

Generational Differences in Managing Personal Finances[†]

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The world is shifting to a digital consumer economy characterized by the empowerment of consumers through digital devices. With millennials being the first generation of digital natives and the largest generation in history moving into prime spending years, this shift is undoubtedly transforming many industries, and the banking industry has been identified among those at the highest risk of disruption (e.g., BBVA 2015). However, there still exists very little evidence of how different generations of people vary in how they use financial management technology, finance consumption, use debit versus credit cards, and incur financial penalties, making it more difficult to predict what this transformation means for the future of retail banking. In this article we help fill this gap by using a very accurate panel of transaction-level data on individual spending, income, balances, and credit limits from a personal finance software to provide a descriptive account of how people of different generations use checking, savings, and credit card accounts and make personal financial decisions today. Our study is related to other studies of payments and financial penalties using transaction-level data (e.g., Agarwal, Pan, and Qian 2018; Agarwal et al. 2019) as well as survey data on payment choice (e.g., Schuh and Stavins 2014).

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I. Banking Then and Now: Financial Behavior

Baby boomers who started banking as young adults in the United States during the 1960s had a much different experience than exists today. In those earlier times, it was common for banks to invest in close relationships in which in-person advice was offered. In fact, banks gave away home appliances like toasters to foster these relationships. Also, life was simple: the menu of financial options was straightforward and there was little search fatigue (Carlin and Ederer 2018).

Nowadays, making financial decisions is more challenging because people are swamped with choices. In-person advice is uncommon and people are offered new technology to manage their finances (e.g., mint.com, personalcapital.com, YNAB.com, and meniga.com). In fact, many people today even rely on robots to make investment decisions (e.g., wealthfront.com, betterment.com, and sofi.com). So, when a person entered into the personal finance market could potentially affect their savings behavior, use of credit, adoption of technology, tendency to incur financial penalties, and overall financial fitness.

Using data from Iceland collected by Meniga, a personal financial software provider to European financial institutions, we provide a descriptive account of how people of different generations access and use checking, savings, and credit card accounts and make personal financial decisions today. Using this data has several advantages. Icelanders rarely use cash, so transactions provide a precise documentation of spending, income, bank balances, and credit access and use. Furthermore, using this setting allows us to study a representative sample of the population. Indeed, in January 2017 about 20 percent of Icelanders over 18 years of age had signed up to use the Meniga platform, and a comparison of our summary statistics to the representative consumer survey of Statistics Iceland suggests that the observed behavior and background characteristics of the platform users

TABLE 1—SUMMARY STATISTICS BY GENERATION

| | Average for generation | | | Differences | | |
|-----------------------------------|------------------------|-------------------|-------------------|--------------------|--------------------|--------------------|
| | BB | X | M | BB-X | BB-M | X-M |
| <i>Use of technology</i> | | | | | | |
| Ever logged in via desktop | 0.980 (-0.140) | 0.972 (-0.166) | 0.925 (-0.264) | 0.008 (-0.003) | 0.055 (-0.005) | 0.047 (-0.004) |
| Number monthly logins via desktop | 0.638 (-2.712) | 0.643 (-2.471) | 0.426 (-2.009) | -0.004 (-0.056) | 0.212 (-0.057) | 0.217 (-0.047) |
| Ever logged in via app | 0.304 (-0.46) | 0.442 (-0.497) | 0.566 (-0.496) | -0.138 (-0.011) | -0.263 (-0.012) | -0.124 (-0.010) |
| Number monthly logins via app | 0.429 (-1.270) | 1.00 (-2.91) | 0.909 (-2.657) | -0.575 (-0.099) | -0.480 (-0.091) | 0.095 (-0.081) |

Notes: BB: baby boomers; X: Generation X; M: millennials. In columns 1–3, standard deviations are displayed below the mean values. In columns 4–6, *t*-test standard errors are displayed below the differences.

is remarkably similar to what we observe in the general population. This dataset has already proven useful to analyze how individual spending responds to income payments and liquidity constraints, how retirement affects individual spending, savings, and consumer debt, what drives individual attention to personal finances, and the effect of technology adoption on access to information and financial fitness.¹

II. Generational Differences

We divide our sample population into three generational categories, based on when they were born: baby boomers (1946–1964), Generation X (1965–1980), and millennials (1981–2000). Spending is pre-classified into 15 categories: groceries, fuel, alcohol, ready-made food, home improvement, media, bookstores, toy stores, insurances, and several types of recreation (e.g., thermal baths, gambling, and cinemas). We aggregate these expenditures into those that appear to be necessities and those that are discretionary or luxury items. Use of credit includes checking account overdrafts, credit cards, and personal loans. Technology use is analyzed using smartphone app adoption statistics as in Carlin, Olafsson, and Pagel (2018). Financial penalties considered include late payment interest (charged by credit card companies from the date a payment is due and payable to the date it is paid in full), non-sufficient funds

(NSF) fees (charged when there are insufficient funds or the overdraft limit is exceeded in the consumer's current account), late fees (assessed for paying bills after their due date), and overdraft interest charges (applied to negative current account balances).

Tables 1 to 3 provide summary statistics by generation. At first glance, it is evident that people of different generations vary significantly in their use of technology, their use of financial instruments, their tendency to incur financial penalties, and their expenditure profiles.

As can be seen in Table 1, all three generations have experience logging into the financial software, but access it differently. Almost everyone has some experience using a desktop to check their financial accounts. Incidence of use range from 98.0 percent for baby boomers to 97.2 percent for Generation X to 92.5 percent for millennials. While these differences are statistically significant, their economic magnitudes are small. In contrast, use of the associated smartphone application ranges from 30.4 percent for baby boomers to 44.2 percent for Generation X to 56.6 percent for millennials. These differences are both economically and statistically significant. As such, younger people are much more likely to adopt new technology than their older counterparts. This is reflected in their dependence on each channel for access. Baby boomers and Generation X had a higher frequency of utilizing a desktop each month (0.638 and 0.643) than millennials (0.426). However, Generation X and millennials logged in more frequently each month using the smartphone application (1.00 and 0.909) compared to baby boomers (0.429).

¹See Olafsson and Pagel (2018a, 2018b, 2017) and Carlin, Olafsson, and Pagel (2018).

TABLE 2—SUMMARY STATISTICS BY GENERATION

| | Average for generation | | | Differences | | |
|--|------------------------|--------------------|--------------------|---------------------|--------------------|--------------------|
| | BB | X | M | BB-X | BB-M | X-M |
| <i>Use of credit</i> | | | | | | |
| Overdraft user | 0.795 (-0.404) | 0.779 (-0.415) | 0.610 (-0.488) | 0.015 (-0.009) | 0.184 (-0.011) | 0.169 (-0.009) |
| Credit card user | 0.798 (-0.402) | 0.784 (-0.412) | 0.638 (-0.481) | 0.014 (-0.009) | 0.160 (-0.011) | 0.146 (-0.009) |
| Payday loan user | 0.009 (-0.097) | 0.015 (-0.123) | 0.025 (-0.156) | -0.006 (-0.003) | -0.015 (-0.003) | -0.010 (-0.003) |
| Average overdraft interest | 39.44 (-56.47) | 37.31 (-51.81) | 24.09 (-27.11) | 2.13 (-1.33) | 15.35 (-1.29) | 13.22 (-1.14) |
| Average overdraft amount | -4,728 (-14,820) | -4,020 (-5,981) | -2,708 (-4,813) | -707.4 (-265.9) | -2,020 (-331.2) | -1,313 (-146.8) |
| Average credit card balance | -2,315 (-2,482) | -2,250 (-5,765) | -1,055 (-2,612) | -64.63 (-121.99) | -1,260 (-73) | -1,195 (-123) |
| Average credit card limit | 8,158 (-8,136) | 6,592 (-8,659) | 2,806 (-4,366) | 1,565 (-210) | 5,352 (-187) | 3,787 (-187) |
| Share of total expenditures paid by credit card (in %) | 55.44 (-38.54) | 51.55 (-39.38) | 32.70 (-37.64) | 3.90 (-0.11) | 22.74 (-0.12) | 18.84 (-0.11) |
| Cash | 1.52 (-10.58) | 0.793 (-5.832) | 1.09 (-5.85) | 0.731 (-0.034) | 0.430 (-0.041) | -0.300 (-0.024) |
| Liquidity | 2.95 (-11.05) | 1.85 (-6.31) | 1.70 (-6.05) | 1.10 (-0.04) | 1.25 (-0.04) | 0.148 (-0.026) |
| <i>Coholding behavior</i> | | | | | | |
| Ever had a coholding day | 0.389 | 0.357 | 0.335 | 0.033 | 0.054 | 0.022 |
| Share of coholding days (conditional on ever coholding) | 0.240 (-0.275) | 0.230 (-0.261) | 0.214 (-0.256) | 0.011 (-0.010) | 0.027 (-0.011) | 0.016 (-0.010) |
| Average unnecessary overdraft | 150.9 | 124.5 | 81.01 | 26.40 | 69.92 | 43.52 |
| Average yearly cost of coholding | 19.98 | 16.49 | 10.73 | 3.49 | 9.25 | 5.76 |
| <i>Financial penalties</i> | | | | | | |
| Ever had late payment interest | 0.286 (-0.452) | 0.331 (-0.471) | 0.184 (-0.388) | -0.045 (-0.010) | 0.102 (-0.010) | 0.147 (-0.009) |
| Ever had non-sufficient-fund fees | 0.314 (-0.464) | 0.398 (-0.489) | 0.274 (-0.446) | -0.084 (-0.011) | 0.040 (-0.011) | 0.124 (-0.010) |
| Ever had late fees | 0.982 (-0.133) | 0.987 (-0.114) | 0.985 (-0.121) | -0.005 (-0.003) | -0.003 (-0.003) | 0.002 (-0.002) |

Notes: Cash and liquidity are measured in number months of average discretionary expenditure. BB: baby boomers; X: Generation X; M: millennials. All amounts are in USD. In columns 1–3, standard deviations are displayed below the mean values. In columns 4–6, *t*-test standard errors are displayed below the differences.

However, it can be seen in Table 2 that the three generations access credit at much different rates. Millennials are the least likely to use credit cards (63.8 percent) or overdrafts (61.0 percent) to finance consumption, and maintain lower credit card balances and overdraft amounts. In contrast, baby boomers are the most likely to use overdrafts (79.5 percent) and credit cards (80.0 percent), and they have the highest overdraft amounts, overdraft interest, credit card

balances, and share of expenditures paid by credit cards. The numbers also show that older generations are more likely to use mainstream credit sources like credit cards and overdrafts while younger generations are more likely to use alternative sources of credit, like payday loans.

The statistics on use of consumer credit and cash holdings also suggest evidence of the “credit-card puzzle” or the “coholding puzzle,” in which consumers incur expensive debt and

TABLE 3—SUMMARY STATISTICS BY GENERATION

| | Average for generation | | | Differences | | |
|---------------------------------|------------------------|-------------------|-------------------|--------------------|--------------------|--------------------|
| | BB | X | M | BB-X | BB-M | X-M |
| <i>Consumption</i> | | | | | | |
| Total expenditure | 2,081 (-2,190) | 2,045 (-2,254) | 1,293 (-1,120) | 35.97 (-6.41) | 787.6 (-5.5) | 751.6 (-5.3) |
| Share of total expenditure (%): | | | | | | |
| Groceries | 30.80 (-16.94) | 30.94 (-16.82) | 25.39 (-16.76) | -0.137 (-0.049) | 5.41 (-0.05) | 5.54 (-0.05) |
| Alcohol | 4.20 (-7.22) | 2.89 (-5.51) | 3.30 (-6.19) | 1.31 (-0.02) | 0.904 (-0.022) | -0.409 (-0.016) |
| Ready-made food | 8.28 (-8.30) | 12.13 (-10.42) | 19.89 (-15.37) | -3.85 (-0.03) | -11.61 (-0.04) | -7.76 (-0.03) |
| Home improvement | 8.45 (-12.59) | 7.49 (-11.84) | 5.77 (-10.85) | 0.956 (-0.035) | 2.68 (-0.04) | 1.72 (-0.03) |
| Sport and activities | 2.91 (-5.84) | 3.57 (-6.40) | 3.43 (-7.16) | -0.668 (-0.018) | -0.523 (-0.021) | 0.145 (-0.018) |
| Clothing and accessories | 6.21 (-9.47) | 7.230 (-10.30) | 7.41 (-12.28) | -1.02 (-0.03) | -1.20 (-0.04) | -0.179 (-0.031) |
| Pharmaceuticals | 3.30 (-4.98) | 2.45 (-4.13) | 2.36 (-4.55) | 0.844 (-0.013) | 0.934 (-0.015) | 0.090 (-0.012) |
| Recreation | 3.99 (-5.44) | 4.63 (-5.64) | 4.92 (-6.58) | -0.641 (-0.016) | -0.934 (-0.02) | -0.293 (-0.017) |
| Lotteries | 0.713 (-2.894) | 0.547 (-2.695) | 0.361 (-2.662) | 0.166 (-0.008) | 0.352 (-0.009) | 0.186 (-0.007) |
| Gambling | 0.023 (-0.820) | 0.070 (-1.480) | 0.189 (-2.587) | -0.046 (-0.004) | -0.166 (-0.006) | -0.119 (-0.005) |
| Games | 0.061 (-0.614) | 0.195 (-1.646) | 0.414 (-2.997) | -0.134 (-0.004) | -0.353 (-0.007) | -0.219 (-0.006) |
| Media | 8.85 (-11.68) | 7.68 (-12.06) | 6.93 (-13.07) | 1.17 (-0.03) | 1.92 (-0.04) | 0.744 (-0.034) |

Notes: BB: baby boomers; X: Generation X; M: millennials. All amounts are in USD. In columns 1–3, standard deviations are displayed below the mean values. In columns 4–6, *t*-test standard errors are displayed below the differences.

low-yield savings simultaneously (e.g., Gross and Souleles 2002; Gathergood and Weber 2014). However, in our setting it appears that baby boomers exhibit this behavior in a more marked way. While baby boomers as a group have much higher cash reserves (equal to 1.52 months of average discretionary expenditures), they appear to use financial instruments to lever up more than their younger counterparts. It is of course possible that this could be explained by some individuals within each generation holding cash reserves while others hold consumer debt. However, when we look at the extent of coholding at the individual level it can clearly be seen that baby boomers are more likely to hold expensive consumer debt and cash reserves simultaneously and the extent to which they do this is greater, i.e., the share of days they cohold

is greater and the amount of unnecessary overdrafts they hold (and hence the cost associated with coholding) is greater. The fact that they also have higher access to future credit makes the rational explanations of managing future binding constraints less likely (Telyukova 2013; Gorbachev and Luengo-Prado forthcoming).

Table 2 also shows that older people incur higher financial penalties, which is consistent with higher use of consumer credit. Baby boomers and Generation X tend to incur late payment fees more than millennials (28.6 percent and 33.1 percent versus 18.4 percent) and tend to be more likely to incur non-sufficient-funds fees (31.4 percent and 39.8 percent versus 27.4 percent). Though, all three groups have almost the exact same tendency to incur late fees at an incidence around 98.5 percent. But, the lower

financial fitness for older people does not appear to result from a stronger financial position for millennials. Indeed, millennials had the lowest amount of liquidity and had the highest use of payday loans. As such, the higher fees paid by older generations might be simply the result of participating more in consumer credit markets, or it could result from the lower adoption of flexible technology that allows more timely access to financial information.

Finally, Table 3 shows that baby boomers and Generation X spend more per month (\$2,081 and \$2,045) than typical millennials (\$1,293). So, the higher use of credit may simply be used to allow for more consumption. The share of total expenditures paid by credit cards is higher for baby boomers and Generation X (55.44 percent and 51.55 percent) than for millennials (32.70 percent), which might suggest that higher consumption is not the only cause of higher use of credit.

Analyzing the expenditure profiles reveals that older people are more likely to spend money on alcohol, pharmaceuticals, media, and home improvement, while younger people spend more on ready-made food, sport and activities, clothing and accessories, recreation, gambling, and games. While many of these trends appear plausible, they do not appear to establish any pattern with regard to spending on discretionary goods. All generations do enjoy discretionary spending, albeit different, and it does not appear that age is a driver of frivolity.

III. Concluding Remarks

In this study, we analyze how different generations of people vary in how they use technology to find information in markets, finance consumption, and incur financial penalties. To the best of our knowledge, even simple descriptive statistics from representative transaction-level data are new to the literature. Older people appear to use credit more readily and also incur fees at a higher rate. This is despite the fact that they typically are more liquid. Younger people appear to adopt new and convenient technology at a higher frequency, which may cause them to be more informed on the go and allow them to avoid penalties. Taking this into account, policymakers who want to improve welfare for consumers in financial markets may wish to take a multi-dimensional approach, using

technological tools and reminders for younger people and more traditional methods for elders.

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