



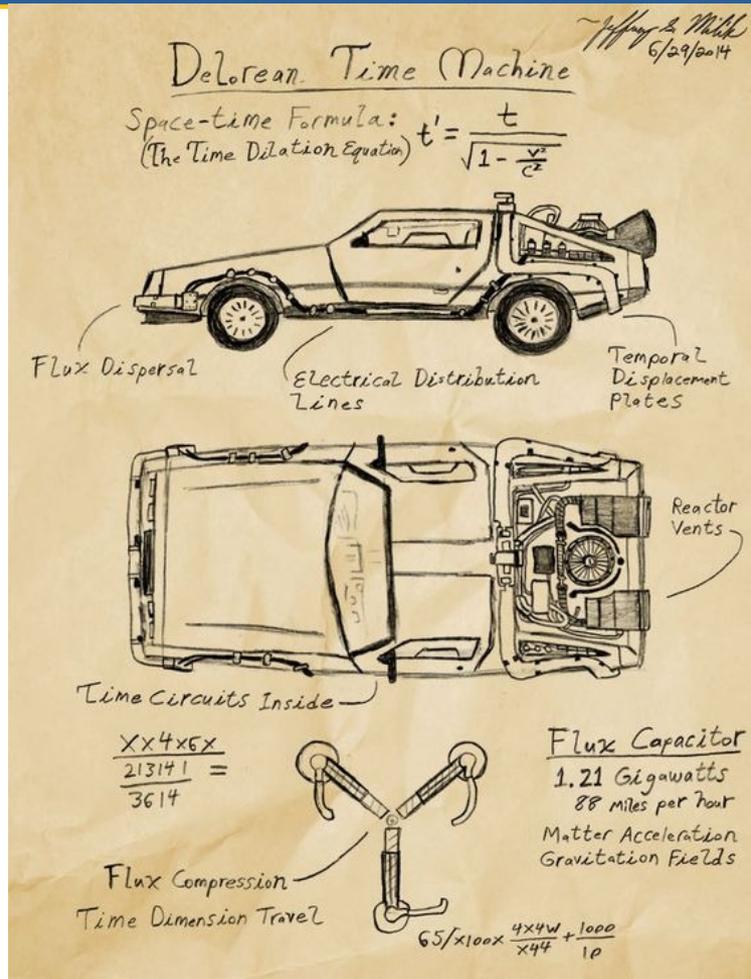
# Unos Artículos Sobre Inversiones

Willyfog

16/Junio/2024

# Introducción

- Mostrar artículos sobre finanzas que cualquiera puede leer
- Objetivo: elevar el debate



# Louis Bachelier (1900)

THÉORIE  
DE  
LA SPÉCULATION,

PAR M. L. BACHELIER.



## INTRODUCTION.

Les influences qui déterminent les mouvements de la Bourse sont innombrables, des événements passés, actuels ou même escomptables, ne présentant souvent aucun rapport apparent avec ses variations, se répercutent sur son cours.

# Albert Einstein (1905)

*5. Über die von der molekularkinetischen Theorie  
der Wärme geforderte Bewegung von in ruhenden  
Flüssigkeiten suspendierten Teilchen;  
von A. Einstein.*

---

In dieser Arbeit soll gezeigt werden, daß nach der molekularkinetischen Theorie der Wärme in Flüssigkeiten suspendierte Körper von mikroskopisch sichtbarer Größe infolge der Molekularbewegung der Wärme Bewegungen von solcher Größe ausführen müssen, daß diese Bewegungen leicht mit dem Mikroskop nachgewiesen werden können. Es ist möglich, daß die hier zu behandelnden Bewegungen mit der sogenannten „Brownschen Molekularbewegung“ identisch sind; die mir erreichbaren Angaben über letztere sind jedoch so ungenau, daß ich mir hierüber kein Urteil bilden konnte.

# Albert Einstein (1905)

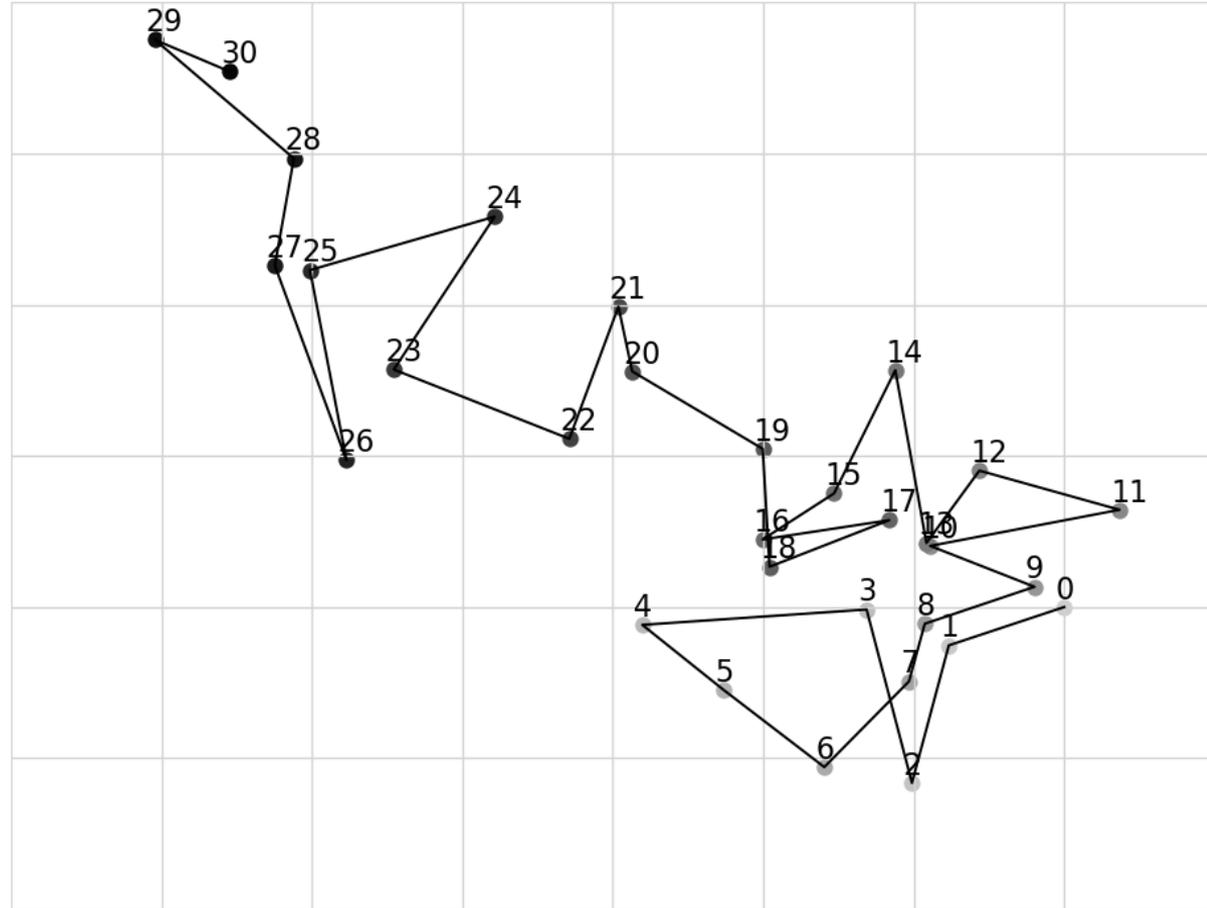
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# Albert Einstein (1905)

- Movimiento Browniano
- Como un borracho que saca la basura y lleva la bolsa goteando grasa



# Louis Bachelier (1900)

Distribución Normal

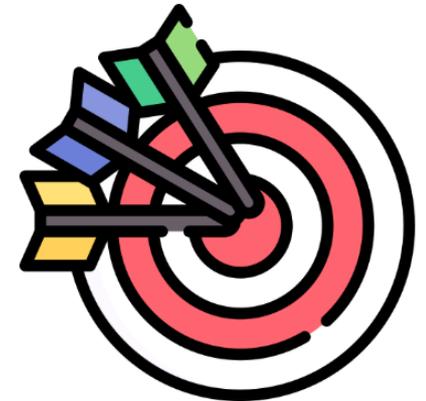
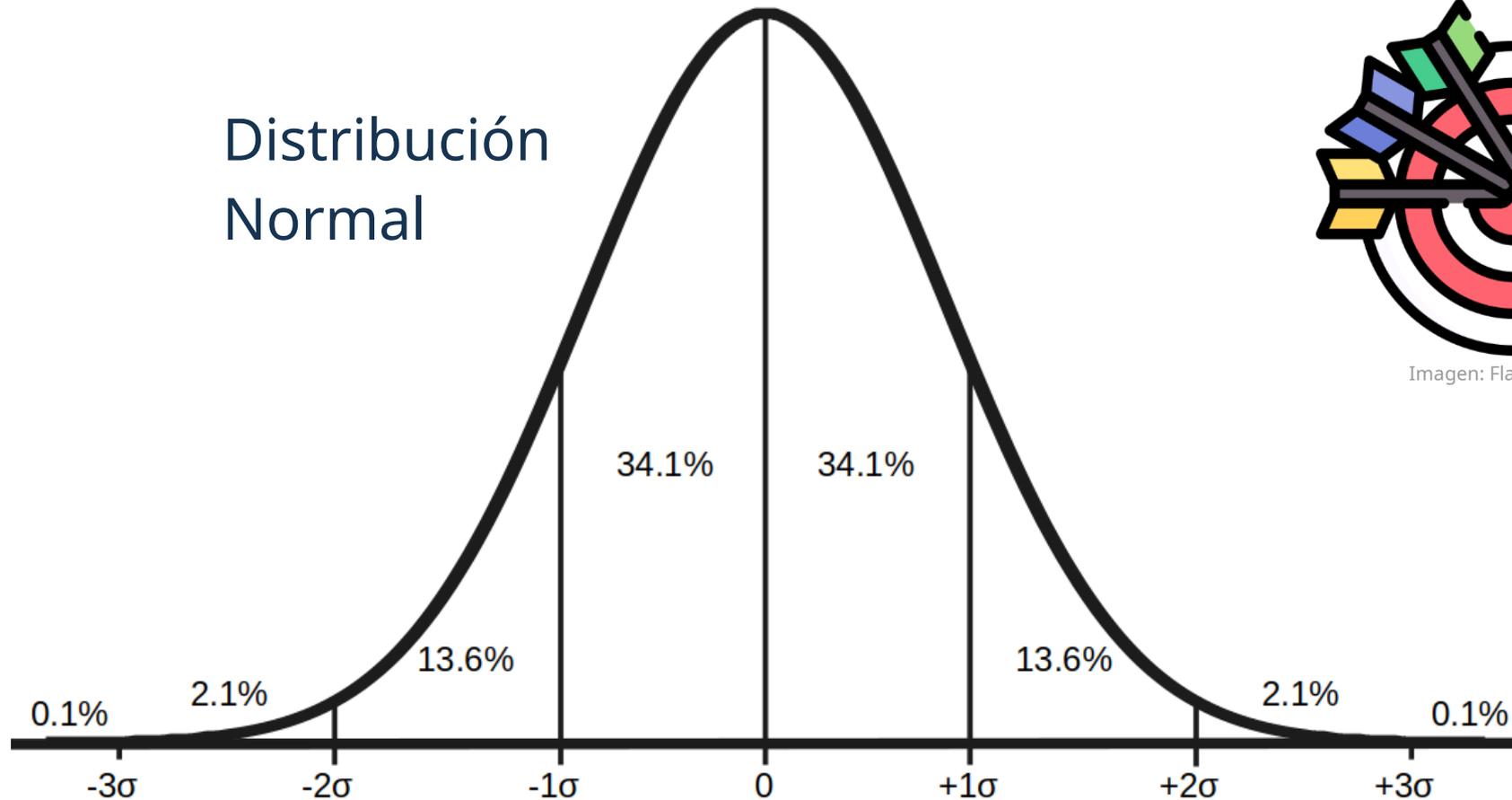
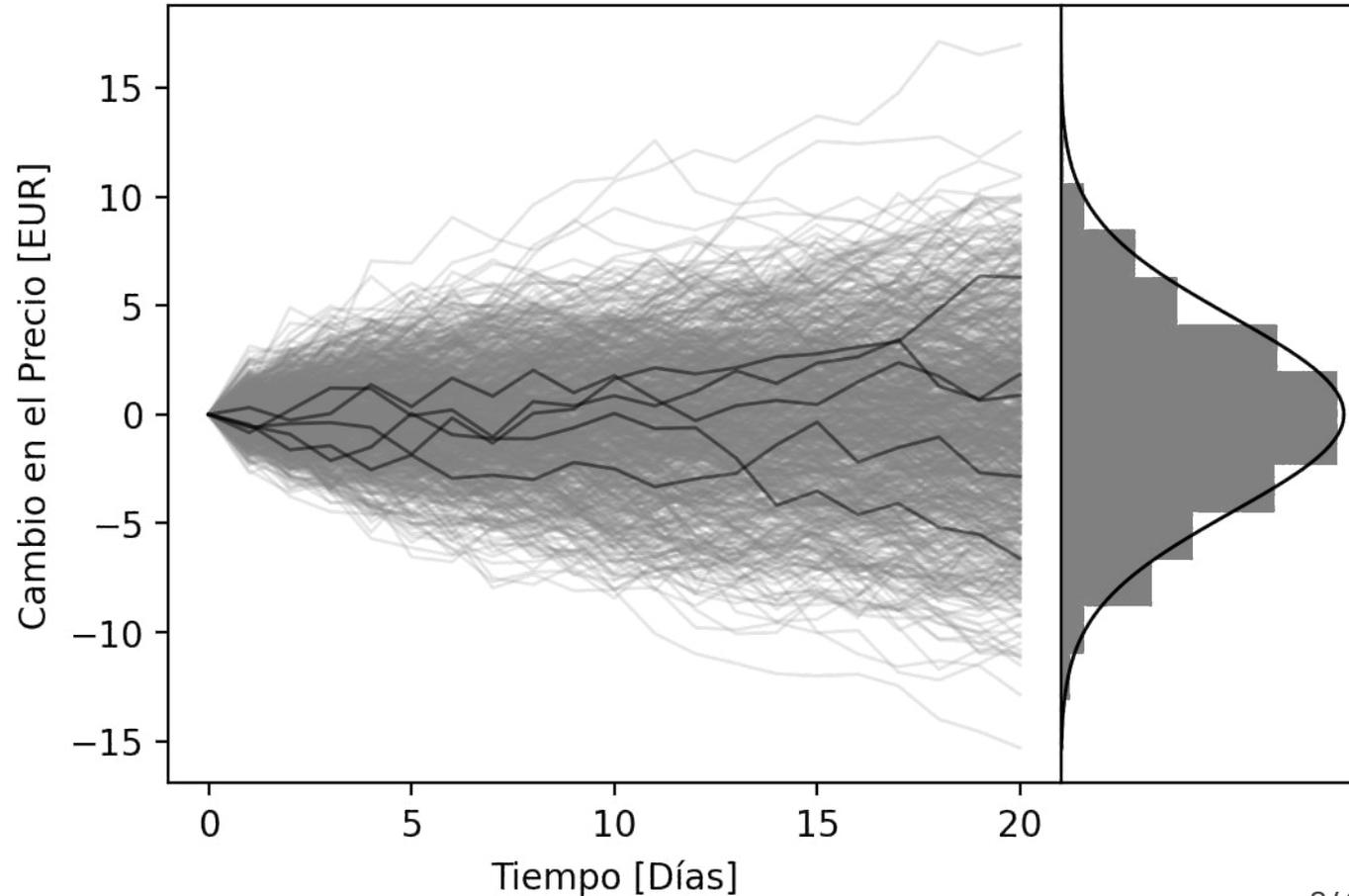


Imagen: Flaticon.com

# Louis Bachelier (1900)

- Distribución Normal aplicada a los precios
- Base del modelo de Black-Scholes-Merton para valorar derivados



M.F.M. Osborne (1958)

# *Operations Research*

March–April 1959

**BROWNIAN MOTION IN THE STOCK MARKET†**

**M. F. M. Osborne**

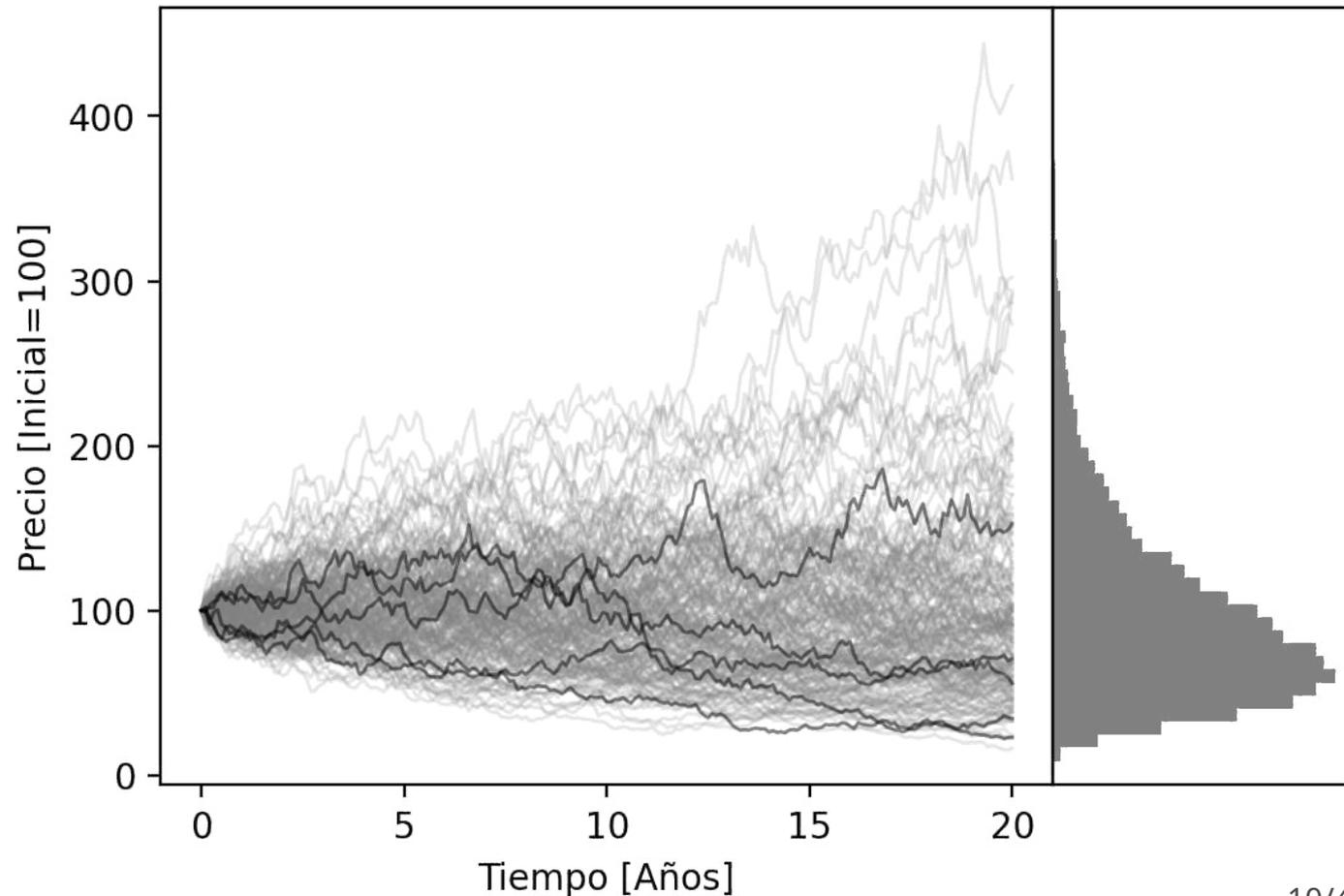
*U S Naval Research Laboratory, Washington 25, D C*

(Received February 6, 1958)

It is shown that common-stock prices, and the value of money can be regarded as an ensemble of decisions in statistical equilibrium, with properties quite analogous to an ensemble of particles in statistical mechanics

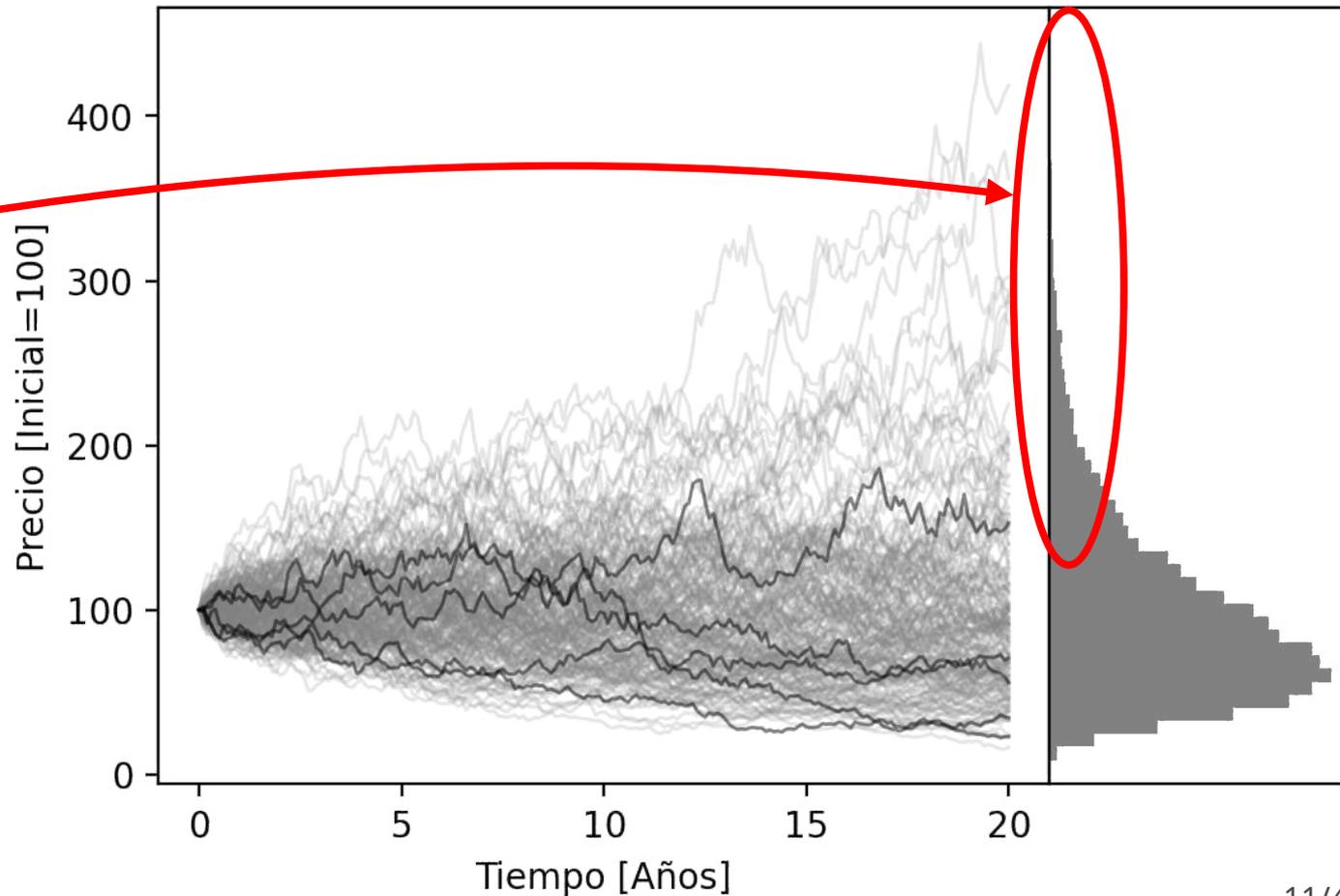
# M.F.M. Osborne (1958)

- A largo plazo la distribución **no es simétrica**



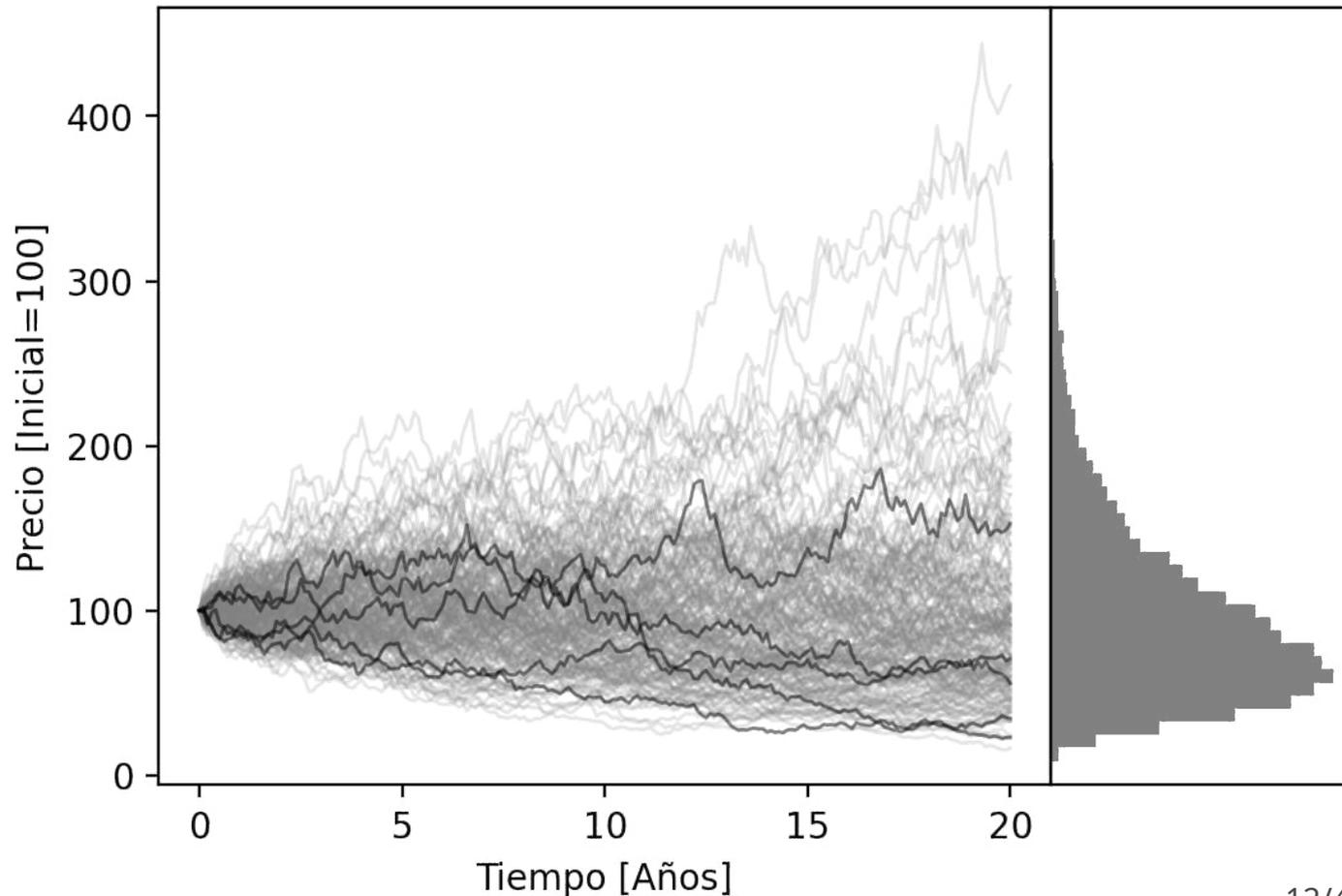
# M.F.M. Osborne (1958)

- A largo plazo la distribución **no es simétrica**



# M.F.M. Osborne (1958)

- A largo plazo la distribución **no es simétrica**
- Efecto en la probabilidad de que los gestores activos superen a sus índices



# Benoît Mandelbrot (1963)

## THE VARIATION OF CERTAIN SPECULATIVE PRICES\*

BENOIT MANDELBROT†

### I. INTRODUCTION

**T**HE name of Louis Bachelier is often mentioned in books on diffusion process. Until very recently, how-

modity, at the end of time period  $t$ . Then it is assumed that successive differences of the form  $Z(t + T) - Z(t)$  are independent, Gaussian or normally distrib-

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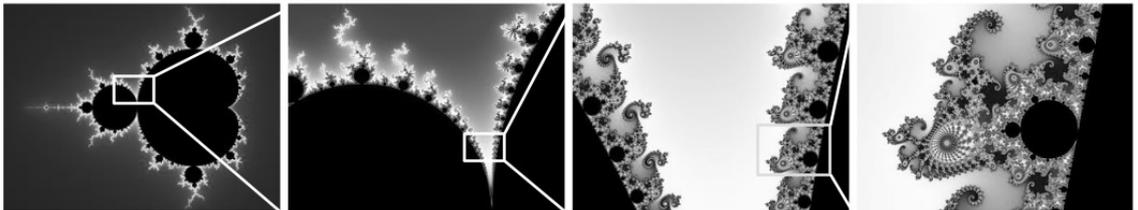
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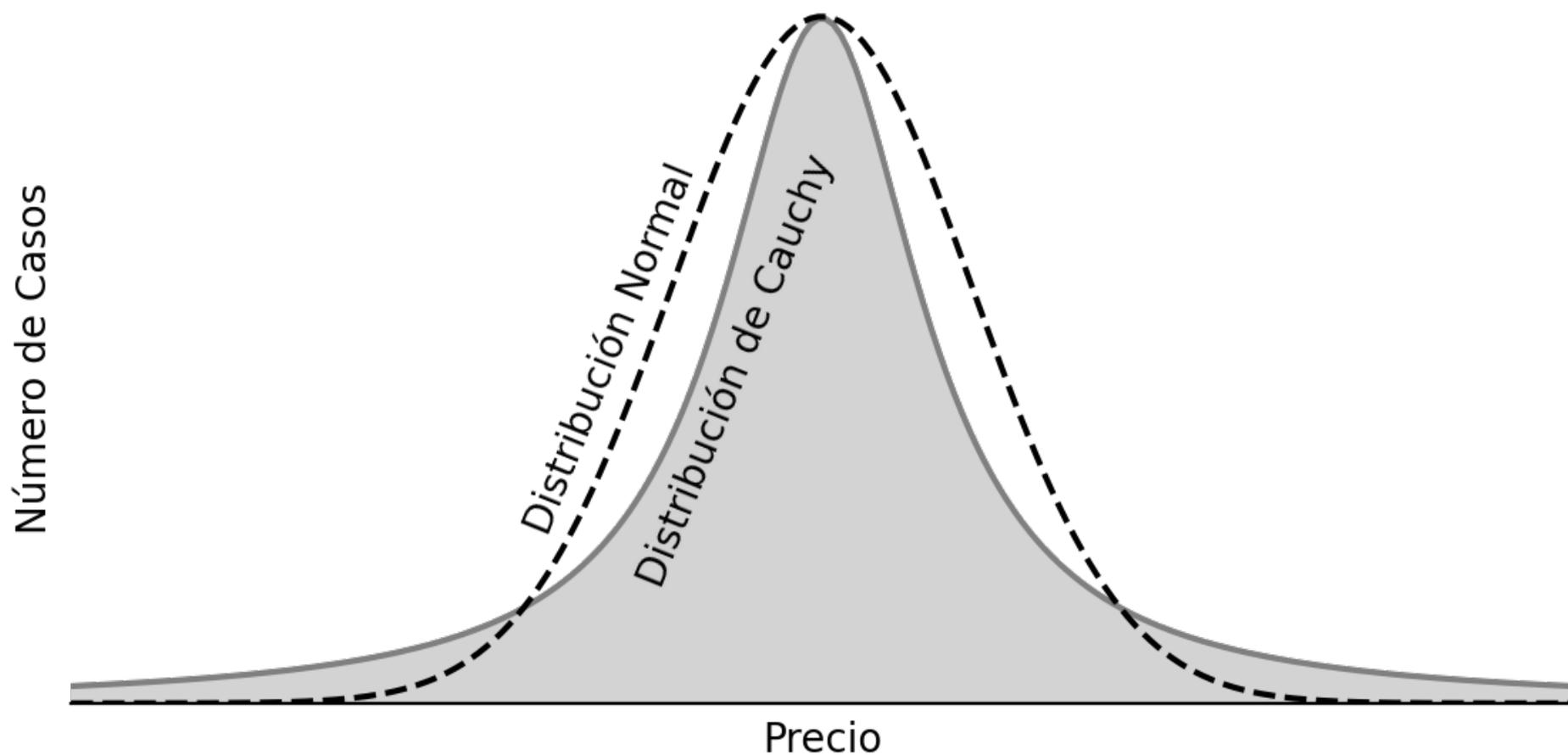
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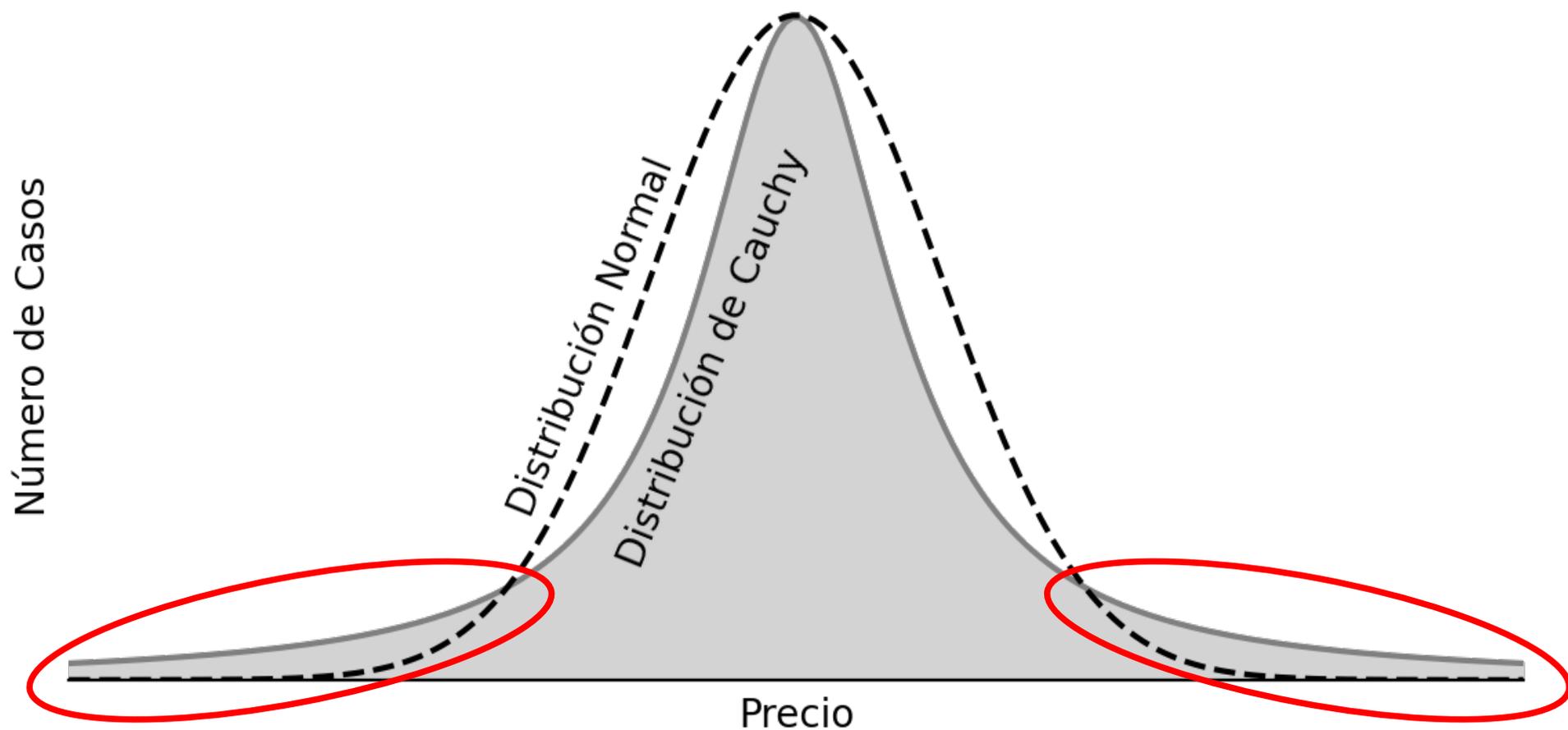
Mandelbrot es conocido por los fractales



# Benoît Mandelbrot (1963)

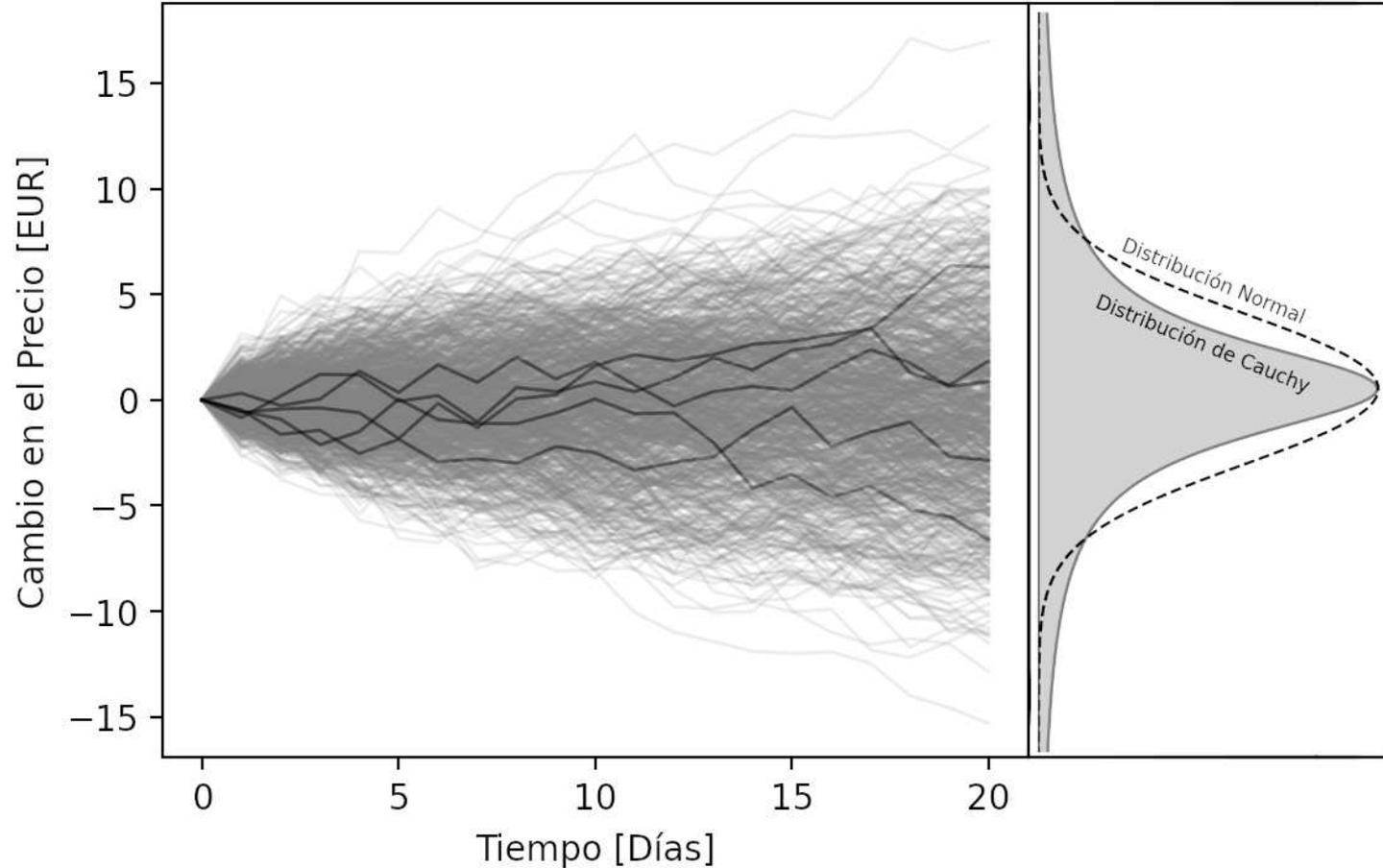


# Benoît Mandelbrot (1963)



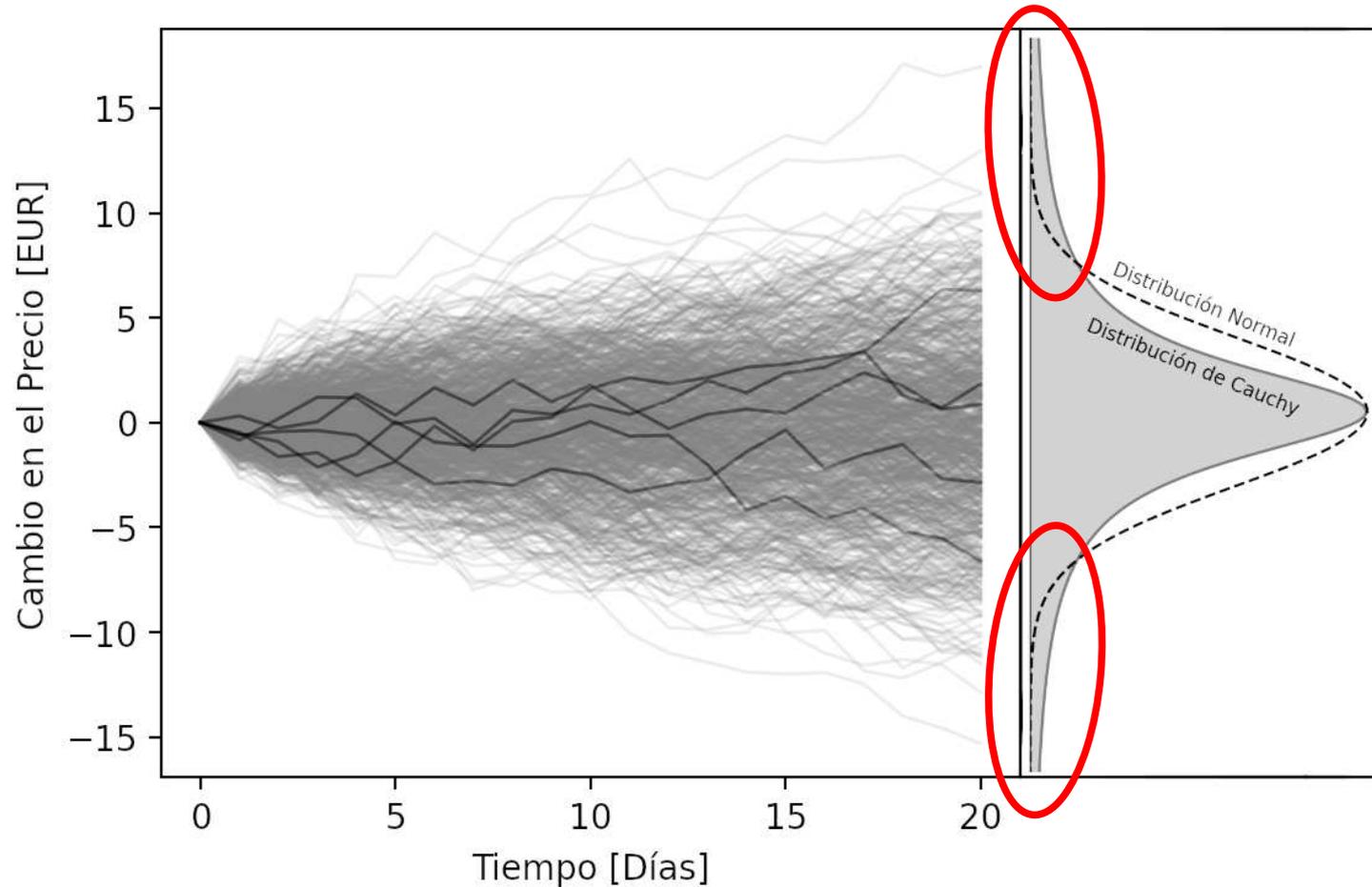
# Benoît Mandelbrot (1963)

- **Colas Gruesas**, procesos salvajemente aleatorios



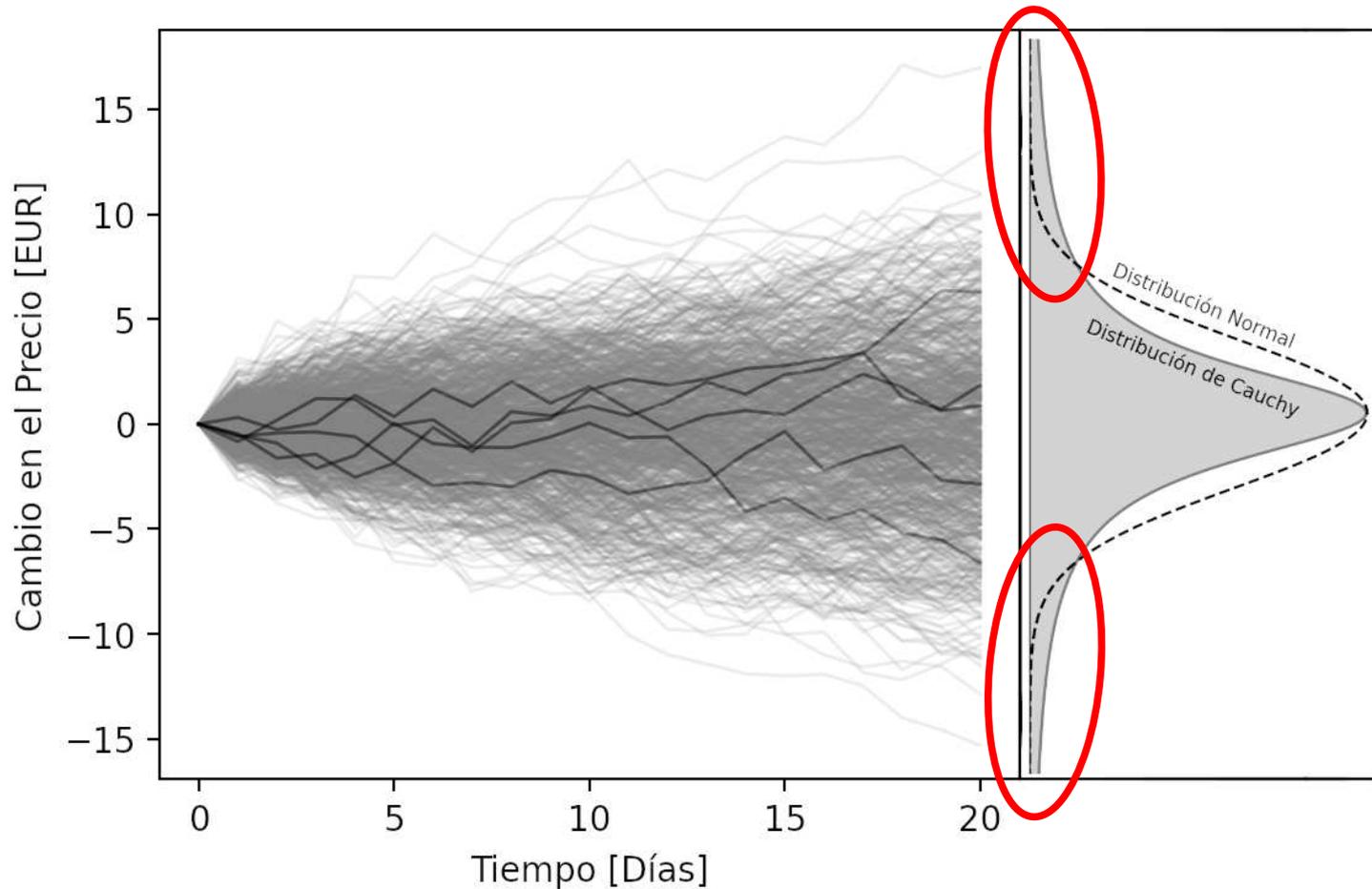
# Benoît Mandelbrot (1963)

- **Colas Gruesas**, procesos salvajemente aleatorios



# Benoît Mandelbrot (1963)

- **Colas Gruesas**, procesos salvajemente aleatorios
- Distribución normal (sencilla pero inexacta) vs distribución de Cauchy (compleja y más exacta)
- Ojo con la valoración de opciones
- Esto le encantó a Nassim Taleb: Cisne Negro



# Edward Norton Lorenz (1972)

## The Butterfly Effect

Inputs con errores de redondeo -> outputs distintos

- 3.14159265...
- 3.1416

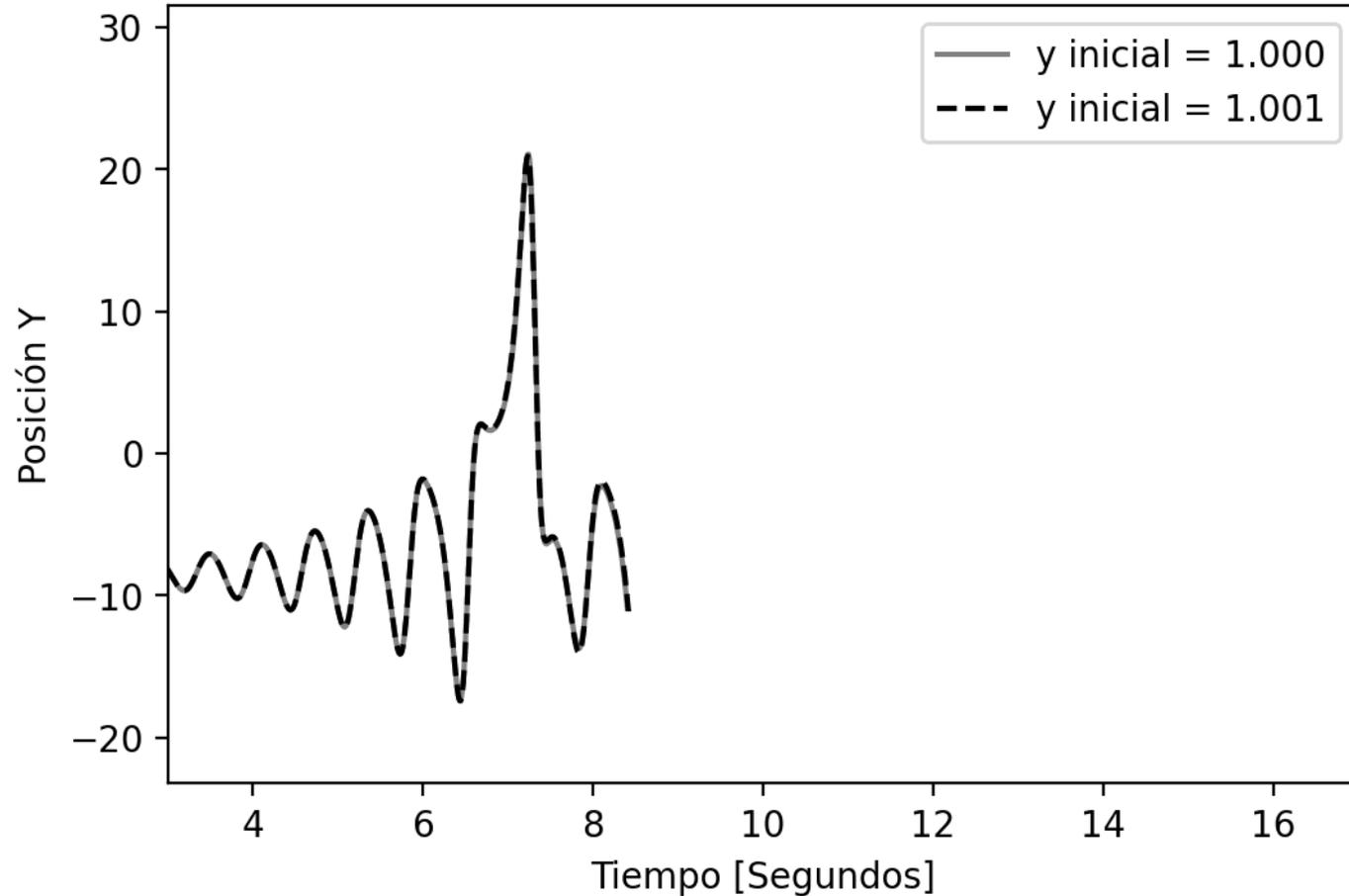
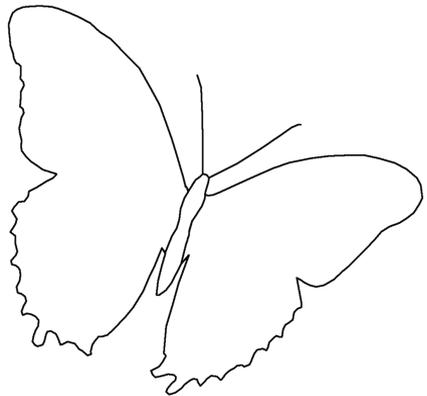
THE FOLLOWING is the text of a talk that I presented in a session devoted to the Global Atmospheric Research Program, at the 139th meeting of the American Association for the Advancement of Science, in Washington, D.C., on December 29, 1972, as prepared for press release. It was never published, and it is presented here in its original form.

*Predictability: Does the Flap of a Butterfly's Wings in Brazil Set off a Tornado in Texas?*

Lest I appear frivolous in even posing the title question, let alone suggesting that it might have an affirmative answer, let me try to place it in proper perspective by offering two propositions.

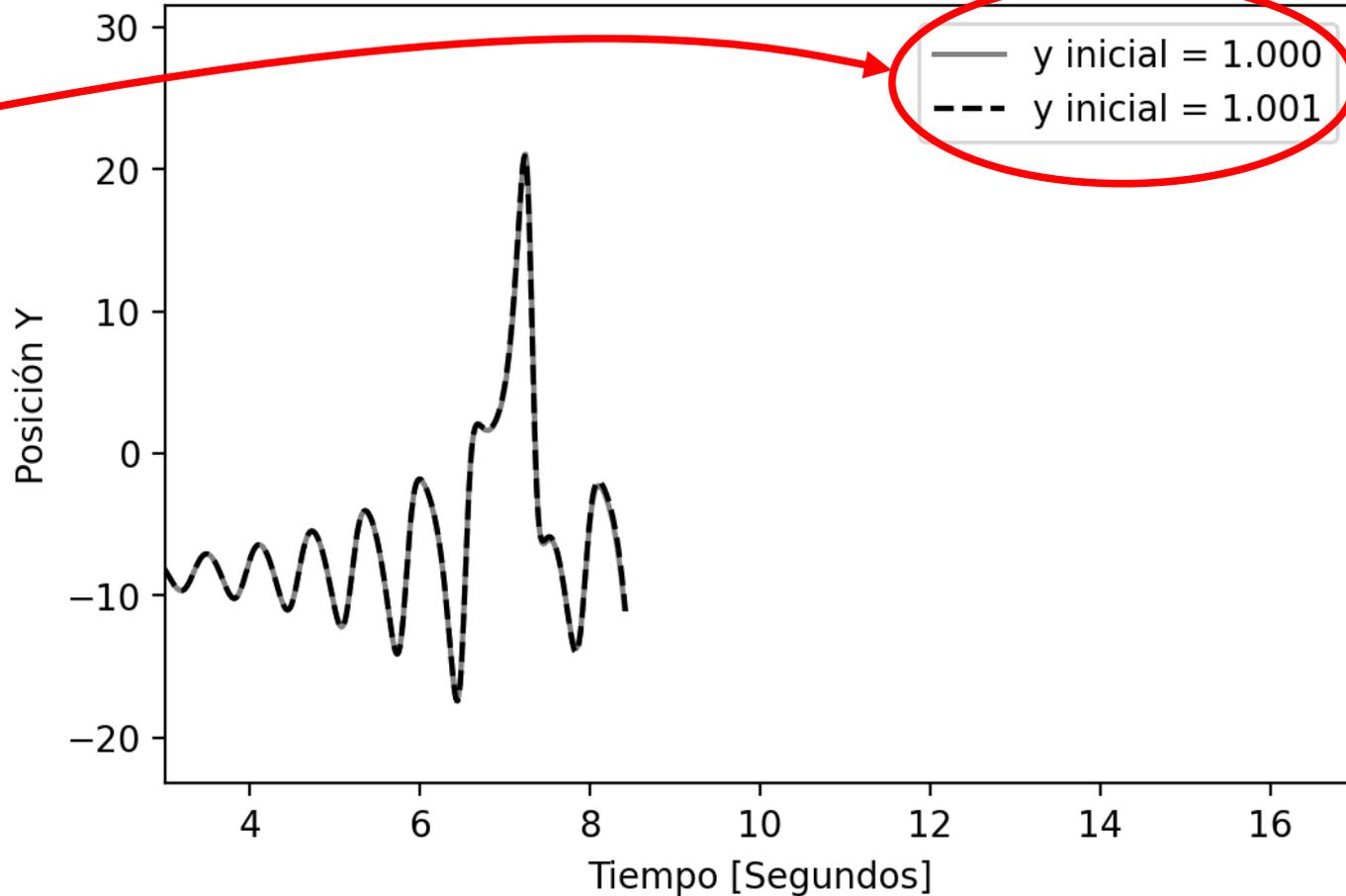
# Edward Norton Lorenz (1972)

- El aleteo de una mariposa lo cambia todo



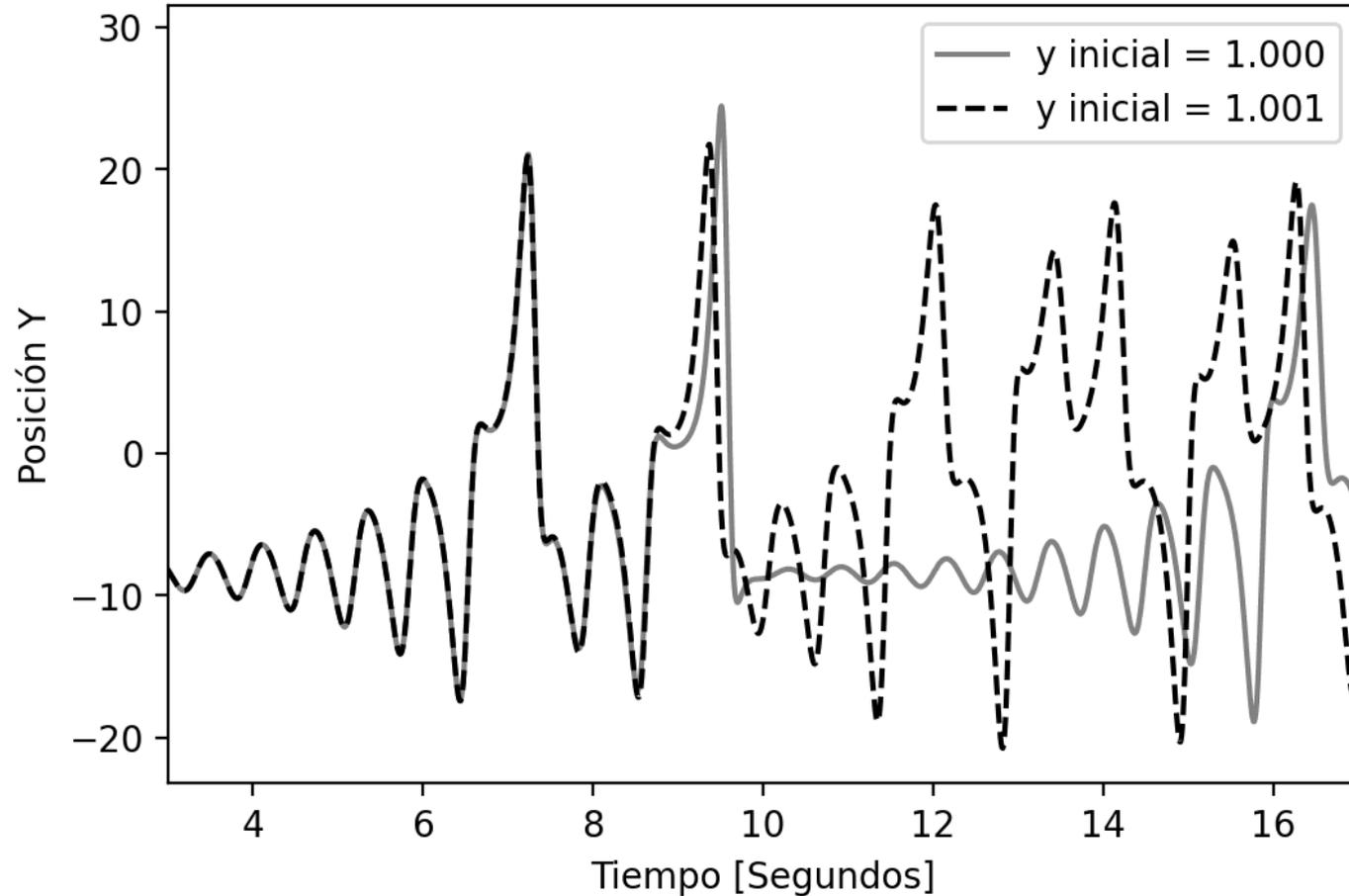
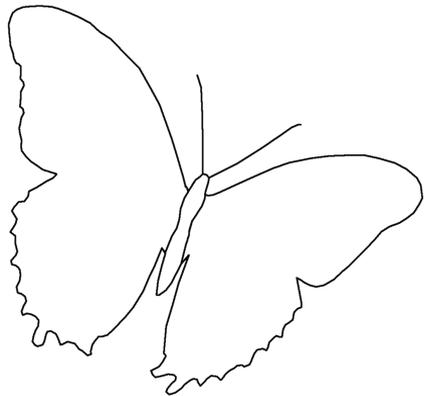
# Edward Norton Lorenz (1972)

- El aleteo de una mariposa lo cambia todo



# Edward Norton Lorenz (1972)

- El aleteo de una mariposa lo cambia todo
- Caos Determinista
- Ojo a esas Excel con la contabilidad de las empresas



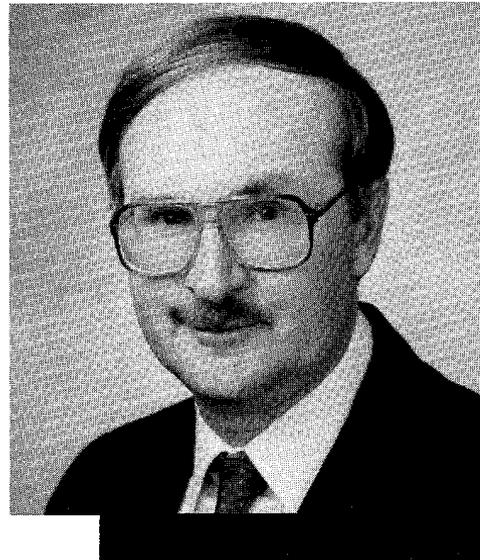
# William P. Bengen (1994)

## DETERMINING WITHDRAWAL RATES USING HISTORICAL DATA

- La Regla del 4%

by William P. Bengen

At the onset of retirement, investment advisors make crucial recommendations to clients concerning asset allocation, as well as dollar amounts they can safely withdraw annually, so clients will not outlive their money. This article utilizes historical investment data as a rational basis for these recommendations. It employs graphical interpretations of the data to determine the maximum safe withdrawal rate (as a percentage of initial portfolio value) and establishes a range of stock and bond asset allocations that is optimal for virtually all retirement portfolios. Finally, it provides guidance on “mid-retirement” changes of asset allocation and withdrawal rate.



planner into trouble was assuming that average returns and average inflation rates are a sound basis for computing how much a client can safely withdraw from a retirement fund over a long time.

As Larry Bierwirth pointed out in his excellent article in the January 1994 issue of the this publication (“Investing for Retirement: Using the Past to Model the Future”), it pays to look not just at averages, but at what actually has happened, year-by-year, to investment returns and inflation in the past. He demonstrated that the long-term effects of certain financial catastrophes, such as the Depression or the 1973-1974 recession,

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## DETERMINING WITHDRAWAL RATES USING HISTORICAL DATA

- La Regla del 4%
- Ingeniero Aeroespacial

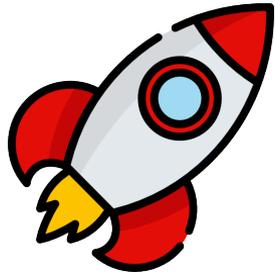
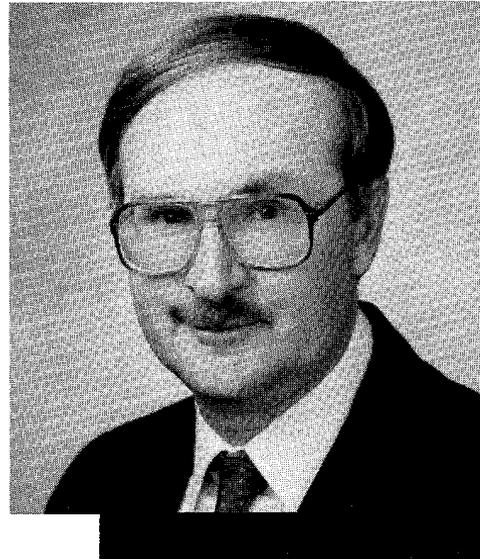


Imagen: Flaticon.com

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# David L. Ikenberry et al. (1998)

## Why active fund managers often underperform the S&P 500: The impact of size and skewness

### Abstract

The performance of actively managed U.S. equity funds is often naively compared to that of the S&P 500 index. In recent years, this comparison has generally cast an unfavorable impression of active fund managers and has led many investors to embrace index funds.

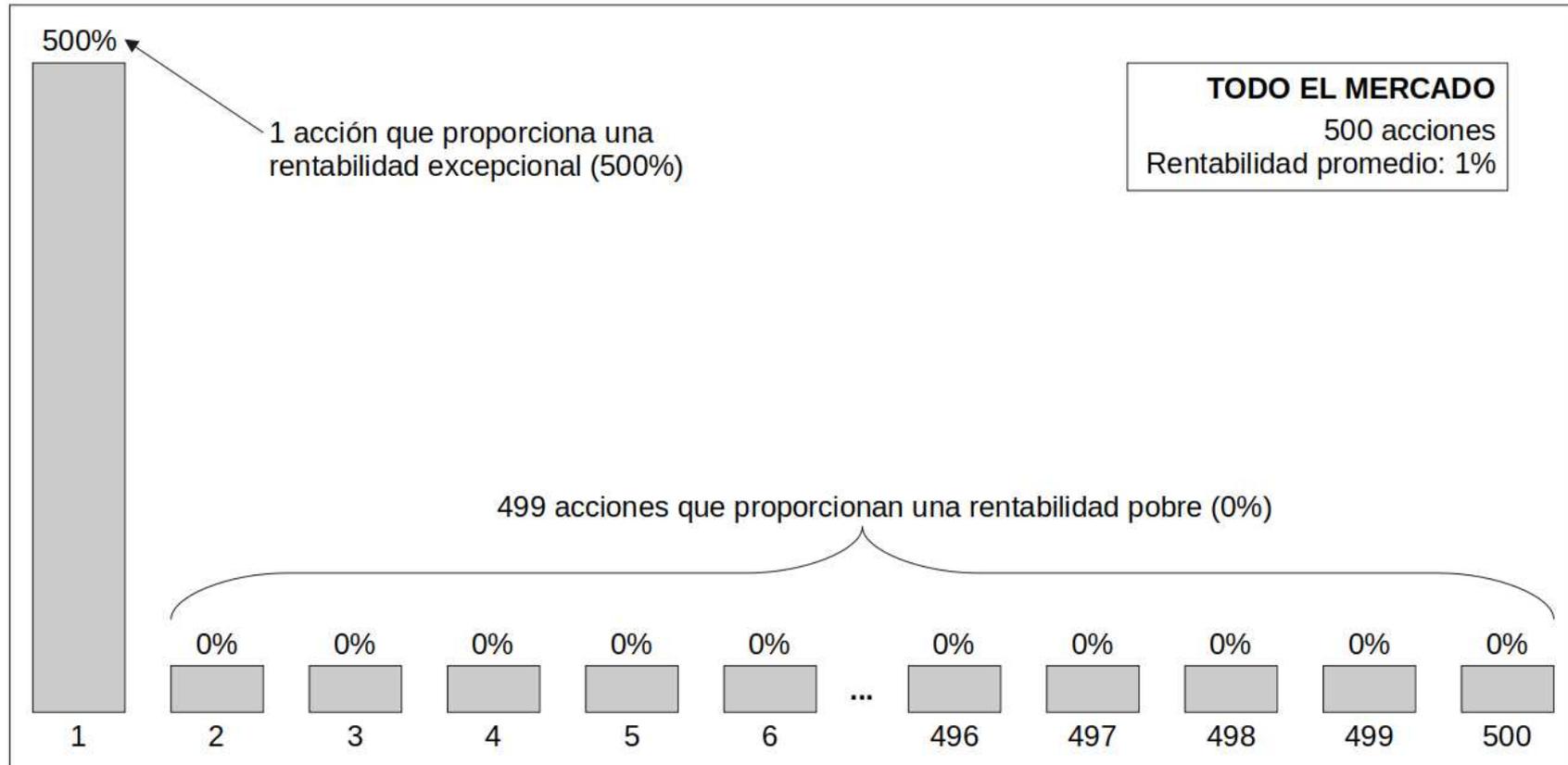
Systematic deviations from the benchmark are affected by two conventional practices of active fund managers: 1) equally-weighting their positions, and 2) holding small numbers of stocks. These two practices accentuate the statistical characteristics of longer-horizon stock returns and cause active manager performance to deviate predictably from broad-based benchmarks such as the S&P 500.

# David L. Ikenberry et al. (1998)

- Experimento mental
- S&P 500 imaginario
- Rentabilidades muy asimétricas

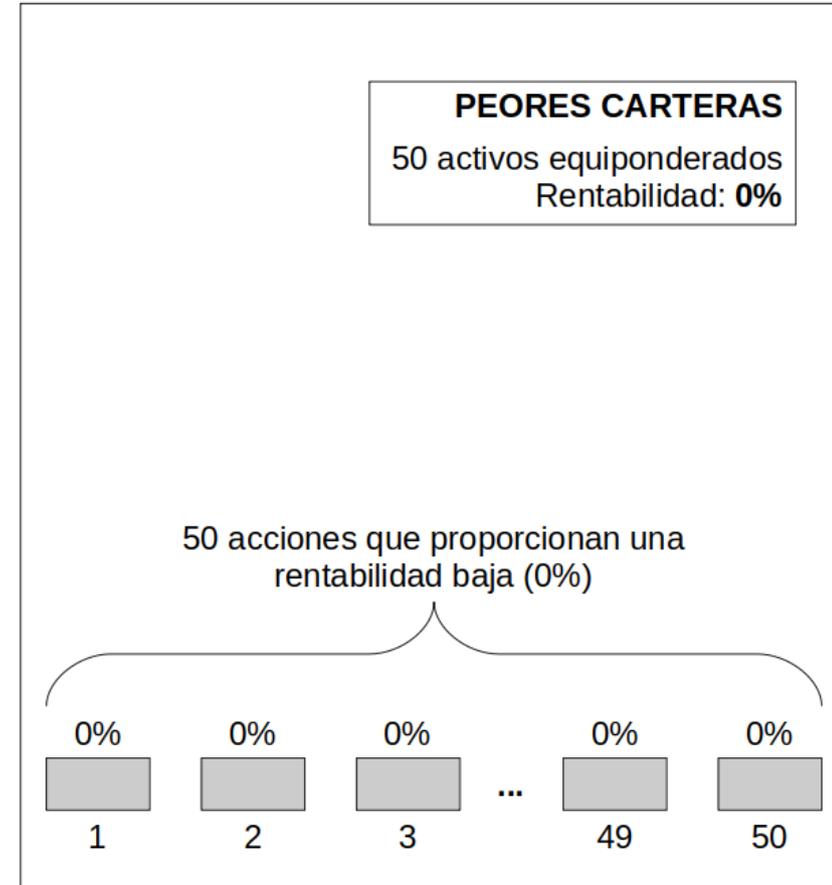
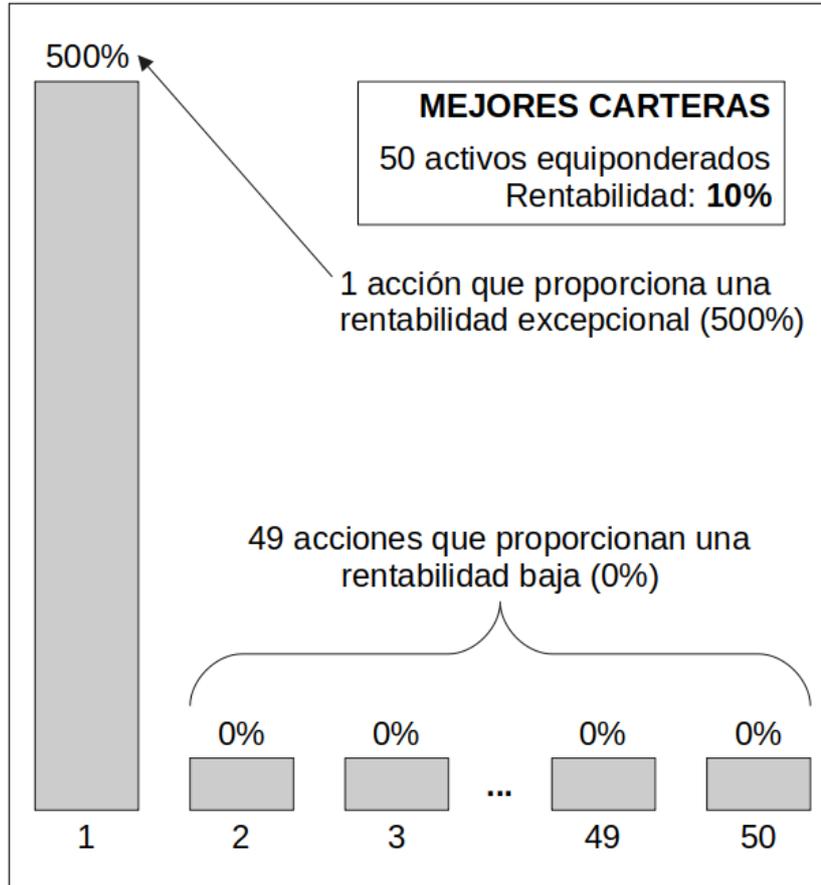
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Carteras de  
50 activos,  
igual peso

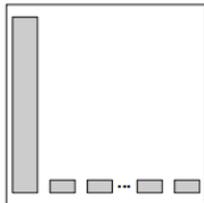


# David L. Ikenberry et al. (1998)

Carteras de 50 activos, de un total de 500, donde 1 es un activo extraordinario

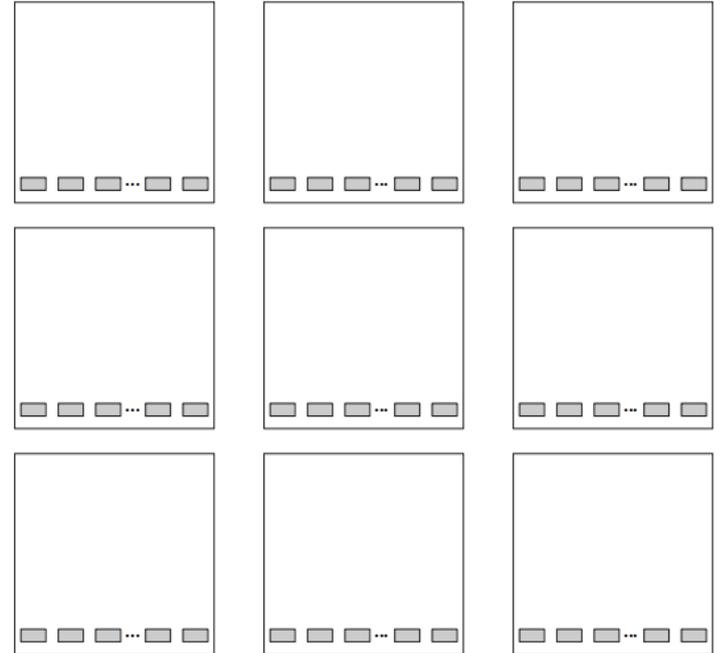
**MEJORES CARTERAS**

Probabilidad de que gestor **incluya** la acción extraordinaria: **10%**

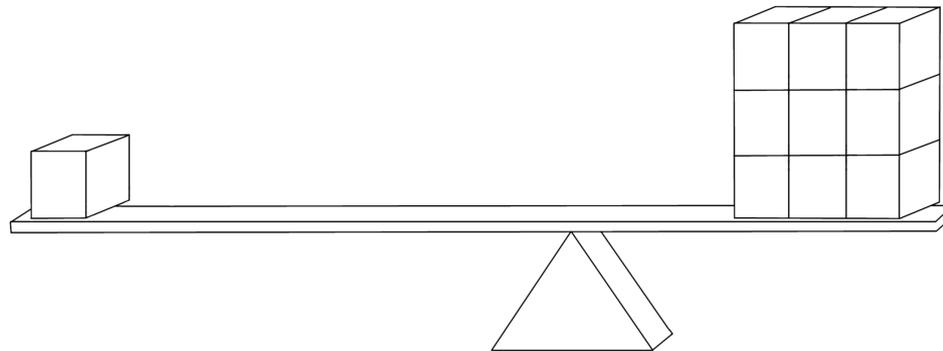
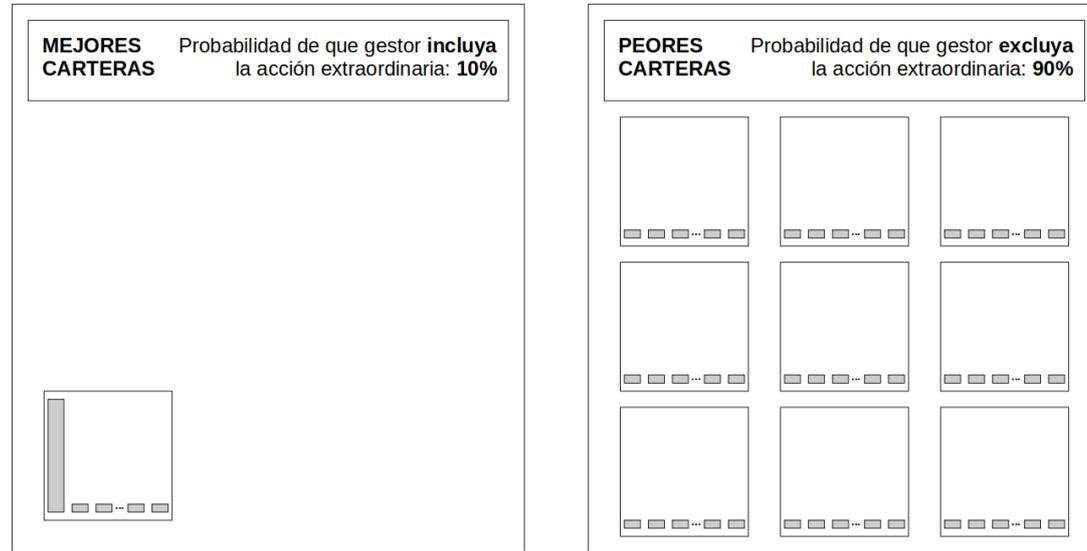


**PEORES CARTERAS**

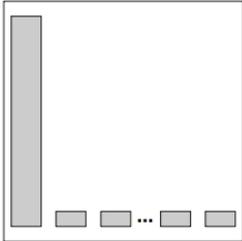
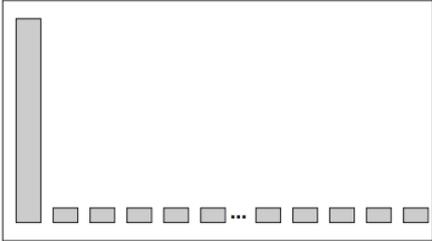
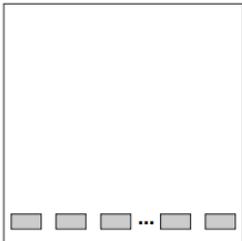
Probabilidad de que gestor **excluya** la acción extraordinaria: **90%**



# David L. Ikenberry et al. (1998)



# David L. Ikenberry et al. (1998)

<b>Mejores</b> carteras activas		Rentabilidad <b>10%</b>	 <b>10%</b> de las carteras activas
Todo el mercado (indexado)		Rentabilidad <b>1%</b>	<b>Rentabilidad mejor que el 90% de las carteras activas</b>
<b>Peores</b> carteras activas		Rentabilidad <b>0%</b>	 <b>90%</b> de las carteras activas

*“La mayoría de los gestores activos obtienen rentabilidades menores que el mercado”*

Los gestores activos tienen que “cruzar el desierto” durante años

# John C. Bogle (2002)

## An Index Fund Fundamentalist

*Goes back to the drawing board.*

John C. Bogle

- Fundador de Vanguard
- Divulgador de la inversión pasiva
- La importancia del coste de la inversión

In 1997, I prepared a study of the returns for the mutual funds in each of the nine Morningstar “style boxes,” a matrix with large-, mid-, and small-capitalization funds on one axis and value, blend, and growth funds on the other (Bogle [1998]). For the five-year period 1992 through 1996, the study presents powerful evidence that the low-cost quartile of funds in each box had earned not only higher returns than those in the high-cost quartile, but also returns that significantly exceeded the cost differential.

# John C. Bogle (2002)

**EXHIBIT 2**  
**ANNUAL RATE OF RETURN**  
**Ten Years Ended June 30, 2001**

	<b>Low-Cost Quartile</b>	<b>High-Cost Quartile</b>	<b>Low-Cost Advantage</b>
Large-Cap Value	14.8%	12.8%	2.0%
Large-Cap Blend	14.7	10.9	3.8
Large-Cap Growth	14.2	11.2	3.0
Mid-Cap Value	15.3	12.5	2.8
Mid-Cap Blend	15.4	14.2	1.2
Mid-Cap Growth	14.7	12.5	2.2
Small-Cap Value	16.8	12.0	4.8
Small-Cap Blend	15.6	11.3	4.3
Small-Cap Growth	15.4	14.5	0.9
All Funds	14.5%	12.3%	2.2%

# John C. Bogle (2002)

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All Funds	14.5%	12.3%	2.2%

- El coste de un fondo es un buen predictor de su rentabilidad:
  - cuanto más barato 
  - mayor rentabilidad 
- Conclusión: mejor elegir fondos baratos

# Y muchos artículos más

- Harry Markowitz y su Teoría de Carteras Moderna
- William Sharpe y la valoración de activos (CAPM)
- Eugene Fama y la Hipótesis del Mercado Eficiente
- Paul Samuelson y el Demonio de Maxwell
- Informes anuales SPIVA: fondos activos vs índices
- Barómetros Morningstar cada 6 meses: fondos activos vs fondos pasivos
- Etc.

# Conclusiones

- La vida del inversor activo es muy dura: colas gruesas, caos determinista, asimetría de rentabilidades, costes de la inversión...
- Para un pequeño inversor, la inversión pasiva es muy razonable
- Hay mucha información disponible
- Elevemos el debate

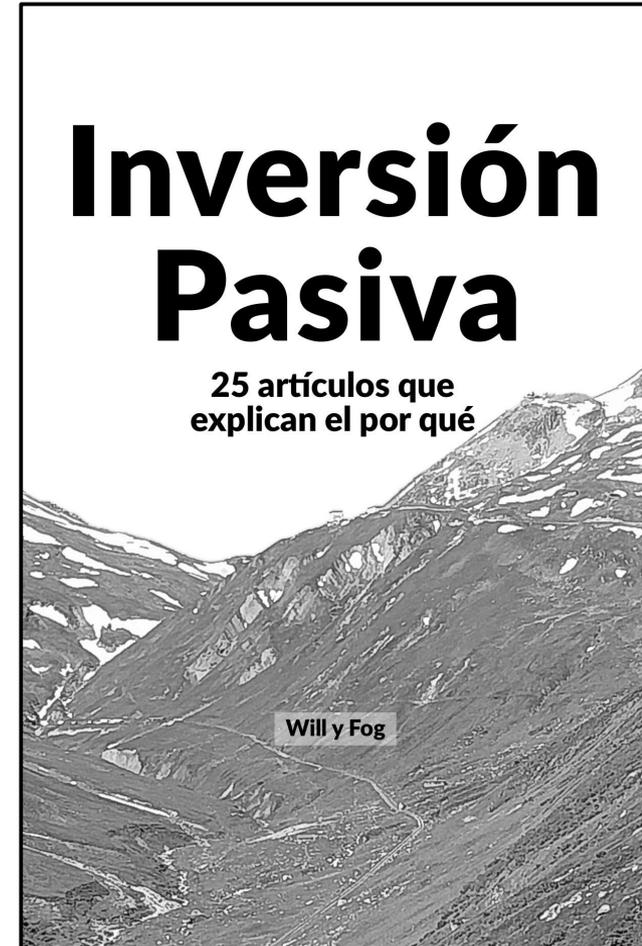


# Para Saber Más

- Twitter/X: [@WillyfogLF](https://twitter.com/WillyfogLF)
- Todo esto y mucho más se puede leer en:
  - <https://LosRevisionistas.wordpress.com>
  - <https://bogleheads.es/>

# Para Saber Más

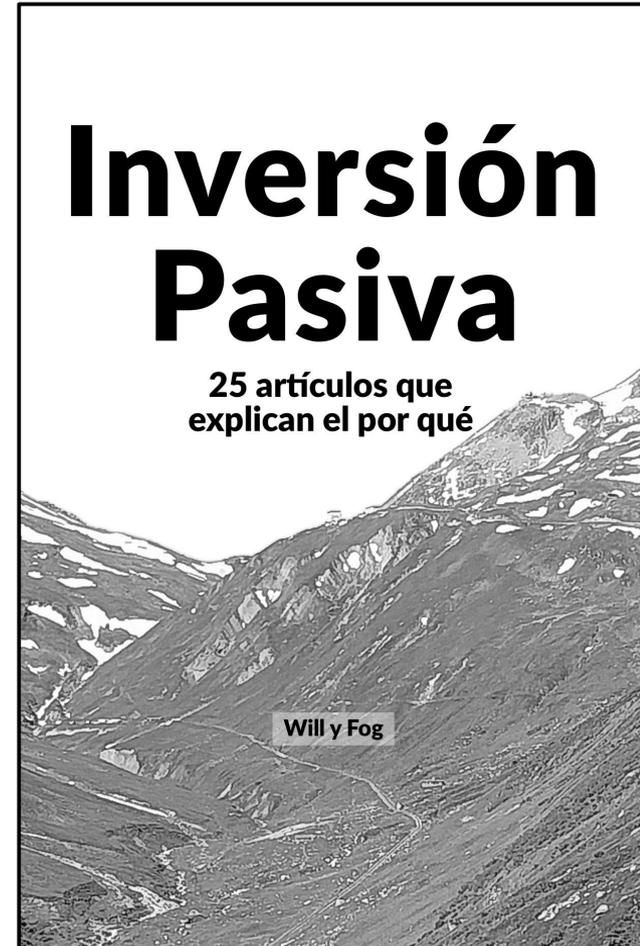
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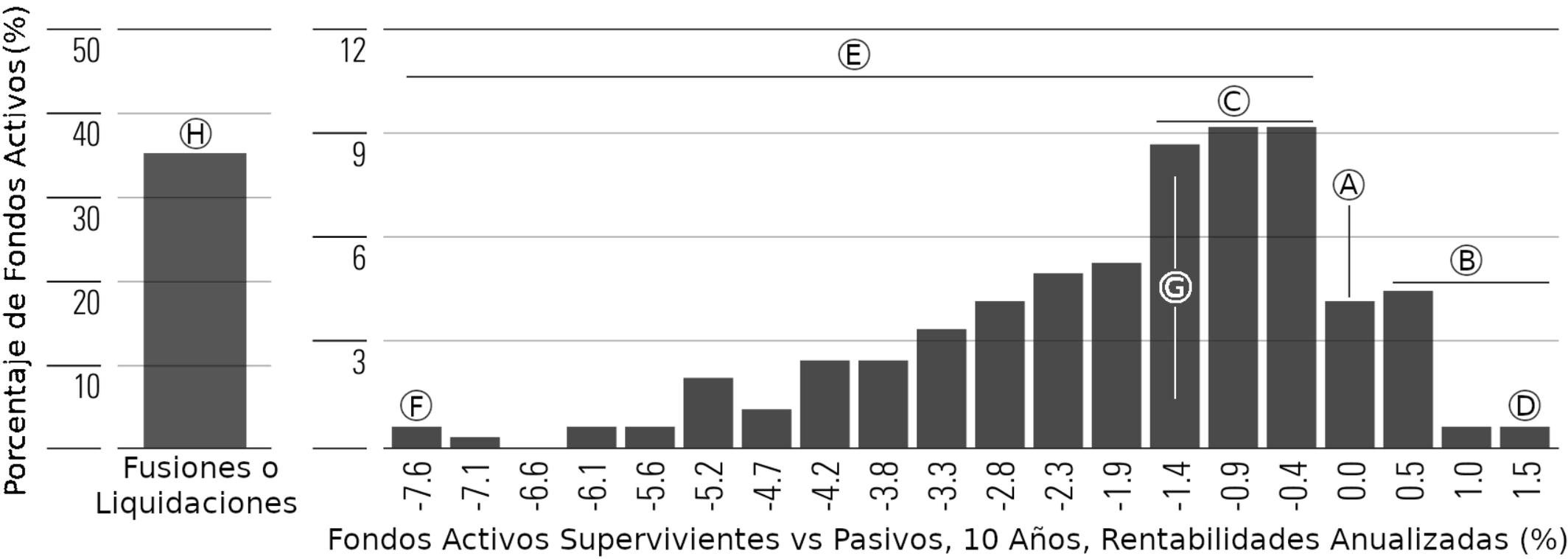
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# ¡Gracias!



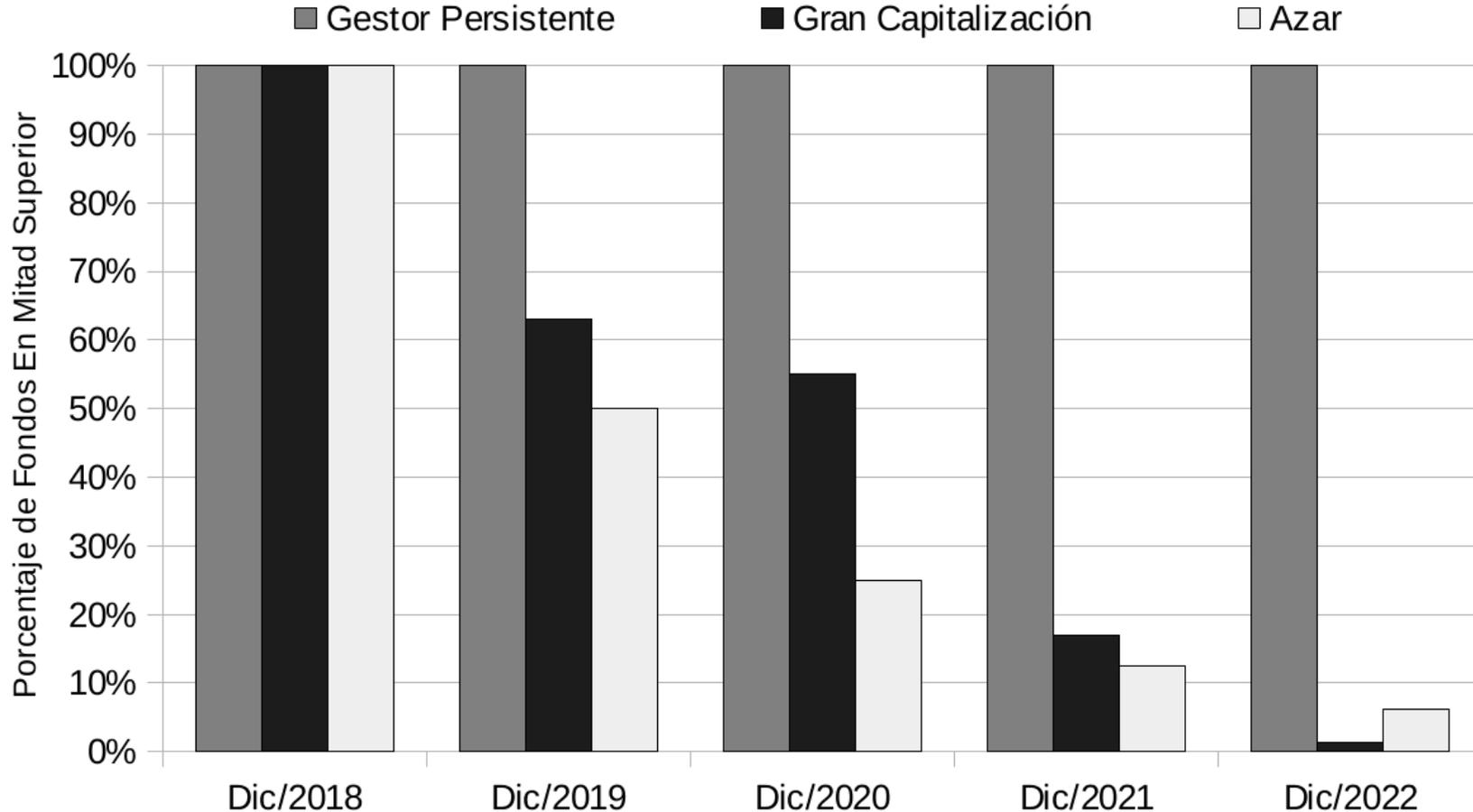
# Otras Diapositivas por si Acaso

# Morningstar's US Active/Passive Barometer Midyear 2023, figura 7



**Fondos activos vs pasivos. Fondos de gran capitalización de EEUU.**

# Persistencia de los Buenos Gestores



Rentabilidad durante el año previo.

Solo gestores de Gran Capitalización.

Fuente: Informe SPIVA