Pay me now or Pay Me Later? The Impact of Untimely Employer Deposits to Defined Contribution Plans in the U.S. on Employee Wealth

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Abstract

This paper provides insight into the impact those delays in employer deposits into employee retirement plans has on employee wealth. I provide a history of the regulations in the U.S. associated with timely deposits of contributions by employers on behalf of the employee. I construct hypothetical investment scenarios, and simulate the impact that delays in the deposit of contributions might have on employee wealth. I find that delays in deposits by employers tend to have a negative impact on accumulated employee wealth. Using total returns on the S & P 500 index over the period 1990-2014, this negative impact increases with longer delays for employees that are paid weekly at the end of the week. However, for employees who are paid monthly at the end of the month, the negative impact actually decreases with longer delays up to seven business days after the date of pay.

Keywords: Defined-contribution, timing of plan deposits, DOL regulations

JEL Classifications: D31, E21, E27, J32

1. Introduction

For many employees, the decision to participate in a defined contribution plan is an important first step in obtaining a secure retirement, an often elusive goal that has been increasingly shifted from employers to the employee over the past few decades. In 1979, 84% of private sector workers in the U.S. covered by a retirement plan had a defined benefit plan, compared to only 38% with a defined contribution plan[1]. As of 2011, however, participation rates had completely reversed, with only 31% of covered private workers having a defined benefit plan, and 93% participating in a defined contribution plan (EBRI, 2014). It is clear that defined contribution plans, once considered merely a supplement to defined benefit plans, have become the primary retirement account for most U.S. employees. The shift toward defined contribution plans as the primary mechanism for retirement funding has led, in part, to greater oversight of the how defined contribution plans are administered. In most defined contribution plans, employees elect to have a certain percentage of their salary withheld and deposited into their retirement account each pay period.

In conjunction with the employee salary withholding each pay period, many employers also offer matching funds that are deposited on behalf of the employee. The obligation of employers to remit deposits (of both withheld and matching funds) to a defined contribution plan on behalf of employees may seem relatively straightforward, and most employees might assume that these funds are deposited immediately into their retirement accounts on the same date on which they are paid. However, there is in fact some discretion on the part of the employer as to when these funds actually get deposited. The process can also be complicated by the fact that many companies outsource their payroll functions, which in turn can lead to delays in depositing funds.

In this paper, I provide a brief history of the regulations associated with the responsibility of employers to remit deposits to employee retirement plans in a timely manner. In addition, I also investigate the impact of possible of delays in the deposit of contributions on employee wealth surrounding two common dates of pay - the end of the week and the end of the month.

[1] Percentages do not sum to 100% because some employees have access to both types of plans.

Specifically, I simulate hypothetical equity portfolios over the 25-year period 1990-2014 and use the total return on the S&P 500 index to ascertain the financial impact that delays in deposits might have on employee retirement wealth. I find that delays in deposits by employers tend to have a negative impact on accumulated employee wealth. Using total returns on the S&P 500 index over the period 1990-2014,this negative impact increases with longer delays for employees that are paid weekly at the end of the week. However, for employees who are paid monthly at the end of the month, the negative impact actually decreases with longer delays up to seven business days after the date of pay. Possible explanations for these findings are discussed in light of previously documented calendar anomalies found in equity markets. Moreover, I conclude that regulatory efforts in the U.S. over the past few decades to improve the timeliness of deposits to employee retirement plans by employers appear warranted. The remainder of the paper proceeds as follows. In Section 2, I discuss the regulatory history and prior literature related to the timeliness of deposits to retirement plans by employers. In Section 3, I discuss the development of simulated hypothetical portfolios, the assumptions made, and the data used in constructing the portfolios. Section 4 discusses the results of the analysis, and Section 5 concludes.

2. Regulatory History and Literature Review

2.1 Regulatory History

Multiple laws and agencies oversee different aspects of the administration of retirement plans in the U.S., the most comprehensive of which is the Employee Retirement Income Security Act of 1974 (ERISA). However, when it comes to oversight on the timeliness of deposits into a retirement plan, the Department of Labor (DOL) has jurisdiction over how employee contributions or salary withholdings are handled prior to being deposited into the plan. To understand this process, it is important to first understand when contributions made by or on behalf of an employee are deemed to become "plan assets." In 1988, several years after the implementation of ERISA, the DOL published the first rule (29 CFR 2510.3-102) in the Federal Register (53 FR 17628, May 17, 1988) defining the nature and handling of plan assets by employers. In this initial rule, the DOL specified plan assets included amounts that a participant (or beneficiary) pays to or has withheld by an employer for contribution to a plan. Specifically, such amounts become plan assets as of the earliest date on which they can reasonably be segregated from the employer's general assets, but in no event to exceed 90 (calendar) days from the date on which they are received or withheld by the employer. The emphasis of this rule was on the "as of the earliest date," not on the 90-day outer limit. However, under this this initial rule, an employer might be allowed to have up to 90 days to remit the deposit without penalty in certain circumstances, but such occurrences were likely rare.

In 1996, the DOL amended this initial rule (61 FR 41220, August 7, 1996) to change the outer limit from 90 calendar days to the 15th business day of the month following the month in which participant contributions are received or withheld. With this change, employers had a shortened maximum time frame to remit deposits. The general intent of the initial rule – that amounts paid to or withheld by an employer become plan assets on the earliest date on which they can become reasonably segregated from the employer's general assets – remained intact. In 2010, the DOL regulations surrounding the treatment of plan assets changed again with the issuance of another a revised rule (75 FR 2068, January 14, 2010). This change was made to provide further clarification to employers, particularly smaller-sized employers. The 2010 revision, which remains current as of the date of this paper, created a specific "safe harbor" provision for smaller-sized businesses. The current (2010) rule retains the original language of the 1988 rule for the definition of plan assets as including amounts that a participant (or beneficiary) pays to or has withheld by an employer for contribution to a plan.

In addition, it also retains the stipulation that such contributions be deposited as of the earliest date on which such contributions can reasonably be segregated from the employer's general assets, but in no event to exceed the 15th business day of the month following the month in which participant contributions are received or withheld. However, the current (2010) rule includes a specific safe-harbor provision that allows employers with plans that have fewer than 100 plan participants at the beginning of the plan year to deposit contributed or withheld funds up to 7 business days with the plan. At first glance, this safe-harbor provision might seem more restrictive than the general rule, but keep in mind the emphasis of the general rule is that funds be deposited "as of the earliest date on which such contributions can reasonably be segregated from the employer's general assets", which is generally interpreted to mean much less than 7 business days. Thus, with the 2010 rule change, smaller employers were explicitly granted a 7 business day grace period to remit deposits to a plan. Despite the increasingly strict oversight of employee plan contributions throughout the years, instances of abuse still are prevalent.

For example, during 2015 fiscal year, the Employee Benefits Security Administration (EBSA) closed 2,441 civil cases involving misuse of plan assets, and restored $696.3 million to employee benefit plan, participants, and beneficiaries (EBSA website).

2.2 Finance Literature Review

There are two previous studies that touch upon the idea of contribution timing having an impact on returns. Neither of these studies, however, specifically examines the impact of delays in the deposit of contributions after a date of pay. Dvorak (2011) examines the impact of the timing of contributions to defined benefit and defined contribution plans on investment returns, determining that contributions to defined benefit plans tend to be counter cyclical with the business cycle. In other words, required contributions to defined benefit plans tend to be highest when asset prices are low. There seems to be little correlation, however, between plan contributions to defined contribution plans and the business cycle. These relationships contribute significantly to the fact that returns on defined benefit plans tend to exceed the returns on defined contribution plans by approximately one percentage point, on average. Ogden (1990) explores the possibility that the standardization of payments in the U.S. results in patterns of concentrated of cash flows near the end of months and years contributing to the persistence of certain calendar anomalies, such as the "turn-of-month" (Ariel, 1987)and "January" (Rozeff and Kinney, 1976) effects, respectively. The standardization of payments creates a surge of investment in equities during these periods, resulting in higher stock prices. Odgen (1990) finds support for this notion, which he calls the turn-of-month liquidity hypothesis. The effect tends to be inversely related to the stringency of monetary policy, that is, when monetary policy is loose (tight), the effects are larger (smaller).

Neither of the two previous studies, however, specifically examines the impact on employee wealth from the delay of a deposit by the employer into a retirement plan. The findings of Ogden (1990), however, suggest that a delay in plan contributions might have an impact on overall plan performance. Depending on the frequency in which employees are paid, various calendar anomalies might have an impact on the returns realized by plan participants if the deposits to the plan are delayed. Of particular importance to this study are the weekend effect, the reverse weekend effect, and the turn-of-month effect. A brief background of each anomaly is provided in the following sections.

2.2.1 The Weekend and 'Reverse' Weekend Effects

First documented by Cross (1973), the weekend effect has subsequently been studied by several other researchers such as French (1980), Keim and Stambaugh (1984), Lakonishok and Maberly (1990), and Kamara (1997), to name a few. In general, the findings of these studies suggest that stock returns tend to be significantly lower on Mondays than other days of the week. One explanation of the weekend effect is the trading patterns of different types of investors. Institutional trading volume tends to be at its lowest on Mondays, while the trading volume of individuals is at its highest and tends to be dominated by sell orders (Lakonishok and Maberly, 1990). Kamara (1997) provides evidence that the rise in the use of equity derivatives and the institutionalization of equity markets erodes the weekend effect, except for small firms, a finding confirmed by Brusa, Liu, and Schulman (2000).

Another notable finding of Brusa, Liu, and Schulman (2000), as well as Brusa et al. (2003) and Brusa et al. (2005), is the existence of a 'reverse' weekend effect – where returns are lower on Fridays and higher on Mondays. The authors document the reverse weekend effect for large firms over the period 1988-1998, and discuss other aspects that might contribute to the reverse weekend effect, such as industry, trading patterns of investors, the month of the year, and the week of the month. The bottom line of the studies on the weekend effect and the reverse weekend effect is that stock returns may behave somewhat differently on the days surrounding a weekend; the effects are not universal across different-sized companies.

2.2.2 The Turn-of-Month Effect

The turn-of-month effect was first discovered by Ariel (1987) and Lakonishok and Smidt (1988). Ariel (1987) documents that the mean return for stocks is positive only for days immediately before and during the first half of calendar months, and indistinguishable from zero for days during the last half of the month. Lakonishok and Smidt (1988) examine the returns to the Dow Jones Industrial Average (DJIA) from the period 1897-1986, and find that the cumulative return over a four-day turn-of-month period was 0.473%, while the cumulative return over the entire month was 0.349%, suggesting that in the remaining days of the month, the return, is, on average, negative.

The turn-of-month effect may be attributable to, in part, the fact that investable cash flows received by investors are more concentrated near the end of months, and these inflows subsequently result in greater demand for stocks in the days surrounding the end of the month (Ogden, 1990). McConnell and Xu (2008) provide evidence that the turn-of-month effect is still quite prevalent in U.S. equity markets since the originally discovery in the 1980s.

3.0 Hypothetical Scenario Development, Assumptions, and Data

The time value of money principle suggests that immediate investment of plan participant funds on the date of pay will maximize plan participant wealth. However, given the existence if identified calendar anomalies surrounding the end of the week and the end of the month, it could be possible that short delays could actually have a positive impact on overall returns. For example, in the case of the weekend effect, where equity returns are lower on Mondays, delaying the contribution until the following Monday might actually be a benefit for the employee that gets paid on a Friday. To ascertain the impact of possible delays in the deposit of plan participant contributions, I form hypothetical portfolios simulating investment of two common pay dates: the end of the week (EOW) and end of the month (EOM). With existing DOL regulations, the safe harbor provision for small employers of 7 business days after the pay date is likely the latest date of deposit that would be permitted on a recurring basis. Therefore, I investigate the impact the delay of deposits of plan participant funds up to 7 business days after the actual date of pay.

The deposit timing variables are computed as follows. The end of week is denoted by EOW_i, where i= 0 through 7, representing the trading day relative to last trading day of the week. In most cases, EOW_0 is a Friday, and EOW_1 is a Monday, with exceptions occurring when a holiday falls on a Friday or Monday. The end of month is denoted byEOM_i, where i= 0 through 7, representing the trading day relative to last trading day of the month. Deposit and investment of funds is assumed to occur at the end of a respective day, consistent with a "mutual fund" type of investment. For example, a deposit of funds on EOM_0 would occur at the end of the day on the last trading day of the month, and a deposit of funds on EOM_1 would occur at the end of the first trading day of the following month. I construct hypothetical pay date and retirement contribution scenarios as follows. For weekly (monthly) dates of pay, I assume a level investment of $100 ($400) each pay period[2] over the period 1990-2014. I ignore the possibility for changes in the contribution amount over the period, though realistically, an employee's periodic contribution amount would likely increase over time.

The benchmark portfolio for each scenario is that the funds are invested at the end of the day on which an employee is paid (EOW_0or EOM_0). For the weekly pay date benchmark portfolio, the funds are invested at the end of the day on the last trading day of the week (EOW_0), which is typically a Friday. For the monthly pay date benchmark portfolio, the funds are invested at the end of the day on the last trading day of the month (EOM_0). For both the weekly and monthly pay date scenarios, seven other portfolios are created reflecting delayed investment of the funds on trading days 1 through 7 after the actual date of pay. The daily total return on the S&P 500 index, which is obtained from the Center for Research in Security Prices, is used as the proxy for equity returns. The time period for analysis, is the 25 year period spanning 1990-2014? What makes the total return on the S&P 500 a suitable measure for equity returns is the fact that an employee could easily invest in an index fund designed to mimic the return on this index. However, I ignore the impact of any possible any transaction fees, management fees, and taxes when simulating the portfolios. Though the focus in this paper is exclusively on U.S. equity returns, it should be noted, however, that a typical plan participant would likely also have exposure to other types of assets, such as international stocks and fixed income securities.

4.0 Results

4.1 Pay Date at the End of the Week

Table 1 presents the end of year balances of simulated portfolios where an employee is paid weekly at the end of each week, and makes a $100 contribution to a defined contribution plan at the end of each week over the period 1990-2014. The leftmost column is the benchmark portfolio (EOW_0), and the remaining seven columns are for portfolios where the deposit is delayed (EOW_1 through EOW_7). The differences of the delayed-investment portfolios relative to the benchmark at the end of the time period (2014) are presented at the bottom the table in both dollars and percentages.

[2] It should be noted that these assumptions do not result in identical total investment in both weekly (52 x $100 = 5,200) and monthly (12 x 400 = $4,800) scenarios.

Adjustments are made to ensure that the same numbers of deposits are made in the delayed portfolios as the benchmark, thus any difference in the portfolio ending values in 2014 are not due to a different number of deposits. The ending balance of the benchmark portfolio is $320,302. When delayed investment occurs, the balance of the portfolio is always smaller than the benchmark, and the size of the deficiency is monotonically positively related to the number of days the deposit is delayed. The size of the deficiency ranges from -0.06% for the EOW_1 portfolio to -0.27% for the EOW_7 portfolio. For weekly pay date employees, it appears that more timely deposits to their accounts is always to their benefit if they invest in an S&P 500 index fund.

4.2 Pay Date at the End of the Month

Table 2 presents the end of year balances of simulated portfolios where an employee is paid monthly at the end of each month, and makes a $400 contribution to a defined contribution plan at the end of each month over the period 1990-2014. The leftmost column is the benchmark portfolio (EOM_0), and the remaining seven columns are for portfolios where the deposit is delayed (EOM_1 through EOM_7). The differences of the delayed-investment portfolios relative to the benchmark at the end of the time period (2014) are presented at the bottom the table in both dollars and percentages. Adjustments are made to ensure that the same numbers of deposits are made in the delayed portfolios as the benchmark, thus any difference in the portfolio ending values in 2014 are not due to a different number of deposits. The ending balance of the benchmark portfolio is $303,675. Note that this is lower than the ending balance of the weekly benchmark portfolio presented in Table 1.

This can be attributed to two factors: 1) the total annual contribution is slightly lower given the assumptions used ($4,800 for monthly vs. $5,200 for weekly), and 2) returns compound more quickly when contributions are invested on a weekly basis. Similar to the results for the weekly pay dates, delayed investment always results in the balance of the portfolio being smaller than the benchmark. However, the size of the deficiency actually tends to decrease as the days of delay increases. The size of the deficiency ranges from a high of -0.31% for the EOM_2 portfolio to a low of -0.14% for the EOM_7 portfolio. For monthly pay date employees investing in an S&P 500 index fund, if a delay in deposit occurs, it is actually to their benefit if the delay is over 1 week instead of 1 or 2 days.

4.3 Comparison of Pay Dates and Discussion

A graphical comparison of the delayed portfolio deficiency relative to the benchmark portfolios for weekly and monthly pay dates is presented in Figure 1. Again, we see that for weekly pay dates, there is a positive monotonic relationship between the magnitude of the deficiency and the delay of the deposit. For monthly pay dates, however, the trend is the opposite after EOM_2, with longer delays resulting in a smaller deficiency. How can these findings be explained? For weekly pay dates, one might expect that the employee could possibly benefit from a day or two delays in the deposit of their funds, since the weekend effect creates returns that tend to be higher on Fridays and lower on Mondays. However, the existence of the weekend effect has been most strongly detected in the stocks for smaller companies.

Since the returns used in this study are on the S&P 500, which consists entirely of larger companies, the weekend effect likely does not exist. In fact, these larger companies may be more likely to exhibit the reverse weekend effect, as documented by Brusa, Liu and Schulman (2000). Related to monthly pay dates, the turn-of-month effect suggests higher returns exist on the days immediately prior to and after the end of a calendar month. Thus, the declining negative impact of a delay in deposit exhibited in the monthly pay date analysis could be a reflection of the fact the higher returns occur in the first few days after the end of a month, thus, a longer delay (up to 7 days at least) results in investment occurring at increasingly lower equity values. Nonetheless, it is still of the greatest benefit for the employee if deposits occur immediately on the date of pay.

5.0 Conclusion

In this paper, I investigate the impact of delays in employer deposits to defined contribution plans on employee wealth. As a background for this analysis, I discuss how the DOL regulations regarding the timely remittance of employee contributions to defined contribution plans have changed over time. I also discuss various calendar anomalies previously identified by the literature that might play a role in the returns realized by plan participants as a result of employer-delayed deposits. Using the total returns on the S&P 500 index over the period 1990-2014, I examine the effect of possible delays in deposits for two common pay date frequencies: the end of the week and the end of the month. For employees who are paid weekly at the end of the week, I find that longer delays (up to 7 business days) result in increasingly negative impacts on employee wealth.

However, for employees who are paid monthly at the end the month, if a delay occurs, it is of greater benefit to employees' wealth of the delay is slightly longer (up to 7 days) than a shorter delay of 1-2 days. Regardless of the periodicity of the pay date, however, employee wealth appears to maximized when retirement contributions are immediately deposited by the employer on the date of pay. Thus, I conclude that when investment of funds is in an S&P 500 index, the time value of money principle dominates any possible market timing benefit that might occur due to the existence of calendar anomalies. Moreover, regulatory efforts in the U.S. over the past few decades to improve the timeliness of deposits to employee retirement plans by employers appear warranted.

An important caveat to the findings in this paper is that it is highly unlikely that an employee would invest exclusively within one specific asset class (U.S. large-cap stocks) through the duration of their career. Analysis of investments in other asset types may reveal considerably different conclusions. For example, if calendar anomalies primarily exist in smaller company stocks, it might be that market timing effects could result in delays in deposits actually benefiting overall employee wealth. Thus, a logical extension of this research would be to examine the impact on overall portfolio wealth when funds are invested in other asset classes.

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Table 1: Simulated Yearly Portfolio Values with Weekly Contributions

This table presents the annual year end balances of simulated hypothetical portfolios using the total return on the S&P 500 index and assuming a level investment of $100 per week. The portfolio labeled $EOW_0$is considered the benchmark portfolio, and differences of the other portfolios are computed relative to this benchmark.

Year	EOW_0	EOW_{+1}	EOW_{+2}	EOW_{+3}	EOW_{+4}	EOW_{+5}	EOW_{+6}	EOW_{+7}
1990	5,055	5,048	4,950	4,953	4,961	4,961	4,851	4,850
1991	12,053	12,038	12,041	11,935	11,934	11,934	11,920	11,817
1992	17,738	17,716	17,717	17,706	17,707	17,707	17,695	17,687
1993	24,160	24,031	24,033	24,014	24,014	24,014	24,001	23,988
1994	28,877	28,745	28,751	28,731	28,733	28,733	28,618	28,609
1995	44,550	44,399	44,398	44,364	44,361	44,361	44,227	44,207
1996	59,221	59,151	59,147	59,003	58,997	58,997	58,949	58,823
1997	83,193	83,084	83,052	82,997	82,897	82,897	82,816	82,767
1998	110,985	110,841	110,792	110,714	110,721	110,721	110,601	110,531
1999	138,190	137,913	137,878	137,773	137,775	137,775	137,616	137,553
2000	128,916	128,647	128,619	128,542	128,536	128,536	128,289	128,229
2001	116,934	116,789	116,666	116,609	116,596	116,596	116,386	116,330
2002	94,190	94,096	94,085	93,931	93,921	93,921	93,868	93,729
2003	124,839	124,713	124,696	124,629	124,507	124,507	124,424	124,370
2004	141,437	141,195	141,170	141,097	141,071	141,071	140,981	140,915
2005	150,953	150,702	150,681	150,607	150,579	150,579	150,379	150,314
2006	177,033	176,761	176,735	176,640	176,607	176,607	176,392	176,317
2007	188,353	188,177	188,053	187,943	187,914	187,914	187,698	187,618
2008	119,688	119,595	119,559	119,524	119,418	119,418	119,355	119,286
2009	153,623	153,522	153,461	153,408	153,385	153,385	153,317	153,228
2010	178,809	178,584	178,515	178,448	178,429	178,429	178,343	178,238
2011	183,881	183,663	183,580	183,521	183,505	183,505	183,325	183,198
2012	213,809	213,670	213,472	213,404	213,388	213,388	213,188	213,040
2013	282,842	282,663	282,526	282,338	282,309	282,309	282,163	281,867
2014	320,302	320,104	319,944	319,841	319,811	319,811	319,644	319,423
End. Difference ($)		**(197)**	**(358)**	**(461)**	**(491)**	**(491)**	**(657)**	**(879)**
End. Difference (%)		**-0.06%**	**-0.11%**	**-0.14%**	**-0.15%**	**-0.15%**	**-0.21%**	**-0.27%**

Table 2: Simulated Yearly Portfolio Values with Monthly Contributions

This table presents the annual year end balances of simulated hypothetical portfolios using the total return on the S&P 500 index and assuming a level investment of $400 per month. The portfolio labeled $EOM_0$is considered the benchmark portfolio, and differences of the other portfolios are computed relative to this benchmark.

Year	EOW_0	EOW_{+1}	EOW_{+2}	EOW_{+3}	EOW_{+4}	EOW_{+5}	EOW_{+6}	EOW_{+7}
1990	4,778	4,355	4,329	4,346	4,351	4,351	4,351	4,346
1991	11,293	10,856	10,820	10,849	10,857	10,857	10,872	10,856
1992	16,814	16,365	16,333	16,372	16,385	16,385	16,406	16,387
1993	22,940	22,478	22,451	22,495	22,521	22,521	22,536	22,507
1994	27,375	26,928	26,895	26,938	26,978	26,978	26,996	26,959
1995	42,156	41,692	41,629	41,663	41,710	41,710	41,733	41,682
1996	55,983	55,480	55,397	55,435	55,489	55,489	55,527	55,476
1997	78,700	78,130	78,003	78,033	78,095	78,095	78,135	78,069
1998	105,137	104,488	104,329	104,387	104,463	104,463	104,518	104,419
1999	130,976	130,269	130,072	130,108	130,182	130,182	130,235	130,137
2000	122,168	121,471	121,316	121,328	121,395	121,395	121,433	121,358
2001	110,906	110,245	110,100	110,106	110,169	110,169	110,251	110,196
2002	89,316	88,728	88,643	88,674	88,713	88,713	88,769	88,760
2003	118,435	117,752	117,632	117,664	117,706	117,706	117,799	117,806
2004	134,219	133,489	133,348	133,386	133,424	133,424	133,551	133,543
2005	143,211	142,462	142,313	142,354	142,385	142,385	142,516	142,516
2006	167,886	167,075	166,898	166,952	166,986	166,986	167,133	167,143
2007	178,584	177,750	177,567	177,637	177,651	177,651	177,800	177,835
2008	113,515	112,881	112,763	112,834	112,889	112,889	112,993	113,048
2009	145,874	145,180	145,015	145,085	145,167	145,167	145,278	145,333
2010	169,878	169,095	168,890	168,948	169,069	169,069	169,156	169,220
2011	174,597	173,843	173,647	173,683	173,812	173,812	173,942	173,988
2012	202,945	202,133	201,919	201,941	202,087	202,087	202,249	202,304
2013	268,408	267,446	267,164	267,194	267,371	267,371	267,557	267,628
2014	303,675	303,070	302,742	302,769	302,963	302,963	303,165	303,242
End. Difference ($)		**(605)**	**(933)**	**(906)**	**(712)**	**(712)**	**(510)**	**(433)**
End. Difference (%)		**-0.20%**	**-0.31%**	**-0.30%**	**-0.23%**	**-0.23%**	**-0.17%**	**-0.14%**

Figure 1: Comparison of Difference from Day 0 Benchmark for Weekly and Monthly Pay Date Simulations