

## **Appendix C**

### **Cash movements at ATM's**

**April to June 1998**

#### **Explanatory notes**

Appendix C1 shows the movement of cash over a period of three months at the four ATM's which are the responsibility of the branch. As explained in Chapter 4, two of the ATM's are located at the branch whereas the other two are located at Agency A.

Since the branch moved to a new location on April, 25, the normal patterns of replenishment and withdrawals at the two ATM's at the branch were disturbed quite severely. The ATM's were not operational from April, 25, until May, 5. During this period a reconciliation showed that one of the ATM's was R10 short. This was corrected by a replenishment of R10 on April, 30.

In addition to the above disruption, the demand patterns at the branch ATM's were significantly altered by the move. At the previous location, the ATM's were located in a very busy shopping mall, whereas the new location does not have passing pedestrian traffic. As a result the demand levels dropped to a much lower level on the reopening of the ATM's. The ATM's at the agency however show undisturbed replenishment and withdrawal patterns throughout the three month period.

Appendix C2 calculates the average withdrawals for various times of the month and week, whereas Appendices C3 to C5 show various graphs illustrating ATM withdrawal patterns.



**Appendix C1: Cash movements at ATM's - April 1998**

Date	Days (holidays)	ATM's filled			ATM withdrawals			ATM balance
		Branch	Agency A	TOTAL	Branch	Agency A	TOTAL	
31-Mar-98	Tuesday							307 130
1-Apr-98	Wednesday	80 000	260 000	340 000	197 140	179 420	376 560	270 570
2	Thursday	160 000	151 000	311 000	178 110	142 630	320 740	260 830
3	Friday	80 000		80 000	151 930	130 460	282 390	58 440
4	Saturday	260 000	540 000	800 000	213 160	128 310	341 470	516 970
5	Sunday							
6	Monday	210 000		210 000	124 810	152 050	276 860	450 110
7	Tuesday		100 000	100 000	138 610	86 080	224 690	325 420
8	Wednesday	250 000	200 000	450 000	145 240	107 310	252 550	522 870
9	Thursday	260 000	200 000	460 000	170 870	139 660	310 530	672 340
10	Good Friday							
11	Saturday	400 000		400 000	197 820	119 150	316 970	755 370
12	Sunday							
13	Family day							
14	Tuesday		100 000	100 000	267 570	181 000	448 570	605 900
15	Wednesday	160 000	165 000	325 000	123 800	134 640	258 440	672 460
16	Thursday	160 000	60 000	220 000	114 840	90 910	205 750	686 710
17	Friday	80 000	200 000	280 000	152 920	121 410	274 330	692 380
18	Saturday	160 000	200 000	360 000	188 330	98 690	287 020	765 360
19	Sunday							
20	Monday	260 000	140 000	400 000	149 580	124 080	273 660	891 700
21	Tuesday		150 000	150 000	113 750	79 630	193 380	848 320
22	Wednesday		45 000	45 000	108 100	75 050	183 150	710 170
23	Thursday	80 000	200 000	280 000	89 420	104 300	193 720	796 450
24	Friday	10 000	100 000	110 000	2 610	191 730	194 340	712 110
25	Saturday			0	0	36 770	36 770	675 340
26	Sunday							
27	Freedom day							
28	Tuesday		400 000	400 000	0	382 800	382 800	673 400
29	Wednesday		200 000	200 000	0	112 380	112 380	761 020
30	Thursday	10	200 000	200 010	0	356 580	356 580	604 450



**Appendix C1: Cash movements at ATM's - May 1998**

Date	Days (holidays)	ATM's filled			ATM withdrawals			ATM balance
		Branch	Agency A	TOTAL	Branch	Agency A	TOTAL	
1-May-98	Workers' day							
2	Saturday		200 000	200 000	0	149 710	149 710	654 740
3	Sunday							
4	Monday		221 000	221 000	0	183 190	183 190	692 550
5	Tuesday		200 000	200 000	0	116 440	116 440	776 110
6	Wednesday	150 000	160 000	310 000	8 810	97 640	106 450	979 660
7	Thursday		15 000	15 000	7 680	77 580	85 260	909 400
8	Friday		20 000	20 000	11 550	148 010	159 560	769 840
9	Saturday		140 000	140 000	12 980	126 340	139 320	770 520
10	Sunday							
11	Monday	140 000	155 000	295 000	2 430	95 800	98 230	967 290
12	Tuesday			0	610	12 900	13 510	953 780
13	Wednesday		128 000	128 000	26 210	214 600	240 810	840 970
14	Thursday			0	10 060	91 990	102 050	738 920
15	Friday		320 000	320 000	27 130	193 130	220 260	838 660
16	Saturday		100 000	100 000	1 970	32 340	34 310	904 350
17	Sunday							
18	Monday		220 000	220 000	21 360	232 880	254 240	870 110
19	Tuesday		150 000	150 000	12 140	74 020	86 160	933 950
20	Wednesday			0	13 130	98 230	111 360	822 590
21	Thursday		80 000	80 000	9 530	104 040	113 570	789 020
22	Friday			0	12 900	115 170	128 070	680 950
23	Saturday		100 000	100 000	9 630	131 970	141 600	619 350
24	Sunday							
25	Monday		200 000	200 000	23 260	242 350	265 610	553 740
26	Tuesday	50 000	368 000	418 000	14 150	75 710	89 860	881 880
27	Wednesday			0	17 740	97 250	114 990	766 890
28	Thursday	100 000	78 000	178 000	25 360	172 820	198 180	746 710
29	Friday		260 000	260 000	54 020	203 950	257 970	748 740
30	Saturday	100 000	200 000	300 000	21 760	157 620	179 380	869 360
31	Sunday							



**Appendix C1: Cash movements at ATM's - June 1998**

Date	Days (holidays)	ATM's filled			ATM withdrawals			ATM balance
		Branch	Agency A	TOTAL	Branch	Agency A	TOTAL	
1-Jun-98	Monday			0	25 040	97 000	122 040	747 320
2	Tuesday		228 000	228 000	21 570	125 310	146 880	828 440
3	Wednesday			0	18 320	119 760	138 080	690 360
4	Thursday			0	15 400	93 780	109 180	581 180
5	Friday	100 000	496 000	596 000	24 490	128 880	153 370	1 023 810
6	Saturday			0	15 760	97 680	113 440	910 370
7	Sunday							
8	Monday		260 000	260 000	21 860	154 400	176 260	994 110
9	Tuesday		115 000	115 000	13 670	96 470	109 140	999 970
10	Wednesday			0	9 010	69 750	78 760	921 210
11	Thursday			0	8 870	97 660	106 530	814 680
12	Friday			0	28 210	119 750	147 960	666 720
13	Saturday	100 000		100 000	12 000	83 020	95 020	671 700
14	Sunday							
15	Monday		550 000	550 000	19 260	163 270	182 530	1 039 170
16	Youth day							
17	Wednesday		230 000	230 000	11 290	96 840	108 130	1 161 040
18	Thursday			0	8 520	89 390	97 910	1 063 130
19	Friday			0	23 610	116 870	140 480	922 650
20	Saturday			0	12 370	125 250	137 620	785 030
21	Sunday							
22	Monday	50 000	510 000	560 000	9 350	54 350	63 700	1 281 330
23	Tuesday		18 000	18 000	15 620	98 510	114 130	1 185 200
24	Wednesday	130 000	120 000	250 000	18 720	93 190	111 910	1 323 290
25	Thursday		76 000	76 000	20 720	148 440	169 160	1 230 130
26	Friday		260 000	260 000	51 610	273 420	325 030	1 165 100
27	Saturday		343 000	343 000	18 190	173 910	192 100	1 316 000
28	Sunday							
29	Monday			0	28 530	239 870	268 400	1 047 600
30	Tuesday		157 000	157 000	32 630	199 880	232 510	972 090



## Appendix C2

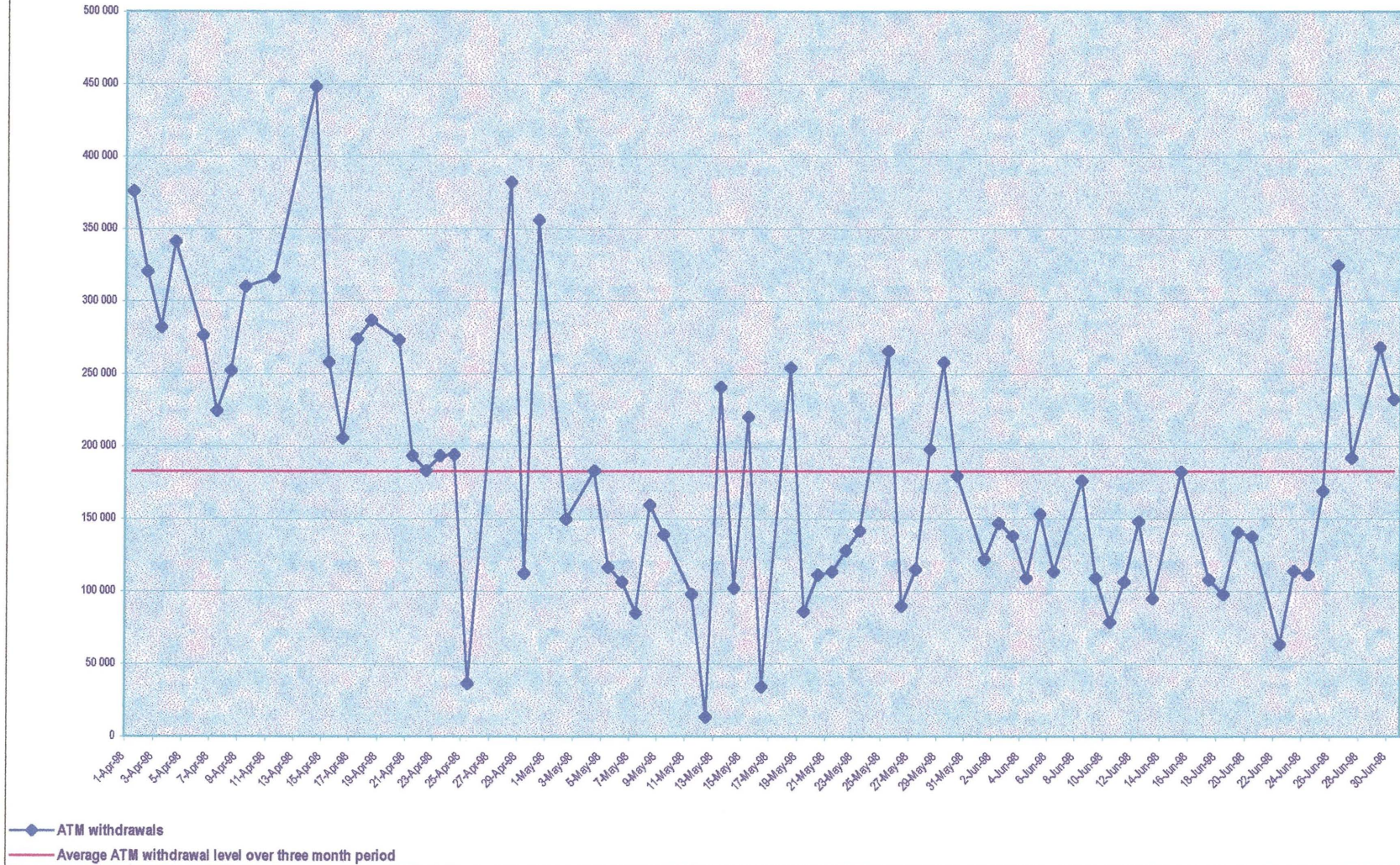
### Calculation of various averages for ATM withdrawals from April to June 1998

#### ATM cash withdrawals per day: April to June 1998

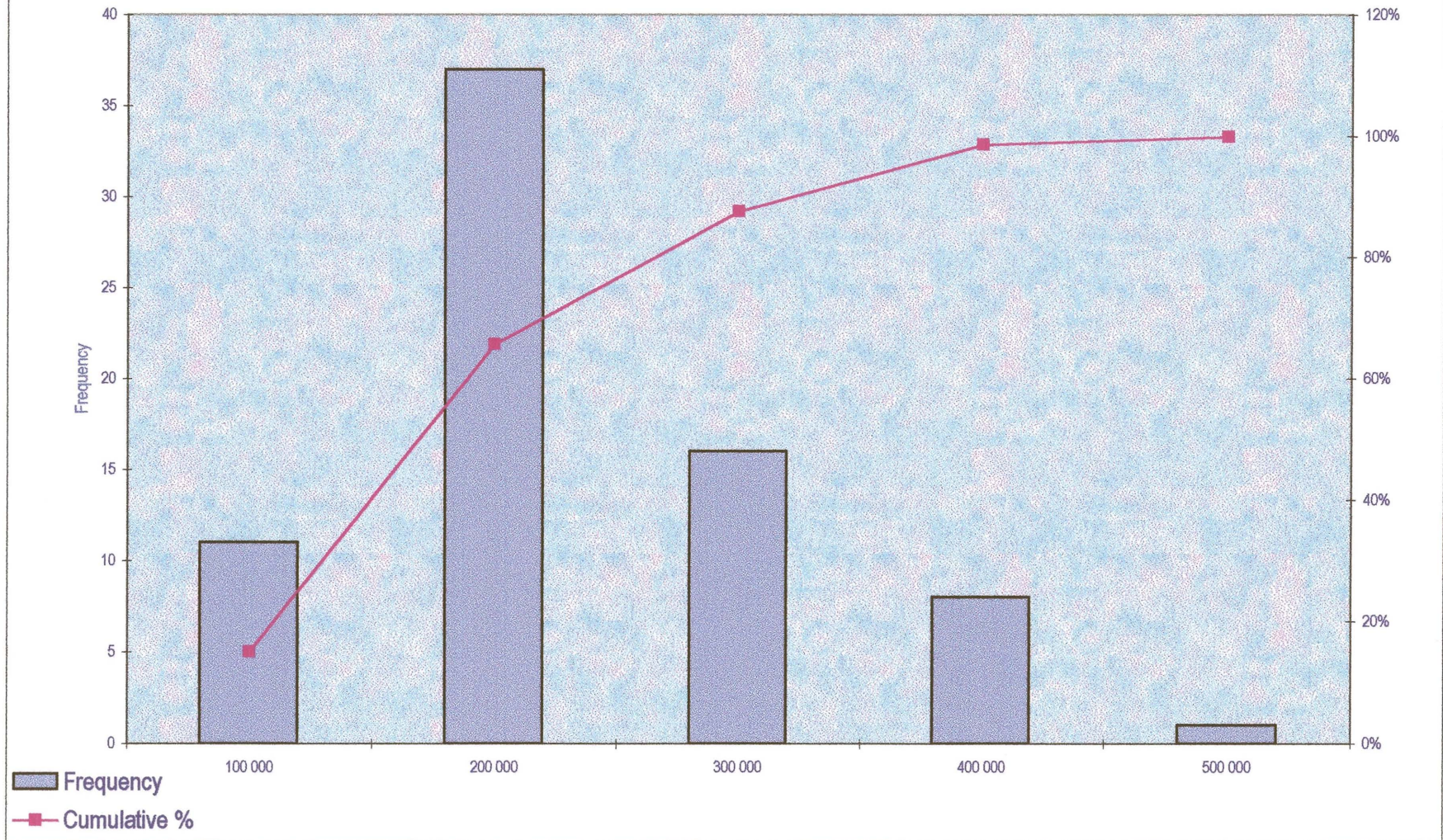
WEEK	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Weekly average
1 - 4 April			376 560	320 740	282 390	341 470	330 290
6 - 11 April	276 860	224 690	252 550	310 530		316 970	276 320
13 - 18 April		448 570	258 440	205 750	274 330	287 020	294 822
20 - 25 April	273 660	193 380	183 150	193 720	194 340	36 770	179 170
27 Apr - 2 May		382 800	112 380	356 580		149 710	250 368
4 - 9 May	183 190	116 440	106 450	85 260	159 560	139 320	131 703
11 - 16 May	98 230	13 510	240 810	102 050	220 260	34 310	118 195
18 - 23 May	254 240	86 160	111 360	113 570	128 070	141 600	139 167
25 - 30 May	265 610	89 860	114 990	198 180	257 970	179 380	184 332
1 - 6 June	122 040	146 880	138 080	109 180	153 370	113 440	130 498
8 - 13 June	176 260	109 140	78 760	106 530	147 960	95 020	118 945
15 - 20 June	182 530		108 130	97 910	140 480	137 620	133 334
22 - 27 June	63 700	114 130	111 910	169 160	325 030	192 100	162 672
29 - 30 June	268 400	232 510					250 455
<b>Daily average</b>	196 793	179 839	168 736	182 243	207 615	166 518	

<b>Month end average</b>	212 115
<b>Normal trading day average</b>	172 480
<b>Average for three month period</b>	182 658

Appendix C3: ATM withdrawals per trading day April to June 1998



Appendix C4: Histogram of ATM amounts withdrawn daily April to June 1998







## **Appendix D**

### **Total daily amount of cash on hand**

**April to June 1998**

#### **Explanatory notes**

Appendix D1 determines the total amount of cash held by the branch and its agencies on a daily basis. This is required to determine the cost of carrying these particular levels of inventory. To determine the total daily amount of cash on hand, the main safe overnight balance is added to the cashiers' total daily balance (both sets of figures provided by the branch) as well as the ATM balance (calculated in Appendix C). A complicating factor is that although ATM withdrawals occur on Sundays and public holidays, the withdrawals on those days are added to the withdrawal totals of the next trading day. The assumption is therefore made that the full amount held at the end of a trading day before a non-trading day is carried throughout that period. Refer also to Appendix E where the storage cost is calculated to view the impact of this assumption.

Appendix D2 shows the components constituting the total amount of cash on hand on a daily basis.



**Appendix D1:  
Total daily amount of cash on hand: April 1998**

Date	Days (holidays)	Main safe ba- lance overnight	Cashiers' total daily balance	ATM balance	Total daily cash on hand
31-Mar-98	Tuesday	865 935	244 889.04	307 130	1 417 954.04
1-Apr-98	Wednesday	530 935	214 321.02	270 570	1 015 826.02
2	Thursday	234 135	241 077.56	260 830	736 042.56
3	Friday	542 535	260 169.83	58 440	861 144.83
4	Saturday	158 535	338 713.69	516 970	1 014 218.69
5	Sunday				
6	Monday	587 535	329 219.64	450 110	1 366 864.64
7	Tuesday	910 535	217 857.58	325 420	1 453 812.58
8	Wednesday	1 963 635	189 247.56	522 870	2 675 752.56
9	Thursday	969 635	294 696.08	672 340	1 936 671.08
10	Good Friday				
11	Saturday	568 555	375 736.90	755 370	1 699 661.90
12	Sunday				
13	Family day				
14	Tuesday	1 455 555	185 664.82	605 900	2 247 119.82
15	Wednesday	1 273 880	253 592.60	672 460	2 199 932.60
16	Thursday	1 614 920	195 261.94	686 710	2 496 891.94
17	Friday	1 202 320	285 454.05	692 380	2 180 154.05
18	Saturday	1 036 320	358 985.83	765 360	2 160 665.83
19	Sunday				
20	Monday	1 526 400	179 439.18	891 700	2 597 539.18
21	Tuesday	1 389 400	145 763.43	848 320	2 383 483.43
22	Wednesday	1 389 400	212 390.24	710 170	2 311 960.24
23	Thursday	1 124 400	142 529.58	796 450	2 063 379.58
24	Friday	255 640	193 993.98	712 110	1 161 743.98
25	Saturday	319 640	182 286.21	675 340	1 177 266.21
26	Sunday				
27	Freedom day				
28	Tuesday	229 640	371 009.80	673 400	1 274 049.80
29	Wednesday	1 096 640	224 675.53	761 020	2 082 335.53
30	Thursday	93 200	303 858.82	604 450	1 001 508.82



**Appendix D1:  
Total daily amount of cash on hand: May 1998**

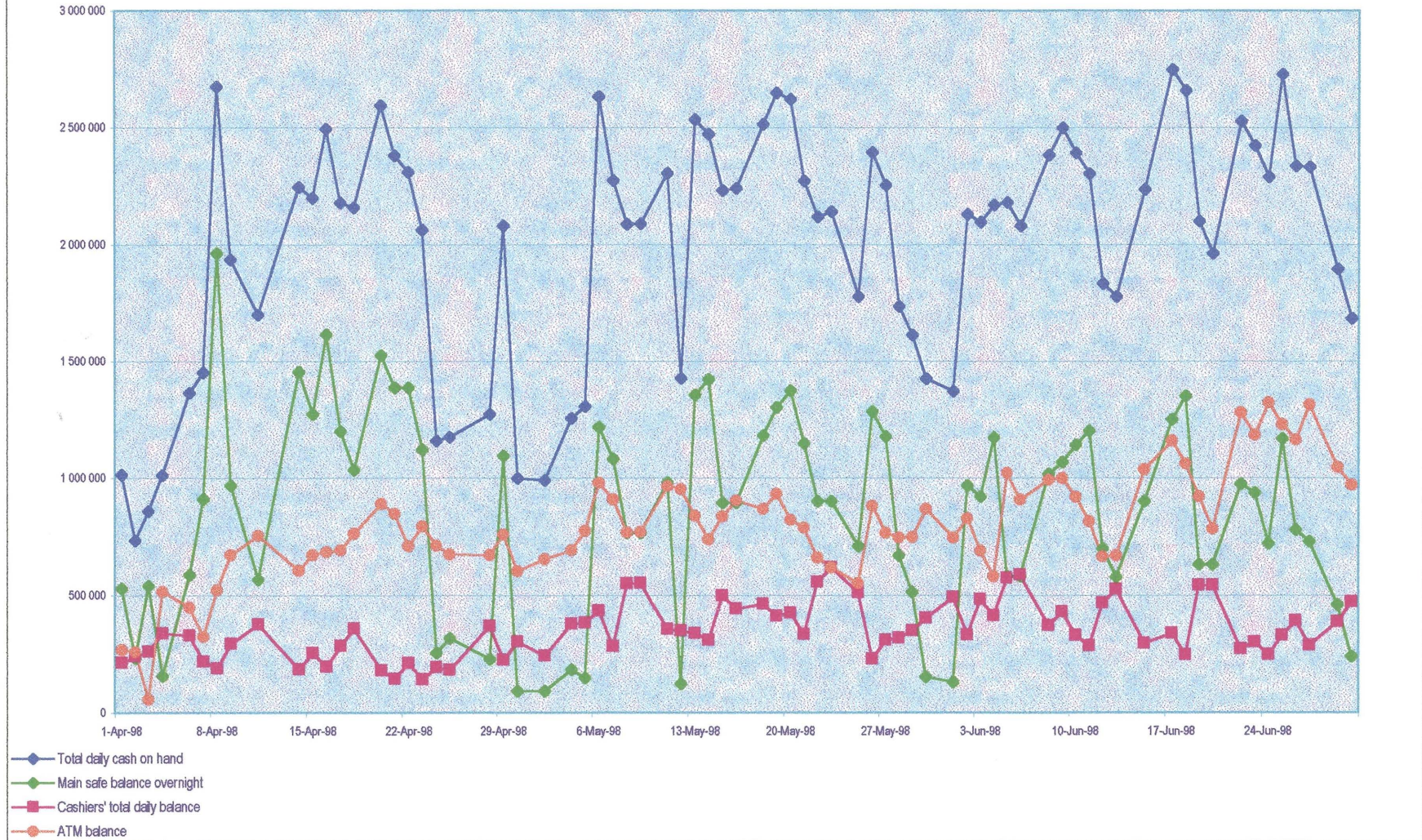
Date	Days (holidays)	Main safe balance overnight	Cashiers' total daily balance	ATM balance	Total daily cash on hand
1-May-98	Workers' day				
2	Saturday	93 000	244 051.75	654 740	991 791.75
3	Sunday				
4	Monday	186 060	378 590.28	692 550	1 257 200.28
5	Tuesday	148 220	383 758.69	776 110	1 308 088.69
6	Wednesday	1 220 220	435 104.94	979 660	2 634 984.94
7	Thursday	1 083 020	282 704.69	909 400	2 275 124.69
8	Friday	767 020	551 499.76	769 840	2 088 359.76
9	Saturday	767 020	552 679.56	770 520	2 090 219.56
10	Sunday				
11	Monday	982 020	357 134.91	967 290	2 306 444.91
12	Tuesday	125 060	350 347.89	953 780	1 429 187.89
13	Wednesday	1 356 370	338 213.64	840 970	2 535 553.64
14	Thursday	1 424 370	309 698.95	738 920	2 472 988.95
15	Friday	895 930	498 159.54	838 660	2 232 749.54
16	Saturday	895 930	442 554.20	904 350	2 242 834.20
17	Sunday				
18	Monday	1 182 420	463 392.54	870 110	2 515 922.54
19	Tuesday	1 304 420	412 546.12	933 950	2 650 916.12
20	Wednesday	1 375 420	426 158.46	822 590	2 624 168.46
21	Thursday	1 149 420	334 170.27	789 020	2 272 610.27
22	Friday	902 420	556 737.06	660 950	2 120 107.06
23	Saturday	902 420	619 859.55	619 350	2 141 629.55
24	Sunday				
25	Monday	711 420	512 644.08	553 740	1 777 804.08
26	Tuesday	1 285 020	228 622.12	881 880	2 395 522.12
27	Wednesday	1 179 020	309 803.45	766 890	2 255 713.45
28	Thursday	670 500	319 798.17	746 710	1 737 008.17
29	Friday	514 500	349 490.36	748 740	1 612 730.36
30	Saturday	154 500	402 942.21	869 360	1 426 802.21
31	Sunday				



**Appendix D1:  
Total daily amount of cash on hand: June 1998**

Date	Days (holidays)	Main safe ba- lance overnight	Cashiers' total daily balance	ATM balance	Total daily cash on hand
1-Jun-98	Monday	132 500	492 282.25	747 320	1 372 102.25
2	Tuesday	969 500	331 943.34	828 440	2 129 883.34
3	Wednesday	922 500	484 720.05	690 360	2 097 580.05
4	Thursday	1 174 540	414 879.69	581 180	2 170 599.69
5	Friday	583 540	575 445.10	1 023 810	2 182 795.10
6	Saturday	583 540	588 892.89	910 370	2 082 802.89
7	Sunday				
8	Monday	1 018 940	371 164.72	994 110	2 384 214.72
9	Tuesday	1 070 620	430 245.02	999 970	2 500 835.02
10	Wednesday	1 147 700	329 037.97	921 210	2 393 947.97
11	Thursday	1 204 500	285 272.97	814 680	2 304 452.97
12	Friday	700 500	467 873.28	666 720	1 835 093.28
13	Saturday	580 460	526 568.25	671 700	1 778 728.25
14	Sunday				
15	Monday	902 460	296 004.40	1 039 170	2 237 634.40
16	Youth day				
17	Wednesday	1 252 460	337 831.10	1 161 040	2 751 331.10
18	Thursday	1 351 900	246 846.80	1 063 130	2 661 876.80
19	Friday	633 800	544 715.68	922 650	2 101 165.68
20	Saturday	633 800	544 878.16	785 030	1 963 708.16
21	Sunday				
22	Monday	977 020	271 739.97	1 281 330	2 530 089.97
23	Tuesday	939 060	301 786.51	1 185 200	2 426 046.51
24	Wednesday	721 300	246 853.96	1 323 290	2 291 443.96
25	Thursday	1 170 320	330 445.09	1 230 130	2 730 895.09
26	Friday	780 900	392 401.52	1 165 100	2 338 401.52
27	Saturday	730 900	286 718.91	1 316 000	2 333 618.91
28	Sunday				
29	Monday	461 100	387 835.98	1 047 600	1 896 535.98
30	Tuesday	240 560	473 335.20	972 090	1 685 985.20

Appendix D2: Total daily cash on hand April to June 1998



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