Appendix 1: Datasets information.

ID	Data sets	# of samples	# of features
1	New stock (UCI)	950	10
2	Housing (UCI)	506	10
3	Laser (UCI)	993	5
4	Delta_Elevator (KEEL)	9517	7
5	California (KEEL)	20640	9

Appendix 2: Comparison of RMSE for different strategies in Scenario A. Each set of result is expressed in the form of $a \pm b$ (c), where a denotes the mean of the RMSE, b denotes the standard deviation of the RMSE, and c denotes the ranking of the RMSE of a certain strategy

Data	Methods	$P = 3$			$c = 4$		
		$c = 3$	$c = 6$	$c = 9$	$P = 4$	$P = 6$	$P = 8$
New stock	Str I	7.90±0.76(2)	7.38±0.49(2)	8.40±0.89(2)	6.61±0.75(2)	6.83±0.97(2)	6.70±0.58(2)
	Str II	9.27±1.70(3)	8.81±1.64(3)	9.43±1.20(3)	7.46±1.57(3)	10.98±2.73(4)	9.12±1.26(3)
	No Col	19.40±1.37(5)	21.92±4.55(6)	21.17±4.73(5)	19.94±2.81(6)	24.01±3.37(6)	27.78±6.28(6)
	Centralized	4.41±0.19(1)	3.96±0.22(1)	3.77±0.31(1)	4.10±0.18(1)	4.24±0.22(1)	4.12±0.18(1)
	FL	11.33±2.08(4)	16.98±3.19(5)	23.41±2.91(6)	10.21±0.26(4)	10.49±0.64(3)	10.38±0.50(4)
	Agg	12.06±1.15(6)	11.70±1.504)	13.82±1.454)	11.89±1.89(5)	13.67±1.82(5)	10.65±2.21(5)
Housing	Str I	11.40±1.21(3)	11.87±1.24(3)	13.11±0.80(3)	12.24±1.50(3)	11.92±1.30(2)	11.25±1.75(2)
	Str II	10.68±1.68(2)	11.43±1.50(2)	13.95±2.32(2)	12.04±1.24(2)	14.28±3.08(4)	404.06±750.43(5)
	No Col	24.22±5.75(5)	25.35±6.74(5)	34.39±15.04(5)	21.59±3.73(6)	41.58±21.58(6)	1537.68±1806.37(6)
	Centralized	9.09±0.80(1)	9.65±1.68(1)	10.14±1.03(1)	9.58±1.02(1)	9.45±1.30(1)	9.81±0.88(1)
	FL	25.11±3.51(6)	33.52±3.95(6)	36.90±7.06(6)	20.79±1.85(5)	19.95±1.68 (5)	20.44±2.90(4)
	Agg	14.86±1.76(4)	15.81±1.58(4)	18.44±3.77(4)	13.90±1.67(4)	14.17±2.29(3)	15.64±4.01(3)
Laser	Str I	8.99±0.55(4)	9.41±0.85(4)	9.30±0.67(4)	9.56±0.61(4)	10.15±0.68(4)	10.25±0.71(4)
	Str II	6.62±0.93(2)	5.88±0.85(2)	5.48±0.68(2)	5.72±0.99(2)	5.65±1.16(2)	7.30±1.23(3)
	No Col	17.21±1.84(5)	17.06±2.39(5)	14.67±2.24(5)	16.98±2.66(6)	19.94±4.16(6)	22.79±3.43(6)
	Centralized	6.24±0.37(1)	5.04±0.45(1)	4.90±0.32(1)	4.98±0.47(1)	5.08±0.60(1)	5.15±0.74(1)
	FL	19.43±2.86(6)	26.35±3.5(6)	30.33±5.15(6)	15.24±2.21(5)	15.48±2.20(5)	14.68±2.04(5)
	Agg	7.33±0.59(3)	7.13±0.51(3)	7.33±0.45(3)	7.34±0.92(3)	6.46±0.73(3)	6.62±1.03(2)
Delta_ Elevator	Str I	7.27±0.14(4)	7.61±0.30(4)	7.70±0.38(4)	7.72±0.23(4)	8.03±0.23(4)	9.07±0.51(4)
	Str II	5.86±0.06(3)	5.86±0.08(3)	5.96±0.19(2)	6.11±0.07(3)	6.33±0.09(3)	6.78±0.46(3)
	No Col	8.27±0.14(6)	8.37±0.16(5)	8.48±0.14(5)	9.67±0.21 (6)	10.03±0.20(6)	10.77±0.43(5)
	Centralized	5.32±0.06(1)	5.33±0.06(1)	5.34±0.06(1)	5.30±0.06(1)	5.28±0.05(1)	5.33±0.07(1)
	FL	7.30±0.14(5)	12.25±1.67(6)	18.75±3.74(6)	8.20±1.77(5)	8.90±2.64(5)	17.96±2.58(6)
	Agg	5.64±0.12(2)	5.80±0.18(2)	6.16±0.28(3)	5.40±0.07(2)	5.41±0.06(2)	5.58±0.11(2)
California	Str I	20.31±0.51(4)	22.03±1.66(4)	22.85±1.17(4)	23.06±1.25(4)	22.06±0.85(4)	22.36±0.58(4)
	Str II	18.82±0.29(3)	18.38±0.63(3)	17.69±0.51(3)	18.71±0.50(3)	19.85±0.57(3)	20.44±0.27 (3)
	No Col	25.1±0.23(6)	25.90±0.24(5)	26.27±0.29(5)	26.57±0.37(6)	28.43±0.22(6)	29.73±0.32(6)
	Centralized	15.13±0.26(1)	17.17±0.31(2)	17.21±0.31(1)	16.29±0.21(2)	16.29±0.20(2)	16.31±0.23(2)
	FL	23.42±0.77(5)	26.92±1.45(6)	29.96±1.31(6)	24.74±0.86(5)	25.25±0.91(5)	24.56±1.16(5)
	Agg	15.87±0.20(2)	17.13±0.25(1)	17.56±0.21(2)	16.06±0.35(1)	16.22±0.38(1)	15.37±0.48(1)

Note: The values of mean and standard deviation should be multiplied by 0.01. Red font indicates that the prediction accuracy of FL or Agg is better than both Strategy I and Strategy II. Green font indicates that the prediction accuracy of Strategy II is better than that of Strategy I. The explanation also applies to Appendix 3.

Appendix 3: Comparison of RMSE for different strategies in Scenario B.

Data	Methods	$P = 3$			$c = 4$		
		$c = 3$	$c = 6$	$c = 9$	$P = 4$	$P = 6$	$P = 8$
New stock	Str I	4.46±0.17(4)	3.86±0.14(1)	3.78±0.14(3)	4.02±0.14(2)	4.12±0.23(2)	4.17±0.15(2)
	Str II	4.46±0.16(3)	3.96±0.13(5)	4.01±0.31(4)	4.06±0.14(4)	4.20±0.18(4)	4.21±0.14(4)
	No Col	4.54±0.19(5)	4.02±0.22(3)	4.05±0.23(5)	4.17±0.17(5)	4.32±0.21(5)	4.37±0.22(5)
	Centralized	4.43±0.17(1)	3.88±0.18(4)	3.74±0.17(2)	4.06±0.13(3)	4.19±0.22(3)	4.20±0.14(3)
	FL	7.83±0.35(6)	7.38±0.52(6)	8.02±0.62(6)	6.55±0.43(6)	8.40±1.07(6)	8.17±1.23(6)
	Agg	4.43±0.18(2)	3.87±0.22(2)	3.70±0.15(1)	3.92±0.10(1)	4.08±0.22(1)	4.02±0.16(1)
Housing	Str I	9.41±1.03(2)	11.58±2.49(2)	12.32±3.12(2)	12.14±4.95(3)	10.39±2.78(3)	10.00±1.33(3)
	Str II	9.47±1.06(4)	12.69±3.47(4)	15.96±6.44(6)	12.57±5.81(4)	10.76±2.95(4)	10.43±1.44(4)
	No Col	9.84±1.14(5)	13.31±4.99(6)	15.08±5.14(5)	13.07±5.60(5)	11.50±3.42(5)	11.63±3.86(5)
	Centralized	9.22±0.89(1)	9.75±1.71(1)	9.99±1.67(1)	9.49±1.37(1)	10.01±1.76(2)	9.58±0.91(2)
	FL	11.40±0.93(6)	12.82±0.82(5)	13.64±0.65(4)	14.11±1.89(6)	14.09±1.86 (6)	13.39±1.24(6)
	Agg	9.44±0.95(3)	12.18±3.35(3)	12.35±2.45(3)	10.28±2.11(2)	9.69±1.74(1)	8.93±0.81(1)
Laser	Str I	5.64±0.80(2)	4.89±0.60(2)	4.76±0.53(5)	4.78±0.37(3)	5.42±0.54(3)	4.91±0.49(3)
	Str II	5.81±0.72(3)	5.33±0.67(5)	4.94±0.67(4)	4.78±0.36(2)	5.40±0.56(2)	4.87±0.48(2)
	No Col	5.82±0.79(4)	5.29±0.68(4)	4.98±0.66(5)	4.94±2.42(5)	5.60±0.60(5)	5.14±0.55(5)
	Centralized	5.93±0.47(5)	5.01±0.52(3)	4.84±0.58(3)	4.77±0.45(4)	5.47±0.52(4)	4.90±0.53(1)
	FL	9.12±0.87(6)	9.57±0.69(6)	9.57±0.74(6)	10.31±1.28(6)	10.31±0.74(6)	10.34±0.95(6)
	Agg	5.50±0.76(1)	4.85±0.60(1)	4.73±0.57(1)	4.71±0.42(1)	5.37±0.63(1)	4.95±0.65(4)
Delta_ Elevator	Str I	5.30±0.06(1)	5.31±0.60(2)	5.31±0.06(1)	5.30±0.05(5)	5.34±0.05(1)	5.33±0.10(2)
	Str II	5.31±0.06(4)	5.33±0.08(5)	5.54±0.23 (5)	5.29±0.05(3)	5.36±0.05(4)	5.32±0.10(1)
	No Col	5.31±0.06(4)	5.32±0.06(4)	5.33±0.06(4)	5.29±0.05(3)	5.36±0.05(4)	5.34±0.10(4)
	Centralized	5.30±0.06(1)	5.30±0.06(1)	5.31±0.06(1)	5.28±0.05(1)	5.34±0.05(1)	5.33±0.10(1)
	FL	5.71±0.05(6)	5.96±0.10(6)	6.14±0.20(6)	5.95±0.10(6)	6.04±0.11(6)	5.94±0.15(6)
	Agg	5.30±0.06(3)	5.31±0.06(2)	5.31±0.06(1)	5.28±0.05(1)	5.34±0.05(1)	5.33±0.10(1)
California	Str I	15.21±0.24(4)	17.00±0.18(2)	16.94±0.22(2)	16.26±0.15(2)	16.43±0.16(4)	16.29±0.32(3)
	Str II	15.21±0.23(3)	17.09±0.23(3)	17.13±0.33(3)	16.29±0.15(4)	16.42±0.16(3)	16.27±0.32 (2)
	No Col	15.38±0.62(5)	25.90±0.18(6)	26.27±0.30(6)	16.30±0.23(5)	16.47±0.23(5)	16.34±0.37(4)
	Centralized	15.10±0.20(2)	17.13±0.19(4)	17.19±0.23(4)	16.27±0.18(3)	16.42±0.13(2)	16.34±0.53(5)
	FL	19.79±0.70(6)	20.72±0.75(5)	20.53±0.63(5)	20.64±0.29(6)	20.13±0.62(6)	20.40±0.55(6)
	Agg	14.76±0.25(1)	16.79±0.35(1)	16.65±0.19(1)	15.71±0.32(1)	15.72±0.32(1)	15.41±0.53(1)