

**Economic Progress of Hmong Americans:
The First Twenty-Five Years**

by

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Abstract

Hmong refugees from remote highlands in Laos resettled in the U.S. starting in 1975, after the end of the Vietnam War. This study uses Census microdata to explore measures of economic progress of Hmong Americans in the first twenty-five years after they began arriving in the U.S. Hmong refugees arrived with low average levels of human capital, so their economic progress was slow at first. Over time, as their English language skills improved and they accumulated more work experience, their labor force participation rates, annual hours worked, and hourly wages rose. Remarkably, the median income of Hmong households rose to parity with other households in the U.S. by about 2000, just twenty-five years after the first wave of refugees arrived.

JEL codes: J15, J71

Keywords: immigration, immigrant assimilation, refugees, Hmong Americans

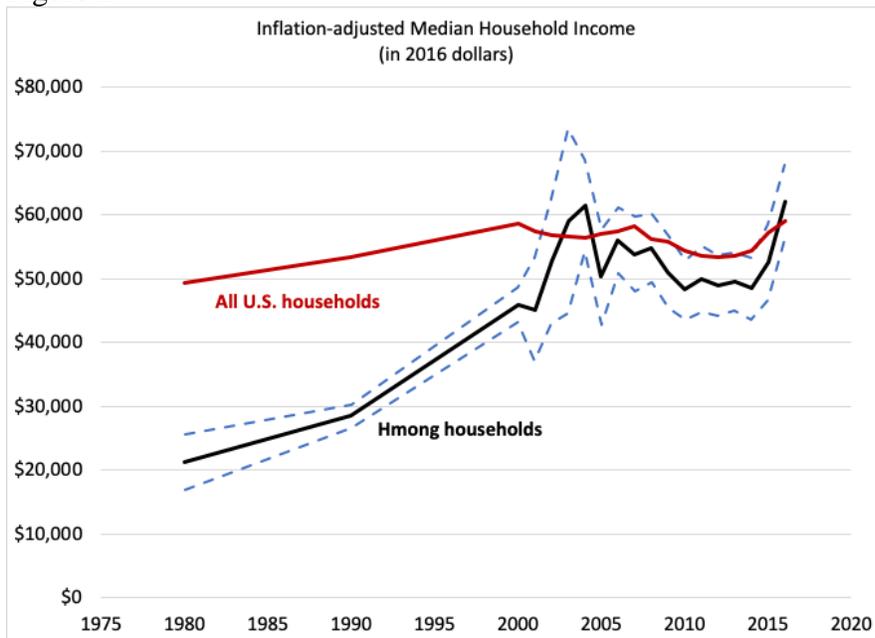
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Economic Progress of Hmong Refugees in the U.S.: The First Twenty-Five Years

Hmong refugees began arriving in the U.S. in large numbers starting in 1975, after their participation as proxy soldiers in the U.S. secret war in Laos. Many Hmong refugees reported that they did not speak English well and had no education when they arrived in the U.S., so it was difficult for many of them to find jobs at first; but Hmong households achieved remarkable economic progress over the next twenty-five years. Figure 1 compares estimates of inflation-adjusted median incomes for Hmong households, based on data from the U.S. Census, with median incomes for all U.S. households. (The dashed lines show 95% confidence bounds on the Hmong income estimates.) Median household income in 1980 was very low compared with other refugee and immigrant groups and the broader U.S. population. But incomes of Hmong households grew significantly over the next twenty years, matching the median income for the entire U.S. population by 2003-04.¹

Figure 1



How did Hmong families achieve this economic progress in their first twenty-five years in the U.S.? This study identifies many factors that help to explain their progress between 1975 and 2000, using data from a large sample of observations from the U.S. Census in 1980, 1990, and 2000. Pfeifer and Lee (2004) discussed demographic and socioeconomic trends of Hmong Americans in 1990 and 2000, using cross tabulations extracted by the Census Bureau from the same large data samples. Vang (2012) discussed the economic progress and challenges of Hmong Americans through 2010, again using summary data from the U.S. Census, with a special focus on the impact of the Great Recession of 2007-2009. The present study explores microdata samples that allow us to view each arrival cohort in statistical snapshots over time; use regression analysis to explore relationships; and make comparisons with other subsets of the population.

At the outset we must echo Chia Youyee Vang's forceful caution about the concept of "economic progress" (Vang 2004). In a study like this, it is tempting to presume uncritically that "economic progress," as measured by ever-rising incomes, is the universal goal. But, as many scholars have acknowledged, people have broader aspirations that transcend pecuniary measures. It is especially important in a study of Hmong Americans to recognize that many individuals and families sought nonpecuniary rewards in the family and clan – choosing to retain traditional roles and continuing to rely on the Hmong language, for example – rather than pursuing status in the workplace. Addressing the deep challenges facing Hmong American families in 2000, Vang noted that "...although there is economic achievement, the quality of life may still be problematic." (Vang 2004, 30).

While the data used in this study provide remarkably detailed insights about the lives of thousands of Hmong Americans, they cannot measure some of the most important factors that

have shaped their pathways in the U.S.: traditional kinship ties, the first generation's experiences in Laos or in refugee camps in Thailand, the lasting trauma many endured in their homeland and their abrupt move to the U.S., the racial prejudice that enveloped them here, the barriers they encountered in schools and other public institutions, and many others. These essential threads in the fabric of Hmong lives are better captured in studies that rely on extended interviews or oral histories, such as Lo's (2004) immersive study of five families in Milwaukee, with a focus on the U.S. government's unfulfilled promises to Hmong refugees; Xiong's (2013) interviews with twelve households in the Central Valley of California, exploring the roots and consequences of poverty among Hmong Americans; and Xiong's (2014) survey-based study of social mobility among second-generation Hmong adults in the Central Valley of California.

The modest aim in the present study is to show what the large Census microdata samples can tell us about socioeconomic trends among Hmong Americans in their first twenty-five years in the U.S. We hope that the statistical evidence presented here can provide historical perspective and a valuable framework for future research on Hmong communities.

This study is organized as follows. The next section describes the data used in the analysis. The following section presents results in three subsections, which successively focus on data from the 1980, 1990, and 2000 Census years. The final section presents concluding observations and suggestions for future research.

Data

Every ten years through 2000, the U.S. Census Bureau asked a large sample of residents to complete the "long form" questionnaire, which included dozens of questions about demographic and socioeconomic characteristics of American households and all the individuals in those households.² After removing information that could be used to identify individuals, the

Census Bureau makes a sample of the data available to researchers. The Institute for Social Research and Data Innovation at the University of Minnesota, in its IPUMS program, edits the Census samples to ensure comparability across years, and then provides the data in a user-friendly form to researchers (Ruggles, *et al.* 2020). We have assembled a huge database that includes all IPUMS data from 1980 through 2018. Out of many millions of observations over those years, we have data on thousands of Hmong individuals and households.

This research focuses on data from the decennial Census in three years: 1980, 1990, and 2000. This period encompasses the dramatic increase in median Hmong household income shown in Figure 1. The Census data in these years are 5% samples of the population. Each observation represents about twenty individuals or households in the U.S. population, on average; but the Census Bureau assigns sample weights that differ across observations. In this study, the sample weights are applied in all calculations of summary statistics and in other analysis, and the unweighted sample sizes are reported in summary tables.

In order to enhance comparability of dollar figures across years, wages and incomes are expressed in inflation-adjusted 2016 dollars. These inflation-adjusted dollar amounts were calculated using annual CPI data.

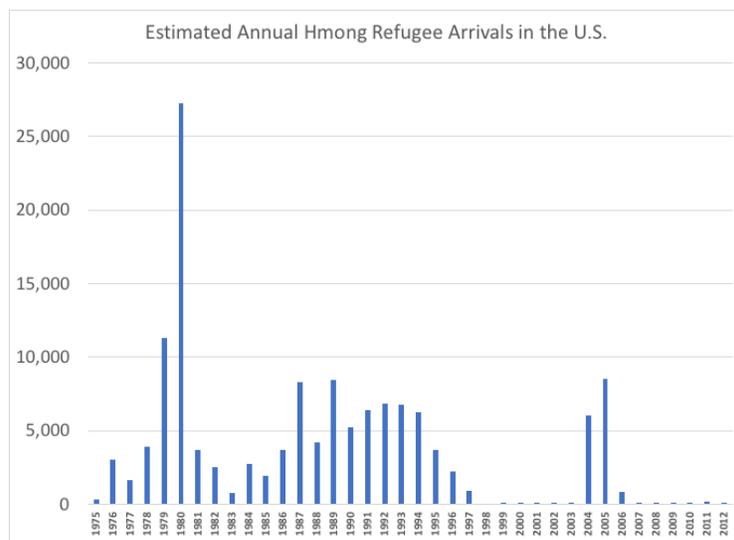
In the U.S. Census data, Hmong Americans can be identified using three indicators: reported race, ancestry, or language spoken at home. Based on the weighted data in our sample, an estimated 281,422 people would identify their race as Hmong in 2015; 236,902 would identify their ancestry as Hmong; 232,220 would report that they speak the Hmong language at home; and 300,638 would identify as Hmong under at least one of these criteria. This last, broad definition of the Hmong community is the one we use in our research (Carroll and Udalova 2005). Although Hmong refugees started arriving in the U.S. in significant numbers around

1975, “Hmong” was not yet offered as a choice among the detailed race categories in the 1980 decennial Census; so we identify as Hmong the individuals in the 1980 sample who reported that their ancestry or language spoken at home was Hmong. Pfeifer and Lee (2004) and other scholars have noted that Hmong Americans were probably significantly undercounted in every Census enumeration.

This research often considers measures at the household level. IPUMS provides data on household income. In calculating other household characteristics, we followed the Census Bureau in defining a “Hmong household” as one in which the person who self-identified as the household head also identified as Hmong.

The data include the year of immigration for every foreign-born person (in two- to four-year intervals), so we can track the progress of each arrival cohort over time. As background, Figure 2 shows our estimates of the numbers of Hmong arrivals in the U.S. each year.³

Figure 2



Hmong Households in the 1980 Census

By 1980, thousands of Hmong refugees had arrived in the U.S. Our sample, representing the broader Hmong population in 1980, includes 826 Hmong individuals who arrived in the U.S.

between 1975 and 1980. Based on our sample, we estimate that a total of 17,820 people would have identified their ancestry or language as Hmong in 1980.

Hmong refugees were initially resettled in communities spread widely across the U.S. Table 1 shows that seventeen states could claim at least 1% of the Hmong population in 1980, compared with eight states in 2000 and nine states in 2015. States with smaller Hmong populations are not included in the table, so the percentages do not add up to 100%. In 1980, only 45% of Hmong Americans lived in California, Minnesota, and Wisconsin – the three states with the largest Hmong populations – compared with about 75% in 2015. By 1990 the Hmong population had already become much more concentrated, as new arrivals were more likely to be resettled in California, and secondary migration brought many families together in California, Minnesota, and Wisconsin. (After 1990, a significant cluster of Hmong communities also grew in North Carolina.) Pfeifer and Lee (2004) and Pfeifer, *et al.* (2012) provide valuable discussions of the regional distribution and migration patterns of Hmong households in 2000 and 2010.

Table 1: Estimated Distribution of Hmong Population across States

State	1980	1990	2000	2009	2015	Total
California	20.1%	58.6%	45.4%	41.6%	42.4%	43.8%
Colorado	3.8%	1.4%	1.9%	2.5%	1.6%	2.1%
Connecticut	1.8%	0.1%	0.1%	0.2%	0.1%	0.1%
Georgia	0.0%	0.9%	0.9%	1.6%	1.6%	1.4%
Illinois	7.0%	0.7%	0.5%	0.4%	0.2%	0.5%
Iowa	2.2%	0.0%	0.0%	0.0%	0.3%	0.2%
Kansas	2.0%	0.5%	0.5%	0.5%	1.4%	0.7%
Michigan	1.7%	2.2%	2.5%	2.8%	2.2%	2.4%
Minnesota	16.7%	14.0%	18.6%	18.5%	19.7%	19.0%
North Carolina	0.8%	0.7%	5.4%	5.4%	6.2%	4.8%
Ohio	2.2%	0.5%	0.3%	0.4%	0.2%	0.4%
Oklahoma	2.0%	0.1%	0.2%	1.0%	2.0%	1.0%
Oregon	8.2%	0.7%	1.2%	1.0%	1.5%	1.2%
Pennsylvania	2.2%	0.4%	0.4%	0.4%	0.0%	0.4%
Rhode Island	1.2%	1.5%	0.5%	0.6%	0.2%	0.6%
Texas	2.6%	0.2%	1.0%	0.4%	0.0%	0.6%
Utah	4.2%	0.3%	0.4%	0.1%	0.0%	0.3%
Washington	4.2%	1.3%	1.4%	1.8%	0.7%	1.3%
Wisconsin	8.3%	14.0%	14.0%	15.3%	13.2%	14.2%

Notes: Estimates are calculated using sample weights in IPUMS data.

Hmong refugees who arrived in the U.S. between 1975 and 1980 brought low average levels of educational attainment and English language fluency. Table 2 shows summary statistics for foreign-born Hmong adults by arrival cohort and Census year. Among those in the first arrival cohort, about 20.7% of men and 55.2% of women reported that they had no education, and 63.0% of men and 84.3% of women said they had less than a high school education. For many Hmong refugees who had received some schooling in Laos or in refugee camps in Thailand, it was probably difficult to know how to respond to the Census educational attainment question, which asked “What is the highest grade (or year) of regular school this person has ever attended?”; so these figures should be interpreted with some caution.

The Census questionnaire asked about English language fluency in a pair of questions. First, respondents were asked whether they spoke a language other than English at home. If they answered Yes, then they were asked in a second question how well they spoke English. There were four possible responses to the second question: “Does not speak English,” “Speaks English, but not well,” “Speaks English well,” and “Speaks English very well.” In the 1980 Census sample, 25% of adult Hmong men and 49% of women reported that they did not speak English at all, and another 49% of men and 35% of women said they could speak some English, but not well. None of the Hmong adults in our 1980 sample spoke only English at home. In Table 2, these measures are summarized in the “Low English” category, which includes people who reported that they did not speak English at all or spoke English, but not well.

Studies of the economics of immigrant assimilation (e.g., Chiswick 1978, 1979) suggest that immigrants’ integration into the labor market depends on the degree to which their human capital – education, English language fluency, work experience, and other job-related attributes – is internationally transferable. Hmong refugees faced deeper challenges than any other refugee

Table 2: Summary Statistics for Foreign-born Adult Hmong by Arrival Cohort and Census Year

Hmong Men														
Arrival cohort	Census year	N	In the labor force	s.e. of mean	Employed	s.e. of mean	Low English	s.e. of mean	No education	s.e. of mean	At least HS education	s.e. of mean	Median real household income	s.e. of mean
arrived in 1975-80	1980	184	47.3%	3.7%	41.8%	3.6%	73.4%	3.3%	20.7%	3.0%	37.0%	3.6%	\$16,507	\$1,991
arrived in 1975-79	1990	161	46.8%	3.9%	43.4%	3.9%	49.6%	3.9%	34.5%	3.7%	45.1%	3.9%	\$42,541	\$1,962
arrived in 1980-81	1990	179	38.8%	3.6%	33.0%	3.5%	59.4%	3.7%	38.4%	3.6%	47.6%	3.7%	\$32,189	\$2,079
arrived in 1982-84	1990	51	34.0%	6.6%	31.2%	6.5%	63.8%	6.7%	38.6%	6.8%	40.4%	6.9%	\$35,170	\$3,498
arrived in 1985-86	1990	47	29.2%	6.6%	28.4%	6.6%	67.7%	6.8%	46.8%	7.3%	29.0%	6.6%	\$29,499	\$2,995
arrived in 1987-90	1990	183	23.1%	3.1%	19.0%	2.9%	64.5%	3.5%	36.8%	3.6%	35.4%	3.5%	\$27,948	\$2,128
arrived in 1975-79	2000	163	58.5%	3.9%	54.3%	3.9%	38.1%	3.8%	33.0%	3.7%	54.5%	3.9%	\$64,079	\$4,806
arrived in 1980-81	2000	148	57.3%	4.1%	54.6%	4.1%	50.1%	4.1%	42.8%	4.1%	51.1%	4.1%	\$58,033	\$3,298
arrived in 1982-84	2000	57	57.3%	6.6%	50.2%	6.6%	51.1%	6.6%	42.0%	6.5%	54.4%	6.6%	\$42,743	\$4,872
arrived in 1985-86	2000	61	50.8%	6.4%	50.8%	6.4%	47.3%	6.4%	43.0%	6.3%	46.5%	6.4%	\$43,646	\$4,398
arrived in 1987-90	2000	223	55.9%	3.3%	49.7%	3.3%	56.1%	3.3%	51.6%	3.3%	41.1%	3.3%	\$44,480	\$3,213
arrived in 1991-93	2000	138	55.4%	4.2%	49.3%	4.3%	60.7%	4.2%	53.1%	4.2%	36.0%	4.1%	\$45,745	\$4,565
arrived in 1994-96	2000	95	53.8%	5.1%	50.1%	5.1%	59.3%	5.0%	51.5%	5.1%	37.9%	5.0%	\$37,544	\$6,732
arrived in 1997-2000	2000	36	63.9%	8.0%	58.1%	8.2%	59.2%	8.2%	36.4%	8.0%	44.5%	8.3%	\$41,700	\$5,056
Hmong Women														
Arrival cohort	Census year	N	In the labor force	s.e. of mean	Employed	s.e. of mean	Low English	s.e. of mean	No education	s.e. of mean	At least HS education	s.e. of mean	Median real household income	s.e. of mean
arrived in 1975-80	1980	172	14.0%	2.6%	11.0%	2.4%	87.8%	2.5%	55.2%	3.8%	15.7%	2.8%	\$14,521	\$2,031
arrived in 1975-79	1990	177	24.1%	3.2%	18.1%	2.9%	75.1%	3.3%	76.0%	3.2%	10.1%	2.3%	\$39,928	\$2,007
arrived in 1980-81	1990	178	20.9%	3.1%	18.7%	2.9%	79.2%	3.0%	68.8%	3.5%	21.9%	3.1%	\$34,960	\$1,976
arrived in 1982-84	1990	58	8.3%	3.6%	6.0%	3.1%	83.0%	4.9%	79.6%	5.3%	9.1%	3.8%	\$28,454	\$2,905
arrived in 1985-86	1990	59	10.8%	4.0%	7.8%	3.5%	86.3%	4.5%	77.3%	5.5%	10.4%	4.0%	\$22,522	\$2,745
arrived in 1987-90	1990	214	8.9%	1.9%	6.4%	1.7%	78.9%	2.8%	65.6%	3.2%	22.7%	2.9%	\$25,760	\$1,411
arrived in 1975-79	2000	156	37.5%	3.9%	35.4%	3.8%	68.4%	3.7%	71.1%	3.6%	19.5%	3.2%	\$64,635	\$3,740
arrived in 1980-81	2000	155	29.9%	3.7%	27.7%	3.6%	74.3%	3.5%	80.0%	3.2%	11.7%	2.6%	\$59,770	\$3,945
arrived in 1982-84	2000	67	31.5%	5.7%	28.3%	5.5%	77.8%	5.1%	76.9%	5.1%	13.6%	4.2%	\$48,650	\$5,137
arrived in 1985-86	2000	65	39.1%	6.1%	39.1%	6.1%	73.4%	5.5%	65.9%	5.9%	18.0%	4.8%	\$36,001	\$10,070
arrived in 1987-90	2000	255	35.2%	3.0%	32.5%	2.9%	76.4%	2.7%	75.0%	2.7%	12.8%	2.1%	\$40,310	\$2,578
arrived in 1991-93	2000	139	32.1%	4.0%	29.3%	3.9%	78.9%	3.5%	75.2%	3.7%	14.7%	3.0%	\$38,920	\$5,388
arrived in 1994-96	2000	88	39.0%	5.2%	35.0%	5.1%	75.1%	4.6%	61.9%	5.2%	27.2%	4.7%	\$39,754	\$7,454
arrived in 1997-2000	2000	46	35.2%	7.0%	33.8%	7.0%	62.2%	7.2%	44.0%	7.3%	43.0%	7.3%	\$41,700	\$10,070

Notes: Estimates are calculated using sample weights in IPUMS data. N is the unweighted number of observations in each category; weighted estimates of population frequencies would be about twenty times as high. "s.e. of mean" is the sample standard error of the estimated mean for each measure. Real household income is expressed in 2016 dollars.

or immigrant group in this respect, so for most of them it was difficult to find jobs that paid well. Carroll and Schaffer (2020) reported mean human capital measures – years of education and English language fluency – for recently-arrived Hmong refugee men, men from other Southeast Asian origins, and men from other countries, summarized here in Table 3. Hmong refugees arrived in the U.S. with significantly lower average levels of educational attainment and English language fluency. Refugees from Cambodia and non-Hmong Laotian refugees had somewhat higher average levels of human capital, while averages were much higher among those born in Vietnam. As the human capital model predicts, many Hmong refugees struggled to find employment at first. Among adult Hmong men in 1980, only 47.3% were in the labor force. In other refugee and immigrant groups, including other refugees from Southeast Asia, 80% or more of adult men were working. The labor force participation rate for Hmong women in 1980 was even lower, at 14.0%. In our study of the economic progress of Hmong refugees, these low labor force participation rates stand out as a key factor. Since it was difficult for many Hmong refugees to find jobs, they accumulated less work experience over time, so their economic progress was slower than that of other refugee and immigrant groups.

Table 3: Human capital endowments for working-age (18 to 64 years) men who arrived in the U.S. as adults (aged 18 or older) and had been in the U.S. for 0 to 5 years

	Mean Years of Education	standard error of mean	Pct. Who Do Not Speak English Well	standard error of mean	N
Hmong	7.4	0.23	64.8%	1.92%	620
Born in Laos, not Hmong	9.4	0.16	57.1%	1.55%	1,014
Born in Cambodia	9.7	0.16	55.7%	1.50%	1,090
Born in Vietnam	11.3	0.04	54.2%	0.48%	10,624
Other refugees	12.2	0.02	46.3%	0.23%	47,271
Other immigrants	11.9	0.01	41.7%	0.07%	442,173

Notes: Based on online supplementary material from Carroll and Schaffer (2020). Data include samples from the U.S. Census and ACS from 1980 to 2016. “Other refugees” are from countries in which a majority of immigrants arrived in the U.S. with refugee status; “other immigrants” are from other countries.

Segmented assimilation theory provides another paradigm to explain the assimilation paths of Hmong refugees and other immigrants (Portes and Zhou 1993, Rumbaut 1994, Portes *et al.* 2009, Zhou *et al.* 2008, Haller *et al.* 2011, Waldinger and Catron 2016). Xiong (2013) applies this theory to explicate the constraints that made it difficult for Hmong families to rise out of poverty. The theory recognizes that an immigrant group's assimilation pathway depends on distinctive conditions of "exit" – the conditions under which immigrants left their country of origin – and "reception" – how welcoming the destination is (Xiong 2013, 69). Studies employing this framework most often aim to explain inter-group differences in assimilation outcomes in the second and subsequent generations, but the determinative factors they identify also help to explain socioeconomic outcomes among first-generation immigrants. This approach suggests that to explain an immigrant group's assimilation pathway, we should examine the immigrants' human capital endowments and the social structures they encounter upon arrival. Important dimensions of the receiving social structure include government policies, the social environment (labor market conditions and racial prejudice), and the strength of social networks and opportunities provided by the preexisting ethnic community (Portes and Rumbaut 2001). Using this framework, Portes and Zhou (1993) characterized government policies regarding Hmong and other refugees from Southeast Asia as "receptive" (as a result of the Refugee Act of 1980 and other refugee-assistance programs); their social reception as "prejudiced"; and their coethnic communities as "weak" (since these communities were relatively small and undiversified in early years). Xiong (2013, 93-4) points to relatively low levels of entrepreneurial activity and professional achievement as chief sources of "weakness" in Hmong social networks.

Segmented assimilation theory can explain broad patterns we observe in the socioeconomic outcomes of Hmong refugees and other groups. Carroll and Schaffer (2020) report that the economic progress of Hmong refugees – the focus of the present study – was slower than that of almost every other refugee and immigrant group. Progress was also slow among immigrants from Mexico and many other Latin American countries, who brought comparably low levels of human capital and did not benefit from the “positive reception” afforded Southeast Asian refugees in government refugee-assistance programs. Refugees from Cambodia and non-Hmong refugees from Laos, who had higher average human capital levels, achieved somewhat faster economic progress than Hmong refugees. Refugees from Vietnam brought higher levels of human capital, benefited from refugee-assistance programs, and had more entrepreneurial experience and interactions with Western market institutions in their homeland. Since they faced more positive conditions of both “exit” and “reception,” Vietnamese refugees achieved much faster economic progress in the U.S. and attained a higher average level of socioeconomic status than Hmong and other Southeast Asian refugees. Takei and Sakamoto (2011) showed that these rankings tend to persist even after controlling for educational attainment and demographic variables, which suggests that there are other important group-specific factors that help to determine economic outcomes. Some of these factors, which could reflect values, aspirations, and traditions shared by members of a group, are unobserved in our data, but might be elucidated in a segmented assimilation study.

When they came to the U.S., Hmong refugees brought skills that were superbly adapted to their lives in Laos, but these skills generally were not so valuable in the U.S. labor market (Xiong 2013, 89-90). As a result, when Hmong refugees did find jobs in the U.S., they were often jobs that required low skill levels and paid low wages. The data provide detailed

information on the reported occupations of Hmong refugees, and we can see that their occupations varied widely. The most common occupations in 1980, each reported by 5% or more of the respondents in the sample, were “assemblers of electrical equipment,” “machine operators,” janitors, and farmers and farm workers – all of which rank as relatively low-skilled, low-wage occupations. The sample also includes some individuals in 1980 who reported high-skilled, higher-paying occupations such as manager, management analyst, supervisor or proprietor, engineer, teacher, or social worker.

Table 4 shows summary statistics for the subset of foreign-born Hmong adults who reported that they were working. The IPUMS data include a variable, the Duncan Socioeconomic Index (SEI), that provides some clues about the skill levels associated with Hmong refugees’ occupations. The SEI assigns a “score” to measure “occupational status based upon the income level and educational attainment associated with each occupation.”⁴ SEI scores range from 6 for “farm laborers” to 96 for “dentists.” Table 12 displays SEI scores for the occupations in the IPUMS data. The SEI is a crude measure, based on a shaky methodological foundation; but it can be used informally to compare the mix of occupations between groups or over time. Hmong men who arrived in the U.S. in 1975-80 and were working in 1980 had an average SEI score of 21.3, much lower than the average of 38.7 for native-born working men in that year. Table 4 shows that the average SEI score of working Hmong Americans generally rose over time as they moved into higher-skill jobs.

Based on the Census data, estimates of hourly wages were calculated by dividing reported annual wage income by annual hours worked. Among Hmong men who were working in 1980, the estimated median wage was \$4.35 per hour, which was equivalent to about \$13.34

per hour in 2016 dollars. Carroll and Schaffer (2020) provide comparative data for other refugee and immigrant groups. Since it was difficult for many Hmong refugees to find work at first, and those who worked often earned low wages, Hmong households in 1980 relied heavily on public assistance. In 1980, 41% of total income for Hmong refugees came from “public assistance or public welfare payments,” compared with 20% or less for other Southeast Asian refugees and 5% or less for most other refugee and immigrant groups. Wage and salary income represented only 47% of total income, compared with 80% or more for recent arrivals in most other refugee and immigrant groups. Business and farm income was less than 1% of the total for Hmong refugees in 1980, reflecting a low level of entrepreneurial activity; the comparable figure among recent arrivals in other immigrant groups was 4% or more.

Hmong Households in the 1990 Census

According to the U.S. Census, 94,439 people identified their race as Hmong in 1990 (Pfeifer, *et al.* 2012). Based on our sample data, we estimate that about 108,054 would have identified their race, ancestry, or language spoken at home as Hmong. According to the data, about 33% of them were born in the U.S.; 0.5% reported that they arrived in the U.S. before 1975; 17% arrived between 1975 and 1979; 16% in 1980 or 1981; 5% between 1982 and 1984; 5% in 1985 or 1986; and 23% between 1987 and 1990. Unfortunately, the 1990 Census only categorizes the year of immigration in these intervals, not by individual years. The data show significant economic gains for Hmong Americans between 1980 and 1990. How did they achieve this progress?

Economic Progress of the Early-Arrival Cohort

Improvements in Hmong Americans’ living standards between 1980 and 1990 were due in large part to gradual economic progress in the cohort who arrived before 1980. In the 1990

sample, the labor force participation rate among early-arrival adult men was about the same as in 1980, at 47%; but those who were working enjoyed significantly higher wages and worked more hours per year. The median hourly wage of Hmong men who had arrived before 1980 (again, measured in constant 2016 dollars) rose from \$13.34 in 1980 to \$15.10 in 1990, an increase of 13.2%; and their average hours of work per year rose from 1452.7 in 1980 to 1858.5 in 1990. (There are about 2000 hours in a year of full-time work, so these figures indicate that many Hmong men were still working less than full-time.) As a result of these changes in wages and hours of work, the median annual real wage income of working Hmong men who had arrived before 1980 rose sharply, from \$18,348 in 1980 to \$31,280 in 1990.

As in 1980, Hmong women were less likely than Hmong men to work in 1990; but those who worked achieved sharp increases in wages and hours of work after ten years in the U.S. The labor force participation rate for Hmong women who had arrived as adults before 1980 rose from 14.0% in 1980 to 24.1% in 1990. Among those who were working, the median hourly wage (in 2016 dollars) rose from \$8.30 in 1980 to \$11.04 in 1990, and average annual hours of work rose from 1151.2 hours in 1980 to 1537.7 hours in 1990. The median annual wage income of working Hmong women who had arrived before 1980 almost doubled, from \$10,549 in 1980 to \$20,240 in 1990, as a result of these changes in hourly wages and hours of work. Taking the labor force participation rate and wage income into account, an average adult Hmong woman in this early-arrival cohort contributed about 15% as much wage income to the household as an average Hmong man in 1980. This percentage rose to 27% in 1990, marking a significant change in the roles of many Hmong women over the decade of the 1980s.⁵

The sharp increases in hourly wages and hours of work among the early-arrival cohort indicate that many Hmong Americans gained a firmer foothold in the workplace in the 1980s.

How did they achieve this? Measures in the data provide some answers, although the economic progress of this cohort was much greater than can be explained by the data. Economic theory suggests that a worker's productivity and wage tend to be higher if the worker has more human capital: education, English language fluency, or work experience. We have data on each individual's educational attainment and English language skills; and linear regression analysis, which allows us to examine patterns behind the sample averages, confirms their potency. In our sample, individuals who have more education or better English language skills are more likely to work in higher-skilled occupations and earn higher wage incomes, on average, after controlling for their other characteristics (such as age, marital status, and region of residence).

Table 5 displays results from regression models exploring the determinants of labor force participation, annual hours worked, and hourly wages for Hmong men who arrived in the first cohort. The first two are linear regression models, while the third uses quantile regression to explain median hourly wages. Quantile regression minimizes the influence of outliers in the data, which otherwise would be a problem in the wage model. In all three models, regression coefficients can be interpreted as estimates of the approximate percentage change in the variable in question – labor force participation rate, annual hours worked, or hourly wage – that would result from a one-unit change in the independent variable.⁶ The regression results show that men in the early-arrival cohort who had at least a high-school education were about 15.8% more likely to be in the labor force than men who had no education, holding other factors constant, and their median hourly wage is estimated to have been 33.3% higher. Hmong men in the early-arrival cohort who spoke English well were 15.4% more likely to be in the labor force than those who did not speak English well, and they worked about 30% more hours per year, holding other factors constant. The regression results suggest that men who had higher levels of education

were more likely to be in the labor force and earn higher wages, but did not work significantly more hours per year, on average; while men who spoke English well were more likely to be in the labor force and work more hours per year, but not earn significantly higher wages. These observations probably reflect the nature of the job opportunities available to Hmong men in the early-arrival cohort: better English language skills led to steady employment in low-skill jobs, while higher levels of education opened the door to higher-wage jobs.

Table 5: Determinants of Labor Force Participation, Annual Hours Worked, and Hourly Wages for Hmong Men Who Arrived in 1975-79

	(1)		(2)		(3)	
	Dependent variable:		Dependent variable:		Dependent variable:	
	In the Labor Force		log Annual Hours Worked		log real hourly wage	
	Coefficient	t	Coefficient	t	Coefficient	t
years in the U.S.	0.0446**	2.21	-0.0295	-0.63	0.0573*	1.78
Low English	-0.154***	-3.00	-0.301**	-2.63	-0.0422	-0.45
Less Than HS	0.139**	2.07	0.0348	0.21	0.480***	4.14
High School	0.158**	2.35	0.0424	0.29	0.333***	3.34
Some College	0.108	1.47	0.0211	0.13	0.287***	3.15
College Grad	0.120	1.02	0.181	1.28	0.731***	6.19
unweighted N	508		235		235	
R ²	0.2323		0.2261		0.1255	

Notes: Samples include Hmong men in 1980, 1990, or 2000 who arrived in the U.S. as adults (18 years and older) between 1975 and 1979. In models (2) and (3), the sample is further restricted to include only working men (wage income > 0). Estimates are calculated using sample weights in IPUMS data. “Unweighted N” is the unweighted number of observations included in each regression. Model (3) uses quantile regression on the median, and R² there is a pseudo-R² estimate. “Years in the U.S.” measures time since arrival in five-year intervals. Regression models include controls for age (entering as a quartic), marital status, and Census region. ***, **, and * signify statistical significance at the 1%, 5%, and 10% levels, respectively.

We know that educational attainment and English language skills are significant determinants of workplace outcomes; but how much of the economic progress of Hmong Americans in the 1980s can be attributed to improvements in the levels of their education and English-language fluency? Based on interviews with Hmong families, Xiong (2013, 85-6) notes that many viewed higher education as the most promising path out of poverty, but they faced institutional barriers that made educational attainment more difficult. In general, Hmong adults who arrived before 1980 do not appear to have acquired significantly more education after

arriving in the U.S. While the percentage of adult Hmong men in this cohort who reported that they had at least a high school education rose from 37.0% in 1980 to 45.1% in 1990, the share among adult Hmong women in this cohort fell from 15.7% in 1980 to 10.1% in 1990, and the percentage of adult men who reported that they had no education rose from 20.7% to 34.5%. (These observations would appear to indicate that many men and women lost some years of education between 1980 and 1990, which is not possible. This seeming anomaly must be due to sampling error – a reminder that all the figures in this study are estimates based on samples of the population, which include different individuals in different Census years.) In both years, about 4% of Hmong men and 2% of Hmong women who arrived before 1980 reported that they had college degrees. Some Hmong men and women obtained more education after they arrived in the U.S., but their numbers were relatively small; so this factor cannot explain much of the significant growth in median hourly wages, average hours of work, and median wage income that we observe in the data.

While average levels of educational attainment in the early-arrival cohort did not change much between 1980 and 1990, there were more dramatic improvements in levels of English language fluency, and these changes can explain a larger portion of the economic progress achieved by the early-arrival cohort in their first ten years in the U.S. The share of early-arrival Hmong adults who reported that they did not speak English well fell from 80.3% in 1980 to 62.9% in 1990, reflecting a reduction from 73.4% to 49.6% for men and 87.8% to 75.1% for women. The regression results in Table 5 suggest that these large improvements in the average level of English language skills in the early-arrival cohort probably drew many more adults into the labor force and led to significant increases in average hours worked per year.

Unfortunately, the Census data sample does not include a measure of work experience, the third important human capital dimension. As a worker accumulates more work experience, the worker's productivity tends to rise, and this generally leads to higher wages. In studies of wages, economists often assume that a worker's years of work experience are equal to the worker's age minus years of schooling minus six, which would be accurate if the individual worked steadily after completing schooling. However, this simple assumption is not appropriate for foreign-born Hmong adults. Many people in the early-arrival cohort did accumulate work experience during the 1980s, and this likely explains a significant share of the observed increase in their wages and hours of work; but we do not have a direct measure of this effect in the data.

Similarly, Hmong refugees accumulated myriad other valuable experiences after arrival in the U.S. that are not captured in the Census data sample. Even if adults in the early-arrival cohort were not working or attending school in the 1980s, they were gaining practical skills that would help them succeed in a world of new opportunities and constraints; they were building robust social networks; and they were learning how to navigate bureaucratic systems. The value of these experiences, along with work experience and other unobservable, time-dependent factors, is reflected in the "Years in the U.S." variable in the data, which shows how long each refugee had been in the U.S. (measured in five-year intervals) before completing the Census questionnaire. The regression results in Table 5 show that Hmong men who had been in the U.S. for an additional five years were about 4.5% more likely to be in the labor force and earned hourly wages about 5.7% higher, holding other factors constant. In the Census data, economic progress was strongly correlated with the number of years a refugee had lived in the U.S.; but unfortunately the data do not describe in richer detail the steps that led to this large portion of economic progress.

Ethnic Enclaves and Social Capital

Measures of human capital endowments and years in the U.S. focus on attributes of individuals; but Hmong communities were also essential determinants of Hmong refugees' economic outcomes. A Hmong refugee who joined a community with a significant Hmong population might find employment opportunities in Hmong-owned businesses, information about other employers who had hired Hmong workers in the past, and crucial social support networks (Xiong 2013, 86-9). An extensive literature on the economic implications of ethnic enclaves describes many ways a community might affect the experience of a refugee or immigrant (Edin *et al.* 2003, Damm 2009, Toussaint-Comeau 2013). Xie and Gough (2011) provide a valuable review of this literature. In earlier studies, ethnic enclaves have been variously identified by the ethnic composition of the neighborhood where an individual resides or works, whether the individual's native language is spoken at work, or whether the individual's employer shares the same ethnic identity. Empirical results in earlier studies are mixed, with some finding higher wages and better employment prospects in ethnic enclaves, while others present evidence of lower average wages. The importance of ethnic communities in determining assimilation paths has also been addressed in studies of the role of social capital, which Blau and Kahn (2015, 440) define as "social interactions or community-level characteristics that enhance skills or productivity and hence wages," which can "take the form of role models, expectations, behavioral norms, and interpersonal networks." Empirical studies typically explore the role of social capital using data describing whether workers found their jobs through social contacts (e.g. Tegegne 2016). Like the research on ethnic enclaves, studies of the role of social capital provide mixed results regarding employment prospects and subsequent earnings.

In 1990 and 2000, most Hmong refugees lived in metropolitan areas that had sizeable Hmong populations; but many others – especially in 1980 – lived in areas with smaller Hmong populations. Did the demographic characteristics and cultural attributes of a Hmong community significantly affect the economic prospects of Hmong refugees living there? If so, did larger Hmong communities, with deeper Hmong social networks, enhance or constrain refugees’ economic prospects? Our rich data set offers some evidence on these questions.

Like many earlier studies, we identify ethnic enclaves based on a geographical definition. The smallest geographical unit in our data is the “consistent PUMA.” (“PUMA” is a Census acronym for a Public Use Microdata Area.) Individuals in our data sample reside in over five hundred consistent PUMAs, with total populations ranging from about 100,000 (Livonia, Michigan) to more than five million (Los Angeles). A large metro area typically spans a few or several consistent PUMAs. For example, the Minneapolis-St. Paul metro area comprises eight consistent PUMAs, and the Fresno metro area comprises two. We calculated weighted estimates of the Hmong population of each consistent PUMA in each of the Census years in our study – 1980, 1990, and 2000 – to obtain a picture of the growth of these Hmong communities. For example, our estimates indicate that the Hmong population of the consistent PUMA covering St. Paul, Minnesota was 1800 in 1980, 11,940 in 1990, and 28,920 in 2000. The data do not provide a direct measure of social capital, but we expect that social capital would be correlated with our measure of the size of Hmong communities.

The estimates of the Hmong populations of consistent PUMAs were included as an explanatory variable in regression models of the determinants of labor force participation rates and hourly wages for Hmong refugee men.⁷ Both models suggest that Hmong refugee men’s

economic status tended to be lower, on average, in communities that had larger Hmong populations. Table 6 displays results from the regression models.

Table 6: Effects of Hmong Community Size on Labor Force Participation and Hourly Wages for Hmong Men

	(1)		(2)	
	Dependent variable:		Dependent variable:	
	In the Labor Force		log real hourly wage	
	Coefficient	t	Coefficient	t
years in the U.S.	0.0630***	5.44	0.0709***	3.74
Low English	-0.149***	-5.29	0.0124	0.3
Less Than HS	0.0737*	1.9	0.0738	0.94
High School	0.167***	4.64	0.190***	3.61
Some College	0.0789**	1.97	0.205***	3.38
College Grad	0.147***	2.42	0.623***	6.56
log(Hmong pop. of PUMA)	-0.0163*	-1.92	-0.0404***	-2.73
unweighted N	1,746		860	
R ²	0.2182		0.0771	

Notes: Samples include Hmong men in 1980, 1990, or 2000 who arrived in the U.S. as adults (18 years and older). In model (2), the sample is further restricted to include only working men (wage income > 0). Estimates are calculated using sample weights in IPUMS data. “Unweighted N” is the unweighted number of observations included in each regression. Model (2) uses quantile regression on the median, and R² there is a pseudo-R² estimate. “Years in the U.S.” measures time since arrival in five-year intervals. Regression models include controls for age (entering as a quartic), marital status, and Census region. ***, **, and * signify statistical significance at the 1%, 5%, and 10% levels, respectively.

As expected, human capital variables – English language skills and education – and years in the U.S. help to explain labor force participation and hourly wages in Table 6. In the labor force participation model, the estimated coefficient on the logarithm of the Hmong population in the individual’s PUMA of residence is negative (-0.0163) and significant at the 10% level. Based on these estimates, a Hmong man living in a consistent PUMA with a small Hmong population of about 50, and mean values of other explanatory variables, would be predicted to have a 55.2% probability of being in the labor force. If he lived in a community with about 1000 Hmong people, his predicted probability of labor force participation would be 50.3%; and if he lived in a PUMA with a Hmong population of about 22,000 (like Fresno in 1990), his predicted probability of being in the labor force would be 45.4%.

The estimated coefficient on the logarithm of the Hmong population in the individual's PUMA of residence is also negative (-0.0404) in the hourly wage model, and it is significant at the 1% level. This estimate implies that the predicted hourly wage for a man living in a community with a Hmong population of 50 (again assuming mean values of all other explanatory variables) would be \$16.82. The predicted hourly wage in a community with about 1000 Hmong people would be \$14.90, and in a community with a Hmong population of about 22,000, the predicted wage would be \$13.20 per hour.

These results describe negative correlations between economic outcomes and the sizes of Hmong communities, but they do not definitively demonstrate causal relationships. Perhaps average wages and labor force participation rates happened to be lower in cities, such as those in the Central Valley in California, where large numbers of Hmong people lived. This possibility was tested in the wage model by estimating average wages for all foreign-born Southeast Asians in each consistent PUMA, and then including these PUMA-specific wage levels as controls in the model for Hmong refugee men. In this specification, the coefficient on the PUMA Hmong population variable was still negative and statistically significant; so the negative correlations do not appear to be just a result of differing labor market conditions across PUMAs. Secondary migration is another possible confounding factor in the labor force participation and wage models. If Hmong families had been assigned randomly to cities, we could more clearly judge how community size affected labor force participation and wages. But after 1980, many Hmong families chose the communities where they would live, so the widely differing Hmong populations of consistent PUMAs might be the result of choices based on economic considerations and other, unobserved factors – not the cause of different economic outcomes.

Why might labor force participation rates and hourly wages of Hmong refugees have been lower in communities with larger Hmong populations? One possibility is that the deeper social networks in communities with large Hmong populations made it easier for some refugees to choose non-market activities, such as caring for children or elderly family members, working on small urban farms, or participating in clan or community initiatives. A second possible explanation is that many Hmong refugees might have preferred to work in Hmong-owned businesses in Hmong enclaves, and these businesses might have paid lower wages, on average. Alternatively, some Hmong families might have been drawn to larger communities that offered more favorable public assistance benefits for refugees. Such communities would be especially attractive to refugees who would have more difficulty finding jobs or earning higher wages, so we would expect that average levels of human capital measures – and therefore labor force participation rates and wages – would be lower there. Indeed, the data show that communities with larger Hmong populations included higher percentages of refugees who reported that they had no education or could not speak English. The negative correlation between Hmong community sizes and economic outcomes emerges in the models in Table 6 even after including education and English language skills as controls; but these attributes might be correlated with other, unobserved variables that cause the negative correlation. Social networks are particularly important in Hmong communities, so the relationship between communities and economic outcomes is a compelling topic for future research.

New Arrivals in the 1980s

During the decade of the 1980s, two large waves of Hmong refugees – one around 1980, the other in the late 1980s – joined the early-arrival cohort in the U.S. The data in Figure 2 show that about half of all Hmong refugees arrived in the U.S. between 1980 and 1990. These

refugees first appear in the Census data sample in 1990, when some had been in the U.S. for almost ten years and others had just arrived. The Census categorizes their arrival years in four intervals: 1980-81, 1982-84, 1985-86, and 1987-90. During a Census year such as 1980 or 1990, some refugees who arrived in that year are counted in that year's Census, while others are first counted in the Census ten years later, introducing some unavoidable ambiguity in the interpretation of data on arrival years. Among those who arrived in the 1980s, we can compare the most recent arrivals (in 1987-90) with the early-arrival cohort in 1980, and we can compare the 1980-81 cohort with data on the early-arrival cohort in 1990.

In Table 2, the labor force participation rates in 1990 for more recent arrivals, who had arrived in the U.S. from 1987 to 1990, are striking: only 23.1% of Hmong men and 8.9% of Hmong women in this cohort reported that they were in the labor force – much lower percentages than in the early-arrival cohort ten years before. The rates were even lower – about 16% for men and 6% to 9% for women – in California, Minnesota, and Wisconsin, where most of the Hmong population was concentrated. Unfortunately, the 1990 Census sample does not tell us in which year from 1987 to 1990 each of these individuals arrived. It is likely that many of these people arrived in 1990, shortly before the Census survey was administered, so it would not be surprising to see that they were not yet working. But other data (as in Figure 2) suggest that many of the people in this cohort had probably been in the U.S. for two or three years by 1990; so we have strong evidence that it was especially difficult for Hmong refugees who arrived in the U.S. in the late 1980s to find jobs.

We see additional evidence of labor-market challenges in the data on wages and hours of work among Hmong refugees who arrived in the late 1980s. The median hourly wage of working Hmong men in 1990 who arrived in the U.S. in 1985 to 1990 was only about \$11 (in

constant 2016 dollars), compared with \$13.34 per hour for new arrivals ten years earlier. These men worked about 1300 hours per year, on average – about 10% fewer hours than men ten years before. As a result of their lower hourly wages and fewer hours worked, the annual wage incomes of men who arrived between 1985 and 1990 were significantly lower than in the recent-arrival cohort in 1980. Hmong women who arrived between 1985 and 1990 also faced struggles in the labor market in 1990.

Why were labor force participation rates, hourly wages, and hours worked so low for Hmong refugees who arrived in the late 1980s? One possible explanation is that the U.S. economy suffered a recession in 1990, so labor market conditions were challenging for many workers – not just Hmong refugees. However, this cannot explain very much, since the 1990 recession was relatively mild, and many of the measures in the 1990 Census data refer back to 1989, before the recession began. Two alternative, more important explanations must be considered. First, the Hmong refugees who arrived in the late 1980s may have been less well equipped to enter the U.S. labor force, on average, than those who arrived ten years earlier. Rumbaut (1995) and Sakamoto and Woo (2007) note that Hmong and other Southeast Asian refugees who arrived in the “first wave” before 1979 tended to have higher levels of socioeconomic status than those who arrived later. Hmong refugees in each arrival cohort had followed a unique path from Laos to the U.S., and their distinctive experiences shaped their lives in the U.S. in important ways. Many who arrived in the late 1980s had spent several years in resettlement camps in Thailand, so their experiences were different in many ways from those who had arrived earlier. The data show that about 65% of Hmong men who arrived in 1985-90 could not speak English well, compared with 73.4% of recent arrivals in the 1980 Census; but about 38% said that they had no education (compared with 20.7% in 1980), and only about 34%

said they had at least a high school education (compared with 37% in 1980). Some of the differences between cohorts that we observe in the data reflect the diversity of the Hmong refugees who came to the U.S. in the first twenty-five years.

Alternatively, as noted in the last section, the differences in labor market outcomes between recent-arrival cohorts might be explained in part by different conditions in the communities where they settled. Hmong refugees before 1980 were widely dispersed in cities throughout the U.S., but most of the recent arrivals in the 1990 Census settled (at least initially) in California. Communities offered different refugee assistance policies and opportunities for refugees, and many who arrived in the late 1980s could take advantage of established social networks. The distinctive challenges encountered by recent Hmong refugees in 1990 might have been due to adverse labor-market conditions in cities in the Central Valley of California and the Twin Cities rather than characteristics of those refugees. The differences we see in the data raise many compelling questions to be addressed in future research.

The data from the 1990 Census on refugees who arrived earlier in the 1980s display patterns we would expect, based on factors discussed earlier: those who arrived in the U.S. earlier (so they had been here longer by 1990) generally had better English language skills and higher levels of education, on average. As a result of these increases in human capital levels, as well as additional work experience and other benefits of additional time in the U.S., they were more likely to be in the labor force; they earned higher hourly wages and worked more hours per year on average; and therefore they had significantly higher median incomes than more recent arrivals. Tables 2 and 4 show that the earliest cohort to arrive in the 1980s (in 1980 and 1981) fell short of the first cohort (who arrived in 1975 to 1979) in almost all respects – labor force

participation, wages, hours worked – but enjoyed better labor market outcomes, on average, than the refugees who arrived later in the decade.

Public Assistance Income in 1990

Data discussed in the last section show that the Hmong refugees who arrived in the late 1980s had particularly little success in the labor market in 1990, with remarkably low labor force participation rates, hourly wages, and hours worked. In light of those observations, it is surprising to see that the average household income of those refugees – \$26,654.77 in Table 7 – was much higher than the average household income of the recent-arrival cohort in 1980 (\$20,642.96). If their wages and hours worked were so much lower, how could their household income be so much higher? Digging deeper into the data, we see that the higher average income in 1990 was mostly due to significantly higher levels of public assistance income, particularly in California. As noted earlier, segmented assimilation studies (such as Portes and Zhou 1993) identified public assistance support for Southeast Asian refugees as a crucial, favorable factor in their reception in the U.S. (Waldinger and Catron 2016).

In the 1980 and 1990 Census, public assistance income includes “Supplemental Security (SSI), Aid to Families with Dependent Children (AFDC), or other public assistance or public welfare payments” from federal, state, or local agencies, but not “private welfare payments.” There is another category in the Census data, labelled “other income,” that includes “all other regular payments, such as government employee retirement, union or private pensions and annuities; unemployment benefits; worker's compensation; Armed Forces allotments; private welfare payments; regular contributions from persons not living in the household; etc.” Many Hmong families also received significant amounts of in-kind assistance, such as housing, training, or medical care, about which the Census Bureau did not ask; so the money income

measures in the data understate (to an unobservable extent) the total resources available to households.

Table 7 shows average household income – total income and several components – in all arrival cohorts and Census years. This table focuses on mean income rather than median income to facilitate comparisons between income components and total income. The table does not show some income components; so the categories shown in the table do not add up to the totals. Hmong households that arrived in 1975-80 had average wage income of \$12,182.96 and public assistance income of \$4,468.68 in 1980. Households that arrived ten years later, in 1987-90, had much lower average wage income (\$6,774.78) as a result of their lower labor force participation rates, hourly wages, and hours worked; but their average public assistance income was much higher (\$16,180.84). The higher average public assistance payments in this recent-arrival cohort in 1990 were not just a result of their low average wage incomes, since households that had arrived earlier (in 1980-81, for example) and had much higher average wage income (\$16,823.19) also received large public assistance payments. The average household income across all arrival cohorts in 1990 was \$34,386.79; but if average public assistance income had been as low in 1990 as it was in 1980, the average household income in 1990 would have been only \$23,673.89 – just a little higher than the average household income in 1980.

The “other income” category in the Census data might include additional assistance to refugee households, such as support from sponsors such as churches or private community groups. Unfortunately, the Census data do not identify the typical sources or nature of “other income” for Hmong Americans. Nevertheless, it is interesting to note that average “other income” per household was significantly larger among the recent-arrival cohorts (1985-86 and

Table 7: Average Hmong Household Income and Components

Arrival cohort	Census year	N	mean household income	s.e. of mean	mean household wage income	s.e. of mean	mean household public assistance income	s.e. of mean	mean household business/farm income	s.e. of mean	mean household "other income"	s.e. of mean
arrived in 1975-80	1980	167	\$20,642.96	\$1,839.83	\$12,183.32	\$1,478.91	\$4,468.68	\$627.99	\$586.88	\$569.15	\$1,166.09	\$445.84
arrived in 1975-79	1990	236	\$38,923.99	\$1,692.89	\$23,243.96	\$1,825.52	\$12,644.22	\$1,086.22	\$678.72	\$310.04	\$1,223.28	\$299.66
arrived in 1980-81	1990	224	\$37,196.36	\$1,828.95	\$16,823.19	\$1,803.61	\$16,927.90	\$1,189.20	\$706.46	\$445.55	\$1,739.34	\$380.19
arrived in 1982-84	1990	53	\$30,831.11	\$3,587.59	\$13,983.44	\$3,703.60	\$14,335.16	\$2,060.40	\$302.04	\$262.90	\$1,864.02	\$698.80
arrived in 1985-86	1990	50	\$29,359.67	\$2,779.02	\$7,882.93	\$2,325.60	\$16,973.96	\$2,092.34	\$29.44	\$29.44	\$3,150.96	\$1,116.00
arrived in 1987-90	1990	163	\$26,654.77	\$1,579.77	\$6,774.78	\$1,235.33	\$16,180.84	\$1,277.22	\$44.52	\$38.83	\$2,832.61	\$514.06
arrived in 1975-79	2000	327	\$67,130.52	\$3,125.44	\$56,814.95	\$2,974.28	\$2,175.33	\$349.44	\$2,885.72	\$764.82	\$1,186.32	\$205.39
arrived in 1980-81	2000	282	\$57,404.41	\$2,232.09	\$47,513.62	\$2,268.08	\$2,599.45	\$486.93	\$553.29	\$242.75	\$1,835.10	\$506.55
arrived in 1982-84	2000	83	\$53,269.15	\$4,221.82	\$41,743.21	\$4,564.18	\$4,204.67	\$1,139.78	\$1,110.33	\$638.82	\$1,979.66	\$672.75
arrived in 1985-86	2000	73	\$49,658.23	\$4,254.53	\$38,360.38	\$4,159.07	\$3,415.02	\$843.83	\$776.50	\$534.05	\$2,981.65	\$967.36
arrived in 1987-90	2000	286	\$52,770.98	\$3,309.01	\$41,015.16	\$3,265.37	\$3,082.69	\$421.59	\$1,263.83	\$579.04	\$1,732.01	\$390.14
arrived in 1991-93	2000	143	\$48,734.64	\$5,165.25	\$37,218.95	\$5,194.12	\$4,145.02	\$608.98	\$63.18	\$295.15	\$1,722.18	\$351.60
arrived in 1994-96	2000	81	\$48,345.23	\$7,844.09	\$36,867.78	\$6,361.70	\$4,962.30	\$953.47	\$60.06	\$60.06	\$767.93	\$282.08
arrived in 1997-2000	2000	26	\$43,968.91	\$5,618.78	\$35,278.20	\$6,204.48	\$4,325.57	\$1,711.68	\$534.62	\$534.62	\$1,303.93	\$691.71

Notes: N is the unweighted number of Hmong households in each category. "s.e. of mean" is the sample standard error of the estimated mean for each measure. Incomes are expressed in 2016 dollars.

Table 8: Hmong Household Total Income and Components in 1990 by State

Arrival cohort	California				Minnesota				Wisconsin				Other states							
	N	mean household wage income	s.e. of mean	mean household public assistance income	N	mean household wage income	s.e. of mean	mean household public assistance income	N	mean household wage income	s.e. of mean	mean household public assistance income	N	mean household wage income	s.e. of mean	mean household public assistance income				
arrived in 1975-79	120	\$13,453.70	\$1,989.12	\$19,852.51	\$1,764.22	28	\$35,869.75	\$6,427.23	\$5,228.62	\$1,413.58	35	\$17,422.17	\$3,451.68	\$10,533.33	\$1,936.34	53	\$42,584.96	\$4,082.61	\$1,641.84	\$492.67
arrived in 1980-81	138	\$11,087.04	\$1,888.21	\$22,157.72	\$1,549.75	41	\$18,496.31	\$3,948.48	\$11,396.33	\$2,594.99	20	\$13,931.38	\$4,366.41	\$9,832.78	\$2,331.05	25	\$48,056.24	\$7,478.33	\$2,807.18	\$1,394.64
arrived in 1982-84	29	\$9,351.90	\$4,508.70	\$4,508.70	\$3,247.07	10	\$17,075.02	\$8,930.17	\$9,891.29	\$3,230.97	6	\$6,179.64	\$6,179.64	\$17,784.21	\$4,552.76	8	\$32,761.20	\$13,673.17	\$4,387.48	\$1,717.04
arrived in 1985-86	24	\$3,611.00	\$2,740.62	\$23,780.77	\$3,024.13	6	\$4,666.24	\$4,666.24	\$7,357.24	\$3,798.50	11	\$6,353.02	\$4,262.04	\$13,531.36	\$3,381.37	9	\$23,289.08	\$7,608.99	\$9,441.24	\$5,006.09
arrived in 1987-90	84	\$4,595.44	\$1,240.59	\$20,467.61	\$2,027.99	28	\$5,711.89	\$3,587.16	\$13,839.95	\$2,240.91	33	\$8,370.10	\$3,761.94	\$12,180.63	\$2,098.20	18	\$15,673.63	\$3,106.90	\$7,150.96	\$2,719.79

Notes: N is the unweighted number of Hmong households in each category. "s.e. of mean" is the sample standard error of the estimated mean for each measure. Incomes are expressed in 2016 dollars.

1987-90) in 1990, suggesting that non-governmental entities stepped up to assist these recent refugees, whose wage incomes were so low.

The sharp increase in public assistance income for Hmong households between 1980 and 1990 deserves further study. In order to put this trend into perspective, we calculated the average share of public assistance income in total income for several comparison groups. Among a large sample of U.S.-born working-age men living in poverty, the share of public assistance payments in total income rose from about 7.1% in 1980 to 8.3% in 1990 – a much smaller increase than for Hmong men. The share fell slightly between 1980 and 1990 in a broad sample of immigrants (many of whom were from Latin American countries). Among non-Hmong immigrants from Southeast Asia – specifically those born in Laos, Cambodia, or Vietnam – the share rose more significantly, almost as much as for Hmong Americans. The data suggest that there was a sharp increase in public assistance support for refugees, particularly from Southeast Asia, between 1980 and 1990.

It is important to note that Hmong household wage income and public assistance income differed significantly between states in 1990. Table 8 shows average household incomes in the three states where most Hmong families lived – California, Minnesota, and Wisconsin – and a fourth category that includes all other states. Across all five arrival cohorts, average wage income per household was lower and average public assistance income was higher in California than in Minnesota and Wisconsin in 1990. In other states, outside the largest Hmong population clusters, average wage incomes per household were significantly higher and average public assistance incomes were lower than in California, Minnesota, and Wisconsin – a pattern that persists across all Census years.⁸ These observations raise important questions: was public assistance support higher in states with large Hmong populations because Hmong households

had low wage incomes, or were Hmong households drawn to states that offered more generous public assistance benefits?

The regression results in Table 9 raise additional questions to explore in future research. The regression model focuses on the determinants of the public assistance income share (that is, public assistance income as a percentage of total income) in a sample of Southeast Asian, working-age, refugee men in 1980, 1990, or 2000 whose total incomes were less than two times the poverty level. As expected, we see that the public assistance share was significantly higher for men whose wage income was lower, who were not in the labor force, who had more children, or who had a work disability. For example, the regression results suggest that the public assistance share was about 18.1% lower for men who were in the labor force; about 4.7% higher for each additional child; and about 5.1% lower for men who had no work disability, holding other factors constant. The regression model includes variables identifying observations in the year 1980 and the year 1990, so these variables compare the public assistance share in those years with observations in the year 2000. The estimated regression coefficients for the years 1980 and 1990 are both positive and statistically significant, indicating that public assistance support for Southeast Asian men was higher in those years than in 2000.

The regression model includes variables marking observations from California, Minnesota, and Wisconsin, comparing public assistance levels in those states with levels in the excluded “all other states” category. The estimated coefficients on all three variables are positive and statistically significant, indicating that public assistance payments for Southeast Asian men were higher in those states than elsewhere, holding other variables constant. The coefficient estimate for California is significantly larger than the coefficients for Minnesota and

Wisconsin, which is consistent with the observation in Table 8 that public assistance payments were higher there.

Table 9: Determinants of the Share of Public Assistance Income in Total Income for Southeast Asian Men

Dependent variable:		
Share of public assistance in total income		
	Coefficient	t
Wage income	-0.000007	-15.77
In the labor force	-0.181	-22.44
number of children	0.047	30.90
California	0.096	17.98
Minnesota	0.052	2.92
Wisconsin	0.064	2.73
Hmong	-0.024	-2.39
Year 1980	0.178	20.70
Year 1990	0.174	29.79
No work disability	-0.051	-6.83
constant	0.196	20.85
unweighted N	15,202	
R ²	0.3819	

Notes: Sample includes working-age (ages 18 to 64) men in 1980, 1990, or 2000 who were born in Laos, Cambodia, or Vietnam – plus Hmong men born in Thailand – who arrived in the U.S. after 1975 and whose total income was less than 200% of the poverty level. Estimates are calculated using sample weights in IPUMS data. “Unweighted N” is the unweighted number of observations included in the regression.

Finally, we note that after controlling for many other factors, the estimated coefficient on the Hmong variable in the regression model is negative, statistically significant, and fairly small. This result implies that public assistance payments as a share of total income for Hmong men were about the same as – perhaps a little smaller than – those for other Southeast Asian men, holding other factors constant. While Hmong refugees relied heavily on public assistance programs in their early years in the U.S., their reliance was typical of other recent Southeast Asian refugees. There is a need for a comprehensive survey of public assistance programs for Hmong refugees in these years, focusing on differences between states and trends over time.

Such a survey would offer valuable insights for subsequent studies of secondary migration and the growth of Hmong communities.

Hmong Households in the 2000 Census

By 2000, the Hmong population had grown to an estimated 204,948 (based on our weighted Census data).⁹ Almost half – 45.7% -- were born in the U.S. For the first time, the adult Hmong population in the 2000 Census included a significant number who were born in the U.S. – 13.7% of U.S.-born Hmong people were at least 18 years old, and 9.2% were employed – so second-generation Hmong adults started to play a significant role in the story of Hmong economic progress. Among the 54.3% of Hmong people in 2000 who were foreign-born, 8.6% reported that they had arrived in the U.S. before 1980; 27.2% arrived between 1980 and 1990; and 18.6% arrived between 1991 and 2000.

The median income of Hmong households was significantly higher in 2000 than in 1990. This economic progress was due to the continued progress of Hmong refugees who had arrived earlier and the superior labor-market success of the most recent arrivals.

Continuing Economic Progress of the First Arrival Cohort

Taking a broad view of Table 2 and Table 4, we once again see clear evidence that refugees who had lived longer in the U.S. achieved higher levels of socioeconomic status, on average. Over time, their average English language skills and education levels improved; they were more likely to find work; and they earned higher hourly wages. If we focus on the data in one Census year – either 1990 or 2000 – we see that more recent arrival cohorts usually had lower levels of human capital (such as English language fluency) and less labor-market success, on average, than those who had arrived earlier. Alternatively, if we follow a particular arrival

cohort over time in the data, we generally see signs of economic progress as they spent more years in the U.S.

The long arc of economic progress for Hmong refugees can be seen most clearly in the data describing those who arrived in the U.S. in 1975-79. By 2000, they had lived in the U.S. for twenty to twenty-five years. 58.5% of Hmong men who had arrived in 1975-79 were in the labor force; only 38.1% were not able to speak English well; and 54.5% reported that they had at least a high school education – all significant improvements over their status in 1980 and 1990. Their median hourly wage in 2000 was \$17.66, and their median annual wage income was \$33,360 (in 2016 dollars). Hmong women in this cohort had also achieved considerable economic progress, with an increase in their labor force participation rate from 14.0% in 1980 to 37.5% in 2000; but human capital levels remained significantly lower among women than men in 2000, with 68.4% reporting that they did not speak English well and 71.1% saying they had no education. Among Hmong women in this cohort who worked, the median hourly wage was \$13.18 – much higher than the medians of \$8.30 in 1980 and \$11.04 in 1990. They worked an average of 1803 hours per year, and their median wage income was \$22,240 per year.

Most important, inflation-adjusted median household income in this early-arrival cohort in 2000 was much higher than before, at about \$64,000 per year. This was due in large part to the improvements in labor force participation, hourly wages, and hours worked in this cohort, which raised the wage incomes of individual workers. Household income could not have increased so much without an essential transformation in Hmong American domestic culture: the rise of two-earner households. In 2000, there were an average of 1.8 employed adults in Hmong households that had arrived in the U.S. in 1975-79 – much higher than in more recent cohorts or in this same cohort in earlier years. (See Table 10.) When this cohort was first sampled, in

1980, there was less than one – 0.66 – employed worker per household, since it was so difficult for these recent refugees to find jobs. Ten years later, in 1990, the average number of workers per household in this cohort had climbed to 1. (We noted earlier that the recent-arrival cohort in 1990 faced particularly steep labor-market challenges, and in Table 10 we see that the average number of workers per household there was only 0.33.) The average number of working adults per household in 2000 was significantly higher than in 1990 across cohorts, reflecting a broad improvement in labor-market prospects for Hmong Americans in their long-established refugee communities.

Table 10: Number of Employed Adults per Hmong Household by Arrival Cohort and Census Year

Arrival cohort	year	N (number of households)	average number of employed adults per household	s.e. of mean
arrived in 1975-80	1980	167	0.66	0.07
arrived in 1975-79	1990	236	1.00	0.07
arrived in 1980-81	1990	224	0.79	0.08
arrived in 1982-84	1990	53	0.57	0.14
arrived in 1985-86	1990	50	0.56	0.12
arrived in 1987-90	1990	163	0.33	0.05
arrived in 1975-79	2000	327	1.83	0.07
arrived in 1980-81	2000	282	1.55	0.07
arrived in 1982-84	2000	83	1.34	0.13
arrived in 1985-86	2000	73	1.44	0.15
arrived in 1987-90	2000	286	1.33	0.07
arrived in 1991-93	2000	143	1.12	0.09
arrived in 1994-96	2000	81	1.37	0.15
arrived in 1997-2000	2000	26	1.42	0.24

Notes: N is the unweighted number of Hmong households in each category. “s.e. of mean” is the sample standard error of the estimated mean for each measure.

Recent Arrivals in the 2000 Census

The most recent arrival cohort in the 2000 Census sample – those who arrived in the U.S. in 1997-2000 – is small, so the specter of sampling error introduces uncertainty into inferences from the data. Keeping this in mind, we see evidence in Tables 2 and 4 of remarkable labor-market success in this cohort. Instead of the low average levels of human capital, labor force

participation rates, hourly wages, and hours worked that we would expect among recent arrivals, we observe high levels for both men and women in this cohort. 63.9% of these men were in the labor force, compared with only 23.1% in the recent-arrival cohort in 1990. They had relatively high levels of English language fluency and education; those who worked earned relatively high hourly wages, with a median of \$14.26 per hour; and they worked an average of 1900 hours per year. Did their success reflect distinctive shared experiences as a cohort, or was it due to the presence of a few remarkable individuals in this subsample? In future research, it will be important to examine more closely the individual stories behind the sample means in our data.

Hmong men who arrived earlier in the 1990s – between 1991 and 1996 – had lower average levels of human capital than men who had arrived in the 1970s and 1980s, as we would expect in recent-arrival cohorts. About 60% of these men did not speak English well – a little better than the percentage among men who arrived in the 1980s – but about 52% of these men had no education, and only about 37% had at least a high school education, compared with about 45% on both measures in the 1980s. Despite their low average human capital levels, men who arrived in the 1990s had more success in the labor market in 2000 than men who arrived in the previous decade had achieved in 1990. Their labor force participation rate was over 50%, their median wage was about \$13 per hour, and they worked an average of more than 1600 hours per year, compared with about 30%, \$11.50 per hour and less than 1400 hours per year among men who arrived in the 1980s.

Hmong women who arrived in the 1990s had higher average levels of English fluency and education than women who arrived in the previous decade. As a result, their labor force participation rate was over 30% in 2000, compared with about 10% in 1990, and their median hourly wage and average annual hours of work were higher. The data show that the lives of

Hmong refugee women were transformed even more dramatically over time than those of Hmong men.

Second-Generation Hmong Americans (and Generation 1.5) in 2000

In 2000, second-generation Hmong Americans whose parents arrived in 1975 or later could have been as old as 25 years. Their education and socialization in the U.S. were drastically different from their parents' backgrounds, creating both profound challenges and wider opportunities. By 2000, many were already working and contributing to their families' incomes. They were joined in the labor force by members of Generation 1.5, which includes refugees who arrived as children, and therefore benefited from some years of formal education in the U.S. In this study, the definition of Generation 1.5 includes foreign-born refugees who were twelve years old or younger when they arrived in the U.S.

Table 11 summarizes data on Hmong adults (at least 18 years old) in 2000 in the second generation and Generation 1.5. Since second-generation Hmong adults were between 18 and 25 years of age in 2000, the cohort in Table 11 is very young, with an average age of only 19.5 years. These second-generation young adults look very different from the earlier refugee cohorts: virtually all of them speak English well, and more than 75% had already completed high school. In 2000, about 64% were in the labor force, and the data indicate that 28% were still in high school and 36% were in college. These shares add up to more than 100%, since some people were working while attending school. Second-generation Hmong adults who were working (described in the fifth and sixth rows of data in Table 11) only worked about half-time (about 1000 hours per year) on average, and their median hourly wage and median annual wage income were fairly low, as we would expect when many are still in transition from school to work. It is interesting to note that second-generation Hmong women in 2000 were more likely

Table 11: Second-Generation and Generation-1.5 Hmong Americans in 2000

Second-generation Hmong adults															
	N	In the labor force	s.e. of mean	Employed	s.e. of mean	Low English	s.e. of mean	No Education	s.e. of mean	At least HS education	s.e. of mean	median real household income	s.e. of mean	mean age	s.e. of mean
Male	231	60.3%	3.2%	51.1%	3.3%	1.1%	0.6%	0.9%	0.4%	75.9%	2.7%	\$68,110	\$3,189	19.5	0.10
Female	192	68.2%	3.4%	56.8%	3.6%	0.7%	0.5%	1.0%	0.5%	77.4%	3.0%	\$64,774	\$3,731	19.3	0.11
Generation 1.5 Hmong adults															
	N	In the labor force	s.e. of mean	Employed	s.e. of mean	Low English	s.e. of mean	No Education	s.e. of mean	At least HS education	s.e. of mean	median real household income	s.e. of mean	mean age	s.e. of mean
Male	461	74.8%	2.1%	68.9%	2.2%	6.7%	1.1%	0.7%	0.4%	88.1%	1.6%	\$64,010	\$2,670	24.3	0.21
Female	425	66.8%	2.3%	63.2%	2.4%	5.8%	1.1%	2.1%	0.7%	87.4%	1.7%	\$66,734	\$2,657	24.9	0.36
Working Second-generation Hmong adults															
	N	median real hourly wage	s.e. of mean	mean annual hours worked	s.e. of mean	median real annual wage income	s.e. of mean	SEI	s.e. of mean	Low English	s.e. of mean	No education	s.e. of mean	At least HS education	s.e. of mean
Male	159	\$11.12	\$0.87	1035.5	67.5	\$8,340	\$922	31.0	1.5	0.62%	0.63%	1.32%	0.63%	79.84%	3.19%
Female	144	\$9.93	\$0.79	919.6	53.8	\$7,228	\$690	40.4	1.4	1.02%	0.69%	0.00%	0.00%	79.68%	3.40%
Working Generation 1.5 Hmong adults															
	N	median real hourly wage	s.e. of mean	mean annual hours worked	s.e. of mean	median real annual wage income	s.e. of mean	SEI	s.e. of mean	Low English	s.e. of mean	No education	s.e. of mean	At least HS education	s.e. of mean
Male	358	\$13.49	\$0.91	1671.5	41.0	\$25,020	\$1,609	37.1	1.2	4.8%	1.0%	0.1%	0.3%	92.5%	1.5%
Female	312	\$14.97	\$0.84	1499.2	40.9	\$22,240	\$1,079	46.5	1.2	3.2%	1.0%	0.8%	0.6%	92.6%	1.6%

Notes: Estimates are calculated using sample weights in IPUMS data. N is the unweighted number of observations in each category; weighted estimates of population frequencies would be about twenty times as high. "s.e. of mean" is the sample standard error of the estimated mean for each measure. Real household wage and income are expressed in 2016 dollars.

than men to be in the labor force; more likely to be attending high school or college; and more likely to have higher-skilled jobs (according to the SEI measure) – although some of these differences between women and men are not statistically significant.

Generation-1.5 adults were a little older than second-generation adults in 2000, on average, so they were more likely to be in the labor force, and they worked more hours per year and earned higher median hourly wages. In contrast with second-generation Hmong adults, more than 5% reported that they did not speak English well in 2000. Although they were still relatively young, these Generation-1.5 adults achieved median hourly wages and annual wage incomes comparable to those of older Hmong refugees who had arrived as adults and lived for many years in the U.S. Since they had spent part of their childhood in the U.S., these Generation-1.5 adults had a head start (relative to earlier refugee cohorts) when they entered the labor force. Their contributions explain a significant share of the higher median incomes in Hmong households in 2000.

The story in this study ends with the 2000 Census, but other studies have explored detailed data on Hmong adults from Generation 1.5 and Generation 2 in years after 2000, when their economic progress followed different paths from that of the first generation (Xiong 2014, Carroll 2021).

Discussion

This study uses large U.S. Census microdata samples to document and start to explain Hmong households' economic progress in the twenty-five years after 1975. The data confirm several important insights and raise many compelling questions for future research. Hmong refugees arrived in the U.S. with low average levels of formal education and English language fluency, so it was difficult for many to enter the labor force. Their first jobs required low skill

levels and paid low hourly wages, on average; and many only worked part-time. As a result, many Hmong households earned little or no wage income in 1980 and 1990, and many relied heavily on public assistance income. Over time, as they gradually gained work experience, learned more English, and overcame other challenges in this strange new land, they achieved considerable improvements in living standards. Hmong refugees who had lived longer in the U.S. were more likely to find jobs and worked more hours per year at higher hourly wages. Since more family members were working, and they were earning higher wage incomes, on average, the median annual income of Hmong households rose sharply. Around the year 2000, just twenty-five years after the first wave of Hmong refugees arrived in the U.S., their median household income had risen to parity with the median income of households in the broader U.S. population.

This statistical description of the economic progress of Hmong households in their first twenty-five years in the U.S. provides valuable historical perspective for the story of the Hmong diaspora; but of course it is only a small step toward a satisfactory understanding of their economic progress. This study points to many questions that deserve further attention from Hmong Studies scholars:

- How did the backgrounds and experiences of Hmong arrival cohorts differ, and how did those differences shape their adjustment in the U.S.? For example, the first cohort to arrive in the U.S. included many younger people who had more directly supported the U.S. government in its Secret War in Laos, while Hmong elders tended to arrive later, after spending many years in Thai resettlement camps (Vang 2010 and Borja 2014). The individuals in each arrival cohort brought a distinctive mix of values and experiences, and the paths they followed after arrival surely reflected those differences. In particular, time spent

in Thai resettlement camps would be a significant factor to examine. Refugee accounts and a closer look at the history of the Hmong diaspora can tell us more about differences between cohorts, and those insights will lead to a better understanding of the statistical patterns described in this study.

- How did the growth of robust Hmong communities affect the labor-market success and economic progress of Hmong refugees who arrived later? There were almost no Hmong people in the U.S. when the first cohort arrived after 1975, and they were dispersed in small clusters in cities throughout the U.S. Later arrivals joined relatives and well-established social networks that facilitated adjustment by offering the collective wisdom of earlier arrivals, providing leads to better jobs, and ensuring the essential support of traditional cultural practices. The present study has mostly focused on individual factors that help to explain economic progress, such as improvements in English language fluency and accumulation of work experience. It will be interesting to examine the role of community-level factors as well in future research.
- How did secondary migration help to shape the economic progress of Hmong families? In their first twenty-five years in the U.S., there was a remarkable amount of resettlement, leading to the growth of large Hmong communities in Minnesota, California, and Wisconsin, as well as smaller but cohesive clusters in other states (Xiong (2013), 74). Did Hmong families usually move to find better employment opportunities, and achieve higher wages and incomes as a result? Or were they motivated more by a desire to rejoin relatives, even though their secondary migration destinations might not offer better economic opportunities? We have rich data on the migration of a large sample of Hmong individuals and families, so it will be possible to try to answer these questions in the future.

- What kinds of public and private assistance payments did Hmong families receive, and how did those payments affect their living standards and economic decisions? This is an inherently difficult question to answer, since public assistance support varied over time (particularly after the passage of the federal Personal Responsibility and Work Opportunity Reconciliation Act in 1996) and between states and local communities. But those variations might allow us to identify the effects of different public assistance programs on labor market outcomes and secondary migration decisions. Research on this topic might yield important insights regarding the design of refugee assistance programs more generally.
- Our data specify the occupations of all working adults in our large sample, and previous studies have described the essential characteristics (such as skill levels) of various occupations (Schaffer and Westenberg 2019). What mix of occupations did Hmong refugees enter upon arrival in the U.S., and how did the mix of occupations change over time as they gained more work experience? How quickly did Hmong Americans move to occupations that required higher skill levels?

Economic Progress of Hmong Americans: The First Twenty-Five Years by Wayne Carroll, Hmong Studies Journal, Volume 23(2021): 1-49.

Table 12: SEI (Duncan Socioeconomic Index) Codes for Occupations in the IPUMS Data

Occupation	SEI code	Occupation	SEI code	Occupation	SEI code
N/A (blank)	0	Job setters, metal	28	Actors and actresses	60
Porters	4	Meat cutters, except slaughter and packing house	29	Librarians	60
Lumbermen, raftsmen, and woodchoppers	4	Entertainers (nec)	31	Ticket, station, and express agents	60
Sawyers	5	Millwrights	31	Stenographers, typists, and secretaries	61
Weavers, textile	6	Housekeepers and stewards, except private household	31	Technicians (nec)	62
Farm laborers, wage workers	6	Managers and superintendants, building	32	Real estate agents and brokers	62
Private household workers (nec)	7	Asbestos and insulation workers	32	Inspectors, public administration	63
Hucksters and peddlers	8	Deliverymen and routemen	32	Social and welfare workers, except group	64
Laborers (nec)	8	Buyers and shippers, farm products	33	Sports instructors and officials	64
Janitors and sextons	9	Bookbinders	33	Photoengravers and lithographers	64
Paperhangers	10	Machinists	33	Professional, technical and kindred workers (nec)	65
Mine operatives and laborers	10	Tinsmiths, coppersmiths, and sheet metal workers	33	Officials and administrators (nec), public administration	66
Taxicab drivers and chauffeurs	10	Plumbers and pipe fitters	34	Advertising agents and salesmen	66
Charwomen and cleaners	10	Structural metal workers	34	Insurance agents and brokers	66
Fishermen and oystermen	10	Sheriffs and bailiffs	34	Artists and art teachers	67
Blasters and powdermen	11	Demonstrators	35	Draftsmen	67
Service workers, except private household (nec)	11	Farm managers	36	Managers, officials, and proprietors (nec)	68
Gardeners, except farm and groundskeepers	11	Jewelers, watchmakers, goldsmiths, and silversmiths	36	Teachers (n.e.c.)	72
Molders, metal	12	Office machine-mechanics and repairmen	36	Buyers and dept heads, store	72
Shoemakers and repairers, except factory	12	Radio and television-mechanics and repairmen	36	Designers	73
Attendants, hospital and other institution	13	Firemen, fire protection	37	Stock and bond salesmen	73
Farmers (owners and tenants)	14	Attendants, physicians and dentists office	38	Chiropractors	75
Roofers and slaters	15	Dietitians and nutritionists	39	Authors	76
Laundry and dry cleaning Operatives	15	Collectors, bill and account	39	Purchasing agents and buyers (nec)	77
Oilers and greaser, except auto	15	Boilermakers	39	Accountants and auditors	78
Truck and tractor drivers	15	Furriers	39	Veterinarians	78
Cooks, except private household	15	Opticians and lens grinders and polishers	39	Airplane pilots and navigators	79
Painters, construction and maintenance	16	Policemen and detectives	39	Chemists	79
Sailors and deck hands	16	Dispatchers and starters, vehicle	40	Optometrists	79
Waiters and waitresses	16	Inspectors (nec)	41	Agricultural scientists	80
Stationary firemen	17	Photographic process workers	42	Biological scientists	80
Barbers, beauticians, and manicurists	17	Motion picture projectionists	43	Geologists and geophysicists	80
Counter and fountain workers	17	Attendants and assistants, library	44	Mathematicians	80
Watchmen (crossing) and bridge tenders	17	Cashiers	44	Physicists	80
Members of the armed services	18	Clerical and kindred workers (n.e.c.)	44	Misc. natural scientists	80
Painters, except construction or maintenance	18	Electricians	44	Economists	81
Operative and kindred workers (nec)	18	Pattern and model makers, except paper	44	Psychologists	81
Guards, watchmen, and doorkeepers	18	Dancers and dancing teachers	45	Statisticians and actuaries	81
Carpenters	19	Office machine operators	45	Misc social scientists	81
Cement and concrete finishers	19	Telephone operators	45	Editors and reporters	82
Automobile-mechanics and repairmen	19	Nurses, professional	46	Mechanical-Engineers	82
Attendants, auto service and parking	19	Salesmen and sales clerks (nec)	47	Metallurgical, metallurgists-Engineers	82
Housekeepers, private household	19	Engravers, except photoengravers	47	Pharmacists	82
Attendants, recreation and amusement	19	Stationary engineers	47	Agricultural sciences-Professors and instructors	84
Bartenders	19	Foresters and conservationists	48	Biological sciences-Professors and instructors	84
Farm foremen	20	Surveyors	48	Mathematics-Professors and instructors	84
Cranemen, derrickmen, and hoistmen	21	Medical and dental-technicians	48	Medical Sciences-Professors and instructors	84
Shipping and receiving clerks	22	Airplane-mechanics and repairmen	48	Non-scientific subjects-Professors and instructors	84
Bakers	22	Foremen (nec)	49	Subject not specified-Professors and instructors	84
Heat treaters, annealers, temperers	22	Linemen and servicemen, telegraph, telephone, and p	49	Civil-Engineers	84
Rollers and roll hands, metal	22	Pressmen and plate printers, printing	49	Electrical-Engineers	84
Upholsterers	22	Photographers	50	Personnel and labor relations workers	84
Filers, grinders, and polishers, metal	22	Tool makers, and die makers and setters	50	Mining-Engineers	85
Practical nurses	22	Power station operators	50	Industrial-Engineers	86
Cabinetmakers	23	Bookkeepers	51	Aeronautical-Engineers	87
Forgemen and hammermen	23	Clergymen	52	Engineers (nec)	87
Tailors and tailoresses	23	Musicians and music teachers	52	Architects	90
Dressmakers and seamstresses, except factory	23	Recreation and group workers	52	Chemical-Engineers	90
Excavating, grading, and road machinery operators	24	Bank tellers	52	Physicians and surgeons	92
Bus drivers	24	Compositors and typesetters	52	Lawyers and judges	93
Welders and flame cutters	24	Radio operators	53	Dentists	96
Plasterers	25	Testing-technicians	53		
Ushers, recreation and amusement	25	Mail carriers	53		
Glaziers	26	Officers, pilots, pursers and engineers, ship	54		
Attendants, professional and personal service (nec)	26	Religious workers	56		
Newsboys	27	Therapists and healers (nec)	58		
Brickmasons,stonemasons, and tile setters	27	Conductors, railroad	58		
Mechanics and repairmen (nec)	27	Locomotive engineers	58		
Messengers and office boys	28	Funeral directors and embalmers	59		

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¹ As Vang (2004) noted, Hmong households were larger, on average; so parity in household incomes implies that per capita incomes of Hmong Americans were smaller than per capita incomes in the broader population. Nevertheless, the increase in the median income of Hmong households through 2000 represents a significant achievement.

² Since 2001, the Census Bureau has collected this detailed information from a sample of the population each year in the American Community Survey (ACS) instead of the decennial census.

³ The estimates in Figure 2 combine data from Dunnigan et al. (1996) and the Minnesota Department of Health (at <https://www.health.state.mn.us/communities/rih/stats/refcum.pdf>).

⁴ A description of the Duncan Socioeconomic Index (SEI) (and cautionary warnings about its interpretation) can be found at ipums.org: https://usa.ipums.org/usa-action/variables/SEI#description_section.

⁵ The 1980 figure for women is equal to the share who were working (11.05%) times the median real wage income of working women (\$10,548.75), or \$1,165.64. Similarly, the 1980 figure for men is 41.85% times \$18,347.55, or \$7,678.45; so the ratio in 1980 was \$1,165.64/\$7,678.45 = 15.18%. The 1990 figures are 18.14% times \$20,240 = \$3,671.54 for women and 43.39% times \$31,280 = \$13,572.39 for men; so the ratio in 1990 was \$3,671.54/\$13,572.39 = 27.05%.

⁶ The first regression is a linear probability model, so the dependent variable can be interpreted as the probability that an individual is in the labor force. In the second and third models, the dependent variable is the log of annual hours worked and the log hourly wage, so the estimated percentage change in hours worked or the hourly wage is approximately equal to the regression coefficient.

⁷ Hmong populations of consistent PUMAs were included in the regression models in the form $\ln(\text{population} + 1)$ to compress the wide range of the values and allow for PUMAs with a Hmong population of zero.

⁸ Vang (2004) notes that “I have observed that those Hmong refugees who resettled into areas with fewer Hmong families were more likely to be introduced to job opportunities after their refugee cash assistance ended than those resettled in areas with a large Hmong population.”

⁹ Pfeifer, *et al.* (2012) cite the Census figure of 186,310 for the U.S. Hmong population in 2000. The Census Bureau based this estimate on the number of people who identified their race as Hmong in 2000. In our estimate, we also include people who identified their ancestry or language spoken at home as Hmong.