The COVID-19 Pandemic Housing Crisis:

Identifying Owner-Vulnerable Neighborhoods in California

Paul M. Ong and Chhandara Pech

May 20, 2021

UCLA | Center for Neighborhood Knowledge

ACKNOWLEDGEMENT

DISCLAIMER

INTRODUCTION

The COVID-19 pandemic has had enormous economic impacts, including creating financial difficulties for many homeowners. A previous CNK brief documents the fact that many are unable to make their mortgage payments, and the burden has fallen disproportionately on disadvantaged households and neighborhoods (Ong et al., 2021; Wong et al., 2020). Temporary eviction moratoriums, forbearance, and governmental assistance is helping many through difficult times. Unfortunately, many homeowners are not receiving the assistance and protection (Qing et al., 2021) or are excluded (Laise, 2021) from aid programs.

While foreclosures have been lower during the public health crisis, primarily due to the current moratorium in place, many homeowners are still receiving pre-foreclosure notices with a disproportionate share going to disadvantaged communities (Ong et al., 2021). Many analysts and housing advocates fear that there will be a new wave of home losses once temporary protections end (Crump and Schuetz, 2021; Hutson, 2020). Given this not-too-distant threat, it is critical that our elected officials develop evidence-based policies and programs to assist households and neighborhoods most at risk.

This brief outlines the development of an Owner Vulnerability Index (OVI) to assist public agencies and community organizations in implementing homeowner protection policies and any COVID-19 mortgage relief programs and to help identify those neighborhoods with the most at-risk homeowners. The OVI is a useful analytical and policy tool for identifying and prioritizing neighborhoods at higher risk of foreclosure to preserve homeownership and promote neighborhood stabilization. The OVI is modeled after the Renter Vulnerability Index (Ong et al. 2020), which has been used by multiple jurisdictions to develop renter protection policies.

DATA & METHODOLOGY

The OVI utilizes four dimensions to identify vulnerability. It includes neighborhoods:

1. With a disproportionate large number of homeowners potentially on the edge of financial vulnerability due to high housing cost burden (especially those with low household income);
2. With a disproportionately large number of households with little income after deducting housing costs;
3. With many mortgages with relatively high interest rates; and
4. With high foreclosure rates during the previous foreclosure crisis (Great Recession).

Geographic Unit of Analysis

The basic geographic unit of analysis for this report is the Census's ZIP Code Tabulation Area (ZCTA). The ZCTA is defined by the Bureau of the Census (BOC) as "generalized area representations of United States Postal Service (USPS) ZIP Code service areas." ZIP Codes created by USPS for mail delivery purposes are constantly changing. ZCTAs do not represent actual ZIP Codes per se but are made by the BOC to approximate ZIP Codes, and their boundaries are defined every 10 years with the Decennial Enumeration. Through ZCTAs, the BOC can provide census-related data (e.g., demographic, socioeconomic, housing characteristics) for a geography that closely mirrors USPS ZIP Codes. For this report, ZCTAs are used to represent neighborhoods and the two terms are used interchangeably.

In some cases, some of the underlying data used to construct the OVI is reported in a different geography other than ZCTAs (e.g., census tracts instead of ZCTAs). When there are incidents of these, we use a geographic crosswalk to allocate the information into the ZCTA.

Operationalizing the Owner Vulnerability Index

We operationalize the four dimensions of owner vulnerability as follows:

The first dimension is homeowners on the potential edge of financial vulnerability. This measure is defined as the proportion of owner-occupied households that pay more than half (50 percent) of their income toward housing costs. The U.S. Department of Housing and Urban Development (HUD) defines these households as "severely cost burdened." We use data from the 2015–2019 5-year American Community Survey (ACS), which is the most

recently available ZCTA-level estimates. (See Appendix for more information about the ACS.)

The second dimension of the OVI captures the number of households with little remaining household income after deducting housing costs. This measure represents the average (mean) household income of homeowners after deducting housing costs. We calculate the value by taking the aggregated household income of homeowners in a ZCTA and subtracting the aggregated housing costs for homeowners and dividing by the total number of homeowners. Data used to calculate this measure also comes from the 2015–2019 5-year ACS.

The third dimension of the OVI is the proportion of mortgages that have high interest rates. This information is derived using data from the Home Mortgage Disclosure Act (HMDA). HMDA does not report actual interest rates but does indicate whether a mortgage is "higher priced." A "higher-priced" loan is defined as a mortgage with an annual percentage rate that exceeds the average prime offer rate by 1.5 percentage points. Mortgage loans that are designated as "higher priced" often reflect riskier or subprime borrowers. We retrieved six years of data, representing 2012 to 2017, from the Consumer Financial Protection Bureau. (See Appendix for more information about HMDA.) HMDA data is reported at the census tract level but allocated to ZCTAs using a geographic crosswalk.

The final dimension of the OVI is foreclosure rates during the previous foreclosure crisis during the Great Recession. We included this measure because past outcomes tend to be a strong predictor of future outcome. The ZIP Code–level data comes from RAND State Statistics, which acquired the information from DataQuick News. The data represents foreclosures that occurred from 2007 to 2012 and includes foreclosures for all homes (single family, condominiums, and townhouses).[i] Foreclosure rates are calculated by taking the total number of foreclosures and dividing that by the total number of owner-occupied households in the neighborhood. Data for the latter (owner-occupied households) comes from the 2007–2011 5-year ACS rather than the more recent 5-year ACS (2015–2019) because it roughly corresponds to the years covering the foreclosure data.

To generate the OVI, we first transform the four components. The individual components tend to be nonlinear and skewed and have different coefficients of variance (a measure of the spread in value across ZCTAs); therefore, we transform each variable into ordinal ranking. Each component has the same weight, and the four rankings are summed up to produce an overall score.

The index only covers ZCTAs with at least 100 reported homeowners to improve statistical precision (the ACS has sampling variance because it covers only about one-eighth of the population) and excludes ZCTAs where the proportion of vacant units designated as "seasonal, recreational, or occasional use" is greater than 25 percent of the total housing stock. The latter condition excludes areas with high rates of housing units that are often used for vacation rentals (e.g., recreation-oriented places such as South Lake Tahoe and Big Bear Lake).

For analytical purposes, California neighborhoods or ZCTAs are assigned into five hierarchical groups based on their OVI. The ranking ranges from neighborhoods with the lowest owner vulnerability to neighborhoods with the highest vulnerability. Each group, or quintile, includes roughly 20 percent of all ZCTAs in the state.

Photo by the Federal Bureau of Investigation

RESULTS & FINDINGS

We examined the neighborhood characteristics of each of the five OVI neighborhood types. Specifically, we examine the demographic, socioeconomic status, and housing characteristics of each. Table 1 reports the neighborhood's averages (mean) of the four variables used to generate the OVI. As expected, more vulnerable neighborhoods have a larger share of homeowners that are severely burdened by housing costs and have less disposable income after paying for housing-related expenses. Further, these vulnerable neighborhoods have higher rates of high-interest mortgages and higher rates of past foreclosures during the last housing crisis.

Table 1. Components of the Owner Vulnerability Index

|	Lowest OVI	Low	Moderate	High	Highest OVI
Severely Burdened Owners	12%	14%	13%	13%	16%
HH Income after Housing Costs	$169k	$123k	$92k	$77k	$62k
High Interest Mortgages	2%	3%	7%	10%	18%
Foreclosure Rate (2007–2012)	3%	7%	12%	17%	24%
Owner Vulnerability Index	1,261	2,154	2,851	3,466	4,319
N (ZCTAs)	272	273	271	273	273

As shown in Table 2, the most vulnerable neighborhoods have a higher share of Latinos and African Americans than the lowest vulnerable neighborhoods, which tend to have more non-Hispanic (NH) Whites and Asians.[ii] The most vulnerable neighborhoods are also more economically disadvantaged, as measured by the poverty rate. The poverty rate in the most vulnerable neighborhoods is nearly three times as high as the lowest vulnerable neighborhoods (22 percent vs. 8 percent). The most vulnerable neighborhoods also have a higher share of immigrants and limited English-speaking households.

Table 2. Neighborhoods Characteristics by Owner Vulnerability Index

	Lowest OVI	Low	Moderate	High	Highest OVI
NH White	57%	58%	50%	38%	27%
Black	3%	3%	4%	6%	7%
Latino	16%	22%	29%	44%	57%
Asian	20%	13%	11%	9%	5%
Poverty Rate	8%	10%	13%	16%	22%
Immigrants	24%	21%	21%	23%	26%
Limited English-Speaking Households	5%	6%	7%	10%	14%
N (ZCTAs)	272	273	271	273	273

Map 1 illustrates the geographic pattern of the OVI for Southern California. The ZCTAs with the highest OVI are in the urban core, the eastern parts of the San Fernando Valley, and the Santa Ana area, which tend to be places that are predominantly people of color and low income. The places with the lowest risks are along the coast, which are locations with relatively more NH Whites and higher income.

Map 1. Owner Vulnerability Index, Southern California
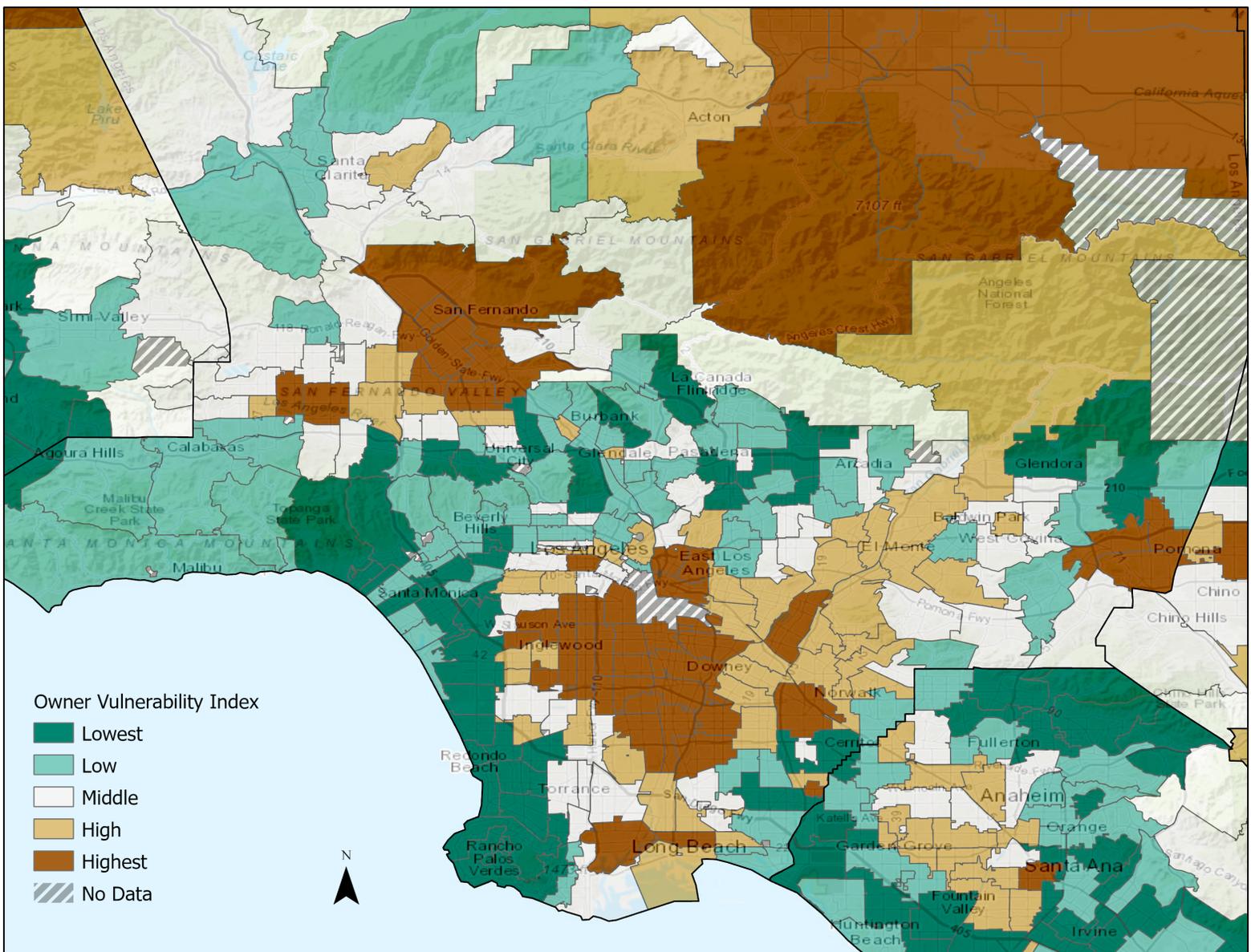
Credit: UCLA Center for Neighborhood Knowledge, May 2021

Map 2 depicts the spatial pattern of the OVI for the Bay Area and Central Valley. Large pockets of ZCTAs with the highest OVI are in the agriculture counties, the East Bay, and the neighborhoods north and south of Midtown Sacramento. These at-risk neighborhoods tend to be ones that have a disproportionately more people of color and low-income residents. Most of the neighborhoods in the high-tech West Bay and Silicon Valley, North Bay, and communities east of Oakland have low risks, which are also locations with relatively more NH Whites and higher income.

Map 2. Owner Vulnerability Index, San Francisco Bay Area and Central Valley
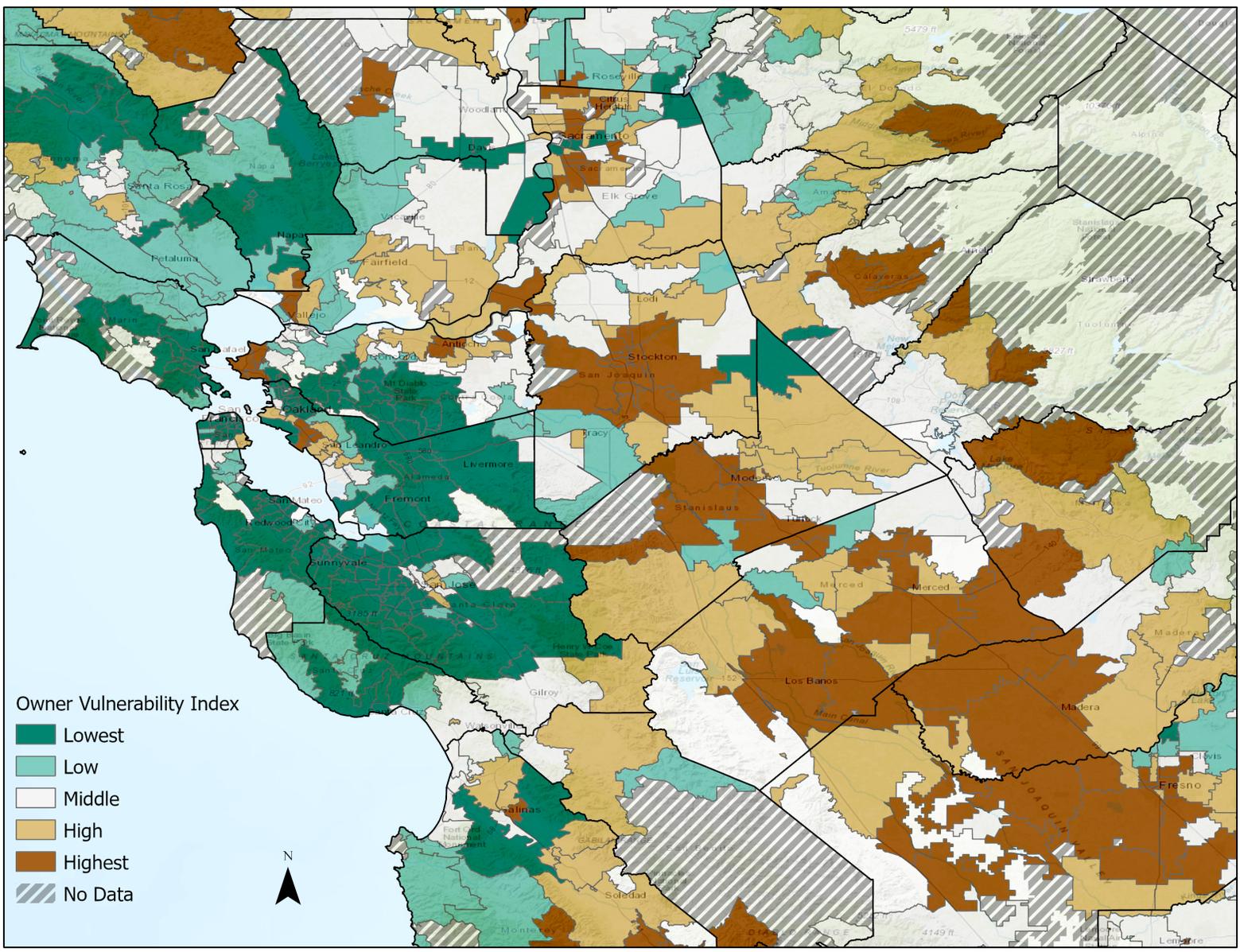
Credit: UCLA Center for Neighborhood Knowledge, May 2021

Table 3 lists the top 20 ZCTAs in California that rank the highest in terms of the OVI. These are scattered throughout the state, indicating that the most at-risk places are not just limited to one region.

Table 3. Top 20 Most Vulnerable Neighborhoods in California by Owner Vulnerability Index

ZCTA	Area	Population	Homeowners	Severely Burdened Homeowners	Average HH Income after Housing Costs	High Interest Mortgages	Foreclosure Rate (2007–2012)	Seasonal Vacant Units	OVI
92236	Coachella	45,477	11,172	32%	$36.8k	23%	33%	1%	5413
95832	Sacramento	12,114	1,551	26%	$43.7k	20%	60%	0%	5397
92275	Salton City	2,632	749	17%	$31.5k	41%	37%	21%	5271
92274	Oasis	15,317	3,704	26%	$28.4k	20%	25%	4%	5267
95319	Empire	1,745	261	17%	$43.7k	33%	38%	0%	5241
90002	Los Angeles	53,302	4,517	26%	$52.5k	25%	24%	0%	5223
92249	Heber	7,861	1,160	21%	$51.3k	21%	36%	0%	5217
92282	Whitewater	1,372	325	16%	$50.8k	34%	46%	15%	5132
95824	Sacramento	30,296	3,593	17%	$51.2k	22%	40%	0%	5103
92301	Adelanto	34,250	4,309	15%	$47.1k	31%	69%	3%	5088
95815	Sacramento	25,673	3,105	17%	$59.5k	26%	38%	1%	5071
95202	Stockton	6,066	171	22%	$74.6k	29%	51%	0%	5069
93728	Fresno	16,574	2,388	19%	$59.2k	26%	24%	0%	5047
90221	Compton	51,688	6,189	24%	$58.0k	25%	18%	0%	5032
90003	Los Angeles	73,730	4,948	24%	$50.4k	20%	17%	0%	5021
93706	Fresno	40,586	4,408	18%	$56.9k	31%	22%	1%	5021
95838	Sacramento	39,053	5,564	16%	$60.8k	24%	57%	0%	5020
92201	Indio	65,726	15,411	19%	$56.1k	17%	29%	9%	5009
94621	Oakland	35,035	2,901	21%	$66.4k	17%	45%	0%	5006
93256	Pixley	5,431	602	17%	$47.4k	41%	17%	0%	4996

Lastly, we examine the association of the OVI with two ZCTA-level datasets that are used to monitor the housing crisis during the pandemic. The first includes the proportion of residential units that are behind on utility bills in Los Angeles City (Gonzalez et al., 2021). We find that the OVI is highly correlated with the proportion of households with utility debt and with high utility debt (more than $300), with correlation coefficients (r-values) of 0.75 and 0.78, respectively, and statistically significant at $p < .0001$. The second dataset includes the proportion receiving foreclosure related notices in Los Angeles County during the pandemic (Ong et al., 2021). We find that the OVI is correlated with the proportion of homes receiving one or more pre-foreclosure notices, with a r-value of 0.42 and $p < .0001$. The assessments were only conducted for Los Angeles because of lack of available data for California as a whole, but the results do indicate that the OVI is a good predictor of identifying neighborhoods with a disproportionate number of homeowners that are financially struggling and may be at risk of losing their home.

CONCLUSION

The coronavirus pandemic has led to widespread public health and economic impacts that threaten the ability for many homeowners to hold onto their home. A real and frightening outcome is a new wave of foreclosures in the post-COVID-19 era. This study developed an analytical tool[iii], the OVI, to identify the most at-risk homeowners and neighborhoods in California with the hope that it can be used by public officials and community organizations to effectively implement policies and support a targeted approach.

The findings show that the most vulnerable neighborhoods are once again predominantly Black and Brown and are economically disadvantaged neighborhoods. Homeowners in many of the most vulnerable neighborhoods may also face multiple barriers to learning, understanding, and utilizing temporary protections policies and programs due to limited English proficiency.

Our elected officials should extend the current foreclosure moratorium until the end of the pandemic. They should fully implement existing protection and ensure assistance is reaching the most disadvantaged neighborhoods. Lastly, elected officials should use empirical research and evidence to better prepare for the looming housing crisis that will materialize over the next few months.

Photo by respres

REFERENCES

Crump, Sarah, and Schuetz, Jenny. 2021. "What the Great Recession Can Teach Us about the Post-Pandemic Housing Market," March 29, https://www.brookings.edu/research/what-the-great-recession-can-teach-us-about-the-post-pandemic-housing-market/

Gonzalez, Silvia R., Ong, Paul M., Pierce, Gregory, and Hernandez, Ariana. 2021. "Keeping the Lights and Water On: COVID-19 and Utility Debt in Los Angeles' Communities of Color," May. UCLA Luskin Center for Innovation and UCLA Center for Neighborhood Knowledge, https://knowledge.luskin.ucla.edu/wp-content/uploads/2021/04/Keeping-the-Lights-and-Water-On.pdf

Hutson, Brittany. 2020. "The Foreclosure Crisis Waiting for Us in January," December 16, https://shelterforce.org/2020/12/16/the-foreclosure-crisis-waiting-for-us-in-january/

Laise, Eleanor. 2021. "Door Is Shut to Millions of American Homeowners in Need of Mortgage Relief as Pandemic Enters Year 2," March 23, https://www.marketwatch.com/story/door-is-shut-to-millions-of-american-homeowners-in-need-of-mortgage-relief-as-pandemic-enters-year-2-11616523560

Ong, Paul M., Pech, Chhandara, Beltran, Tracey, and Gay, Lori R. 2021. "Saving Black Homeownership: Just and Fair Pandemic Relief and Recovery," March 4. UCLA Center for Neighborhood Knowledge and Neighborhood Housing Services of Los Angeles County, https://knowledge.luskin.ucla.edu/wp-content/uploads/2021/03/Saving_Black_Homeownership_CNK_3_4_2021.pdf

Ong, Paul M., Pech, Chhandara, Ong, Elena, Gonzalez, Silvia R., and Ong, Jonathan. 2020. "Economic Impacts of the COVID-19 Crisis in Los Angeles: Identifying Renter-Vulnerable Neighborhoods," April 30. Technical Report. UCLA Center for Neighborhood Knowledge and UCLA Ziman Center for Real Estate, https://www.anderson.ucla.edu/documents/areas/ctr/ziman/UCLA-CNK_OngAssoc._LA_Renter_Vulnerability_4-30-20.pdf

Qing, Koh, Johnson, Katanga, Prentice, Chris, and Qing, Koh Gui. 2021. "Fearing Foreclosure Crisis, U.S. Watchdog Cracks Down on Mortgage Servicers," April 19, https://www.reuters.com/business/finance/exclusive-fearing-foreclosure-crisis-us-watchdog-cracks-down-mortgage-servicers-2021-04-19/

Wong, Karna, Ong, Paul M., and Gonzalez, Silvia R. 2020. "Systemic Racial Inequality and the COVID-19 Homeowner Crisis," August 27. UCLA Center for Neighborhood Knowledge, UCLA Ziman Center for Real Estate, and Ong & Associates, https://www.anderson.ucla.edu/documents/areas/ctr/ziman/Systemic-Racial-Inequality-and-COVID-19-Homeowner-Crisis_Wong_Ong_Gonzalez.pdf

APPENDIX

American Community Survey (2015–2019) ━━━━━━━━━━━━━━━━━━━━━━━━━

The American Community Survey is an ongoing survey conducted by the U.S. Census Bureau to collect housing, demographic, social, and economic information. The ACS data utilized in this project comes from the 2015–2019 5-year estimates. For small geographies, including ZCTAs, statistics from the ACS are only reported in the five-year average dataset. Each annual ACS survey represents a sample of about 2.0 to 2.5 percent of households and individuals, with the five-year ACS representing roughly 12.5 percent.

Home Mortgage Disclosure Act (2012–2017) ━━━━━━━━━━━━━━━━━━━━━━━━━

The U.S. government collects and distributes data on mortgages and lending activity through the Home Mortgage Disclosure Act. The HDMA requires many lending institutions to report and disclose loan-level information about mortgages to the public. HMDA is managed by the Federal Financial Institutions Examination Council.

HMDA offers information about the loan, including loan purpose (e.g., home purchase, refinancing), type (e.g., conventional, FHA-insured, VA), loan amount, the property's location (census tract is the smallest geographic unit reported), property type (e.g., one-to-four family, multifamily), loan denial, and reasons for denial. HMDA also includes information about the applicant or borrower (e.g., race/ethnicity, sex, and household income).

For this project, we retrieved HMDA data from 2012 to 2017, covering six years of data, from the Consumer Financial Protection Bureau. We restricted our sample to include mortgages that meet the following criteria: first lien; owner occupied as a principal dwelling unit; one-to-four family homes, excluding manufactured and multifamily housing; home purchase loan; and originated loans.

ENDNOTES

[i] The RAND dataset did not include foreclosure data for ZIP Code 91331, which covers the Pacoima neighborhood in Los Angeles County. For this ZIP Code, we allocated census tract foreclosure data, representing 2007 to 2013, into ZCTAs. The data also comes from DataQuick and was used for an earlier project by the researchers.

[ii] Asian Americans are incredibly diverse in ethnicity and income. Statistics for Asians as a whole obscure the disparity among Asian subpopulations. For example, Cambodian, Hmong, and Laotian are more economically disadvantaged than their East Asian counterparts (e.g., Chinese, Japanese, and Korean).

[iii] The project developed an interactive web map of the OVI for California. The web map is accessible at: https://arcg.is/1zTfnu

Cover Page Photo by Alvin Engler

UCLA Center for Neighborhood Knowledge

https://knowledge.luskin.ucla.edu/

KnowledgeLuskin

UCLACenterforNeighborhoodKnowledge

knowledge@luskin.ucla.edu