Active and Passive Learning in Agent-based Financial Markets

Article | Published: 28 December 2010
Volume 37, pages 35–43, (2011) Cite this article

Eastern Economic Journal
Aims and scope →

Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 93 **partners**, also use optional cookies and similar technologies for advertising, personalisation of content, usage analysis, and social media.

By accepting optional cookies, you consent to allowing us and our partners to store and access personal data on your device, such as browsing behaviour and unique identifiers. Some third parties are outside of the European Economic Area, with varying standards of data protection. See our **privacy policy** for more information on the use of your personal data. Your consent choices apply to springer.com and applicable subdomains.

You can find further information, and change your preferences via 'Manage preferences'. You can also change your preferences or withdraw consent at any time via 'Your privacy choices', found in the footer of every page.

We use cookies and similar technologies for the following purposes:

> **Store and/or access information on a device**

> **Personalised advertising and content, advertising and content measurement, audience research and services development**

Accept all cookies

Reject optional cookies

Manage preferences

Log in via an institution

Subscribe and save

Springer+ from €37.37 /Month

- Starting from 10 chapters or articles per month
- Access and download chapters and articles from more than 300k books and 2,500 journals
- Cancel anytime

View plans

Buy Now

Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 93 **partners**, also use optional cookies and similar technologies for advertising, personalisation of content, usage analysis, and social media.

By accepting optional cookies, you consent to allowing us and our partners to store and access personal data on your device, such as browsing behaviour and unique identifiers. Some third parties are outside of the European Economic Area, with varying standards of data protection. See our **privacy policy** for more information on the use of your personal data. Your consent choices apply to springer.com and applicable subdomains.

You can find further information, and change your preferences via 'Manage preferences'. You can also change your preferences or withdraw consent at any time via 'Your privacy choices', found in the footer of every page.

We use cookies and similar technologies for the following purposes:

Store and/or access information on a device

Personalised advertising and content, advertising and content measurement, audience research and services development

Accept all cookies

Reject optional cookies

Manage preferences

Behavioral Finance Capital Markets Learning Theory Market Psychology

Sociology of the Financial Market Agent-based Economics

Notes

1. This is not a survey of learning, or heterogeneous agent models finance. This is well beyond the scope of this short paper. On heterogeneous agent models many excellent surveys exist including, Chiarella et al. [2009], Hommes [2006], LeBaron [2006], and Lux [2009]. On learning models finance in general a recent survey of this large literature can be found in Pastor and Veronesi [2009].

Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 93 **partners**, also use optional cookies and similar technologies for advertising, personalisation of content, usage analysis, and social media.

By accepting optional cookies, you consent to allowing us and our partners to store and access personal data on your device, such as browsing behaviour and unique identifiers. Some third parties are outside of the European Economic Area, with varying standards of data protection. See our **privacy policy** for more information on the use of your personal data. Your consent choices apply to springer.com and applicable subdomains.

You can find further information, and change your preferences via 'Manage preferences'. You can also change your preferences or withdraw consent at any time via 'Your privacy choices', found in the footer of every page.

We use cookies and similar technologies for the following purposes:

Store and/or access information on a device

Personalised advertising and content, advertising and content measurement, audience research and services development

Accept all cookies

Reject optional cookies

Manage preferences

selection generally have no passive learning component. Two very different examples of this are Brock and Hommes [1998] and Arthur et al. [1997]. Price formation depends on the fraction of traders in a given strategy, and not on their wealth.

6. The best-known case would be log utility.

7. See Pastor and Stambaugh [2009] for a more complete treatment of systems of this form in finance.

8. See LeBaron [2007] or Campbell and Viceira [2002] for derivations and connections to intertemporal preferences. The variance term in the numerator can be thought of as an adjustment for the fact that these are log returns.

Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 93 **partners**, also use optional cookies and similar technologies for advertising, personalisation of content, usage analysis, and social media.

By accepting optional cookies, you consent to allowing us and our partners to store and access personal data on your device, such as browsing behaviour and unique identifiers. Some third parties are outside of the European Economic Area, with varying standards of data protection. See our **privacy policy** for more information on the use of your personal data. Your consent choices apply to springer.com and applicable subdomains.

You can find further information, and change your preferences via 'Manage preferences'. You can also change your preferences or withdraw consent at any time via 'Your privacy choices', found in the footer of every page.

We use cookies and similar technologies for the following purposes:

Store and/or access information on a device

Personalised advertising and content, advertising and content measurement, audience research and services development

Accept all cookies

Reject optional cookies

Manage preferences

13. This is where Sims's [1980] critique of deviations from rationality is in full force.

14. Important current work has moved in the direction of estimating the intensity of choice as in Goldbaum and Mizrach [2008] or Boswijk et al. [2007].

15. It reminds one of Fisher Black's discussions in Black [1986].

References

Anufriev, M., and P. Dindo . 2010. Wealth-driven Selection in a Financial Market

Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 93 **partners**, also use optional cookies and similar technologies for advertising, personalisation of content, usage analysis, and social media.

By accepting optional cookies, you consent to allowing us and our partners to store and access personal data on your device, such as browsing behaviour and unique identifiers. Some third parties are outside of the European Economic Area, with varying standards of data protection. See our **privacy policy** for more information on the use of your personal data. Your consent choices apply to springer.com and applicable subdomains.

You can find further information, and change your preferences via 'Manage preferences'. You can also change your preferences or withdraw consent at any time via 'Your privacy choices', found in the footer of every page.

We use cookies and similar technologies for the following purposes:

Store and/or access information on a device

Personalised advertising and content, advertising and content measurement, audience research and services development

Accept all cookies

Reject optional cookies

Manage preferences

Blume, L., and D. Easley . 1990. Evolution and Market Behavior. Journal of Economic Theory, 58: 9–40.

Article Google Scholar

Blume, L., and D. Easley . 2006. If You're so Smart, Why aren't you Rich? Belief Selection in Complete and Incomplete Markets. Econometrica, 74: 929–966.

Article Google Scholar

Boswijk, H.P., C.H. Hommes, and S. Manzan . 2007. Behavioral Heterogeneity in Stock Prices. Journal of Economic Dynamics and Control, 31 (6): 1938–1970.

Article Google Scholar

Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 93 **partners**, also use optional cookies and similar technologies for advertising, personalisation of content, usage analysis, and social media.

By accepting optional cookies, you consent to allowing us and our partners to store and access personal data on your device, such as browsing behaviour and unique identifiers. Some third parties are outside of the European Economic Area, with varying standards of data protection. See our **privacy policy** for more information on the use of your personal data. Your consent choices apply to springer.com and applicable subdomains.

You can find further information, and change your preferences via 'Manage preferences'. You can also change your preferences or withdraw consent at any time via 'Your privacy choices', found in the footer of every page.

We use cookies and similar technologies for the following purposes:

Store and/or access information on a device

Personalised advertising and content, advertising and content measurement, audience research and services development

Accept all cookies

Reject optional cookies

Manage preferences

Book Google Scholar

Chen, S.-H., and C.-H. Yeh . 2001. Evolving Traders and the Business School with Genetic Programming: A New Architecture of the Agent-based Artificial Stock market. Journal of Economic Dynamics and Control, 25: 363–394.

Article Google Scholar

Chiarella, C., R. Dieci, and X.-Z. He . 2009. Heterogeneity, Market Mechanisms, and Asset Price Dynamics, in Handbook of Financial Markets: Dynamics and Evolution, edited by T. Hens and K.R. Schenk-Hoppe. USA: Elsevier, 277–344.

Chapter Google Scholar

Chiarella, C., and X.-Z. He . 2001. Asset Pricing and Wealth Dynamics under

Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 93 **partners**, also use optional cookies and similar technologies for advertising, personalisation of content, usage analysis, and social media.

By accepting optional cookies, you consent to allowing us and our partners to store and access personal data on your device, such as browsing behaviour and unique identifiers. Some third parties are outside of the European Economic Area, with varying standards of data protection. See our **privacy policy** for more information on the use of your personal data. Your consent choices apply to springer.com and applicable subdomains.

You can find further information, and change your preferences via 'Manage preferences'. You can also change your preferences or withdraw consent at any time via 'Your privacy choices', found in the footer of every page.

We use cookies and similar technologies for the following purposes:

Store and/or access information on a device

Personalised advertising and content, advertising and content measurement, audience research and services development

Accept all cookies

Reject optional cookies

Manage preferences

Google Scholar

Friedman, M. 1953. Essays in Positive Economics. Chicago, IL: University of Chicago Press.

Google Scholar

Goldbaum, D., and B. Mizrach . 2008. Estimating the Intensity of Choice in a Dynamic Mutual Fund Allocation Decision. Journal of Economic Dynamics and Control, 32: 3866–3876.

Article Google Scholar

Hakansson, N.H. 1971. Multi-period Mean-variance Analysis: Toward a General

Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 93 **partners**, also use optional cookies and similar technologies for advertising, personalisation of content, usage analysis, and social media.

By accepting optional cookies, you consent to allowing us and our partners to store and access personal data on your device, such as browsing behaviour and unique identifiers. Some third parties are outside of the European Economic Area, with varying standards of data protection. See our **privacy policy** for more information on the use of your personal data. Your consent choices apply to springer.com and applicable subdomains.

You can find further information, and change your preferences via 'Manage preferences'. You can also change your preferences or withdraw consent at any time via 'Your privacy choices', found in the footer of every page.

We use cookies and similar technologies for the following purposes:

Store and/or access information on a device

Personalised advertising and content, advertising and content measurement, audience research and services development

Accept all cookies

Reject optional cookies

Manage preferences

Article Google Scholar

LeBaron, B. . 2006. Agent-based Computational Finance, in Handbook of Computational Economics, edited by K.L. Judd and L. Tesfatsion. Amsterdam, the Netherlands: Elsevier, 1187–1233.

Google Scholar

LeBaron, B. . 2007. Wealth Evolution and Distorted Financial Forecasts, Technical Report, International Business School, Brandeis University.

LeBaron, B. . 2010. Heterogenous Gain Learning and the Dynamics of Asset Prices, Technical Report, International Business School, Brandeis University, Waltham, MA.

Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 93 **partners**, also use optional cookies and similar technologies for advertising, personalisation of content, usage analysis, and social media.

By accepting optional cookies, you consent to allowing us and our partners to store and access personal data on your device, such as browsing behaviour and unique identifiers. Some third parties are outside of the European Economic Area, with varying standards of data protection. See our **privacy policy** for more information on the use of your personal data. Your consent choices apply to springer.com and applicable subdomains.

You can find further information, and change your preferences via 'Manage preferences'. You can also change your preferences or withdraw consent at any time via 'Your privacy choices', found in the footer of every page.

We use cookies and similar technologies for the following purposes:

Store and/or access information on a device

Personalised advertising and content, advertising and content measurement, audience research and services development

Accept all cookies

Reject optional cookies

Manage preferences

Article Google Scholar

Pastor, L., and R.F. Stambaugh . 2009. Predictive Systems: Living with Imperfect Predictors. Journal of Finance, 64: 1583–1628.

Article Google Scholar

Radner, R. 1998. Economic Survival, in Frontiers of Research in Economic Theory, edited by D.P. Jacobs, E. Kalai and M.I. Kamien. Econometric Society Monographs, Cambridge, UK: Cambridge University Press, 183–209.

Chapter Google Scholar

Samuelson, P. 1971. The “fallacy” of Maximizing the Geometric Mean in Long

Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 93 **partners**, also use optional cookies and similar technologies for advertising, personalisation of content, usage analysis, and social media.

By accepting optional cookies, you consent to allowing us and our partners to store and access personal data on your device, such as browsing behaviour and unique identifiers. Some third parties are outside of the European Economic Area, with varying standards of data protection. See our **privacy policy** for more information on the use of your personal data. Your consent choices apply to springer.com and applicable subdomains.

You can find further information, and change your preferences via 'Manage preferences'. You can also change your preferences or withdraw consent at any time via 'Your privacy choices', found in the footer of every page.

We use cookies and similar technologies for the following purposes:

Store and/or access information on a device

Personalised advertising and content, advertising and content measurement, audience research and services development

Accept all cookies

Reject optional cookies

Manage preferences

Author information

Authors and Affiliations

International Business School, Brandeis University, 415 South Street, Mailstop 32, Waltham, 02453 – 2728, MA, USA

Blake LeBaron

Rights and permissions

Reprints and permissions

About this article

Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 93 **partners**, also use optional cookies and similar technologies for advertising, personalisation of content, usage analysis, and social media.

By accepting optional cookies, you consent to allowing us and our partners to store and access personal data on your device, such as browsing behaviour and unique identifiers. Some third parties are outside of the European Economic Area, with varying standards of data protection. See our **privacy policy** for more information on the use of your personal data. Your consent choices apply to springer.com and applicable subdomains.

You can find further information, and change your preferences via 'Manage preferences'. You can also change your preferences or withdraw consent at any time via 'Your privacy choices', found in the footer of every page.

We use cookies and similar technologies for the following purposes:

Store and/or access information on a device

Personalised advertising and content, advertising and content measurement, audience research and services development

Accept all cookies

Reject optional cookies

Manage preferences

Search by keyword or author

Navigation

Find a journal

Publish with us

Track your research

Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 93 **partners**, also use optional cookies and similar technologies for advertising, personalisation of content, usage analysis, and social media.

By accepting optional cookies, you consent to allowing us and our partners to store and access personal data on your device, such as browsing behaviour and unique identifiers. Some third parties are outside of the European Economic Area, with varying standards of data protection. See our **privacy policy** for more information on the use of your personal data. Your consent choices apply to springer.com and applicable subdomains.

You can find further information, and change your preferences via 'Manage preferences'. You can also change your preferences or withdraw consent at any time via 'Your privacy choices', found in the footer of every page.

We use cookies and similar technologies for the following purposes:

Store and/or access information on a device

Personalised advertising and content, advertising and content measurement, audience research and services development

Accept all cookies

Reject optional cookies

Manage preferences