Economic Regulation Authority

Material constrained portfolio determination

Quarter 1 – 2024

30 April 2024

D275781

Contents

List of appendices

Executive summary

This is the ERA's determination of material constrained portfolios in the Wholesale Electricity Market (WEM), from constraint data over the 8:00am 1 January 2024 to 7:59am 1 April 2024 three-month rolling test window.[1] This set of material constrained portfolios replaces the ERA's previously published set of material constrained portfolios on 8 March 2024.[2] The ERA's determination was made following the WEM Procedure for portfolio determinations.[3]

This determination is part of the WEM Rules' market power mitigation framework which aims to focus regulatory monitoring and surveillance effort on those entities with the greatest potential to exercise market power. The ERA monitors market participants' price offers in the real-time market to ensure that they are compliant with the general trading obligations, with particular focus on those facilities assigned to a material constrained portfolio.[4]

Material constrained portfolios contain those facilities that have the potential to exert localised market power due to network constraints.[5] Market participants whose facilities received energy uplift payments in more than 10 per cent of relevant intervals over the associated three-month rolling test window are part of a material constrained portfolio.[6] All facilities identified in the material constrained portfolios must comply with the requirements under the WEM Rules which includes record keeping obligations on offer price construction.[7]

Importantly, market participants whose facilities that are not included in these material constrained portfolios are still monitored. The ERA monitors ***all*** market participant bidding in ***all*** intervals as required by the WEM Rules. The ERA expects all market participants to comply with the offer construction guidelines as required by the WEM Rules.[8]

1 The ERA must make its material constrained portfolios determination within 20 business days of the end of the rolling test window as required by the Wholesale Electricity Market Rules (WA), 1 April 2024, Rule 2.16C.2, (online).

2 Economic Regulation Authority, 8 March 2024, *Material constrained portfolio determination*, (online), and Wholesale Electricity Market Rules (WA), 1 April 2024, Rule 2.16C.2A, (online).

3 Economic Regulation Authority, October 2023, *WEM Procedure: Portfolio Determination*, (online).

4 Wholesale Electricity Market Rules (WA), 1 April 2024, Rule 2.16C.4(b), (online).

5 Energy Policy Western Australia, *Market Power Mitigation Strategy: Information Paper*, 10 November 2022, p. 21, (online).

6 Wholesale Electricity Market Rules (WA), 1 April 2024, Rule 2.16C.2, (online). A 'relevant interval' is an interval in which a constraint equation bound, and the facility received an energy uplift payment.

7 Further information is available in Economic Regulation Authority, 2023, *Offer Construction Guideline*, Chapter 10, (online). The record keeping requirement is in Wholesale Electricity Market Rules (WA), 1 April 2024, Rule 2.16C.3, (online).

8 Wholesale Electricity Market Rules (WA), 1 April 2024, Rule 2.16A.1 and Section 2.16D, (online).

1. Introduction

The market power mitigation framework requires the ERA to complete two processes to identify those facilities with the greatest potential to exercise market power in the real-time market. These processes are:

1. Identify portfolios of facilities and those which are material portfolios.[9] The ERA published its latest portfolio and material portfolio determination on 11 April 2024.[10]

2. Identify those portfolios of facilities with the potential to exercise localised market power, due to network constraints that bound which affected dispatch in the real-time market. These portfolios are called material constrained portfolios.[11]

This determination uses the portfolios published on 11 April 2024 as an input into the assessment of which network constraints bound and which facilities received uplift payments related to those binding network constraints. Those facilities that received constrained uplift payments in 10 per cent or more of relevant intervals over the three-month rolling test window (from 8:00am 1 January 2024 to 7:59am 1 April 2024) are considered material constrained portfolios.[12] All market participants with facilities that are determined to be in a material constrained portfolio must keep adequate records as per the WEM Rules to substantiate and justify their offers into the WEM.[13]

1.1 ERA's determination process

To make this determination, the ERA:

1. Identified the constrained portfolios of facilities on 15 April 2024.[14]

2. Identified each material constrained portfolio and published this determination and notified the affected market participants on 30 April 2024 of their registered facilities being classified under a material constrained portfolio.[15]

To identify the constrained portfolios, the ERA:

1. Identified each constraint equation that bound for at least one interval between 8:00am 1 January 2024 to 7:59am 1 April 2024 (the three-month rolling test window).

2. Identified each constrained portfolio of facilities for each identified constraint equation.

9 Wholesale Electricity Market Rules (WA), 1 April 2024, Rules 2.16B.1 and 2.16C.1, (online).

10 Economic Regulation Authority, 11 April 2024, *Portfolio identification and material portfolio – Determination*, (online).

11 Energy Policy Western Australia, *Market Power Mitigation Strategy: Information Paper*, 10 November 2022, p. 11, (online).

12 A 'relevant interval' is an interval in which a constraint equation bound, and the facility received an energy uplift payment.

13 Wholesale Electricity Market Rules (WA), 1 April 2024, Rule 2.16C.3, (online).

14 Ibid, 2.16B.2, (online).

15 Ibid, 2.16C.2, (online).

To identify each material constrained portfolio, the ERA:

1. Calculated the constrained uplift payment ratio for each constrained portfolio, for both the three-month rolling test window and any relevant fixed assessment period.[16]

2. Classified those constrained portfolios with constrained uplift payments in more than 10 per cent of all relevant intervals for which the relevant network constraint bound within the three-month rolling test window as material constrained portfolios.

1.2 Record keeping obligations for facilities that are part of a material constrained portfolio

All market participants with facilities that are part of a material constrained portfolio must ensure that adequate records are kept that can be independently verified to support a market participant's price offers for those facilities made in the real-time market, within three months of receiving the notice from the ERA.

An example of the types of records that are required include:

- Internal governance arrangements
- Methods, assumptions and cost inputs.

This includes those documents that market participants use to develop their prices, quantities and ramp rates for each identified facility.

[16] This includes any Fixed Assessment Periods during the rolling test window which is a period of at least seven consecutive trading days in which a relevant constraint equation has bound continuously within a rolling test window. This is defined in Wholesale Electricity Market Rules (WA), 1 April 2024, Chapter 11, (online).

2. Assessment of constrained portfolios

The ERA has completed its assessment of constrained portfolios and identified each constraint equation for network constraints that bound within the rolling test window of 8:00am 1 January 2024 to 7:59am 1 April 2024. Constraint equations are a mathematical representation of a constraint or limitation on how electricity can be transferred over parts of the network.[17] A constraint equation is considered binding when AEMO applies a constraint to limit the risk to power system security or reliability. When a constraint equation is applied, those registered facilities that are located behind that constraint are assigned to a constrained portfolio. The constrained portfolio includes all registered facilities behind the constraint equation that are in the same portfolio.

The ERA identified 85 unique binding network constraint equations in the 8:00am 1 January 2024 to 7:59am 1 April 2024 rolling test window. This resulted in identification of 638 unique constrained portfolios. A full list of constraint equations and constrained portfolios is included in Appendix 4.

The ERA used the portfolios identified in April 2024 for this constrained portfolio identification process.[18]

2.1 Constraint equation identification

The ERA identified 85 unique binding network constraint equations over the 8:00am 1 January 2024 to 7:59am 1 April 2024 rolling test window. The ERA used AEMO's constraint equation data to identify all network constraints that bound during the rolling test window. The data was filtered to include data for binding network constraints only from within the rolling test window. AEMO publishes this data on its public data site, which is embedded in the dispatch solution files.[19]

2.2 Constrained portfolio identification

The ERA identified 638 unique constrained portfolios over this rolling test window. The constrained portfolios consist of those registered facilities identified in the ERA's portfolio determination and where the facility is located behind a binding network constraint.[20] Registered facilities can be assigned to multiple constrained portfolios.[21]

The ERA uses a combination of data provided by AEMO and information available in AEMO's public constraints library to identify the constrained portfolios.[22]

17 Wholesale Electricity Market Rules (WA) 1 April 2024, Chapter 11, (online).

18 Economic Regulation Authority, April 2024, *Portfolio Identification and Material Portfolio Determination*, p. 3, (online).

19 Australian Energy Market Operator, Market Data Western Australia, (online) [accessed 10 April 2024].

20 Economic Regulation Authority, December 2023, *Portfolio Identification and Material Portfolio Determination*, p. 3, (online).

21 Wholesale Electricity Market Rules (WA) 1 April 2024, Rule 2.16B.3, (online).

22 Australian Energy Market Operator, 'Operational Constraints Library', (online) [accessed 10 April 2024].

3. Material constrained portfolio determination

After identifying the constrained portfolios over a rolling test window, the ERA must determine the material constrained portfolios by calculating and applying the materiality threshold specified in the WEM Rules to the constrained uplift payment ratio (see section 3.1). The ratio is a percentage of the number of dispatch intervals where a network constraint bound and any registered facilities within the relevant constrained portfolio that received energy uplift payments.

A material constrained portfolio is a constrained portfolio that meets or exceeds the 10 per cent threshold in its constrained uplift payment ratio. The ERA has notified market participants that have registered facilities allocated to a material constrained portfolio. The ERA monitors any prices offered by the market participant in the real time market in line with the market power test.[23,24]

Market participants have three months from the date of receipt of a material constrained portfolio determination notice to maintain additional records to support their compliance with the general trading obligations under the WEM Rules.[25] Additional guidance regarding the record keeping obligations is available in the WEM procedure detailing portfolio determination and in the offer construction guideline.[26,27]

3.1 Constrained uplift payment ratio

The ERA identifies those constrained portfolios that have received energy uplift payments in 10 per cent or more relevant dispatch intervals within the rolling test window.[28] Where this occurs, the constrained portfolio is deemed to be a material constrained portfolio and the facilities within each material constrained portfolio are considered to have the potential to exercise market power when located behind a network constraint.

The calculation of the constrained uplift payment ratio is:[29]

$$Constrained\ Uplift\ Payment\ Ratio = \frac{CP\_UP}{NC} \times 100$$

where:

i. CP_UP is the number of dispatch intervals in the rolling test window or fixed assessment period (as applicable) in which:

   1. the constraint equation relevant to the identification of the constrained portfolio identified under clause 2.16B.2(a) bound; and

[23] Wholesale Electricity Market Rules (WA) 1 April 2024, Rule 2.16C.2(d), (online).

[24] Ibid, Rule 2.16C.4, (online).

[25] Ibid, Section 2.16A, (online).

[26] Economic Regulation Authority, 2023, *WEM Procedure: Portfolio Determination*, p. 8, (online).

[27] Economic Regulation Authority, 2023, *Offer Construction Guideline*, p. 56, (online).

[28] This includes any Fixed Assessment Periods during the rolling test window which is a period of at least seven consecutive trading days in which a relevant constraint equation has bound continuously within a rolling test window. This is defined in Wholesale Electricity Market Rules (WA), 1 April 2024, Chapter 11, (online).

[29] Wholesale Electricity Market Rules (WA), 1 April 2024, Rule 2.16C.2(a), (online).

2. a registered facility in the constrained portfolio received an energy uplift Payment; and

ii. NC is the total number of dispatch intervals in the rolling test window or fixed assessment period (as applicable) in which the constraint equation relevant to the identification of the constrained portfolio bound.

3.1.1 Constrained uplift payment ratio calculation results

The constrained uplift payment ratio calculation is applied to the rolling test window and in any relevant fixed assessment periods.[30] The calculation returned 100 of 638 identified constrained portfolios with a non-zero result.

Full results of the calculation are provided in Appendix 4.

3.2 Material constrained portfolios

The constrained uplift payment ratio calculation resulted in 70 material constrained portfolios, capturing a total of 38 different facilities belonging to 14 different market participants.

Table 1 lists all material constrained portfolios. These are identified as all constrained portfolios that met or exceeded the 10 per cent threshold of the constrained uplift payment ratio calculation. No relevant fixed assessment periods were identified in this rolling test window. This list of material constrained portfolios replaces the previously published list of material constrained portfolios.[31]

Differences between this material constrained portfolio determination and the previous determination are detailed in Chapter 4.

Table 1: List of material constrained portfolios

Constrained portfolio	Constraint equation	Registered facility	Constrained uplift payment ratio (%)[32]
1	DCCE-WEMDEUI-Security-278	PINJAR_GT5	48
7	DCCE-WEMDEUI-Security-394	GREENOUGH_RIVER_PV1	58
8	DCCE-WEMDEUI-Security-395	GREENOUGH_RIVER_PV1	19
9	DCCE-WEMDEUI-Security-419	PRK_AG	67
12	DCCE-WEMDEUI-Security-539	PRK_AG	98
14	DCCE-WEMDEUI-Security-542	TESLA_GERALDTON_G1	88
24	Island(NC) * {NIL} [Manual(TESLA_GERALDTON_G1)]	TESLA_GERALDTON_G1	12

30 Economic Regulation Authority, *WEM Procedure: Portfolio Determination*, October 2023, 4.2.1, (online).

31 Wholesale Electricity Market Rules (WA), 1 April 2024, Rule 2.16C.2A, (online).

32 Value rounded to the nearest percentage point.

Constrained portfolio	Constraint equation	Registered facility	Constrained uplift payment ratio (%)[32]
72	NIL > CVP0 {KEM-MRR 81} [KEM-MRR 82 (KEM~)]	NAMKKN_MERR_SG1	20
75	NIL > CVP0 {KEM-MRR 81} [KEM-MRR 82 (KEM~)]	TESLA_KEMERTON_G1 TESLA_NORTHAM_G1 TESLA_PICTON_G1	17
85	NIL > CVP0 {MH-PNJ 81} [PNJ81-CMP (PNJ-)]	NAMKKN_MERR_SG1	11
120	NIL > CVP0 {MU-NT 91} [MU-NGS X1 (MU~)]	COLLIE_G1 KEMERTON_GT11 KEMERTON_GT12 MUJA_G6 MUJA_G7 MUJA_G8 PINJAR_GT1 PINJAR_GT10 PINJAR_GT11 PINJAR_GT2 PINJAR_GT3 PINJAR_GT4 PINJAR_GT5 PINJAR_GT7 PINJAR_GT9 WEST_KALGOORLIE_GT2 WEST_KALGOORLIE_GT3	31
171	NIL > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	COCKBURN_CCG1 COLLIE_G1 KEMERTON_GT11 KEMERTON_GT12 KWINANA_GT2 KWINANA_GT3 MUJA_G6 MUJA_G7 MUJA_G8 WEST_KALGOORLIE_GT2 WEST_KALGOORLIE_GT3	11
184	NIL > {D-MJ 81 (D)} [GLT-FFD 81 (GLT~)]	PRK_AG	75
194	NIL > {D-MJ 81} [GLT-FFD 81 (GLT~)]	NAMKKN_MERR_SG1	36
197	NIL > {D-MJ 81} [GLT-FFD 81 (GLT~)]	TESLA_NORTHAM_G1	50
210	NIL > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	ALCOA_WGP	16

Constrained portfolio	Constraint equation	Registered facility	Constrained uplift payment ratio (%)[32]
214	NIL > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	PRK_AG	20
218	NIL > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	TESLA_KEMERTON_G1 TESLA_NORTHAM_G1 TESLA_PICTON_G1	34
272	NIL > {MRT-NOR 81 (MRT)} [MU-NGS X1 (MU~)]	MERSOLAR_PV1	43
281	NIL > {NB-PBY 81} [NT-LDE 81 (NT~)]	COCKBURN_CCG1 KWINANA_GT2 KWINANA_GT3 MUNGARRA_GT1 MUNGARRA_GT3 PINJAR_GT1 PINJAR_GT10 PINJAR_GT11 PINJAR_GT2 PINJAR_GT3 PINJAR_GT4 PINJAR_GT5 PINJAR_GT7 PINJAR_GT9	100
289	NIL > {NBT T2} [TST-TS 81 (TS-)]	MUNGARRA_GT1 MUNGARRA_GT3 PINJAR_GT1 PINJAR_GT10 PINJAR_GT11 PINJAR_GT2 PINJAR_GT3 PINJAR_GT4 PINJAR_GT5 PINJAR_GT7 PINJAR_GT9	100
334	NIL > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	ALCOA_WGP	20
339	NIL > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	PRK_AG	17

Constrained portfolio	Constraint equation	Registered facility	Constrained uplift payment ratio (%)[32]
342	NIL > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	COCKBURN_CCG1 COLLIE_G1 KEMERTON_GT11 KEMERTON_GT12 KWINANA_GT2 KWINANA_GT3 MUJA_G6 MUJA_G7 MUJA_G8 WEST_KALGOORLIE_GT2 WEST_KALGOORLIE_GT3	23
343	NIL > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	TESLA_KEMERTON_G1 TESLA_PICTON_G1	29
345	NIL > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	TIWEST_COG1	20
351	NIL > {PJR-CTB 81 (PJR)} [PJR-RGN 81 (RGN~)]	MUNGARRA_GT1 MUNGARRA_GT3 PINJAR_GT1 PINJAR_GT10 PINJAR_GT11 PINJAR_GT2 PINJAR_GT3 PINJAR_GT4 PINJAR_GT5 PINJAR_GT7 PINJAR_GT9	14
357	NIL > {PJR-CTB 81} [PJR-RGN 81 (RGN~)]	MUNGARRA_GT1 MUNGARRA_GT3 PINJAR_GT1 PINJAR_GT10 PINJAR_GT11 PINJAR_GT2 PINJAR_GT3 PINJAR_GT4 PINJAR_GT5 PINJAR_GT7 PINJAR_GT9	14
384	NIL > {SNR-WGP-APJ 81} [PNJ-APJ 81 (APJ~)]	ALINTA_PNJ_U1	100
415	NIL, LOR > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	ALINTA_PNJ_U1 ALINTA_PNJ_U2 ALINTA_WGP_GT ALINTA_WGP_U2	67

Constrained portfolio	Constraint equation	Registered facility	Constrained uplift payment ratio (%)[32]
419	NIL, LOR > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	PRK_AG	48
420	NIL, LOR > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	NAMKKN_MERR_SG1	56
423	NIL, LOR > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	TESLA_KEMERTON_G1 TESLA_PICTON_G1	63
429	NIL, LOR > {D-MJ 81 (D)} [GLT-FFD 81 (GLT~)]	PRK_AG	30
430	NIL, LOR > {D-MJ 81 (D)} [GLT-FFD 81 (GLT~)]	NAMKKN_MERR_SG1	36
433	NIL, LOR > {D-MJ 81 (D)} [GLT-FFD 81 (GLT~)]	TESLA_NORTHAM_G1	25
447	NIL, LOR > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	ALINTA_PNJ_U1 ALINTA_WGP_GT ALINTA_WGP_U2	32
450	NIL, LOR > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	PRK_AG	19
451	NIL, LOR > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	NAMKKN_MERR_SG1	25
453	NIL, LOR > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	KEMERTON_GT11 KEMERTON_GT12 MUJA_G6 MUJA_G7 MUJA_G8 WEST_KALGOORLIE_GT2 WEST_KALGOORLIE_GT3	21
454	NIL, LOR > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	TESLA_KEMERTON_G1 TESLA_NORTHAM_G1 TESLA_PICTON_G1	32
478	NIL, LOR > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	NAMKKN_MERR_SG1	33
481	NIL, LOR > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	TESLA_KEMERTON_G1 TESLA_PICTON_G1	33
493	NIL, LOR > {MU BTT1 (9)} [PIC-MRR 81 (MRR~)]	ALINTA_PNJ_U1 ALINTA_WGP_GT ALINTA_WGP_U2	34
496	NIL, LOR > {MU BTT1 (9)} [PIC-MRR 81 (MRR~)]	PRK_AG	15

Constrained portfolio	Constraint equation	Registered facility	Constrained uplift payment ratio (%)[32]
497	NIL, LOR > {MU BTT1 (9)} [PIC-MRR 81 (MRR~)]	NAMKKN_MERR_SG1	49
499	NIL, LOR > {MU BTT1 (9)} [PIC-MRR 81 (MRR~)]	COCKBURN_CCG1 KEMERTON_GT11 KEMERTON_GT12 KWINANA_GT2 KWINANA_GT3 WEST_KALGOORLIE_GT2 WEST_KALGOORLIE_GT3	37
500	NIL, LOR > {MU BTT1 (9)} [PIC-MRR 81 (MRR~)]	TESLA_KEMERTON_G1 TESLA_NORTHAM_G1 TESLA_PICTON_G1	20
523	NIL, LOR > {NBT-NT 91, SPS_MARNET} [JDP-MUL 81 (JDP~)]	TESLA_GERALDTON_G1	21
530	NIL, LOR > {NBT-NT 91, SPS_MARNET} [JDP-WNO 81 (WNO~)]	TESLA_GERALDTON_G1	31
537	NIL, LOR > {NBT-NT 91, SPS_MARNET} [NBT-WNO 81 (NBT~)]	TESLA_GERALDTON_G1	33
558	NIL, LOR > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	COCKBURN_CCG1 KWINANA_GT2 KWINANA_GT3 MUNGARRA_GT1 MUNGARRA_GT3 PINJAR_GT1 PINJAR_GT10 PINJAR_GT11 PINJAR_GT2 PINJAR_GT3 PINJAR_GT4 PINJAR_GT5 PINJAR_GT7 PINJAR_GT9 WEST_KALGOORLIE_GT2 WEST_KALGOORLIE_GT3	25
559	NIL, LOR > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	TESLA_GERALDTON_G1 TESLA_NORTHAM_G1	12
564	NIL, LOR > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	ALINTA_PNJ_U1 ALINTA_WGP_GT ALINTA_WGP_U2	47
568	NIL, LOR > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	PRK_AG	28

Constrained portfolio	Constraint equation	Registered facility	Constrained uplift payment ratio (%)[32]
569	NIL, LOR > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	NAMKKN_MERR_SG1	40
571	NIL, LOR > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	COCKBURN_CCG1 COLLIE_G1 KEMERTON_GT11 KEMERTON_GT12 KWINANA_GT2 KWINANA_GT3 MUJA_G6 MUJA_G7 MUJA_G8 WEST_KALGOORLIE_GT2 WEST_KALGOORLIE_GT3	16
572	NIL, LOR > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	TESLA_KEMERTON_G1 TESLA_PICTON_G1	53
581	NIL, LOR > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	PRK_AG	40
582	NIL, LOR > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	NAMKKN_MERR_SG1	38
585	NIL, LOR > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	NEWGEN_NEERABUP_GT1	27
587	NIL, LOR > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	TESLA_GERALDTON_G1 TESLA_NORTHAM_G1	50
594	NIL, LOR > {RO-WAI 81 (RO)} [PNJ-APJ 81 (APJ~)]	PRK_AG	23
595	NIL, LOR > {RO-WAI 81 (RO)} [PNJ-APJ 81 (APJ~)]	NAMKKN_MERR_SG1	28
598	NIL, LOR > {RO-WAI 81 (RO)} [PNJ-APJ 81 (APJ~)]	TESLA_KEMERTON_G1 TESLA_PICTON_G1	49
605	NT-NOR 81 > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	NAMKKN_MERR_SG1	56
608	NT-NOR 81 > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	TESLA_NORTHAM_G1	33
612	NT-NOR 81 > {D-SVY 81 (D)} [MW-WUN 71 (WUN-)]	INVESTEC_COLLGAR_WF1	38
615	NT-NOR 81 > {D-SVY 81 (D)} [MW-WUN 71 (WUN-)]	MERSOLAR_PV1	25
617	NT-NOR 81 > {D-SVY 81 (D)} [MW-WUN 71 (WUN-)]	TESLA_NORTHAM_G1	26

Source: ERA analysis of WEM data.

3.3 Market participants and facilities in a material constrained portfolio

Table 2 is a list of market participants with facilities that are part of a material constrained portfolio.

Table 2: Market participants and those facilities that are part of a material constrained portfolio

Market participant	Facility
Alcoa	ALCOA_WGP
Alinta Sales Pty Ltd	ALINTA_PNJ_U1 ALINTA_PNJ_U2 ALINTA_WGP_GT ALINTA_WGP_U2
Collgar Wind Farm	INVESTEC_COLLGAR_WF1
Goldfields Power Pty Ltd	PRK_AG
Bright Energy Investments	GREENOUGH_RIVER_PV1
Merredin Energy	NAMKKN_MERR_SG1
NewGen Neerabup Partnership	NEWGEN_NEERABUP_GT1
Merredin Solar Farm Nominee Pty Ltd	MERSOLAR_PV1
Tronox	TIWEST_COG1
Tesla Corporation Pty Ltd	TESLA_PICTON_G1
Tesla Geraldton	TESLA_GERALDTON_G1
Tesla Kemerton	TESLA_KEMERTON_G1
Tesla Northam	TESLA_NORTHAM_G1
Synergy	COCKBURN_CCG1 COLLIE_G1 KEMERTON_GT11 KEMERTON_GT12 KWINANA_GT2 KWINANA_GT3 MUJA_G6 MUJA_G7 MUJA_G8 MUNGARRA_GT1 MUNGARRA_GT3 PINJAR_GT1 PINJAR_GT2 PINJAR_GT3

Market participant	Facility
	PINJAR_GT4 PINJAR_GT5 PINJAR_GT7 PINJAR_GT9 PINJAR_GT10 PINJAR_GT11 WEST_KALGOORLIE_GT2 WEST_KALGOORLIE_GT3

Source: ERA assessment of WEM data.

4. Comparison to previous determination

The differences between the most recent and previous rolling test windows are detailed below:

- Table 3 is the number of constraint equations identified to have bound.
- Table 4 is the number of unique constrained portfolios identified.
- Table 5 is the number of unique facilities that were part of a material constrained portfolio.
- Table 6 is the number of unique market participants that have facilities that are part of a material constrained portfolio.

Table 3: Number of constraint equations identified

Rolling test window	Number of constraint equations identified
Q1 2024	85
Q4 2023	44

Source: ERA analysis of WEM data.

Table 4: Number of unique constrained portfolios identified

Rolling test window	Number of unique constrained portfolios
Q1 2024	638
Q4 2023	236

Source: ERA analysis of WEM data.

Table 5: Number of unique facilities within a material constrained portfolio

Rolling test window	Number of unique constrained portfolios
Q1 2024	39
Q4 2023	39

Source: ERA analysis of WEM data.

Table 6: Number of unique market participants that have facilities in a material constrained portfolio

Rolling test window	Number of unique constrained portfolios
Q1 2024	14
Q4 2023	12

Source: ERA analysis of WEM data.

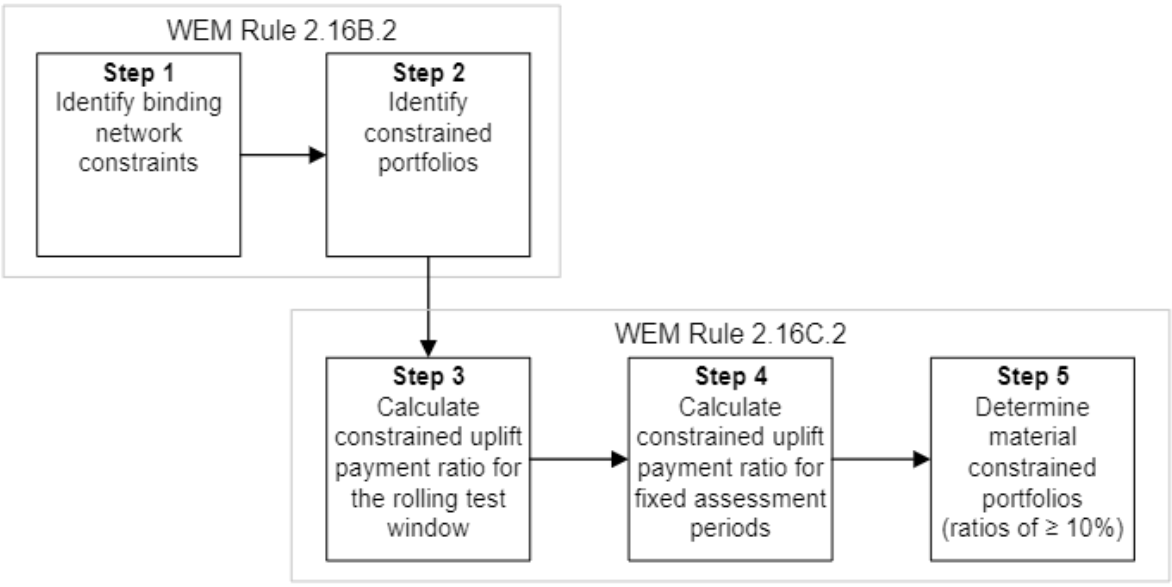
Appendix 1 List of Tables

Appendix 2 List of Figures

Appendix 3 Constrained portfolio method

The ERA developed and applied the process and method, outlined in this appendix, to identify constrained portfolios and calculate the constrained uplift payment ratio for determining material constrained portfolios. The method is outlined in Figure 1, with additional detail provided in the following sections.

Figure 1: High level steps in the constrained portfolio method



The assignment of constrained portfolios and the calculation of the constrained uplift payment ratio is completed using R within RStudio.[33]

Data sets

The following data sets were used as inputs to this process:

1. WEMDE dispatch solution constraints.[34]
2. 'Left Hand Side' terms of network constraints, which lists all facilities located behind each network constraint.
3. Energy uplift payment data.
4. Portfolios identified under WEM Rule 2.16B.1.[35]

Data set 1 is available publicly via AEMO's public data site.[36] Data set 2 is partially available publicly via the Operational Constraints Library, however discretionary constraints are not included.[37] Data set 3 is not publicly available. Data set 4 is published by the ERA.[38]

[33] Libraries used were "tidyverse", "readxl" and "here".

[34] WEMDE stands for the Wholesale Electricity Market Dispatch Engine.

[35] Wholesale Electricity Market Rules (WA) 1 April 2024, Rule 2.16B.1, (online).

[36] Australian Energy Market Operator, Market Data Wester Australia: Dispatch Solution Files, (online).

[37] Australian Energy Market Operator, Operational Constraints Library, (online).

[38] Economic Regulation Authority, October 2023, *WEM Procedure: Portfolio Determination*, (online).

Data cleansing

All data underwent cleansing processes. This included filtering the data to include only dispatch intervals falling within the rolling test window, ensuring consistent variable naming and formatting across data frames, and extracting facility names from string variable values.

Step 1 - Binding network constraint identification

The first step in the process of identifying constrained portfolios is to identify all binding network constraints within a rolling test window is. [39]

A network constraint is a limitation or requirement in a part of a network that may impact one or more registered facilities in the central dispatch process, such that it would be unacceptable to transfer electricity across that part of the network at a level or in a manner outside the limit or requirement.[40]

This step in the process requires the list of WEMDE dispatch solution constraints. This data was checked against the publicly available data. The three filters applied are date range, constraintType = “Network” and isBindingConstraint = “TRUE”.

The list of unique constraint IDs are the network constraints that bound within the rolling test window.

Step 2 - Constrained portfolio identification

Following identification of all network constraints that bound during the rolling test window, the ERA then identified all constrained portfolios for each constraint equation.[41] A constrained portfolio is, for each constraint equation, a set comprising all the registered facilities within a single portfolio that are located behind the relevant network constraint.[42]

This step requires three data sets:

1. The list of unique binding network constraint resulting from part A of this process.
2. ‘Left Hand Side’ terms of those network constraints, which lists all the facilities located behind each network constraint.
3. Portfolios identified under WEM Rule 2.16B.1.[43]

Some network constraints have versions which applied through the rolling test window. Whilst most version changes only affect facility coefficients in the constraint equation, if a facility is commissioned or decommissioned, the terms of the equation would change. A strict interpretation of the WEM Rules definition of constrained portfolio is used, and the set comprising all the registered facilities that are located behind any version of the network constraint are considered.

---

39 Wholesale Electricity Market Rules (WA) 1 April 2024, Rule 2.16B.2(a), (online).

40 Ibid, Chapter 11, p. 734, (online).

41 Ibid, Rule 2.16B.2(b), (online).

42 Ibid, Chapter 11, p. 706, (online).

43 Economic Regulation Authority, October 2023, *WEM Procedure: Portfolio Determination*, (online).

The three data sets are merged, the first two by network constraint ID and the last two by facility. Only those facilities which sit behind a network constraint that bound during the period are included in this process.

The data frame is arranged alphabetically by constraint ID, then numerically by portfolio and then alphabetically by facility. An exception to this ordering is where a constraint ID uses a numerical suffix, in which case those constraints are arranged numerically by their suffix.

A constrained portfolio number is assigned to each facility, row by row, according to the constraint ID and portfolio number. If either the constraint ID or the portfolio changes, then a new constrained portfolio number is assigned, see Table 7.

Table 7: Example of constrained portfolio identification

Constraint ID	Facilities	Portfolio	Constrained portfolio number
Constraint-equation-1	Facility A	1	1
Constraint-equation-1	Facility B	1	1
Constraint-equation-1	Facility C	2	2
Constraint-equation-2	Facility A	1	3
Constraint-equation-3	Facility A	1	4

Source: ERA created example based on WEM data.

Step 3 - Constrained uplift payment ratio calculation (rolling test window)

Steps 1 and 2 of the process meet the WEM Rule 2.16B.2 requirements.[44] From this point on, the steps are designed to apply the calculation required under the market power test set in market rule 2.16C.2 to determine which of the constrained portfolios meet or exceed the materiality threshold in the WEM Rules.[45] This step calculates the constrained uplift payment ratio for each of the constrained portfolios within the rolling test window.

This calculation is applied to each constrained portfolio.

$$Constrained\ Uplift\ Payment\ Ratio = \frac{CP\_UP}{NC} \times 100$$

Where:

CP_UP is the count of dispatch intervals within the rolling test window for a bound network constraint where uplift payments were made.

44 Wholesale Electricity Market Rules (WA) 1 April 2024, Rule 2.16B.2, (online).

45 Ibid, Rule 2.16C.2, (online).

NC is the count of dispatch intervals within the rolling test window where a network constraint equation bound.

This process requires the following data sets:

1. WEMDE dispatch solution constraints.
2. 'Left Hand Side' (LHS) terms of those network constraints, which lists all the facilities located behind each network constraint.
3. Energy uplift payment data.
4. Constrained portfolios assigned in part B of this process.

The denominator (NC) is extracted for each constrained portfolio by filtering the WEMDE dispatch solution constraints by the network constraint for which the constrained portfolio was assigned. The row count is the number of dispatch intervals in the rolling test window for which the network constraint bound.

The numerator (CP_UP) is found by merging the solution constraints with the facilities from the LHS terms, and then with the facilities receiving energy uplift. The same filter for the relevant constraint is then applied as before. The data is then filtered to include intervals for which there is an energy uplift payment received by a facility within that constrained portfolio only. The number of unique dispatch intervals is counted, which forms the numerator.

For example, Table 8 below shows a hypothetical example where all the dispatch intervals in which constraint equation 1 bound. This constraint equation resulted in identification of example constrained portfolios 1 and 2. Constrained portfolio 1 includes facilities A and B, while constrained portfolio 2 includes facility C. From this example, NC is determined to be 4 for both constrained portfolios, and CP_UP is the count of gold and blue shaded intervals for constrained portfolios 1 and 2 respectively.

Table 8: Example of determining constrained facilities that received energy uplift payments by dispatch interval

Dispatch interval	Constrained facilities	Energy uplift recipients
2023-10-01 11:00	A, B, C	A, B
2023-10-01 11:05	A, B, C	A
2023-10-02 17:30	A, B, C	-
2023-10-02 17:35	A, B, C	C

Source: ERA example based on WEM data.

These numbers are then input to a second table, in which the ratio is calculated according to the formula set out in the WEM Rules. Table 9 below shows the calculation of constrained uplift payment ratios for example constrained portfolios 1 and 2.

Table 9: Example of how the constrained uplift payment ratio is calculated

Constrained portfolio	CP_UP	NC	Constrained uplift payment ratio (%)
1	2	4	50
2	1	4	25

Source: ERA example based on WEM data.

Step 4 - Constrained uplift payment ratio calculation (fixed assessment periods)

The process for calculating the fixed assessment period is the same used for the whole of the rolling test window period. However, instead of using the rolling test window, the calculation is applied where the constraint equation relevant to the constrained portfolio has continuously bound for a period of a least seven consecutive trading days within the rolling test window. A rolling test window may contain multiple fixed assessment periods.[46]

This process is the same as outlined in step 3 and uses the same data set, however the key difference is first filtering the network constraint data to consider only fixed assessment periods. This is done by creating a duration variable, by ordering the data by constraint ID, then by chronological order. Rows are then checked to see if they are five minutes apart, if they are then this is added to a cumulative duration, if they are not, a new count is started.

The duration variable is then filtered to only include those which exceed seven days. The numerator and denominator are then extracted as before, and the constrained uplift payment ratio is calculated. If there are multiple fixed assessment periods for the same network constraint, the highest constrained uplift payment ratio is provided.

Step 5 – Material constrained portfolios

A filter is applied to the calculation tables generated in steps 3 and 4 to only include those portfolios with a constrained uplift payment ratio greater than 10 per cent from either of steps 3 or 4.

[46] Wholesale Electricity Market Rules (WA) 1 April 2024, Chapter 11, (online).

Appendix 4 Constrained uplift payment ratio results

The ERA must publish the results of the calculations carried out for the WEM Rule clause 2.16C.2(a). This includes both the results of the constrained uplift payment ratio for all constrained portfolios for both the rolling test window and any fixed assessment periods.

Table 10: Complete results of the calculation carried out under WEM Rule clause 2.16C.2(a)

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
1	DCCE-WEMDEUI-Security-278	48	NA
2	DCCE-WEMDEUI-Security-286	0	NA
3	DCCE-WEMDEUI-Security-290	0	NA
4	DCCE-WEMDEUI-Security-384	0	NA
5	DCCE-WEMDEUI-Security-385	0	NA
6	DCCE-WEMDEUI-Security-393	0	NA
7	DCCE-WEMDEUI-Security-394	58	NA
8	DCCE-WEMDEUI-Security-395	19	NA
9	DCCE-WEMDEUI-Security-419	67	NA
10	DCCE-WEMDEUI-Security-420	0	NA
11	DCCE-WEMDEUI-Security-538	0	NA
12	DCCE-WEMDEUI-Security-539	98	NA
13	DCCE-WEMDEUI-Security-541	0	NA
14	DCCE-WEMDEUI-Security-542	88	NA
15	BGA-ENB 81 > {PJR-CTB 81} [PJR-RGN 81 (RGN~)]	0	NA
16	BGA-ENB 81 > {PJR-CTB 81} [PJR-RGN 81 (RGN~)]	0	NA
17	BGA-ENB 81 > {PJR-CTB 81} [PJR-RGN 81 (RGN~)]	0	NA
18	BGA-ENB 81 > {PJR-CTB 81} [PJR-RGN 81 (RGN~)]	0	NA
19	BGA-ENB 81 > {PJR-CTB 81} [PJR-RGN 81 (RGN~)]	0	NA

[47] Values rounded to the nearest percentage point.

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
20	BGA-ENB 81 > {PJR-CTB 81} [PJR-RGN 81 (RGN~)]	0	NA
21	Island(NC) * {NIL} [Manual(ALINTA_WWF)]	0	NA
22	Island(NC) * {NIL} [Manual(GREENOUGH_RIVER_PV1)]	1	NA
23	Island(NC) * {NIL} [Manual(MWF_MUMBIDA_WF1)]	0	NA
24	Island(NC) * {NIL} [Manual(TESLA_GERALDTON_G1)]	12	NA
25	KDN-MRT X1, YLN-WKT X1 > {MRT-MER 81 (MRT)} [MRT-NOR 81 (MRT~)]	0	NA
26	NBT T2 > {PJR-CTB 81 (PJR)} [PJR-RGN 81 (RGN~)]	0	NA
27	NBT T2 > {PJR-CTB 81 (PJR)} [PJR-RGN 81 (RGN~)]	0	NA
28	NBT T2 > {PJR-CTB 81 (PJR)} [PJR-RGN 81 (RGN~)]	0	NA
29	NBT T2 > {PJR-CTB 81 (PJR)} [PJR-RGN 81 (RGN~)]	0	NA
30	NBT T2 > {PJR-CTB 81 (PJR)} [PJR-RGN 81 (RGN~)]	0	NA
31	NBT T2 > {PJR-CTB 81 (PJR)} [PJR-RGN 81 (RGN~)]	3	NA
32	NBT T2 > {PJR-CTB 81 (PJR)} [PJR-RGN 81 (RGN~)]	0	NA
33	NBT-NT 91, TST-TS 81, Off(SPS_MARNET) > {JDP-WNO 81} [HBK-MUC 81 (MUC~)]	0	NA
34	NBT-NT 91, TST-TS 81, Off(SPS_MARNET) > {JDP-WNO 81} [HBK-MUC 81 (MUC~)]	0	NA
35	NBT-NT 91, TST-TS 81, Off(SPS_MARNET) > {JDP-WNO 81} [HBK-MUC 81 (MUC~)]	0	NA
36	NBT-NT 91, TST-TS 81, Off(SPS_MARNET) > {JDP-WNO 81} [HBK-MUC 81 (MUC~)]	0	NA
37	NBT-NT 91, TST-TS 81, Off(SPS_MARNET) > {JDP-WNO 81} [HBK-MUC 81 (MUC~)]	0	NA
38	NBT-NT 91, TST-TS 81, Off(SPS_MARNET) > {JDP-WNO 81} [HBK-MUC 81 (MUC~)]	0	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
39	NBT-NT 91, TST-TS 81, Off(SPS_MARNET) > {JDP-WNO 81} [HBK-MUC 81 (MUC~)]	0	NA
40	NBT-NT 91, TST-TS 81, Off(SPS_MARNET) > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA
41	NBT-NT 91, TST-TS 81, Off(SPS_MARNET) > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA
42	NBT-NT 91, TST-TS 81, Off(SPS_MARNET) > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA
43	NBT-NT 91, TST-TS 81, Off(SPS_MARNET) > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA
44	NBT-NT 91, TST-TS 81, Off(SPS_MARNET) > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA
45	NBT-NT 91, TST-TS 81, Off(SPS_MARNET) > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	1	NA
46	NBT-NT 91, TST-TS 81, Off(SPS_MARNET) > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	1	NA
47	NBT-NT 91, TST-TS 81, Off(SPS_MARNET), TS806 > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA
48	NBT-NT 91, TST-TS 81, Off(SPS_MARNET), TS806 > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA
49	NBT-NT 91, TST-TS 81, Off(SPS_MARNET), TS806 > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA
50	NBT-NT 91, TST-TS 81, Off(SPS_MARNET), TS806 > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA
51	NBT-NT 91, TST-TS 81, Off(SPS_MARNET), TS806 > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA
52	NBT-NT 91, TST-TS 81, Off(SPS_MARNET), TS806, ENB-TS 81 > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA
53	NBT-NT 91, TST-TS 81, Off(SPS_MARNET), TS806, ENB-TS 81 > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA
54	NBT-NT 91, TST-TS 81, Off(SPS_MARNET), TS806, ENB-TS 81 > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
55	NBT-NT 91, TST-TS 81, Off(SPS_MARNET), TS806, ENB-TS 81 > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA
56	NBT-NT 91, TST-TS 81, Off(SPS_MARNET), TS806, ENB-TS 81 > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA
57	NIL > CVP0 {D-SVY 81} [MU-NGS X1 (MU~)]	0	NA
58	NIL > CVP0 {D-SVY 81} [MU-NGS X1 (MU~)]	0	NA
59	NIL > CVP0 {D-SVY 81} [MU-NGS X1 (MU~)]	0	NA
60	NIL > CVP0 {D-SVY 81} [MU-NGS X1 (MU~)]	0	NA
61	NIL > CVP0 {D-SVY 81} [MU-NGS X1 (MU~)]	0	NA
62	NIL > CVP0 {D-SVY 81} [MU-NGS X1 (MU~)]	0	NA
63	NIL > CVP0 {D-SVY 81} [MU-NGS X1 (MU~)]	0	NA
64	NIL > CVP0 {D-SVY 81} [MU-NGS X1 (MU~)]	0	NA
65	NIL > CVP0 {D-SVY 81} [MU-NGS X1 (MU~)]	0	NA
66	NIL > CVP0 {D-SVY 81} [MU-NGS X1 (MU~)]	0	NA
67	NIL > CVP0 {KEM-MRR 81} [KEM-MRR 82 (KEM~)]	0	NA
68	NIL > CVP0 {KEM-MRR 81} [KEM-MRR 82 (KEM~)]	5	NA
69	NIL > CVP0 {KEM-MRR 81} [KEM-MRR 82 (KEM~)]	0	NA
70	NIL > CVP0 {KEM-MRR 81} [KEM-MRR 82 (KEM~)]	0	NA
71	NIL > CVP0 {KEM-MRR 81} [KEM-MRR 82 (KEM~)]	2	NA
72	NIL > CVP0 {KEM-MRR 81} [KEM-MRR 82 (KEM~)]	20	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
73	NIL > CVP0 {KEM-MRR 81} [KEM-MRR 82 (KEM~)]	0	NA
74	NIL > CVP0 {KEM-MRR 81} [KEM-MRR 82 (KEM~)]	1	NA
75	NIL > CVP0 {KEM-MRR 81} [KEM-MRR 82 (KEM~)]	17	NA
76	NIL > CVP0 {KEM-MRR 81} [KEM-MRR 82 (KEM~)]	0	NA
77	NIL > CVP0 {KEM-MRR 81} [KEM-MRR 82 (KEM~)]	0	NA
78	NIL > CVP0 {MH-PNJ 81} [PNJ81-CMP (PNJ-)]	0	NA
79	NIL > CVP0 {MH-PNJ 81} [PNJ81-CMP (PNJ-)]	0	NA
80	NIL > CVP0 {MH-PNJ 81} [PNJ81-CMP (PNJ-)]	0	NA
81	NIL > CVP0 {MH-PNJ 81} [PNJ81-CMP (PNJ-)]	0	NA
82	NIL > CVP0 {MH-PNJ 81} [PNJ81-CMP (PNJ-)]	0	NA
83	NIL > CVP0 {MH-PNJ 81} [PNJ81-CMP (PNJ-)]	0	NA
84	NIL > CVP0 {MH-PNJ 81} [PNJ81-CMP (PNJ-)]	0	NA
85	NIL > CVP0 {MH-PNJ 81} [PNJ81-CMP (PNJ-)]	11	NA
86	NIL > CVP0 {MH-PNJ 81} [PNJ81-CMP (PNJ-)]	0	NA
87	NIL > CVP0 {MH-PNJ 81} [PNJ81-CMP (PNJ-)]	1	NA
88	NIL > CVP0 {MH-PNJ 81} [PNJ81-CMP (PNJ-)]	6	NA
89	NIL > CVP0 {MH-PNJ 81} [PNJ81-CMP (PNJ-)]	0	NA
90	NIL > CVP0 {MH-PNJ 81} [PNJ81-CMP (PNJ-)]	0	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
91	NIL > CVP0 {MH-PNJ 81} [PNJ81-CMP (PNJ-)]	0	NA
92	NIL > CVP0 {MRT-NOR 81} [MU-NGS X1 (MU~)]	0	NA
93	NIL > CVP0 {MRT-NOR 81} [MU-NGS X1 (MU~)]	0	NA
94	NIL > CVP0 {MRT-NOR 81} [MU-NGS X1 (MU~)]	3	NA
95	NIL > CVP0 {MRT-NOR 81} [MU-NGS X1 (MU~)]	0	NA
96	NIL > CVP0 {MRT-NOR 81} [MU-NGS X1 (MU~)]	0	NA
97	NIL > CVP0 {MRT-NOR 81} [MU-NGS X1 (MU~)]	0	NA
98	NIL > CVP0 {MU BTT1} [PIC-MRR 81 (MRR~)]	0	NA
99	NIL > CVP0 {MU BTT1} [PIC-MRR 81 (MRR~)]	0	NA
100	NIL > CVP0 {MU BTT1} [PIC-MRR 81 (MRR~)]	0	NA
101	NIL > CVP0 {MU BTT1} [PIC-MRR 81 (MRR~)]	0	NA
102	NIL > CVP0 {MU BTT1} [PIC-MRR 81 (MRR~)]	0	NA
103	NIL > CVP0 {MU BTT1} [PIC-MRR 81 (MRR~)]	0	NA
104	NIL > CVP0 {MU BTT1} [PIC-MRR 81 (MRR~)]	0	NA
105	NIL > CVP0 {MU BTT1} [PIC-MRR 81 (MRR~)]	0	NA
106	NIL > CVP0 {MU BTT1} [PIC-MRR 81 (MRR~)]	0	NA
107	NIL > CVP0 {MU BTT1} [PIC-MRR 81 (MRR~)]	0	NA
108	NIL > CVP0 {MU BTT1} [PIC-MRR 81 (MRR~)]	0	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
109	NIL > CVP0 {MU BTT1} [PIC-MRR 81 (MRR~)]	0	NA
110	NIL > CVP0 {MU BTT1} [PIC-MRR 81 (MRR~)]	0	NA
111	NIL > CVP0 {MU-NT 91} [MU-NGS X1 (MU~)]	0	NA
112	NIL > CVP0 {MU-NT 91} [MU-NGS X1 (MU~)]	0	NA
113	NIL > CVP0 {MU-NT 91} [MU-NGS X1 (MU~)]	0	NA
114	NIL > CVP0 {MU-NT 91} [MU-NGS X1 (MU~)]	0	NA
115	NIL > CVP0 {MU-NT 91} [MU-NGS X1 (MU~)]	0	NA
116	NIL > CVP0 {MU-NT 91} [MU-NGS X1 (MU~)]	0	NA
117	NIL > CVP0 {MU-NT 91} [MU-NGS X1 (MU~)]	0	NA
118	NIL > CVP0 {MU-NT 91} [MU-NGS X1 (MU~)]	0	NA
119	NIL > CVP0 {MU-NT 91} [MU-NGS X1 (MU~)]	0	NA
120	NIL > CVP0 {MU-NT 91} [MU-NGS X1 (MU~)]	31	NA
121	NIL > CVP0 {MU-NT 91} [MU-NGS X1 (MU~)]	0	NA
122	NIL > CVP0 {MU-NT 91} [MU-NGS X1 (MU~)]	0	NA
123	NIL > CVP0 {MU-NT 91} [MU-NGS X1 (MU~)]	0	NA
124	NIL > CVP0 {NOR-SVY 81} [MU-NGS X1 (MU~)]	0	NA
125	NIL > CVP0 {NOR-SVY 81} [MU-NGS X1 (MU~)]	0	NA
126	NIL > CVP0 {NOR-SVY 81} [MU-NGS X1 (MU~)]	0	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
127	NIL > CVP0 {NOR-SVY 81} [MU-NGS X1 (MU~)]	0	NA
128	NIL > CVP0 {NOR-SVY 81} [MU-NGS X1 (MU~)]	0	NA
129	NIL > CVP0 {NOR-SVY 81} [MU-NGS X1 (MU~)]	0	NA
130	NIL > CVP0 {NOR-SVY 81} [MU-NGS X1 (MU~)]	0	NA
131	NIL > CVP0 {NOR-SVY 81} [MU-NGS X1 (MU~)]	0	NA
132	NIL > CVP0 {NOR-SVY 81} [MU-NGS X1 (MU~)]	0	NA
133	NIL > CVP0 {NOR-SVY 81} [MU-NGS X1 (MU~)]	0	NA
134	NIL > CVP0 {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
135	NIL > CVP0 {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
136	NIL > CVP0 {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
137	NIL > CVP0 {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
138	NIL > CVP0 {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
139	NIL > CVP0 {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
140	NIL > CVP0 {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
141	NIL > CVP0 {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
142	NIL > CVP0 {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
143	NIL > CVP0 {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
144	NIL > CVP0 {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	1	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
145	NIL > CVP0 {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
146	NIL > CVP0 {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
147	NIL > CVP0 {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
148	NIL > CVP0 {RO-WAI 81} [PNJ-APJ 81 (APJ~)]	0	NA
149	NIL > CVP0 {RO-WAI 81} [PNJ-APJ 81 (APJ~)]	0	NA
150	NIL > CVP0 {RO-WAI 81} [PNJ-APJ 81 (APJ~)]	0	NA
151	NIL > CVP0 {RO-WAI 81} [PNJ-APJ 81 (APJ~)]	0	NA
152	NIL > CVP0 {RO-WAI 81} [PNJ-APJ 81 (APJ~)]	0	NA
153	NIL > CVP0 {RO-WAI 81} [PNJ-APJ 81 (APJ~)]	0	NA
154	NIL > CVP0 {RO-WAI 81} [PNJ-APJ 81 (APJ~)]	0	NA
155	NIL > CVP0 {RO-WAI 81} [PNJ-APJ 81 (APJ~)]	0	NA
156	NIL > CVP0 {RO-WAI 81} [PNJ-APJ 81 (APJ~)]	0	NA
157	NIL > CVP0 {RO-WAI 81} [PNJ-APJ 81 (APJ~)]	0	NA
158	NIL > CVP0 {RO-WAI 81} [PNJ-APJ 81 (APJ~)]	0	NA
159	NIL > CVP0 {SNR-WGP-APJ 81} [PNJ-APJ 81 (APJ~)]	0	NA
160	NIL > Commitment, CVP0 {NIL} [YLN-WKT X1 (YLN~)]	0	NA
161	NIL > Commitment, CVP0 {NIL} [YLN-WKT X1 (YLN~)]	0	NA
162	NIL > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	0	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
163	NIL > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	0	NA
164	NIL > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	0	NA
165	NIL > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	0	NA
166	NIL > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	0	NA
167	NIL > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	0	NA
168	NIL > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	0	NA
169	NIL > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	0	NA
170	NIL > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	0	NA
171	NIL > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	11	NA
172	NIL > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	0	NA
173	NIL > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	0	NA
174	NIL > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	0	NA
175	NIL > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	0	NA
176	NIL > {CTB-ENB 81} [CTB-RGN 81 (CTB~)]	0	NA
177	NIL > {CTB-ENB 81} [CTB-RGN 81 (CTB~)]	0	NA
178	NIL > {CTB-ENB 81} [CTB-RGN 81 (CTB~)]	0	NA
179	NIL > {CTB-ENB 81} [CTB-RGN 81 (CTB~)]	0	NA
180	NIL > {CTB-ENB 81} [CTB-RGN 81 (CTB~)]	0	NA
181	NIL > {CTB-ENB 81} [CTB-RGN 81 (CTB~)]	0	NA
182	NIL > {D-MJ 81 (D)} [GLT-FFD 81 (GLT~)]	0	NA
183	NIL > {D-MJ 81 (D)} [GLT-FFD 81 (GLT~)]	0	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
184	NIL > {D-MJ 81 (D)} [GLT-FFD 81 (GLT~)]	75	NA
185	NIL > {D-MJ 81 (D)} [GLT-FFD 81 (GLT~)]	0	NA
186	NIL > {D-MJ 81 (D)} [GLT-FFD 81 (GLT~)]	0	NA
187	NIL > {D-MJ 81 (D)} [GLT-FFD 81 (GLT~)]	0	NA
188	NIL > {D-MJ 81 (D)} [GLT-FFD 81 (GLT~)]	0	NA
189	NIL > {D-MJ 81 (D)} [GLT-FFD 81 (GLT~)]	0	NA
190	NIL > {D-MJ 81 (D)} [GLT-FFD 81 (GLT~)]	0	NA
191	NIL > {D-MJ 81} [GLT-FFD 81 (GLT~)]	0	NA
192	NIL > {D-MJ 81} [GLT-FFD 81 (GLT~)]	0	NA
193	NIL > {D-MJ 81} [GLT-FFD 81 (GLT~)]	0	NA
194	NIL > {D-MJ 81} [GLT-FFD 81 (GLT~)]	36	NA
195	NIL > {D-MJ 81} [GLT-FFD 81 (GLT~)]	0	NA
196	NIL > {D-MJ 81} [GLT-FFD 81 (GLT~)]	0	NA
197	NIL > {D-MJ 81} [GLT-FFD 81 (GLT~)]	50	NA
198	NIL > {D-MJ 81} [GLT-FFD 81 (GLT~)]	0	NA
199	NIL > {D-MJ 81} [GLT-FFD 81 (GLT~)]	0	NA
200	NIL > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	0	NA
201	NIL > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	0	NA
202	NIL > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	0	NA
203	NIL > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	0	NA
204	NIL > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	0	NA
205	NIL > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	0	NA
206	NIL > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	0	NA
207	NIL > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	0	NA
208	NIL > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	0	NA
209	NIL > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	0	NA
210	NIL > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	16	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
211	NIL > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	2	NA
212	NIL > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	0	NA
213	NIL > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	0	NA
214	NIL > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	20	NA
215	NIL > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	0	NA
216	NIL > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	0	NA
217	NIL > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	0	NA
218	NIL > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	34	NA
219	NIL > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	0	NA
220	NIL > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	0	NA
221	NIL > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA
222	NIL > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA
223	NIL > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA
224	NIL > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA
225	NIL > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA
226	NIL > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA
227	NIL > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA
228	NIL > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
229	NIL > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA
230	NIL > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA
231	NIL > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA
232	NIL > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA
233	NIL > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA
234	NIL > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA
235	NIL > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	0	NA
236	NIL > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	0	NA
237	NIL > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	0	NA
238	NIL > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	0	NA
239	NIL > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	0	NA
240	NIL > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	0	NA
241	NIL > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	0	NA
242	NIL > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	0	NA
243	NIL > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	0	NA
244	NIL > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	0	NA
245	NIL > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	0	NA
246	NIL > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	0	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
247	NIL > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	0	NA
248	NIL > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	0	NA
249	NIL > {KW-CC-MED 81} [WM81-MWO (WM-)]	0	NA
250	NIL > {KW-CC-MED 81} [WM81-MWO (WM-)]	0	NA
251	NIL > {KW-CC-MED 81} [WM81-MWO (WM-)]	0	NA
252	NIL > {KW-CC-MED 81} [WM81-MWO (WM-)]	0	NA
253	NIL > {KW-CC-MED 81} [WM81-MWO (WM-)]	0	NA
254	NIL > {KW-CC-MED 81} [WM81-MWO (WM-)]	0	NA
255	NIL > {KW-CC-MED 81} [WM81-MWO (WM-)]	0	NA
256	NIL > {KW-CC-MED 81} [WM81-MWO (WM-)]	0	NA
257	NIL > {KW-CC-MED 81} [WM81-MWO (WM-)]	0	NA
258	NIL > {KW-CC-MED 81} [WM81-MWO (WM-)]	0	NA
259	NIL > {KW-CC-MED 81} [WM81-MWO (WM-)]	0	NA
260	NIL > {KW-CC-MED 81} [WM81-MWO (WM-)]	0	NA
261	NIL > {KW-CC-MED 81} [WM81-MWO (WM-)]	0	NA
262	NIL > {KW-CC-MED 81} [WM81-MWO (WM-)]	0	NA
263	NIL > {MBR-ALB 81} [KOJ81-KAF (KOJ-)]	0	NA
264	NIL > {MBR-ALB 81} [KOJ81-KAF (KOJ-)]	0	NA
265	NIL > {MGA-TS 81 (MGA)} [TS-MBA 81 (MBA~)]	0	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
266	NIL > {MGA-TS 81 (MGA)} [TS-MBA 81 (MBA~)]	0	NA
267	NIL > {MGA-TS 81 (MGA)} [TS-MBA 81 (MBA~)]	0	NA
268	NIL > {MGA-TS 81 (MGA)} [TS-MBA 81 (MBA~)]	0	NA
269	NIL > {MRT-NOR 81 (MRT)} [MU-NGS X1 (MU~)]	6	NA
270	NIL > {MRT-NOR 81 (MRT)} [MU-NGS X1 (MU~)]	0	NA
271	NIL > {MRT-NOR 81 (MRT)} [MU-NGS X1 (MU~)]	10	NA
272	NIL > {MRT-NOR 81 (MRT)} [MU-NGS X1 (MU~)]	43	NA
273	NIL > {MRT-NOR 81 (MRT)} [MU-NGS X1 (MU~)]	0	NA
274	NIL > {MRT-NOR 81 (MRT)} [MU-NGS X1 (MU~)]	6	NA
275	NIL > {NB-PBY 81} [NT-LDE 81 (NT~)]	0	NA
276	NIL > {NB-PBY 81} [NT-LDE 81 (NT~)]	0	NA
277	NIL > {NB-PBY 81} [NT-LDE 81 (NT~)]	0	NA
278	NIL > {NB-PBY 81} [NT-LDE 81 (NT~)]	0	NA
279	NIL > {NB-PBY 81} [NT-LDE 81 (NT~)]	0	NA
280	NIL > {NB-PBY 81} [NT-LDE 81 (NT~)]	0	NA
281	NIL > {NB-PBY 81} [NT-LDE 81 (NT~)]	100	NA
282	NIL > {NB-PBY 81} [NT-LDE 81 (NT~)]	0	NA
283	NIL > {NB-PBY 81} [NT-LDE 81 (NT~)]	0	NA
284	NIL > {NBT T2} [TST-TS 81 (TS-)]	0	NA
285	NIL > {NBT T2} [TST-TS 81 (TS-)]	0	NA
286	NIL > {NBT T2} [TST-TS 81 (TS-)]	0	NA
287	NIL > {NBT T2} [TST-TS 81 (TS-)]	0	NA
288	NIL > {NBT T2} [TST-TS 81 (TS-)]	0	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
289	NIL > {NBT T2} [TST-TS 81 (TS-)]	100	NA
290	NIL > {NBT T2} [TST-TS 81 (TS-)]	0	NA
291	NIL > {NBT-NT 91, SPS_MARNET} [JDP-WNO 81 (WNO~)]	0	NA
292	NIL > {NBT-NT 91, SPS_MARNET} [JDP-WNO 81 (WNO~)]	0	NA
293	NIL > {NBT-NT 91, SPS_MARNET} [JDP-WNO 81 (WNO~)]	0	NA
294	NIL > {NBT-NT 91, SPS_MARNET} [JDP-WNO 81 (WNO~)]	0	NA
295	NIL > {NBT-NT 91, SPS_MARNET} [JDP-WNO 81 (WNO~)]	0	NA
296	NIL > {NBT-NT 91, SPS_MARNET} [JDP-WNO 81 (WNO~)]	5	NA
297	NIL > {NBT-NT 91, SPS_MARNET} [JDP-WNO 81 (WNO~)]	0	NA
298	NIL > {NBT-NT 91, SPS_MARNET} [NBT-WNO 81 (NBT~)]	0	NA
299	NIL > {NBT-NT 91, SPS_MARNET} [NBT-WNO 81 (NBT~)]	0	NA
300	NIL > {NBT-NT 91, SPS_MARNET} [NBT-WNO 81 (NBT~)]	0	NA
301	NIL > {NBT-NT 91, SPS_MARNET} [NBT-WNO 81 (NBT~)]	0	NA
302	NIL > {NBT-NT 91, SPS_MARNET} [NBT-WNO 81 (NBT~)]	2	NA
303	NIL > {NBT-NT 91, SPS_MARNET} [NBT-WNO 81 (NBT~)]	5	NA
304	NIL > {NBT-NT 91, SPS_MARNET} [NBT-WNO 81 (NBT~)]	8	NA
305	NIL > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	0	NA
306	NIL > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	0	NA
307	NIL > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	0	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
308	NIL > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	0	NA
309	NIL > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	0	NA
310	NIL > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	0	NA
311	NIL > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	0	NA
312	NIL > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	0	NA
313	NIL > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	0	NA
314	NIL > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	0	NA
315	NIL > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	0	NA
316	NIL > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	0	NA
317	NIL > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	0	NA
318	NIL > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	0	NA
319	NIL > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA
320	NIL > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA
321	NIL > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA
322	NIL > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA
323	NIL > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA
324	NIL > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA
325	NIL > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA
326	NIL > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA
327	NIL > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA
328	NIL > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA
329	NIL > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
330	NIL > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA
331	NIL > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA
332	NIL > {NT-PJR 81} [JDP-WNO 81 (WNO~)]	0	NA
333	NIL > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
334	NIL > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	20	NA
335	NIL > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
336	NIL > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
337	NIL > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
338	NIL > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
339	NIL > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	17	NA
340	NIL > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
341	NIL > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
342	NIL > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	23	NA
343	NIL > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	29	NA
344	NIL > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
345	NIL > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	20	NA
346	NIL > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
347	NIL > {PJR-CTB 81 (PJR)} [PJR-RGN 81 (RGN~)]	0	NA
348	NIL > {PJR-CTB 81 (PJR)} [PJR-RGN 81 (RGN~)]	0	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
349	NIL > {PJR-CTB 81 (PJR)} [PJR-RGN 81 (RGN~)]	0	NA
350	NIL > {PJR-CTB 81 (PJR)} [PJR-RGN 81 (RGN~)]	0	NA
351	NIL > {PJR-CTB 81 (PJR)} [PJR-RGN 81 (RGN~)]	14	NA
352	NIL > {PJR-CTB 81 (PJR)} [PJR-RGN 81 (RGN~)]	0	NA
353	NIL > {PJR-CTB 81} [PJR-RGN 81 (RGN~)]	0	NA
354	NIL > {PJR-CTB 81} [PJR-RGN 81 (RGN~)]	0	NA
355	NIL > {PJR-CTB 81} [PJR-RGN 81 (RGN~)]	0	NA
356	NIL > {PJR-CTB 81} [PJR-RGN 81 (RGN~)]	0	NA
357	NIL > {PJR-CTB 81} [PJR-RGN 81 (RGN~)]	14	NA
358	NIL > {PJR-CTB 81} [PJR-RGN 81 (RGN~)]	0	NA
359	NIL > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	0	NA
360	NIL > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	0	NA
361	NIL > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	0	NA
362	NIL > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	0	NA
363	NIL > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	0	NA
364	NIL > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	0	NA
365	NIL > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	0	NA
366	NIL > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	0	NA
367	NIL > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	0	NA
368	NIL > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	0	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
369	NIL > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	0	NA
370	NIL > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	0	NA
371	NIL > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	0	NA
372	NIL > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	0	NA
373	NIL > {RO-WAI 81 (RO)} [PNJ-APJ 81 (APJ~)]	0	NA
374	NIL > {RO-WAI 81 (RO)} [PNJ-APJ 81 (APJ~)]	0	NA
375	NIL > {RO-WAI 81 (RO)} [PNJ-APJ 81 (APJ~)]	0	NA
376	NIL > {RO-WAI 81 (RO)} [PNJ-APJ 81 (APJ~)]	0	NA
377	NIL > {RO-WAI 81 (RO)} [PNJ-APJ 81 (APJ~)]	0	NA
378	NIL > {RO-WAI 81 (RO)} [PNJ-APJ 81 (APJ~)]	0	NA
379	NIL > {RO-WAI 81 (RO)} [PNJ-APJ 81 (APJ~)]	0	NA
380	NIL > {RO-WAI 81 (RO)} [PNJ-APJ 81 (APJ~)]	0	NA
381	NIL > {RO-WAI 81 (RO)} [PNJ-APJ 81 (APJ~)]	0	NA
382	NIL > {RO-WAI 81 (RO)} [PNJ-APJ 81 (APJ~)]	0	NA
383	NIL > {RO-WAI 81 (RO)} [PNJ-APJ 81 (APJ~)]	0	NA
384	NIL > {SNR-WGP-APJ 81} [PNJ-APJ 81 (APJ~)]	100	NA
385	NIL > {ST-KNL 91 (ST)} [ST-CT 81 (ST~)]	0	NA
386	NIL > {ST-KNL 91 (ST)} [ST-CT 81 (ST~)]	0	NA
387	NIL > {ST-KNL 91 (ST)} [ST-CT 81 (ST~)]	0	NA
388	NIL > {ST-KNL 91 (ST)} [ST-CT 81 (ST~)]	0	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
389	NIL > {ST-KNL 91 (ST)} [ST-CT 81 (ST~)]	0	NA
390	NIL > {ST-KNL 91 (ST)} [ST-CT 81 (ST~)]	0	NA
391	NIL > {ST-KNL 91 (ST)} [ST-CT 81 (ST~)]	0	NA
392	NIL > {ST-KNL 91 (ST)} [ST-CT 81 (ST~)]	0	NA
393	NIL > {ST-KNL 91 (ST)} [ST-CT 81 (ST~)]	0	NA
394	NIL > {ST-KNL 91 (ST)} [ST-CT 81 (ST~)]	0	NA
395	NIL > {ST-KNL 91 (ST)} [ST-CT 81 (ST~)]	0	NA
396	NIL > {ST-KNL 91 (ST)} [ST-CT 81 (ST~)]	0	NA
397	NIL > {ST-KNL 91 (ST)} [ST-CT 81 (ST~)]	0	NA
398	NIL > {ST-KNL 91 (ST)} [ST-CT 81 (ST~)]	0	NA
399	NIL > {TS-MBA 81 (MBA)} [MGA-TS 81 (MGA~)]	0	NA
400	NIL > {TS-MBA 81 (MBA)} [MGA-TS 81 (MGA~)]	0	NA
401	NIL > {TS-MBA 81 (MBA)} [MGA-TS 81 (MGA~)]	0	NA
402	NIL, EmergencyState > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	0	NA
403	NIL, EmergencyState > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	0	NA
404	NIL, EmergencyState > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	0	NA
405	NIL, EmergencyState > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	0	NA
406	NIL, EmergencyState > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	0	NA
407	NIL, EmergencyState > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	0	NA
408	NIL, EmergencyState > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	0	NA
409	NIL, EmergencyState > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	0	NA
410	NIL, EmergencyState > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	0	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
411	NIL, EmergencyState > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	0	NA
412	NIL, EmergencyState > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	0	NA
413	NIL, LOR > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	0	NA
414	NIL, LOR > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	0	NA
415	NIL, LOR > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	67	NA
416	NIL, LOR > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	0	NA
417	NIL, LOR > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	0	NA
418	NIL, LOR > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	0	NA
419	NIL, LOR > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	48	NA
420	NIL, LOR > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	56	NA
421	NIL, LOR > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	0	NA
422	NIL, LOR > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	0	NA
423	NIL, LOR > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	63	NA
424	NIL, LOR > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	0	NA
425	NIL, LOR > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	0	NA
426	NIL, LOR > {CT-MSS-PNJ 81} [MH-PNJ 81 (PNJ~)]	0	NA
427	NIL, LOR > {D-MJ 81 (D)} [GLT-FFD 81 (GLT~)]	0	NA
428	NIL, LOR > {D-MJ 81 (D)} [GLT-FFD 81 (GLT~)]	0	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
429	NIL, LOR > {D-MJ 81 (D)} [GLT-FFD 81 (GLT~)]	30	NA
430	NIL, LOR > {D-MJ 81 (D)} [GLT-FFD 81 (GLT~)]	36	NA
431	NIL, LOR > {D-MJ 81 (D)} [GLT-FFD 81 (GLT~)]	0	NA
432	NIL, LOR > {D-MJ 81 (D)} [GLT-FFD 81 (GLT~)]	0	NA
433	NIL, LOR > {D-MJ 81 (D)} [GLT-FFD 81 (GLT~)]	25	NA
434	NIL, LOR > {D-MJ 81 (D)} [GLT-FFD 81 (GLT~)]	0	NA
435	NIL, LOR > {D-MJ 81 (D)} [GLT-FFD 81 (GLT~)]	0	NA
436	NIL, LOR > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	0	NA
437	NIL, LOR > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	0	NA
438	NIL, LOR > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	0	NA
439	NIL, LOR > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	0	NA
440	NIL, LOR > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	0	NA
441	NIL, LOR > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	0	NA
442	NIL, LOR > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	0	NA
443	NIL, LOR > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	0	NA
444	NIL, LOR > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	0	NA
445	NIL, LOR > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	0	NA
446	NIL, LOR > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	0	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
447	NIL, LOR > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	32	NA
448	NIL, LOR > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	0	NA
449	NIL, LOR > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	0	NA
450	NIL, LOR > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	19	NA
451	NIL, LOR > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	25	NA
452	NIL, LOR > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	0	NA
453	NIL, LOR > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	21	NA
454	NIL, LOR > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	32	NA
455	NIL, LOR > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	0	NA
456	NIL, LOR > {KEM-MRR 81 (KEM)} [KEM-MRR 82 (KEM~)]	0	NA
457	NIL, LOR > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA
458	NIL, LOR > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA
459	NIL, LOR > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA
460	NIL, LOR > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA
461	NIL, LOR > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA
462	NIL, LOR > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA
463	NIL, LOR > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA
464	NIL, LOR > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
465	NIL, LOR > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA
466	NIL, LOR > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA
467	NIL, LOR > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA
468	NIL, LOR > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA
469	NIL, LOR > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA
470	NIL, LOR > {KW-CC-MED 81} [RO-WM-AFM 81 (RO-)]	0	NA
471	NIL, LOR > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	0	NA
472	NIL, LOR > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	0	NA
473	NIL, LOR > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	0	NA
474	NIL, LOR > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	0	NA
475	NIL, LOR > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	0	NA
476	NIL, LOR > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	0	NA
477	NIL, LOR > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	0	NA
478	NIL, LOR > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	33	NA
479	NIL, LOR > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	0	NA
480	NIL, LOR > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	0	NA
481	NIL, LOR > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	33	NA
482	NIL, LOR > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	0	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
483	NIL, LOR > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	0	NA
484	NIL, LOR > {KW-CC-MED 81} [WM-AFM-RO 81 (WM~)]	0	NA
485	NIL, LOR > {MRT-NOR 81 (MRT)} [MU-NGS X1 (MU~)]	0	NA
486	NIL, LOR > {MRT-NOR 81 (MRT)} [MU-NGS X1 (MU~)]	0	NA
487	NIL, LOR > {MRT-NOR 81 (MRT)} [MU-NGS X1 (MU~)]	0	NA
488	NIL, LOR > {MRT-NOR 81 (MRT)} [MU-NGS X1 (MU~)]	0	NA
489	NIL, LOR > {MRT-NOR 81 (MRT)} [MU-NGS X1 (MU~)]	0	NA
490	NIL, LOR > {MRT-NOR 81 (MRT)} [MU-NGS X1 (MU~)]	0	NA
491	NIL, LOR > {MU BTT1 (9)} [PIC-MRR 81 (MRR~)]	0	NA
492	NIL, LOR > {MU BTT1 (9)} [PIC-MRR 81 (MRR~)]	0	NA
493	NIL, LOR > {MU BTT1 (9)} [PIC-MRR 81 (MRR~)]	34	NA
494	NIL, LOR > {MU BTT1 (9)} [PIC-MRR 81 (MRR~)]	0	NA
495	NIL, LOR > {MU BTT1 (9)} [PIC-MRR 81 (MRR~)]	0	NA
496	NIL, LOR > {MU BTT1 (9)} [PIC-MRR 81 (MRR~)]	15	NA
497	NIL, LOR > {MU BTT1 (9)} [PIC-MRR 81 (MRR~)]	49	NA
498	NIL, LOR > {MU BTT1 (9)} [PIC-MRR 81 (MRR~)]	0	NA
499	NIL, LOR > {MU BTT1 (9)} [PIC-MRR 81 (MRR~)]	37	NA
500	NIL, LOR > {MU BTT1 (9)} [PIC-MRR 81 (MRR~)]	20	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
501	NIL, LOR > {MU BTT1 (9)} [PIC-MRR 81 (MRR~)]	0	NA
502	NIL, LOR > {MU BTT1 (9)} [PIC-MRR 81 (MRR~)]	0	NA
503	NIL, LOR > {MU BTT1 (9)} [PIC-MRR 81 (MRR~)]	0	NA
504	NIL, LOR > {MU-NT 91 (MU)} [MU-NGS X1 (MU~)]	0	NA
505	NIL, LOR > {MU-NT 91 (MU)} [MU-NGS X1 (MU~)]	0	NA
506	NIL, LOR > {MU-NT 91 (MU)} [MU-NGS X1 (MU~)]	0	NA
507	NIL, LOR > {MU-NT 91 (MU)} [MU-NGS X1 (MU~)]	0	NA
508	NIL, LOR > {MU-NT 91 (MU)} [MU-NGS X1 (MU~)]	0	NA
509	NIL, LOR > {MU-NT 91 (MU)} [MU-NGS X1 (MU~)]	0	NA
510	NIL, LOR > {MU-NT 91 (MU)} [MU-NGS X1 (MU~)]	0	NA
511	NIL, LOR > {MU-NT 91 (MU)} [MU-NGS X1 (MU~)]	0	NA
512	NIL, LOR > {MU-NT 91 (MU)} [MU-NGS X1 (MU~)]	0	NA
513	NIL, LOR > {MU-NT 91 (MU)} [MU-NGS X1 (MU~)]	0	NA
514	NIL, LOR > {MU-NT 91 (MU)} [MU-NGS X1 (MU~)]	0	NA
515	NIL, LOR > {MU-NT 91 (MU)} [MU-NGS X1 (MU~)]	0	NA
516	NIL, LOR > {MU-NT 91 (MU)} [MU-NGS X1 (MU~)]	0	NA
517	NIL, LOR > {NBT-NT 91, SPS_MARNET} [JDP-MUL 81 (JDP~)]	0	NA
518	NIL, LOR > {NBT-NT 91, SPS_MARNET} [JDP-MUL 81 (JDP~)]	0	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
519	NIL, LOR > {NBT-NT 91, SPS_MARNET} [JDP-MUL 81 (JDP~)]	0	NA
520	NIL, LOR > {NBT-NT 91, SPS_MARNET} [JDP-MUL 81 (JDP~)]	0	NA
521	NIL, LOR > {NBT-NT 91, SPS_MARNET} [JDP-MUL 81 (JDP~)]	0	NA
522	NIL, LOR > {NBT-NT 91, SPS_MARNET} [JDP-MUL 81 (JDP~)]	2	NA
523	NIL, LOR > {NBT-NT 91, SPS_MARNET} [JDP-MUL 81 (JDP~)]	21	NA
524	NIL, LOR > {NBT-NT 91, SPS_MARNET} [JDP-WNO 81 (WNO~)]	0	NA
525	NIL, LOR > {NBT-NT 91, SPS_MARNET} [JDP-WNO 81 (WNO~)]	0	NA
526	NIL, LOR > {NBT-NT 91, SPS_MARNET} [JDP-WNO 81 (WNO~)]	0	NA
527	NIL, LOR > {NBT-NT 91, SPS_MARNET} [JDP-WNO 81 (WNO~)]	0	NA
528	NIL, LOR > {NBT-NT 91, SPS_MARNET} [JDP-WNO 81 (WNO~)]	9	NA
529	NIL, LOR > {NBT-NT 91, SPS_MARNET} [JDP-WNO 81 (WNO~)]	3	NA
530	NIL, LOR > {NBT-NT 91, SPS_MARNET} [JDP-WNO 81 (WNO~)]	31	NA
531	NIL, LOR > {NBT-NT 91, SPS_MARNET} [NBT-WNO 81 (NBT~)]	0	NA
532	NIL, LOR > {NBT-NT 91, SPS_MARNET} [NBT-WNO 81 (NBT~)]	0	NA
533	NIL, LOR > {NBT-NT 91, SPS_MARNET} [NBT-WNO 81 (NBT~)]	0	NA
534	NIL, LOR > {NBT-NT 91, SPS_MARNET} [NBT-WNO 81 (NBT~)]	0	NA
535	NIL, LOR > {NBT-NT 91, SPS_MARNET} [NBT-WNO 81 (NBT~)]	9	NA
536	NIL, LOR > {NBT-NT 91, SPS_MARNET} [NBT-WNO 81 (NBT~)]	6	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
537	NIL, LOR > {NBT-NT 91, SPS_MARNET} [NBT-WNO 81 (NBT~)]	33	NA
538	NIL, LOR > {NOR-SVY 81 (NOR)} [MU-NGS X1 (MU~)]	0	NA
539	NIL, LOR > {NOR-SVY 81 (NOR)} [MU-NGS X1 (MU~)]	0	NA
540	NIL, LOR > {NOR-SVY 81 (NOR)} [MU-NGS X1 (MU~)]	0	NA
541	NIL, LOR > {NOR-SVY 81 (NOR)} [MU-NGS X1 (MU~)]	0	NA
542	NIL, LOR > {NOR-SVY 81 (NOR)} [MU-NGS X1 (MU~)]	0	NA
543	NIL, LOR > {NOR-SVY 81 (NOR)} [MU-NGS X1 (MU~)]	0	NA
544	NIL, LOR > {NOR-SVY 81 (NOR)} [MU-NGS X1 (MU~)]	0	NA
545	NIL, LOR > {NOR-SVY 81 (NOR)} [MU-NGS X1 (MU~)]	0	NA
546	NIL, LOR > {NOR-SVY 81 (NOR)} [MU-NGS X1 (MU~)]	0	NA
547	NIL, LOR > {NOR-SVY 81 (NOR)} [MU-NGS X1 (MU~)]	0	NA
548	NIL, LOR > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	0	NA
549	NIL, LOR > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	0	NA
550	NIL, LOR > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	0	NA
551	NIL, LOR > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	0	NA
552	NIL, LOR > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	0	NA
553	NIL, LOR > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	0	NA
554	NIL, LOR > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	0	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
555	NIL, LOR > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	0	NA
556	NIL, LOR > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	0	NA
557	NIL, LOR > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	0	NA
558	NIL, LOR > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	25	NA
559	NIL, LOR > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	12	NA
560	NIL, LOR > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	0	NA
561	NIL, LOR > {NT-PJR 81 (PJR)} [JDP-WNO 81 (WNO~)]	0	NA
562	NIL, LOR > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
563	NIL, LOR > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
564	NIL, LOR > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	47	NA
565	NIL, LOR > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	1	NA
566	NIL, LOR > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
567	NIL, LOR > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
568	NIL, LOR > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	28	NA
569	NIL, LOR > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	40	NA
570	NIL, LOR > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
571	NIL, LOR > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	16	NA
572	NIL, LOR > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	53	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
573	NIL, LOR > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
574	NIL, LOR > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
575	NIL, LOR > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (APJ~)]	0	NA
576	NIL, LOR > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	0	NA
577	NIL, LOR > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	0	NA
578	NIL, LOR > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	0	NA
579	NIL, LOR > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	0	NA
580	NIL, LOR > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	0	NA
581	NIL, LOR > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	40	NA
582	NIL, LOR > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	38	NA
583	NIL, LOR > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	0	NA
584	NIL, LOR > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	0	NA
585	NIL, LOR > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	27	NA
586	NIL, LOR > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	2	NA
587	NIL, LOR > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	50	NA
588	NIL, LOR > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	0	NA
589	NIL, LOR > {PJR-YP 81 (PJR)} [NBT-WNO 81 (NBT~)]	0	NA
590	NIL, LOR > {RO-WAI 81 (RO)} [PNJ-APJ 81 (APJ~)]	0	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
591	NIL, LOR > {RO-WAI 81 (RO)} [PNJ-APJ 81 (APJ~)]	0	NA
592	NIL, LOR > {RO-WAI 81 (RO)} [PNJ-APJ 81 (APJ~)]	0	NA
593	NIL, LOR > {RO-WAI 81 (RO)} [PNJ-APJ 81 (APJ~)]	0	NA
594	NIL, LOR > {RO-WAI 81 (RO)} [PNJ-APJ 81 (APJ~)]	23	NA
595	NIL, LOR > {RO-WAI 81 (RO)} [PNJ-APJ 81 (APJ~)]	28	NA
596	NIL, LOR > {RO-WAI 81 (RO)} [PNJ-APJ 81 (APJ~)]	0	NA
597	NIL, LOR > {RO-WAI 81 (RO)} [PNJ-APJ 81 (APJ~)]	0	NA
598	NIL, LOR > {RO-WAI 81 (RO)} [PNJ-APJ 81 (APJ~)]	49	NA
599	NIL, LOR > {RO-WAI 81 (RO)} [PNJ-APJ 81 (APJ~)]	0	NA
600	NIL, LOR > {RO-WAI 81 (RO)} [PNJ-APJ 81 (APJ~)]	0	NA
601	NIL, LOR > {SNR-WGP-APJ 81} [PNJ-APJ 81 (APJ~)]	0	NA
602	NT-NOR 81 > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	0	NA
603	NT-NOR 81 > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	0	NA
604	NT-NOR 81 > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	0	NA
605	NT-NOR 81 > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	56	NA
606	NT-NOR 81 > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	0	NA
607	NT-NOR 81 > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	0	NA
608	NT-NOR 81 > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	33	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
609	NT-NOR 81 > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	0	NA
610	NT-NOR 81 > {D-SVY 81 (D)} [MU-NGS X1 (MU~)]	0	NA
611	NT-NOR 81 > {D-SVY 81 (D)} [MW-WUN 71 (WUN-)]	0	NA
612	NT-NOR 81 > {D-SVY 81 (D)} [MW-WUN 71 (WUN-)]	38	NA
613	NT-NOR 81 > {D-SVY 81 (D)} [MW-WUN 71 (WUN-)]	0	NA
614	NT-NOR 81 > {D-SVY 81 (D)} [MW-WUN 71 (WUN-)]	0	NA
615	NT-NOR 81 > {D-SVY 81 (D)} [MW-WUN 71 (WUN-)]	25	NA
616	NT-NOR 81 > {D-SVY 81 (D)} [MW-WUN 71 (WUN-)]	0	NA
617	NT-NOR 81 > {D-SVY 81 (D)} [MW-WUN 71 (WUN-)]	26	NA
618	NT-NOR 81 > {D-SVY 81 (D)} [MW-WUN 71 (WUN-)]	0	NA
619	NT-NOR 81 > {D-SVY 81 (D)} [MW-WUN 71 (WUN-)]	0	NA
620	PJR815 > {PJR-CTB 81, PJR81-PEE} [PJR-RGN 81 (RGN~)]	0	NA
621	PJR815 > {PJR-CTB 81, PJR81-PEE} [PJR-RGN 81 (RGN~)]	0	NA
622	PJR815 > {PJR-CTB 81, PJR81-PEE} [PJR-RGN 81 (RGN~)]	0	NA
623	PJR815 > {PJR-CTB 81, PJR81-PEE} [PJR-RGN 81 (RGN~)]	0	NA
624	PJR815 > {PJR-CTB 81, PJR81-PEE} [PJR-RGN 81 (RGN~)]	0	NA
625	PJR815 > {PJR-CTB 81, PJR81-PEE} [PJR-RGN 81 (RGN~)]	0	NA
626	SHO-WLT 91 > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (PNJ-)]	0	NA

Constrained portfolio	Constraint equation	Constrained uplift payment ratio[47]	
		Rolling test window	Fixed assessment period
627	SHO-WLT 91 > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (PNJ-)]	0	NA
628	SHO-WLT 91 > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (PNJ-)]	0	NA
629	SHO-WLT 91 > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (PNJ-)]	0	NA
630	SHO-WLT 91 > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (PNJ-)]	0	NA
631	SHO-WLT 91 > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (PNJ-)]	0	NA
632	SHO-WLT 91 > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (PNJ-)]	0	NA
633	SHO-WLT 91 > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (PNJ-)]	0	NA
634	SHO-WLT 91 > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (PNJ-)]	0	NA
635	SHO-WLT 91 > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (PNJ-)]	0	NA
636	SHO-WLT 91 > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (PNJ-)]	0	NA
637	SHO-WLT 91 > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (PNJ-)]	0	NA
638	SHO-WLT 91 > {PIC-PNJ-BSN-KEM 81} [PNJ-APJ 81 (PNJ-)]	0	NA