# The Impact of Earned Wage Access on Household Liquidity and Financial Well-Being

Herman Donner<sup>1</sup> and Daniel Siciliano<sup>2</sup> December 22, 2021

<sup>1</sup>Stanford Graduate School of Business, Stanford School of Engineering, <u>hdonner@stanford.edu</u> <sup>2</sup>Stanford Law School, <u>dsicilia@law.stanford.edu</u>

#### Executive Summary:

In this paper, we analyze the impact of liquidity constraints on household financial well-being, notably, the relationships between pay frequency, transient financial hardship, and ensuing financial outcomes. Specifically, we analyze the impact of Earned Wage Access (EWA), which allows employees and contractors to access earned wages more frequently and on-demand compared to regularly scheduled payments.

A significant fraction of U.S. households face liquidity constraints. In these households, an unexpected expense, even if only of a few hundred dollars, can produce significant costs such as overdraft fees, payday loan charges or strategic non-payment of bills. Consequently, even households with incomes that roughly match annual expenses may face significant costs associated with simply matching income with expenses.

Primarily impacting lower-income groups that lack assets and access to traditional credit, costs associated with managing their liquidity cause significant short- and longer-term financial harm, which we define in terms of direct and indirect costs. The former category constitutes costs such as payday loan charges and has been widely covered by academics and policymakers. Indirect costs have received far less attention. These constitute decisions impacted by liquidity constraints that have longer-term negative impact, such as resorting to strategic non-payment of a bill, which in the longer-term makes a household even less likely to gain access to credit. We argue that both direct, and in-direct costs of managing household liquidity need to be viewed in conjunction, as indirect costs can be as costly as even the most expensive forms of credit.

EWA has the potential to alleviate some of the financial strains households experience when managing their liquidity. Notably, EWA can create an alternative to expensive credit options such as payday loans. It is also a benefit that can increase both worker satisfaction and retention. EWA has also been rapidly adopted by large/traditional employers such as Walmart and Wendy's, and gig-worker platforms such as Uber and DoorDash. Even as both employers and platforms embrace the potential of EWA, we are not yet able to fully determine the impact of more frequent access of earned wages. As the adoption of EWA is a fairly recent development, there is little academic research that offers insight into its impact on employees, employers and society. This paper provides an overview of the potential impact of EWA in relation to the financial well-being of employees and outlines the need for further empirical research.

Looking at how increased pay frequency will impact households; we find two major contradicting forces in terms of impact on spending and savings behavior. First, being paid more often (frequently) results in an increased perception of wealth, causing individuals to potentially spend more and save less. The impact of this effect is uncertain. If a household has an annual income that comfortably exceeds annual expenses, the potential impact of increased pay frequency might be decreased savings – as illustrated by infrequent payouts, such as annual bonuses, often resulting in increased saving. This type of household would still be able to cover their expenses, even if their savings declined as a consequence of more frequent pay. But, if a household has smaller margins, i.e., an annual income that is roughly equal to annual expenses, being paid more frequently or on demand might result in not having enough money for rent at the end of the month. This concern is closely related to self-control and financial literacy. Consequently, the ability to counter the effect of increased wealth perception is essential for EWA to improve financial outcomes.

EWA providers and employers are aware of these concerns and developed two strategies to address them: limiting access to accrued wages and coupling EWA with tools aimed at improving budgeting and financial planning. Examples of the latter are solutions that predict household cash-flow, so that money is set aside for upcoming expenses and savings goals. This allows for household liquidity improvement by management of both the timing of income, and timing of expenses when users gain a better understanding of their financial situation. An example is the Even app, that aims to provide employees with a consistent amount of money left to spend after every paycheck. EWA can potentially alleviate financial hardship by replacing more expensive credit-based options used by households to manage their liquidity. Notably, EWA can potentially alleviate the need for expensive payday loans. Consequently, EWA will have limited impact on higher earners with access to cheap short-term credit, but, for the more than 20% of U.S. households that are either unbanked or underbanked and have no other option but to resort to payday loans or other forms of expensive credit, EWA can result in substantial savings and a net improvement of their financial wellbeing.

In sum, EWA has the potential to have a positive impact on the financial well-being of low-income households with small margins that are likely to be unbanked or underbanked – as these households are those that are likely to use more expensive forms of credit such as payday loans and strategic non-payment of bills. However, EWA solutions should be mindfully designed so that; 1) EWA access is balanced to prevent overspending, so that not all earned wages are immediately accessible, and 2) earned wage access is integrated with tools for improved financial literacy, budgeting, and financial planning.

As earned wage access becomes pervasive among both employees and freelance workers, additional research is essential to shed light on its impact on household financial wellbeing and best practices. Notably, additional empirical research to inform optimal levels of earned wage access and design of integrated tools for budgeting. Research on the dynamics of how households manage their liquidity and choose between credit and EWA is also needed.

1.	Introduction: Household Liquidity Constraints and Costs Associated with Managing
L	iquidity5
2.	Background: Consumption Smoothing, Financial Literacy and Market Friction7
	2.1 Household Responses to Changes in Asset Values
	2.2 Time-Inconsistent Preferences, Hyperbolic Discounting and Responses to Changes in Income
	2.3 The Impact of Pay Frequency on Spending10
3.	Direct Liquidity Costs – Overdraft Fees, Pay-Day Loans and Strategic Non-Payment11
4.	In-Direct Liquidity Costs – Career Choices and Hyperbolic Discount Rates
5.	The Role of Financial Innovation and Earned Wage Access14
	5.1 Integration of Earned Wage Access with Budgeting Tools: Walmart's InstaPay
6.	Conclusion: Policy Implications and Guiding Principles19
	6.1 The Impact of EWA Depends on the Characteristics of the User
	6.2 Consider Both Direct, and In-Direct Costs of Managing Household Liquidity
	6.3 Implement Strategies to Address Potentially Adverse Effects of EWA
	6.4 EWA can Address Costs for Managing Liquidity, not Longer-Term Financial Hardship
7.	References

# 1. Introduction: Household Liquidity Constraints and Costs Associated with Managing Liquidity

Households face liquidity challenges for a variety of reasons, such as unexpected expenses for a car repair or an income-shock through the loss of a job. The ability to smooth consumption, even over a short period of time, can be associated with significant costs, such as account overdraft fees and interest rate charges on credit cards or payday loans. Across income-groups, households are sensitive to cash-flow disruption, as illustrated by 37% of U.S adults being unable to cover an unexpected expense of \$400 (Federal Reserve, 2020). Among such households, most would resort to credit card debt, although 12% state that they would have no access to the cash whatsoever, likely resorting to strategic non-payment of other expenses (Federal Reserve, 2020).

Household sensitivity to income-volatility and unexpected expenses span income groups, with 17% of full-time workers making over \$100,000 a year reporting to have less than \$500 in savings. Low-income households are however even more likely to lack savings, with 70% of those making less than \$25,000 having less than \$500 in savings (Visa, 2019). High-income households will also have greater access to low-cost short-term credit (such as 30-day zero APR credit cards) and are more likely to have bank overdraft fees reversed or waived (Di Maggi and Williams, 2020). The overall cost of credit also constitutes a much smaller fraction of higher-income households' overall income (Pew, 2016).

Low-income households are more likely to lack access to traditional forms of short-term credit, and are more likely to turn to payday loans with annualized interest rates often reaching hundreds of percent (Bhutta, 2014; Bhutta, Goldin and Honomoff, 2016). As low-income households also have smaller financial margins, they are more likely to face challenges matching their income with their expenses.

Receiving pay more frequently than the typical monthly or bi-weekly installment could potentially alleviate some of the costs that households face when managing their liquidity. Technological advancements in electronic payments that allow for faster and cheaper processing of pay transfers has made it possible for employees and contractors to access earned wages as they accrue, something that is increasingly offered by both employers such as Walmart and Wendy's and platforms for gig-work such as Uber and DoorDash. Known as Earned Wage Access (EWA), this product is provided by companies such as Branch, Dailypay, PayActiv, Payfare and Flexwage (De La Rossa and Tully, 2020; Stell, 2016), and typically use the infrastructure for immediate transfers provided by networks like Visa and Mastercard.

EWA is often framed as a competitive advantage for employers and an employee benefit that attracts and retains workers. The number of employers offering more frequent pay is increasing rapidly – illustrative examples are that Walmart and Wendy's offer their employees the ability to access part of their wages on a daily basis through PayActiv, and that platforms such as Uber, Lyft, and Doordash use Payfare for daily disbursements of pay (Corkery, 2017; Miller, 2021).

The logic for exploring liquidity costs in relation to EWA is simple – even a household with an annual income that covers, or at least nearly covers, annual expenses can experience transient financial hardship, defined as not being able to cover their expenses (Daniels and Grinstein-Weiss, 2019). Households will often face significant direct and indirect costs associated with managing their liquidity. Examples of the former are fees and interest rates, while the latter could be broadly defined as financial decisions that provide short-term liquidity but negatively impact longer-term financial well-being.

It is important to note that besides credit or non-payment of obligations, households can manage their liquidity by increasing income. App-based freelancing, or gig-work, such as driving for Uber or delivering food for DoorDash makes it possible for households to increase supplemental income when other sources of income decreases, thus deceasing overall income volatility (Farrell and Greig, 2016). These jobs have the added benefit of providing almost immediate payment, something that is especially useful for households that lack savings or access to credit (Gundersen and Gruber, 2001; Bania and Leete, 2007). Although providing a way to quickly get cash, gig-work can potentially increase income volatility, as workers are paid by service rather than by the hour. Limited ability to predict income also poses a disadvantage in financial planning (Daniels and Grinstein-Weiss, 2019).

There are many factors that may compel individuals to engage in gig-work. One commonly mentioned is the desire to receive immediate payments instead of waiting for larger but less-frequent payments. Thus, pay frequency can impact individual career choices, which in relation to EWA illustrates the value that individuals place on increased pay frequency.

Even as EWA is becoming a mainstay feature among employers, there is little academic research on its implications – both in terms of positive impact and potential risks. Notably, there are conflicting forces in play here, as prior research indicate that increased pay-frequency often results in greater wealth perceptions and increased spending, i.e., reduces household savings. However, increased payfrequency allows households to potentially avoid more expensive ways of managing their liquidity, such as overdraft fees and loan interest rate payments, which increases household disposable income. The net effect of EWA is likely to vary among households, as direct costs of managing liquidity predominantly impacts low-income households, while higher income households have bigger financial margins and access to cheaper credit.

If an individual is capable of planning his or her finances, getting paid earlier may be preferred as it may enable the individual to better manage their expenses. From this perspective, the financial literacy of the individual becomes a key determinant of what type of impact EWA will have. Klapper, Lusardi and van Oudheusden (2014) concluded that about 43% of Americans are financially illiterate, i.e., lacking understanding of economic concepts such as interest compounding, inflation and diversification. Thus, EWA providers should consider that a large fraction of users are at risk of harmful financial behaviors when pay frequency increases. EWA solutions that both lowers costs of accessing cash *and* provides tools for financial planning can be beneficial.

The above tells us that financial innovation and its impact on household well-being needs to be evaluated from a holistic perspective that considers impact across income groups. And as part of this analysis, we propose that both direct and indirect costs of liquidity be considered. We are unaware of a study that considers both short-term and long-term consequences of liquidity constraints and evaluates them within the context of pay frequency and financial innovation. The implications of looking at this from a wider perspective result in a greater understanding of how access to part of, or all, of earned wages can improve the financial welfare of households.

The aim of this paper is to add some clarity to this topic. We build our analysis from a broad review of different strands of literature to identify different types of potential impact on the financial wellbeing of households. We outline the need for empirical research as EWA is a fairly new offering, best practices have yet to crystalize, and will have to be informed by insights that are captured among firms that are currently deploying EWA.

The remainder of this paper is organized as follows: section 2 outlines theory on household spending and consumption smoothing. In section 3, we analyze the direct costs of managing household liquidity, such as payday loans and overdraft fees, while section 4 covers what we define as in-direct liquidity costs. Section 5 analyzes the role EWA has in lowering the costs that households face when managing their liquidity. Section 6 concludes and provides recommendations for implementation of EWA.

# 2. Background: Consumption Smoothing, Financial Literacy and Market Friction

To fully understand the impact that EWA and financial innovation has on how households make financial decisions, we first analyze prior research. Household liquidity and transient financial hardship is closely related to studies that analyze household spending and savings behavior, which can be analyzed from both longer-term and shorter-term perspectives. In relation to the former, the Modigliani-Miller life-cycle/permanent income hypothesis implies that household consumption will be independent of anticipated income changes, as spending is spread evenly over time (Friedman 1957; Modigliani 1988). However, households typically have a hump-shaped spending pattern over time, with increased spending through middle-age, after which it declines sharply (Thurow, 1969; Aguiar and Hurst, 2008). This well-documented pattern tracks a similar hump in household income (Carroll and Summers, 1991), providing evidence against forward-looking consumption smoothing implied by the life-cycle hypothesis (Aguiar and Hurst, 2008).

There are several reasons for why household expenditures vary over time, with researchers focusing primarily on precautionary savings or poor financial planning (Aguiar and Hurst, 2008). For the former, lack of access to credit is mentioned as a reason for why households spend less early in life (Jappelli and Pagano, 1994) as they need precautionary savings to insure against unpredictable changes in income (Aguiar and Hurst, 2008; Gourinchas and Parker, 2002 and Carroll 1997). Researchers have found that market imperfections, notably constraints in how much consumers can borrow, results in an increased savings rate (Jappelli and Pagano, 1994). Studies analyzing the impact of borrowing

constraints on household spending and savings behavior have yielded varied results, with some studies indicating that it increases savings as households need "rainy day" funds (Jappelli and Pagano, 1994). In an analysis of household savings decisions, Laibson (1997), states that financial innovation, through increased liquidity access, might have been a driver of a decline in U. S. savings rates.

#### 2.1 Household Responses to Changes in Asset Values

Asset ownership can function as a buffer that allow households to manage periods of cash-flow disruption or unexpected expenses. This could either be through cash savings, sales of liquid assets such as stocks, or home equity that can be borrowed against. A large body of research has analyzed the impact of household assets on spending and savings behavior, looking at the effects of stock ownership (Ludvigson and Steindel, 1999; Poterba, 2000) and housing wealth (Benito et al., 2006; Berger et al., 2018). Often, these studies find that household spending responds sharply to increases in wealth, due to both increasing home values (Mian et al. 2013; Cerutti et al. 2015), and equity values (Ludvigson and Steindel, 1999). Berger et al. (2015) model the relationship between house values and spending, finding that access to credit, how volatile the local housing market is, and prior levels of debt can explain how much households respond to changing home values. These findings support a smaller effect on spending, consistent with the life-cycle hypothesis (Buiter 2008; Campbell and Cocco, 2007; Sinai and Souleles, 2005). Notably, an often-mentioned explanation for why household spending does not fully respond to increases in wealth is that of precautionary savings, which also implies imperfect credit markets in the Modigliani-Miller framework.

As the bottom 60% of households in the U.S. essentially lack wealth (Carroll et al., 2017), most households will be less sensitive to changes in asset prices. Consequently, such households will also be more sensitive to cash-flow disruption. However, changes in asset prices can potentially impact the behavior of households without assets. In this context, the findings by Guiso et al. (2005) are of interest, as they find that Italian home-owners respond to increasing home values by increasing spending, while renters respond by increasing savings. Campbell and Cocco (2007) find that young renters have an essentially zero reaction to changes in home values, as the negative impact from the wealth effect is offset by a shift in spending towards housing, away from non-durable goods, when home values increase.

# 2.2 Time-Inconsistent Preferences, Hyperbolic Discounting and Responses to Changes in Income

Adding complexity to the issue is that the shape of the life-time consumption might vary across different socio-economic groups, with several studies making the case that less-educated households have a tendency to be poor financial planners (Lusardi and Mitchell, 2007; Laibson, 2007). However, even as there is variation across groups, there is also support towards large differences in savings and wealth among households with similar socio-economic characteristics (Lusardi, 1999), with considerable heterogeneity in lifetime spending patterns (Aguiar and Hurst, 2013).

A key question is if these differences in spending behavior are due to a difference in preferences, or household inability to plan their finances by being boundedly rational or dynamically inconsistent (Bernheim et al., 2001). In other words, individuals could be aware but indifferent to the benefits of savings and budgeting or, on the other hand, could lack knowledge and information that enables more prudent saving and spending.

Analyzing the behavioral aspects of spending, Hoch and Loewenstein (1991) state that consumer selfcontrol can be framed as a struggle between the psychological forces of desire and willpower. A key challenge are transient desires to spend, such as splurging on a product the individual knows is not in their best interest to buy, i.e., individuals are time-inconsistent. Thus, a key aspect of consumer behavior is that of self-control, which has been extensively studied in clinical settings (Mischel, 1974). From a savings perspective, there are abundant examples of strategies that households exhibit to reach their longer-term goals, such as Christmas Clubs where money is set aside monthly in preparation for Christmas, or membership fees towards services that help individuals to stop smoking or lose weight (Thaler and Shefrin, 1981). And the reason for why people pay for these costs is basically due to; "*a desire of people to protect themselves against a future lack of willpower*...." (Stigler, 1966). As most individuals lack self-control and place a high value on the present when making financial decisions, various strategies are employed to mitigate these behaviors. Notable strategies for self-control are various commitments, such as paying a gym membership (Laibson, 1997).

By observing how and when individuals consume, we can deduct their subjective discount rates, as impatient households place higher value of cash in the short-term, vs patient ones, who in effect, delay gratification. Household tendencies to place a high value on immediateness is known as hyperbolic discounting, and has been extensively researched (Laibson, 1997; Rubinstein, 2003; Dasgupta and Maskin, 2005). Support towards that individuals tend to exhibit hyperbolic discounting has been found in studies that analyze settings where individuals can choose hypothetical rewards and payments that are either framed as speeding up a payment or delaying it (Harrison et al., 2001). Looking at households in Denmark, Harrison et al. (2001) found that discount-rates vary considerably among different socio-economic groups and that they decline with age. The authors asked respondents if they prefer a smaller amount within one month, or a higher amount in 37 months, with the latter increasing in increments that allows for estimation of the implied discount rate over a period of three years. Notably, low-income respondents had an average discount rate of 43%, while high-income respondents showed an average of 33%. Similarly, renters exhibited an average discount rate of 49%, while homeowners had a considerably lower average of 35%.

Both liquidity constraints and behavioral biases can explain why households are excessively sensitive to income disruption compared to models that assume rational behavior (Ganong and Noel, 2019). For when individuals lack self-control, they lack financial buffers and will be close to their liquidity constraints when an economic shock arrives (Carroll et al., 2017). It is therefore not surprising that household spending responds sharply to changes in income (Campbell and Mankiw, 1989). Several studies of household sensitivity to income disruption have focused on unanticipated changes in

income, looking at income increases from tax rebates and refunds (Hsieh, 2003; Souleles,1999 Shapiro and Slemrod, 2009; Baugh et al., 2018). Other studies have analyzed unanticipated losses of income, using U.S. government shutdowns as natural experiments (Baker and Yannelis, 2017; Gelman et al., 2015).

Households are, however, not only sensitive to *unanticipated* income disruption, as illustrated by the findings of Ganong and Noel (2019), who found that household spending declined sharply among unemployed households when unemployment benefits were exhausted, even as households *knew* that their income would decline. Similarly, Wilcox (1989) found that consumption increased with pre-announced increases of social-security benefits. Thus, there is robust support for the notion that individuals tend to be myopic or have a strong present-bias when making financial decisions, which results in significant sensitivity of spending in relation to frequency and volatility of income. This sensitivity is further amplified for low-income households that lack assets that function as a buffer.

# 2.3 The Impact of Pay Frequency on Spending

Closely related to the stream of literature that analyzes spending and savings behavior, are studies of the relationship between pay-frequency and spending. For even if some rational models of consumption would assume that household spending would be independent of how annual income is distributed, Thaler and Shefrin (1981) noted that increased pay-frequency is likely to result in increased spending, modeling that households who receive a larger fraction of their salary in bonus increases savings.

A large body of research has analyzed the relationship between pay and consumption, typically finding that households reduce consumption immediately before receiving pay, and increasing it immediately afterwards (Evans and Moore, 2011). As an example, Stephens (2003) found that the expenses of U.S. households that receive social-security respond to the receipt of such checks, and that this relationship is stronger for time-sensitive purchases such as going out to a restaurant. This pattern is consistent with hyperbolic discounting, present-bias and lack of self-control which contradicts the life-cycle hypothesis of consumption (Mastrobuoni and Weinberg, 2009). Looking at salaried employees in the U.K, Stephens (2006) also finds that consumption responds sharply to when pay is received. Sensitivity to payment frequency does however vary, as households with more savings will exhibit more smoothing of consumption (Mastrobuoni and Weinberg, 2009; Stephens, 2006).

Further support towards a bias for immediateness is provided by Shapiro (2005) who analyzed foodstamp recipients in the U.S., finding that households tend to consume more calories in the period immediately after receiving food-stamps. Mastrobuoni and Weinberg (2009) found a similar pattern when analyzing caloric expenditures of U.S. retirees on social-security, although households with more than \$5,000 in savings exhibited more smoothing of their consumption, compared to those who had little or no savings. For the latter group, caloric expenditure is 25% lower during the week before they receive their social-security check, compared to the week immediately afterwards. Parsons and Van Wesep (2013) show that self-control problems result in under-saving and volatile consumption between paychecks. Even as more frequent pay can amplify these challenges, individuals with severe lack of self-control and "feast-famine consumption cycles" can in some instances benefit from more frequent pay. Thus, the impact of pay frequency will vary depending on the characteristics of individual household. As education and wealth correlate negatively with self-control and financial literacy, the findings are consistent with observable patterns of pay frequency, as more educated and wealthy workers should receive pay less frequently (as they are).

Looking specifically at the relationship between the frequency of payment and spending, Stephens and Unayama (2011) find Japanese retirees become better at smoothing their expenses when they get their retirement checks every two months, rather than monthly.

In a recent study, De La Rosa and Tully (2020) analyzed the impact more frequent, smaller, paychecks impact household wealth perceptions and spending. Using a dataset with financial data for over 27,000 individuals, in addition to conducting behavioral experiments, the authors found that smaller, more frequent, paychecks increase individual wealth perceptions, compared to larger, less frequent, paychecks. A key consequence of this feeling of wealth is higher discretionary spending, even when controlling for other factors such as account balance or perceptions of income volatility or decreased propensity to plan. The authors note that employers should carefully consider the implications of offering increased pay frequency alone, as more frequent pay may result in financial harm absent greater literacy.

It is important to note that financial literacy and households' ability to plan their finances varies, but that potentially adverse effects on household financial well-being need to be considered in the context of EWA.

In the section below, we shift our attention to costs that households face when managing their liquidity, that EWA could potentially alleviate.

# 3. Direct Liquidity Costs – Overdraft Fees, Pay-Day Loans and Strategic Non-Payment

Low-income Americans are more likely to face higher costs for the banking, if any, services they use. For instance, individuals who make less than \$30,000 pay on average \$31 per month in fees for checking accounts, compared to \$9 across other income groups (Bankrate, 2017). Low-income households are also more likely to lack access to affordable credit, with the Federal Deposit Insurance Corporation finding that in 2017, 6.5% of American households were unbanked (i.e., lacked a bank account), and that an additional 18.7% of households were underbanked, meaning that they have an account, but also used financial services outside of the banking system (FDIC, 2017). Among unbanked households, more than half lack enough money to keep in an account while 30 percent state that they lack trust in banking institutions (Barry, 2021).

Among underbanked households, overdraft fees have become an expensive form of credit. Around one third of overdraft fees are intentionally used as a way of borrowing small amounts of money because of a lack of access to traditional forms of credit (Bernard, 2021). As overdraft fees disproportionately impact low-income Americans, legislators have called for regulation (Prang, 2021), and efforts in the U.S. Congress to ban such fees in 2020 (Ponciano, 2021).

Overdraft fees are highly profitable for banks and amounted to more than \$11 billion in 2020 (Smith et al., 2020), and disproportionately hit marginalized communities (Walsh, 2021). These fees are typically stated as a fee for having a negative balance on your account, and are typically around \$30 (Hendricks and Foreman, 2021). As the fees accrue for each transaction, they can quickly add up. Notably, a banking practice of shuffling transactions from their highest amount to the lowest when charging overdraft fees, rather than in chronological order, has been widely criticized as it often results in more overdraft fees. An illustrative example is an account balance of \$400 that becomes negative after a \$500 car payment, which is processed before multiple smaller transactions of \$10, \$20 and \$50 of that took place before the car payment was made. The effect is that several \$30 fees can accrue in just one day (Carrns, 2014).

The relationship between credit access and overdraft fees is illustrated by disparities in who pays these charges. Roughly two-thirds of heavy over-drafters report that they do most purchases with debit cards, rather than credit cards (which are more often used by higher earners) (Pew, 2016). Additionally, 18% of account holders, primarily low-income individuals, pay 91% of all overdraft fees (Pew, 2016). Similarly, 9% of account holders pay 80% of all overdraft fees according to the Consumer Financial Protection Bureau (Bernard, 2021; Walsh, 2021). Also notable is that 70% of those who report paying more than \$100 in overdraft fees per year have annual incomes below \$50,000 (Pew, 2016). Some banks are making changes. Ally Bank, for instance, has introduced a six-day grace period for overdraft fees while Chime, an online bank, allows users to overdraft up to \$200 and automatically have it deducted from their next paycheck (Bernard, 2021).

Another direct cost of managing liquidity are so-called alternative financial services (AFS), which cover high-cost credit such as payday loans and pawnshops. This is an industry that has grown rapidly since the 1990s. In 2007, Americans paid \$8 billion in charges for \$50 billion in payday loans (Bertrand and Morse, 2011), and pawnbrokers had annual revenue of \$4 billion in 2008 (Rivlin, 2010). In 2010, there were more payday loan locations in the U.S. than Starbucks and McDonald's locations combined (Skiba and Tobacman, 2019), and these locations are typically in low-income neighborhoods with populations likely to be underbanked. However, when one controls for income and wealth, the racial composition of a neighborhood has little impact on the choice of location (Bhutta, 2014).

As many as 12 million Americans took out a payday loan in 2018, despite a typical cost of a two-week \$100 loan of \$10 to \$30 (Consumer Financial Protection Bureau, 2017). Studies show that about a quarter of the U.S. population has used high-cost credit such as payday loans, pawn shops, auto title

loans, refund anticipation loans, and rent-to-own shops, over a period of five years (Lusardi and de Bassa Scheresberg, 2013).

Payday loans are typically framed in terms of a cost per \$100 for a two-week loan. A common amount is \$15, which corresponds to an annualized interest rate of 400%. The average payday borrower has such loans for five months of the year and makes \$30,000 annually. Not surprisingly, the Consumer Financial Protection Bureau (2017) finds that 58% of these borrowers have difficulty meeting their expenses, which is consistent with 70% of payday loans going to recurring every-day expenses, rather than one-off emergencies.

Research supports that payday loans harm consumers. Skiba and Tobacman (2019) found that access to such loans results in a near doubling of bankruptcy rates, and that this is driven by the strain that they cause on household cash-flow. However, using aggregate data across the U.S., Bhutta (2014) finds no linkage between payday lending, delinquencies, and credit scores on the neighborhood level.

Complicating the analysis of the impact of payday loans is that even if most loans are taken for recurring expenses, payday loans can also be a last resort if a household faces a financial emergency. Analyzing if payday loans exuberate or mitigates financial distress, Morse (2010) took natural disasters as an exogenous event and found that payday loans can mitigate a substantial fraction of foreclosures when households face a disastrous event.

It is also possible that the impact of payday loans is influenced by pay frequency. Parsons and Van Wesep (2013), model that that payday loans can act as a very expensive form of revolving debt when pay is frequent. However, when pay is infrequent, payday loans are more likely to improve welfare by delivering cash in times of need.

Research also supports that when payday loans are not available, consumers shift to other forms of credit, such as credit cards (Bhutta et al., 2016). However, it is not just a question of availability, for even when consumers have access to several forms of credit, they are bad at identifying the cheapest form of credit. Lusardi and de Bassa Scheresberg (2013) analyzed the linkage between financial literacy and the cost of borrowing, finding that financial literacy is strongly linked to whether someone uses high-cost borrowing, and that a majority of such borrowers display very low levels of financial literacy. Conversely, individuals with higher levels of financial literacy are much less likely to use expensive forms of credit. Further support towards this linkage is provided by Agarwal et al. (2009), who found that among those that take out payday loans and have access to credit cards (which are a cheaper form of credit), a majority typically have substantial credit card liquidity when they take out a substantially more expensive payday loan.

Despite a growing number of fintech startups such as Dailypay, PayActiv and Flexwage, that offer cheaper alternatives to payday loans by providing employees with access to all, or part of their earned wages directly, or through an employer, payday lending is still persistent. However, between 2015 and

2019, the percentage of U.S. households that had used a payday loan dropped from 2.1% to 1.5% (FDIC, 2021).

# 4. In-Direct Liquidity Costs - Career Choices and Hyperbolic Discount Rates

Looking at how liquidity constraints impacts financial decision making, many households experience significant financial harm due to liquidity considerations that cause them to make decisions that they; a) would not have taken if liquidity was not an issue, i.e., a decision not taken in a frictionless setting without cost or constraints on borrowing, or if earnings where immediately accessible, and, b) that this decision adversely impacts the financial well-being of the individual or household.

A good way of illustrating this type of indirect liquidity costs is a household that lacks access to credit, and thus resorts to strategic non-payment when facing an unexpected expense. Besides the direct cost of having to pay a late fee, the non-payment also negatively impacts the individual's credit score, and hampers their ability to get access to credit in the future. The latter constitutes the indirect cost of managing liquidity through non-payment.

Another form of indirect liquidity cost is financial harm that can be attributed to how an individual decides to spend their time and professional efforts. A way of illustrating this type of impact is "gig work" (e.g., Driving for Uber or delivering food for DoorDash) that allow individuals to manage their liquidity by increasing their income – and get immediate payment as is typical for most platforms for such work. Anecdotally, human resources professionals have told us about scenarios where employees have abstained from work to spend more time doing gig work, and that these decisions were driven by a desire to receive immediate pay.

There is a strong case for putting these types of indirect costs in the same context as direct costs, as this type of prioritization can result in high, even, hyperbolic, discount rates. The full extent of this type of impact needs to be analyzed further, as liquidity concerns might cause individuals to spend their time engaging in work that provides less skill development and benefits, which would constitute a longer-term cost that can be both substantial (given the impact on life-time earnings) and attributed to pay frequency.

# 5. The Role of Financial Innovation and Earned Wage Access

Historically, payroll processing has been costly (due to both associated fees and manual processing), and time-consuming (both at the employee side, and the processing times required for transfers or check issuance). This has limited the frequency of pay to either monthly or bi-weekly installments, except for cash intensive industries such as tipped workers in the service industry that often receive tips on a daily basis.

The typical cost of sending a paycheck is \$2 to \$4, in addition to it taking significant time for the money to reach the recipient. However, recent technological advances in electronic payments have reduced the logistical and cost considerations associated with distributing pay (De La Rossa and Tully, 2020; Stell, 2016), and competition among payroll providers have decreased the cost of distributing paychecks through lower fees for electronic pay transfers. Consequently, the number of employers offering more frequent pay are increasing (De La Rossa and Tully, 2020). In industries with lower-paying jobs, such as retail and restaurants, offering frequent pay becomes a competitive advantage in attracting workers. EWA is growing rapidly, with the value of wages accessed by employees totaling \$9.5 billion in 2020, from \$3.2 billion in 2018 (Pimentel, 2021).

From a technical standpoint, EWA is provided by a more than a dozen fintech companies such as Branch, Dailypay, PayActiv, Payfare and Flexwage.<sup>3</sup> When employers partner with earned wage access providers, employees typically download an app from the provider which allows them to access and transfer earned wages to a debit card or bank account in near real time (within 30 minutes), based on transfer infrastructure such as Visa Direct, the direct payment solution offered by Visa (Visa, 2020).<sup>4</sup> Importantly, it is often argued that EWA is not a form of credit, though certain mechanics will feel similar to the end consumer/employee. This distinction is important legally and practically but the "similar feel" to certain aspects of credit from the consumer viewpoint are likely more advantageous than not because it may invoke a more cautious approach to the use of EWA tools and make employees more likely to take the various recommendations (or agreeably comply with the specific limitations) related to the planning considerations involved in earlier access to earned wages.

Both traditional employers and platforms for gig-employment have begun to embrace EWA. Walmart and Wendy's are notable recent adopters, both partnering with EWA provider PayActiv to offer their employees some of their pay immediately. There is no cost for the employee if wages are transferred to a PayActiv debit card, a \$1 fee per day to receive their wages in a different account, and \$1.99 for instant (30 minute) transfers (Bhattacharyya, 2021).

Smaller companies can also provide their employees with earned wage access. The company Clair provides EWA software with a focus on simplicity and ease of use for small business owners. Similar to other providers, Clair offers employees the ability to have wages transferred directly to their own debit cards, issued by Mastercard.

Another earned wage access provider is Payfare, that provides people that work for Uber, Lyft, and Doordash to access their pay immediately (Miller, 2021). For gig-workers, access to earned wages becomes especially important, as they go through expenses continually (e.g., An uber driver paying for

<sup>&</sup>lt;sup>3</sup>Examples of earned wage access providers are Branch, Clair, DailyPay, Instant Financial, PayActiv, Payfare, FlexWage, and ZayZoon.

<sup>&</sup>lt;sup>4</sup> Visa Direct allows for immediate payments between cards and accounts and has been offered as a service to businesses for over 10 years outside the U.S. and is now growing in the U.S. market through partnerships with major earned wage access providers such as DailyPay, FlexWage, Instant Financial, PayActiv, and ZayZoon (Visa, 2020).

gas), which would be very burdensome to cover if not also being paid on a very frequent basis, especially considering that many gig-workers have limited financial resources (Koustas, 2019). As gig-work or some sort of independent contracting is expected to constitute roughly half of all U.S. employment by 2023, EWA is predicted to become increasingly important by industry experts (Miller, 2020).

While most EWA providers partner with employers to gain access to payroll systems to gauge how much an employee has accrued in wages – such as Branch, PayActiv and DailyPay – other providers engage directly with employees who provide access to their bank accounts. Notably, Earnin works this way, and charges no fees as it relies on users tipping for the service at each transaction (Pimentel, 2021).

Typically, employees pay a fee to the EWA provider for each transfer of instant earned wage access to a debit card issued by a bank on the Visa or the Mastercard network, or alternatively, to a bank account. Branch charges between \$2.99 to \$4.99 for a transfer to another account, with slower transfers being free. PayActiv users pay \$1.99 for a transfer to a third-party card, and DailyPay charges a fee of \$2.99 for instant transfers and \$1.99 for next day transfers, regardless of where the money goes (Pimentel, 2021). Despite the cost compared to a free ACH wage transfer, four out of five employees with access to PayActiv's EWA service choose instant transfers to a Visa debit card (Moeser, 2021), and employers that offer EWA often find that it is one of the most appreciated employee benefits offered (Baker and Kumar, 2018; Pimentel, 2021).

Besides fees (which in some instances are covered by the employer), EWA providers make money in different ways, with several providers offer banking services, with lower fees if the employee opens a bank account. Notably, PayActiv users can get their pay directly to a debit card and pay bills through an app. Revenue is provided by fees paid by the employer, transaction fees on purchases made on the issued debit cards, and in some instances, the provider creates new ways of utilizing accrued wages such as transferring two hours of wages directly to Amazon or Uber credit (Pimentel, 2021). Illustrative of how these services are evolving towards more than just access to earned wages, Earnin offers a service called Balance Shield, that automatically takes out an advance on wages once the employee's bank account balance becomes too low.

Employers often find that EWA increases employee satisfaction and retention without impacting corporate cashflow (Baker and Kumar, 2018), and reduces the number of employees seeking out predatory loans (Pimentel, 2021). Given this, some employers have chosen to cover access fees as a boost to their competitive benefit set, going as far as setting up a maximum amount that an employee can withdraw per month to cap the benefit. However, some policymakers have criticized earned wage access providers, equating the service to payday lending. It is worth noting that even as EWA is not viewed as a form of credit, an understanding of the price paid by consumers for access to the liquidity is relevant. The fees sometimes associated with EWA, though low, can result in high APRs. If done

repeatedly, for example, paying \$5 to receive \$50 of wages three days early is very costly for a low wage earner (Pimentel, 2021).

Even as employees have been found to appreciate EWA, the way it is designed and packaged is important, both for employee satisfaction, retention, and financial well-being. Walmart employees who decided to get paid more frequently but did not use the tools for saving and budgeting that were offered, left their jobs sooner.<sup>5</sup> However, a positive effect on both employee satisfaction and retention was observed among employees who used EWA in conjunction with tools for saving and budgeting (Surane and Boyle, 2021; Pimentel, 2021). Thus, the emerging evidence appears to suggest that EWA, though better than several other more costly (particularly credit/lending) liquidity solutions for hourly wage earners, can be similarly problematic if not deployed with other financial management and education tools.

Worth mentioning is that easier access to credit can provide similar benefits to EWA, to ease household liquidity constraints. Providers of credit such as Mission Lane, Prosper (that brokers low-interest peer-to-peer lending), Upstart and Wisely are companies active in this market. Another alternative to earned wage access are services such as Chime, a startup that charges a small fee make your pay available instantly – basically a short-term loan that enable users to receive their wages 3 days earlier compared to traditional ACH transfers.

# 5.1 Integration of Earned Wage Access with Budgeting Tools: Walmart's InstaPay

A key concern relating to EWA is that increased pay frequency will result in employees not setting aside enough money for recurring expenses. To alleviate these concerns, employers and providers often set limits on EWA, either in terms of how many times wages can be accessed in a given time period, or the fraction of pay that is accessible. Most employers offering EWA limits the fraction of pay available, which is often in the range of 50% to 70%, to ensure that employees don't risk overdrawing beyond their means.

Another strategy is to integrate EWA with budgeting tools. A notable example is that Walmart employees now have access to earned wages through the InstaPay app, provided by Even (a company offering a tool for household budgeting and financial planning). The EWA aspect is integrated through the company PayActiv. Notable features of the offering are that wages can only be accessed once a week, with access to up to 50% of earned wages, net of deductions. (Even/Walmart, 2021).

In terms of financial planning, the Even app connects with the employee's bank account, to identify bills, track the individual's income and expenses. An "Ok to Spend" is continuously estimated, which is defined as the bank balance, minus money needed for identified bills and emergency expenses. The app can be set to draw different amounts from each check, to spread expenses evenly over time. This

<sup>&</sup>lt;sup>5</sup> It should be noted that we lack information about the specific reasons for leaving their jobs. The pattern is however interesting.

is explained in the materials provided by Walmart associates; "Even spreads your bills evenly across your paychecks, pulling just the right amount of money from each check for each bill. This balancing of pay and expenses is reflected in the "Okay to spend" amount. For example, if most of your bills are due in the second half of the month, Even will hold aside enough money from your first paycheck of the month, so you don't have to use your whole second paycheck for bills. This leaves you with a more consistent amount of money left to spend after every paycheck" (Even/Walmart, 2021).

# 6. Conclusion: Policy Implications and Guiding Principles

Overall, EWA can have a positive impact on some fraction of employed individuals who are either un- or underbanked and therefore are likely to lack access to traditional forms of credit–groups that constitute 6.5% and 18.7% of U.S households, respectively (FDIC, 2017). Notably, EWA has the potential to replace costs associated with payday loans, overdraft fees and consequences of strategic non-payment of bills. However, a better understanding of which households that would benefit from EWA is needed, in addition to deeper knowledge about the potentially adverse effects that access to accrued wages have on how households make financial decisions. Below, we outline a few key issues that should be considered in relation to both implementation of EWA and as areas for further research.

# 6.1 The Impact of EWA Depends on the Characteristics of the User

There is sound reason to believe that EWA requires strategies to mitigate the increased perception of wealth that often come with increased pay frequency. Examples of studies that support this notion are provided by De La Rosa and Tully (2020), who found that increased pay frequency increases discretionary spending, and Aguiar and Hurst (2008) who found that a lack of access to credit results in precautionary savings. Basically, friction in context of Modigliani-Miller can result in better financial outcomes when individuals lack financial literacy and/or self-control.

However, EWA can also improve the financial wellbeing of households, as disposable income increases when money is not spent on expensive credit, or when liquidity constraints would have resulted in costly decisions (as EWA can alleviate such constraints).

The above tells us that there are two conflicting forces that drive how earned wage access will impact the financial well-being of households: a) a decline in savings as observance of self-control becomes more difficult when liquidity is improved, and b) an increase in disposable income when households avoid direct and indirect costs of managing liquidity.

Without empirical evidence telling us the magnitude of these potential forces, it is difficult to make statements on the net effect of EWA on the financial wellbeing of households. It might however be such that both arguments hold, as research that support that infrequent pay increases savings will hold for households with annual earnings that surpass their annual expenses. For such households, receiving a part of their pay in a lump sum, does not impact their ability to pay their bills, i.e., EWA would in fact lower the savings rate.

However, if a household has an annual income that barely covers annual expenses, lower pay frequency is more likely to result in the household facing costs such as overdraft fees, or costs associated with payday loans. In this context, EWA can result in considerable savings as it replaces expensive credit as a means to manage payment for essential expenses. Depending on how large these

costs are, and how much spending behavior is impacted by increased pay frequency, the net effect that EWA has on financial well-being is likely to vary considerably across groups of households.

Besides income, high levels of heterogeneity in financial literacy, wealth, and savings patterns among households with similar socio-economic characteristics should also be considered (Lusardi, 1999). Further research is needed to evaluate differences in how EWA impacts individuals, both across, and within different socio-economic groups.

# 6.2 Consider Both Direct, and In-Direct Costs of Managing Household Liquidity

In addition to direct costs of managing liquidity – such as payday loans and overdraft fees – indirect costs should also be considered when analyzing the impact of EWA.

Notably, when a lack of access to credit results in strategic non-payment as a strategy for managing an unexpected expense, the consequences include the direct penalties and fees, in addition to making the individual even less likely to gain access to credit in the future. The latter constitutes an indirect cost of managing liquidity. Similarly, someone might decide to engage in gig-work that pays less than an alternative form of work simply because the former pays immediately. A better understanding of the implicit discount rates of such decisions, would make it possible to analyze all consequences of liquidity constraints in conjunction – effectively comparing APRs of payday loans and overdraft fees in the same context as the cost of a one-year delay in having access to credit due to a strategic non-payment.

Further research can provide a better understanding of the relationship between liquidity constraints and how households make financial decisions. Notably, analyzing the potential for EWA to mitigate some of these costs.

# 6.3 Implement Strategies to Address Potentially Adverse Effects of EWA

Behavioral aspects are key to understanding how EWA will impact the financial well-being of households, and to inform best practices for implementation. If households gain access to their earnings faster, the impact is positive if it enables the households to avoid costs such as payday loans and overdraft fees. However, this only holds if access to EWA does not result in increased spending/decreased savings due to potentially greater perceived wealth that comes from more frequent pay. Thus, successful EWA that has a net positive impact on the financial wellbeing of households should be aimed at addressing these potentially harmful consequences.

The amount of financial literacy and self-control an individual has, are key determinants of whether EWA will have a net positive impact on financial wellbeing. Currently, companies are addressing the potentially adverse effects of EWA by limiting access to wages in terms of percentages of accrued income and number of transactions for a given time period. Some employers also offer employees

solutions that allow for better budgeting. A notable example is the Even app that makes it possible to set aside part of each paycheck for upcoming expenses, so that employees have a consistent amount to spend after each paycheck. Coupling EWA with this form of tools has proven to increase employee satisfaction and retention. Not only could these solutions limit potentially adverse effects of EWA, but they also have the potential to over time increase the financial literacy of users.

Further research is needed, to determine the potential benefits from program limits such as how much wages are to be accessible at a given time, and the level of integration with financial planning tools. Current applications of EWA support that limiting access to accrued wages and offering tools for budgeting is beneficial for those who use EWA.

# 6.4 EWA can Address Costs for Managing Liquidity, not Longer-Term Financial Hardship

It is important to note that EWA does not solve for financial hardship of a longer-term nature, i.e., having expenses that exceed income, and that it is not a substitute for other forms of compensation or salary. However, EWA has the potential to improve the financial well-being of employees, by lowering costs associated with managing liquidity during periods of transient financial hardship for those that lack access to traditional credit. Or, stated differently, EWA can offer a far more affordable alternative to expensive credit such as payday loans.

#### 7. References

Agarwal, S., Skiba, P. M., & Tobacman, J. 2009. Payday loans and credit cards: New liquidity and credit scoring puzzles?. American Economic Review, 99(2), 412-17.

Aguiar, M., & Hurst, E. 2013. Deconstructing life cycle expenditure. Journal of Political Economy, 121(3), 437-492.

Baker, S. R., & Yannelis, C. 2017. Income changes and consumption: Evidence from the 2013 federal government shutdown. Review of Economic Dynamics, 23, 99-124.

Baker, T., and Kumar, S. 2018. Power of the Salary Link: Assessing the Benefits of Employer-Sponsored FinTech Liquidity and Credit Solutions for Low-Wage Working Americans and their Employers. Harvard Business Review

Barry, E. 2019. 25% of US households are either unbanked or underbanked. CNBC. https://www.cnbc.com/2019/03/08/25percent-of-us-households-are-either-unbanked-orunderbanked.html

Bania, N. and Leete, L., 2007. Income volatility and food insufficiency in US low-income households, 1992-2003. Institute for Research on Poverty.

Baugh, B., Ben-David, I., Park, H., & Parker, J. A. 2018. Asymmetric consumption response of households to positive and negative anticipated cash flows. National Bureau of Economic Research.

Benito, A., Thompson, J. N., Waldron, M., & Wood, R. 2006. House prices and consumer spending. Bank of England Quarterly Bulletin, Summer.

Berger, D., Guerrieri, V., Lorenzoni, G., & Vavra, J. 2018. House prices and consumer spending. The Review of Economic Studies, 85(3), 1502-1542.

Bernard, T. 2021. Banks Slowly Offer Alternatives to Overdraft Fees, a Bane of Struggling Spenders. New York Times.

Bernheim, D., Skinner, J. and Weinberg, S. 2001. What Accounts for the Variation in Retirement Wealth Among U.S. Households? American Economic Review, 91(4), 832 – 857.

Bertrand, Marianne, and Adair Morse. 2011. Information Disclosure, Cognitive Biases, and Payday Borrowing. The Journal of Finance, 66 (6), pp. 1865-1893.

Bhattacharyya, S. 2021. How fintech startups are disrupting the payday lending model. Protocol. Protocol.

Bhutta, N. 2014. Payday loans and consumer financial health. Journal of Banking & Finance, 47, 230-242.

Bhutta, N., Goldin, J., & Homonoff, T. 2016. Consumer borrowing after payday loan bans. The Journal of Law and Economics, 59(1), 225-259.

Buiter, W. H. 2008. Housing wealth isn't wealth (No. w14204). National Bureau of Economic Research.

Campbell, J. and Cocco, J. 2007. How Do House Prices Affect Consumption? Journal of Monetary Economics, 54 (3), 591-621.

Campbell, J. Y. and Mankiw, N. G. 1989. Consumption, Income and Interest Rates: Reinterpreting the Time Series Evidence. In NBER Chapters, pages 185–246. National Bureau of Economic Research, Inc.

Campbell, John Y. & Cocco, Joao F., 2007. How do house prices affect consumption? Evidence from micro data. Journal of Monetary Economics, vol. 54(3), pages 591-621.

Carrns, A. 2014. Customers Can Lose When Banks Shuffle Payments. New York Times.

Carroll, C., Slacalek, J., Tokuoka, K., & White, M. N. 2017. The distribution of wealth and the marginal propensity to consume. Quantitative Economics, 8(3), 977-1020.

Carroll, Christopher 1997. Buffer Stock Saving and the Life Cycle/Permanent Income Hypothesis. Quarterly Journal of Economics 112(1): 1-56.

Carroll, C. and Summers, L. 1991. Consumption Growth Parrells Income Growth: Some New Evidence. In National Saving and Economic Performance, edited by Bernheim, D. and Shoven, J. Chicago: University of Chicago Press.

Cerutti, E., Dagher J. and Dell'Ariccia, G. 2015. Housing Finance and Real-Estate Booms: A Cross-Country Perspective," Sta Discussion Notes, IMF.

Consumer Financial Protection Bureau. 2017. What are the costs and fees for a payday loan? CFPB.

Corkery, M. 2017. Walmart Will Let Its 1.4 Million Workers Take Their Pay Before Payday. New York Times, December 13, 2017.

Daniels, K. and Grinstein-Weiss, M., 2019. The impact of the gig-economy on financial hardship among low-income families. Available at SSRN 3293988.

Dasgupta, P., & Maskin, E. 2005. Uncertainty and hyperbolic discounting. American Economic Review, 95(4), 1290-1299.

Di Maggio, M. and Williams, E. 2020. Should U.S. Policymakers Force Banks to Waive Overdraft Fees During the Crisis? Harvard Business Review

De La Rosa, W., & Tully, S. 2020. The Impact of Payment Frequency on Subjective Wealth Perceptions and Discretionary Spending. Available at SSRN 3658727.

Even/Walmart, 2021. Even FAQ for Walmart Associates. https://one.walmart.com/content/dam/themepage/pdfs/COVID\_Walmart\_Even\_FAQ.pdf

Farrell, D. and Greig, F., 2016, January. Paychecks, paydays, and the online platform economy. In Proceedings. Annual Conference on Taxation and Minutes of the Annual Meeting of the National Tax Association (Vol. 109, pp. 1-40). National Tax Association.

FDIC, Federal Deposit Insurance Corporation. 2017. FDIC National Survey of Unbanked and Underbanked Households. https://www.fdic.gov/analysis/household-survey/2017/index.html

FDIC, Federal Deposit Insurance Corporation. 2021. How America Banks: Household Use of Banking and Financial Services, 2019 FDIC Survey.

Federal Reserve. 2020. Report on the Economic Well-Being of U.S. Households in 2019 - May 2020.

Ganong, P., & Noel, P. 2019. Consumer spending during unemployment: Positive and normative implications. American Economic Review, 109(7), 2383-2424.

Gelman, M., Kariv, S., Shapiro, M. D., Silverman, D., & Tadelis, S. 2015. How individuals smooth spending: Evidence from the 2013 government shutdown using account data. Cambridge, MA: National Bureau of Economic Research.

Gourinchas, P-O and Parker, J. 2002. Consumption over the Life Cycle. Econometrica, January 2002, 70, 1, 47-89.

Gundersen, C. and Gruber, J., 2001. The dynamic determinants of food insufficiency. In Second food security measurement and research conference (Vol. 2, pp. 11-2). Food Assistance and Nutrition Research Report.

Guiso, L., Paiella, M. and Visco, I. 2005. Do capital gains affect consumption? Estimates of wealth effects from italian households' behavior," Discussion Paper 555, Bank of Italy

Hendricks, M and Foreman, D. 2021. How To Get Your Bank To Waive Overdraft Fees. https://www.forbes.com/advisor/banking/get-bank-to-waive-overdraft-fees/

Hoch, S.J. and Loewenstein, G.F., 1991. Time-inconsistent preferences and consumer self-control. Journal of consumer research, 17(4), pp.492-507.

Hsieh, C. T. 2003. Do consumers react to anticipated income changes? Evidence from the Alaska permanent fund. American Economic Review, 93(1), 397-405.

Jappelli, T., & Pagano, M. 1994. Saving, growth, and liquidity constraints. The Quarterly Journal of Economics, 109(1), 83-109.

Koustas, D.K., 2019, May. What do big data tell us about why people take gig economy jobs? In AEA Papers and Proceedings (Vol. 109, pp. 367-71).

Laibson, D. 1997. Golden eggs and hyperbolic discounting. The Quarterly Journal of Economics, 112(2), 443-478.

Lusardi, A. 1999. Information, expectations, and savings for retirement. Behavioral dimensions of retirement economics, 81, 115. Chicago.

Lusardi, A. 2008. Financial literacy: an essential tool for informed consumer choice? (No. w14084). National Bureau of Economic Research.

Lusardi, A., & de Bassa Scheresberg, C. 2013. Financial literacy and high-cost borrowing in the United States (No. w18969). National Bureau of Economic Research.

Lusardi, A. and Mitchell, O. 2007. "Baby Boomer Retirement Security: The Roles of Planning, Financial Literacy, and Housing Wealth", Journal of Monetary Economics.

Mastrobuoni, G. and M. Weinberg 2009. Heterogeneity in intra-monthly con- sumption patterns, self-control, and savings at retirement. American Economic Journal: Economic Policy 1(2), 163–89.

Mian, A., Rao, K. and Su, A. 2013. Household Balance Sheets, Consumption, and the Economic Slump," The Quarterly Journal of Economics, 2013, 128 (4), 1687-1726.

Miller, Z. 2021. 'Sitting in the back of an Uber, we understood drivers have a pain point': Payfare's Marco MargiottA. https://tearsheet.co/podcasts/sitting-in-the-back-of-an-uber-we-understood-drivers-have-a-pain-point-payfares-marco-margiotta/

Mischel, W. 1974. Processes in Delay of Gratification. Advances in Experimental Social Psychology. Vol. 7. ed D. Berkowitz. New York.

Moeser, B. 2020. Demand for real-time wages climbed even after fees came back. Payments Source. <u>https://www.paymentssource.com/news/demand-for-real-time-wages-climbed-even-after-fees-came-back</u>

Morse, A. 2011. Payday lenders: Heroes or villains? Journal of Financial Economics, 102(1), 28-44.

Parsons, C. A., & Van Wesep, E. D. 2013. The timing of pay. Journal of Financial Economics, 109(2), 373-397.

Pew. 2016. Payday Loan Facts and the CFPBS Impact.https://www.pewtrusts.org/en/research-and-analysis/fact-sheets/2016/01/payday-loan-facts-and-the-cfpbs-impact

Pimentel, B. 2021. Is earned wage access predatory payday lending? States will soon decide.Protocol. https://www.protocol.com/earned-wage-access-payday-lending

Ponciano, J. 2021. Sen. Warren Grills Billionaire JPMorgan CEO For Collecting \$1.5 Billion In Overdraft Fees During Pandemic. Forbes

Poterba, J. M. 2000. Stock market wealth and consumption. Journal of economic perspectives, 14(2), 99-118.

Prang, A. 2021. Overdraft Fees Fell in the Covid-19 Economy. Wall Street Journal.

Rivlin, Gary. 2010. Broke, USA: From Pawnshops to Poverty, Inc.—How the Working Poor Became Big Business. New York: HarperCollins Publishers.

Rubinstein, A. 2003. Economics and psychology? The case of hyperbolic discounting. International Economic Review, 44(4), 1207-1216.

Sahm, C. R., Shapiro, M. D., & Slemrod, J. B. 2009. Household response to the 2008 tax rebate: survey evidence and aggregate implications (No. w15421). National Bureau of Economic Research.

Shapiro, J. M. 2005. Is there a daily discount rate? Evidence from the food stamp nutrition cycle. Journal of public Economics, 89(2-3), 303-325.

Sinai, T., & Souleles, N. S. 2005. Owner-occupied housing as a hedge against rent risk. The Quarterly Journal of Economics, 120(2), 763-789.

Skiba, P. M., & Tobacman, J. 2019. Do payday loans cause bankruptcy?. The Journal of Law and Economics, 62(3), 485-519.

Smith, P., Babar S., and Borné R. 2020. Overdraft Fees: Banks Must Stop Gouging Consumers During the COVID-19 Crisis. Center for Responsible Lending.

Souleles, N. S. 1999. The response of household consumption to income tax refunds. American Economic Review, 89(4), 947-958.

Stell, R. 2016. The Benefits of Direct Deposit for Salary Checks. National Federation of Independent Businesses.

Steindel, C. and Ludvigson, S.C., 1999. How Important is the Stock Market Effect on Consumption?. Economic Policy Review, 5(2).

Stephens Jr, M. 2003. 3rd of the month: Do social security recipients smooth consumption between checks?. American Economic Review, 93(1), 406-422.

Stephens Jr, M. 2006. Paycheck receipt and the timing of consumption. The Economic Journal, 116(513), 680-701.

Stephens, Melvin and Takashi Unayama. 2011. The Consumption Response to Seasonal Income: Evidence from Japanese Public Pension Benefits," American Economic Journal: Applied Economics, 3(4)86–118.

Stigler, G. 1966. The Theory of Price. 3d ed. New York: Macmillan.

Surane, J. and Boyle, M. 2021. Walmart's Early Pay Perk Is Popular, But Sometimes Has a Cost. Bloomberg Technology. <u>https://www.bloomberg.com/news/articles/2021-03-09/walmart-s-experiment-with-paying-early-sees-some-higher-turnover</u>

Thaler, R. H., & Shefrin, H. M. 1981. An economic theory of self-control. Journal of political Economy, 89(2), 392-406.

Thurow, L. 1969. The Optimum Lifetime Distribution of Consumption Expenditures. American Economic Review, 59(3), 282-97.

Valenzuela A., Theodore, N. Meléndez, E. and Gonzalez A. 2006. On the Corner: Day labor in the United States. Center for the Study of Urban Poverty.

Visa Corporate Website. Visited on July 25, 2021. Q&A: What developers need to know about Visa Direct. <u>https://usa.visa.com/visa-everywhere/innovation/visa-direct-interview.html</u>

Visa. 2019. Earned Wage Access: The impact on employee engagement, health and financial wellness

Visa. 2020. Millions of hourly workers get paid faster due to Visa and partner support. https://usa.visa.com/visa-everywhere/blog/bdp/2020/05/14/millions-of-hourly-1589422514788.html

Walsh, M. 2020. Banks Took \$11 Billion in Overdraft Fees in 2019, Group Says. New York Times.

Wilcox, D. W. 1989. Social security benefits, consumption expenditure, and the life cycle hypothesis. Journal of Political Economy, 97(2), 288-304.

Zeldes, S. P. 1989. Consumption and liquidity constraints: an empirical investigation. Journal of political economy, 97(2), 305-346.