

Statistica

2024-2025



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~~Statistica~~ Coding e Big Data

~~2024-2025~~ 2025-2026



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Borsa di Milano

Posiz.	▲	Titolo	◆	Capitalizz. (ml. di euro)	◆	Var.% a 12 mesi
1		Ferrari		79431,1		44,84 %
2		Enel		70709,3		25,23 %
3		Intesa Sanpaolo		68807,3		59,2 %
4		Unicredit		63547,4		63,08 %

LAB

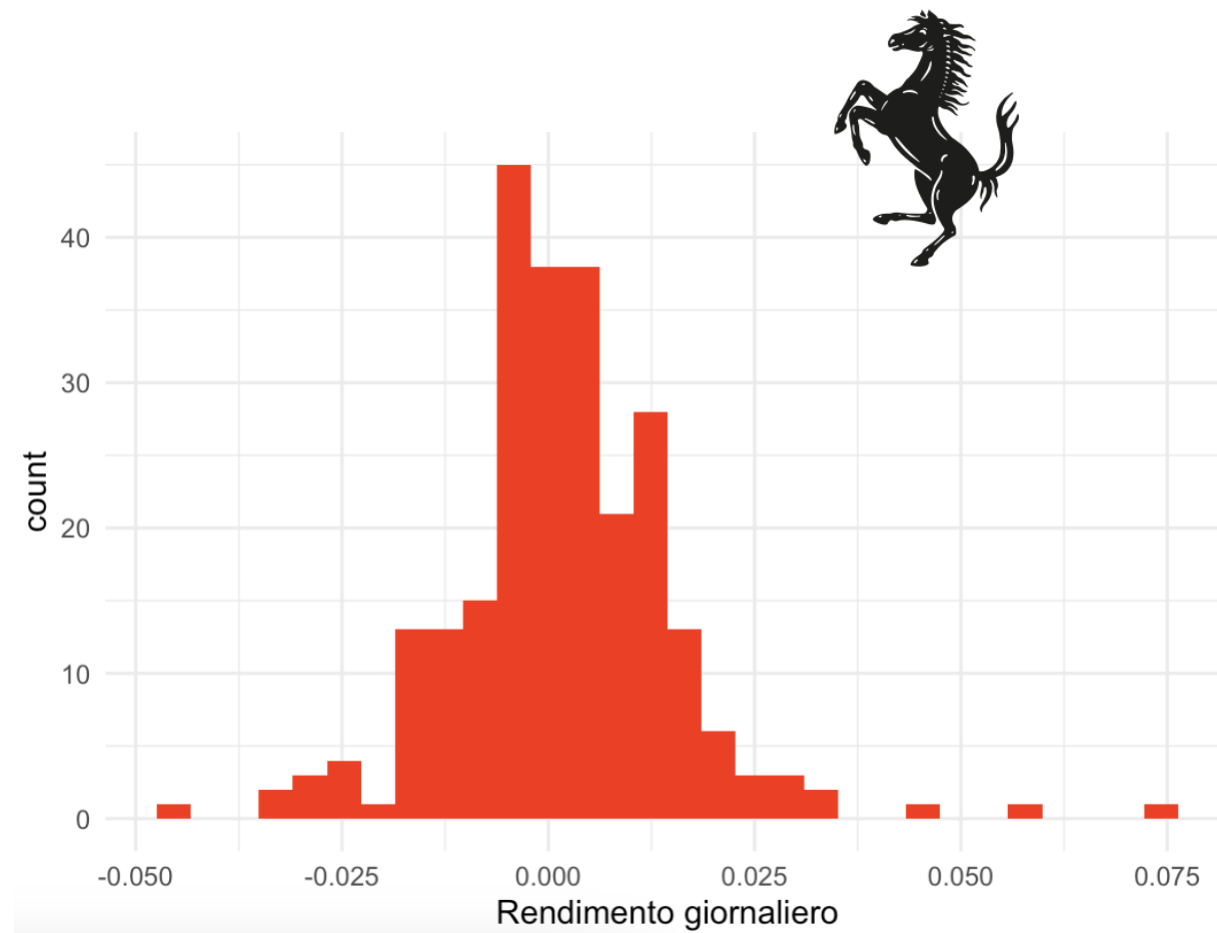
Analisi Prezzi Azioni

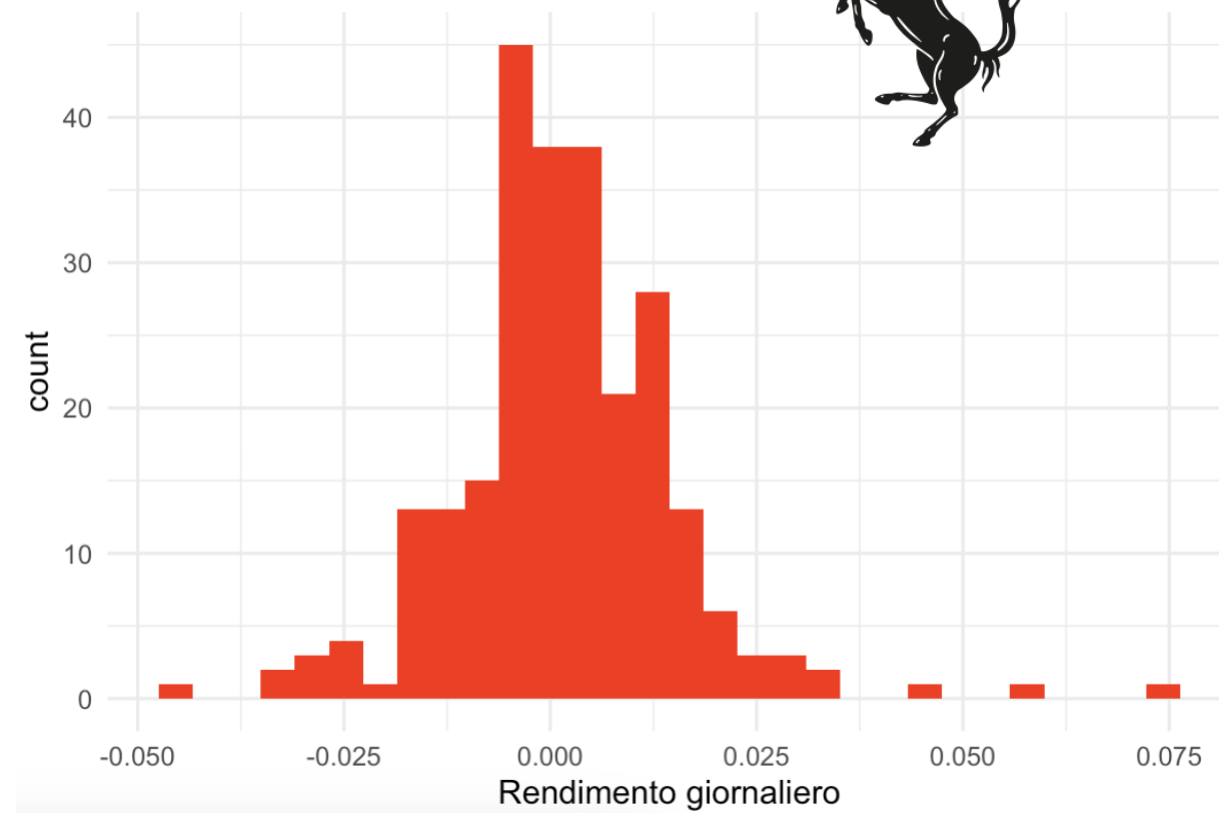
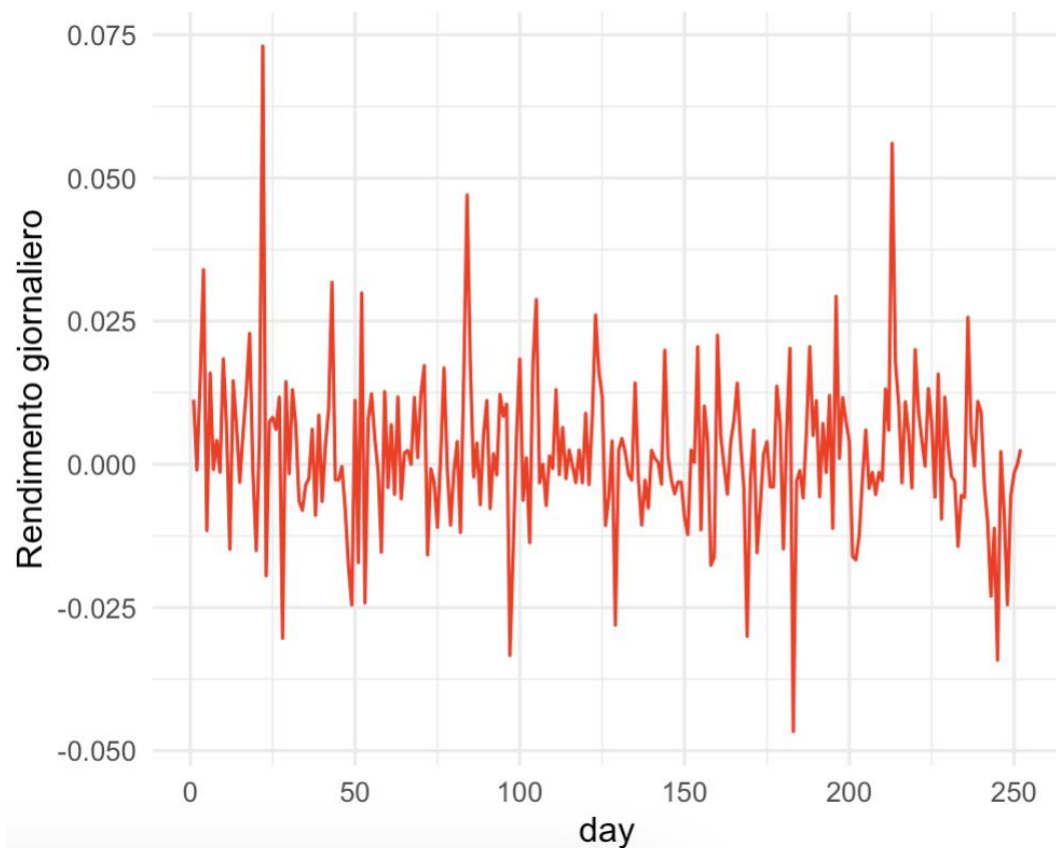


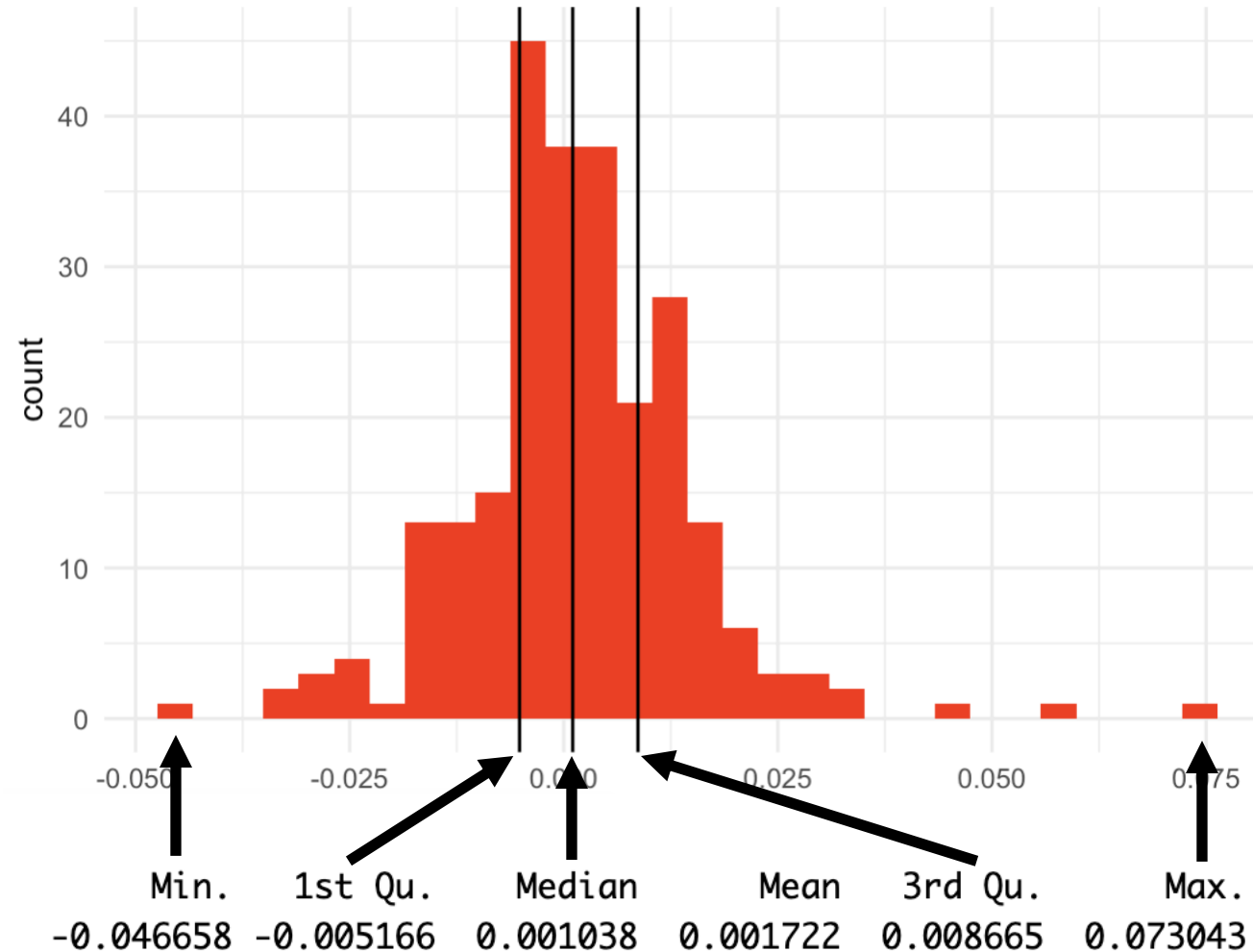
Rendimenti giornalieri del 2023

Ferrari	Enel	Intesa	Unicredit	day
0.0112855447	0.0352830395	0.0257767938	0.0373832821	1
-0.0009704035	-0.0016402659	-0.0060579085	0.0072071973	2
0.0145701161	0.0224535326	0.0083522229	0.0122470901	3
0.0339876198	-0.0003570954	-0.0022386944	-0.0067971441	4
-0.0115741190	-0.0112520855	0.0096478074	-0.0009581474	5

Rendimento Giornaliero	n	Percentuale
< -0.5%	64	25.4%
-0.5% - 0	59	23.4%
0 – 0.5%	38	15.1%
> 0.5%	91	36.1%





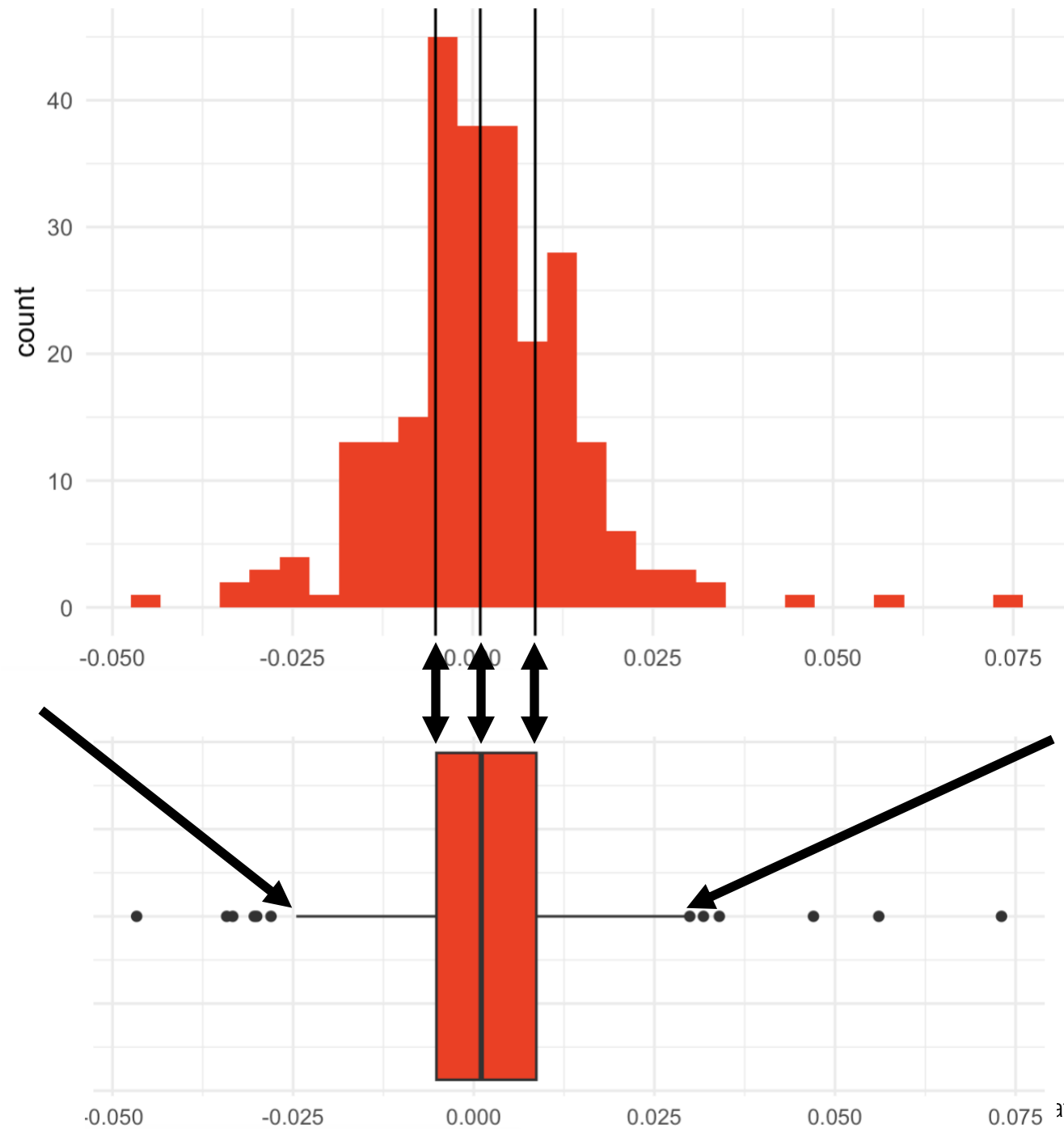


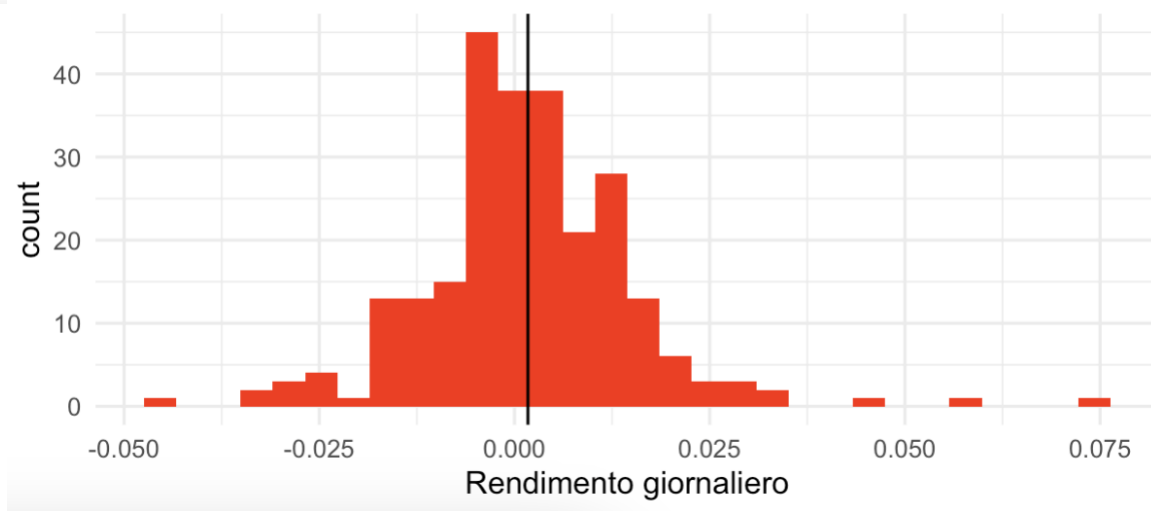
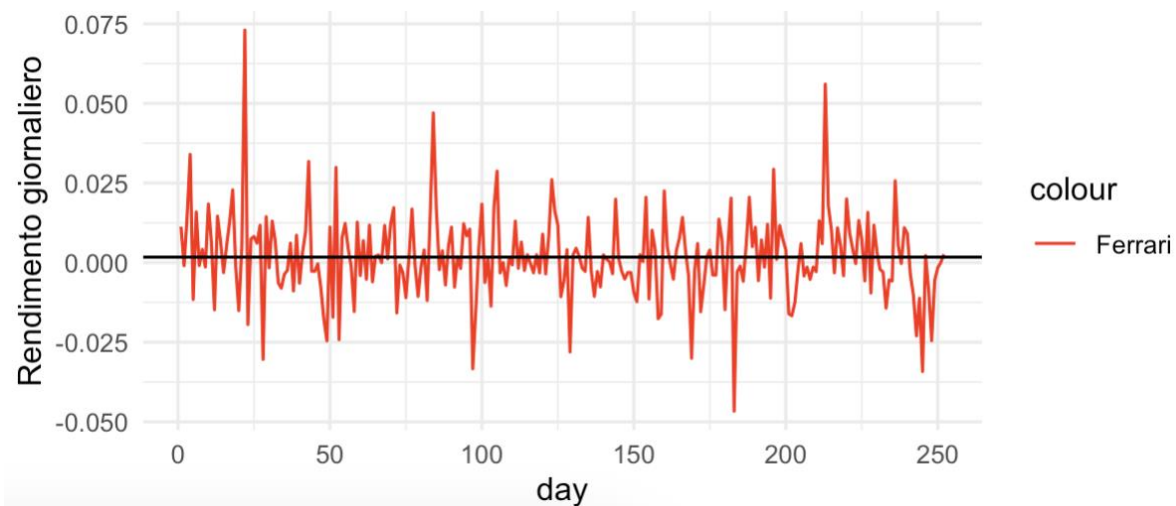
LAB



$Q1 - (1.5 \cdot IQR)$

$Q3 + (1.5 \cdot IQR)$





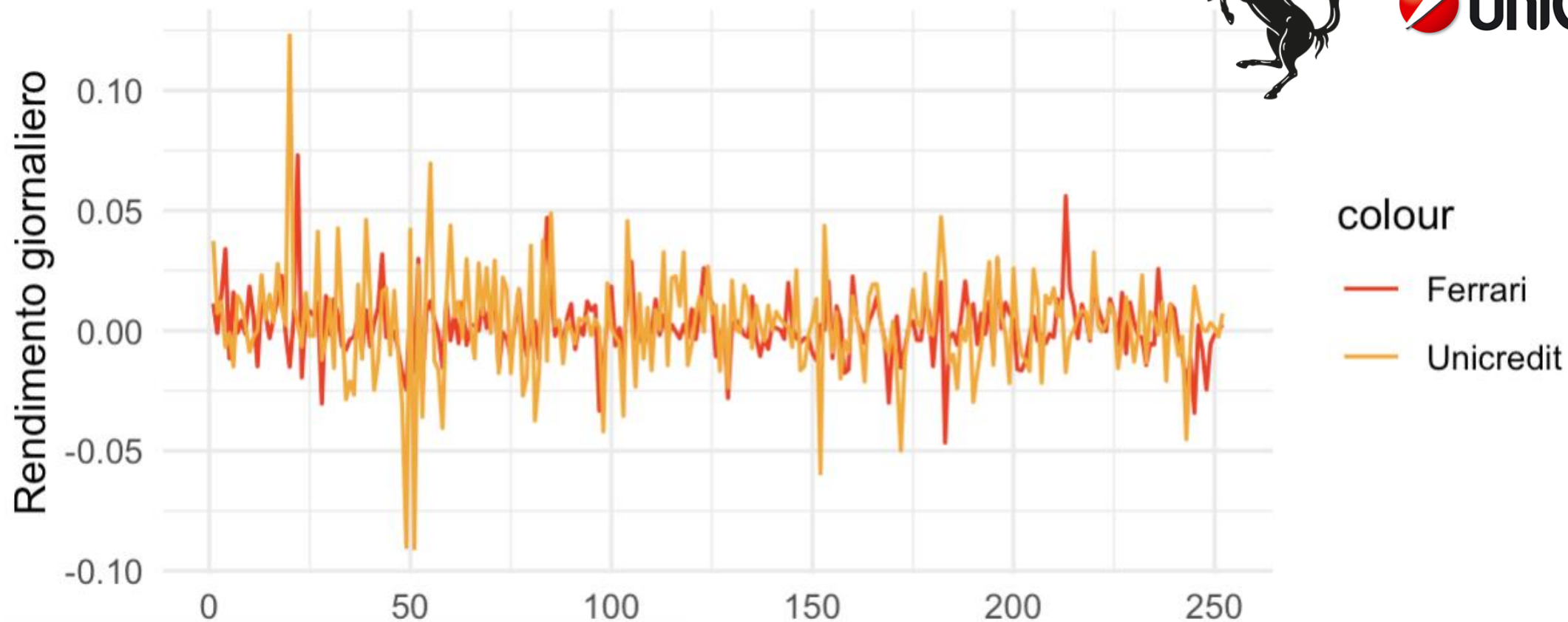
Finanza: **Rischio**
Statistica: **Variabilità**

Dev. Std. 0.013

$$\sigma = \sqrt{\frac{\sum_{i=1}^N (x_i - \mu)^2}{N}}$$

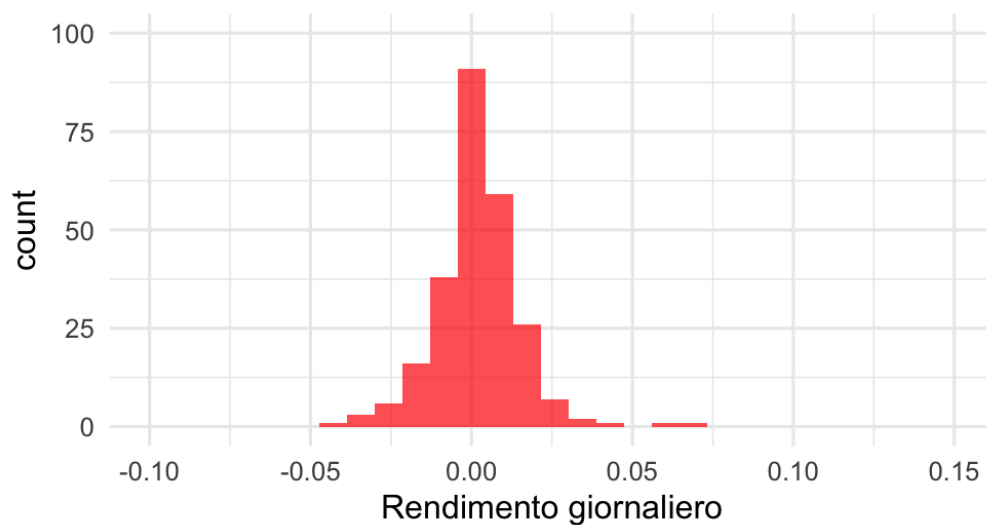
LAB

Analisi Prezzi Azioni - Variabilità



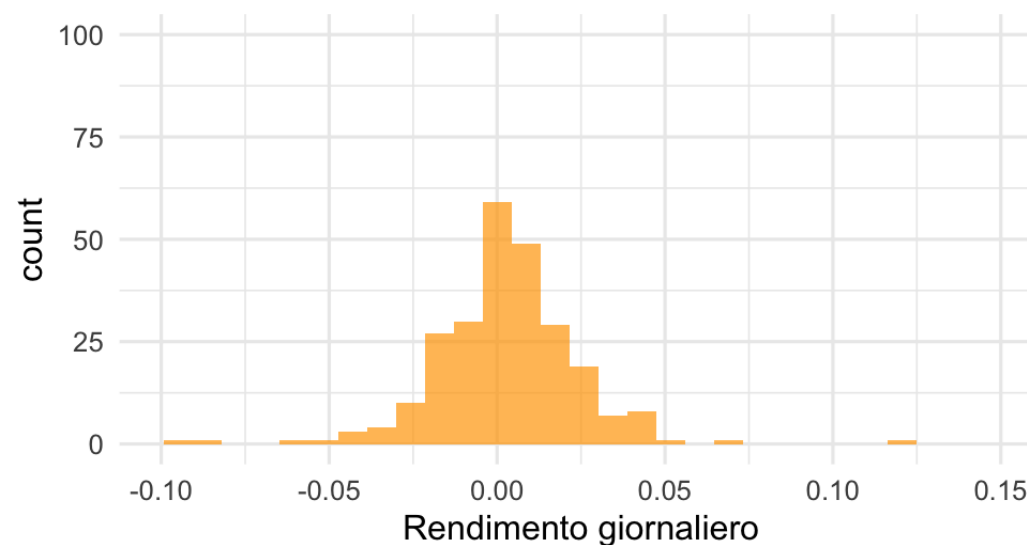
LAB

Analisi Prezzi Azioni - Variabilità



Media: 0.17% - Dev. Std. 1.3%

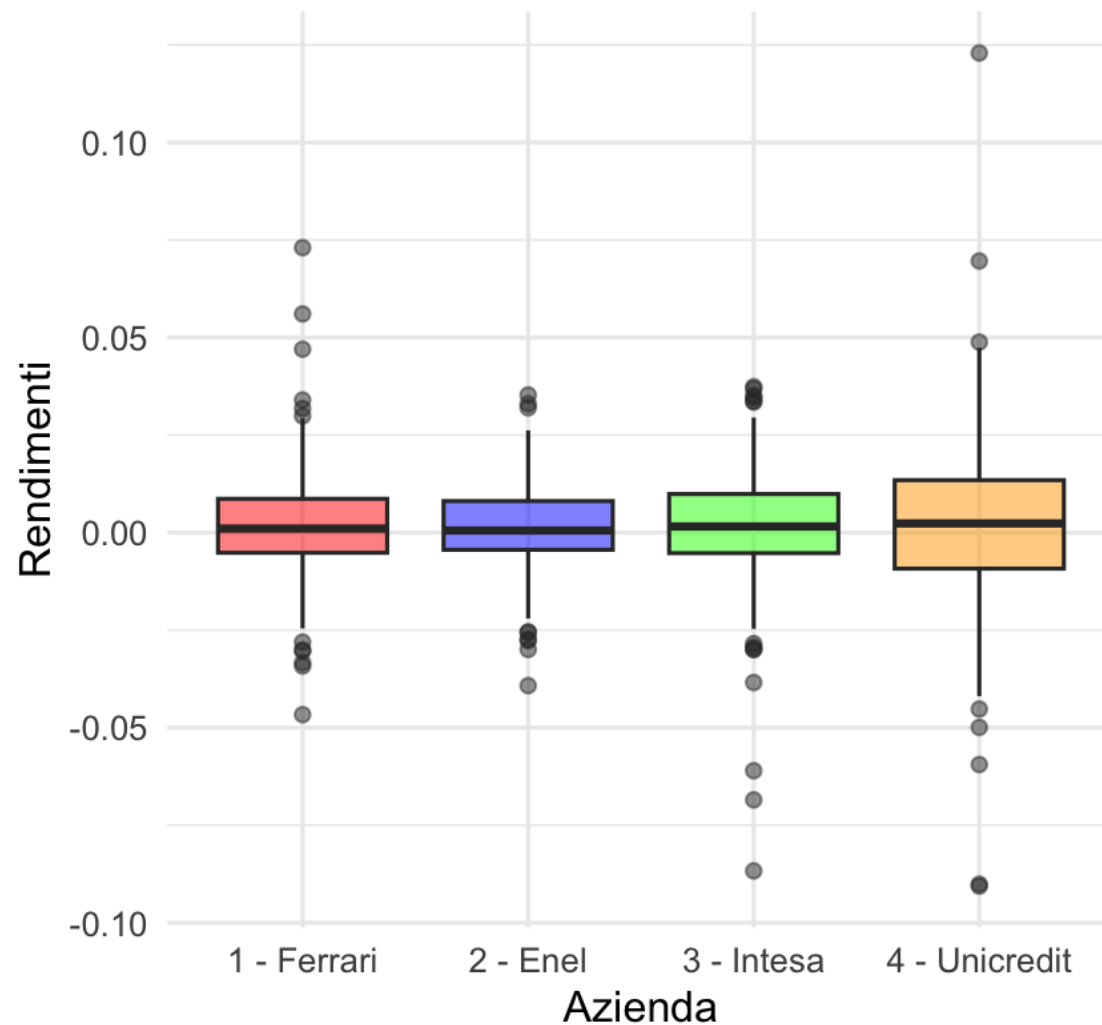
Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
-0.046658	-0.005166	0.001038	0.001722	0.008665	0.073043



Media: 0.26% - Dev. Std. 2.1%

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
-0.090631	-0.009232	0.002348	0.002699	0.013447	0.122944

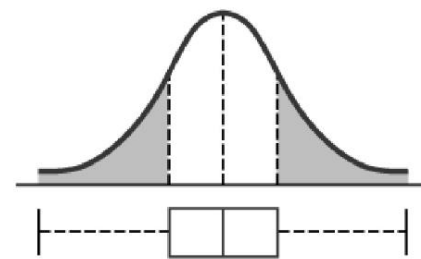
Confronto dei Boxplot



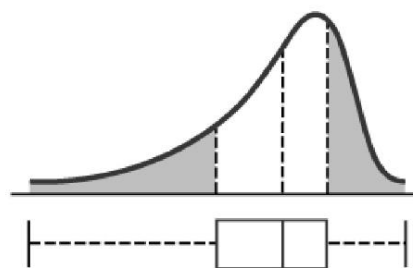
Azione	Media	Dev. Std.
Ferrari	0.17%	1.34%
Enel	0.12%	1.10%
Intesa	0.12%	1.50%
Unicredit	0.26%	2.16%

Quattro distribuzioni ipotetiche esaminate per mezzo del loro diagramma Box-Plot e dei corrispondenti poligoni.

Nota: l'area sottostante a ciascuna curva è divisa nei quartili corrispondenti ai cinque numeri di sintesi su cui si basa il Box-Plot

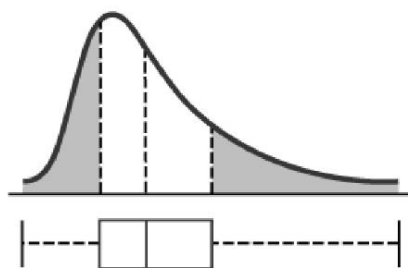


(a) Distribuzione simmetrica a campana



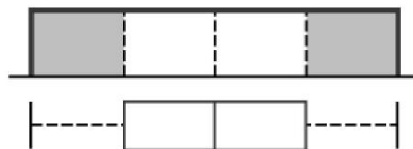
(b) Distribuzione obliqua a sinistra

Skewness negativa



(c) Distribuzione obliqua a destra

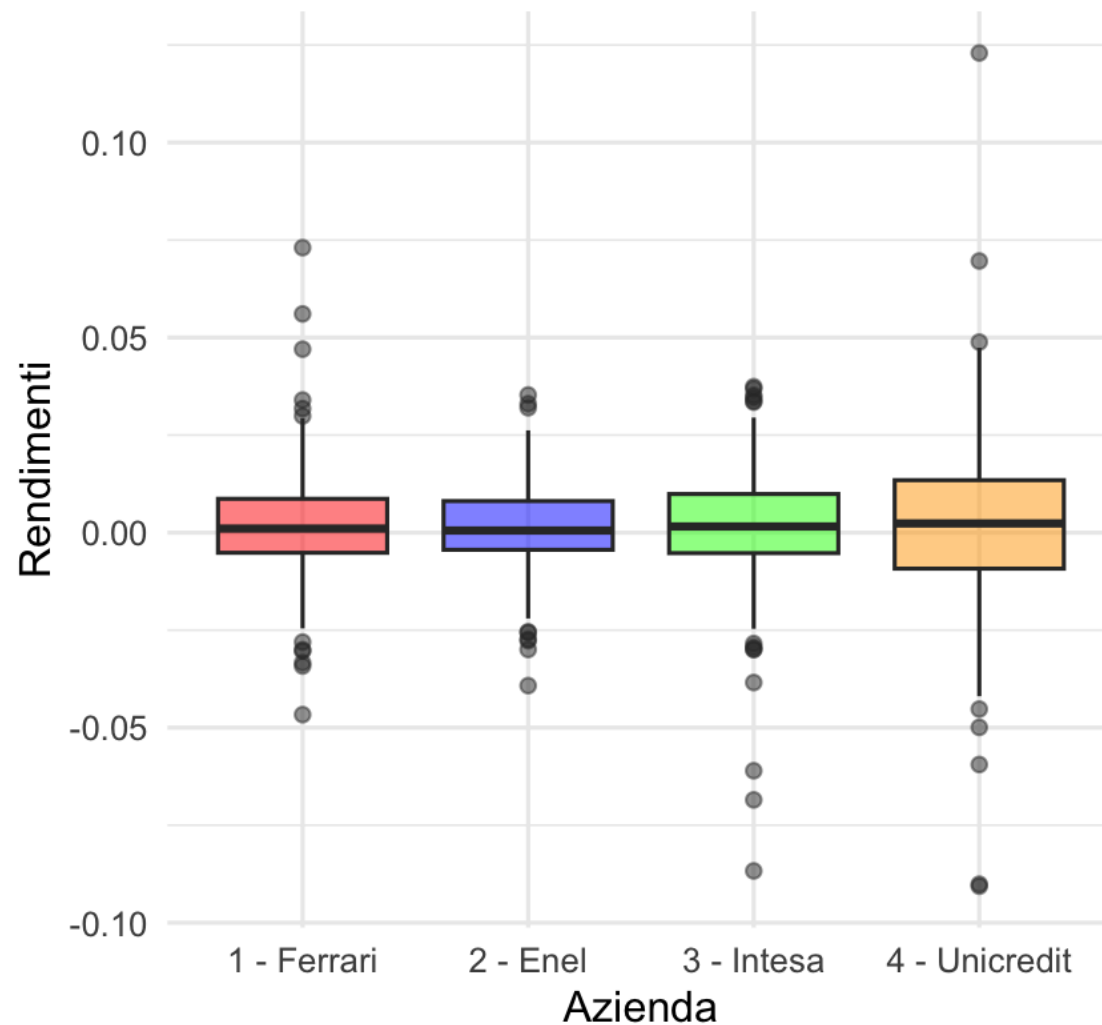
Skewness positiva



(d) Distribuzione uniforme (rettangolare)

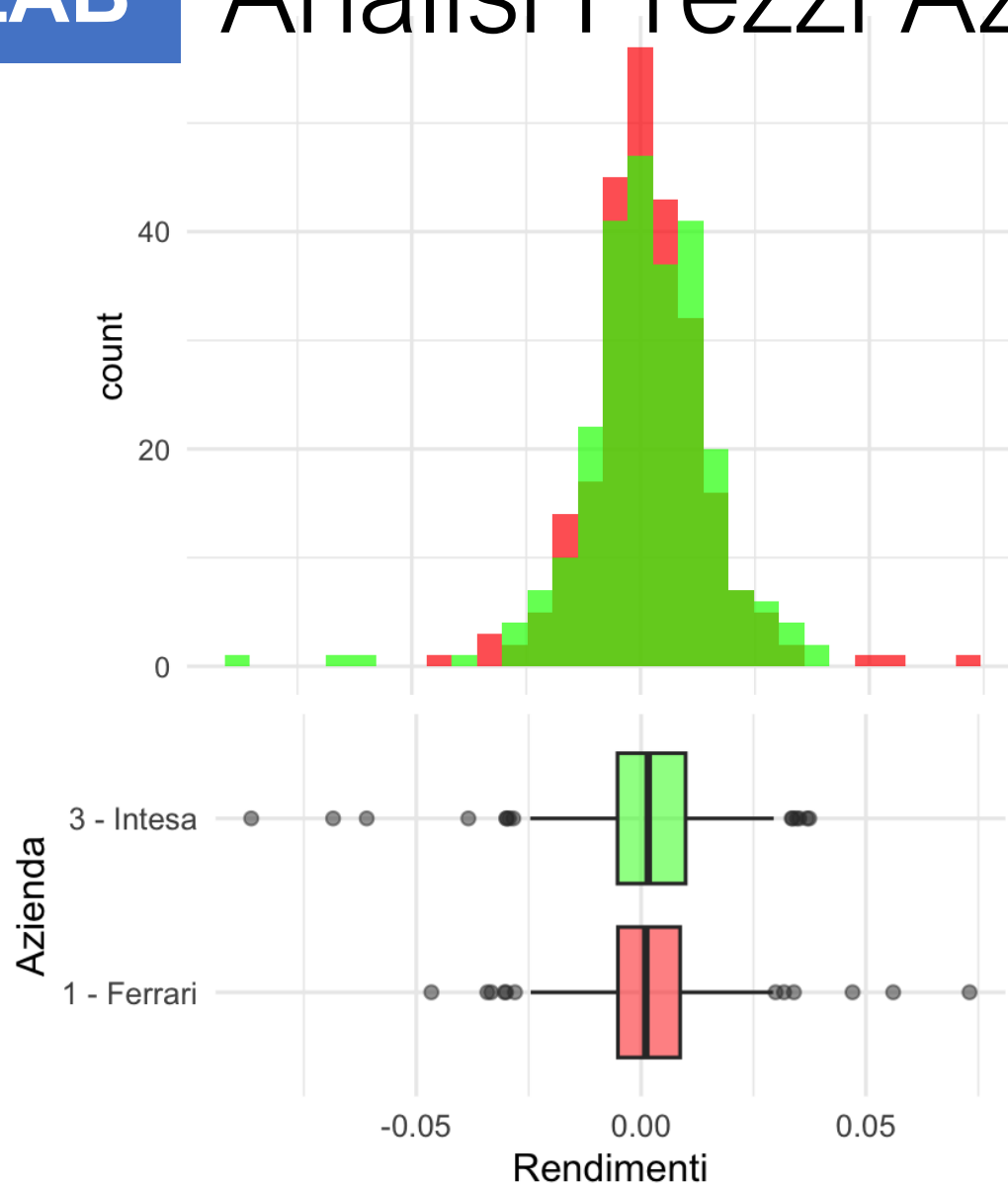
$$SK = \frac{n}{(n-1)(n-2)} \cdot \sum_{i=1}^n \frac{(x_i - \bar{x})^3}{\sigma}$$

Confronto dei Boxplot



Azione	Media	Dev. Std.	Skewness
Ferrari	0.17%	1.34%	0.65
Enel	0.12%	1.10%	-0.23
Intesa	0.12%	1.50%	-1.34
Unicredit	0.26%	2.16%	0.11

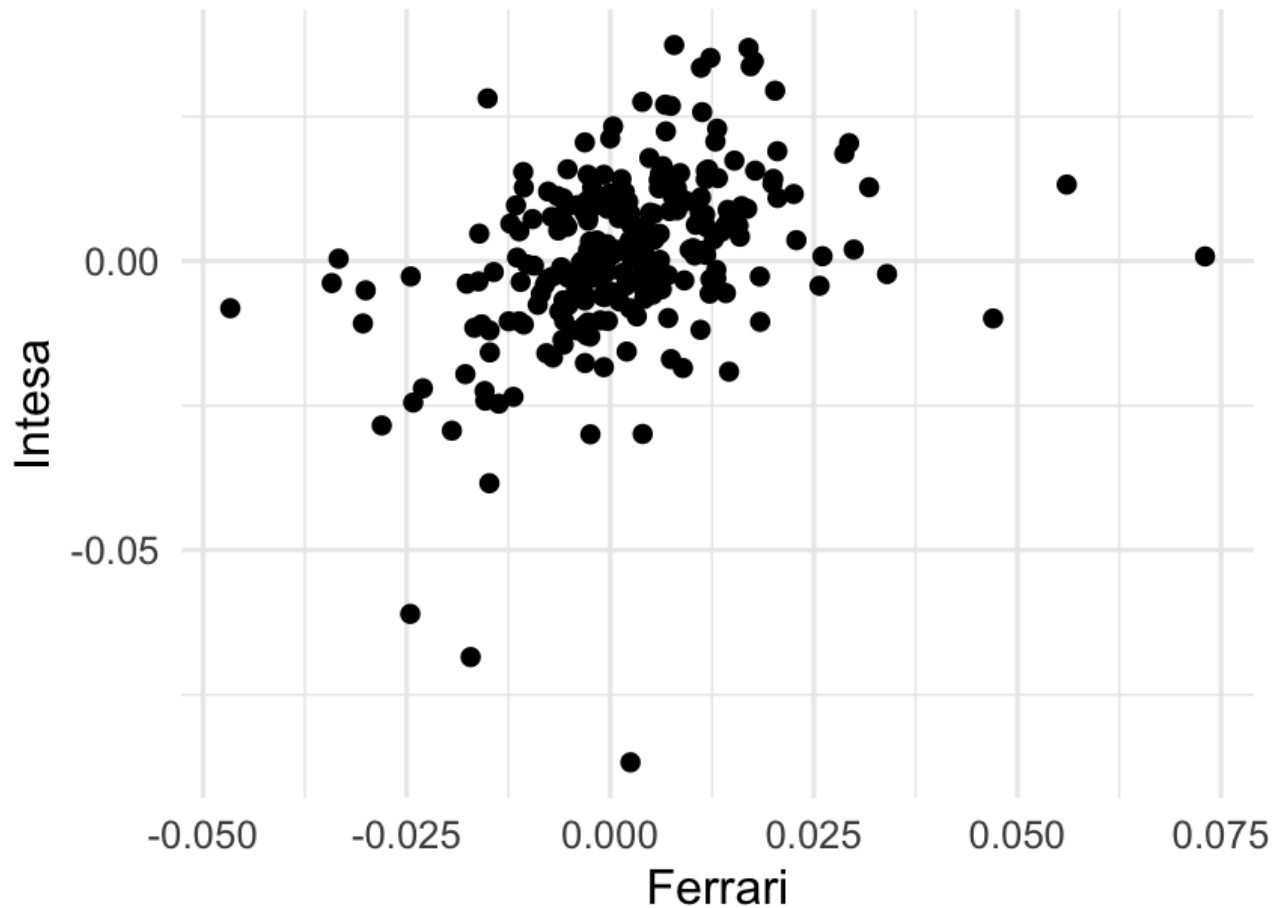
Analisi Prezzi Azioni - Forma



Azione	Media	Dev. Std.	Skewness
Ferrari	0.17%	1.34%	0.65
Intesa	0.12%	1.50%	-1.34

LAB

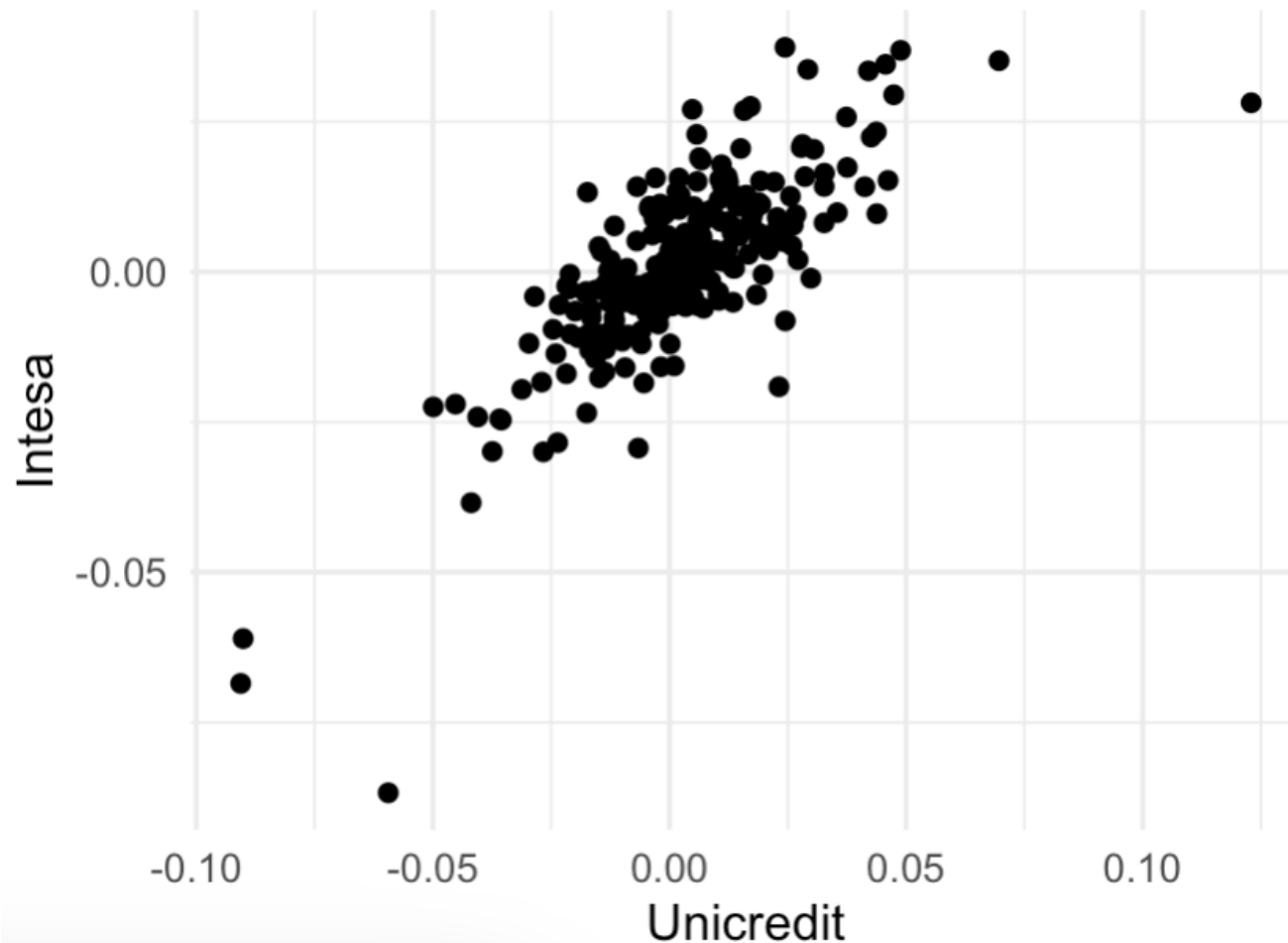
Analisi Prezzi Azioni - Bivariata



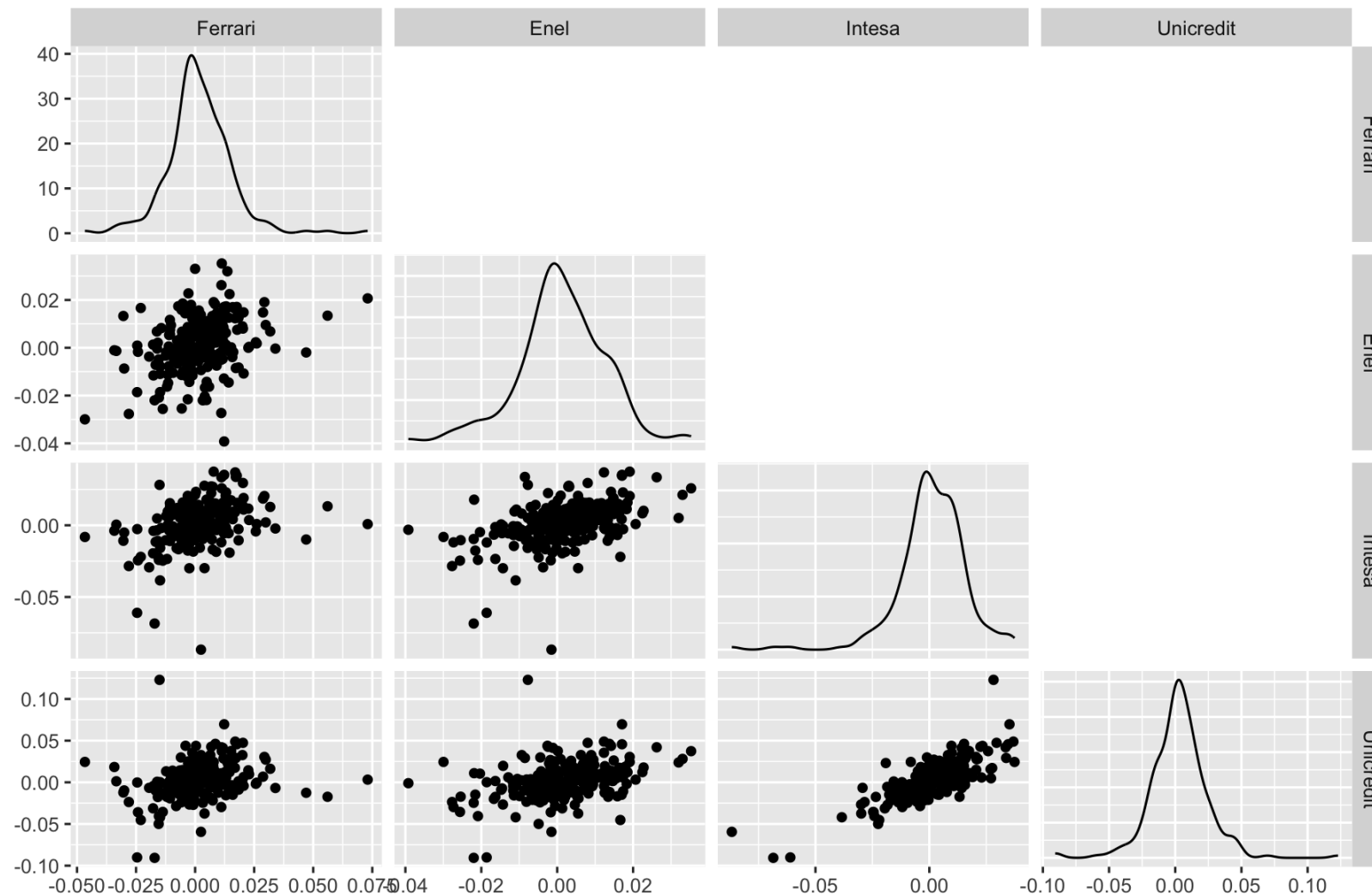
INTESA
SANPAOLO

LAB

Analisi Prezzi Azioni - Bivariata



Analisi Prezzi Azioni - Bivariata



Analisi Univariata

Varianza

$$\sigma^2 = \frac{\sum_{i=1}^N (x_i - \mu)^2}{N}$$

Analisi Bivariata

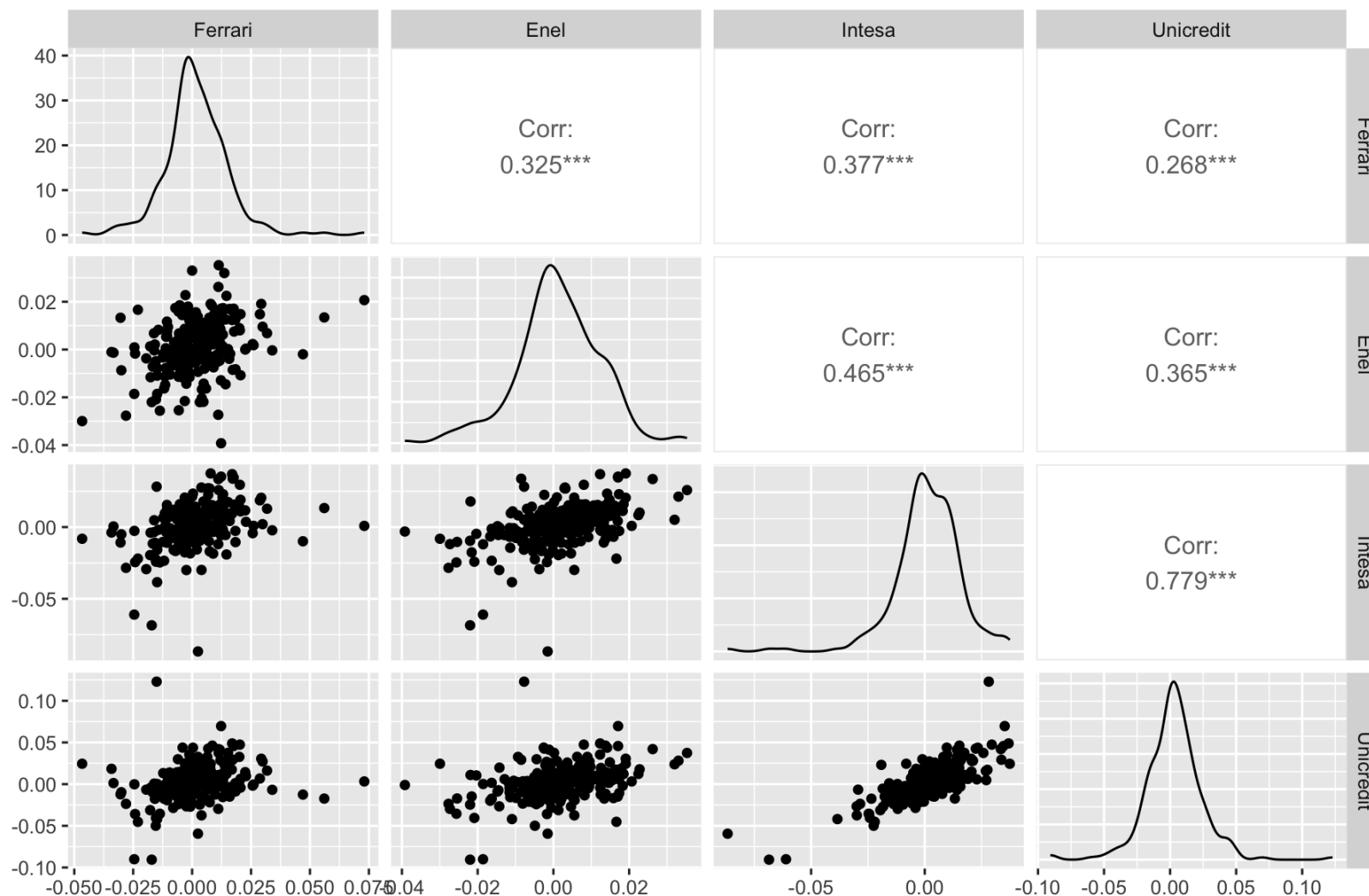
Covarianza

$$Cov(X, Y) = \frac{\sum_{i=1}^N ((x_i - media_X) \cdot (y_i - media_Y))}{N}$$

Correlazione

$$Corr(X, Y) = \frac{Cov(X, Y)}{\sqrt{Var(X)Var(Y)}}$$

Analisi Prezzi Azioni - Correlazione



Analisi Prezzi Azioni - Correlazione

	Ferrari	Enel	Intesa	Unicredit
Ferrari	1.00	0.32	0.38	0.27
Enel	0.32	1.00	0.47	0.37
Intesa	0.38	0.47	1.00	0.78
Unicredit	0.27	0.37	0.78	1.00

