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| **Description of Fama/French 5 Factors (2x3)**   |  | | --- | |  | | **Monthly Returns:** |  | July 1963 -July 2017 | |  |  |  | | **Annual Returns:** |  | 1964 - 2016 | |  |  |  | | **Construction:** |  | The Fama/French 5 factors (2x3) are constructed using the 6 value-weight portfolios formed on size and book-to-market, the 6 value-weight portfolios formed on size and operating profitability, and the 6 value-weight portfolios formed on size and investment. (See the description of the 6 size/book-to-market, size/operating profitability, size/investment portfolios.) | |  |  |  | |  |  | SMB (Small Minus Big) is the average return on the nine small stock portfolios minus the average return on the nine big stock portfolios, | |  |  |  | |  |  | |  |  |  |  | | --- | --- | --- | --- | |  | *SMB(B/M) =    SMB(OP) =    SMB(INV) =     SMB =* | *1/3 (Small Value + Small Neutral + Small Growth)    - 1/3 (Big Value + Big Neutral + Big Growth).    1/3 (Small Robust + Small Neutral + Small Weak)   - 1/3 (Big Robust + Big Neutral + Big Weak).  1/3 (Small Conservative + Small Neutral + Small Aggressive)   - 1/3 (Big Conservative + Big Neutral + Big Aggressive).    1/3 ( SMB(B/M) + SMB(OP) + SMB(INV) ).* |  | | |  |  |  | |  |  | HML (High Minus Low) is the average return on the two value portfolios minus the average return on the two growth portfolios, | |  |  |  | |  |  | |  |  |  |  | | --- | --- | --- | --- | |  | *HML =* | *1/2 (Small Value + Big Value)  - 1/2 (Small Growth + Big Growth).* |  | | |  |  |  | |  |  | RMW (Robust Minus Weak) is the average return on the two robust operating profitability portfolios minus the average return on the two weak operating profitability portfolios, | |  |  |  | |  |  | |  |  |  |  | | --- | --- | --- | --- | |  | *RMW =* | *1/2 (Small Robust + Big Robust)   - 1/2 (Small Weak + Big Weak).* |  | | |  |  |  | |  |  | CMA (Conservative Minus Aggressive) is the average return on the two conservative investment portfolios minus the average return on the two aggressive investment portfolios, | |  |  |  | |  |  | |  |  |  |  | | --- | --- | --- | --- | |  | *CMA =* | *1/2 (Small Conservative + Big Conservative)   - 1/2 (Small Aggressive + Big Aggressive).* |  | | |  |  |  | |  |  | Rm-Rf, the excess return on the market, value-weight return of all CRSP firms incorporated in the US and listed on the NYSE, AMEX, or NASDAQ that have a CRSP share code of 10 or 11 at the beginning of month t, good shares and price data at the beginning of t, and good return data for t minus the one-month Treasury bill rate (from Ibbotson Associates). | |  |  |  | |  |  | See Fama and French, 1993, "Common Risk Factors in the Returns on Stocks and Bonds,"*Journal of Financial Economics*, and Fama and French, 2014, "A Five-Factor Asset Pricing Model" for a complete description of the factor returns. | |  |  |  | | **Stocks:** |  | Rm-Rf includes all NYSE, AMEX, and NASDAQ firms. SMB, HML, RMW, and CMA for July of year t to June of t+1 include all NYSE, AMEX, and NASDAQ stocks for which we have market equity data for December of t-1 and June of t, (positive) book equity data for t-1 (for SMB, HML, and RMW), non-missing revenues and at least one of the following: cost of goods sold, selling, general and administrative expenses, or interest expense for t-1 (for SMB and RMW), and total assets data for t-2 and t-1 (for SMB and CMA). | |
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