

[Home](#) > [Decisions in Economics and Finance](#) > Article

# The origins of the mean-variance approach in finance: revisiting de Finetti 65 years later

[Open access](#) | Published: May 2007Volume 30, pages 19–49 (2007) [Cite this article](#)✔ You have full access to this [open access](#) article[Download PDF](#) ↓[Save article](#)[View saved research](#) >

## [Decisions in Economics and Finance](#)

[Aims and scope](#) →[Submit manuscript](#) →[Flavio Pressacco](#)<sup>1</sup> & [Paolo Serafini](#)<sup>2</sup>[1869](#) Accesses [18](#) Citations [12](#) Altmetric [1](#) Mention [Explore all metrics](#) →

## Abstract

In a recent critical review of de Finetti's paper "Il problema dei pieni", the Nobel Prize winner Harry Markowitz recognized the primacy of de Finetti in applying the mean-variance approach to finance, but pointed out that de Finetti did not solve the problem for the general case of correlated risks. We argue in this paper that a more fair sentence would be: de Finetti did solve the general problem but under an implicit hypothesis of regularity which is not always satisfied. Moreover, a natural extension of de Finetti's procedure to non-regular cases offers a general

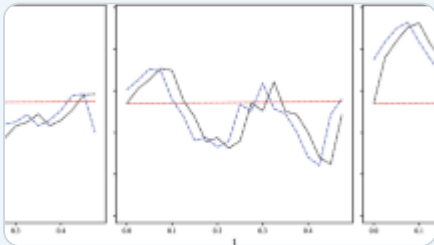
solution for the correlation case and shows that de Finetti anticipated a modern mathematical programming approach to mean-variance problems.

**Mathematics Subject Classification** (2000): 91B30, 90C20

**Journal of Economic Literature Classification:** G11, C61, B23, D81, G22

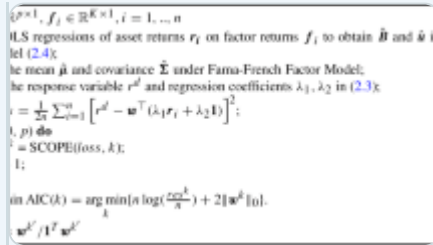
[Download](#) to read the full article text

### Similar content being viewed by others



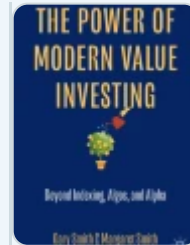
**Non-Markovian Mean-Variance Portfolio Selection Problems via Closed-Loop Equilibrium Strategies**

Article | 11 December 2023



**High-dimensional Portfolio Selection via an  $\ell_0$ -Constrained Regression**

Article | 01 September 2025



**Investing 3.0—(Mis)measuring Risk**

Chapter | © 2023

### Explore related subjects

Discover the latest articles, books and news in related subjects, suggested using machine learning.

[History of Statistics](#)

[Mathematics in Business, Economics and Finance](#)

[Mathematical Finance](#)

[Quantitative Finance](#)

[Risk Theory](#)

[Statistical Finance](#)

[Robust Stochastic Optimization Methods](#)

## References

1. Borch, K. (1974): The mathematical theory of insurance. Lexington Books, Lexington, MA

2. Bühlmann, H., Gerber, H. (1978): Risk bearing and the reinsurance market. *The ASTIN Bulletin* **10**, 12-24
3. Dantzig, G.B. (1963): Linear programming and extensions. Princeton University Press, Princeton, NJ
4. de Finetti, B. (1940): Il problema dei "Pieni". *Giornale dell' Istituto Italiano degli Attuari* **11**, 1-88; translation (Barone, L. (2006)): The problem of full-risk insurances. Chapter I. The risk within a single accounting period. *Journal of Investment Management* **4**(3), 19-43
5. de Finetti, B. (1969): Un matematico e l'economia. Franco Angeli, Milan
6. Karush, W. (1939): Minima of functions of several variables with inequalities as side conditions. S.M. dissertation. University of Chicago, Chicago, IL
7. Kuhn, H.W., Tucker, A.W. (1951): Nonlinear programming. In: Neyman, J. (ed.): Proceedings of the Second Berkeley Symposium on Mathematical Statistics and Probability. University of California Press, Berkeley, CA, pp. 481-492
8. Lintner, J. (1965): The valuation of risky assets and the selection of risky investments in stock portfolios and capital budgets. *The Review of Economics and Statistics* **47**, 13-37
9. Markowitz, H. (1952): Portfolio selection. *The Journal of Finance* **7**, 77-91
10. Markowitz, H. (1956): The optimization of a quadratic function subject to linear constraints. *Naval Research Logistics Quarterly* **3**, 111-133

11. Markowitz, H. (2006): de Finetti scoops Markowitz. *Journal of Investment Management* **4**(3), 5-18
12. Mossin, J. (1966): Equilibrium in a capital asset market. *Econometrica* **34**, 768-783
13. Pressacco, F. (1986): Separation theorems in proportional reinsurance. Goovaerts, M. et al. (eds.): *Insurance and Risk Theory*. D. Reidel, Dordrecht, pp. 209-215
14. Rubinstein M. (2006a ): Bruno de Finetti and mean-variance portfolio selection. *Journal of Investment Management* **4**(3), 3-4
15. Rubinstein M. (2006b): A history of the theory of investments. Wiley, Hoboken, NJ
16. Shapiro, J.F. (1979): *Mathematical programming: structures and algorithms*. Wiley-Inter-science, New York
17. Sharpe, W. (1964): Capital asset prices: a theory of market equilibrium under conditions of risk. *The Journal of Finance* **19**, 425-442

## Author information

---

### Authors and Affiliations

**Dipartimento di Finanza dell'Impresa e dei Mercati Finanziari, Università di Udine,**

Flavio Pressacco

**Dipartimento di Matematica e Informatica, Università di Udine,**

## Rights and permissions

---

**Open Access** This is an open access article distributed under the terms of the Creative Commons Attribution Noncommercial License ( <https://creativecommons.org/licenses/by-nc/2.0> ), which permits any noncommercial use, distribution, and reproduction in any medium, provided the original author(s) and source are credited.

[Reprints and permissions](#)

## About this article

---

### Cite this article

Pressacco, F., Serafini, P. The origins of the mean-variance approach in finance: revisiting de Finetti 65 years later. *Decisions Econ Finan* **30**, 19–49 (2007). <https://doi.org/10.1007/s10203-007-0067-7>

Received

28 November 2006

Accepted

23 January 2007

Issue date

May 2007

DOI

<https://doi.org/10.1007/s10203-007-0067-7>

### Keywords

[Optimum Path](#)

[Portfolio Selection](#)

[Corner Point](#)

[Golden Rule](#)

[Critical Risk](#)

## Search

Search by keyword or author



# Navigation

[Find a journal](#)

---

[Publish with us](#)

---

[Track your research](#)

---

