



Projecting Hotel Operating Flow-Through in a Volatile Economy

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Introduction

Whereas hotel industry revenue levels will decline significantly through 2009 and perhaps through 2010 as well, many analysts and operators are programming rapid recovery in future years. By putting our store of historical operating data from our industry's last periods of rapid decline (2000 to 2002) and recovery (2004 to 2006) to use, HVS herewith provides empirical historical data as a reference point, as well as a forecasting tool developed to help analysts and operators predict changes. The study focuses solely on those income and expense items with both fixed and variable components.

The Raw Data – Rapid RevPAR Decline

HVS, with 11 domestic offices and 14 worldwide, has a massive database of historical operating data. As we entered the current downturn, it occurred to us to look at the actual data for hotels that experienced major rooms revenue losses from 2000 to 2002, in order to see what we could learn about the other categories. The following tables present the historical data. For this study, we identified over 500 United States hotels (containing a total of over 80,000 rooms) that posted RevPAR (rooms revenue per available room) losses of at least 10%; the composite RevPAR decline for the entire population was 22.3%. The analysis isolates 13 different categories of hotel, based on differences in affiliation status (branded or independent); product type (limited-service, mid-rate, select-service, full-service, luxury, and extended-stay); and location (resort, urban, suburban, and airport).

The data in each column and each year pertain to the exact same population of hotels. The slight differences in room count between 2000 and 2002 are attributable to routine increases and decreases in the constituent hotels' inventory, as opposed to substantial additions or closures, or any change in the mix of hotels included in the survey. Thus, the comparisons are strictly apples to apples.

Table 1 Historical Income & Expense Data - 2000

Affiliation Product Type Location	Independent Full-Service Various	Independent Luxury Various	Independent Full-Service Resort	Independent Boutique Urban	Branded Limited-Service Suburban	Branded Select-Service Various	Branded Luxury Urban	Branded First-Class Resort	Branded Full-Service Urban	Branded Full-Service Airport	Branded First-Class Suburb	Branded Mid-Rate Suburb	Branded Extended-Stay Suburb	Grand Total
Number of Rooms:	3,994	2,668	2,492	3,614	5,000	6,117	7,735	5,199	10,890	4,496	22,657	4,794	2,080	81,736
Occupied Rooms:	1,057,494	780,541	697,842	1,022,966	1,271,198	1,605,563	2,156,767	1,466,660	3,064,272	1,190,587	5,912,805	1,172,852	597,157	21,996,704
Occupancy:	72.5%	80.2%	76.7%	77.5%	69.7%	71.9%	76.4%	77.3%	77.1%	72.6%	71.5%	67.0%	78.7%	73.7%
ADR:	\$123.13	\$283.66	\$171.76	\$170.08	\$65.56	\$113.27	\$208.63	\$201.02	\$157.17	\$109.26	\$123.61	\$94.29	\$99.34	\$144.02
RevPAR:	\$89.32	\$227.36	\$131.78	\$131.90	\$45.67	\$81.46	\$159.38	\$155.37	\$121.17	\$79.27	\$88.38	\$63.20	\$78.14	\$106.19
REVENUE														
Rooms	\$130,211	\$221,411	\$119,863	\$173,989	\$83,341	\$181,869	\$449,963	\$294,835	\$481,621	\$130,083	\$730,861	\$110,585	\$59,322	\$3,167,954
Food & Beverage	61,497	80,313	53,905	49,867	---	23,333	264,677	181,859	215,213	54,041	353,960	27,316	---	1,365,981
Telephone	4,378	11,677	3,474	5,772	1,639	5,168	22,394	11,357	19,403	3,854	30,901	2,585	1,428	124,030
Other Income	10,617	16,453	29,619	7,402	5,021	2,314	32,364	53,336	35,985	6,359	36,790	4,668	1,285	242,213
Total	206,703	329,854	206,861	237,030	90,001	212,684	769,398	541,387	752,222	194,337	1,152,682	145,154	62,035	4,900,348
DEPT EXPENSES														
Rooms	32,072	63,110	28,097	47,100	21,917	40,838	112,472	64,448	106,982	32,925	170,083	29,062	11,729	760,835
Food & Beverage	44,234	64,982	41,768	39,948	---	17,876	207,219	129,159	156,629	37,834	257,505	21,645	---	1,018,799
Telephone	2,268	4,879	1,815	2,358	1,107	1,680	9,754	4,800	7,886	2,000	13,264	1,574	732	54,117
Other Expenses	3,721	5,032	17,317	1,162	2,617	648	14,688	29,432	7,880	2,568	11,926	555	555	98,101
Total	82,295	138,003	88,997	90,568	25,641	61,042	344,133	227,839	279,377	75,327	453,031	52,836	13,017	1,932,105
DEPT INCOME	124,408	191,851	117,864	146,462	64,360	151,642	425,265	313,548	472,845	119,011	699,651	92,318	49,019	2,968,243
OPERATING EXPENSES														
Admin. & General	17,555	24,860	16,749	21,816	7,792	25,334	52,778	34,605	46,789	16,736	80,435	11,957	4,513	361,920
Marketing	12,920	19,052	13,763	10,391	3,160	14,039	42,345	34,128	44,496	12,045	70,619	7,708	2,389	287,055
Prop. Ops & Maint.	10,973	13,511	8,591	11,588	4,370	6,797	32,611	24,690	26,134	8,389	49,672	7,517	2,727	207,569
Utilities	7,220	8,498	5,865	6,805	4,290	7,675	20,383	14,911	21,165	6,889	35,717	6,150	2,361	147,929
Total	48,668	65,921	44,968	50,600	19,611	53,845	148,117	108,334	138,584	44,058	236,443	33,332	11,990	1,004,473
HOUSE PROFIT	\$75,740	\$125,930	\$72,896	\$95,862	\$44,748	\$97,797	\$277,148	\$205,214	\$334,261	\$74,952	\$463,208	\$58,986	\$37,029	\$1,963,770
REVENUE														
Rooms	63.0 %	67.1 %	57.9 %	73.4 %	92.6 %	85.5 %	58.5 %	54.5 %	64.0 %	66.9 %	63.4 %	76.2 %	95.6 %	64.6 %
Food & Beverage	29.8	24.3	26.1	21.0	---	11.0	34.4	33.6	28.6	27.8	30.7	18.8	---	27.9
Telephone	2.1	3.5	1.7	2.4	1.8	2.4	2.9	2.1	2.6	2.0	2.7	1.8	2.3	2.5
Other Income	5.1	5.0	14.3	3.1	5.6	1.1	4.2	9.9	4.8	3.3	3.2	3.2	2.1	4.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
DEPT EXPENSES														
Rooms	24.6	28.5	23.4	27.1	26.3	22.5	25.0	21.9	22.2	25.3	23.3	26.3	19.8	24.0
Food & Beverage	71.9	80.9	77.5	80.1	---	76.6	78.3	71.0	72.8	70.0	72.7	79.2	---	74.6
Telephone	51.8	41.8	52.2	40.9	67.5	32.5	43.6	42.3	40.6	51.9	42.9	60.9	51.3	43.6
Other Expenses	35.0	30.6	58.5	15.7	52.1	28.0	45.4	55.2	21.9	40.4	32.4	11.9	43.2	40.5
Total	39.8	41.8	43.0	38.2	28.5	28.7	44.7	42.1	37.1	38.8	39.3	36.4	21.0	39.4
DEPT INCOME	60.2	58.2	57.0	61.8	71.5	71.3	55.3	57.9	62.9	61.2	60.7	63.6	79.0	60.6
OPERATING EXPENSES														
Admin. & General	8.5	7.5	8.1	9.2	8.7	11.9	6.9	6.4	6.2	8.6	7.0	8.2	7.3	7.4
Marketing	6.3	5.8	6.7	4.4	3.5	6.6	5.5	6.3	5.9	6.2	6.1	5.3	3.9	5.9
Prop. Ops & Maint.	5.3	4.1	4.2	4.9	4.9	3.2	4.2	4.6	3.5	4.3	4.3	5.2	4.4	4.2
Utilities	3.5	2.6	2.8	2.9	4.8	3.6	2.6	2.8	2.8	3.5	3.1	4.2	3.8	3.0
Total	23.5	20.0	21.7	21.3	21.8	25.3	19.3	20.0	18.4	22.7	20.5	23.0	19.3	20.5
HOUSE PROFIT	36.6 %	38.2 %	35.2 %	40.4 %	49.7 %	46.0 %	36.0 %	37.9 %	44.4 %	38.6 %	40.2 %	40.6 %	59.7 %	40.1 %

Table 2 Historical Income & Expense Data – 2002

Affiliation Product Type Location	Independent Full-Service Various	Independent Luxury Various	Independent Full-Service Resort	Independent Boutique Urban	Branded Limited-Service Suburban	Branded Select-Service Various	Branded Luxury Urban	Branded First-Class Resort	Branded Full-Service Urban	Branded Full-Service Airport	Branded First-Class Suburb	Branded Mid-Rate Suburb	Branded Extended-Stay Suburb	Grand Total
Number of Rooms:	4,001	2,666	2,491	3,611	5,002	6,117	7,728	5,213	10,909	4,512	22,713	4,828	2,082	81,873
Occupied Rooms:	888,739	676,501	632,249	857,934	1,098,677	1,527,901	1,934,571	1,246,900	2,790,406	1,091,000	5,167,619	1,022,208	539,318	19,474,023
Occupancy:	60.9%	69.5%	69.5%	65.1%	60.2%	68.4%	68.6%	65.5%	70.1%	66.2%	62.3%	58.0%	71.0%	65.2%
ADR:	\$117.24	\$261.29	\$158.29	\$142.44	\$61.55	\$97.68	\$188.10	\$197.91	\$145.32	\$96.21	\$114.80	\$91.34	\$89.16	\$132.28
RevPAR:	\$71.35	\$181.65	\$110.07	\$92.72	\$37.04	\$66.84	\$129.01	\$129.70	\$101.84	\$63.73	\$71.56	\$52.98	\$63.28	\$86.20
REVENUE														
Rooms	\$104,193	\$176,763	\$100,078	\$122,208	\$67,619	\$149,243	\$363,900	\$246,777	\$405,509	\$104,960	\$593,246	\$93,368	\$48,087	\$2,575,951
Food & Beverage	55,091	79,323	48,398	44,256	---	20,084	232,226	146,270	193,729	46,576	303,558	26,077	---	1,195,589
Telephone	3,211	8,440	2,058	3,423	735	3,067	15,560	6,782	13,058	2,235	18,211	1,601	647	79,027
Other Income	6,779	11,055	25,976	5,910	4,160	2,284	32,086	52,661	33,790	4,606	32,315	3,890	927	216,439
Total	169,274	275,581	176,510	175,797	72,514	174,678	643,772	452,490	646,086	158,378	947,329	124,936	49,661	4,067,006
DEPT EXPENSES														
Rooms	28,617	57,273	26,412	41,291	19,739	36,425	99,795	55,954	96,861	28,122	147,027	25,890	10,967	674,373
Food & Beverage	39,247	64,192	38,516	36,793	---	15,425	185,526	108,253	140,452	33,138	227,440	21,432	---	910,415
Telephone	2,030	4,238	1,573	2,194	782	1,583	8,198	3,882	6,462	1,473	10,932	1,313	556	45,215
Other Expenses	2,513	3,232	16,378	1,052	1,842	487	14,691	29,887	8,031	2,545	10,341	400	461	91,860
Total	72,407	128,935	82,878	81,330	22,364	53,920	308,210	197,976	251,806	65,277	395,740	49,035	11,983	1,721,862
DEPT INCOME	96,867	146,646	93,631	94,467	50,150	120,758	335,562	254,514	394,280	93,100	551,589	75,901	37,677	2,345,143
OPERATING EXPENSES														
Admin. & General	15,767	22,370	16,335	17,181	7,237	21,865	50,343	31,048	43,979	15,292	73,952	11,466	4,055	330,889
Marketing	12,201	15,459	13,515	10,034	2,979	13,237	37,481	29,812	40,937	11,345	64,618	8,009	2,507	262,135
Prop. Ops & Maint.	11,094	13,190	8,243	8,906	4,313	8,838	30,411	22,634	25,600	7,933	47,676	7,407	2,653	198,897
Utilities	7,112	7,887	6,006	6,663	4,154	7,365	22,245	14,474	21,729	6,482	35,917	6,222	2,355	148,611
Total	46,174	58,906	44,099	42,784	18,682	51,305	140,480	97,968	132,245	41,052	222,163	33,104	11,569	940,531
HOUSE PROFIT	\$50,693	\$87,740	\$49,532	\$51,683	\$31,468	\$69,453	\$195,082	\$156,546	\$262,035	\$52,048	\$329,426	\$42,796	\$26,108	\$1,404,612
REVENUE														
Rooms	61.6 %	64.1 %	56.7 %	69.5 %	93.2 %	85.4 %	56.5 %	54.5 %	62.8 %	66.3 %	62.6 %	74.7 %	96.8 %	63.3 %
Food & Beverage	32.5	28.8	27.4	25.2	---	11.5	36.1	32.3	30.0	29.4	32.0	20.9	---	29.4
Telephone	1.9	3.1	1.2	1.9	1.0	1.8	2.4	1.5	2.0	1.4	1.9	1.3	1.3	1.9
Other Income	4.0	4.0	14.7	3.4	5.7	1.3	5.0	11.6	5.2	2.9	3.4	3.1	1.9	5.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
DEPT EXPENSES														
Rooms	27.5	32.4	26.4	33.8	29.2	24.4	27.4	22.7	23.9	26.8	24.8	27.7	22.8	26.2
Food & Beverage	71.2	80.9	79.6	83.1	---	76.8	79.9	74.0	72.5	71.1	74.9	82.2	---	76.1
Telephone	63.2	50.2	76.4	64.1	106.5	51.6	52.7	57.2	49.5	65.9	60.0	82.0	85.9	57.2
Other Expenses	37.1	29.2	63.0	17.8	44.3	21.3	45.8	56.8	23.8	55.2	32.0	10.3	49.7	42.4
Total	42.8	46.8	47.0	46.3	30.8	30.9	47.9	43.8	39.0	41.2	41.8	39.2	24.1	42.3
DEPT INCOME	57.2	53.2	53.0	53.7	69.2	69.1	52.1	56.2	61.0	58.8	58.2	60.8	75.9	57.7
OPERATING EXPENSES														
Admin. & General	9.3	8.1	9.3	9.8	10.0	12.5	7.8	6.9	6.8	9.7	7.8	9.2	8.2	8.1
Marketing	7.2	5.6	7.7	5.7	4.1	7.6	5.8	6.6	6.3	7.2	6.8	6.4	5.0	6.4
Prop. Ops & Maint.	6.6	4.8	4.7	5.1	5.9	5.1	4.7	5.0	4.0	5.0	5.0	5.9	5.3	4.9
Utilities	4.2	2.9	3.4	3.8	5.7	4.2	3.5	3.2	3.4	4.1	3.8	5.0	4.7	3.7
Total	27.3	21.4	25.0	24.3	25.8	29.4	21.8	21.7	20.5	25.9	23.5	26.5	23.3	23.1
HOUSE PROFIT	29.9 %	31.8 %	28.1 %	29.4 %	43.4 %	39.8 %	30.3 %	34.6 %	40.6 %	32.9 %	34.8 %	34.3 %	52.6 %	34.5 %

Table 3 Percent Change, 2000 to 2002

Affiliation Product Type Location	Independent Full-Service Various	Independent Luxury Various	Independent Full-Service Resort	Independent Boutique Urban	Branded Limited-Service Suburban	Branded Select-Service Various	Branded Luxury Urban	Branded First-Class Resort	Branded Full-Service Urban	Branded Full-Service Airport	Branded First-Class Suburb	Branded Mid-Rate Suburb	Branded Extended-Stay Suburb	Grand Total
Occupied Rooms:	(16.0) %	(13.3) %	(9.4) %	(16.1) %	(13.6) %	(4.8) %	(10.3) %	(15.0) %	(8.9) %	(8.4) %	(12.6) %	(12.8) %	(9.7) %	(11.5) %
Occupancy:	(16.1)	(13.3)	(9.4)	(16.1)	(13.6)	(4.8)	(10.2)	(15.2)	(9.1)	(8.7)	(12.8)	(13.5)	(9.8)	(11.6)
ADR:	(4.8)	(7.9)	(7.8)	(16.2)	(6.1)	(13.8)	(9.8)	(1.5)	(7.5)	(11.9)	(7.1)	(3.1)	(10.2)	(8.2)
RevPAR:	(20.1)	(20.1)	(16.5)	(29.7)	(18.9)	(17.9)	(19.1)	(16.5)	(15.9)	(19.6)	(19.0)	(16.2)	(19.0)	(18.8)
REVENUE														
Rooms	(20.0)	(20.2)	(16.5)	(29.8)	(18.9)	(17.9)	(19.1)	(16.3)	(15.8)	(19.3)	(18.8)	(15.6)	(18.9)	(18.7)
Food & Beverage	(10.4)	(1.2)	(10.2)	(11.3)	---	(13.9)	(12.3)	(19.6)	(10.0)	(13.8)	(14.2)	(4.5)	---	(12.5)
Telephone	(26.7)	(27.7)	(40.8)	(40.7)	(55.2)	(40.7)	(30.5)	(40.3)	(32.7)	(42.0)	(41.1)	(38.1)	(54.7)	(36.3)
Other Income	(36.1)	(32.8)	(12.3)	(20.2)	(17.1)	(1.3)	(0.9)	(1.3)	(6.1)	(27.6)	(12.2)	(16.7)	(27.9)	(10.6)
Total	(18.1)	(16.5)	(14.7)	(25.8)	(19.4)	(17.9)	(16.3)	(16.4)	(14.1)	(18.5)	(17.8)	(13.9)	(19.9)	(17.0)
DEPT EXPENSES														
Rooms	(10.8)	(9.2)	(6.0)	(12.3)	(9.9)	(10.8)	(11.3)	(13.2)	(9.5)	(14.6)	(13.6)	(10.9)	(6.5)	(11.4)
Food & Beverage	(11.3)	(1.2)	(7.8)	(7.9)	---	(13.7)	(10.5)	(16.2)	(10.3)	(12.4)	(11.7)	(1.0)	---	(10.6)
Telephone	(10.5)	(13.1)	(13.4)	(7.0)	(29.3)	(5.8)	(16.0)	(19.1)	(18.1)	(26.4)	(17.6)	(16.6)	(24.1)	(16.4)
Other Expenses	(32.5)	(35.8)	(5.4)	(9.5)	(29.6)	(24.8)	0.0	1.5	1.9	(0.9)	(13.3)	(27.9)	(16.9)	(6.4)
Total	(12.0)	(6.6)	(6.9)	(10.2)	(12.8)	(11.7)	(10.4)	(13.1)	(9.9)	(13.3)	(12.6)	(7.2)	(7.9)	(10.9)
DEPT INCOME	(22.1)	(23.6)	(20.6)	(35.5)	(22.1)	(20.4)	(21.1)	(18.8)	(16.6)	(21.8)	(21.2)	(17.8)	(23.1)	(21.0)
OPERATING EXPENSES														
Admin. & General	(10.2)	(10.0)	(2.5)	(21.2)	(7.1)	(13.7)	(4.6)	(10.3)	(6.0)	(8.6)	(8.1)	(4.1)	(10.2)	(8.6)
Marketing	(5.6)	(18.9)	(1.8)	(3.4)	(5.7)	(5.7)	(11.5)	(12.6)	(8.0)	(5.8)	(8.5)	3.9	4.9	(8.7)
Prop. Ops & Maint.	1.1	(2.4)	(4.1)	(23.1)	(1.3)	30.0	(6.7)	(8.3)	(2.0)	(5.4)	(4.0)	(1.5)	(2.7)	(4.2)
Utilities	(1.5)	(7.2)	2.4	(2.1)	(3.2)	(4.0)	9.1	(2.9)	2.7	(5.9)	0.6	1.2	(0.3)	0.5
Total	(5.1)	(10.6)	(1.9)	(15.4)	(4.7)	(4.7)	(5.2)	(9.6)	(4.6)	(6.8)	(6.0)	(0.7)	(3.5)	(6.4)
HOUSE PROFIT	(33.1) %	(30.3) %	(32.1) %	(46.1) %	(29.7) %	(29.0) %	(29.6) %	(23.7) %	(21.6) %	(30.6) %	(28.9) %	(27.4) %	(29.5) %	(28.5) %

Table 4 Change Expressed Per Incremental Dollar – Rapid-Decline Environment – 2000 vs. 2002

Affiliation Product Type Location	Independent Full-Service Various	Independent Luxury Various	Independent Full-Service Resort	Independent Boutique Urban	Branded Limited-Service Suburban	Branded Select-Service Various	Branded Luxury Urban	Branded First-Class Resort	Branded Full-Service Urban	Branded Full-Service Airport	Branded First-Class Suburb	Branded Mid-Rate Suburb	Branded Extended-Stay Suburb	Industry Total
Change for Every \$1 Decrease in Rooms Revenue														
Rooms Revenue	(\$1.00)	(\$1.00)	(\$1.00)	(\$1.00)	(\$1.00)	(\$1.00)	(\$1.00)	(\$1.00)	(\$1.00)	(\$1.00)	(\$1.00)	(\$1.00)	(\$1.00)	(\$1.00)
F&B Revenue	(0.25)	(0.02)	(0.28)	(0.11)	---	(0.10)	(0.38)	(0.74)	(0.28)	(0.30)	(0.37)	(0.07)	---	(0.29)
Telephone Revenue	(0.04)	(0.07)	(0.07)	(0.05)	(0.06)	(0.06)	(0.08)	(0.10)	(0.08)	(0.06)	(0.09)	(0.06)	(0.07)	(0.08)
Other Income	(0.15)	(0.12)	(0.18)	(0.03)	(0.05)	(0.00)	(0.00)	(0.01)	(0.03)	(0.07)	(0.03)	(0.05)	(0.03)	(0.04)
Total Revenue	(1.44)	(1.22)	(1.53)	(1.18)	(1.11)	(1.16)	(1.46)	(1.85)	(1.39)	(1.43)	(1.49)	(1.17)	(1.10)	(1.41)
Rooms Expense	(0.13)	(0.13)	(0.09)	(0.11)	(0.14)	(0.14)	(0.15)	(0.18)	(0.13)	(0.19)	(0.17)	(0.18)	(0.07)	(0.15)
House Profit	(0.96)	(0.86)	(1.18)	(0.85)	(0.84)	(0.87)	(0.95)	(1.01)	(0.95)	(0.91)	(0.97)	(0.94)	(0.97)	(0.94)
Change for Every \$1 Decrease in Food and Beverage Revenue														
F&B Expense	(\$0.78)	(\$0.80)	(\$0.59)	(\$0.56)	---	(\$0.75)	(\$0.67)	(\$0.59)	(\$0.75)	(\$0.63)	(\$0.60)	(\$0.17)	---	(\$0.64)
Change for Every \$1 Decrease in Telephone Revenue														
Telephone Expense	(\$0.20)	(\$0.20)	(\$0.17)	(\$0.07)	(\$0.36)	(\$0.05)	(\$0.23)	(\$0.20)	(\$0.22)	(\$0.33)	(\$0.18)	(\$0.27)	(\$0.23)	(\$0.20)
Change for Every \$1 Decrease in Other Income														
Other Expense	(\$0.31)	(\$0.33)	(\$0.26)	(\$0.07)	(\$0.90)	(\$5.37)	\$0.01	\$0.67	\$0.07	(\$0.01)	(\$0.35)	(\$0.20)	(\$0.26)	(\$0.24)
Change for Every \$1 Decrease in Total Revenue														
Dept Income	(\$0.74)	(\$0.83)	(\$0.80)	(\$0.85)	(\$0.81)	(\$0.81)	(\$0.71)	(\$0.66)	(\$0.74)	(\$0.72)	(\$0.72)	(\$0.81)	(\$0.92)	(\$0.75)
Admin & Gen'l	(0.05)	(0.05)	(0.01)	(0.08)	(0.03)	(0.09)	(0.02)	(0.04)	(0.03)	(0.04)	(0.03)	(0.02)	(0.04)	(0.04)
Marketing	(0.02)	(0.07)	(0.01)	(0.01)	(0.01)	(0.02)	(0.04)	(0.05)	(0.03)	(0.02)	(0.03)	0.01	0.01	(0.03)
Prop Ops & Maint.	0.00	(0.01)	(0.01)	(0.04)	(0.00)	0.05	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Utilities	(0.00)	(0.01)	0.00	(0.00)	(0.01)	(0.01)	0.01	(0.00)	0.01	(0.01)	0.00	0.00	(0.00)	0.00
House Profit	(0.67)	(0.70)	(0.77)	(0.72)	(0.76)	(0.75)	(0.65)	(0.55)	(0.68)	(0.64)	(0.65)	(0.80)	(0.88)	(0.67)

The Raw Data – Rapid RevPAR Recovery

We repeated the preceding process, this time studying changes realized between 2004 and 2006. The following tables present the historical data. As with the rapid-decline research, this population includes approximately 500 United States hotels. (In terms of total rooms, this sample is somewhat larger, at approximately 118,000 rooms.) Overall, the composite RevPAR increase for the entire population was 26.3%. The analysis isolates 13 different categories of hotel, based on differences in affiliation status (branded or independent); product type (limited-service, mid-rate, select-service, full-service, luxury, and extended-stay); and location (resort, urban, suburban, and airport).

Otherwise, note that the data in each column and each year pertain to the exact same population of hotels. The slight differences in room count between 2004 and 2006 are attributable to routine increases and decreases in the constituent hotels' inventory, as opposed to substantial additions or closures, or any change in the mix of hotels included in the survey. As with the rapid-decline samples, the rapid-recovery comparisons are strictly apples to apples.

Table 5 Historical Income & Expense Data - 2004

Affiliation Product Type Location	Independent Full-Service Various	Independent Luxury Various	Independent Full-Service Resort	Independent Boutique Urban	Branded Limited-Service Suburban	Branded Select-Service Various	Branded Luxury Various	Branded First-Class Resort	Branded Full-Service Urban	Branded Full-Service Airport	Branded First-Class Suburb	Branded Mid-Rate Suburb	Branded Extended-Stay Various	Grand Total
Number of Rooms:	3,859	2,451	4,254	1,886	12,251	5,696	13,230	6,521	14,832	6,470	31,716	6,674	7,930	117,770
Occupied Rooms:	1,018,952	662,725	991,627	451,105	2,953,660	1,452,480	3,349,759	1,732,618	3,580,757	1,752,138	7,962,294	1,541,252	2,153,402	29,602,769
Occupancy:	72.3%	74.1%	63.9%	65.5%	66.1%	69.9%	69.4%	72.8%	66.1%	74.2%	68.8%	63.3%	74.4%	68.9%
ADR:	\$130.83	\$170.13	\$184.47	\$149.52	\$77.52	\$98.03	\$224.65	\$141.59	\$137.24	\$100.92	\$113.84	\$89.67	\$91.52	\$127.54
RevPAR:	\$94.65	\$126.03	\$117.81	\$97.98	\$51.21	\$68.49	\$155.83	\$103.07	\$90.78	\$74.88	\$78.30	\$56.73	\$68.09	\$87.83
REVENUE														
Rooms	\$133,312	\$112,748	\$182,930	\$67,449	\$228,969	\$142,389	\$752,515	\$245,315	\$491,433	\$176,821	\$906,432	\$138,205	\$197,084	\$3,775,602
Food & Beverage	42,071	37,805	112,448	36,113	---	16,484	483,572	138,315	228,302	87,015	415,547	33,624	---	1,631,296
Telephone	2,316	2,158	2,603	783	1,215	1,464	20,552	3,668	9,576	3,147	12,831	1,283	1,723	63,319
Other Income	18,266	7,936	59,587	4,193	8,186	4,350	123,267	58,708	35,520	10,064	57,202	5,998	5,355	398,632
Total	195,965	160,647	357,568	108,538	238,371	164,688	1,379,906	446,006	764,831	277,047	1,392,012	179,109	204,162	5,868,849
DEPT EXPENSES														
Rooms	41,877	35,543	51,899	21,182	62,923	33,040	222,436	66,269	136,013	50,426	222,872	37,616	45,395	1,027,491
Food & Beverage	33,787	29,518	90,159	29,147	---	12,727	377,231	102,687	173,435	60,142	303,161	26,063	---	1,238,057
Telephone	1,744	1,592	2,468	628	1,925	1,533	13,146	3,839	8,638	2,790	13,402	1,508	1,913	55,126
Other Expenses	5,732	3,400	39,541	2,450	3,655	2,339	63,154	29,681	12,839	3,848	25,785	2,056	3,403	197,884
Total	83,140	70,053	184,067	53,407	68,503	49,638	675,967	202,476	330,925	117,206	565,220	67,244	50,712	2,518,558
DEPT INCOME	112,825	90,594	173,501	55,131	169,868	115,050	703,939	243,530	433,906	159,841	826,792	111,865	153,450	3,350,291
OPERATING EXPENSES														
Admin. & General	17,264	17,329	33,423	9,880	23,026	16,544	119,151	32,049	63,551	25,951	121,906	17,402	18,764	516,240
Marketing	13,049	9,220	24,477	6,584	11,470	9,697	90,607	35,055	57,707	20,921	105,240	11,269	13,155	408,451
Prop. Ops & Maint.	10,311	7,998	19,130	4,851	11,647	8,013	66,863	21,694	38,799	12,477	66,645	9,578	10,649	288,655
Utilities	7,397	6,175	13,054	3,570	11,817	6,965	47,415	16,171	31,003	11,258	58,256	9,745	9,748	232,574
Total	48,021	40,722	90,084	24,885	57,960	41,219	324,036	104,969	191,959	70,607	352,047	47,995	52,316	1,446,820
HOUSE PROFIT	\$64,804	\$49,872	\$83,417	\$30,246	\$111,908	\$73,830	\$379,903	\$138,561	\$241,947	\$89,234	\$474,745	\$63,870	\$101,134	\$1,903,471
REVENUE														
Rooms	68.0 %	70.2 %	51.2 %	62.1 %	96.1 %	86.5 %	54.5 %	55.0 %	64.3 %	63.8 %	65.1 %	77.2 %	96.5 %	64.3 %
Food & Beverage	21.5	23.5	31.4	33.3	---	10.0	35.0	31.0	29.8	31.4	29.9	18.8	---	27.8
Telephone	1.2	1.3	0.7	0.7	0.5	0.9	1.5	0.8	1.3	1.1	0.9	0.7	0.8	1.1
Other Income	9.3	4.9	16.7	3.9	3.4	2.6	8.9	13.2	4.6	3.6	4.1	3.3	2.6	6.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
DEPT EXPENSES														
Rooms	31.4	31.5	28.4	31.4	27.5	23.2	29.6	27.0	27.7	28.5	24.6	27.2	23.0	27.2
Food & Beverage	80.3	78.1	80.2	80.7	---	77.2	78.0	74.2	76.0	69.1	73.0	77.5	---	75.9
Telephone	75.3	73.8	94.8	80.2	158.4	104.7	64.0	104.7	90.2	88.7	104.5	117.6	111.1	87.1
Other Expenses	31.4	42.8	66.4	58.4	44.7	53.8	51.2	50.6	36.1	38.2	45.1	34.3	63.6	49.6
Total	42.4	43.6	51.5	49.2	28.7	30.1	49.0	45.4	43.3	42.3	40.6	37.5	24.8	42.9
DEPT INCOME	57.6	56.4	48.5	50.8	71.3	69.9	51.0	54.6	56.7	57.7	59.4	62.5	75.2	57.1
OPERATING EXPENSES														
Admin. & General	8.8	10.8	9.3	9.1	9.7	10.0	8.6	7.2	8.3	9.4	8.8	9.7	9.2	8.8
Marketing	6.7	5.7	6.8	6.1	4.8	5.9	6.6	7.9	7.5	7.6	7.6	6.3	6.4	7.0
Prop. Ops & Maint.	5.3	5.0	5.4	4.5	4.9	4.9	4.8	4.9	5.1	4.5	4.8	5.3	5.2	4.9
Utilities	3.8	3.8	3.7	3.3	5.0	4.2	3.4	3.6	4.1	4.1	4.2	5.4	4.8	4.0
Total	24.5	25.3	25.2	22.9	24.3	25.0	23.5	23.5	25.1	25.5	25.3	26.8	25.6	24.7
HOUSE PROFIT	33.1 %	31.0 %	23.3 %	27.9 %	46.9 %	44.8 %	27.5 %	31.1 %	31.6 %	32.2 %	34.1 %	35.7 %	49.5 %	32.4 %

Table 6 Historical Income & Expense Data – 2006

Affiliation Product Type Location	Independent Full-Service Various	Independent Luxury Various	Independent Full-Service Resort	Independent Boutique Urban	Branded Limited-Service Suburban	Branded Select-Service Various	Branded Luxury Urban	Branded First-Class Resort	Branded Full-Service Urban	Branded Full-Service Airport	Branded First-Class Suburb	Branded Mid-Rate Suburb	Branded Extended-Stay Suburb	Grand Total
Number of Rooms:	3,863	2,452	4,241	1,885	12,111	5,695	13,211	6,518	14,782	6,468	31,755	6,671	7,931	117,583
Occupied Rooms:	1,077,224	708,588	1,068,718	520,908	3,180,693	1,561,321	3,581,407	1,783,861	3,923,873	1,754,474	8,365,662	1,694,204	2,273,242	31,494,175
Occupancy:	76.4%	79.2%	69.0%	75.7%	72.0%	75.1%	74.3%	75.0%	72.7%	74.3%	72.2%	69.6%	78.5%	73.4%
ADR:	\$165.58	\$214.05	\$208.96	\$180.43	\$91.40	\$118.40	\$272.71	\$174.41	\$157.29	\$125.76	\$131.62	\$101.39	\$106.11	\$151.22
RevPAR:	\$126.50	\$169.47	\$144.27	\$136.61	\$65.77	\$88.93	\$202.55	\$130.77	\$114.39	\$93.46	\$95.00	\$70.55	\$83.33	\$110.97
REVENUE														
Rooms	\$178,370	\$151,676	\$223,318	\$93,988	\$290,723	\$184,859	\$976,684	\$311,121	\$617,170	\$220,650	\$1,101,105	\$171,779	\$241,216	\$4,762,660
Food & Beverage	49,470	41,373	131,518	40,763	---	19,360	570,160	159,507	242,586	94,110	469,317	38,700	---	1,856,863
Telephone	2,210	1,910	1,810	495	837	968	16,202	3,944	9,792	3,396	11,643	841	1,203	55,250
Other Income	22,605	10,806	68,254	5,275	10,033	5,853	168,461	68,716	45,312	15,530	74,725	6,355	6,317	508,241
Total	252,654	205,765	424,900	140,521	301,593	211,040	1,731,507	543,288	914,860	333,686	1,656,789	217,675	248,736	7,183,014
DEPT EXPENSES														
Rooms	50,445	41,209	59,502	25,077	71,632	39,483	267,474	75,242	161,381	55,401	251,594	43,724	51,317	1,193,481
Food & Beverage	39,031	29,855	101,154	33,343	---	14,605	443,908	113,290	179,587	64,177	330,095	28,556	---	1,377,601
Telephone	2,116	4,621	2,528	584	1,905	1,190	14,384	3,696	8,363	2,912	13,910	1,467	1,738	59,414
Other Expenses	6,454	4,102	47,732	2,605	3,809	2,550	73,052	30,774	11,191	3,550	30,241	1,890	4,168	222,118
Total	98,045	79,787	210,916	61,609	77,346	57,828	798,819	223,002	360,522	126,040	625,840	75,637	57,223	2,852,613
DEPT INCOME	154,609	125,978	213,984	78,912	224,247	153,212	932,688	320,286	554,338	207,646	1,030,950	142,038	191,513	4,330,401
OPERATING EXPENSES														
Admin. & General	18,979	20,539	37,380	11,803	26,591	19,379	139,148	38,526	77,652	29,204	135,355	18,536	21,123	594,215
Marketing	15,537	10,088	25,443	6,535	12,971	10,776	96,399	36,750	59,293	24,566	117,131	11,942	13,488	440,919
Prop. Ops & Maint.	11,627	9,102	21,290	5,528	13,162	8,479	76,283	24,385	41,790	14,258	73,679	10,837	11,844	322,265
Utilities	9,435	7,156	14,977	4,397	14,143	8,713	55,252	19,630	38,558	14,144	68,961	11,758	12,324	279,449
Total	55,579	46,885	99,090	28,263	66,867	47,347	367,082	119,292	217,293	82,172	395,126	53,073	58,779	1,636,848
HOUSE PROFIT	\$99,030	\$79,093	\$114,894	\$50,649	\$157,380	\$105,865	\$565,606	\$200,994	\$337,045	\$125,474	\$635,823	\$88,965	\$132,734	\$2,693,553
REVENUE														
Rooms	70.6 %	73.7 %	52.6 %	66.9 %	96.4 %	87.6 %	56.4 %	57.3 %	67.5 %	66.1 %	66.5 %	78.9 %	97.0 %	66.3 %
Food & Beverage	19.6	20.1	31.0	29.0	---	9.2	32.9	29.4	26.5	28.2	28.3	17.8	---	25.9
Telephone	0.9	0.9	0.4	0.4	0.3	0.5	0.9	0.7	1.1	1.0	0.7	0.4	0.5	0.8
Other Income	8.9	5.3	16.1	3.8	3.3	2.8	9.7	12.6	5.0	4.7	4.5	2.9	2.5	7.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
DEPT EXPENSES														
Rooms	28.3	27.2	26.6	26.7	24.6	21.4	27.4	24.2	26.1	25.1	22.8	25.5	21.3	25.1
Food & Beverage	78.9	72.2	76.9	81.8	---	75.4	77.9	71.0	74.0	68.2	70.3	73.8	---	74.2
Telephone	95.7	241.9	139.7	118.0	227.6	122.9	88.8	93.7	85.4	85.7	119.5	174.4	144.5	107.5
Other Expenses	28.6	38.0	69.9	49.4	38.0	43.6	43.4	44.8	24.7	22.9	40.5	29.7	66.0	43.7
Total	38.8	38.8	49.6	43.8	25.6	27.4	46.1	41.0	39.4	37.8	37.8	34.7	23.0	39.7
DEPT INCOME	61.2	61.2	50.4	56.2	74.4	72.6	53.9	59.0	60.6	62.2	62.2	65.3	77.0	60.3
OPERATING EXPENSES														
Admin. & General	7.5	10.0	8.8	8.4	8.8	9.2	8.0	7.1	8.5	8.8	8.2	8.5	8.5	8.3
Marketing	6.1	4.9	6.0	4.7	4.3	5.1	5.6	6.8	6.5	7.4	7.1	5.5	5.4	6.1
Prop. Ops & Maint.	4.6	4.4	5.0	3.9	4.4	4.0	4.4	4.5	4.6	4.3	4.4	5.0	4.8	4.5
Utilities	3.7	3.5	3.5	3.1	4.7	4.1	3.2	3.6	4.2	4.2	4.2	5.4	5.0	3.9
Total	22.0	22.8	23.3	20.1	22.2	22.4	21.2	22.0	23.8	24.6	23.8	24.4	23.6	22.8
HOUSE PROFIT	39.2 %	38.4 %	27.0 %	36.0 %	52.2 %	50.2 %	32.7 %	37.0 %	36.8 %	37.6 %	38.4 %	40.9 %	53.4 %	37.5 %

Table 7 Percent Change, 2004 to 2006

Affiliation Product Type Location	Independent Full-Service Various	Independent Luxury Various	Independent Full-Service Resort	Independent Boutique Urban	Branded Limited-Service Suburban	Branded Select-Service Various	Branded Luxury Urban	Branded First-Class Resort	Branded Full-Service Urban	Branded Full-Service Airport	Branded First-Class Suburb	Branded Mid-Rate Suburb	Branded Extended-Stay Various	Grand Total
Occupied Rooms:	5.7 %	6.9 %	7.8 %	15.5 %	7.7 %	7.5 %	6.9 %	3.0 %	9.6 %	0.1 %	5.1 %	9.9 %	5.6 %	6.4 %
Occupancy:	5.6	6.9	8.1	15.5	8.9	7.5	7.1	3.0	10.0	0.2	4.9	10.0	5.6	6.6
ADR:	26.6	25.8	13.3	20.7	17.9	20.8	21.4	23.2	14.6	24.6	15.6	13.1	15.9	18.6
RevPAR:	33.7	34.5	22.5	39.4	28.4	29.8	30.0	26.9	26.0	24.8	21.3	24.3	22.4	26.3
REVENUE														
Rooms	33.8	34.5	22.1	39.3	27.0	29.8	29.8	26.8	25.6	24.8	21.5	24.3	22.4	26.1
Food & Beverage	17.6	9.4	17.0	12.9	---	17.4	17.9	15.3	6.3	8.2	12.9	15.1	---	13.8
Telephone	(4.6)	(11.5)	(30.5)	(36.8)	(31.1)	(33.9)	(21.2)	7.5	2.3	7.9	(9.3)	(34.4)	(30.2)	(12.7)
Other Income	23.8	36.2	14.5	25.8	22.6	34.5	36.7	17.0	27.6	54.3	30.6	6.0	18.0	27.5
Total	28.9	28.1	18.8	29.5	26.5	28.1	25.5	21.8	19.6	20.4	19.0	21.5	21.8	22.4
DEPT EXPENSES														
Rooms	20.5	15.9	14.6	18.4	13.8	19.5	20.2	13.5	18.7	9.9	12.9	16.2	13.0	16.2
Food & Beverage	15.5	1.1	12.2	14.4	---	14.8	17.7	10.3	3.5	6.7	8.9	9.6	---	11.3
Telephone	21.3	190.3	2.4	(7.0)	(1.0)	(22.4)	9.4	(3.7)	(3.2)	4.4	3.8	(2.7)	(9.2)	7.8
Other Expenses	12.6	20.6	20.7	6.3	4.2	9.0	15.7	3.7	(12.8)	(7.7)	17.3	(8.1)	22.5	12.2
Total	17.9	13.9	14.6	15.4	12.9	16.5	18.2	10.1	8.9	7.5	10.7	12.5	12.8	13.3
DEPT INCOME	37.0	39.1	23.3	43.1	32.0	33.2	32.5	31.5	27.8	29.9	24.7	27.0	24.8	29.3
OPERATING EXPENSES														
Admin. & General	9.9	18.5	11.8	19.5	15.5	17.1	16.8	20.2	22.2	12.5	11.0	6.5	12.6	15.1
Marketing	19.1	9.4	3.9	(0.7)	13.1	11.1	6.4	4.8	2.7	17.4	11.3	6.0	2.5	7.9
Prop. Ops & Maint.	12.8	13.8	11.3	14.0	13.0	5.8	14.1	12.4	7.7	14.3	10.6	13.1	11.2	11.6
Utilities	27.6	15.9	14.7	23.2	19.7	25.1	16.5	21.4	24.4	25.6	18.4	20.7	26.4	20.2
Total	15.7	15.1	10.0	13.6	15.4	14.9	13.3	13.6	13.2	16.4	12.2	10.6	12.4	13.1
HOUSE PROFIT	52.8 %	58.6 %	37.7 %	67.5 %	40.6 %	43.4 %	48.9 %	45.1 %	39.3 %	40.6 %	33.9 %	39.3 %	31.2 %	41.5 %

Table 8 Change Expressed Per Incremental Dollar – Rapid-Recovery Environment – 2004 vs. 2006

Affiliation	Independent	Independent	Independent	Independent	Branded	Branded	Branded	Branded	Branded	Branded	Branded	Branded	Branded	Industry
Product Type	Full-Service	Luxury	Full-Service	Boutique	Limited-Service	Select-Service	Luxury	First-Class	Full-Service	Full-Service	First-Class	Mid-Rate	Extended-Stay	Total
Location	Various	Various	Resort	Urban	Suburban	Various	Urban	Resort	Urban	Airport	Suburb	Suburb	Various	Total
Change for Every \$1 Increase in Rooms Revenue														
Rooms Revenue	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00
F&B Revenue	0.16	0.09	0.47	0.18	---	0.07	0.39	0.32	0.11	0.16	0.28	0.15	---	0.23
Telephone Revenue	(0.00)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)	0.00	0.00	0.01	(0.01)	(0.01)	(0.01)	(0.01)
Other Income	0.10	0.07	0.21	0.04	0.03	0.04	0.20	0.15	0.08	0.12	0.09	0.01	0.02	0.11
Total Revenue	1.26	1.16	1.67	1.21	1.02	1.09	1.57	1.48	1.19	1.29	1.36	1.15	1.01	1.33
Rooms Expense	0.19	0.15	0.19	0.15	0.14	0.15	0.20	0.14	0.20	0.11	0.15	0.18	0.13	0.17
House Profit	0.76	0.75	0.78	0.77	0.74	0.75	0.83	0.95	0.76	0.83	0.83	0.75	0.72	0.80
Change for Every \$1 Increase in Food and Beverage Revenue														
F&B Expense	\$0.71	\$0.09	\$0.58	\$0.90	---	\$0.65	\$0.77	\$0.50	\$0.43	\$0.57	\$0.50	\$0.49	---	\$0.62
Change for Every \$1 Increase in Telephone Revenue														
Telephone Expense	(\$3.49)	(\$12.21)	(\$0.08)	\$0.15	\$0.05	\$0.69	(\$0.28)	(\$0.52)	(\$1.27)	\$0.49	(\$0.43)	\$0.09	\$0.34	(\$0.53)
Change for Every \$1 Increase in Other Income														
Other Expense	\$0.17	\$0.24	\$0.95	\$0.14	\$0.08	\$0.14	\$0.22	\$0.11	(\$0.17)	(\$0.05)	\$0.25	(\$0.47)	\$0.79	\$0.22
Change for Every \$1 Increase in Total Revenue														
Dept Income	\$0.74	\$0.78	\$0.60	\$0.74	\$0.86	\$0.82	\$0.65	\$0.79	\$0.80	\$0.84	\$0.77	\$0.78	\$0.85	\$0.75
Admin & Gen'l	0.03	0.07	0.06	0.06	0.06	0.06	0.06	0.07	0.09	0.06	0.05	0.03	0.05	0.06
Marketing	0.04	0.02	0.01	(0.00)	0.02	0.02	0.02	0.02	0.01	0.06	0.04	0.02	0.01	0.02
Prop Ops & Maint.	0.02	0.02	0.03	0.02	0.02	0.01	0.03	0.03	0.02	0.03	0.03	0.03	0.03	0.03
Utilities	0.04	0.02	0.03	0.03	0.04	0.04	0.02	0.04	0.05	0.05	0.04	0.05	0.06	0.04
House Profit	0.60	0.65	0.47	0.64	0.72	0.69	0.53	0.64	0.63	0.64	0.61	0.65	0.71	0.60

Between 2000 and 2002, the grand total of rooms revenue decreased by \$592,004,000 while the grand total of house profit decreased by \$559,158,000. Thus, for each dollar of additional rooms revenue, house profit (excluding brand royalties and management fees) decreased approximately \$0.94. Viewed from the perspective of total revenue (which decreased by \$833,343,000), the rate of change was a \$0.67 reduction in house profit per dollar loss of total revenue.

Between 2004 and 2006, the grand total of rooms revenue in our study increased by \$987,057,000 while the grand total of house profit increased by \$790,082,000. Thus, for each dollar of additional rooms revenue, house profit increased approximately \$0.80. Viewed from the perspective of total revenue (which increased by \$1,314,165,000), the rate of change was a \$0.60 increase in house profit per dollar of total revenue growth.

The data indicates that the decline in profit was somewhat more proportionate to the revenue loss during periods of rapid decline than the gain in profit recorded during periods of rapid recovery. The variation may be attributed to the effects of cost-inflation over each two-year periods of study. Inflation is not otherwise accounted for in this analysis.

Note that we have intentionally excluded from consideration here any income and expense item that is a) property-specific, b) entirely fixed, or c) entirely variable. Excluded items include management fees, royalty fees, property taxes, insurance, and reserves for replacement. Rather we have limited this analysis to those items with are both fixed and variable, where the degree of variability is difficult to discern. This study is focused on the elasticity of these hybrid items.

From the standpoint of optimizing net income during a downturn, an operator hopes to see lower variability in revenue and profit categories and higher variability in expense categories. The fact that utilities expense is particularly inelastic suggests that operators have fewer options for reducing this expense. In contrast, food and beverage expense is among the most elastic of all the major operating expense categories.

In contrast, during an upturn, operators hope to see higher variability in revenue and profit categories and lower variability in expense categories. Based on our upturn findings, those expenses that seem most suited to strong improvements in operating efficiency (i.e. those categories that demonstrated lower-than-average elasticity) include marketing, maintenance, and rooms

expense. Energy expenses increased nearly in tandem with rooms revenue between 2004 and 2006, which was more a function of rising utility costs than a measure of occupancy-related expense variability. Where externalities are stable, utility expenses are typically more far more fixed than variable.

Telephone department results also require qualification here. Due to the proliferation of mobile phones, revenue and departmental profit levels skewed rapidly downward in both surveys. During the upturn, hotels in our survey experienced a 12.7% decrease in revenue, despite the 6.4% gain in the number of occupied rooms.

A Forecasting Tool – The Variability Index

Whereas the preceding tables are useful as a quick reference, we have developed a methodology using the raw data to be used for a more detailed review of any given property's projected performance. Our tool, the "variability index," was developed using the preceding historical data and is meant to act as market-derived benchmarking tool. The following table contains the variability indexes. In the subsequent text we will explain the mathematical basis for the indexes and demonstrate their application.

Table 9 Variability Indexes in a Rapid-Decline Environment – 2000 vs. 2002

Affiliation	Independent	Independent	Independent	Independent	Branded	Branded	Branded	Branded	Branded	Branded	Branded	Branded	Branded	Industry
Product Type	Full-Service	Luxury	Full-Service	Boutique	Limited-Service	Select-Service	Luxury	First-Class	Full-Service	Full-Service	First-Class	Mid-Rate	Extended-Stay	Total
Location	Various	Various	Resort	Urban	Suburban	Various	Urban	Resort	Urban	Airport	Suburb	Suburb	Suburb	Total
Variability Index Relative to Percentage Change in Rooms Revenue														
Rooms Revenue	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
F&B Revenue	52	6	62	38	---	78	64	120	63	72	76	29	---	67
Telephone Revenue	133	137	247	137	293	227	160	247	207	217	218	245	289	194
Other Income	181	163	75	68	91	7	4	8	39	143	65	107	147	57
Total Revenue	91	82	89	87	103	100	85	101	89	96	95	89	105	91
Rooms Expense	54	46	36	41	53	60	59	81	60	76	72	70	34	61
House Profit	166	150	194	155	157	162	155	145	137	158	153	176	156	152
Variability Index Relative to Percentage Change in F&B Revenue														
F&B Expense	108 %	99 %	76 %	70 %	---	98 %	85 %	83 %	103 %	90 %	82 %	22 %	---	85 %
Variability Index Relative to Percentage Change in Telephone Revenue														
Telephone Expense	39 %	47 %	33 %	17 %	53 %	14 %	52 %	47 %	55 %	63 %	43 %	44 %	44 %	45 %
Variability Index Relative to Percentage Change in Other Income														
Other Expense	90 %	109 %	44 %	47 %	173 %	1,916 %	(2) %	(122) %	(31) %	3 %	109 %	168 %	61 %	60 %
Variability Index Relative to Percentage Change in Total Revenue														
Dept Income	122 %	143 %	140 %	137 %	114 %	114 %	129 %	115 %	118 %	118 %	119 %	128 %	116 %	123 %
Admin & Gen'l	56	61	17	82	37	77	28	63	43	47	45	30	51	50
Marketing	31	115	12	13	29	32	70	77	57	31	48	(28)	(25)	51
Prop Ops & Maint.	(6)	14	28	90	7	(168)	41	51	14	29	23	11	14	25
Utilities	8	44	(16)	8	16	23	(56)	18	(19)	32	(3)	(8)	1	(3)
House Profit	183	184	218	178	153	162	181	144	153	165	162	197	148	167

Table 10 Variability Indexes in a Rapid-Recovery Environment – 2004 vs. 2006

Affiliation	Independent	Independent	Independent	Independent	Branded	Branded	Branded	Branded	Branded	Branded	Branded	Branded	Branded	Industry
Product Type	Full-Service	Luxury	Full-Service	Boutique	Limited-Service	Select-Service	Luxury	First-Class	Full-Service	Full-Service	First-Class	Mid-Rate	Extended-Stay	Total
Location	Various	Various	Resort	Urban	Suburban	Various	Urban	Resort	Urban	Airport	Suburb	Suburb	Various	Total
Variability Index Relative to Percentage Change in Rooms Revenue														
Rooms Revenue	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
F&B Revenue	52	27	77	33	---	58	60	57	24	33	60	62	---	53
Telephone Revenue	(14)	(33)	(138)	(93)	(115)	(114)	(71)	28	9	32	(43)	(142)	(135)	(49)
Other Income	70	105	66	66	84	116	123	64	108	219	143	25	80	105
Total Revenue	86	81	85	75	98	94	86	81	77	82	89	89	97	86
Rooms Expense	61	46	66	47	51	65	68	50	73	40	60	67	58	62
House Profit	156	170	171	171	151	145	164	168	154	164	158	162	140	159
Variability Index Relative to Percentage Change in F&B Revenue														
F&B Expense	88 %	12 %	72 %	112 %	---	85 %	99 %	67 %	57 %	82 %	69 %	63 %	---	82 %
Variability Index Relative to Percentage Change in Telephone Revenue														
Telephone Expense	(464) %	(1,656) %	(8) %	19 %	3 %	66 %	(44) %	(50) %	(141) %	55 %	(41) %	8 %	30 %	(61) %
Variability Index Relative to Percentage Change in Other Income														
Other Expense	53 %	57 %	142 %	25 %	19 %	26 %	43 %	22 %	(47) %	(14) %	56 %	(136) %	125 %	45 %
Variability Index Relative to Percentage Change in Total Revenue														
Dept Income	128 %	139 %	124 %	146 %	121 %	118 %	128 %	145 %	141 %	146 %	130 %	125 %	114 %	131 %
Admin & Gen'l	34	66	63	66	58	61	66	93	113	61	58	30	58	67
Marketing	66	34	21	(3)	49	40	25	22	14	85	59	28	12	35
Prop Ops & Maint.	44	49	60	47	49	21	55	57	39	70	55	61	51	52
Utilities	95	57	78	79	74	89	65	98	124	125	97	96	121	90
House Profit	183	209	200	229	153	154	192	207	200	199	178	182	143	185

The variability indexes are calculated by dividing the rates of change for any given income or expense item, where the denominator is the base point of reference (the determinant) and the numerator is the dependent. For example, in Table 3, in the first category (Independent-Full Service-Variou), rooms revenue declined by 20.0% while food and beverage revenue for the same set of hotels declined by 10.4%. Therefore, food and beverage revenue declined at 52% of the rooms department's rate of decline. Put another way, 48% of food and beverage revenue was directly variable with the rooms revenue loss. In that same category, telephone and other income revenue declined at rates in excess of the rooms revenue decline, with index levels above 100%. The higher the index, the higher the level of variability (or elasticity) with rooms revenue. The lower the index, the larger the fixed component. Where the index is negative, the expense continued to grow in real terms despite the decline in revenue, a dynamic that occurred in only 12 instances out of a possible 224.

Case Study – Downturn Scenario

The variability index can be used as a quick test of the validity of an existing projection, or as the basis for an all new forecast.

Under the quick-test scenario, assume you're the asset manager of an independent boutique hotel that opened in downtown Chicago in 2006. The 2009 forecast you've received from on-site management shows a 29.7% decline in rooms revenue from 2008. Based on the market data presented here, the hotel's 2009 house profit (before deductions for franchise fees or management fees) would be lower by a factor of approximately 46% (calculated as -29.7% , the rooms revenue decrease, multiplied by 155%), as compared to 2008 results. Using the same methodology, 2009 rooms expense, for example, should decrease from 2008 levels by a factor of approximately 8.2% (calculated as -29.7% , the rooms revenue decrease, multiplied by 46%).

The following narrative features a ground-up projection, based on a hypothetical hotel, the same independent boutique hotel that opened in downtown Chicago in 2006, mentioned above. It has 150 rooms, a restaurant, meeting space, and all the other facilities typical of a first-class hotel. The following table summarizes the 2008 income and expense.

Table 11 Historical Operating Results - 2008

Year	2008 Actual	
Number of Rooms	150	
Occupied Rooms	42,431	
Occupancy Rate	77.5%	
Average Daily Rate	\$170.08	
REVENUE		
Rooms	\$7,216,707	73.5 %
Food & Beverage	2,092,845	21.3
Telephone	144,334	1.5
Other Income	360,835	3.7
Total	9,814,722	100.0
DEPARTMENTAL EXPENSES		
Rooms	1,955,728	27.1
Food & Beverage	1,676,369	80.1
Telephone	59,033	40.9
Other Expenses	56,651	15.7
Total	3,747,780	38.2
DEPARTMENTAL INCOME		
	6,066,941	61.8
OPERATING EXPENSES		
Administrative & General	902,954	9.2
Marketing	431,848	4.4
Property Operations & Maintenance	480,921	4.9
Utilities	284,627	2.9
Total	2,100,350	21.4
HOUSE PROFIT	\$3,966,591	40.4 %

In light of the downturn, the 2009 occupancy and average daily rate (ADR) have been projected at 65.1% and \$142.44, resulting in rooms revenue of \$5,076,489, a drop of 29.7% from 2008. Using this figure and the variability indexes, we can calculate the corresponding changes in the other income and expense components, as follows.

Table 12 Rate of Change Projections - 2009

	Variability Index				Calculated % Change
Rooms Rev % Change					(29.7) %
Corresponding Change in:					
Rooms Revenue	100 %	x	(29.7) %	=	(29.7) %
F&B Revenue	38	x	(29.7)	=	(11.2)
Telephone Revenue	68	x	(29.7)	=	(20.1)
Other Income	68	x	(29.7)	=	(20.1)
Rooms Expense	41	x	(29.7)	=	(12.3)
F&B Rev % Change					(11.2) %
Corresponding Change in:					
F&B Expense	70 %	x	(11.2) %	=	(7.9) %
Phone Rev % Change					(20.1) %
Corresponding Change in:					
Phone Expense	47 %	x	(20.1) %	=	(9.4) %
Other Rev % Change					(20.1) %
Corresponding Change in:					
Other Expense	47 %	x	(20.1) %	=	(9.4) %
Total Rev % Change					(25.2) % ¹
Corresponding Change in:					
Admin & Gen'l	82 %	x	(25.2) %	=	(20.8) %
Marketing	13	x	(25.2)	=	(3.4)
Prop Ops & Maint	90	x	(25.2)	=	(22.6)
Utilities	8	x	(25.2)	=	(2.0)

¹ Calculated in subsequent table, based on departmental revenue projections

Following our own advice, we used the "other income" and "other expense" indexes as the basis for the telephone departmental projections.

By applying the preceding rates of change to the 2008 actual results, the 2009 results can be projected, as follows.

Table 13 Forecasted Results - 2009

Year	2008 Actual		2009 Forecast		Percent Change	
Number of Rooms	150		150			
Occupied Rooms	42,431		35,638		(16.0) %	
Occupancy Rate	77.5%		65.1%		(16.0)	
Average Daily Rate	\$170.08		\$142.44		(16.2)	
REVENUE						
Rooms	\$7,216,707	73.5 %	\$5,076,489	69.2 %	given	(29.7) %
Food & Beverage	2,092,845	21.3	1,858,187	25.3		(11.2)
Telephone	144,334	1.5	115,343	1.6		(20.1)
Other Income	360,835	3.7	288,359	3.9		(20.1)
Total	9,814,722	100.0	7,338,378	100.0	calc'd	(25.2)
DEPARTMENTAL EXPENSES						
Rooms	1,955,728	27.1	1,715,369	33.8		(12.3)
Food & Beverage	1,676,369	80.1	1,544,439	83.1		(7.9)
Telephone	59,033	40.9	53,464	46.4		(9.4)
Other Expenses	56,651	15.7	51,307	17.8		(9.4)
Total	3,747,780	38.2	3,364,579	45.8	calc'd	(10.2)
DEPARTMENTAL INCOME	6,066,941	61.8	3,973,799	54.2	calc'd	(34.5)
OPERATING EXPENSES						
Administrative & General	902,954	9.2	715,588	9.8		(20.8)
Marketing	431,848	4.4	417,357	5.7		(3.4)
Property Operations & Maintenance	480,921	4.9	372,210	5.1		(22.6)
Utilities	284,627	2.9	278,826	3.8		(2.0)
Total	2,100,350	21.4	1,783,981	24.3	calc'd	(15.1)
HOUSE PROFIT	\$3,966,591	40.4 %	\$2,189,818	29.8 %	calc'd	(44.8) %

A quick check of the source data at the beginning of this article will show that we used the actual 2000 occupancy, average daily rate, and income and expense ratios from the “Independent-Boutique-Urban” category as the basis for our 2008 statement. We then used this category’s 2002 rooms revenue change as the basis for the case study’s 2009 forecast. Because the case study’s 2009 projected results match the actual 2002 income and expense ratios, the preceding case example also works as a mathematical proof of our findings and methodology. (There is a very slight variation in the house profit ratio because of our decision to use the “other income” and “other expense” indexes as the basis for the telephone department operations.)

Case Study – Upturn Scenario

Months later and you’re still the asset manager of that same independent boutique hotel in Chicago, way to go. The 2011 forecast you’ve received from on-site management shows a 39.3% increase in rooms revenue from the 2009 forecast. Based on the market data, the hotel’s 2011 house profit (before deductions for franchise fees or management fees) would be higher by a factor of approximately 67%

(calculated as 39.3%, the rooms revenue increase, multiplied by 171%), as compared to 2009 results. Using the same methodology, 2011 rooms expense, for example, should increase from 2009 levels by a factor of approximately 18% (calculated as 39.3%, the rooms revenue increase, multiplied by 47%).

The following narrative features a ground-up projection, based on a hypothetical hotel, the same independent boutique hotel that opened in downtown Chicago in 2006, mentioned above. It has 150 rooms, a restaurant, meeting space, and all the other facilities typical of a first-class hotel. The following table summarizes the 2009 income and expense forecast.

Table 14 Projected Operating Results - 2009

Year	2009 Forecast	
Number of Rooms	150	
Occupied Rooms	35,878	
Occupancy Rate	65.5%	
Average Daily Rate	\$149.52	
REVENUE		
Rooms	\$5,364,449	62.1 %
Food & Beverage	2,872,190	33.3
Telephone	62,275	0.7
Other Income	333,484	3.9
Total	8,632,397	100.0
DEPARTMENTAL EXPENSES		
Rooms	1,684,677	31.4
Food & Beverage	2,318,160	80.7
Telephone	49,947	80.2
Other Expenses	194,857	58.4
Total	4,247,641	49.2
DEPARTMENTAL INCOME		
	4,384,756	50.8
OPERATING EXPENSES		
Administrative & General	785,790	9.1
Marketing	523,648	6.1
Property Operations & Maintenance	385,817	4.5
Utilities	283,934	3.3
Total	1,979,189	22.9
HOUSE PROFIT	\$2,405,567	27.9 %

The 2011 occupancy and average daily rate (ADR) have been projected at 75.7% and \$180.43, resulting in rooms revenue of \$7,479,151, a gain of 39.4% from 2009. Using this figure and the variability indexes, we can calculate the corresponding changes in the other income and expense components, as follows.

Table 15 Rate of Change Projections – 2009 to 2011

	Variability Index				Calculated % Change
Rooms Rev % Change					39.4 %
Corresponding Change in:					
Rooms Revenue	100 %	x	39.4 %	=	39.4 %
F&B Revenue	33	x	39.4	=	12.9
Telephone Revenue	(93)	x	39.4	=	(36.9)
Other Income	66	x	39.4	=	25.9
Rooms Expense	47	x	39.4	=	18.4
F&B Rev % Change					12.9 %
Corresponding Change in:					
F&B Expense	112 %	x	12.9 %	=	14.4 %
Phone Rev % Change					(36.9) %
Corresponding Change in:					
Phone Expense	25 %	x	(36.9) %	=	(9.0) %
Other Rev % Change					25.9 %
Corresponding Change in:					
Other Expense	25 %	x	25.9 %	=	6.3 %
Total Rev % Change					29.5 % ¹
Corresponding Change in:					
Admin & Gen'l	66 %	x	29.5 %	=	19.5 %
Marketing	(3)	x	29.5	=	(0.7)
Prop Ops & Maint	47	x	29.5	=	14.0
Utilities	79	x	29.5	=	23.2

¹ Calculated in subsequent table, based on departmental revenue projections

By applying the preceding rates of change to the 2009 forecast, the 2011 results can be projected, as follows.

Table 16 Forecasted Results - 2011

Year	2009 Forecast		2011 Forecast		Percent Change	
Number of Rooms	150		150			
Occupied Rooms	35,878		41,452		15.5 %	
Occupancy Rate	65.5%		75.7%		15.5	
Average Daily Rate	\$149.52		\$180.43		20.7	
REVENUE						
Rooms	\$5,364,449	62.1 %	\$7,479,151	66.9 %	given	39.4 %
Food & Beverage	2,872,190	33.3	3,242,715	29.0		12.9
Telephone	62,275	0.7	39,326	0.4		(36.9)
Other Income	333,484	3.9	419,700	3.8		25.9
Total	8,632,397	100.0	11,180,893	100.0	calc'd	29.5
DEPARTMENTAL EXPENSES						
Rooms	1,684,677	31.4	1,995,041	26.7		18.4
Food & Beverage	2,318,160	80.7	2,652,509	81.8		14.4
Telephone	49,947	80.2	45,434	115.5		(9.0)
Other Expenses	194,857	58.4	207,208	49.4		6.3
Total	4,247,641	49.2	4,900,193	43.8	calc'd	15.4
DEPARTMENTAL INCOME						
	4,384,756	50.8	6,280,700	56.2	calc'd	43.2
OPERATING EXPENSES						
Administrative & General	785,790	9.1	939,020	8.4		19.5
Marketing	523,648	6.1	519,743	4.6		(0.7)
Property Operations & Maintenance	385,817	4.5	439,762	3.9		14.0
Utilities	283,934	3.3	349,832	3.1		23.2
Total	1,979,189	22.9	2,248,357	20.1	calc'd	13.6
HOUSE PROFIT						
	\$2,405,567	27.9 %	\$4,032,343	36.1 %	calc'd	67.6 %

A quick check of the source data at the beginning of this article will show that we used the actual 2004 occupancy, average daily rate, and income and expense ratios from the "Independent-Boutique-Urban" category as the basis for our 2009 statement. We then used this category's 2006 rooms revenue change as the basis for the case study's 2011 forecast. Because the case study's 2011 projected results match the actual 2006 income and expense ratios (save some minor rounding errors), the preceding case example also works as a mathematical proof of our findings and methodology.

Conclusion

The historical data and variability indexes developed here offer lenders, asset managers, hotel operators, and other analysts a market-derived historical context for the current downturn and the anticipated recovery. Segregated among 13 categories of hotel, the indexes allow an analyst with a given rate of rooms revenue change to either build a ground-up forecast, or place an existing forecast within a historical context.

About the Author



Erich Baum is a Vice President with HVS and works out of his home in Portsmouth, New Hampshire as an affiliate of the Boston and New York offices. Erich has been with HVS since graduating from Cornell's hotel school in 1989, working in the San Francisco office through mid 1996 and based in New England thereafter. Erich co-authored the 2001 edition of the Appraisal Institute's standard hotel valuation text ("Hotels & Motels: Valuations and Market Studies") with Steve Rushmore. Erich is a certified appraiser in the states of Massachusetts, New Hampshire, and Maine, has provided expert testimony in numerous courts of law. He also has a masters of arts degree from the University of San Francisco.

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