

Differences in the Onset of Formal Retirement Saving between Native and Foreign Born Individuals: An Event History Analysis

Saving during the peak income years is of increasing importance for funding retirement consumption. Due to high start-up costs involved in cross-national immigration as well as limiting factors such as language, immigrant populations may be delaying the start of formal retirement saving more so than native born individuals. Using event history techniques, this study indicates that immigrants take longer to begin saving for retirement after the start of employment than their native born counterparts. Changes in life cycle stage, home ownership, and attaining U.S. citizenship are significant predictors of the savings timeline. These results may indicate a need for culturally appropriate financial education for foreign born individuals, as well as further examination into the financial acculturation process of immigrant households.

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Introduction

Household financial security over the long run often requires that families accumulate savings. Savings can be a safety net to protect against income instability and is essential for many financial goals such as funding retirement and paying for education. Retirement savings is essential for households who do hope to slow down or even stop working during their older years. While some individuals begin saving for retirement at a very early stage in life, others begin saving much later. Since saving for retirement is integral in personal financial management, it is important to examine the time at which one begins an individual saving process.

One characteristic that may provide some insight into when an individual begins to save for retirement is immigration. The frequent language barrier and the lower use of financial and social services by immigrant populations may act to delay when a foreign born individual will begin formal retirement savings. In addition, other factors such as the “start-up” costs of immigrating to the U.S., and the possible use of familial support structures rather than personal savings through retirement may act to delay the beginning of retirement savings of foreign born individuals. However relying on a resource such as familial support may not be ideal since it is possible that this support may not be reliable or long-term. Therefore building some financial assets is still a prudent strategy for all households.

Although unable to assess the individual factors that may cause a delay in the start of saving for foreign born individuals, this paper seeks to determine whether such a delay exists, and if so, the extent of the delay. In other words, is the time from employment until the start of participation in formal retirement savings programs the same for immigrants as it is for native born workers? Using data from the 2001 Survey of Income and Program Participation, event history analysis is used to examine possible differences in the onset of retirement saving between otherwise similar native born and foreign born individuals after beginning employment. With this study serving as a first step, this determination of difference can then be utilized in further studies seeking to more fully understand the dynamic interplay between saving and immigration.

Background

There has been ample literature on saving behavior and the variables that determine who is likely to save, but little on the actual timing of the beginning of formal retirement saving. Although far from exhaustive, the next section will review the relevant previous literature on the savings behavior of both native and foreign born individuals.

Savings

Saving is seen as motivated by the life cycle hypothesis (Ando & Modigliani, 1963) in which individuals estimate their future income over the life course, base consumption on that estimation, and consume relatively steadily over the life span. As income generally increases with age until retirement, this typically results in borrowing while young, saving during later years when income is at its peak, and spending this savings during retirement. In this way, individuals smooth their consumption path over the life course such as changes in household composition and employment.

However, some research has indicated that individuals do not always follow this pattern of borrowing when young, saving during peak income years and spending down during retirement (Wärneryd, 1999). This may indicate that the economic life cycle hypothesis may not fully explain the reasoning behind an individual's saving behavior. In addition to consideration of life cycle hypothesis, other factors such as immigration and household demographic indicators may add to the understanding of individual saving behavior.

Immigration

There has been limited research on the specific savings patterns of immigrant populations as compared to those of native born individuals, and paucity that focus on retirement savings specifically. In addition to the limited nature of the past work, the conclusions drawn by previous researchers have sometimes proven contradictory. In an early study of immigrant savings patterns, Galor & Stark (1990) indicate that those more likely to emigrate have higher levels of savings. They conclude that because immigrant populations are more likely to emigrate than their native born counterparts, savings among immigrants should be higher, possibly indicating an earlier start to saving. A later study using U.S. Census and Population Housing data supports this finding (Carroll, Rhee, & Rhee, 1999). Carroll et al. (1999), measuring percent in change in net worth over a decade, indicate that although the savings rates of immigrant populations varies significantly depending on their country of origin, the savings rates of all immigrants groups are higher than that of the U.S. native born population.

In addition, Dustman (1997) examines immigrant savings within the context of the labor markets of the home and immigrated-to countries. Dustman indicates that if the labor markets in the two countries are correlated, immigrant savings rates should be higher reflecting a higher level of risk in the new country. Conversely, if the two markets are not related, savings rates of immigrants will reflect their ability to spread employment risk between the two countries, and therefore be lower.

Several other studies have also indicated that the saving rates of immigrant populations are lower than those of their native born counterparts. In a study using native and foreign born populations in Canada, Carroll, Rhee, & Rhee (1994) find that recent immigrants had lower savings rates than those of native born Canadians when savings is measured as income less expenses. In examining the wealth accumulation of foreign and native born households in Canada, Shamsuddin & DeVoretz, (1998) find that immigrant households accumulate wealth at a lower rate than native born Canadians, and in a similar study in the U.S., Amuedo-Dorantes (2002) finds that both the wealth accumulation and savings of immigrants are lower than their native born counterparts.

Although these studies do not indicate the time at which immigrants begin saving, the conclusion that foreign born individuals save less than native born individuals may indicate that the point at which saving begins is later for those who immigrate into this country.

Income

Income has been found to have significant effects on individual saving behavior, with higher income individuals saving a greater percentage of their income (Avery & Kennickell, 1991), and being more likely to engage in saving behavior in general (Spencer & Fan, 2002). Dynan, et al. (2004) found that both savings rates and the marginal propensity to save are higher for higher lifetime-income households. Because the income of foreign born populations may differ from to native born households, income is controlled for in the analysis in order to isolate the effects of immigration on the onset of saving for retirement.

As an indication of the potential to generate income, occupation may influence the onset of saving. Those in more stable occupations may feel more secure in their ability to continue employment, and therefore begin saving at a later age than those in less stable occupations. Additionally, access to an employee sponsored retirement savings plan (such as a 401K) can influence an individual's onset of saving.

Household composition: Marriage and the inclusion of children in the household

The makeup of the household has been thought to have some impact on an individual's level of saving, particularly the presence of children and additional numbers of household members. Although Dynan, et al. (2004) found that there were no significant differences in the savings rates of individuals with and without children, Bosworth, et al. (1991), found that married households without children saved 1.4 (using Survey of Consumer Finance data) and 8.2 (using Consumer Expenditure Survey data) percent less than married households with children, and single households with children saved between 15.9 (using Survey of Consumer Finance data) and 26.3 (using Consumer Expenditure Survey data) percent less than single households without children. Overall, single parent families tend to have the lowest saving rate (Bosworth, et al., 1991; Spencer & Fan, 2002). The studies using SCF data would have measured defined contribution plan participation while studies using the CEX measured savings as income less expenses.

Although previous work has found that households with children tend to save less than those without children, children are thought of as increasing the motive to save to provide inheritance (Dynan, et al., 2004). Because of this perceived increase in saving motivation and the costs associated with having children, the immigration status of individuals with or without children or a spouse may influence the onset of saving behavior.

Home ownership

Households that own their home tend to save more than households that do not own their home (Bosworth, et al., 1991). Spencer & Fan (2001) found that even when holding income constant, home owners who owned their homes outright (no mortgage) were more likely to have savings than either home owners with mortgages or renters, but that home owners with a mortgage were still more likely than renters to have at least some savings, but some non-mortgage debt as well. Those individuals with the financial experience and resources necessary to undergo the home purchasing process may be further along in their ability to access and navigate financial resource and therefore be more likely to save than non-owning individuals. However, the additional costs associated with the purchase of a home may act to decrease the ability of an individual to begin saving, thereby increasing the time at which they begin to save.

Citizenship

An additional factor that may influence an immigrant's saving behavior is the intent to stay in the U.S. or return to their home country at some later date, possibly for retirement. Rather than engage in formal retirement saving using a 401k, Keogh, or IRA plan, immigrants planning to return to their home country may be sending money to family in the home country, or engaging in some other form of saving there. Although these motives are difficult to assess, the attainment of U.S. citizenship status may be a proxy for the intent to stay of the individual. It seems reasonable to assume that individuals intending to stay would be more likely to obtain U.S. citizenship than those intending to return to the home country at some later point. Also supporting this idea, individuals choosing to obtain U.S. citizenship are frequently required to surrender citizenship in the home country, sometimes resulting in the loss of financial assets domiciled in that home country.

Other demographic indicators: Race/ethnic identity, education, and age

The effects of race/ethnic identity on saving behavior are debated. Spencer & Fan (2002) find that Black and Hispanic households are less likely than White households to have savings holding income and other demographic variables constant, but several other studies (Avery & Kennickell, 1991; Gittleman & Wolff, 2004) find that ethnic identity is not significant in predicting saving behavior when other factors, particularly income, are controlled for. Due to divergent findings, no implications for the effects of ethnic identity on intent to save can be drawn from this previous research.

Educational attainment has been shown to have significant effects on saving behavior. Individuals with higher levels of educational attainment have higher savings levels (Avery & Kennickell, 1991) and are more likely to have savings than debt or debt and savings (Spencer & Fan, 2002). Dynan, et al. (2004) found that savings rate differed between 18 and 26 percent for households where the respondent had less than a high school education and those where the respondent was a college graduate. This previous research would indicate that educational attainment may affect not only an individual's saving behavior, but the onset of saving. In addition, those with higher levels of educational attainment may have more exposure to information both about the benefits and options for saving, thus affecting the start of such saving.

Consistent with life-cycle/permanent income hypothesis, saving rates tend to increase with age until the retirement years (Attanasio, 1993; Avery & Kennickell, 1991; Bosworth, et al., 1991). In addition, individuals who save tend to be older than those who have debt or have both savings and debt (Spencer & Fan, 2002). This research suggests that age may also have a significant effect on the onset of saving behavior.

Hypotheses

Immigration should impact an individual's ability and willingness to begin saving for retirement. Costs associated with immigration, such as the financial cost of the relocation itself, as well as those associated with setting up the new households, should act to delay the time at which an immigrant begins saving for long term goals such as retirement. Social factors may also act to delay the start of saving for retirement, either in limited use of or access to financial saving services. Finally, immigrant households may be using more informal means of preparing the future such as building social capital with family members. Therefore, it is expected that foreign born individuals will take longer to begin saving for retirement than otherwise similar native born individuals. In addition, the act of becoming a U.S. citizen should indicate an additional intention to stay in the country long-term, and therefore increase the likelihood of earlier retirement saving to fund retirement in the U.S. Some differences may be related to other factors including income, marital status, education, household composition, occupation, and ethnic identity and have been controlled for in the analysis. Finally, we expect a change in household composition to impact the timeline for savings after beginning employment. Specifically, individuals who get married during the period between employment and the beginning of formal retirement savings are likely to take longer to begin saving given an adjustment in their consumption patterns. Additionally, those who have a child during this timeline are likely to have tighter budgets at that point and thus have longer timelines to begin saving.

Data and Methods

Data

This paper uses data from the 2001 Survey of Income and Program Participation (U.S. Census Bureau, Demographics Survey Division, Survey of Income and Program Participation branch). The SIPP gathers panel data on a multi-stage stratified sample of the non-institutionalized U.S. population and identifies immigrants. The 2001 panel consisted of quarterly interviews over a 3-year span. In addition to the "core" data on income and household demographics, data is collected on "topical" areas each quarter (wave) of the survey. For this analysis, topical modules 1, 2, and 3 are used in addition to the core data set.

Individuals with complete responses for the analysis variables are used in this analysis. Final sample size was 14,682 individuals, including 1,737 immigrants and 12,945 native born individuals. Of these 14,682, 39.5% (5,799) indicated saving in at least one of the three retirement savings options.

Variables

Dependent Variable. The dependent variable used in this analysis is the time between which an individual began working in the labor market and the time at which they began saving in either a 401k or thrift account, Keogh, or Individual Retirement Account. One assumption of life cycle theory is that households have some certainty about future income flows. This generally is not likely to be the case prior to employment and as such the start point of employment this is the prudent starting place for our timeline. To determine this time period, two questions from the SIPP were used. The questions are as follows (U.S. Census Bureau, 2004):

"For how many years have you contributed to your (IRA/Keogh/401K) accounts?"

"How old were you when you FIRST worked 6 straight months at some job or business?"

These responses to these two questions, in addition to the respondent's year of birth, allow for the construction of a timeline for the individual reflecting the point at which saving began.

Independent Variables. The main independent variable used in this analysis is whether an individual was born in the United States or not. The combined answers to these questions allow for the determination of foreign or native born status. This variable is determined by the individual's response to the SIPP questions that ask (U.S. Census Bureau, 2004):

"Are you a U.S. citizen?"

“Are you a citizen through naturalization or were you born abroad of American parents?”

In addition to the main variable, other demographic variables were considered in the model. These variables are suggested through previous research on savings behavior as well as the life cycle hypothesis. Income, (measured as one of four income categories based on quartiles of the sample), citizenship (measured as U.S. citizen or not), ethnic identity (measured as dummy variables for White, Black, Asian, Latino, American Indian, or not), education (measured as dummy variables for <high school, high school graduate, college graduate, post graduate, or not), occupation (measured as dummy variables for one of five occupation categories, or not) and age at time of first job. Although unable to determine whether these variables are measuring the circumstances of the individual at the time of saving beginning (due to data limitations), they are included to act as current proxies to the past situation.

In order to assess whether the effects of changes in household composition and the purchase of a home impact the time at which an individual begins to save for retirement, data available for measuring home ownership and household composition is captured for the timeline between beginning employment and establishing savings. A timeline is constructed, and variables measuring whether an individual got married, had children, or purchased a home during the time between their first job and the beginning of saving are included to more fully isolate the effects of immigration on the duration between the beginning of employment and the onset of formal retirement savings.

4.3 Statistical Methods

In order to analyze differences in the actual duration of time between the beginning of work and the beginning of saving for native and foreign born individuals, event history analysis is used. This type of analysis models the probability, or hazard rate, that the event that has not occurred at time t will occur between time t and $t + \Delta t$. The hazard rate is defined as

$$\lambda(t) = \lim_{\Delta t \rightarrow 0} \frac{P(t \leq T < t + \Delta t | t \leq T)}{\Delta t},$$

and in this analysis reflects the probability that an individual will begin saving. The analysis is conducted using the proportional hazard model proposed as by Cox (1972) to estimate β parameters and hazard ratios reflecting the effects of the independent variables.

Results and Discussion

Sample Profile

Table 1 provides the descriptive profile of the sample with breakdown by native born status. We will discuss differences in static measures such as financial resources, race/ethnic identity, education, gender, labor force participation, and age when one began saving. Three variables measured a change in status of household composition and home ownership, indicating that individuals had a change in status. These results are also reported in Table 1.

The native and foreign born samples are statistically different in several ways. Foreign born individuals are more frequently in the lowest quartile of the income distribution than native born individuals, and conversely, there are more native born than foreign born individuals in the highest two quartiles. The native born sample is more frequently white, while immigrants are more frequently Latino or Asian. More of the foreign sample has less than a high school education, and fewer of them are high school or some college. However, immigrants are also more frequently college graduate, possibly reflecting the considerable immigration of skilled professionals. More immigrants in the sample are male than non-immigrants, and they more frequently worked full-time. Occupationally, foreign born individuals are more frequently employed in agricultural industries, and less frequently employed in manufacturing or service industries.

Of the variables indicating a change in the household composition and homeownership, results indicate differences between the native and foreign born individuals. For all three indicators, native born individuals more frequently experienced a change in either marital, parenthood, or homeownership status during the time between the start of employment and the onset of formal retirement saving than their foreign born counterparts.

Table 1: Demographic profile by native and foreign born status

<i>Characteristic</i>	<i>Native</i>	<i>Foreign</i>	² or t	
n	12945	1737		
Income (monthly) (%)				
\$0-\$2,846	24.43	29.19	18.46	***
\$2,847-\$4,672	25.06	24.58	0.19	
\$4,673-\$7,099	25.23	23.09	3.76	*
>\$7100	25.28	23.14	3.71	*
Occupation (%)				
Agriculture	11.90	19.06	70.6	
Construction/Mining	8.38	9.61	2.98	
Manufacturing	3.16	2.25	4.33	
Retail	18.39	17.79	0.37	
Service	38.34	35.58	4.95	
Hours worked (<35 hours/wk)(%)				
Full-time	81.18	86.07	24.52	***
Marital status (%)				
Got married	14.34	5.87	94.96	***
Parenthood (%)				
Had child(ren)	28.75	21.99	34.76	***
Home purchase (%)				
Purchase	49.90	39.21	70.16	***
Citizenship (%)				
U.S. citizen	100.00	40.99	8212.14	***
Ethnic Identity (%)				
White	80.03	18.99	451.17	***
Black	12.17	10.71	3.09	
Asian	1.24	22.80	1949.43	***
Native American	1.00	1.21	0.63	
Latino	5.56	46.29	2730.41	***
Education (%)				
< high school	7.66	29.59	799.98	***
High school grad	65.17	44.27	285.93	***
> 4 year college	18.05	15.43	7.09	**
college graduate	9.12	10.71	4.56	*
Age at saving start (SD)	40.71 (12.53)	39.91 (12.00)	2.51	
Gender (%)				
Male	49.45	57.34	38.76	*****

* p<.05; ** p<.01; *** p<.001

Event History Model

Table 2 presents the proportional hazard estimates and hazard ratios of the independent variables. Native born individuals are more likely to fail (begin saving) in any time period. In other words, the results

indicate that native born individuals do begin saving sooner after the start of market labor than their otherwise similar foreign born

Table 2. Proportional hazard estimates of the effects on the start of saving

<i>Independent variable (reference)</i>	<i>Parameter estimate</i>	<i>Standard error</i>	<i>Hazard ratio</i>
Immigration Status (foreign)			
Native born	.144*	0.074	1.155
Income (50-75% quartile)			
0-25% quartile	-.443***	0.044	0.642
25-50% quartile	-.190***	0.038	0.827
75-100% quartile	.160***	0.034	1.174
Occupation (Agriculture)			
Construction/Mining	.337***	0.046	1.400
Manufacturing	.359***	0.066	1.432
Retail	-.137***	0.043	0.872
Service	-.146***	0.033	0.865
Hours worked (<35 hours/wk)			
Full-time	0.163	0.038	1.177
Marital status (no change)			
Got married	-.243***	0.037	0.784
Parenthood (no change)			
Had child(ren)	-.304***	0.040	0.738
Home purchase (no change)			
Purchase	0.304***	0.029	1.355
Citizenship (non-citizen)			
U.S. citizen	0.400***	0.106	1.492
Ethnic Identity (White)			
Black	-0.497***	0.052	0.608
Asian	0.136	0.079	1.146
American Indian	-0.045	0.147	0.956
Latino	-.537***	0.072	0.585
Education (college graduate)			
< high school	-1.391***	0.084	0.249
High school grad	-.554***	0.033	0.574
> 4 year college	0.147***	0.043	1.158
Age at saving start	-0.850***	0.002	0.919
Gender (female)			
Male	-.205***	0.037	0.814

*p<.05 **p<.01 ***p<.001

counterparts. Native born individuals are 16% more likely to begin saving in any given year than those who are foreign born. This finding supports the hypothesis that immigration status effects the time at which an individual begins to save and extends the literature on the saving behavior of immigrants. Not only do immigrants save less (as concluded from the literature), this analysis would indicate that they do in fact, begin to save later than otherwise similar non-immigrants. The hypothesis that immigrants may be waiting to save longer than non-immigrants because they intend to return home is supported when

examining the effects of U.S. citizenship, as results indicate that those who become citizens do save earlier. The effect of citizenship supports the idea that those planning to remain in the U.S. likely through retirement would choose to begin saving earlier in formal savings vehicles.

As predicted, income significantly affects an individual's time to saving. Compared to those in the third highest quartile of the sample income distribution, those in the second lowest quartile are only 83% as likely to begin to save in any given year, and the odds drop to 64% for those in the lowest quartile. This is consistent with previous findings about savings behavior. The increased timeline for lower income individuals is likely due to the more immediate consumption needs faced by these individuals.

Occupation appears to have a significant effect on the onset of saving as well. As compared to those in the agriculture industry, those in the construction/mining and manufacturing industries have a shorter saving threshold, while those in the retail and service industries took longer to begin saving. This may have to do with the availability of better employer benefit packages including retirement savings plans such as a 401k, possibly due to unions, in the construction/mining and manufacturing industries. Although we cannot measure income, education, or occupation at the time of the onset of savings, these post-hoc measures act as proxies for past situations.

Changes in household composition appear to have significant impacts on the saving thresholds of individuals. Both those who got married, who are only 78% as likely to begin retirement saving in any given period as those who did not have a change in marital status, and those who became parents, who are 74% as likely, started saving later than those who did not. These findings support our hypothesis that these consumption adjusting life cycle events would increase the timeline for savings after employment.

However, those who purchased a home began saving sooner than those who did not. These individuals were 136% more likely to begin saving for retirement in any given period. Homeownership is often seen as a form of savings from a durable goods perspective. Those buying a home are more likely to be forward thinking at that time and thus it is not surprising that those who bought a home might be quicker to engage in other forms of savings despite the costs associated with home acquisition.

Other demographic variables also seem to affect the beginning of saving. Ethnic identity also seems to be a factor, with Latinos and Blacks begin saving after their White counterparts. Conversely, Asians begin saving sooner than Whites. These findings confirm past literature on the effects of racial/ethnic identity on savings rates. Male respondents have longer saving thresholds, possibly reflecting the increased need for savings for women because of longer life expectancies. Moreover, women are more likely to leave the labor force at some point and be unable to save thus beginning to save for retirement earlier is a proactive strategy by women to mitigate the effect of lost labor force time on savings ability.

Educational differences also appear to impact length of time to save, with those without a high school diploma and those who only complete high school respectively being only 25% and 57% as likely to begin saving for retirement in any given year as compared to those with a college degree. Higher educated individuals tend to both be more forward thinking. They would also likely be more aware of the need for and the methods of saving for retirement.

Age also has a negative relationship with the likelihood of beginning to save for retirement in any given period. Much of our savings measure is comprised of workplace based retirement savings where age has been shown to have a more ambiguous effect (Elder & Rudiolph, 2002; Springstead & Wilson, 2000). The longer timeline for older individuals seems logical for several reasons. First, older individuals may be more likely to have a defined benefit plan and thus have less need for retirement saving. In addition older individuals are less likely to have been exposed to information both about retirement plans and retirement planning, and as such, may have optimistic views of their retirement adequacy from Social Security alone.

Conclusion and Implications

Saving is seen as an integral part of financial security. The time at which an individual begins saving for a variety of goals, including retirement, is important in determining their success in meeting those goals. One factor which may have important implications for when an individual begins saving is immigration status. For many who immigrate to the U.S., financial independence and success is paramount in their decision to undertake such a move. Whether due to reliance on social networks to support the retirement years by sending funds to the home country, the high start-up costs of the immigration itself, or limited knowledge or access to financial savings vehicles, immigrants appear to be waiting longer after the entry into the labor market to begin saving for retirement. Although unable to ascertain the exact reasons why this might be the case, this study illustrates the magnitude of the difference in saving threshold and

suggests that intention to stay in the country, in the form of becoming a U.S. citizen, may mitigate the impact of immigration. This study also confirms some elements of the life cycle hypothesis. Changes in household composition directly influence the onset of formal retirement savings.

Future studies utilizing data more reflective of the individual situation during the employment start and saving start, as well as the start-up costs associated with immigration, remittances to the home country and the country of origin will better illustrate the nature of the differences, but the implications of this preliminary study are several. If immigrant populations are delaying the beginning of savings, they may be relying more heavily on Social Security to financially support their retirement years. The proposed changes in Social Security could have a more pronounced impact on these populations resulting in increased poverty rates.

In addition, there may be differences in knowledge about the need and access to savings vehicle over time between immigrants and native born individuals. There may also literally be something missing in the cultural translation for financial education efforts to these individuals. This not only implies differences in language but also in the cultural context in which retirement saving is placed. Future studies should address how acculturation affects the timing and overall savings behavior of immigrant populations.

The path to financial security, particularly for retirement, depends on the ability of financial assets to generate interest over a period of time. The indicated delay in the start of saving by immigrant individuals could indicate the loss of interest income and less wealth for retirement for these individuals who are likely to have fewer options for funding retirement than others. This information could be useful to financial planners and educators, particularly those who work with immigrant populations, in assisting individuals to successfully plan for their financial goals, including retirement.

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