



**Appendix H3-1**

**A comparison of forecasting techniques applied to face-to-face withdrawals (using all available data)**

**Season = 6 days**

Forecasting method	Smoothing constants	Seasonality	Measures of forecast error		
			RSME	MAPE	MAD
Simple exponential smoothing	$\alpha = 0.3012$	Simple seasonal relatives	359 031	74.83%	248 351
Simple exponential smoothing	$\alpha = 0.3199$	Moving seasonal relatives	366 527	74.17%	252 905
FIT smoothing (trend = default)	$\alpha = 0.3125$ $\delta = 3.052 \times 10^{-5}$	Simple seasonal relatives	359 666	74.78%	248 523
FIT smoothing (trend = regressed)	$\alpha = 0.3125$ $\delta = 3.052 \times 10^{-5}$	Simple seasonal relatives	359 000	76.45%	248 246
FIT smoothing (trend = default)	$\alpha = 0.3203$ $\delta = 3.052 \times 10^{-5}$	Moving seasonal relatives	366 356	75.17%	252 917
FIT smoothing (trend = regressed)	$\alpha = 0.3125$ $\delta = 3.052 \times 10^{-5}$	Moving seasonal relatives	365 771	76.90%	253 140
Trend regressed exponential smoothing	$\alpha = 0.2931$	Simple seasonal relatives	357 856	76.62%	248 283
Trend regressed exponential smoothing	$\alpha = 0.3116$	Moving seasonal relatives	365 670	76.87%	253 034
Simple average	-	Simple seasonal relatives	353 079	87.42%	251 869
Simple average	-	Moving seasonal relatives	355 418	87.54%	257 929
Moving average	Step = 5	Simple seasonal relatives	355 101	<b>71.96%</b>	<b>234 168</b>
Moving average	Step = 5	Moving seasonal relatives	362 198	72.53%	241 345
Winter's method (trend = default)	$\alpha = 0$ $\delta = 0$ $\gamma = 0$	Simple seasonal relatives	353 956	92.13%	257 083
Winter's method (trend = regressed)	$\alpha = 0$ $\delta = 0$ $\gamma = 0$	Simple seasonal relatives	<b>342 664</b>	83.60%	243 184
Winter's method (trend = default)	$\alpha = 0$ $\delta = 0$ $\gamma = 0$	Moving seasonal relatives	356 613	91.21%	262 350
Winter's method (trend = regressed)	$\alpha = 0$ $\delta = 0.05$ $\gamma = 0$	Moving seasonal relatives	344 622	82.11%	244 036



**Appendix H3-2**

**A comparison of forecasting techniques applied to face-to-face withdrawals (using all available data)  
Season = 24 days**

Forecasting method	Smoothing constants	Seasonality	Measures of forecast error		
			RSME	MAPE	MAD
Simple exponential smoothing	$\alpha = 0.1532$	Simple seasonal relatives	286 986	<b>53.90%</b>	202 392
Simple exponential smoothing	$\alpha = 0.0972$	Moving seasonal relatives	284 840	55.01%	200 761
FIT smoothing (trend = default)	$\alpha = 0.1484$ $\delta = 0.0006$	Simple seasonal relatives	286 673	53.91%	202 190
FIT smoothing (trend = regressed)	$\alpha = 0.1211$ $\delta = 3.052 \times 10^{-5}$	Simple seasonal relatives	282 122	55.30%	199 264
FIT smoothing (trend = default)	$\alpha = 0.0948$ $\delta = 0.0039$	Moving seasonal relatives	284 436	55.53%	201 076
FIT smoothing (trend = regressed)	$\alpha = 0.0786$ $\delta = 3.052 \times 10^{-5}$	Moving seasonal relatives	282 567	56.58%	201 246
Trend regressed exponential smoothing	$\alpha = 0.1205$	Simple seasonal relatives	282 061	55.21%	<b>199 124</b>
Trend regressed exponential smoothing	$\alpha = 0.0793$	Moving seasonal relatives	282 503	56.51%	201 132
Simple average	-	Simple seasonal relatives	290 168	64.37%	210 516
Simple average	-	Moving seasonal relatives	301 970	67.77%	210 338
Moving average	Step = 5	Simple seasonal relatives	300 909	54.17%	203 846
Moving average	Step = 5	Moving seasonal relatives	295 933	58.09%	206 460
Winter's method (trend = default)	$\alpha = 0$ $\delta = 0$ $\gamma = 0$	Simple seasonal relatives	292 947	70.42%	216 145
Winter's method (trend = regressed)	$\alpha = 0$ $\delta = 0.3$ $\gamma = 0$	Simple seasonal relatives	<b>280 954</b>	62.94%	206 505
Winter's method (trend = default)	$\alpha = 0$ $\delta = 0$ $\gamma = 0$	Moving seasonal relatives	307 087	73.02%	214 572
Winter's method (trend = regressed)	$\alpha = 0$ $\delta = 0$ $\gamma = 0$	Moving seasonal relatives	291 804	64.87%	209 543



**Appendix H3-3**

**A comparison of forecasting techniques applied to face-to-face withdrawals (using all available data)**

**Season = 26 days**

Forecasting method	Smoothing constants	Seasonality	Measures of forecast error		
			RSME	MAPE	MAD
Simple exponential smoothing	$\alpha = 3.052 \times 10^{-5}$	Simple seasonal relatives	282 232	70.24%	223 087
Simple exponential smoothing	$\alpha = 3.052 \times 10^{-5}$	Moving seasonal relatives	318 368	80.11%	240 271
FIT smoothing (trend = default)	$\alpha = 0.0625$ $\delta = 3.052 \times 10^{-5}$	Simple seasonal relatives	301 150	70.02%	232 830
FIT smoothing (trend = regressed)	$\alpha = 0.0176$ $\delta = 0.0234$	Simple seasonal relatives	292 628	74.21%	229 129
FIT smoothing (trend = default)	$\alpha = 3.052 \times 10^{-5}$ $\delta = 3.052 \times 10^{-5}$	Moving seasonal relatives	318 368	80.11%	240 271
FIT smoothing (trend = regressed)	$\alpha = 0.0235$ $\delta = 0.0273$	Moving seasonal relatives	332 338	83.08%	245 939
Trend regressed exponential smoothing	$\alpha = 0.0367$	Simple seasonal relatives	298 744	74.33%	231 014
Trend regressed exponential smoothing	$\alpha = 0.0384$	Moving seasonal relatives	343 258	84.63%	249 542
Simple average	-	Simple seasonal relatives	<b>281 946</b>	68.64%	<b>222 329</b>
Simple average	-	Moving seasonal relatives	315 550	77.37%	238 402
Moving average	Step = 5	Simple seasonal relatives	331 641	71.34%	247 318
Moving average	Step = 5	Moving seasonal relatives	381 454	74.06%	258 388
Winter's method (trend = default)	$\alpha = 0$ $\delta = 0$ $\gamma = 0$	Simple seasonal relatives	283 196	72.14%	224 550
Winter's method (trend = regressed)	$\alpha = 0$ $\delta = 0$ $\gamma = 0$	Simple seasonal relatives	293 777	<b>67.90%</b>	227 237
Winter's method (trend = default)	$\alpha = 0$ $\delta = 0$ $\gamma = 0$	Moving seasonal relatives	316 916	78.84%	239 361
Winter's method (trend = regressed)	$\alpha = 0$ $\delta = 0$ $\gamma = 0$	Moving seasonal relatives	329 150	73.28%	236 267



**Appendix H3-4**

**A comparison of forecasting techniques applied to face-to-face withdrawals (using all available data)**

**Season = 30 days**

Forecasting method	Smoothing constants	Seasonality	Measures of forecast error		
			RSME	MAPE	MAD
Simple exponential smoothing	$\alpha = 0.1265$	Simple seasonal relatives	322 704	<b>59.98%</b>	199 049
Simple exponential smoothing	$\alpha = 0.0273$	Moving seasonal relatives	338 918	69.75%	198 369
FIT smoothing (trend = default)	$\alpha = 0.1259$ $\delta = 3.052 \times 10^{-5}$	Simple seasonal relatives	322 704	59.99%	199 073
FIT smoothing (trend = regressed)	$\alpha = 0.1250$ $\delta = 3.052 \times 10^{-5}$	Simple seasonal relatives	324 044	64.82%	203 779
FIT smoothing (trend = default)	$\alpha = 0.0157$ $\delta = 0.0625$	Moving seasonal relatives	342 986	72.37%	<b>197 722</b>
FIT smoothing (trend = regressed)	$\alpha = 3.052 \times 10^{-5}$ $\delta = 3.052 \times 10^{-5}$	Moving seasonal relatives	465 911	118.26%	323 155
Trend regressed exponential smoothing	$\alpha = 0.0350$	Simple seasonal relatives	326 617	72.20%	209 427
Trend regressed exponential smoothing	$\alpha = 3.052 \times 10^{-5}$	Moving seasonal relatives	460 694	116.28%	317 478
Simple average	-	Simple seasonal relatives	315 001	70.75%	214 553
Simple average	-	Moving seasonal relatives	383 268	100.90%	249 132
Moving average	Step = 5	Simple seasonal relatives	340 150	60.84%	213 442
Moving average	Step = 5	Moving seasonal relatives	619 447	90.28%	331 723
Winter's method (trend = default)	$\alpha = 0$ $\delta = 0$ $\gamma = 0$	Simple seasonal relatives	<b>314 276</b>	69.15%	212 685
Winter's method (trend = regressed)	$\alpha = 0$ $\delta = 0$ $\gamma = 0$	Simple seasonal relatives	314 289	63.88%	203 353
Winter's method (trend = default)	$\alpha = 0$ $\delta = 0$ $\gamma = 0$	Moving seasonal relatives	345 442	78.52%	212 800
Winter's method (trend = regressed)	$\alpha = 0$ $\delta = 0$ $\gamma = 0$	Moving seasonal relatives	342 680	70.67%	199 770