

**In America's Thrall.**  
**The Effects of the US Market and US Security**  
**Characteristics on Australian Stock Returns**

**Supplementary**  
**Information.**

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**Table A: CAPM Regressions**

$$R_{p,i} - R_f = a_i + b_i(R_m - R_f) + e_i$$

At the end of December each year from 1982-2001, all of the stocks publicly listed on the Australian Stock Exchange (ASX), with the exception of those in banks and finance, insurance, investment and financial services, and property trusts, are used to form 25 portfolios based on their size and beta values. Individual firms' betas are estimated using past monthly returns over the period 24-60 months (i.e. t-2 to t-5 years) prior to formation. Stocks are first sorted into size quintiles based on their market values (at t-1) and subsequently into beta quintiles based on their pre-estimated beta values in order to form the 25 portfolios. These portfolios are then divided into five systems, with each individual system representing each beta quintile. Therefore, System 1 contains the five portfolios in the lowest beta quintile, while System 5 contains the five portfolios in the highest beta quintile. The full information maximum likelihood (FIML) is then used to estimate the regression coefficients in each system. This table reports the CAPM regression's coefficient estimates and their p-values in Panel A, the GRS test statistics in Panel B, and the AIC and SBC test statistics in Panel C. \* indicates significance at 5% level and \*\* indicates significance at 1% level. Panel D reports the value of adjusted R-squared for each equation in the system.

Panel A: Coefficient Estimates and P-Values										
Size/Beta	Low	2	3	4	High	Low	2	3	4	High
	<b>a</b>					<b>p(a)</b>				
Small	0.2410	-0.3681	-0.8091	-1.2013	-1.2484	0.0617	0.0008 **	0.0000 **	0.0000 **	0.0000 **
2	0.3463	0.1555	-0.2930	-0.7778	-0.8928	0.0000 **	0.0126 *	0.0000 **	0.0000 **	0.0000 **
3	0.6024	0.3489	0.2173	-0.3022	1.5195	0.0000 **	0.0000 **	0.0000 **	0.0000 **	0.0000 **
4	0.6457	0.5414	0.3939	0.0148	-0.4184	0.0000 **	0.0000 **	0.0000 **	0.7076	0.0000 **
Big	0.6085	0.5171	0.4367	0.2525	-0.0995	0.0000 **	0.0000 **	0.0000 **	0.0000 **	0.0489 *
	<b>b</b>					<b>p(b)</b>				
Small	0.7768	1.3962	1.8352	2.2245	2.2653	0.0000 **	0.0000 **	0.0000 **	0.0000 **	0.0000 **
2	0.6563	0.8426	1.2925	1.7700	1.8826	0.0000 **	0.0000 **	0.0000 **	0.0000 **	0.0000 **
3	0.3995	0.6493	0.7747	1.2869	-0.5122	0.0000 **	0.0000 **	0.0000 **	0.0000 **	0.0000 **
4	0.3542	0.4594	0.6023	0.9710	1.3963	0.0000 **	0.0000 **	0.0000 **	0.0000 **	0.0000 **
Big	0.3942	0.4843	0.5601	0.7392	1.0804	0.0000 **	0.0000 **	0.0000 **	0.0000 **	0.0000 **
Panel B: GRS		Panel C: AIC & SBC			Panel D: Adjusted R-squared					
		AIC	SBC							
System 1	167.0319 **	-18.2605	-18.2589		0.2539	0.4747	0.6083	0.7131	0.7212	
System 2	80.7853 **	-17.2168	-17.2153		0.4428	0.5201	0.7166	0.7858	0.7692	
System 3	81.5896 **	-16.8591	-16.8575		0.3627	0.4781	0.6071	0.7222	0.2408	
System 4	61.1832 **	-15.6556	-15.6540		0.3927	0.4958	0.5516	0.6885	0.7134	
System 5	125.7890 **	-14.3361	-14.3345		0.3494	0.4399	0.4515	0.5223	0.6403	

**Table B: CAPM with US Factor Regressions**

$$R_{p,i} - R_f = a_i + b_i(R_m - R_f) + u_iUS + e_i$$

At the end of December each year from 1982-2001, all of the stocks publicly listed on the Australian Stock Exchange (ASX), with the exception of those in banks and finance, insurance, investment and financial services, and property trusts, are used to form 25 portfolios based on their size and beta values. Individual firms' betas are estimated using past monthly returns over the period 24-60 months (i.e. t-2 to t-5 years) prior to formation. Stocks are first sorted into size quintiles based on their market values (at t-1) and subsequently into beta quintiles based on their pre-estimated beta values in order to form the 25 portfolios. These portfolios are then divided into five systems, with each individual system representing each beta quintile. Therefore, System 1 contains the five portfolios in the lowest beta quintile, while System 5 contains the five portfolios in the highest beta quintile. The full information maximum likelihood (FIML) is then used to estimate the regression coefficients in each system. This table reports the CAPM with the US factor regression's coefficient estimates and their p-values in Panel A, the GRS test statistics in Panel B, and the AIC and SBC test statistics in Panel C. \* indicates significance at 5% level and \*\* indicates significance at 1% level. Panel D reports the value of adjusted R-squared for each equation in the system.

Panel A: Coefficient Estimates and P-Values										
Size/Beta	Low	2	3	4	High	Low	2	3	4	High
	<b>a</b>					<b>p(a)</b>				
Small	0.2954	-0.3415	-0.5685	-1.0087	-0.9862	0.1340	0.0625	0.0028 **	0.0000 **	0.0000 **
2	0.4246	0.2170	-0.2356	-0.7123	-0.8041	0.0000 **	0.0570	0.0116 *	0.0000 **	0.0000 **
3	0.6560	0.3415	0.2997	-0.2382	1.5378	0.0000 **	0.0004 **	0.0000 **	0.0167 *	0.0000 **
4	0.5857	0.5215	0.3516	-0.0112	-0.4438	0.0000 **	0.0000 **	0.0000 **	0.8467	0.0000 **
Big	0.5168	0.4279	0.3454	0.1871	-0.1231	0.0000 **	0.0000 **	0.0000 **	0.0007 **	0.0694
	<b>b</b>					<b>p(b)</b>				
Small	0.7834	1.4005	1.8713	2.2533	2.3044	0.0000 **	0.0000 **	0.0000 **	0.0000 **	0.0000 **
2	0.6682	0.8518	1.3011	1.7797	1.8958	0.0000 **	0.0000 **	0.0000 **	0.0000 **	0.0000 **
3	0.4077	0.6482	0.7870	1.2965	-0.5095	0.0000 **	0.0000 **	0.0000 **	0.0000 **	0.0000 **
4	0.3453	0.4564	0.5960	0.9671	1.3925	0.0000 **	0.0000 **	0.0000 **	0.0000 **	0.0000 **
Big	0.3804	0.4708	0.5465	0.7295	1.0768	0.0000 **	0.0000 **	0.0000 **	0.0000 **	0.0000 **
	<b>u</b>					<b>p(u)</b>				
Small	-0.0601	-0.0307	-0.2734	-0.2186	-0.2976	0.6981	0.8529	0.0771	0.0980	0.0084 **
2	-0.0891	-0.0699	-0.0652	-0.0743	-0.1007	0.2371	0.4328	0.3621	0.3075	0.3083
3	-0.0610	0.0085	-0.0935	-0.0726	-0.0208	0.2891	0.9181	0.0959	0.4117	0.8352
4	0.0682	0.0228	0.0481	0.0295	0.0289	0.1056	0.5719	0.3402	0.6108	0.7212
Big	0.1042	0.1014	0.1036	0.0742	0.0268	0.0129 *	0.0182 *	0.0344 *	0.2341	0.7132
Panel B: GRS		Panel C: AIC & SBC				Panel D: Adjusted R-squared				
		AIC	SBC							
System 1	69.7293 **	-18.3051	-18.3020			0.2517	0.4727	0.6152	0.7162	0.7278
System 2	34.3139 **	-17.2346	-17.2314			0.4456	0.5203	0.7165	0.7858	0.7696
System 3	23.8491 **	-16.9032	-16.9000			0.3654	0.4759	0.6111	0.7225	0.2378
System 4	16.0845 **	-15.6735	-15.6703			0.3993	0.4944	0.5519	0.6876	0.7124
System 5	42.8716 **	-14.3586	-14.3554			0.3621	0.4498	0.4590	0.5236	0.6390

**Table C: CAPM with US and ER Factors Regressions**

$$R_{p,i} - R_f = a_i + b_i(R_m - R_f) + u_iUS + r_iER + e_i$$

At the end of December each year from 1982-2001, all of the stocks publicly listed on the Australian Stock Exchange (ASX), with the exception of those in banks and finance, insurance, investment and financial services, and property trusts, are used to form 25 portfolios based on their size and beta values. Individual firms' betas are estimated using past monthly returns over the period 24-60 months (i.e. t-2 to t-5 years) prior to formation. Stocks are first sorted into size quintiles based on their market values (at t-1) and subsequently into beta quintiles based on their pre-estimated beta values in order to form the 25 portfolios. These portfolios are then divided into five systems, with each individual system representing each beta quintile. Therefore, System 1 contains the five portfolios in the lowest beta quintile, while System 5 contains the five portfolios in the highest beta quintile. The full information maximum likelihood (FIML) is then used to estimate the regression coefficients in each system. This table reports the CAPM with the US and ER factors regression's coefficient estimates and their p-values in Panel A, the GRS test statistics in Panel B, and the AIC and SBC test statistics in Panel C. \* indicates significance at 5% level and \*\* indicates significance at 1% level. Panel D reports the value of adjusted R-squared for each equation in the system.

Panel A: Coefficient Estimates and P-Values										
Size/Beta	Low	2	3	4	High	Low	2	3	4	High
	<b>a</b>					<b>p(a)</b>				
Small	0.0482	-0.6549	-0.6198	-1.3844	-1.5769	0.8707	0.0288 *	0.0709	0.0000 **	0.0000 **
2	0.3159	0.1450	-0.4384	-0.9554	-1.0909	0.0315 *	0.4402	0.0121 *	0.0000 **	0.0000 **
3	0.7174	0.4410	0.3537	-0.2588	1.6126	0.0000 **	0.0013 **	0.0020 **	0.0833	0.0000 **
4	0.7088	0.6750	0.5433	0.1125	-0.4822	0.0000 **	0.0000 **	0.0000 **	0.3594	0.0036 **
Big	0.7597	0.7702	0.6653	0.5854	0.1337	0.0000 **	0.0000 **	0.0000 **	0.0000 **	0.3325
	<b>b</b>					<b>p(b)</b>				
Small	0.8307	1.4588	1.8808	2.3231	2.4143	0.0000 **	0.0000 **	0.0000 **	0.0000 **	0.0000 **
2	0.6888	0.8652	1.3388	1.8249	1.9491	0.0000 **	0.0000 **	0.0000 **	0.0000 **	0.0000 **
3	0.3961	0.6296	0.7769	1.3002	-0.5234	0.0000 **	0.0000 **	0.0000 **	0.0000 **	0.0000 **
4	0.3227	0.4278	0.5603	0.9442	1.3997	0.0000 **	0.0000 **	0.0000 **	0.0000 **	0.0000 **
Big	0.3353	0.4072	0.4870	0.6555	1.0291	0.0000 **	0.0000 **	0.0000 **	0.0000 **	0.0000 **
	<b>u</b>					<b>p(u)</b>				
Small	-0.1526	-0.1503	-0.2928	-0.3615	-0.5227	0.3857	0.4349	0.0640	0.0171 *	0.0001 **
2	-0.1301	-0.0974	-0.1424	-0.1668	-0.2099	0.1226	0.2977	0.0880	0.0516	0.0531
3	-0.0381	0.0464	-0.0729	-0.0805	0.0076	0.5926	0.6169	0.3161	0.4465	0.9475
4	0.1153	0.0814	0.1211	0.0766	0.0142	0.0204 *	0.0586	0.0284	0.2762	0.8777
Big	0.1964	0.2320	0.2254	0.2259	0.1246	0.0000 **	0.0000 **	0.0000 **	0.0008 **	0.1310
	<b>r</b>					<b>p(r)</b>				
Small	0.2919	0.3743	0.0611	0.4482	0.7051	0.2939	0.1801	0.8415	0.0693	0.0038 **
2	0.1290	0.0861	0.2421	0.2902	0.3423	0.3366	0.6078	0.1727	0.0735	0.0664
3	-0.0727	-0.1187	-0.0645	0.0246	-0.0892	0.5416	0.3531	0.5994	0.8795	0.6021
4	-0.1475	-0.1834	-0.2288	-0.1476	0.0459	0.0361 *	0.0054 **	0.0168 *	0.2292	0.7817
Big	-0.2898	-0.4087	-0.3818	-0.4754	-0.3065	0.0005 **	0.0000 **	0.0000 **	0.0000 **	0.0322 *
Panel B: GRS		Panel C: AIC & SBC			Panel D: Adjusted R-squared					
		AIC	SBC							
System 1	32.9043 **	-18.3691	-18.3643		0.2556	0.4769	0.6137	0.7205	0.7399	
System 2	24.4019 **	-17.3428	-17.3381		0.4464	0.5193	0.7201	0.7889	0.7734	
System 3	13.7650 **	-16.9889	-16.9841		0.3652	0.4768	0.6102	0.7214	0.2360	
System 4	19.9961 **	-15.7719	-15.7672		0.4103	0.5073	0.5652	0.6893	0.7113	
System 5	38.1463 **	-14.4391	-14.4344		0.3964	0.5070	0.4966	0.5627	0.6472	

**Table D: CAPM Likelihood-ratio Tests**

$$R_{p,i} - R_f = a_i + b_i(R_m - R_f) + e_i$$

$$R_{p,i} - R_f = a_i + b_i(R_m - R_f) + u_iUS + e_i$$

$$R_{p,i} - R_f = a_i + b_i(R_m - R_f) + u_iUS + r_iER + e_i$$

The 25 portfolios are divided into five systems, with each individual system representing each beta quintile. System 1 contains the five portfolios in the lowest beta quintile, while System 5 contains the five portfolios in the highest beta quintile. The full information maximum likelihood (FIML) is then used to estimate the regression coefficients in each system. This table indicates the Likelihood test statistics for all five systems that are used for the three different models, namely, the CAPM, the CAPM with the US factor, and the CAPM with the US and ER factors. \* indicates significance at 5% level and \*\* indicates significance at 1% level.

<b>Likelihood Ratio Test Statistics</b>			
	<b>CAPM CAPM w US</b>	<b>CAPM CAPM w US and ER</b>	<b>CAPM w US CAPM w US and ER</b>
<b>System 1</b>	12.7140 **	30.0560 **	17.3420 **
<b>System 2</b>	6.2620 **	34.2340 **	27.9720 **
<b>System 3</b>	12.5840 **	35.1500 **	22.5660 **
<b>System 4</b>	6.2860 **	31.9220 **	25.6360 **
<b>System 5</b>	7.3900 **	28.7200 **	21.3300 **

**Table E: Australian Three-Factor Model Likelihood-ratio Tests**

$$R_{p,i} - R_f = a_i + b_i(R_m - R_f) + s_iSMB + h_iHML + j_iJAN + k_iJULY + e_i$$

$$R_{p,i} - R_f = a_i + b_i(R_m - R_f) + s_iSMB + h_iHML + u_iUS + r_iER + j_iJAN + k_iJULY + e_i$$

The 25 portfolios are divided into five systems, with each individual system representing each beta quintile. System 1 contains the five portfolios in the lowest beta quintile, while System 5 contains the five portfolios in the highest beta quintile. The full information maximum likelihood (FIML) is then used to estimate the regression coefficients in each system. This table indicates the Likelihood test statistics for all five systems that are used for the two different models, namely, the Australian three-factor model and the Australian three-factor model with the US and ER factors. \* indicates significance at 5% level and \*\* indicates significance at 1% level.

<b>Likelihood Ratio Test Statistics</b>	
	<b>AUS 3FM AUS 3FM w US and ER</b>
<b>System 1</b>	21.2080 **
<b>System 2</b>	20.2440 **
<b>System 3</b>	9.1900 **
<b>System 4</b>	6.6380 **
<b>System 5</b>	13.4900 **

**Table F: Australian and US Three-Factor Model Likelihood-ratio Tests**

$$R_{p,i} - R_f = a_i + b_i(R_m - R_f) + s_i \text{SMB} + h_i \text{HML} + j_i \text{JAN} + k_i \text{JULY} + e_i$$

$$R_{p,i} - R_f = a_{us,i} + b_{us,i}(\text{USR}_m - \text{USR}_f) + s_{us,i} \text{USSMB} + h_{us,i} \text{USHML} + j_i \text{JAN} + k_i \text{JULY} + e_i$$

$$R_{p,i} - R_f = a_i + b_i(R_m - R_f) + s_i \text{SMB} + h_i \text{HM} + b_{us,i}(\text{USR}_m - \text{USR}_f) + s_{us,i} \text{USSMB} + h_{us,i} \text{USHML} + j_i \text{JAN} + k_i \text{JULY} + e_i$$

The 25 portfolios are divided into five systems, with each individual system representing each beta quintile. System 1 contains the five portfolios in the lowest beta quintile, while System 5 contains the five portfolios in the highest beta quintile. The full information maximum likelihood (FIML) is then used to estimate the regression coefficients in each system. This table indicates the Likelihood test statistics for all five systems that are used for the three different models, namely, the Australian three-factor model, the US three-factor model, and the Combined Australian and US three-factor model. \* indicates significance at 5% level and \*\* indicates significance at 1% level.

<b>Likelihood Ratio Test Statistics</b>		
	<b>AUS 3 FM</b>	<b>US 3 FM</b>
	<u>AUS 3FM w US 3 Factors</u>	<u>US 3FM w AUS 3 Factors</u>
<b>System 1</b>	27.4320 **	383.0580 **
<b>System 2</b>	34.7020 **	491.9540 **
<b>System 3</b>	17.6880 **	505.8360 **
<b>System 4</b>	11.5000 **	563.4368 **
<b>System 5</b>	21.4520 **	449.0168 **