

# Homework

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**Table 1**

Table 1: Lead-Lag Portfolio Sorting (Max Correlation)

|                | Lead                | Mid                | Lag               | LL                  | LLStrong            |
|----------------|---------------------|--------------------|-------------------|---------------------|---------------------|
| Average return | 9.435***<br>(2.278) | 6.033**<br>(2.778) | 5.236*<br>(3.052) | 4.199**<br>(1.795)  | 5.240***<br>(1.966) |
| CAPM $\alpha$  | 3.171***<br>(1.055) | -0.632<br>(0.476)  | -1.789<br>(1.306) | 4.959***<br>(1.903) | 6.119***<br>(1.955) |
| FF3 $\alpha$   | 3.021***<br>(1.154) | -0.710<br>(0.545)  | -1.655<br>(1.427) | 4.676**<br>(2.082)  | 6.233**<br>(2.485)  |

*Notes:* \*\*\*Significant at the 1 percent level.  
 \*\*Significant at the 5 percent level.  
 \*Significant at the 10 percent level.

**Table 3**

Table 2: Lead-Lag Portfolio Sorting - 38 and 49 Industries

|                | Lead               | Mid                | Lag                | LL                 |
|----------------|--------------------|--------------------|--------------------|--------------------|
| Average return | 3.158**<br>(1.562) | 6.545**<br>(2.916) | 4.309**<br>(2.127) | 5.056*<br>(2.581)  |
| CAPM $\alpha$  | 3.841**<br>(1.634) | 6.940**<br>(2.961) | 5.097**<br>(2.247) | 5.989**<br>(2.718) |
| FF3 $\alpha$   | 3.547*<br>(1.992)  | 5.407*<br>(3.175)  | 4.606**<br>(2.281) | 5.689**<br>(2.640) |

*Notes:* \*\*\*Significant at the 1 percent level.  
 \*\*Significant at the 5 percent level.  
 \*Significant at the 10 percent level.

**Table 7**

Table 3: The Disconnect between LL and Other Factors (II)

|               | FF5                | HXZ q-factors     | Carhart MOM 1      | Carhart MOM 2       | Carhart MOM 3      |
|---------------|--------------------|-------------------|--------------------|---------------------|--------------------|
| $\alpha_{LL}$ | 4.004**<br>(2.225) | 3.956*<br>(2.415) | 4.197**<br>(2.080) | 5.170***<br>(2.072) | 4.978**<br>(2.352) |

*Notes:* \*\*\*Significant at the 1 percent level.  
\*\*Significant at the 5 percent level.  
\*Significant at the 10 percent level.

**Table 9**

Table 4: Price of Risk

|                 | 30 industries      | 38 industries      | 49 industries      | BE/ME and Size (25) |
|-----------------|--------------------|--------------------|--------------------|---------------------|
| $\lambda_{MKT}$ | 0.550**<br>(0.255) | 0.542**<br>(0.249) | 0.566**<br>(0.259) | 0.416<br>(0.254)    |
| $\lambda_{SMB}$ | -0.217<br>(0.246)  | -0.178<br>(0.200)  | -0.225<br>(0.204)  | 0.158<br>(0.157)    |
| $\lambda_{HML}$ | -0.013<br>(0.192)  | 0.064<br>(0.199)   | -0.057<br>(0.194)  | 0.442***<br>(0.151) |
| $\lambda_{LL}$  | 0.455**<br>(0.187) | 0.367<br>(0.224)   | 0.501**<br>(0.220) | 0.366**<br>(0.159)  |

*Notes:* \*\*\*Significant at the 1 percent level.  
\*\*Significant at the 5 percent level.  
\*Significant at the 10 percent level.

Table 5: Pricing Kernel Loading

|           | 30 industries       | 38 industries       | 49 industries       | BE/ME and Size (25) |
|-----------|---------------------|---------------------|---------------------|---------------------|
| $b_{MKT}$ | 0.040***<br>(0.014) | 0.040***<br>(0.013) | 0.041***<br>(0.014) | 0.035***<br>(0.013) |
| $b_{SMB}$ | -0.036<br>(0.027)   | -0.029<br>(0.021)   | -0.038*<br>(0.022)  | 0.017<br>(0.015)    |
| $b_{HML}$ | 0.005<br>(0.024)    | 0.016<br>(0.024)    | -0.000<br>(0.024)   | 0.066***<br>(0.018) |
| $b_{LL}$  | 0.050***<br>(0.018) | 0.042**<br>(0.021)  | 0.055***<br>(0.021) | 0.037**<br>(0.015)  |

*Notes:* \*\*\*Significant at the 1 percent level.  
\*\*Significant at the 5 percent level.  
\*Significant at the 10 percent level.