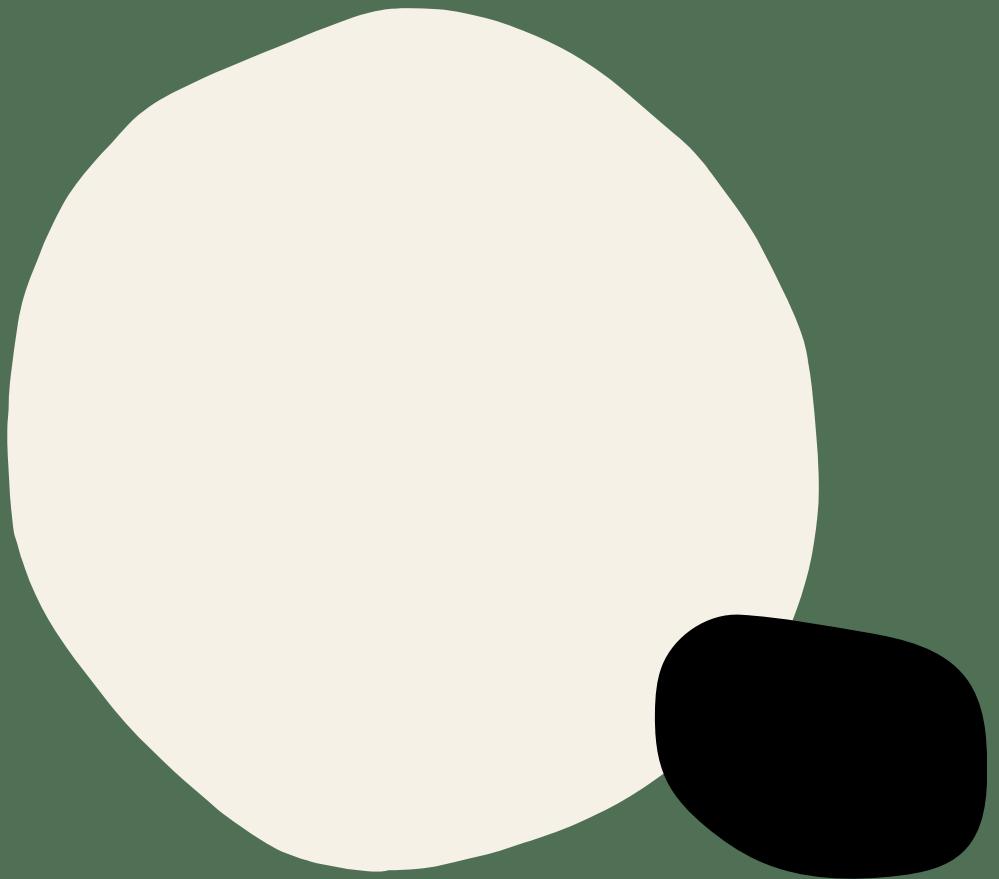


Modèle de pricing des joueurs de football

BLIBECHÉ Farès



Introduction



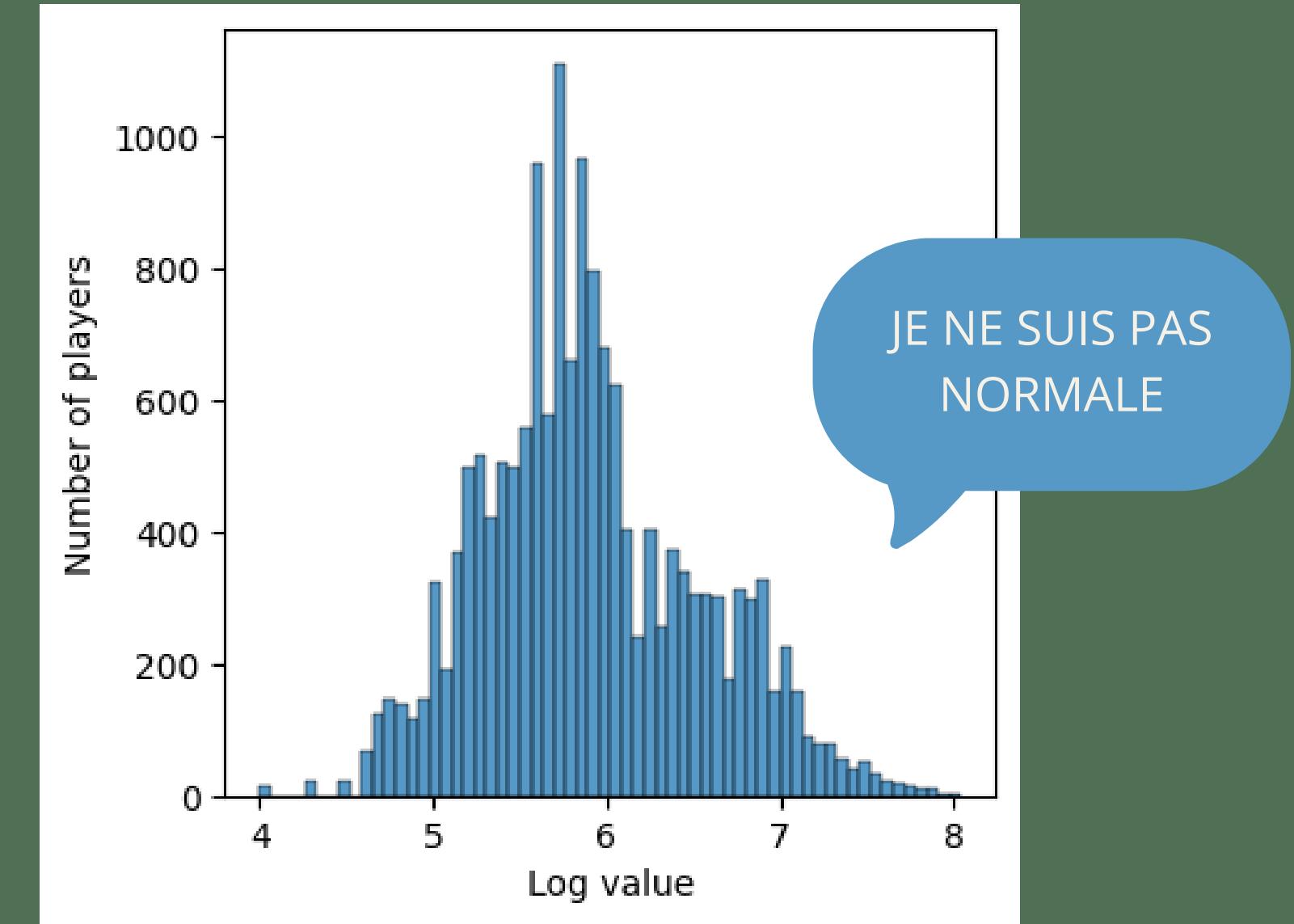
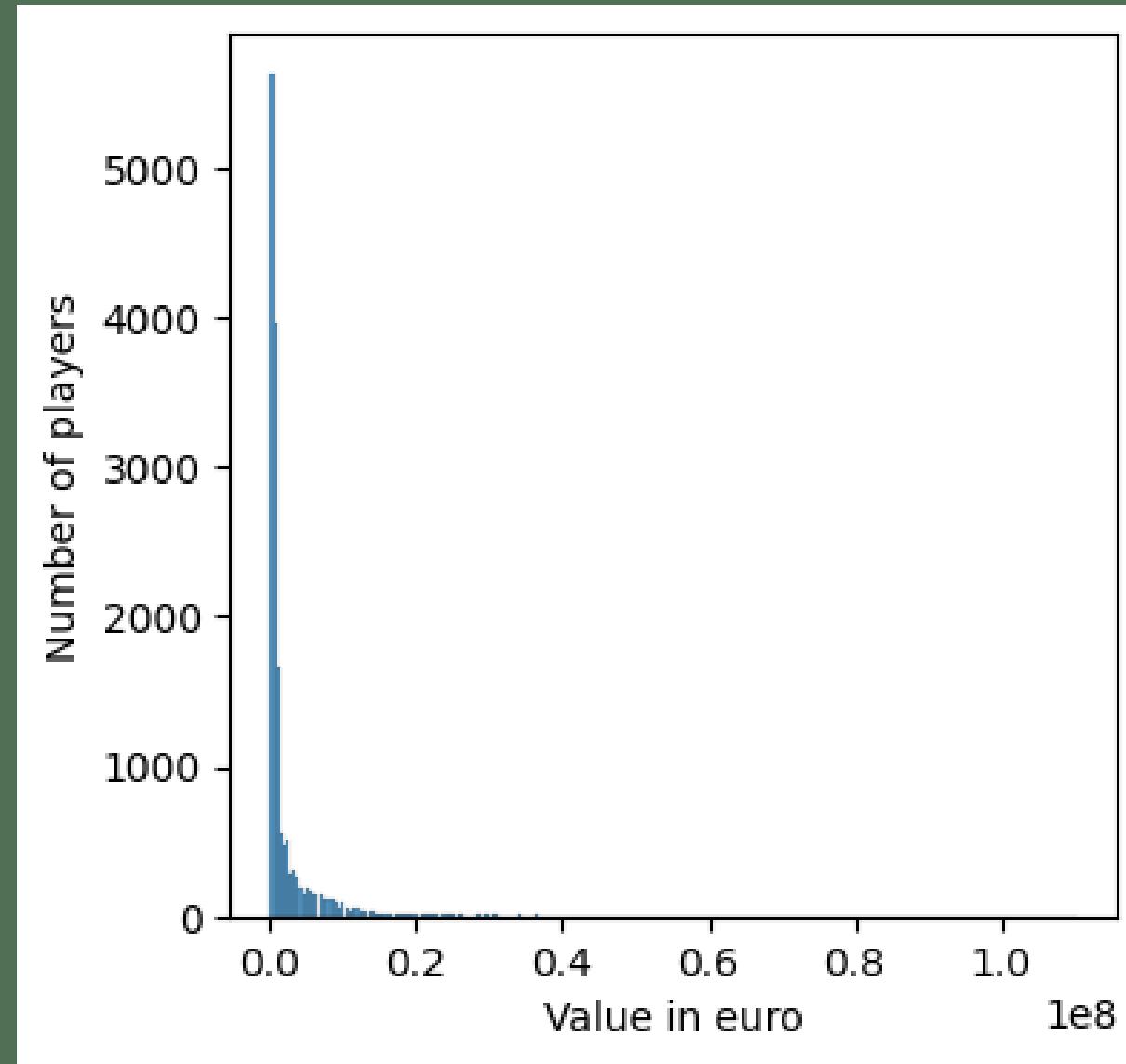
Nos données

Dataset : 18 000 joueurs de foot

Valeur marchade, données de performances, pied favori, nationalité, club, sélection, clause de départ ...

Source : Fifa19, SoFIFA.com, Kaggle

Description de nos données



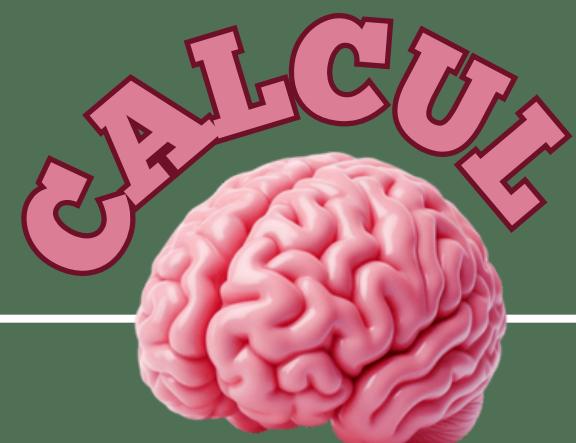
Lilliefors Test
 $p = 0.0009 < 0.001$

Nettoyage

Nationnalité	wASH	Nat_blg	Nat_mli	Nat_fr
Belgique		1	0	0
Mali		0	1	0
...	
France		0	0	1

Feature engineering

long_shots	log_lshot	sqrt_lshot	sqr_lshot
94	1.97	9.69	8836
39	1.59	6.24	1521
...
75	1.87	8.66	5625



Méthodes

Prédire :

Valeur marchande

Logarithme Valeur marchande

Méthodes

Régression linéaire

Régression LASSO

Réseau de neurones

Hyperparamètres du réseau

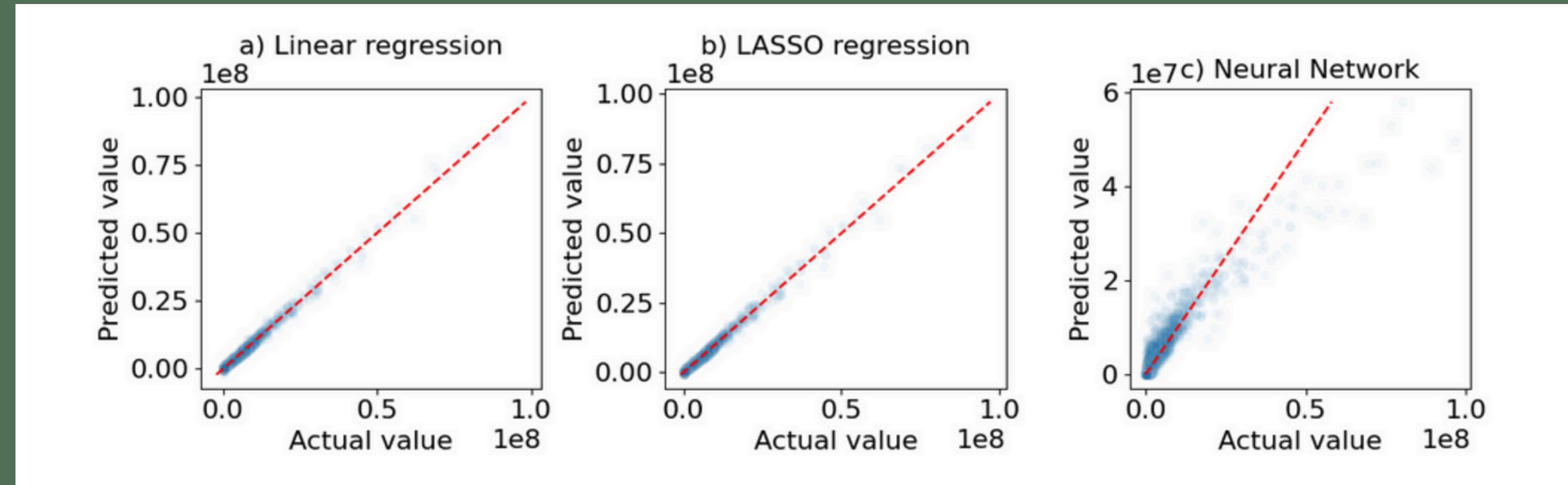
Hyperparameter	Tested values	Optimized values
Hidden layer sizes	[1], [2], [2,2], [4,2], [8,4], [16,8]	[4, 2]
Activation function	ReLU, Tanh, Logistic	ReLU
Solver	adam, sgd	adam
Initial learning rate	0.001, 0.01	0.01
Batch sizes	32, 64	64

Table A1 - Summary of train RMSE and test RMSE (for log value)

Hyperparameter	Tested values	Optimized values
Hidden layer sizes	[1], [2], [2,2], [4,2], [8,4], [16,8]	[8, 4]
Activation function	ReLU, Tanh, Logistic	ReLU
Solver	adam, sgd	adam
Initial learning rate	0.001, 0.01	0.01
Batch sizes	32, 64	32

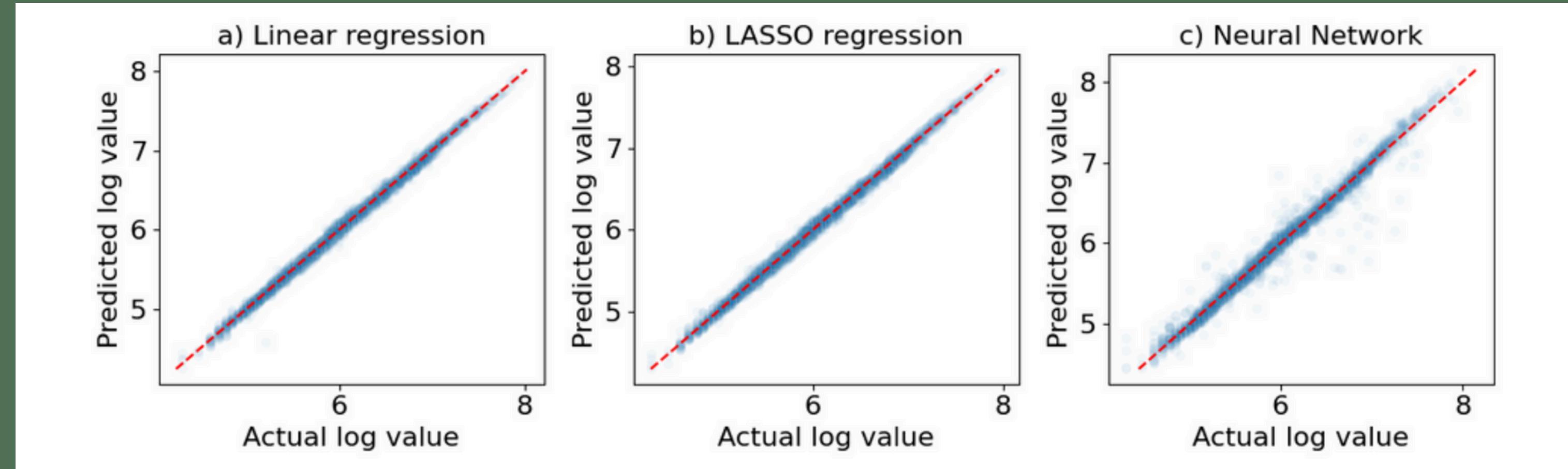
Table A2 - Summary of train RMSE and test RMSE (for log value)

Résultats pour la valeur marchande



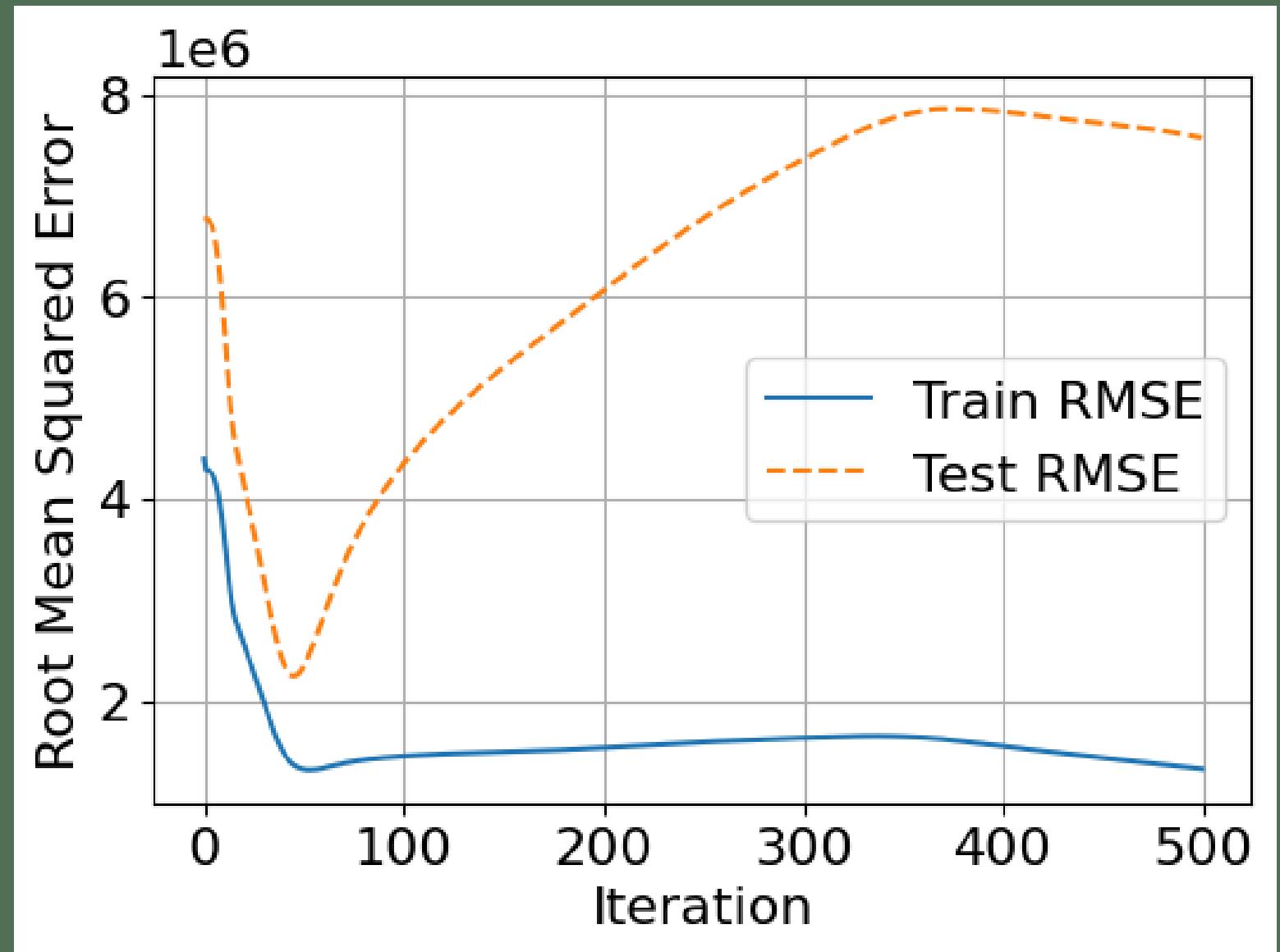
Model	Train RMSE	Test RMSE
Linear regression	439,168	493,034
LASSO regression	467,712	527,198
Neural Network	2,107,726	2,403,101

Résultats pour log valeur marchande

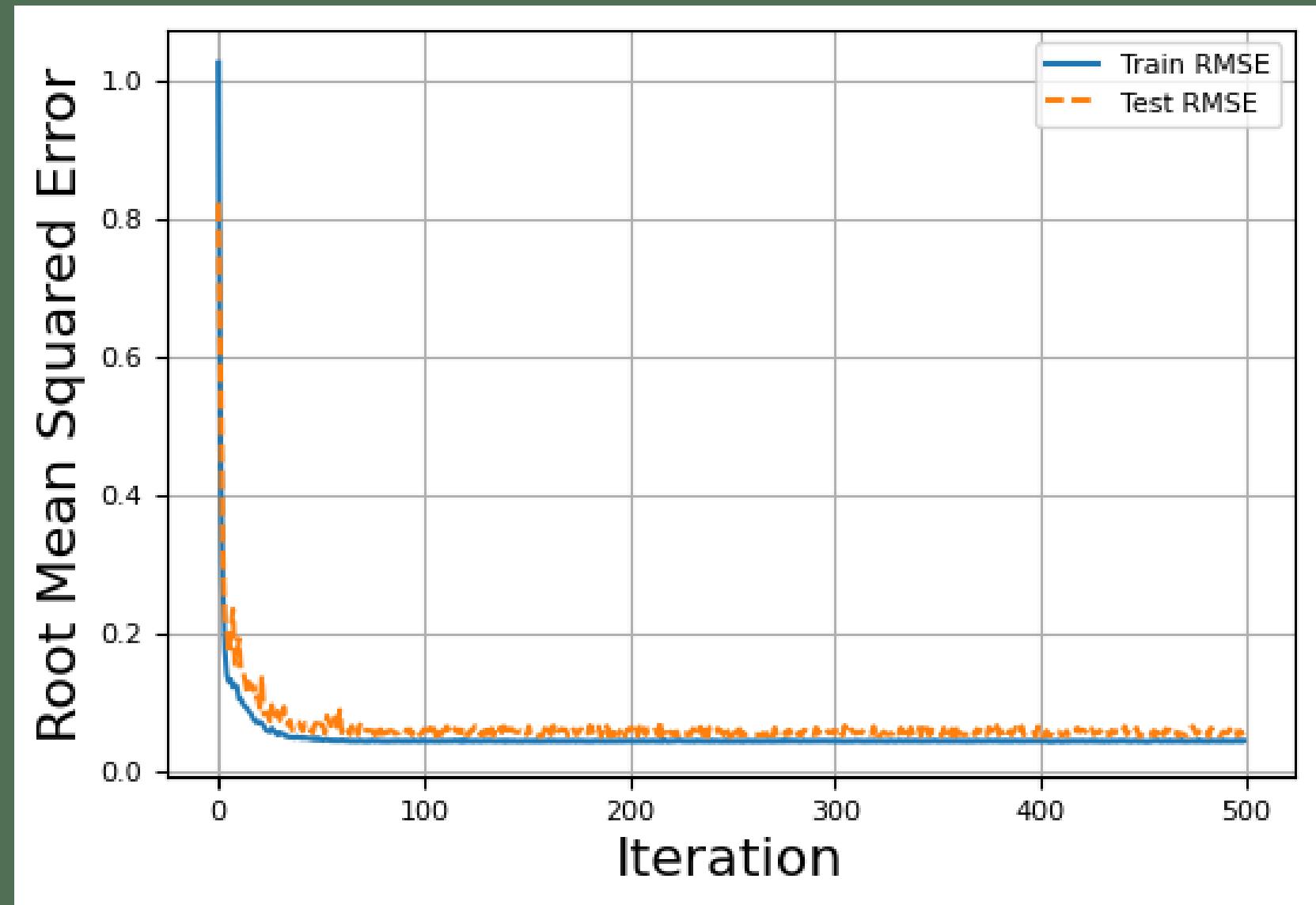


Model	Train RMSE	Test RMSE
Linear regression	0.034	0.037
LASSO regression	0.039	0.039
Neural Network	0.071	0.086

Comportement du réseau



Avec valeur marchande



Avec log valeur marchande

Conclusion !

TOP 1

Régression linéaire

TOP 2

Régression LASSO

TOP 3

Réseau de neurones

Conclusion !

TOP 1

Prédire log de la valeur
marchande

TOP 2

Prédire valeur
marchande

MERCI

