

Missing Money Update: Thrift Savings Fund—Treasury Account 026x6153¹

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In May 2020, we provided an update ([Skidmore and Fitts, 2020](#)), regarding the \$21 trillion in unsupported journal voucher adjustments documented in federal government reports created by the Office of the Inspector General. In that update, we discussed new information obtained via a Freedom of Information Act (FOIA) request in which we received documentation regarding 170 unsupported adjustments that tallied to \$2.1 trillion. We also presented new information regarding a very high rate of redemption and reissuance of federal government debt instruments. In 2019, total government debt was about \$22 trillion, but bond redemptions and reissuance were about \$95 trillion ([United States Department of Treasury, 2020a](#)). Further, redemptions and reissuance had grown at a much faster pace than debt over the 2001-2019 period and appeared to be much larger than what seemed to be required to support the existing debt outstanding. This information prompted us to ask whether high redemptions and reissuance were indicative to more debt outstanding than is officially reported. In June 2020, Mark Skidmore gave an interview on USA Watchdog in which he discussed this new information and invited others to offer ideas and suggestions. Fortunately, several suggestions emerged, one of which was to examine internally held debt. Recall that the federal government issues General Account Series securities for funds such as the Federal Old-Age and Survivors Fund, which are held internally within the government. Currently, internal debt outstanding is more than \$6 trillion. In this update, we offer new analyses regarding the nature of the large redemptions and reissuance being used to support internally held debt. Specifically, a portion of the internally held debt is composed of securities with one-day maturities. One-day securities require turnover every business day, thus generating very large redemptions and reissuance over the course of a year.

Internally held debt is managed by the United States Department of Treasury. Typically, this debt is held as special Government Account Series (GAS) securities. GAS securities come in varied maturity lengths, ranging from one-day up to 10 or more years. The Treasury Direct website ([United States Department of Treasury, 2020b](#)) contains daily fund balances for more than 700 funds managed by Treasury, dating back to 2001. While several funds have substantial one-day security holdings, the Thrift Savings Fund (account 026x6153) is an outlier.

¹ We thank Tom Stanis for bringing the issue of the very large Treasury redemptions to our attention and for valuable discussions that helped inform this report. We also thank Camila Alvaay Torrejón for capable research assistance.

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The Thrift Savings Plan is a savings vehicle for federal government employees that has many of the same features of a typical 401k plan. Information about the Thrift Savings Plan can be found at Wikipedia ([Wikipedia](#), 2020a) and at the federal government’s Thrift Savings Plan website ([Thrift Savings Plan](#), 2020). There are five funds available in the Thrift Savings portfolio; the G, F, C, S and I funds. The F, C, S and I funds are all “indexed” funds, the management of which is outsourced to BlackRock. According to the information provided by Wikipedia, one of the key features of indexed funds is that a “lack of active management generally gives the advantage of lower fees and, in taxable accounts, lower taxes.” These statements indicate that the Thrift Savings Fund uses a passive management strategy. Wikipedia ([Wikipedia](#), 2020b) offers a concise description of a passive management strategy:

The most popular method is to mimic the performance of an externally specified index by buying an index fund. By tracking an index, an investment portfolio typically gets good diversification, low turnover (good for keeping down internal transaction costs), and low management fees. ... One of the largest equity mutual funds, the Vanguard 500, is passively managed. The two firms with the largest amounts of money under management, BlackRock and State Street, primarily engage in passive management strategies.

This background information will be useful in our evaluation of the G Fund. The 2018 Thrift Savings Plan Financial Statement is available at the Federal Retirement Thrift Investment Board website ([FRTIB](#), 2020). As outlined in the financial statement, in 2018 the total amount managed was \$559 billion, which is allocated to five funds:

Table 1: Thrift Savings Plan Fund Allocations from the 2018 Financial Statement

Fund	Manager	Amount in 2018
U.S. Government Securities Investment Account	U.S. Treasury	\$253 billion
TSP F Fund – U.S. Debt Index Account	BlackRock	\$ 28 billion
TSP C Fund—Equity Index Account	BlackRock	\$177 billion
TSP S Fund—Extended Equity Index Account	BlackRock	\$ 60 billion
TSP I Fund EAFE Equity Index Account	BlackRock	\$ 41 billion
Total Assets		\$559 billion

It is not unusual for 45% of a retirement portfolio to be allocated to government securities. However, there is something unusual here in that the G Fund is entirely composed of securities with one-day maturities. Every day, Treasury redeems and reissues the entire balance of the G Fund. According Wikipedia ([Wikipedia](#), 2020a), the G Fund is defined as:

G Fund –Government Securities fund. These are unique government securities specifically issued to the TSP (thus, not available to the general public) and earn interest set by law at the weighted average yield on outstanding US Treasury securities with four or more years to maturity. Since these securities are backed by the full faith and credit of the US Government; the G Fund is the only fund with no risk of loss of principal. The G Fund was the initial fund established by the TSP when it began operations on April 1, 1987.

By law, the G Fund must generate a return that is equal to the “weighted average yield on outstanding US Treasury securities with four or more years to maturity”. The web archive provides more information about the G Fund ([Thrift Savings Plan](#), 2010). The fund description indicates that it invests in “short-term securities” but offers the return of longer-term securities. This is possible because the securities are non-marketable, and thus government sets the rate of return on a monthly basis. The fund reports a much higher return for TSP investors relative to overnight borrowing rates in the marketplace. For reference, the Federal Reserve Bank of New York ([Federal Reserve Bank of New York](#), 2020) reports that overnight borrowing at the time this report was written had an interest rate of about 9 basis points.

It was surprising to learn that all \$253 billion in the G Fund is entirely held in securities with one-day maturities. Because the Treasury “redeems” and “reissues” these securities every day, this fund alone generated about \$44 trillion in redemptions and reissuance in 2019. This single fund is responsible for nearly half of the \$94 trillion in total redemptions reported by the Treasury in 2019.

Thanks to the assistance of technical consultant Mr. David Pare, Python code was used to download the daily G Fund balances for every day dating back to 2001 from the Treasury Direct website ([United States Department of Treasury](#), 2020b). From these data, we calculated the average daily fund balances by year, as well as the required turnover (redemptions and issuance) by year over the 2001—2019 period.² This information is summarized in Tables 2 and 3 below. Figures 1 and 2 depict this information in graphical form.

Table 2: Thrift Savings Fund G Fund Average *Daily* Balance (\$ billions): 2001-2019

Year	Mean	Median	Std. Dev.	Minimum	Maximum
2001	36	36	2	33	39
2002	39	42	9	5	47
2003	41	50	17	0	51
2004	51	54	10	0	57
2005	61	62	2	57	64
2006	66	70	12	6	73
2007	78	78	3	73	84
2008	96	95	7	84	108
2009	112	113	7	0	115
2010	120	120	3	115	125
2011	119	129	36	0	148
2012	149	151	7	110	159
2013	132	156	48	0	178
2014	179	179	10	105	191
2015	116	112	75	0	209
2016	217	217	5	207	228
2017	144	182	80	13	226
2018	219	238	57	29	253
2019	174	241	91	0	257

² Figure 1 reports data for the first part of 2020 as well.

As shown in Table 2 the average daily balances increased from \$36 billion to \$174 billion in nominal terms between 2001 and 2019. Note the variability in fund balance from year to year as reflected in the standard deviations and minimum/maximum values. Why does a passively managed government securities fund fluctuate so dramatically from day to day? There is a zero balance that occurred at some point over the course of a year in seven of the 20 years for which we have data. Figure 1 offers clearer picture of fund balances from day to day over the entire period. Fund balances declined significantly for some days in the early 2000s and then were stable for several years. Then beginning in 2009 there were an increasing number of events wherein the daily fund balances dropped dramatically, in some cases for months at a time.

Because the G Fund is entirely composed of securities with one-day maturities, government reports indicated that entire balance of the G Fund is redeemed and reissued every day. One-day securities are the source of the massive redemptions and reissuance reported by Treasury, as discussed in our previous report ([Skidmore and Fitts, 2020](#),). This information provides an answer to the question we posed: Why is government reporting many \$10s of trillions in redemptions and reissuance? The explanation is that some of its internal debt is held as one-day securities, which requires daily turnover. Table 3 and Figure 2 present data on the turnover (redemptions and reissuance) required for the G Fund. The needed annual turnover increased from about \$9 trillion in 2001 to \$55 trillion in 2018, before dropping to \$44 trillion in 2019. However, the turnover only dropped off in 2019 because the average fund balances declined dramatically during the months of March through July, as shown in Figure 1. Table 2 also shows 1, 25, 50, 75, and 99 percentile values for the daily balances for each year. In some years, such as 2001, the balances are stable. However, in other years such as 2019 the balance ranges between \$22 billion and \$257 billion. Figure 2 shows year over year cases when the required turnover increases by as much as \$24 trillion (2015-2016) and falls by as much \$18 trillion (2016-2017). Figures 1 and 2 also show that while the general trend is increasing over time (the dotted lines on the graphs), there is also substantial variation in fund balances from day to day and from year to year. Why?

Figure 1: Thrift Savings Fund G Fund Daily Balance (\$ billions): 2001-2020

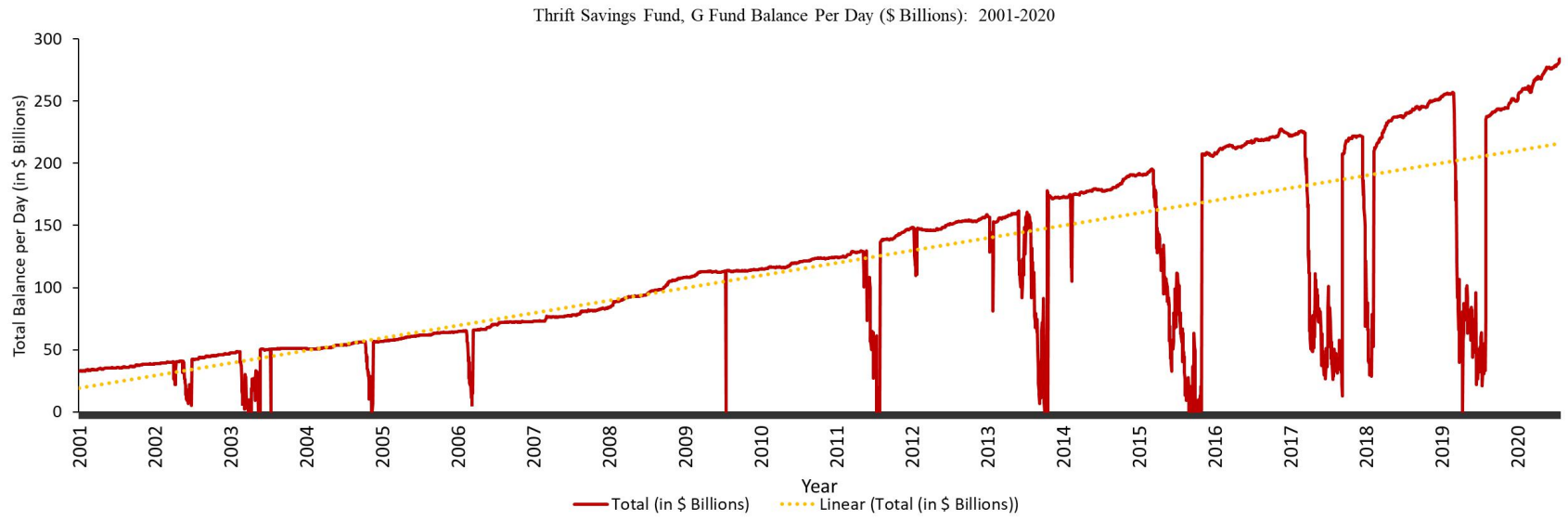
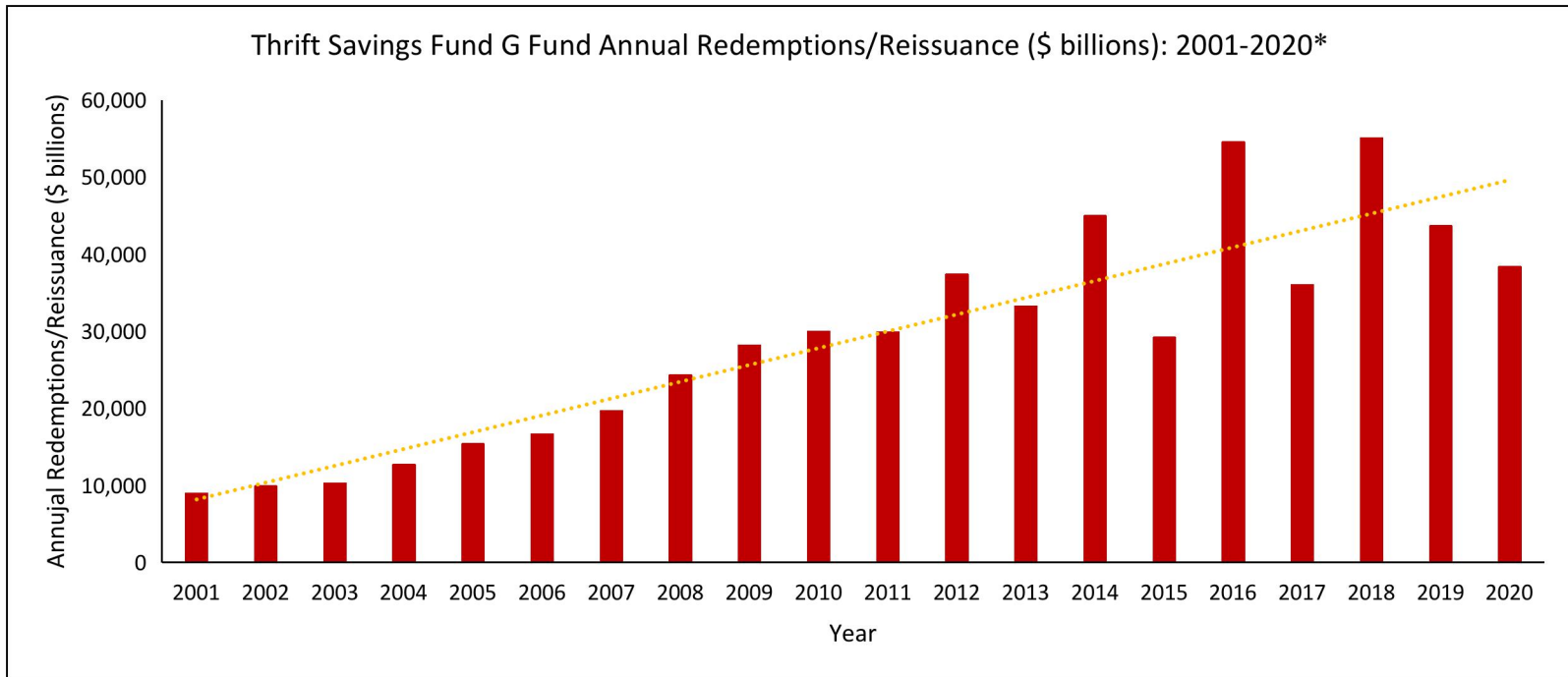


Table 2: Thrift Savings Fund G Fund Average *Annual* Required Turnover (\$ billions): 2001-2019

Year	Required Turnover	p1	p25	p50	p75	p99
2001	8,940	33	34	36	37	39
2002	9,879	7	39	42	45	47
2003	10,265	0	33	50	51	51
2004	12,694	4	51	54	56	57
2005	15,348	57	59	62	64	64
2006	16,606	12	66	70	72	73
2007	19,652	73	76	78	81	84
2008	24,312	84	92	95	101	108
2009	28,141	108	113	113	114	115
2010	29,966	115	116	120	123	125
2011	29,862	0	124	129	139	148
2012	37,361	111	147	151	154	158
2013	33,235	0	112	156	159	175
2014	44,955	116	176	179	183	191
2015	29,163	0	48	112	192	208
2016	54,522	208	213	217	221	227
2017	36,024	26	56	182	222	226
2018	55,046	29	227	238	245	253
2019	43,643	22	74	241	250	257

Figure 2: Thrift Savings Fund G Fund Annual Turnover (\$ billions): 2001-2019



*Data for 2020 are partial, running from January 1, 2020 through July 24, 2020.

The Appendix Table presents the reported end of month fund balances for years 2001 through 2019. The data show that over time the G Fund increased from \$33 billion in early 2001 to \$251 billion in 2019 in nominal terms, representing a 660% increase. The Appendix also provides links to the financial statements of the Thrift Savings Fund for years 2009-2018, which report the balances on the last day of each fiscal year for each of the funds in the portfolio, including the G Fund. The balances reported in the table for the last month of each year match those reported in the financial statements except for 2017. In 2017, the Treasury website records a balance of \$69 billion, but the financial statement indicates a balance of \$220 billion.

Given that this is a retirement fund with a stated passive investment strategy, one would expect balances in each of the funds managed, including the G Fund, to be reasonably stable from day to day and month to month. However, there is significant variability over time. Figure 1 as well as the months highlighted in yellow in the Appendix Table show dramatic reductions in fund balances, sometimes for several months at time. Then as quickly as the fund balance declined, it returned to its pre-decline levels. These observations spur several questions:

- Why is the G Fund composed entirely of securities with one-day maturities that are turned over every business day?
- Why do the daily balances drop dramatically in some periods and then return to their previous levels?
 - Where did those funds go in the months when the G Fund decreased so substantially?
 - Did fund managers at Treasury work with BlackRock to push those funds into financial markets?
 - Did those funds generate a return during the months when the fund balance low, and if so, how much?
 - Did the gains accrue to the federal employees and retirees who contributed to the fund?
 - Is the fluctuation in the daily fund balance we observe consistent with the stated passive management strategy used for the Thrift Savings Plan?
 - Are federal employees and retirees who have allocated their savings to this fund aware of the fluctuations occurring with their retirement savings? Would they approve of such movements?
 - Is holding the entire G Fund in one-day securities legal?
- Do other large retirement funds move \$10s or \$100s billions in and out of government securities on daily or monthly basis?
- Is it feasible to use those funds for public investment or spending (as is the case with other government security instruments) when they are turned over every business day?
- Do the dips in the fund balance correlate with significant financial market events?
- Are these funds being used for purposes other than to generate a return for current and future federal government retirees?
- Does this information suggest that there may be outstanding debt in excess of the official debt?

We bring these questions to the forefront, focusing on the Thrift Savings Fund. However, we also note that several other funds managed by Treasury have a substantial amount of securities with one-day maturities. Take for example the following funds:

- 020x444 Exchange Stabilization Fund (~\$11 billion in one-day securities in 2019)

- 097x8097 Department of Defense Military Retirement Fund (~15 billion in one-day securities in 2019)
- 097x5472 Department of Defense, Medicare-Eligible Retire Health Care Fund (~5 billion in one-day securities in 2019)

These three funds generated roughly ~\$8 trillion in turnover (redemptions and reissuance) in 2019. Note the larger funds such as the Federal Old-Age and Survivors Fund, Federal Disability Insurance Trust Fund, and the Federal Supplementary Medical Insurance Trust Fund do not hold one-day securities, at least not in the years we checked. In future work, it will be important to systematically review each of the more than 700 funds to tally the total dollar amount of securities with one-day maturities, and carefully consider the purposes for holding so much internally held federal government debt in securities with one-day maturities. We hope the readers understand how extraordinary and unusual this situation is and are spurred to inquire further about the nature and purposes of the holding \$100s of billions in one-day securities. What is going on?

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Appendix

Thrift Savings Board Financial Statements

December 31, 2018 and 2017

[TSP Financial Statements](#)

December 31, 2017 and 2016

[TSP Financial Statements](#)

December 31, 2016 and 2015

[TSP Financial Statements](#)

December 31, 2015 and 2014

[TSP Financial Statements](#)

December 31, 2014 and 2013

[TSP Financial Statements](#)

December 31, 2013 and 2012

[TSP Financial Statements](#)

December 31, 2012 and 2011

[TSP Financial Statements](#)

December 31, 2011 and 2010

[TSP Financial Statements](#)

December 31, 2010 and 2009

[TSP Financial Statements](#)

Appendix Table: Thrift Savings Fund Daily G Fund Balance at Treasury for Last Day of Each Month: 2001-2019

*Yellow highlight indicates anomalous reductions in year-end fund balance.

Year	Month	Fund Balance	Year	Month	Fund Balance	Year	Month	Fund Balance	Year	Month	Fund Balance
2001	January	32,957,485,000	2006	January	65,265,648,000	2011	January	124,469,739,617	2016	January	211,598,756,133
	February	33,564,215,000		February	27,099,011,000		February	126,628,412,080		February	213,699,143,997
	March	34,100,105,000		March	65,904,439,000		March	128,734,442,049		March	212,968,357,398
	April	34,835,880,000		April	66,405,250,000		April	129,326,023,276		April	213,415,468,020
	May	35,355,982,000		May	67,874,559,000		May	73,335,047,002		May	215,096,482,942
	June	35,442,059,000		June	70,549,893,000		June	27,220,572,069		June	216,088,692,207
	July	35,612,210,000		July	71,840,644,000		July	9,777,225,829		July	218,245,940,558
	August	36,234,204,000		August	72,180,097,000		August	138,992,630,086		August	218,969,856,920
	September	36,778,119,000		September	72,168,952,000		September	139,325,333,027		September	220,875,706,751
	October	37,842,280,000		October	72,240,498,000		October	143,328,836,133		October	221,591,273,823
	November	38,433,137,000		November	72,486,840,000		November	145,450,548,885		November	225,749,586,671
	December	38,660,018,000		December	72,784,757,000		December	147,726,298,487		December	222,304,445,644
2002	January	39,262,825,000	2007	January	73,098,999,000	2012	January	147,530,187,790	2017	January	223,777,525,786
	February	39,666,530,000		February	73,436,939,000		February	146,369,699,795		February	225,972,247,610
	March	40,404,478,000		March	76,340,648,000		March	146,153,153,811		March	116,620,767,842
	April	40,683,757,000		April	76,248,516,000		April	146,843,561,135		April	60,463,593,657
	May	14,025,335,000		May	76,956,543,000		May	148,449,598,891		May	37,296,259,405
	June	41,602,751,000		June	77,398,633,000		June	150,544,374,932		June	84,332,158,143
	July	42,512,675,000		July	78,527,526,000		July	152,468,694,553		July	35,426,371,079
	August	44,000,225,000		August	80,887,982,000		August	153,435,551,156		August	31,728,531,052
	September	44,948,369,000		September	81,379,092,000		September	153,942,101,754		September	217,929,819,323
	October	45,477,494,000		October	81,879,323,000		October	153,541,576,395		October	221,756,692,862
	November	46,166,291,000		November	83,469,151,000		November	155,113,960,632		November	222,543,880,877
	December	46,848,948,000		December	83,912,831,000		December	158,520,885,857		December	68,745,060,490
2003	January	47,930,354,000	2008	January	88,476,675,000	2013	January	81,406,386,925	2018	January	29,216,223,215
	February	16,284,627,000		February	89,839,939,000		February	155,607,133,804		February	216,359,534,581
	March	0		March	91,977,337,000		March	156,670,775,159		March	226,500,060,793
	April	9,359,203,000		April	93,034,501,000		April	158,950,457,327		April	234,119,741,436
	May	50,578,899,000		May	93,371,953,000		May	129,601,582,406		May	237,031,740,549
	June	50,113,656,000		June	94,388,694,000		June	146,961,947,030		June	236,903,636,880

	July	50,636,973,000		July	97,497,730,000		July	91,688,464,749		July	240,862,019,614
	August	51,002,924,000		August	98,386,145,000		August	49,460,709,346		August	245,396,109,670
	September	51,132,538,000		September	101,451,729,676		September	52,478,576,380		September	245,480,407,066
	October	51,173,305,000		October	105,918,122,858		October	173,171,859,377		October	248,764,510,226
	November	51,070,956,000		November	107,026,238,820		November	172,499,187,923		November	251,189,149,949
	December	51,159,990,000		December	108,215,649,805		December	172,695,083,307		December	253,356,455,583
2004	January	50,685,416,000	2009	January	108,595,681,209	2014	January	173,448,563,153	2019	January	256,282,643,665
	February	50,899,250,000		February	110,424,378,357		February	174,944,994,686		February	256,893,768,902
	March	51,780,713,000		March	112,623,112,622		March	176,525,449,547		March	40,088,624,638
	April	51,851,864,000		April	113,308,646,964		April	177,328,367,439		April	89,449,961,378
	May	53,534,463,000		May	112,818,045,182		May	179,158,771,870		May	44,069,286,653
	June	53,935,880,000		June	112,954,630,034		June	178,428,859,892		June	43,538,913,537
	July	54,691,701,000		July	113,698,479,919		July	178,667,277,137		July	33,295,993,292
	August	55,767,405,000		August	113,176,383,732		August	180,623,210,731		August	240,188,697,750
	September	56,366,810,000		September	113,318,925,342		September	183,738,322,528		September	243,357,273,648
	October	10,386,333,000		October	113,686,973,461		October	188,887,284,723		October	244,535,953,330
	November	56,394,302,000		November	114,491,088,390		November	190,711,186,960		November	248,886,789,246
	December	56,656,447,000		December	114,853,495,263		December	191,268,870,701		December	250,763,933,338
2005	January	57,588,368,000	2010	January	115,226,408,163	2015	January	190,953,052,000		January	
	February	57,942,979,000		February	116,518,273,401		February	193,904,085,201		February	
	March	58,891,175,000		March	116,254,229,071		March	131,661,854,349		March	
	April	60,051,708,000		April	116,180,722,350		April	94,929,947,645		April	
	May	60,754,410,000		May	119,381,417,126		May	57,313,998,012		May	
	June	61,599,283,000		June	120,115,883,068		June	68,606,839,981		June	
	July	61,957,045,000		July	121,384,449,118		July	40,247,093,714		July	
	August	62,597,239,000		August	122,257,376,456		August	53,656,915		August	
	September	63,512,395,000		September	123,563,475,431		September	0		September	
	October	63,944,584,000		October	123,670,288,073		October	1,282,572,157		October	
	November	64,137,800,000		November	124,186,651,966		November			November	207,803,471,301
	December	64,450,420,000		December	124,540,934,379		December			December	206,929,770,140