

Home ownership, epidemic mortality and wealth distribution in early modern Leiden, 1630–70

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Extended abstract

Epidemic mortality is generally believed to have produced short-term reductions in wealth inequality in pre-industrial Europe (Alfani and Murphy 2016; Scheidel 2017). Yet, the effects of mortality spikes on asset prices were transitory and often limited in early modern Europe (Gelderblom and Jonker 2011; Francke and Korevaar 2021), while labor shortages did push up wages. Empirical evidence for short-term inequality reductions is also quite ambiguous, showing substantial inequality deviations in some cases but none in other cases (Alfani 2013, 2021). Accordingly, it remains an open question whether and how epidemic mortality could shift wealth distribution.

In this paper, we estimate how large mortality spikes changed patterns of home ownership in seventeenth-century Leiden over a period of 40 years. Housing wealth is a major component of wealth distribution, both historically and in modern times (Van Zanden 1995; Jorda et al. 2019). The city of Leiden provides an interesting case. It was the second city in the highly urbanized province of Holland, the economic core of the Dutch Republic. Here, distribution of income and wealth was highly unequal already by the seventeenth century (Van Zanden, 1995). Recent literature has shown, furthermore, that wealth inequality increased mostly monotonously in the Low Countries across the early modern period (Alfani and Ryckbosch, 2016)—thus unaffected by mortality spikes. Although mortality crises in the Low Countries were slightly less severe than estimated so far for elsewhere in Europe, several major epidemic disease outbreaks occurred in the period under study (Van Besouw and Curtis, 2021).

We use newly collected data on owners and the rental value of houses of over 5,000 houses in four consecutive property-tax registers.¹ Rather than studying price effects, we exploit the nature of the sources to analyze actual property changes. In addition, we exploit

¹ Given high turnover of real estate and the absence of legal restrictions on house transactions, rental values of houses can be straightforwardly related to house prices.

variation in street-level mortality to relate ownership changes to mortality shocks. The detailed data on ownership and street-level mortality allow us to dissect at what segments of the housing wealth distribution, and of the spatial urban distribution, ownership changes were most frequent.

Doing so, we emphasize three empirical findings. First, we show that variation in street level mortality explains most of the variation in the turnover of housing wealth. Second, turnover is largest at the intermediate segments of the housing distribution. This holds across neighborhoods but also within streets. Importantly, these first two findings are even more evident when we take into account our third finding: epidemic diseases did not affect all people equally. Mortality increases were much higher in poorer neighborhoods than in richer ones. Although this result is unsurprising—see, among others, Cummins, Kelly and Ó Gráda (2016); Kesztenbaum and Rosenthal (2017), and Francke and Korevaar (2021)—it has direct bearing on the potential for mortality shocks to redistribute wealth, because the most substantial assets in terms of housing wealth were less likely to be in need of a new owner. In addition, and more fundamentally, the direct connection between epidemic mortality and urban housing wealth is obscured by large numbers of tenants located especially in poorer neighborhoods. Put simply, homeowners did not always live in the houses of badly afflicted neighborhoods, and sometimes did not live in the same city at all. Rather, both the most expensive and the cheapest houses were generally owned by wealthier people who did not live in the neighborhoods and streets where mortality was most severe.

Besides providing new estimates on pre-industrial wealth inequality and the capacity of epidemic disease to shift wealth distribution, our results speak to two more strands of existing literature. First, it provides estimated effects of major demographic shocks to the literature on urban susceptibility and resilience to major shocks, which so far, mostly studies shocks to housing capital (Davis and Weinstein 2002; Brakman, Garretsen and Schramm. 2004; Hornbeck and Keniston 2017). Second, it links up with literature on spatial patterns of inequality in urban settings (Ahlfeldt et al. 2015; Baum-Snow, Freedman and Pavan 2018; Heblich, Redding and Sturm, 2020). The papers closest to our work are Ambrus, Field and Gonzalez (2020), who also study the effects of mortality shocks on the urban landscape, and Francke and Korevaar (2021) who study the effects of mortality shocks on housing markets. However, compared to these two papers, we focus on actual ownership changes rather than changes in housing prices.

References

- Ahlfeldt, G. M., Redding, S. J., Sturm, D. M., and Wolf, N. (2015). The economics of density: Evidence from the Berlin Wall. *Econometrica*, 83(6), 2127-2189.
- Alfani, G. (2013). Plague in seventeenth-century Europe and the decline of Italy: an epidemiological hypothesis. *European Review of Economic History* 17 (4), 408-430.
- Alfani, G. (2021). Economic inequality in preindustrial times: Europe and beyond. *Journal of Economic Literature* 59 (1), 3–44.
- Alfani, G. and Murphy, T. (2016). Plague and lethal epidemics in the pre-industrial world. *Journal of Economic History* 77 (1), 314–343.
- Alfani, G., and Ryckbosch, W. (2016). Growing apart in early modern Europe? A comparison of inequality trends in Italy and the Low Countries, 1500–1800. *Explorations in Economic History* 62, 143-153.
- Ambrus, A., Field, E., and Gonzalez, R. (2020). Loss in the time of cholera: long-run impact of a disease epidemic on the urban landscape. *American Economic Review*, 110(2), 475-525.
- van Besouw, B., and Curtis, D. R. (2021). Estimating warfare-related civilian mortality in the early modern period: Evidence from the Low Countries, 1620–99. *Explorations in Economic History*, in press.
- Brakman, S., Garretsen, H., and Schramm, M. (2004). The strategic bombing of German cities during World War II and its impact on city growth. *Journal of Economic Geography*, 4(2), 201-218.
- Cummins, N., Kelly, M. and Ó Gráda, C. (2016). Living standards and plague in London 1560–1665. *Economic History Review* 69 (1), 3–34.
- Davis, D. R., and Weinstein, D. E. (2002). Bones, bombs, and break points: the geography of economic activity. *American Economic Review*, 92(5), 1269-1289.
- Francke, M. and Korevaar, M. (2021). Housing markets in a pandemic: Evidence from historical outbreaks. *Journal of Urban Economics* 123, 103333.
- Gelderblom, O., and Jonker, J. (2011). Public finance and economic growth: the case of Holland in the seventeenth century. *Journal of Economic History*, 71(1), 1-39.
- Heblich, S., Redding, S. J., and Sturm, D. M. (2020). The making of the modern metropolis: evidence from London. *Quarterly Journal of Economics*, 135(4), 2059-2133.
- Hornbeck, R., and Keniston, D. (2017). Creative destruction: Barriers to urban growth and the Great Boston Fire of 1872. *American Economic Review*, 107(6), 1365-98.

- Jordà, Ò., Knoll, K., Kuvshinov, D., Schularick, M., and Taylor, A. M. (2019). The rate of return on everything, 1870–2015. *Quarterly Journal of Economics*, 134(3), 1225-1298.
- Kesztenbaum, L., and Rosenthal, J. L. (2017). Sewers' diffusion and the decline of mortality: The case of Paris, 1880–1914. *Journal of Urban Economics*, 98, 174-186.
- Scheidel, W. (2017). *The Great Leveler: Violence and the History of Inequality from the Stone Age to the Twenty-First Century*. Princeton, NJ: Princeton University Press.
- van Zanden, J. L. (1995). Tracing the beginning of the Kuznets curve: Western Europe during the early modern period. *Economic History Review* 48 (4), 643-664.