

Retailing Industry

Retail weekly/JMA weather outlook: 5 January 2024

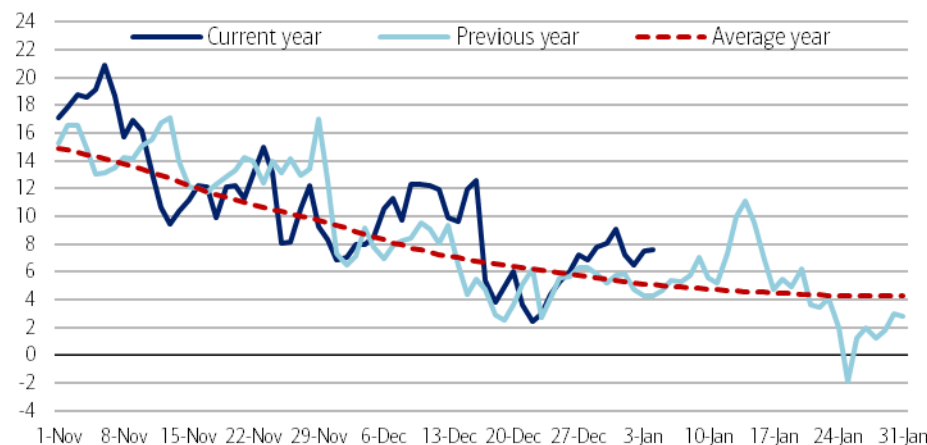
Industry Overview

Weather outlook: forecasts next month to remain warm

The Japan Meteorological Agency (JMA) updated its one-month forecast on 4 January. Over the next month (6 Jan-5 Feb), the JMA expects temperatures throughout Japan to be higher than the historical average and the amount of snowfall to be low. Notably, it forecasts that temperatures will be quite high in the first half of January, a headwind for specialty apparel retailers. Over the past week (28 Dec-3 Jan), temperatures were higher than average and last year's levels, as the entire country was less affected by cold fronts. See Page 2 onward for details about weather forecasts, overseas temperatures, and the performance of retail stocks.

Exhibit 2: Current-/previous-year and average temperatures (average for 10 largest cities)

Last week, temperatures were above historical averages and up YoY



Source: Japan Meteorological Agency, BofA Global Research

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05 January 2024

Equity
Japan
Retailing

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Exhibit 1: Next week's events

Please confirm official times with companies

8 Jan (Mon)
Holiday
9 Jan (Tue)
Earnings (Welcia, Izumi, etc.)
Monthly data (ABC Mart, Adastria, etc.)
10 Jan (Wed)
Earnings (ABC Mart, Saizeriya, Pal, etc.)
Monthly data (Ryohin Keikaku, convenience stores, PPIH, etc.)
11 Jan (Thu)
Earnings (Fast Retailing, Seven & i, Warabeya Nichiyo, Kojima, etc.)
12 Jan (Fri)
Earnings (Ryohin Keikaku, Lawson, Cosmos Pharmaceutical, JINS, Bic Camera, Aeon, etc.)

Source: BofA Global Research

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Timestamp: 05 January 2024 06:44AM EST

Retail share price performance

Exhibit 3: Retail share price performance (1W, 1M, 3M, 6M, 2023)

TOPIX Retail Index was -0.9 points versus TOPIX over the last week, -1.9% over the last month, and -0.6%, over the last three months

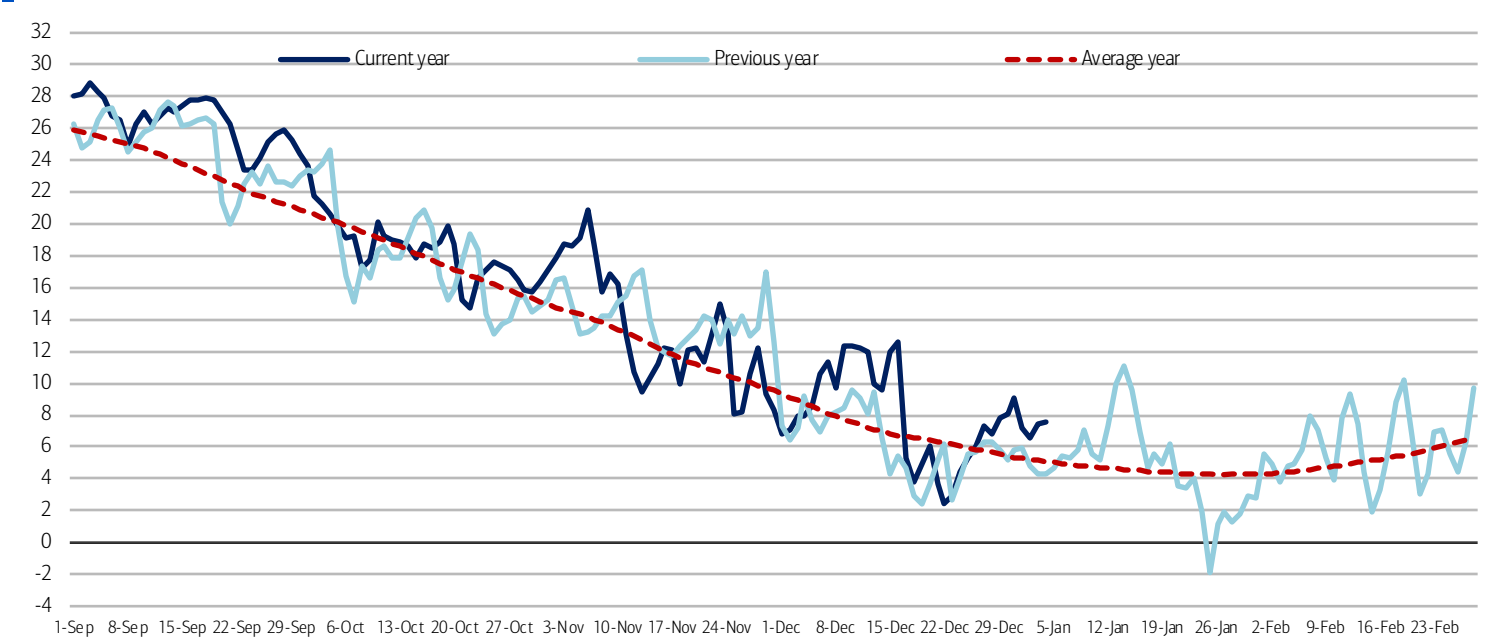
	1 Week		1 Month		3 Month		6 Month		2023	2022	
Skylark	4.8	Tokyo Base	13.9	JINS	47.4	Ryohin Keikaku	61.4	Pal	96.4	Takashimaya	72.2
Isetan Mitsukoshi	4.3	Daikokuten Bussan	13.3	Ryohin Keikaku	28.0	JINS	50.7	Onward	55.2	Isetan Mitsukoshi	69.1
Kusuri no Aoki	4.2	Bic Camera	12.3	Nishimatsuya	25.2	Kojima	31.2	Asics	51.6	H2O	59.3
Komeri	3.6	Kojima	9.2	Tsuruha	23.0	Daikokuten Bussan	30.4	Ryohin Keikaku	50.7	MatsukiyoCocokara	54.9
Aeon	3.2	Kohnan Shoji	7.4	Bic Camera	22.4	Bic Camera	30.2	Adastria	48.2	PPIH	54.6
Marui	3.1	Tsuruha	7.0	Kojima	22.2	PPIH	27.0	Lawson	44.8	ABC-Mart	51.5
MatsukiyoCocokara	2.6	Aeon	6.5	Pal	21.4	Nishimatsuya	25.9	Daikokuten Bussan	40.2	Pal	46.2
Bic Camera	2.2	Edion	5.9	Seria	16.8	Kusuri no Aoki	22.0	Mizuno	39.7	Adastria	45.1
ZOZO	2.1	DCM	5.8	ZOZO	16.4	Skylark	20.5	PPIH	37.1	Goldwin	43.4
Takashimaya	2.0	Marui	5.2	Daikokuten Bussan	14.9	Tsuruha	18.8	Skylark	35.2	Shimamura	35.6
Welcia	2.0	ZOZO	5.0	Nitori	10.9	Shimamura	18.3	Nishimatsuya	33.6	Yonex	35.4
Onward	1.9	Komeri	4.2	FOOD & LIFE	10.3	Pal	15.8	Kojima	32.1	Bic Camera	33.1
DCM	1.9	Yonex	4.2	Sundrug	9.4	Lawson	14.5	Fast Retailing	30.3	Sundrug	30.3
H2O	1.8	World	3.4	PPIH	9.0	Onward	13.4	World	27.6	Mizuno	25.4
Yamada	1.8	Yamada	3.4	Fast Retailing	8.7	Yaoko	13.2	Tsuruha	26.7	Fast Retailing	23.3
Mizuno	1.8	Izumi	3.0	Sugi	8.1	Kohnan Shoji	12.8	Arcs	26.7	Edion	19.9
J.Front	1.7	K's	2.3	Aeon	7.3	Arcs	12.0	Kusuri no Aoki	25.3	Yamada	18.8
TOPIX	1.1	TOPIX	2.2	Lawson	7.0	Kura Sushi	11.8	TOPIX	25.1	J.Front	14.7
Arcs	1.1	Arcs	1.5	DCM	7.0	ZOZO	11.5	Life	25.0	Asics	14.3
Izumi	1.1	U.S.M.H.	1.5	World	6.9	Komeri	11.3	Edion	22.2	DCM	12.9
K's	1.0	Sugi	1.4	Kobe Bussan	6.3	Cosmos	10.1	Cosmos	22.1	Nishimatsuya	12.2
7&i	0.9	MatsukiyoCocokara	1.3	Edion	6.0	Isetan Mitsukoshi	10.1	Izumi	21.1	7&i	11.9
World	0.9	Nitori	1.2	TOPIX	5.7	Nitori	9.9	Shimamura	20.3	World	10.9
Life	0.8	Mizuno	1.1	Skylark	5.2	Aeon	9.5	Yaoko	19.0	Kojima	9.2
U.S.M.H.	0.5	PPIH	0.4	TOPIX Retail	5.1	Life	9.2	H2O	18.4	TOPIX Retail	8.8
Tsuruha	0.4	TOPIX Retail	0.3	Shimamura	4.8	DCM	9.1	K's	17.1	Komeri	6.9
Alpen	0.4	Alpen	0.3	Kusuri no Aoki	4.7	Seria	8.8	TOPIX Retail	15.8	U.S.M.H.	6.4
Tokyo Base	0.3	Seria	0.1	Arcs	4.3	Adastria	8.2	Sundrug	15.8	Kusuri no Aoki	5.3
Sugi	0.3	Onward	-0.6	Yaoko	4.1	Izumi	7.7	Descente	15.2	Daikokuten Bussan	4.3
TOPIX Retail	0.2	Welcia	-1.0	Marui	3.2	Mizuno	7.4	Kohnan Shoji	14.8	Onward	3.7
Kohnan Shoji	0.1	JINS	-1.1	Kohnan Shoji	3.1	K's	6.8	Kura Sushi	13.7	Arcs	3.0
Yaoko	0.0	Cosmos	-1.2	Komeri	3.1	Kobe Bussan	6.7	MatsukiyoCocokara	13.5	Aeon	2.7
Kura Sushi	0.0	FOOD & LIFE	-1.3	Cosmos	2.8	Sundrug	6.3	Aeon	13.2	United Arrows	1.1
Kojima	0.0	Kobe Bussan	-1.4	Alpen	2.3	H2O	6.2	Komeri	13.1	Skylark	1.1
Edion	-0.2	Life	-1.5	Adastria	1.7	Edion	5.9	Yonex	12.4	Kohnan Shoji	1.0
Sundrug	-0.3	Lawson	-1.8	Kura Sushi	1.5	Yamada	5.1	FOOD & LIFE	11.5	K's	0.9
Lawson	-0.6	Takashimaya	-1.9	Tokyo Base	-0.3	TOPIX Retail	5.0	Nitori	10.7	Marui	0.7
Shimamura	-1.0	Skylark	-1.9	Yamada	-1.3	World	4.3	Sugi	10.4	Nitori	-1.0
Yonex	-1.1	ABC-Mart	-1.9	7&i	-2.0	TOPIX	3.8	Kobe Bussan	9.9	Workman	-1.8
Fast Retailing	-1.4	Yaoko	-2.0	K's	-2.0	Sugi	2.8	Marui	8.4	Yaoko	-3.0
Nishimatsuya	-1.5	Ryohin Keikaku	-2.1	Welcia	-2.3	FOOD & LIFE	1.3	DCM	7.6	TOPIX	-5.1
JINS	-1.7	7&i	-2.2	MatsukiyoCocokara	-3.6	Takashimaya	-0.5	Tokyo Base	7.1	Izumi	-7.3
Snow Peak	-1.7	Sundrug	-3.0	Izumi	-3.7	Alpen	-1.7	J.Front	6.8	Tsuruha	-7.6
Cosmos	-2.0	J.Front	-3.2	U.S.M.H.	-4.1	Marui	-1.8	Isetan Mitsukoshi	6.8	Lawson	-7.7
Descente	-2.0	Kusuri no Aoki	-3.8	United Arrows	-4.8	Fast Retailing	-3.4	Goldwin	6.1	Alpen	-8.6
FOOD & LIFE	-2.1	Pal	-4.2	Isetan Mitsukoshi	-4.9	Yonex	-4.8	Bic Camera	4.8	ZOZO	-9.2
PPIH	-2.1	Nishimatsuya	-4.3	Takashimaya	-6.1	J.Front	-4.9	Takashimaya	4.3	Ryohin Keikaku	-10.7
ABC-Mart	-2.2	Isetan Mitsukoshi	-4.4	Onward	-6.1	MatsukiyoCocokara	-5.3	JINS	2.0	Seria	-14.0
United Arrows	-2.3	Fast Retailing	-4.8	Life	-7.2	Asics	-6.8	United Arrows	1.9	Welcia	-14.3
Workman	-3.4	Shimamura	-5.5	Goldwin	-7.4	U.S.M.H.	-7.0	Alpen	-0.6	Kobe Bussan	-14.9
Ryohin Keikaku	-4.2	H2O	-5.6	Workman	-7.6	ABC-Mart	-7.5	ABC-Mart	-1.0	Sugi	-15.8
Asics	-4.7	Workman	-7.3	ABC-Mart	-9.0	7&i	-8.2	7&i	-1.1	Kura Sushi	-17.4
Daikokuten Bussan	-4.8	United Arrows	-7.5	H2O	-11.1	Descente	-12.3	ZOZO	-2.6	Cosmos	-21.2
Kobe Bussan	-5.4	Snow Peak	-8.4	J.Front	-11.4	Tokyo Base	-13.7	Yamada	-6.1	Life	-22.3
Seria	-5.9	Kura Sushi	-8.8	Mizuno	-11.5	Welcia	-15.8	Seria	-8.4	Descente	-23.7
Goldwin	-6.4	Descente	-9.8	Asics	-11.8	Workman	-18.6	U.S.M.H.	-9.6	Snow Peak	-26.1
Nitori	-7.3	Adastria	-13.6	Descente	-12.9	Goldwin	-21.7	Welcia	-19.8	JINS	-34.2
Adastria	-7.9	Asics	-14.6	Yonex	-16.8	United Arrows	-25.5	Workman	-23.0	FOOD & LIFE	-40.3
Pal	-8.8	Goldwin	-16.4	Snow Peak	-20.7	Snow Peak	-50.0	Snow Peak	-60.7	Tokyo Base	-53.3

Note: Includes companies outside of our coverage

Source: Bloomberg, BofA Global Research



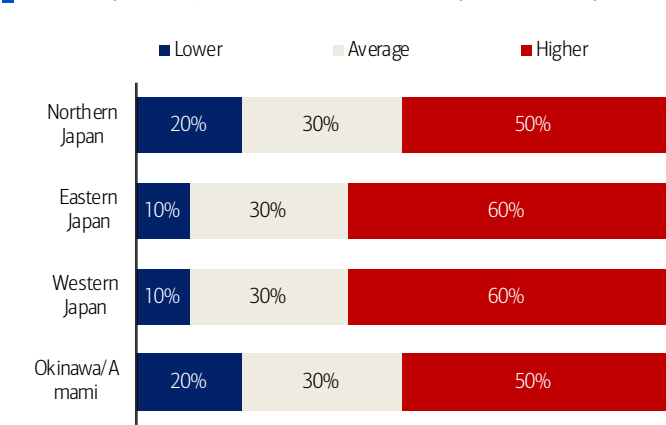
Exhibit 4: Current-/previous-year and average temperatures (average for 10 largest cities)
Last week, temperatures were above historical averages and up YoY



Note: Simple average for 10 cities (Tokyo, Yokohama, Osaka, Nagoya, Sapporo, Fukuoka, Kobe, Hiroshima, Sendai, Matsuyama). Average data based on 1991-2020.
Source: Japan Meteorological Agency, BofA Global Research

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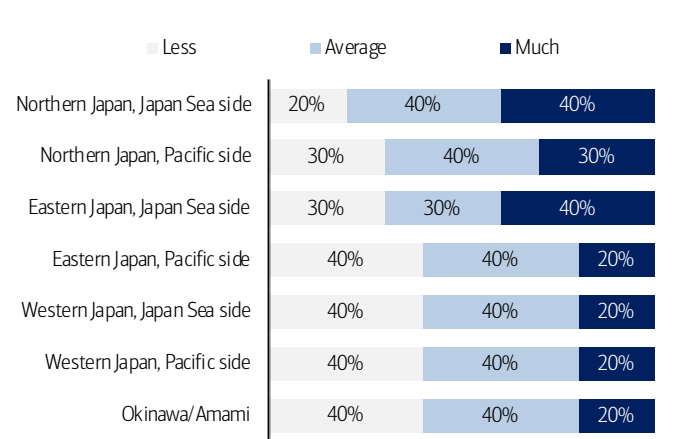
Exhibit 5: Temperature forecasts by region (6Jan -5 Feb)
In each region, temperatures are forecast to be higher than average



Source: Japan Meteorological Agency, BofA Global Research

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Exhibit 6: Precipitation forecasts by region (6Jan -5 Feb)
For the next month, forecasts call for average precipitation to fall in North/East Japan of the Sea of Japan side



Source: Japan Meteorological Agency, BofA Global Research

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Exhibit 7: Monthly temperature trends

Tokyo, Yokohama, Osaka, Nagoya, Sapporo

	Tokyo				Yokohama				Osaka				Nagoya				Sapporo			
	Average	vs. last year	vs. average	vs. 5 yrs ave	Average	vs. last year	vs. average	vs. 5 yrs ave	Average	vs. last year	vs. average	vs. 5 yrs ave	Average	vs. last year	vs. average	vs. 5 yrs ave	Average	vs. last year	vs. average	vs. 5 yrs ave
2021/1	5.4	-0.2	0.0	-0.5	6.2	-0.4	0.1	-0.5	6.2	-0.3	0.0	-0.4	5.0	-0.1	0.2	-0.4	-4.4	-1.4	-1.2	-1.3
2021/2	8.5	1.3	2.4	1.5	9.1	1.2	2.4	1.5	8.7	0.9	2.1	1.7	7.5	0.3	2.0	1.4	-2.2	0.4	0.5	0.4
2021/3	12.8	2.2	3.4	2.5	13.2	2.2	3.5	2.5	12.2	1.6	2.3	1.5	12.0	1.9	2.8	1.8	3.8	1.3	2.7	1.5
2021/4	15.1	1.5	0.8	0.4	15.2	1.3	0.7	0.2	15.5	0.9	0.3	0.0	15.2	1.1	0.6	0.3	7.9	-0.1	0.6	0.2
2021/5	19.6	-0.4	0.8	-0.3	19.6	-0.2	0.8	-0.3	20.0	-1.0	-0.1	-0.8	19.5	-0.9	0.1	-0.9	13.1	-2.6	0.1	-1.3
2021/6	22.7	0.9	0.8	0.3	22.7	0.8	0.9	0.3	23.9	0.2	0.3	0.3	23.4	0.3	0.4	0.1	18.9	1.5	1.9	2.0
2021/7	25.9	1.8	0.2	0.0	26.0	1.7	0.4	0.2	27.9	1.4	0.2	0.1	27.4	1.5	0.5	0.3	23.9	2.2	2.8	2.3
2021/8	27.4	-1.0	0.5	-0.4	27.5	-0.9	0.5	-0.4	28.1	-1.0	-0.9	-1.5	27.8	-1.1	-0.4	-1.3	22.9	0.4	0.6	0.4
2021/9	22.3	-2.8	-1.0	-1.6	22.6	-2.7	-1.1	-1.6	24.8	-1.8	-0.4	-0.5	24.1	-2.6	-0.4	-0.8	18.8	-0.5	0.2	-0.3
2021/10	18.2	-1.2	0.2	-0.1	18.7	-1.2	0.2	-0.1	20.3	-0.4	0.8	0.7	19.9	-0.4	1.3	0.9	12.5	-0.8	0.4	0.2
2021/11	13.7	0.6	1.2	0.8	14.3	0.3	0.9	0.6	14.1	-0.1	0.3	0.2	13.0	-0.4	0.4	-0.1	7.3	3.4	2.1	2.7
2021/12	7.9	-0.6	0.2	-0.1	8.8	-0.6	0.1	-0.2	8.8	-0.7	0.1	0.0	7.3	-1.5	0.1	-0.3	-0.5	0.3	0.4	0.8
2022/1	4.9	-2.2	-0.5	-0.8	5.5	-2.3	-0.6	-1.1	5.6	-3.0	-0.6	-0.9	4.1	-3.5	-0.7	-1.2	-3.2	-0.9	0.0	0.0
2022/2	5.2	-3.1	-0.9	-2.1	5.8	-3.1	-0.9	-2.1	5.5	-2.5	-1.1	-1.7	4.5	-2.6	-1.0	-1.8	-2.2	-0.1	0.5	0.4
2022/3	10.9	0.2	1.5	0.1	11.3	0.1	1.6	0.1	11.4	0.0	1.5	0.4	11.0	0.3	1.8	0.5	2.6	-0.7	1.5	-0.1
2022/4	15.3	2.5	1.0	0.7	15.4	2.0	0.9	0.5	16.8	3.1	1.6	1.5	16.8	3.4	2.2	2.0	9.1	2.3	1.8	1.4
2022/5	18.8	-0.7	0.0	-1.0	19.0	-0.7	0.2	-0.8	20.0	-0.8	-0.1	-0.6	19.5	-1.1	0.1	-0.7	14.9	1.2	1.9	0.8
2022/6	23.0	-0.2	1.1	0.6	22.9	-0.5	1.1	0.4	24.4	-0.5	0.8	0.7	24.3	-0.3	1.3	0.9	16.8	-1.5	-0.2	-0.6
2022/7	27.4	3.1	1.7	1.4	27.1	2.7	1.5	1.1	28.4	2.4	0.7	0.7	27.5	2.1	0.6	0.3	23.1	1.9	2.0	0.9
2022/8	27.5	-1.6	0.6	-0.4	27.6	-1.5	0.6	-0.3	29.5	-1.2	0.5	0.1	28.5	-1.8	0.3	-0.5	22.7	-0.6	0.4	0.4
2022/9	24.4	0.2	1.1	0.9	24.7	0.1	1.0	0.9	26.2	0.4	1.0	1.1	26.1	0.7	1.6	1.4	19.8	-0.3	1.2	0.8
2022/10	17.2	-0.3	-0.8	-1.0	17.9	0.0	-0.6	-0.8	19.0	0.3	-0.5	-0.6	18.7	0.7	0.1	-0.3	12.6	-0.5	0.5	0.0
2022/11	14.5	0.5	2.0	1.2	15.2	0.5	1.8	1.1	15.2	0.5	1.4	1.2	14.6	0.6	2.0	1.5	7.1	0.8	1.9	1.5
2022/12	7.5	-0.2	-0.2	-0.3	8.4	-0.4	-0.3	-0.4	7.9	-0.8	-0.8	-0.8	6.6	-0.8	-0.6	-0.9	-1.4	0.2	-0.5	-0.2
2023/1	5.7	0.3	0.3	0.2	6.4	0.2	0.3	0.1	6.5	0.3	0.3	0.1	5.2	0.2	0.4	0.1	-4.4	0.0	-1.2	-1.3
2023/2	7.3	-1.2	1.2	0.4	7.9	-1.2	1.2	0.4	7.0	-1.7	0.4	-0.1	6.5	-1.0	1.0	0.3	-2.7	-0.5	0.0	0.0
2023/3	12.9	0.1	3.5	1.6	13.2	0.0	3.5	1.5	13.0	0.8	3.1	1.6	12.7	0.7	3.5	1.7	4.9	1.1	3.8	2.0
2023/4	16.3	1.2	2.0	1.5	16.6	1.4	2.1	1.6	15.9	0.4	0.7	0.4	15.9	0.7	1.3	0.7	9.2	1.3	1.9	1.2
2023/5	19.0	-0.6	0.2	-0.5	19.0	-0.6	0.2	-0.6	20.0	0.0	-0.1	-0.4	20.2	0.7	0.8	0.2	13.8	0.7	0.8	-0.4
2023/6	23.2	0.5	1.3	0.6	23.2	0.5	1.4	0.6	23.8	-0.1	0.2	-0.3	23.8	0.4	0.8	0.0	19.3	0.4	2.3	1.7
2023/7	28.7	2.8	3.0	2.7	28.2	2.2	2.6	2.2	28.9	1.0	1.2	1.2	28.9	1.5	2.0	1.8	23.8	-0.1	2.7	1.5
2023/8	29.2	1.8	2.3	1.1	29.1	1.6	2.1	1.0	29.9	1.8	0.9	0.5	29.4	1.6	1.2	0.4	26.7	3.8	4.4	4.2
2023/9	26.7	4.4	3.4	2.9	26.9	4.3	3.2	2.8	27.9	3.1	2.7	2.4	27.3	3.2	2.8	2.1	21.5	2.7	2.9	2.1
2023/10	18.9	0.7	0.9	0.6	19.5	0.8	1.0	0.7	19.3	-1.0	-0.2	-0.4	18.3	-1.6	-0.3	-0.9	13.3	0.8	1.2	0.4
2023/11	14.4	0.7	1.9	0.5	15.2	0.9	1.8	0.6	14.4	0.3	0.6	-0.2	13.6	0.6	1.0	-0.2	6.7	-0.6	1.5	0.5
2023/12	9.4	1.5	1.7	1.4	10.2	1.4	1.5	1.3	9.3	0.5	0.6	0.4	8.4	1.1	1.2	0.8	-0.7	-0.2	0.2	0.4

Source: Japan Meteorological Agency, BofA Global Research

Exhibit 8: Monthly temperature trends

Fukuoka, Kobe, Hiroshima, Sendai, Matsuyama

	Fukuoka				Kobe				Hiroshima				Sendai				Matsuyama			
	Average	vs. last year	vs. average	vs. 5 yrs ave	Average	vs. last year	vs. average	vs. 5 yrs ave	Average	vs. last year	vs. average	vs. 5 yrs ave	Average	vs. last year	vs. average	vs. 5 yrs ave	Average	vs. last year	vs. average	vs. 5 yrs ave
2021/1	7.0	-1.0	0.1	-0.5	6.1	-0.6	-0.1	-0.7	5.2	-1.2	-0.2	-0.8	1.2	-1.2	-0.8	-1.3	6.2	-1.0	0.0	-0.6
2021/2	10.2	0.8	2.4	1.9	8.8	0.8	2.3	1.7	8.2	0.6	2.0	1.7	3.7	0.0	1.3	0.5	8.9	0.7	2.1	1.6
2021/3	13.5	1.6	2.7	1.9	12.3	1.5	2.5	1.6	12.1	1.5	2.6	1.8	8.6	1.6	3.1	1.7	12.7	1.8	2.8	2.0
2021/4	16.7	1.3	1.3	0.7	15.3	0.8	0.3	-0.1	15.4	0.6	0.6	0.2	11.6	1.4	0.9	0.4	15.5	0.7	0.7	0.2
2021/5	20.4	-0.7	0.5	-0.4	19.7	-0.9	-0.1	-0.8	19.5	-1.0	-0.1	-0.8	17.0	-0.4	1.4	0.0	19.5	-0.8	0.1	-0.6
2021/6	24.2	0.8	0.9	0.5	23.7	0.3	0.3	0.4	23.8	0.6	0.6	0.5	20.6	1.6	1.4	0.8	23.4	0.4	0.5	0.2
2021/7	28.9	2.5	1.5	1.2	27.5	1.1	0.4	0.2	27.6	1.2	0.4	0.2	24.1	1.7	1.2	0.6	27.2	1.1	0.1	-0.1
2021/8	27.5	-0.5	-0.9	-1.9	27.8	-1.0	-0.8	-1.5	27.4	-1.1	-1.1	-1.9	24.9	-1.3	0.5	-0.4	27.5	-0.3	-0.6	-1.5
2021/9	25.9	0.0	1.2	1.0	25.1	-1.8	-0.3	-0.4	25.0	-1.3	0.3	0.3	20.8	-1.6	-0.4	-1.0	25.0	-1.3	0.4	0.1
2021/10	21.0	0.5	1.4	1.0	20.6	-0.6	0.8	0.6	19.9	-0.4	1.1	0.7	15.8	-1.1	0.1	-0.1	20.1	-0.6	1.0	0.4
2021/11	13.9	-1.0	-0.3	-0.6	14.5	-0.1	0.3	0.2	13.1	-0.4	0.2	-0.1	11.1	1.1	1.3	1.3	13.7	-0.4	0.1	-0.1
2021/12	9.1	-1.2	0.0	-0.3	8.9	-1.0	0.1	-0.2	7.8	-0.8	0.3	0.0	4.7	-0.7	0.2	0.1	8.8	-0.9	0.3	0.1
2022/1	6.9	-2.6	0.0	-0.6	5.7	-3.1	-0.5	-0.9	5.3	-2.8	-0.1	-0.6	1.7	-2.3	-0.3	-0.6	5.9	-2.8	-0.3	-0.8
2022/2	6.3	-3.4	-1.5	-2.5	5.6	-2.6	-0.9	-1.7	4.8	-3.0	-1.4	-2.1	1.9	-2.5	-0.5	-1.4	5.2	-3.2	-1.6	-2.4
2022/3	12.7	0.3	1.9	0.7	11.5	0.1	1.7	0.5	11.5	0.5	2.0	0.8	6.4	-1.1	0.9	-0.8	11.9	0.5	2.0	0.8
2022/4	16.4	2.3	1.0	0.4	16.6	3.0	1.6	1.5	16.4	3.2	1.6	1.4	11.8	1.7	1.1	0.6	15.9	2.6	1.1	0.7
2022/5	20.6	0.2	0.7	-0.1	19.8	-0.8	0.0	-0.5	20.0	-0.3	0.4	-0.1	16.5	-0.3	0.9	-0.5	19.3	-0.8	-0.1	-0.7
2022/6	24.8	-0.1	1.5	0.9	23.9	-0.4	0.5	0.5	24.2	0.0	1.0	0.8	20.2	-1.0	1.0	0.3	24.1	-0.1	1.2	0.9
2022/7	28.9	3.4	1.5	1.1	28.0	2.3	0.9	0.7	28.1	2.9	0.9	0.8	24.9	3.6	2.0	1.2	27.8	2.2	0.7	0.7
2022/8	29.8	-0.4	1.4	0.8	29.2	-0.8	0.6	0.2	29.2	-0.7	0.7	0.3	25.1	-1.5	0.7	0.0	29.1	-0.6	1.0	0.5
2022/9	25.7	1.2	1.0	0.6	26.7	0.8	1.3	1.4	26.0	1.0	1.3	1.3	22.2	-0.3	1.0	0.7	26.2	1.0	1.6	1.3
2022/10	19.6	0.2	0.0	-0.4	19.5	0.4	-0.3	-0.4	18.9	0.2	0.1	-0.3	15.5	-0.1	-0.2	-0.4	19.2	0.4	0.1	-0.3
2022/11	16.2	0.9	2.0	1.8	15.8	0.7	1.6	1.4	14.9	0.7	2.0	1.7	11.9	1.1	2.1	1.6	15.5	0.8	1.9	1.7
2022/12	7.7	-0.8	-1.4	-1.4	7.9	-0.9	-0.9	-1.0	6.4	-0.8	-1.1	-1.2	4.2	0.3	-0.3	-0.2	7.4	-0.5	-1.1	-1.1
2023/1	7.2	0.2	0.3	-0.2	6.6	0.5	0.4	0.1	5.7	0.5	0.3	-0.2	2.1	0.9	0.1	0.0	6.5	0.3	0.3	-0.1
2023/2	9.0	-1.2	1.2	0.6	7.2	-1.6	0.7	0.0	6.9	-1.3	0.7	0.3	3.0	-0.7	0.6	0.0	7.6	-1.3	0.8	0.4
2023/3	13.6	0.1	2.8	1.1	13.0	0.7	3.2	1.5	12.6	0.5	3.1	1.4	9.3	0.7	3.8	1.9	12.7	0.0	2.8	1.0
2023/4	16.7	0.0	1.3	0.8	15.9	0.6	0.9	0.6	15.7	0.3	0.9	0.5	13.3	1.7	2.6	2.1	15.9	0.4	1.1	0.7
2023/5	20.2	-0.2	0.3	-0.5	19.8	0.1	0.0	-0.3	19.9	0.4	0.3	-0.1	16.6	-0.4	1.0	-0.3	19.8	0.3	0.4	0.0
2023/6	24.4	0.2	1.1	0.2	23.4	-0.3	0.0	-0.3	23.3	-0.5	0.1	-0.4	21.6	1.0	2.4	1.3	23.1	-0.3	0.2	-0.4
2023/7	28.9	0.0	1.5	1.2	28.0	0.5	0.9	0.7	27.9	0.3	0.7	0.6	26.6	2.5	3.7	3.0	28.0	0.8	0.9	1.0
2023/8	29.7	2.2	1.3	0.6	29.7	1.9	1.1	0.7	30.0	2.6	1.5	1.0	28.6	3.7	4.2	3.1	28.9	1.4	0.8	0.2
2023/9	26.9	1.0	2.2	1.5	27.9	2.8	2.5	2.1	27.2	2.2	2.5	2.0	25.1	4.3	3.9	3.4	27.3	2.3	2.7	1.9
2023/10	19.8	-1.2	0.2	-0.1	19.6	-1.0	-0.2	-0.5	18.9	-1.0	0.1	-0.4	16.7	0.9	1.0	0.6	19.4	-0.7	0.3	-0.2
2023/11	15.1	1.2	0.9	0.2	14.7	0.2	0.5	-0.3	14.0	0.9	1.1	0.2	11.4	0.3	1.6	0.5	14.8	1.1	1.2	0.5
2023/12	9.9	0.8	0.8	0.7	9.7	0.8	0.9	0.7	8.2	0.4	0.7	0.5	5.7	1.0	1.2	1.2	9.3	0.5	0.8	0.7

Source: Japan Meteorological Agency, BofA Global Research

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Exhibit 9: Monthly precipitation trends

Tokyo, Yokohama, Osaka, Nagoya, Sapporo

	Tokyo			Yokohama			Osaka			Nagoya			Sapporo		
	vs. last year	vs. average	vs. 5 yrs ave	vs. last year	vs. average	vs. 5 yrs ave	vs. last year	vs. average	vs. 5 yrs ave	vs. last year	vs. average	vs. 5 yrs ave	vs. last year	vs. average	vs. 5 yrs ave
2021/1	-68%	-27%	-30%	-63%	-28%	-27%	6%	37%	37%	2%	11%	48%	76%	-17%	18%
2021/2	490%	57%	196%	200%	51%	125%	-30%	-26%	-14%	-13%	-28%	-3%	-50%	-15%	-2%
2021/3	32%	49%	32%	32%	57%	38%	44%	41%	61%	36%	75%	65%	-26%	2%	0%
2021/4	-47%	17%	6%	-36%	9%	6%	92%	120%	98%	73%	51%	20%	113%	105%	130%
2021/5	-16%	-29%	-16%	16%	-26%	-10%	251%	149%	162%	88%	69%	71%	68%	38%	60%
2021/6	-21%	0%	-4%	-53%	-40%	-44%	-8%	-7%	-13%	-40%	-27%	-28%	-2%	-16%	-54%
2021/7	15%	98%	111%	-3%	102%	79%	-35%	54%	27%	-23%	48%	22%	-87%	-92%	-91%
2021/8	522%	147%	135%	471%	97%	136%	175%	178%	140%	2569%	149%	153%	-13%	-14%	-37%
2021/9	89%	-1%	-5%	85%	-18%	-29%	96%	26%	11%	-3%	-3%	8%	36%	-49%	-28%
2021/10	-3%	-15%	-30%	-5%	-13%	-23%	-67%	-50%	-63%	-76%	-61%	-75%	128%	37%	39%
2021/11	541%	-3%	11%	1317%	18%	63%	110%	36%	138%	96%	-10%	60%	36%	35%	50%
2021/12	792%	100%	149%	669%	103%	104%	341%	47%	46%	305%	57%	64%	309%	-5%	18%
2022/1	-48%	-62%	-58%	-55%	-68%	-64%	-69%	-57%	-57%	-54%	-49%	-32%	88%	57%	113%
2022/2	-20%	26%	96%	-39%	-8%	40%	-63%	-73%	-63%	-27%	-47%	-23%	43%	22%	52%
2022/3	-36%	-5%	-24%	-53%	-26%	-36%	-28%	1%	3%	-58%	-27%	-40%	-31%	-30%	-35%
2022/4	44%	68%	45%	64%	79%	74%	-48%	14%	-12%	-30%	5%	-15%	-87%	-73%	-75%
2022/5	99%	42%	79%	56%	16%	44%	-76%	-41%	-53%	-35%	9%	-4%	-13%	20%	21%
2022/6	-62%	-62%	-63%	-23%	-54%	-54%	-41%	-45%	-39%	-14%	-37%	-32%	41%	18%	-27%
2022/7	-25%	49%	21%	-43%	15%	-5%	-35%	0%	-31%	17%	73%	29%	740%	-31%	-4%
2022/8	-73%	-32%	-33%	-47%	5%	15%	-77%	-35%	-55%	-44%	41%	7%	115%	84%	70%
2022/9	39%	38%	39%	55%	27%	19%	-6%	18%	4%	16%	12%	35%	20%	-38%	-7%
2022/10	-41%	-50%	-61%	-41%	-49%	-59%	35%	-32%	-51%	-14%	-66%	-77%	-47%	-27%	-35%
2022/11	10%	6%	37%	-18%	-3%	41%	-17%	12%	73%	59%	44%	162%	-46%	-28%	-25%
2022/12	-51%	-2%	7%	-52%	-4%	-14%	-78%	-68%	-65%	-72%	-56%	-53%	10%	4%	65%
2023/1	-31%	-74%	-71%	-21%	-74%	-71%	130%	-2%	5%	-4%	-51%	-35%	-58%	-34%	-28%
2023/2	-43%	-28%	-14%	-31%	-37%	-20%	103%	-45%	-15%	29%	-32%	6%	-7%	13%	23%
2023/3	31%	25%	-4%	35%	0%	-15%	-27%	-26%	-33%	12%	-18%	-34%	-35%	-54%	-55%
2023/4	-60%	-33%	-49%	-63%	-34%	-45%	69%	93%	44%	7%	13%	-6%	307%	12%	24%
2023/5	-20%	14%	13%	25%	44%	51%	190%	70%	39%	5%	15%	-9%	-68%	-61%	-62%
2023/6	442%	107%	110%	281%	76%	84%	159%	42%	71%	221%	102%	122%	88%	121%	73%
2023/7	-87%	-81%	-87%	-78%	-74%	-81%	-42%	-42%	-64%	-61%	-32%	-53%	-2%	-32%	-2%
2023/8	26%	-14%	-11%	-25%	-21%	-13%	122%	45%	5%	-20%	12%	-12%	-70%	-45%	-59%
2023/9	-26%	2%	-6%	-51%	-39%	-41%	-76%	-71%	-76%	-62%	-57%	-56%	67%	3%	96%
2023/10	25%	-37%	-34%	9%	-44%	-38%	-16%	-43%	-36%	108%	-29%	-24%	11%	-19%	-24%
2023/11	-60%	-57%	-52%	-45%	-47%	-30%	13%	28%	78%	-38%	-11%	24%	53%	11%	25%
2023/12	-65%	-66%	-68%	-48%	-50%	-60%	8%	-65%	-61%	140%	6%	13%	-61%	-59%	-42%

Source: Japan Meteorological Agency, BofA Global Research

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Exhibit 10: Monthly precipitation trends

Fukuoka, Kobe, Hiroshima, Sendai, Matsuyama

	Fukuoka			Kobe			Hiroshima			Sendai			Matsuyama		
	vs.	vs.	vs.	vs.	vs.	vs.	vs.	vs.	vs.	vs.	vs.	vs.	vs.	vs.	vs.
	last year	average	5 yrs ave	last year	average	5 yrs ave	last year	average	5 yrs ave	last year	average	last year	average	5 yrs ave	5 yrs ave
2021/1	-70%	-39%	-50%	-13%	42%	36%	-42%	9%	-12%	-92%	-78%	-82%	-61%	-28%	-37%
2021/2	23%	14%	28%	-38%	-39%	-39%	-7%	-12%	-14%	282%	120%	312%	25%	5%	7%
2021/3	-26%	12%	10%	-3%	3%	14%	-16%	20%	20%	136%	44%	58%	-8%	-12%	-13%
2021/4	-20%	-44%	-48%	70%	67%	52%	-8%	0%	-17%	-40%	3%	-18%	-36%	-4%	-21%
2021/5	-9%	0%	12%	172%	83%	89%	92%	48%	96%	-29%	-32%	-27%	153%	111%	166%
2021/6	-67%	-51%	-53%	-58%	-42%	-53%	-48%	-18%	-37%	43%	-57%	-44%	-50%	-48%	-49%
2021/7	-94%	-85%	-88%	-69%	-2%	-39%	-51%	36%	0%	-52%	6%	17%	-73%	-34%	-50%
2021/8	1699%	320%	437%	1947%	256%	256%	34700%	430%	527%	152%	16%	4%	3414%	273%	423%
2021/9	-21%	41%	-9%	32%	19%	-8%	52%	36%	-4%	-34%	-35%	-30%	1%	-9%	-44%
2021/10	-32%	-53%	-70%	-72%	-64%	-71%	-87%	-89%	-93%	127%	-5%	-37%	-75%	-74%	-78%
2021/11	510%	67%	206%	120%	71%	197%	316%	50%	204%	829%	11%	309%	150%	98%	232%
2021/12	6%	-33%	-37%	237%	-7%	3%	-26%	-47%	-55%	167%	30%	148%	-22%	-51%	-54%
2022/1	5%	-35%	-42%	-70%	-57%	-60%	-76%	-74%	-78%	68%	-62%	-62%	4%	-25%	-29%
2022/2	-72%	-68%	-61%	-47%	-68%	-56%	-70%	-73%	-70%	-65%	-23%	-12%	-62%	-60%	-57%
2022/3	-6%	5%	-4%	-9%	-7%	1%	-13%	5%	-8%	-33%	-4%	-19%	2%	-11%	-13%
2022/4	114%	20%	40%	-38%	3%	-16%	6%	6%	4%	2%	4%	-1%	42%	37%	23%
2022/5	-66%	-66%	-58%	-62%	-31%	-37%	-88%	-82%	-78%	23%	-17%	-9%	-79%	-55%	-57%
2022/6	13%	-45%	-33%	-14%	-50%	-50%	-46%	-56%	-57%	183%	22%	93%	-15%	-56%	-43%
2022/7	132%	-65%	-69%	33%	30%	-23%	-16%	14%	-23%	88%	100%	90%	74%	14%	-15%
2022/8	-70%	27%	-15%	-56%	58%	0%	-79%	13%	-36%	-21%	-9%	-14%	-86%	-49%	-64%
2022/9	-12%	24%	9%	-30%	-17%	-36%	1%	37%	4%	-9%	-41%	-20%	-15%	-23%	-45%
2022/10	57%	-27%	-42%	108%	-24%	-40%	91%	-80%	-83%	-72%	-73%	-84%	59%	-59%	-63%
2022/11	-78%	-63%	-37%	1%	73%	152%	-60%	-39%	9%	5%	17%	216%	-50%	-1%	19%
2022/12	-20%	-47%	-30%	-62%	-64%	-55%	-9%	-52%	-48%	-54%	-40%	-7%	-5%	-53%	-45%
2023/1	102%	30%	24%	230%	42%	42%	279%	-2%	-2%	-38%	-76%	-76%	64%	23%	23%
2023/2	167%	-14%	13%	53%	-51%	-23%	262%	-4%	30%	21%	-7%	-1%	88%	-25%	-5%
2023/3	-18%	-14%	-29%	-3%	-9%	-13%	-48%	-45%	-56%	-15%	-18%	-30%	-19%	-28%	-34%
2023/4	29%	54%	100%	55%	61%	35%	64%	75%	81%	-49%	-47%	-49%	55%	112%	82%
2023/5	447%	84%	145%	169%	85%	63%	723%	50%	86%	36%	13%	37%	349%	101%	106%
2023/6	22%	-32%	-15%	154%	26%	38%	121%	-3%	12%	-1%	20%	57%	172%	20%	70%
2023/7	409%	79%	62%	-62%	-50%	-74%	-4%	10%	-31%	-56%	-13%	-30%	7%	22%	-17%
2023/8	-38%	-22%	-53%	23%	93%	10%	-67%	-63%	-80%	-79%	-81%	-80%	53%	-23%	-41%
2023/9	-52%	-40%	-52%	-75%	-80%	-83%	-48%	-29%	-45%	138%	41%	96%	-93%	-95%	-96%
2023/10	-67%	-76%	-69%	-45%	-58%	-50%	-61%	-92%	-84%	15%	-69%	-76%	-84%	-93%	-87%
2023/11	53%	-43%	-7%	-22%	35%	51%	-21%	-52%	-23%	-34%	-23%	33%	-33%	-34%	-25%
2023/12	24%	-34%	-18%	9%	-61%	-49%	115%	4%	5%	89%	13%	55%	28%	-40%	-29%

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Exhibit 11: Monthly sunshine hours

Tokyo, Yokohama, Osaka, Nagoya, Sapporo

	Tokyo			Yokohama			Osaka			Nagoya			Sapporo		
	vs. last year	vs. average	vs. 5 yrs ave	vs. last year	vs. average	vs. 5 yrs ave	vs. last year	vs. average	vs. 5 yrs ave	vs. last year	vs. average	vs. 5 yrs ave	vs. last year	vs. average	vs. 5 yrs ave
2021/1	23%	-10%	-13%	17%	-4%	-8%	40%	20%	14%	10%	-7%	-11%	17%	21%	22%
2021/2	10%	26%	26%	12%	36%	32%	37%	35%	24%	-11%	-6%	-9%	15%	10%	11%
2021/3	6%	10%	6%	11%	13%	7%	2%	13%	0%	-4%	-3%	-11%	-7%	12%	-4%
2021/4	2%	22%	14%	0%	21%	14%	-3%	15%	8%	-14%	10%	3%	11%	18%	8%
2021/5	-14%	-16%	-27%	-12%	-13%	-24%	-23%	-17%	-27%	-29%	-26%	-33%	-28%	-26%	-34%
2021/6	-3%	6%	-9%	7%	9%	-5%	-1%	13%	-4%	-6%	1%	-16%	83%	45%	59%
2021/7	236%	6%	16%	210%	11%	17%	101%	4%	10%	124%	6%	13%	43%	70%	46%
2021/8	-31%	1%	-2%	-36%	-7%	-10%	-44%	-26%	-34%	-37%	-17%	-26%	-1%	11%	6%
2021/9	-5%	-21%	-7%	-7%	-18%	-9%	-7%	-23%	-9%	-15%	-21%	-11%	44%	26%	15%
2021/10	43%	26%	41%	41%	25%	40%	11%	22%	32%	11%	17%	30%	3%	8%	3%
2021/11	32%	38%	34%	34%	38%	34%	10%	25%	10%	-1%	20%	7%	25%	6%	6%
2021/12	21%	16%	20%	22%	16%	21%	-4%	19%	14%	-6%	-1%	0%	16%	33%	30%
2022/1	20%	7%	7%	4%	0%	-4%	-8%	11%	3%	22%	13%	12%	-22%	-6%	-10%
2022/2	-11%	12%	5%	-13%	18%	7%	-10%	22%	10%	4%	-3%	-3%	6%	17%	14%
2022/3	1%	12%	4%	2%	15%	5%	-1%	12%	0%	6%	3%	-1%	-18%	-9%	-21%
2022/4	-22%	-5%	-17%	-21%	-4%	-16%	-2%	13%	1%	-9%	0%	-10%	17%	38%	22%
2022/5	20%	1%	-7%	11%	-4%	-11%	26%	5%	-3%	39%	2%	-2%	51%	12%	7%
2022/6	27%	35%	16%	16%	27%	10%	23%	38%	15%	33%	34%	12%	-34%	-4%	-6%
2022/7	10%	17%	25%	-1%	10%	13%	-1%	3%	12%	10%	16%	25%	-37%	7%	-14%
2022/8	-14%	-14%	-18%	-10%	-16%	-19%	30%	-3%	-6%	-7%	-23%	-27%	-19%	-9%	-10%
2022/9	34%	6%	19%	37%	12%	24%	43%	10%	26%	30%	3%	12%	-3%	23%	7%
2022/10	-27%	-8%	-4%	-22%	-3%	0%	-1%	21%	22%	-4%	12%	17%	4%	12%	5%
2022/11	-22%	7%	-5%	-21%	9%	-4%	-3%	21%	3%	-4%	15%	-1%	-8%	-2%	-5%
2022/12	-13%	1%	3%	-11%	3%	6%	0%	18%	10%	4%	3%	7%	-26%	-2%	-11%
2023/1	-6%	1%	3%	0%	-1%	0%	0%	10%	3%	-5%	7%	5%	46%	37%	29%
2023/2	-6%	5%	-2%	-13%	3%	-7%	-22%	-4%	-17%	12%	9%	11%	-15%	-1%	-9%
2023/3	-16%	-6%	-13%	-13%	0%	-10%	17%	31%	17%	4%	7%	4%	36%	24%	15%
2023/4	16%	10%	-1%	18%	13%	1%	-11%	0%	-12%	1%	1%	-9%	-33%	-8%	-23%
2023/5	8%	9%	5%	15%	11%	8%	6%	11%	5%	7%	10%	7%	0%	12%	6%
2023/6	-18%	11%	-6%	-14%	10%	-6%	-39%	-15%	-29%	-37%	-15%	-28%	24%	20%	16%
2023/7	42%	65%	81%	48%	63%	75%	28%	32%	44%	25%	45%	53%	-4%	2%	-16%
2023/8	48%	28%	13%	52%	27%	17%	2%	-1%	-5%	39%	7%	3%	15%	4%	7%
2023/9	7%	13%	25%	17%	31%	40%	5%	16%	29%	11%	14%	26%	-27%	-10%	-23%
2023/10	68%	55%	55%	58%	53%	52%	6%	29%	16%	15%	29%	22%	8%	22%	12%
2023/11	9%	17%	3%	6%	15%	2%	4%	25%	6%	-5%	9%	-7%	9%	7%	3%
2023/12	13%	14%	21%	11%	15%	23%	10%	30%	21%	9%	12%	18%	33%	31%	20%

Source: Japan Meteorological Agency, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 12: Monthly sunshine hours

Fukuoka, Kobe, Hiroshima, Sendai, Matsuyama

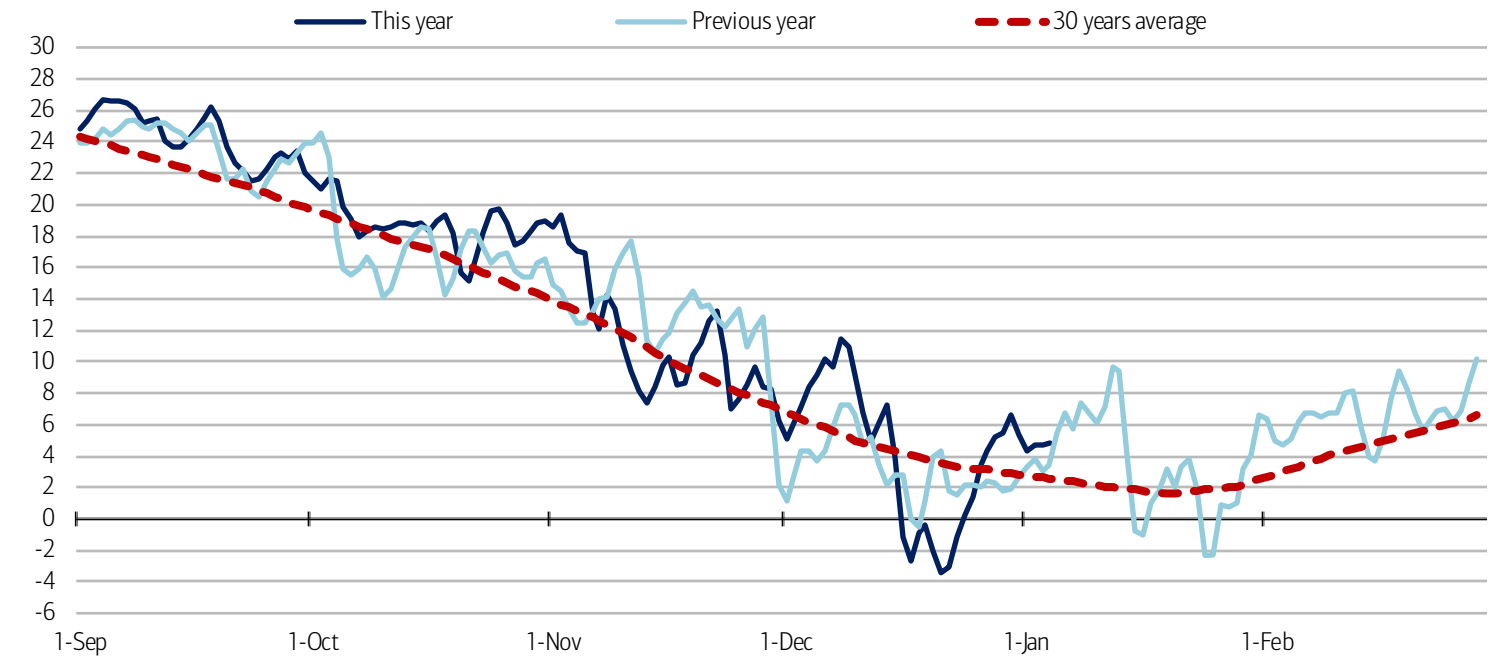
	Fukuoka			Kobe			Hiroshima			Sendai			Matsuyama		
	vs.	vs.	vs.	vs.	vs.	vs.	vs.	vs.	vs.	vs.	vs.	vs.	vs.	vs.	
	last year	average	5 yrs ave	last year	average	5 yrs ave	last year	average	5 yrs ave	last year	average		last year	average	5 yrs ave
2021/1	27%	14%	12%	31%	15%	11%	21%	21%	15%	7%	-4%	-4%	25%	21%	23%
2021/2	28%	41%	34%	30%	36%	28%	26%	41%	33%	25%	14%	8%	14%	26%	25%
2021/3	5%	16%	4%	-3%	12%	2%	6%	13%	3%	6%	9%	0%	14%	11%	4%
2021/4	-7%	14%	7%	-2%	16%	10%	-7%	13%	4%	10%	18%	15%	-7%	16%	7%
2021/5	-17%	-12%	-22%	-23%	-17%	-27%	-25%	-25%	-31%	2%	1%	-10%	-30%	-23%	-31%
2021/6	1%	29%	5%	6%	10%	-1%	-8%	6%	-5%	-8%	14%	-2%	-7%	9%	-2%
2021/7	132%	17%	11%	112%	4%	10%	105%	-100%	-100%	177%	9%	9%	85%	6%	9%
2021/8	-43%	-28%	-41%	-46%	-28%	-36%	-44%	-29%	-38%	-33%	-4%	-8%	-46%	-29%	-37%
2021/9	-11%	-9%	9%	-6%	-22%	-9%	-27%	-31%	-17%	52%	9%	12%	-22%	-29%	-13%
2021/10	4%	25%	40%	14%	22%	37%	9%	29%	44%	9%	-6%	-1%	17%	28%	43%
2021/11	-1%	8%	-2%	6%	22%	7%	-8%	14%	2%	11%	29%	19%	-8%	17%	3%
2021/12	-9%	6%	12%	-16%	6%	3%	-7%	4%	14%	11%	-1%	-7%	0%	16%	19%
2022/1	28%	46%	30%	-4%	10%	4%	-3%	17%	5%	25%	21%	17%	-2%	18%	7%
2022/2	-18%	16%	0%	-9%	25%	13%	-12%	24%	8%	-13%	-2%	-8%	-11%	12%	5%
2022/3	-8%	6%	-7%	-5%	6%	-3%	-15%	-4%	-13%	3%	11%	3%	-10%	1%	-6%
2022/4	5%	20%	7%	-5%	10%	-1%	2%	15%	3%	-3%	15%	8%	-6%	9%	-5%
2022/5	25%	10%	2%	31%	8%	-1%	55%	16%	12%	13%	14%	2%	35%	4%	-1%
2022/6	1%	30%	0%	11%	23%	6%	14%	20%	3%	-1%	13%	-5%	23%	34%	15%
2022/7	-6%	9%	7%	5%	9%	19%	-11%	-11%	-2%	4%	12%	12%	-11%	-6%	2%
2022/8	40%	1%	-7%	27%	-9%	-12%	30%	-8%	-11%	-18%	-22%	-20%	35%	-3%	-6%
2022/9	5%	-4%	7%	39%	9%	24%	15%	-21%	-8%	-11%	-3%	-8%	3%	-27%	-14%
2022/10	-3%	21%	20%	-9%	11%	13%	-8%	18%	15%	10%	3%	16%	-7%	19%	18%
2022/11	26%	36%	20%	1%	23%	5%	8%	23%	7%	-12%	14%	-1%	13%	32%	11%
2022/12	-11%	-6%	1%	9%	16%	12%	3%	7%	13%	-8%	-9%	-14%	-11%	3%	3%
2023/1	-20%	16%	1%	-1%	9%	5%	1%	18%	7%	-28%	-13%	-18%	-4%	13%	3%
2023/2	-9%	6%	-8%	-25%	-7%	-19%	-20%	0%	-15%	5%	3%	-3%	-8%	3%	-5%
2023/3	16%	23%	7%	21%	28%	17%	26%	21%	11%	0%	11%	0%	20%	20%	12%
2023/4	-9%	9%	-5%	-8%	1%	-10%	-9%	5%	-8%	-2%	13%	4%	-4%	5%	-10%
2023/5	-11%	-2%	-7%	2%	11%	4%	-14%	0%	-3%	-4%	10%	-2%	-2%	2%	0%
2023/6	-23%	0%	-23%	-35%	-20%	-29%	-29%	-15%	-26%	0%	13%	-3%	-42%	-22%	-34%
2023/7	-9%	-1%	-1%	13%	23%	32%	28%	14%	26%	45%	63%	73%	15%	8%	21%
2023/8	10%	12%	8%	15%	5%	3%	11%	2%	1%	114%	67%	58%	-7%	-10%	-11%
2023/9	10%	5%	14%	7%	17%	30%	19%	-6%	11%	7%	4%	9%	45%	6%	27%
2023/10	-1%	20%	7%	15%	28%	18%	5%	24%	10%	34%	38%	44%	4%	24%	11%
2023/11	-21%	8%	-10%	-4%	19%	0%	-3%	19%	0%	4%	19%	2%	-8%	21%	-2%
2023/12	0%	-6%	-2%	4%	21%	15%	-1%	6%	10%	19%	8%	7%	7%	10%	9%

Source: Japan Meteorological Agency, BofA Global Research

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China temperature trends

Exhibit 13: China temperature trends (current-year, previous-year, and 30-year averages)
Temperatures up YoY / higher than average



Source: Bloomberg, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 14: China monthly temperatures (simple average)
The Dec average was up YoY

	2022												2023											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
vs. last year	1.1	-4.5	0.3	0.9	-1.2	0.5	0.7	1.5	-0.9	-0.2	2.0	-2.6	-0.3	2.9	0.2	-0.3	1.0	0.2	-0.1	-0.6	0.6	1.5	-1.6	1.1
vs. average year	0.7	-1.0	2.8	1.5	0.1	1.5	1.7	2.1	1.6	0.2	2.5	-1.2	1.4	1.9	3.0	1.2	1.0	1.6	1.6	1.5	2.2	1.8	0.9	-0.1

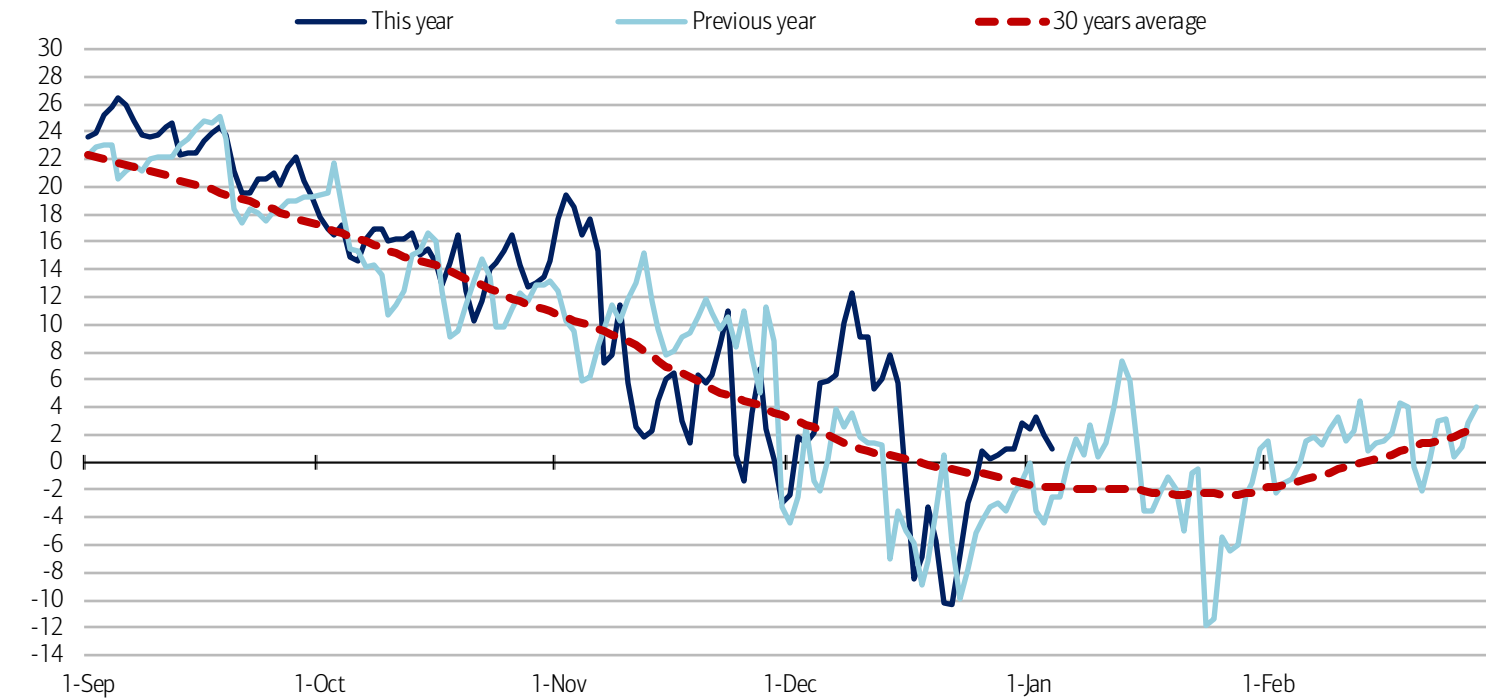
Source: Bloomberg, BofA Global Research

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Korea temperature trends

Exhibit 15: Korea temperature trends (current-year, previous-year, and 30-year averages)
Temperatures up YoY / higher than average



Source: Bloomberg, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 16: Korea monthly temperatures (simple average)
The Dec average was up YoY with the warmer winter weather continuing

	2022												2023											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
vs. last year	0.5	-3.5	-0.9	0.5	1.4	0.6	-0.3	0.2	-0.6	-1.3	1.6	-3.3	0.4	2.8	1.5	-0.6	0.1	0.1	-0.2	1.3	1.6	1.2	-2.3	3.7
vs. average year	0.3	-1.5	1.9	2.5	1.9	2.0	2.6	1.0	1.2	-0.3	2.4	-3.0	0.4	1.3	3.5	1.9	2.0	2.0	2.4	2.2	2.8	0.9	0.0	0.7

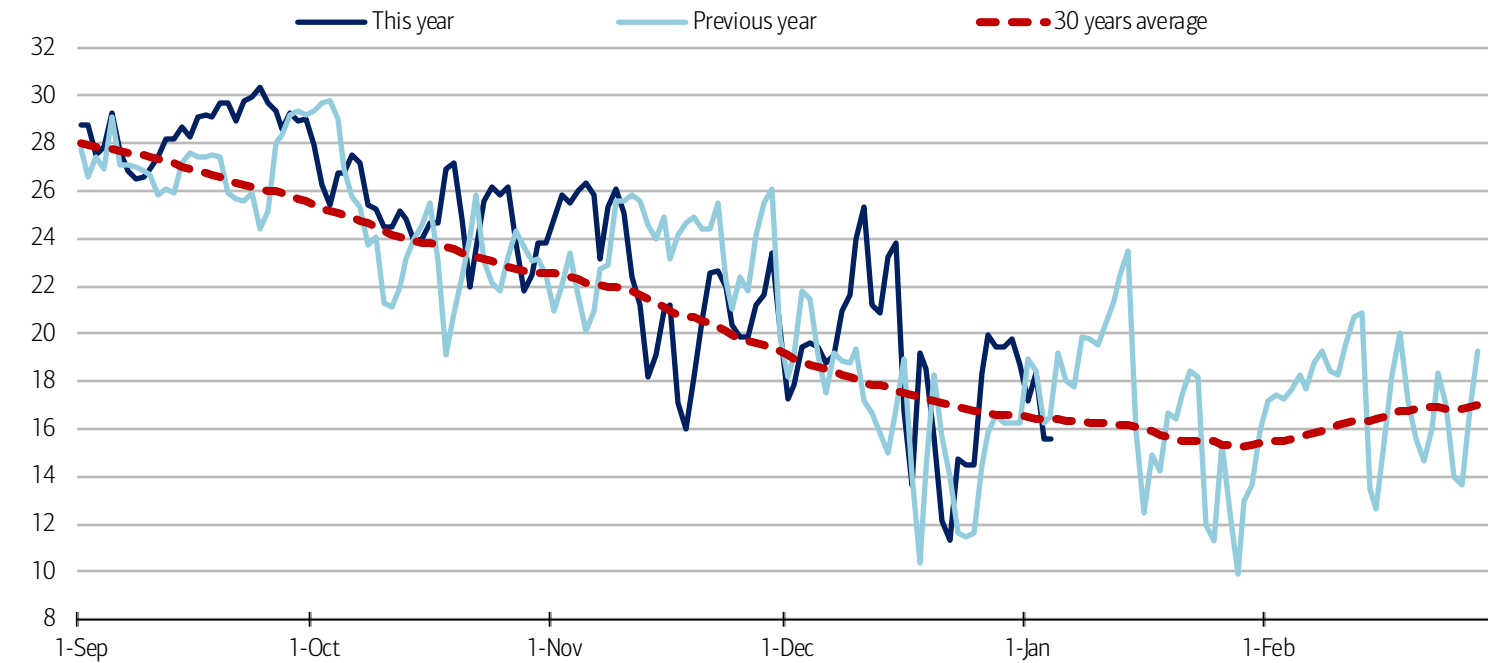
Source: Bloomberg, BofA Global Research

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Taiwan temperature trends

Exhibit 17: Taiwan temperature trends (current-year, previous-year, and 30-year averages)
Temperatures cooled over past few days to levels on par with last year



Source: Bloomberg, BofA Global Research

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Exhibit 18: Taiwan monthly temperatures (simple average)
The Dec average was up YoY

	2022												2023											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
vs. last year	1.3	-2.7	0.4	-0.2	-4.8	-1.3	0.1	1.3	-2.1	-1.2	2.3	-1.7	-0.4	1.1	-1.2	0.4	2.4	0.7	-0.3	-1.0	1.6	1.0	-1.4	2.2
vs. average year	1.1	-0.1	2.5	0.4	-1.6	0.4	1.2	1.6	0.2	0.3	2.5	-1.1	0.9	0.9	1.4	0.9	0.8	1.1	0.9	0.7	1.8	1.3	1.1	1.1

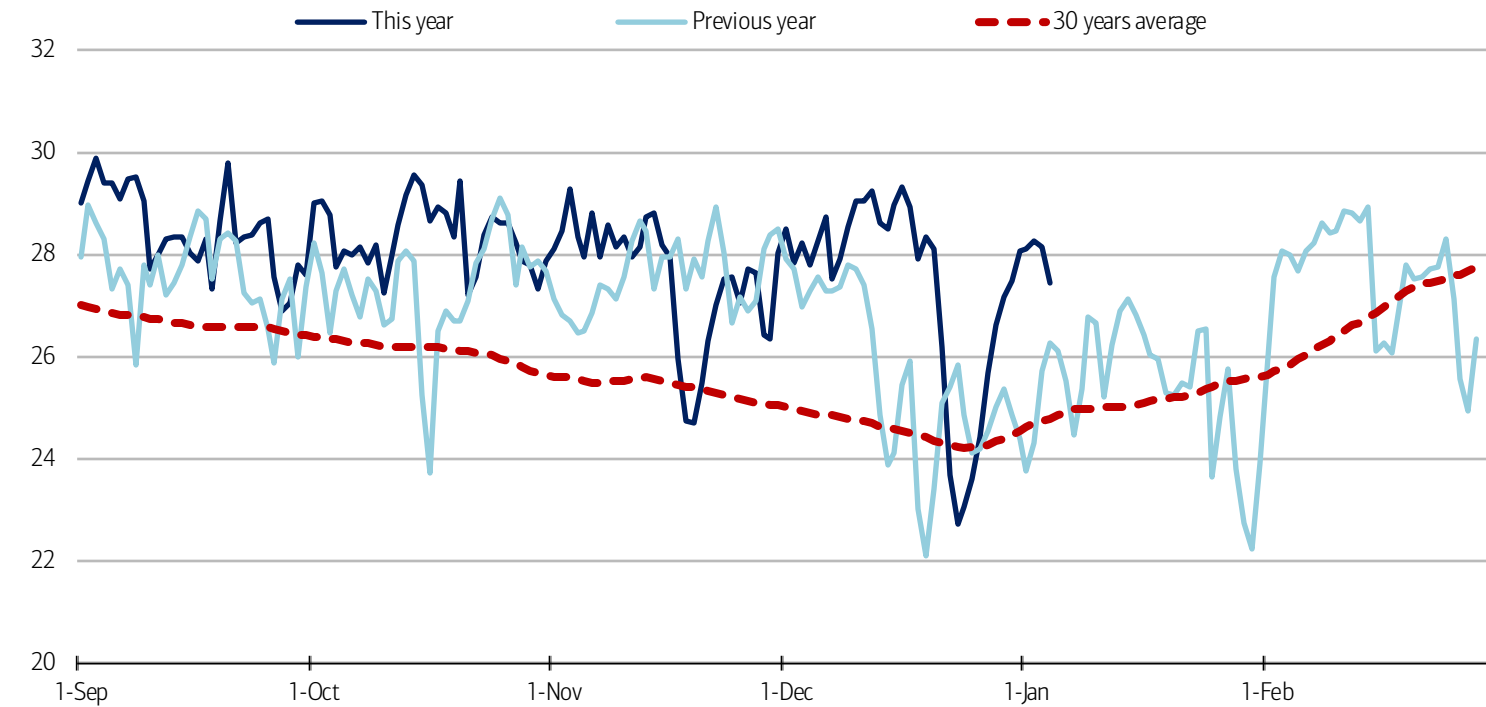
Source: Bloomberg, BofA Global Research

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Thailand temperature trends

Exhibit 19: Thailand temperature trends (current-year, previous-year, and 30-year averages)
Temperatures higher than last year



Source: Bloomberg, BofA Global Research BofA GLOBAL RESEARCH

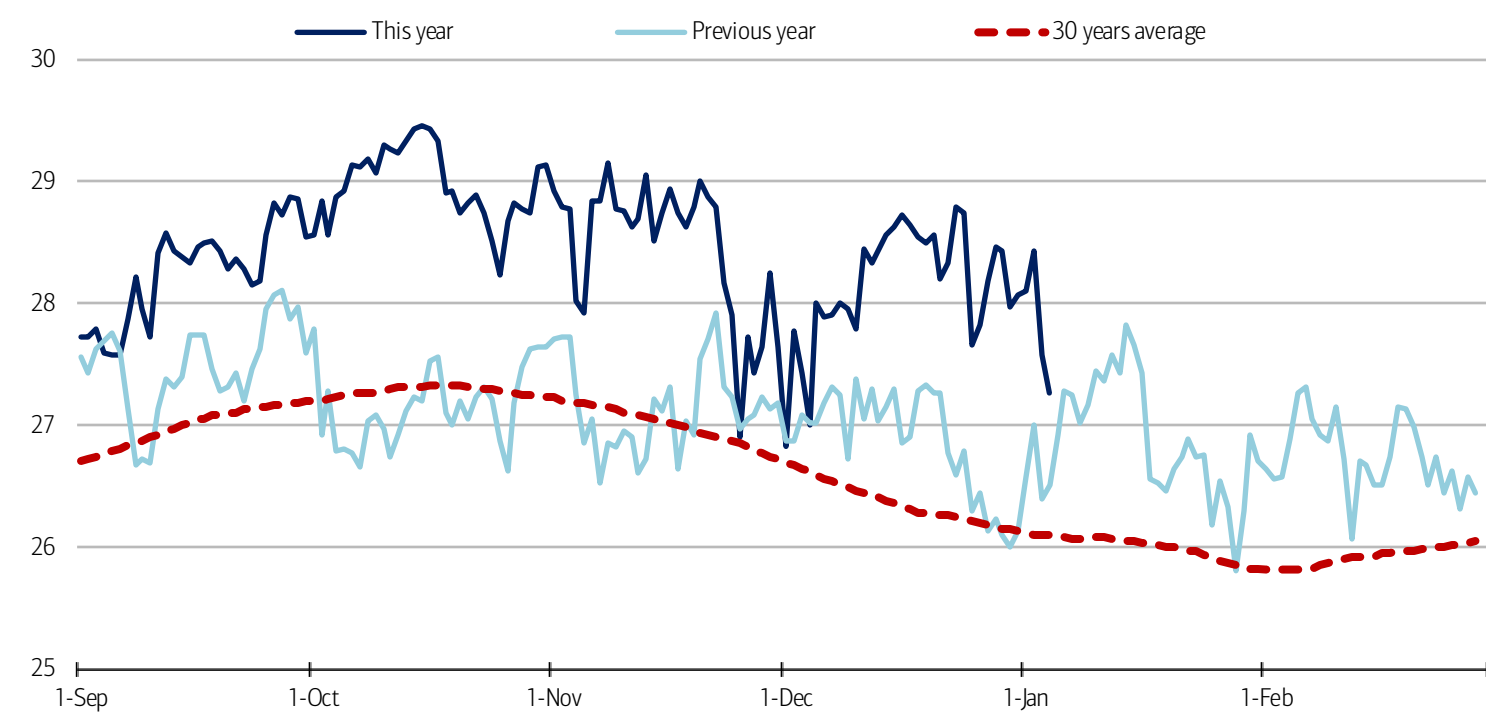
Exhibit 20: Thailand monthly temperatures (simple average)
The Dec average was up YoY

	2022												2023											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
vs. last year	1.9	-0.3	-0.3	0.5	-1.2	-0.6	-0.1	-0.5	0.0	-0.3	0.1	0.0	-1.5	0.5	-0.2	1.9	2.5	0.8	0.7	1.1	0.9	1.0	-0.1	1.7
vs. average year	1.8	0.2	0.7	-0.5	-0.4	1.2	1.3	1.2	0.9	1.2	2.2	1.1	0.3	0.7	0.5	1.4	2.2	2.0	2.0	2.2	1.8	2.2	2.1	2.8

Source: Bloomberg, BofA Global Research BofA GLOBAL RESEARCH

Indonesia temperature trends

Exhibit 21: Indonesia temperature trends (current-year, previous-year, and 30-year averages)
Temperatures up YoY over past few weeks



Source: Bloomberg, BofA Global Research

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Exhibit 22: Indonesia monthly temperatures (simple average)
The Dec average was up YoY

	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
vs. last year	0.6	0.1	0.2	0.1	-0.2	-0.5	-0.1	0.0	-0.3	-0.9	-0.2	-0.4	-0.3	-0.2	-0.4	0.2	0.5	0.9	0.2	0.3	0.8	1.8	1.3	1.3
vs. average year	0.6	1.1	1.3	1.1	1.0	0.5	1.2	1.0	0.5	-0.1	0.1	0.5	0.9	0.8	0.9	1.3	1.5	1.4	1.3	1.3	1.3	1.7	1.5	1.8

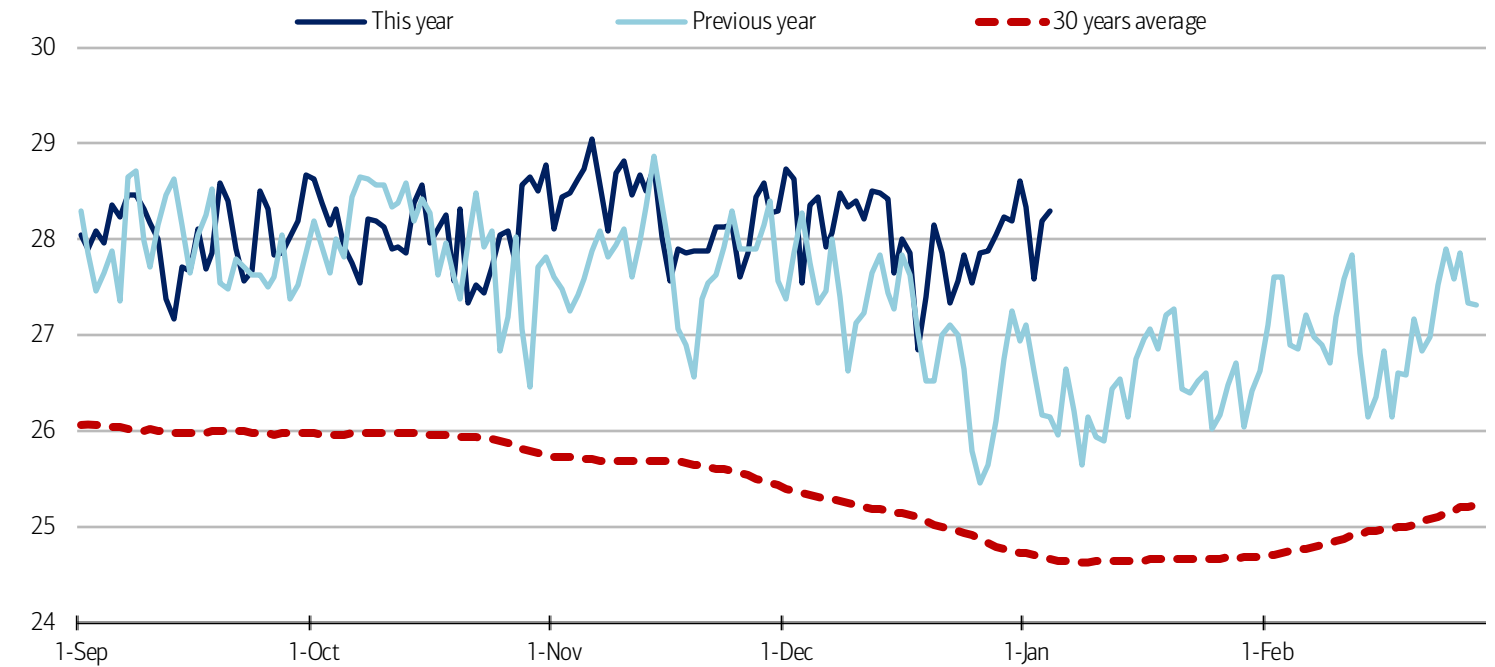
Source: Bloomberg, BofA Global Research

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Philippines temperature trends

Exhibit 23: Philippines temperature trends (current-year, previous-year, and 30-year averages)
Temperatures higher than last year



Source: Bloomberg, BofA Global Research

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Exhibit 24: Philippines monthly temperatures (simple average)
The temperature has been slightly above the year-ago level in past months

	2022												2023											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
vs. last year	0.3	0.2	0.0	-0.4	-0.6	0.2	0.0	-0.4	0.2	0.1	-0.1	0.1	-0.4	0.0	-0.3	0.7	0.6	-0.1	0.1	0.7	0.1	0.1	0.5	1.0
vs. average year	0.3	2.1	2.2	1.1	1.5	1.9	2.0	1.6	1.9	2.0	2.1	2.0	1.8	2.1	2.0	1.8	2.0	1.8	2.1	2.3	2.0	2.1	2.6	3.0

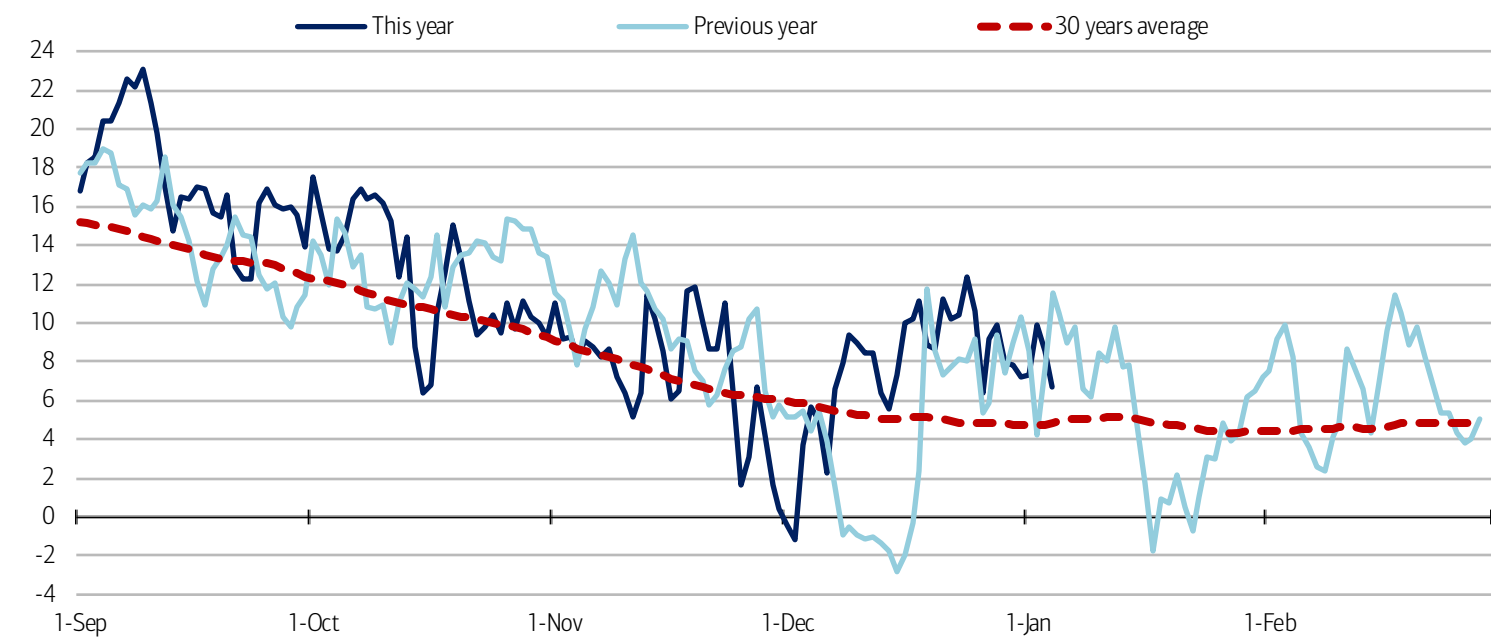
Source: Bloomberg, BofA Global Research

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UK temperature trends

Exhibit 25: UK temperature trends (current-year, previous-year, and 30-year averages)
Temperatures rose in December 2023, but have recently been similar to last year



Source: Bloomberg, BofA Global Research

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Exhibit 26: UK monthly temperatures (simple average)
The Dec average was up YoY

	2022												2023											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
vs. last year	1.5	1.8	0.6	2.5	2.8	-0.6	1.0	3.1	-1.5	0.7	1.7	-2.9	0.1	-0.8	-0.9	-0.7	-0.5	1.7	-2.6	-2.6	2.6	-0.6	-2.0	3.5
vs. average year	1.4	2.7	1.8	1.4	1.9	1.5	2.7	2.9	0.9	2.2	2.2	-1.0	0.5	1.9	0.9	0.6	1.3	3.3	0.1	0.3	3.5	1.6	0.2	2.4

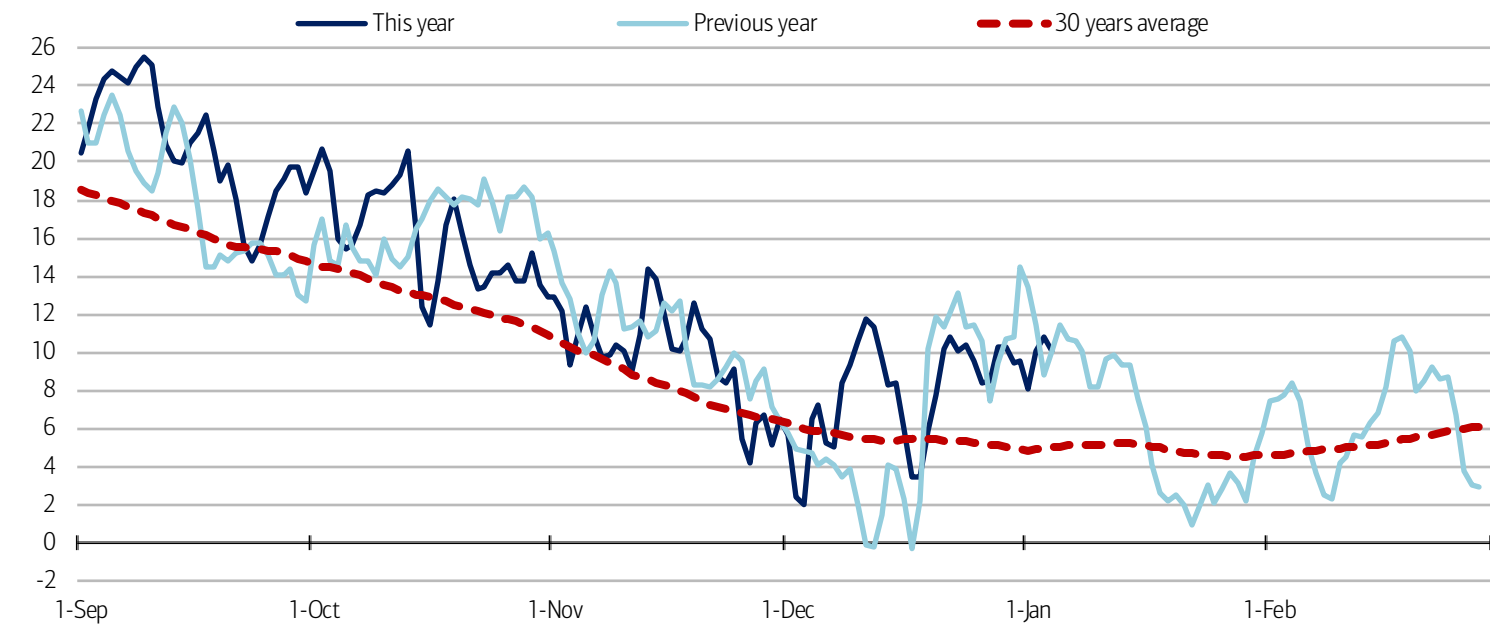
Source: Bloomberg, BofA Global Research

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France temperature trends

Exhibit 27: France temperature trends (current-year, previous-year, and 30-year averages)
Temperatures slightly lower than last year



Source: Bloomberg, BofA Global Research

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Exhibit 28: France monthly temperatures (simple average)
The Dec average was up YoY

	2022												2023											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
vs. last year	0.0	0.2	1.1	1.6	3.9	0.7	2.8	3.7	-1.1	3.5	2.9	-0.5	1.5	-1.6	0.0	-0.4	-1.8	0.5	-1.6	-2.1	2.8	-0.7	-0.8	1.5
vs. average year	-0.3	2.9	1.8	1.3	3.0	2.9	2.9	3.1	1.5	3.8	2.3	1.0	1.5	1.3	1.9	0.9	1.2	3.5	1.3	1.1	4.3	3.1	1.5	2.5

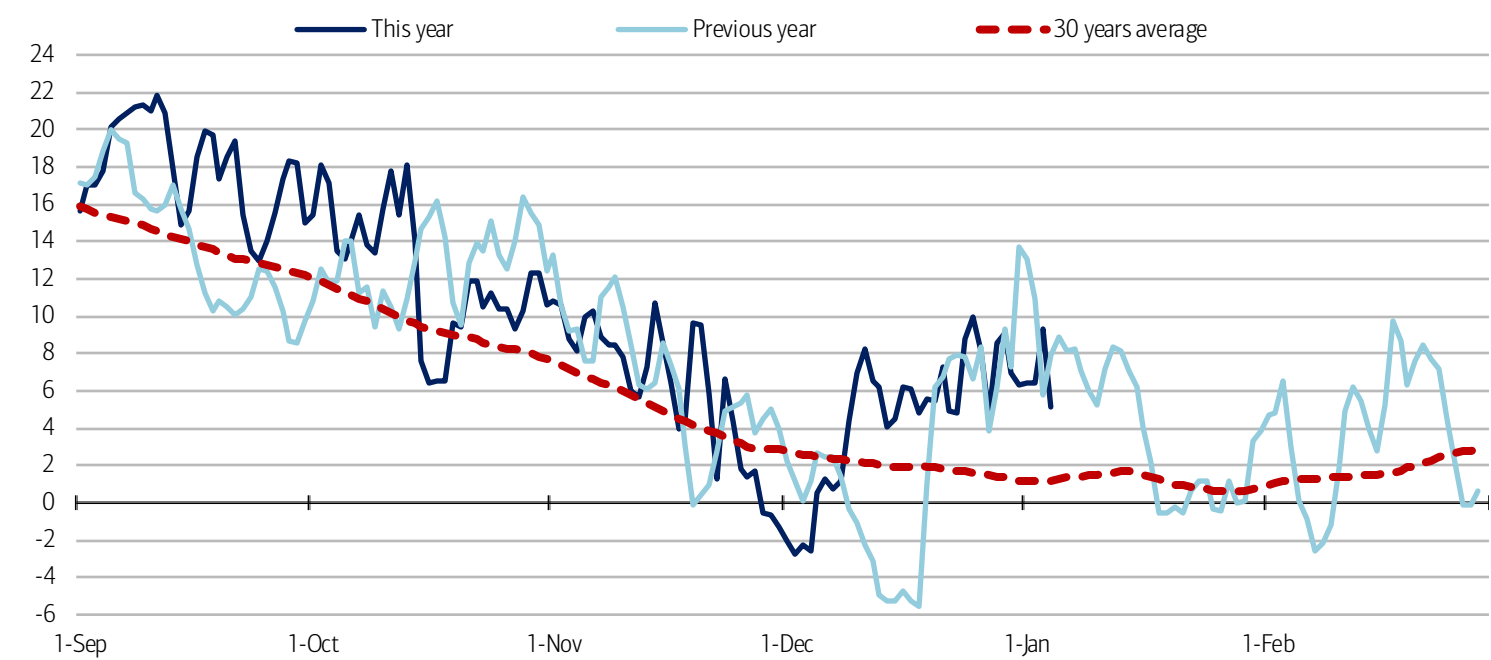
Source: Bloomberg, BofA Global Research

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Germany temperature trends

Exhibit 29: Germany temperature trends (current-year, previous-year, and 30-year averages)
Temperatures were high in mid-December, but now level with last year



Source: Bloomberg, BofA Global Research BofA GLOBAL RESEARCH

Exhibit 30: Germany monthly temperatures (simple average)
The Dec average was up YoY

	2022												2023											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
vs. last year	2.3	3.1	0.2	1.7	3.6	-0.9	0.4	3.8	-1.8	2.5	1.1	-0.8	0.8	-1.4	0.6	-0.2	-1.4	0.4	-0.4	-2.1	4.0	-0.5	-0.4	2.4
vs. average year	2.1	3.4	0.9	-0.1	1.8	2.7	1.2	2.8	0.0	3.2	1.7	0.2	3.1	2.0	1.4	-0.3	0.4	3.0	0.8	0.7	4.0	2.7	1.2	2.6

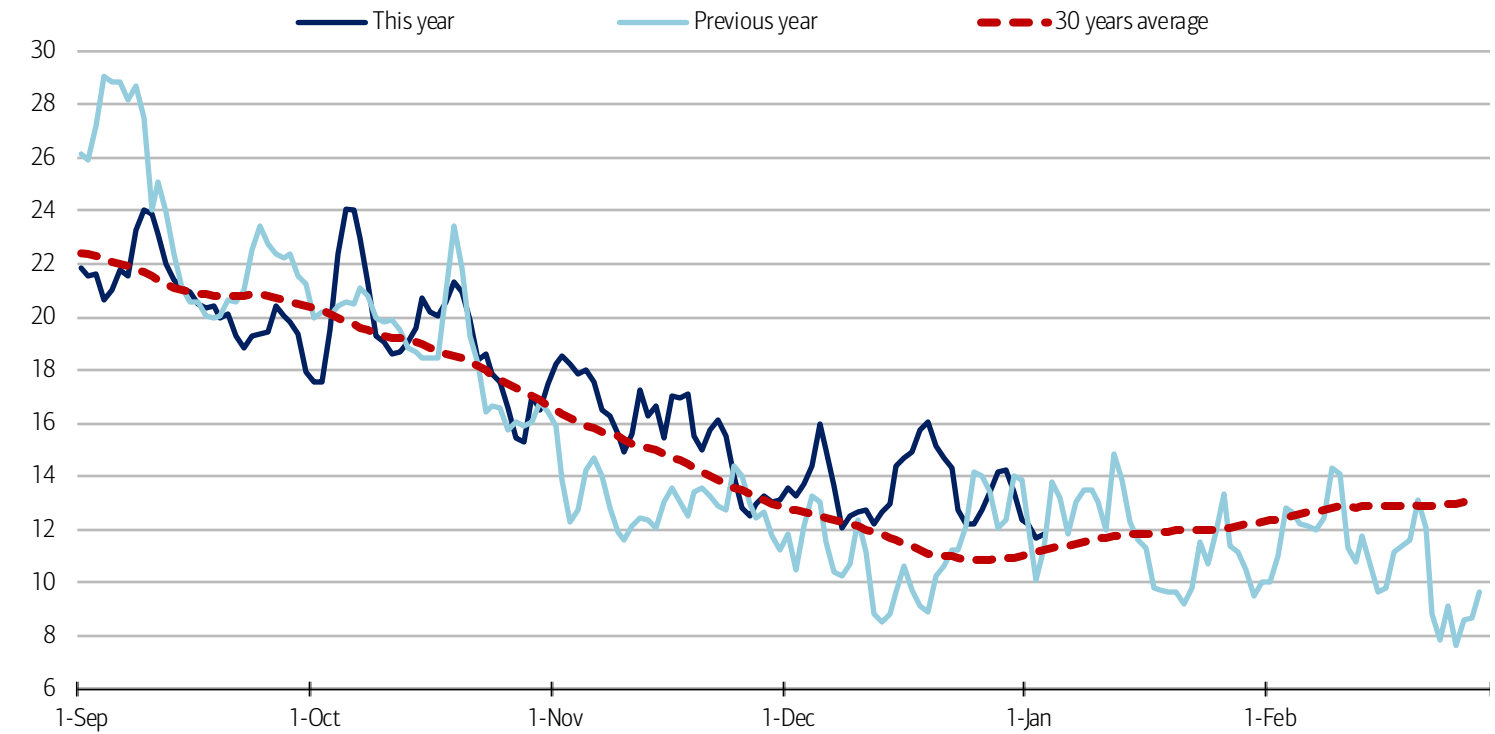
Source: Bloomberg, BofA Global Research BofA GLOBAL RESEARCH



US temperature trends

Average temperature trends for the US's five states (California, Texas, Florida, New York, Washington) are shown below.

Exhibit 31: California temperature trends (current-year, previous-year, and 30-year averages)
Temperatures recently similar to last year



Source: Bloomberg, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 32: California monthly temperatures (simple average)
The Dec average was up YoY

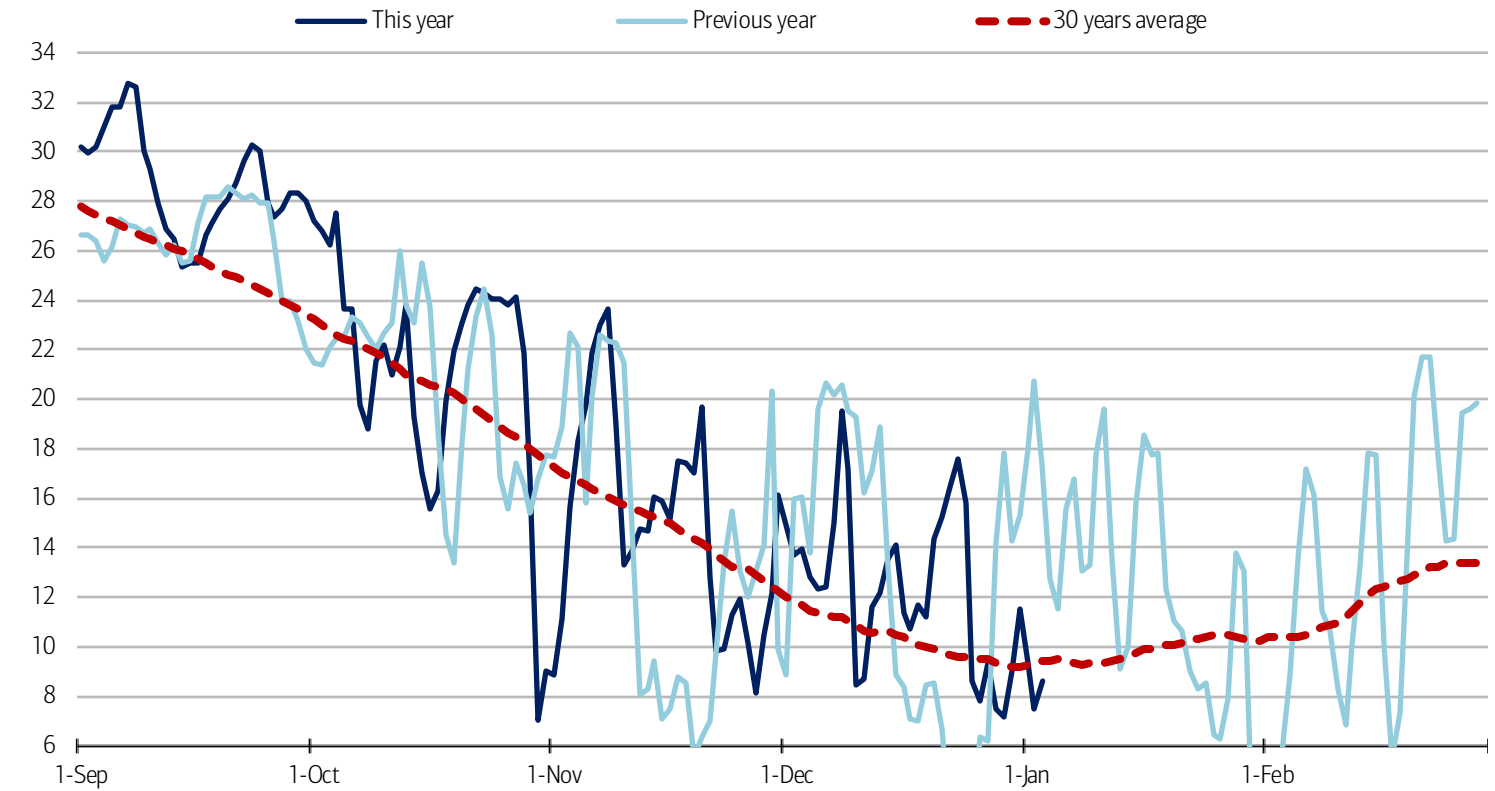
	2022												2023											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
vs. last year	0.1	0.1	1.7	0.3	-0.1	0.4	-0.7	1.0	2.5	1.2	-2.4	0.4	-0.7	-2.3	-2.9	-1.3	-1.1	-2.7	0.7	-0.4	-2.8	0.4	2.8	2.4
vs. average year	0.0	0.5	0.6	0.5	0.0	1.3	-0.1	1.2	2.4	0.2	-1.7	-0.3	-0.2	-1.8	-2.3	-0.8	-1.1	-1.3	0.6	0.9	-0.4	0.6	1.1	2.1

Source: Bloomberg, BofA Global Research

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Exhibit 33: Texas temperature trends (current-year, previous-year, and 30-year averages)
Temperatures lower than last year over past few days



Source: Bloomberg, BofA Global Research

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Exhibit 34: Texas monthly temperatures (simple average)
The Dec average was up YoY

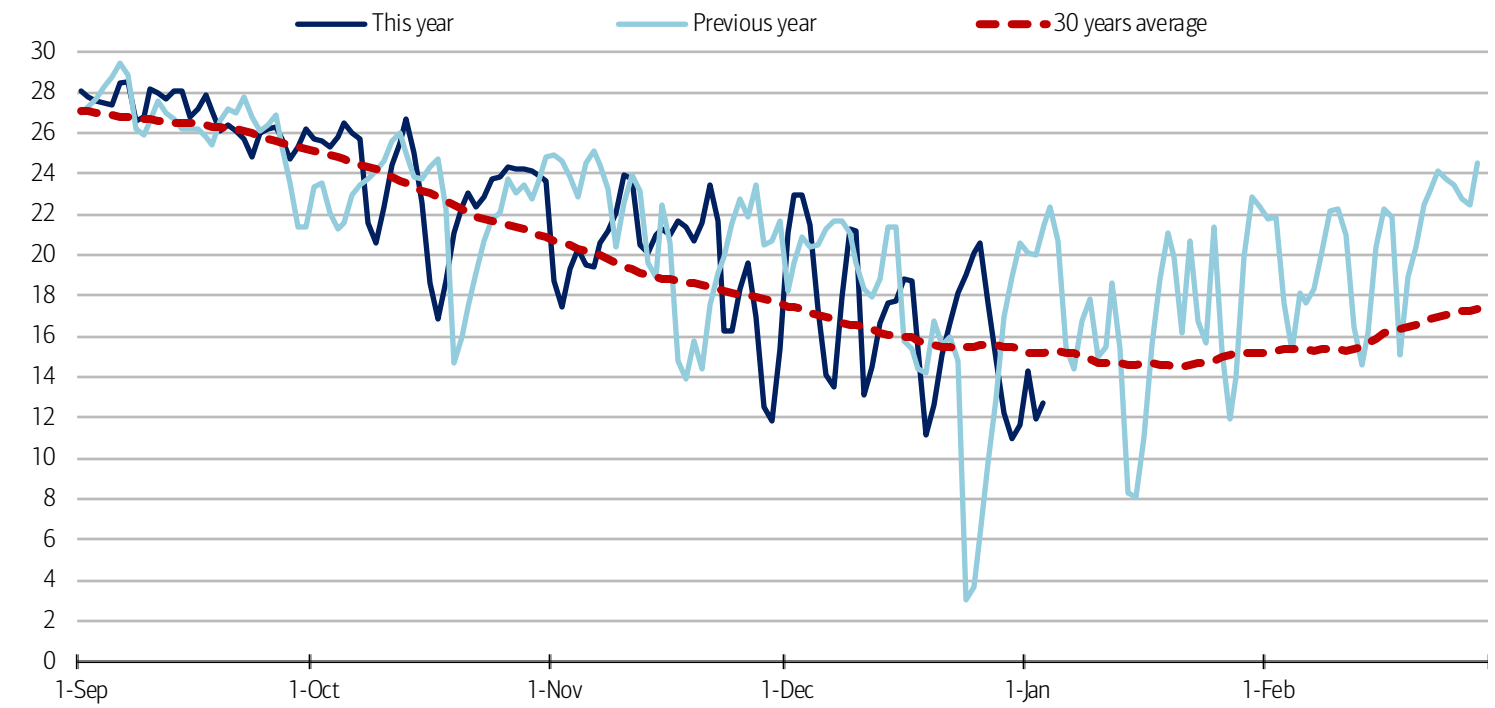
	2022												2023											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
vs. last year	-1.2	0.7	-1.3	2.4	3.3	2.1	3.4	0.3	0.2	-1.5	-1.2	-5.1	3.3	4.0	2.0	-2.4	-2.2	-0.9	-0.2	3.2	2.2	0.6	1.0	0.6
vs. average year	-1.4	-2.8	-0.1	1.9	2.4	2.1	2.4	0.1	0.9	0.2	-0.9	1.5	2.8	1.2	1.8	-0.5	0.1	1.2	2.1	3.3	3.1	0.8	0.1	2.1

Source: Bloomberg, BofA Global Research

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Exhibit 35: Florida temperature trends (current-year, previous-year, and 30-year averages)
Temperatures were lower than last year on most days in December, and are still down YoY over past few days



Source: Bloomberg, BofA Global Research BofA GLOBAL RESEARCH

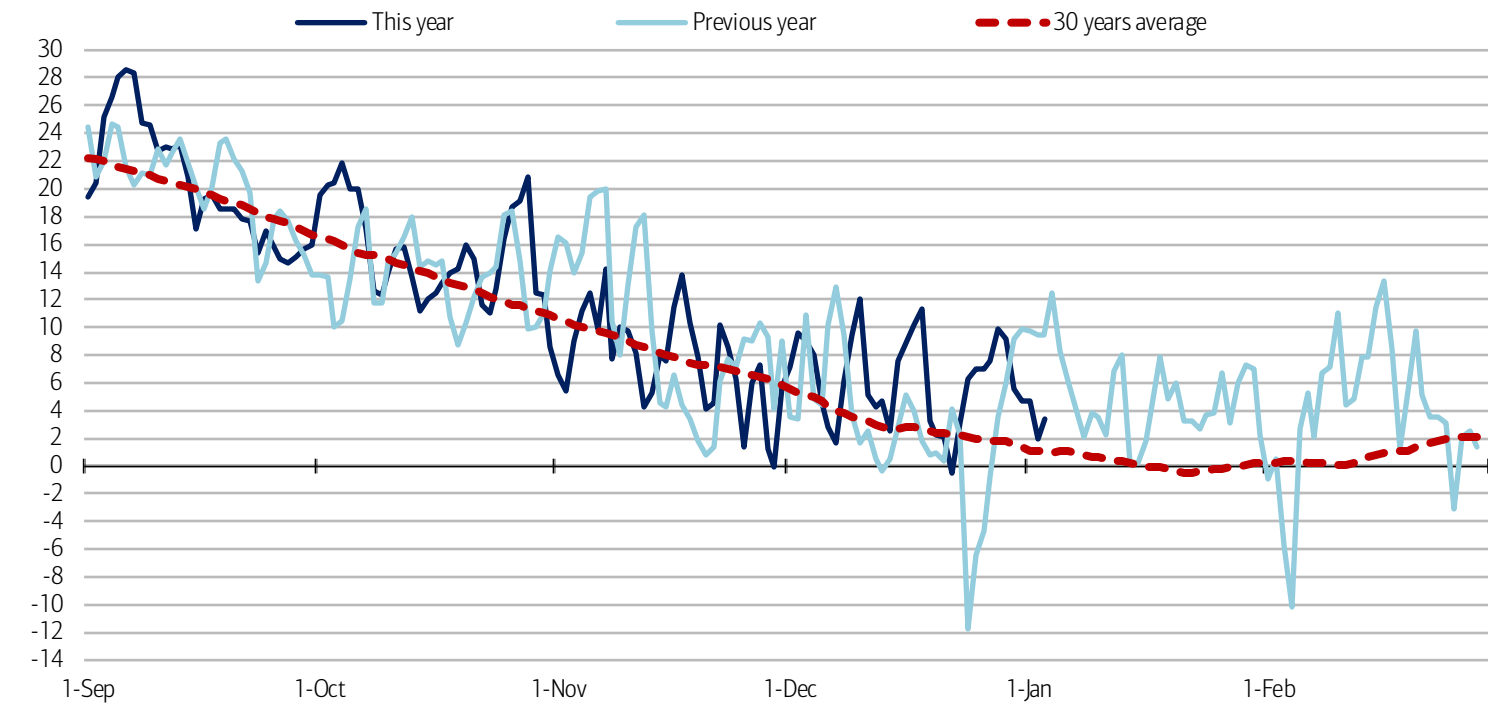
Exhibit 36: Florida monthly temperatures (simple average)
The Dec average was down YoY

	2022												2023											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
vs. last year	-0.5	0.2	0.8	1.1	0.9	1.4	1.0	0.3	0.3	-1.5	3.5	-2.6	2.6	2.7	0.6	1.0	-0.9	-0.8	0.5	1.2	0.5	0.9	-1.5	0.3
vs. average year	-0.5	1.6	1.9	0.8	0.8	0.9	0.6	0.4	0.1	-0.4	2.1	0.6	2.3	4.3	2.4	1.8	0.0	0.1	1.1	1.7	0.6	0.5	0.6	0.9

Source: Bloomberg, BofA Global Research BofA GLOBAL RESEARCH

Exhibit 37: New York temperature trends (current-year, previous-year, and 30-year averages)

Temperatures were high in mid-December, but have been lower than last year over past few days



Source: Bloomberg, BofA Global Research

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Exhibit 38: New York monthly temperatures (simple average)

The Dec average was up YoY

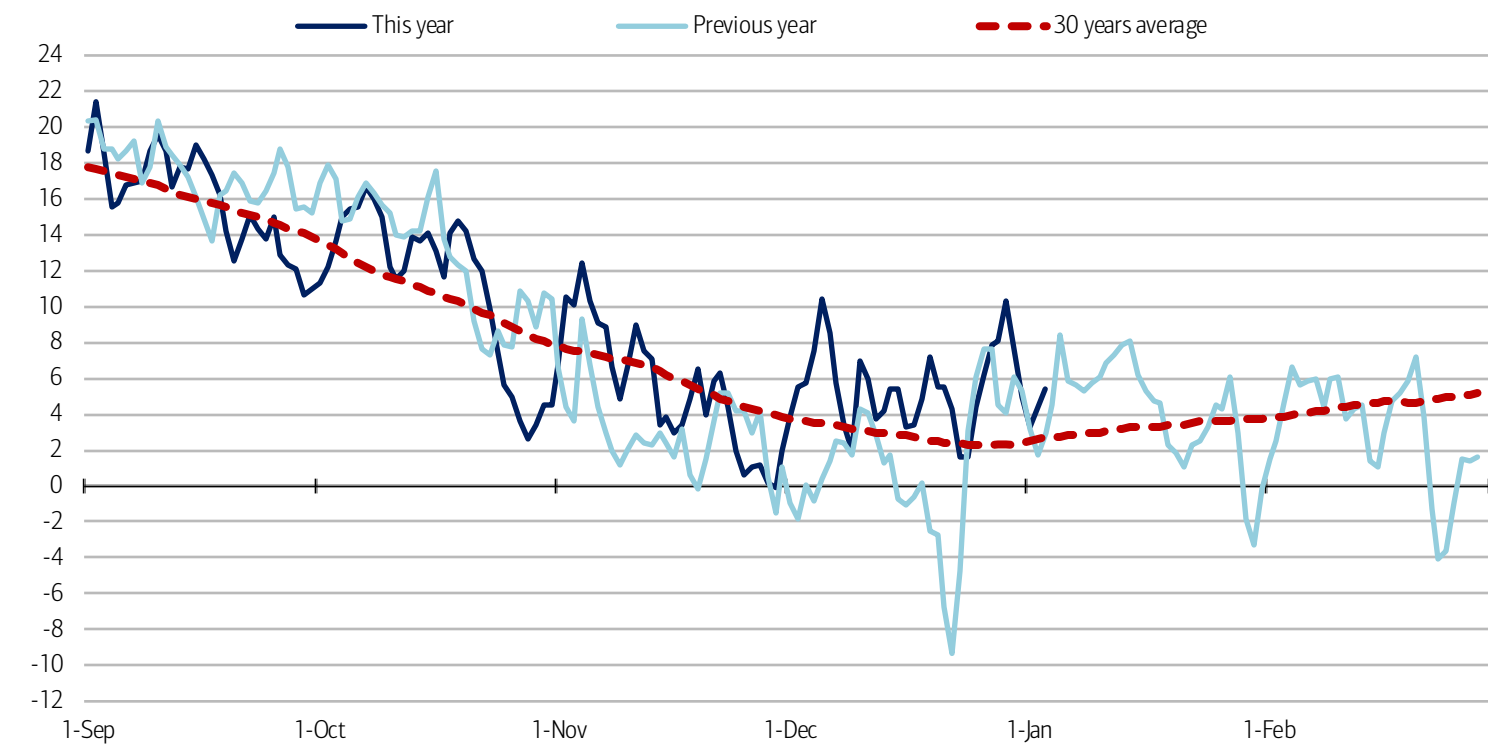
	2022												2023											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
vs. last year	-2.5	1.4	-0.3	-1.0	0.6	-1.5	1.8	0.5	-0.9	-3.0	2.0	-3.1	6.5	1.9	-0.6	2.3	-0.7	-1.1	-0.5	-2.1	0.0	1.7	-2.3	3.1
vs. average year	-2.8	1.2	1.8	0.1	1.2	0.1	1.6	2.0	0.6	0.0	1.8	0.1	4.9	3.1	1.2	2.4	0.5	-1.0	1.1	-0.1	0.6	1.7	-0.5	3.2

Source: Bloomberg, BofA Global Research

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Exhibit 39: Washington temperature trends (current-year, previous-year, and 30-year averages)
Recent temperatures similar to last year



Source: Bloomberg, BofA Global Research

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Exhibit 40: Washington monthly temperatures (simple average)
The Dec average was up YoY

	2022												2023											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
vs. last year	-1.8	0.6	1.1	-3.4	-2.3	-3.5	-0.2	1.7	1.5	2.9	-4.2	-0.5	1.4	-0.5	-1.9	1.2	5.0	1.0	0.0	-0.5	-1.5	-1.8	2.3	4.4
vs. average year	-1.7	-0.8	0.5	-2.4	-2.1	0.1	1.5	2.2	1.5	2.3	-2.9	-1.7	0.8	-1.4	-1.4	-1.1	2.9	1.1	1.4	1.7	0.0	0.5	-0.5	2.7

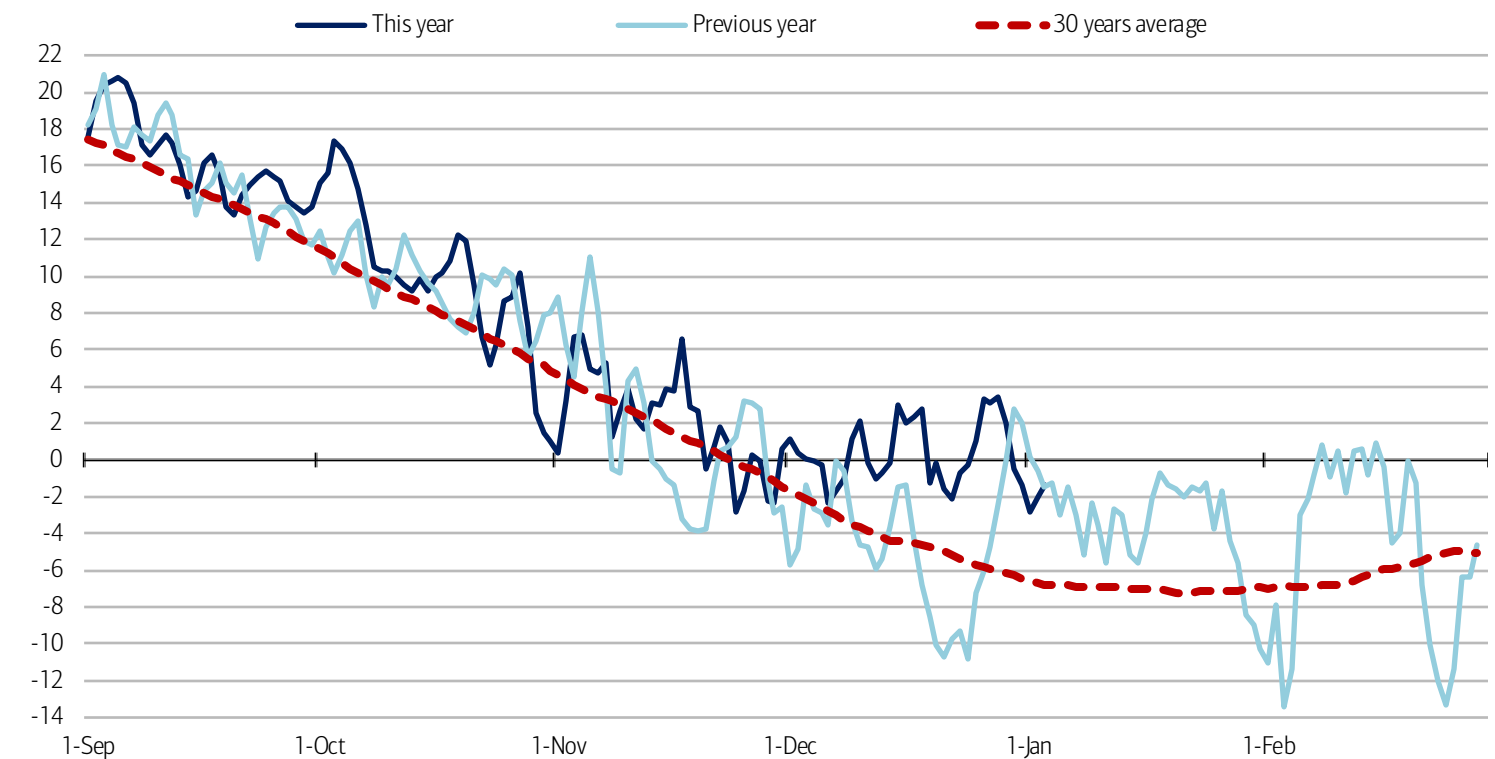
Source: Bloomberg, BofA Global Research

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Canada temperature trends

Exhibit 41: Canada temperature trends (current-year, previous-year, and 30-year averages)
Temperatures were much higher than last year in mid-December, but have cooled off over past few days



Source: Bloomberg, BofA Global Research

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Exhibit 42: Canada monthly temperatures (simple average)
The Dec average was up YoY

	2022												2023											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
vs. last year	-4.8	1.6	-1.9	-2.0	1.0	-2.3	0.5	-0.2	-0.1	-1.0	-0.8	-0.2	5.7	1.4	-1.4	1.6	0.4	0.6	-0.3	-1.8	0.6	0.5	0.5	4.9
vs. average year	-4.8	0.0	1.1	-0.6	1.7	0.7	1.2	1.8	1.1	1.4	0.0	-0.1	3.7	1.4	-0.3	1.0	2.1	1.3	0.9	0.0	1.7	1.9	0.5	4.7

Source: Bloomberg, BofA Global Research

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Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

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