higher employment per capita (employment rate) in the quarter t + 7 relative to a counterfactual where similar increase in housing wealth does not occur. Better identification of wealth effect channel is achieved when using nontradable-, tradable- and construction- sector data that instead.

Dependent Variables:	Payroll pc growth h=7			Employment pc growth h=7		
	Non-tr.	Tr.	Cons.	Non-tr.	Tr.	Cons.
	Baseline specification					
Hous Shift-Share	0.0059	-0.0317	0.1647***	0.0036	-0.0088	0.1344***
	(0.0117)	(0.0272)	(0.0506)	(0.0099)	(0.0189)	(0.0373)
Debt Shift-Share	-0.4375	-0.6601	-3.750***	-0.4207	-0.4817	-1.947**
	(0.3199)	(0.7943)	(1.358)	(0.2653)	(0.6513)	(0.9490)
Dep Shift-Share	0.1904	0.7731	1.647	-0.1415	0.3697	0.8559
	(0.3726)	(0.8886)	(1.161)	(0.2924)	(0.8325)	(0.9090)
Eqty Shift-Share	0.0016**	-0.0030**	0.0017	0.0011	-0.0021*	0.0028
	(0.0007)	(0.0014)	(0.0033)	(0.0007)	(0.0012)	(0.0022)
Bond Shift-Share	0.0004	0.0010	0.0237***	0.0005	-0.0008	0.0135**
	(0.0016)	(0.0039)	(0.0080)	(0.0013)	(0.0030)	(0.0057)

Consistent with the wealth effect interpretation the stock market wealth effects appear only in non-tradable industries and the house price shocks originate from construction sector.

Structural interpretation

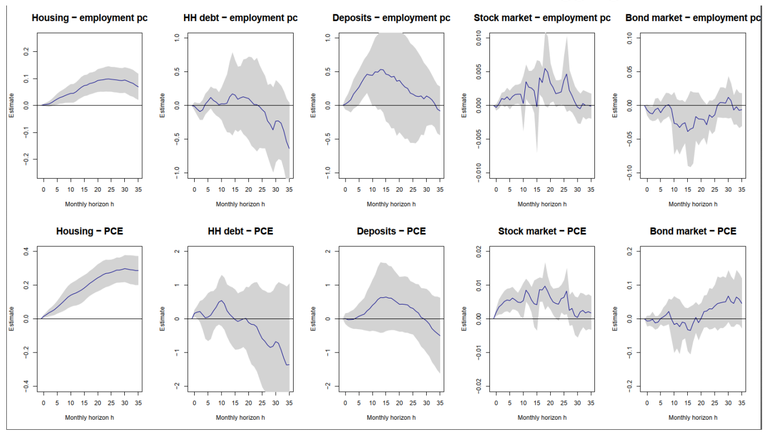
These micro-estimates β_f that we have obtained cannot necessarily be interpreted as macro-estimates because of GE effects that are absorbed by fixed effects. With aggregation we have to rely on models. First, the model in the paper and the similar results in prior literature e.g. Chodorow-Reich et al. (2021) and Guren et al. (2021) imply that

$$\beta_f = M \times MPC_{j(f)} \times \alpha$$

where α is the local labor share and $MPC_{j(f)}$ is the MPC of a marginal investor *j* in that asset class *f*, while M is the local Keynesian multiplier. If we calibrate M=1.5 and local labor share as α =2/3, then β_f equals the MPC of the marginal agent *j* holding that asset class f. Second, the aggregate effect is given as

$$\beta_f^{Agg} = MA/M \times \beta_f$$

where M_A is the aggregate Keynesian multiplier. Chodorow-Reich et al. argue that M_A /M>1 implying the my estimated β_fs are a lower bound on aggregate effects. To provide some empirical support for these considerations I estimate the similar model with aggregate data



The macro-level results are in line with the micro level evidence both in sign and magnitude and results when using the Personal Consumption Expenditure (PCE) as the outcome variable supports the interpretation that effects originate from wealth-effect channel.

Conclusion

I provide transparent and well-identified estimates of household wealth effect on local labor market for many important household wealth effects. Following multiple robustness checks, I find that the shocks to housing wealth and household debt produce the largest responses in payroll and employment growth, while the stock market wealth effects are small but positive. I find no (robust) effects from shocks to bond market wealth while deposit wealth shocks are not credibly identified.

References

Chodorow-Reich, G., Nenov, P. T., & Simsek, A. (2021). Stock market wealth and the real economy: A local labor market approach. *American Economic Review*, *111*(5), 1613-1657.

Guren, A., McKay, A., Nakamura, E., & Steinsson, J. (2021). What do we learn from cross-regional empirical estimates in macroeconomics?. *NBER Macroeconomics Annual*, *35*(1), 175-223.

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