

Spurious Regressions in Financial Economics?

Wayne E. Ferson, Sergei Sarkissian, Timothy T. Simin

First published: 15 July 2003

<https://doi.org/10.1111/1540-6261.00571>

Citations: 408

ABSTRACT

Even though stock returns are not highly autocorrelated, there is a spurious regression bias in predictive regressions for stock returns related to the classic studies of **Yule (1926)** and **Granger and Newbold (1974)**. Data mining for predictor variables interacts with spurious regression bias. The two effects reinforce each other, because more highly persistent series are more likely to be found significant in the search for predictor variables. Our simulations suggest that many of the regressions in the literature, based on individual predictor variables, may be spurious.

REFERENCES

Bekaert, Geert, Robert J. Hodrick, and David Marshall, 1997, On biases in tests of the expectations hypothesis of the term structure, *Journal of Financial Economics* 44, 309–348.

[Web of Science®](#) | [Google Scholar](#)

Bossaerts, Peter, and Pierre Hillion, 1999, Implementing statistical criteria to select return forecasting models: What do we learn? *Review of Financial Studies* 12, 405–428.

[Web of Science®](#) | [Google Scholar](#)

Boudoukh, Jacob, and Matthew Richardson, 1994, The statistics of long-horizon regressions, *Mathematical Finance* 4, 103–120.

[Google Scholar](#)

Breen, William, Lawrence R. Glosten, and Ravi Jagannathan, 1989, Economic significance of predictable variations in stock index returns, *Journal of Finance* 44, 1177–1190.

[Web of Science®](#) | [Google Scholar](#)

Campbell, John Y., 1987, Stock returns and the term structure, *Journal of Financial Economics* 18, 373–400.

[CAS](#) | [PubMed](#) | [Web of Science®](#) | [Google Scholar](#)

Campbell, John Y., and Robert Shiller, 1988, The dividend ratio and small sample bias, *Economics Letters* 29, 325–331.

[Google Scholar](#)

Cochrane, John H., 1999, New facts in finance, *Economic Perspectives* 23, 36–58.

[Google Scholar](#)

Conrad, Jennifer, and Gautam Kaul, 1988, Time variation in expected returns, *Journal of Business* 61, 409–425.

[Web of Science®](#) | [Google Scholar](#)

Cox, John C., Jonathan E. Ingersoll Jr., and Stephen A. Ross, 1985, A theory of the term structure of interest rates, *Econometrica* 53, 363–384.

[Web of Science®](#) | [Google Scholar](#)

Fama, Eugene F., 1970, Efficient capital markets: A review of theory and empirical work, *Journal of Finance* 25, 383–417.

[Web of Science®](#) | [Google Scholar](#)

Fama, Eugene F., 1990, Stock returns, expected returns, and real activity, *Journal of Finance* 45, 1089–1108.

[Web of Science®](#) | [Google Scholar](#)

Fama, Eugene F., and Kenneth R. French, 1988a, Dividend yields and expected stock returns, *Journal of Financial Economics* 22, 3–25.

[Web of Science®](#) | [Google Scholar](#)

Fama, Eugene F., and Kenneth R. French, 1988b, Permanent and temporary components of stock prices, *Journal of Political Economy* 96, 246–273.

[Web of Science®](#) | [Google Scholar](#)

Fama, Eugene F., and Kenneth R. French, 1989, Business conditions and expected returns on stocks and bonds, *Journal of Financial Economics* 25, 23–49.

[Web of Science®](#) | [Google Scholar](#)

Fama, Eugene F., and G. William Schwert, 1977, Asset returns and inflation, *Journal of Financial Economics* 5, 115–146.

[Web of Science®](#) | [Google Scholar](#)

Ferson, Wayne, and Campbell R. Harvey, 1991, Sources of predictability in portfolio returns, *Financial Analysts Journal* 3, 49–56.

[Google Scholar](#)

Fleming, Jeff, Chris Kirby, and Barbara Ostdiek, 2001, The economic value of volatility timing, *Journal of Finance* 61, 329–352.

[Google Scholar](#)

Foster, F. Douglas, Tom Smith, and Robert E. Whaley, 1997, Assessing goodness-of-fit of asset pricing models: The distribution of the maximal R-squared, *Journal of Finance* 52, 591–607.

[Web of Science®](#) | [Google Scholar](#)

Goetzmann, William, and Philippe Jorion, 1993, Testing the predictive power of dividend yields, *Journal of Finance* 48, 663–679.

[Web of Science®](#) | [Google Scholar](#)

Goyal, Amit, and Ivo Welch, 2003, Predicting the equity premium with dividend ratios, *Management Science* (forthcoming, May).

[Google Scholar](#)

Granger, Clive W.J., and Paul Newbold, 1974, Spurious regressions in economics, *Journal of Econometrics* 4, 111–120.

[Google Scholar](#)

Harvey, Campbell R., 1989, Time-varying conditional covariances in tests of asset pricing models, *Journal of Financial Economics* 24, 289–318.

[Web of Science®](#) | [Google Scholar](#)

Hodrick, Robert J., 1992, Dividend yields and expected stock returns: Alternative procedures for estimation and inference, *Review of Financial Studies* 5, 357–386.

[Web of Science®](#) | [Google Scholar](#)

Huberman, Gur, and Shmuel Kandel, 1990, Market efficiency and Value Line's record, *Journal of Business* 63, 187–216.

[Web of Science®](#) | [Google Scholar](#)

Kandel, Shmuel, and Robert F. Stambaugh, 1990, Expectations and volatility of consumption and asset returns, *Review of Financial Studies* 3, 207-232.

[Web of Science®](#) | [Google Scholar](#)

Kandel, Shmuel, and R.F. Stambaugh, 1996, On the predictability of stock returns: An asset-allocation perspective, *Journal of Finance* 51, 385-424.

[Web of Science®](#) | [Google Scholar](#)

Keim, Donald B., and Robert F. Stambaugh, 1986, Predicting returns in the bond and stock markets, *Journal of Financial Economics* 17, 357-390.

[Web of Science®](#) | [Google Scholar](#)

Kendall, Maurice G., 1954, A note on the bias in the estimation of autocorrelation, *Biometrika* 41, 403-404.

[Web of Science®](#) | [Google Scholar](#)

Kim, Myung J., Charles R. Nelson, and Richard Startz, 1991, Mean reversion in stock prices? A reappraisal of the empirical evidence, *Review of Economic Studies* 58, 515-528.

[PubMed](#) | [Web of Science®](#) | [Google Scholar](#)

Kothari, S.P., and Jay Shanken, 1997, Book-to-market time series analysis, *Journal of Financial Economics* 44, 169-203.

[Web of Science®](#) | [Google Scholar](#)

Lanne, Markku, 2002, Testing the predictability of stock returns, *Review of Economics and Statistics* 84, 407-415.

[Web of Science®](#) | [Google Scholar](#)

Lee, Charles, James Myers, and Bhaskaran Swaminathan, 1999, What is the intrinsic value of the Dow? *Journal of Finance*, 1693-1742.

[Google Scholar](#)

Lettau, Martin, and Sydney Ludvigson, 2001, Consumption, aggregate wealth and expected stock returns, *Journal of Finance* 56, 815-849.

[Web of Science®](#) | [Google Scholar](#)

Lo, Andrew W., and A. Craig MacKinlay, 1988, Stocks prices do not follow random walks, *Review of Financial Studies* 1, 41-66.

[Web of Science®](#) | [Google Scholar](#)

Lo, Andrew W., and A. Craig MacKinlay, 1990, Data snooping in tests of financial asset pricing models, *Review of Financial Studies* 3, 431–467.

[Web of Science®](#) | [Google Scholar](#)

Lucas, Robert E. Jr., 1978, Asset prices in an exchange economy, *Econometrica* 46, 1429–1445.

[Web of Science®](#) | [Google Scholar](#)

Marmol, Francesc, 1998, Spurious regression theory with nonstationary fractionally integrated processes, *Journal of Econometrics* 84, 233–250.

[Web of Science®](#) | [Google Scholar](#)

Merton, Robert C., 1973, An intertemporal capital asset pricing model, *Econometrica* 41, 867–887.

[Web of Science®](#) | [Google Scholar](#)

Nelson, Charles, and Myung J. Kim, 1993, Predictable stock returns: The role of small sample bias, *Journal of Finance* 48, 641–661.

[Web of Science®](#) | [Google Scholar](#)

Newey, Whitney K., and Kenneth D. West, 1987, A simple, positive definite, heteroskedasticity and autocorrelation consistent covariance matrix, *Econometrica* 55, 703–708.

[Web of Science®](#) | [Google Scholar](#)

Pesaran, M. Hashem, and Allan Timmermann, 1995, Predictability of stock returns: Robustness and economic significance, *Journal of Finance* 50, 1201–1228.

[Web of Science®](#) | [Google Scholar](#)

Phillips, Peter C.B., 1986, Understanding spurious regressions in econometrics, *Journal of Econometrics* 33, 311–340.

[Web of Science®](#) | [Google Scholar](#)

Phillips, Peter C.B., 1998, New tools for understanding spurious regressions, *Econometrica* 66, 1299–1326.

[Web of Science®](#) | [Google Scholar](#)

Pontiff, Jeffrey, and Lawrence Schall, 1998, Book-to-market as a predictor of market returns, *Journal of Financial Economics* 49, 141–60.

[Web of Science®](#) | [Google Scholar](#)

Schwert, G. William, 2002, Anomalies and market efficiency, in George M. Constantinides, Milton Harris, René M. Stulz, eds.: *Handbook of the Economics of Finance*, North Holland: Amsterdam.

[Google Scholar](#)

Simin, Timothy, 2002, *The (poor) predictive performance of asset pricing models*, Working paper, Pennsylvania State University.

[Google Scholar](#)

Stambaugh, Robert S., 1999, Predictive regressions, *Journal of Financial Economics* 54, 315–421.

[Web of Science®](#) | [Google Scholar](#)

Valkanov, Rossen, 2003, Long-horizon regressions: Theoretical results and applications, *Journal of Financial Economics* 68, 201–232.

[Web of Science®](#) | [Google Scholar](#)

Yule, George U., 1926, Why do we sometimes get nonsense correlations between time series? A study in sampling and the nature of time series, *Journal of the Royal Statistical Society* 89, 1–64.

[Web of Science®](#) | [Google Scholar](#)

Citing Literature



[Download PDF](#)

ABOUT WILEY ONLINE LIBRARY

[Privacy Policy](#)

[Terms of Use](#)

[About Cookies](#)

[Manage Cookies](#)

[Accessibility](#)

[Wiley Research DE&I Statement and Publishing Policies](#)

[Developing World Access](#)

HELP & SUPPORT

Contact Us
Training and Support
DMCA & Reporting Piracy

OPPORTUNITIES

Subscription Agents
Advertisers & Corporate Partners

CONNECT WITH WILEY

The Wiley Network
Wiley Press Room

Copyright © 1999-2024 John Wiley & Sons, Inc or related companies. All rights reserved, including rights for text and data mining and training of artificial intelligence technologies or similar technologies.

WILEY