

**Investment Committee**  
**Friday, December 8, 2023, 9:00 a.m.**  
**Virtual Only**  
[Click here to join the meeting](#)

**AGENDA**

**I. CALL TO ORDER AND ACCEPTANCE OF AGENDA - *(Committee Action)***

**II. ACCEPTANCE OF MINUTES – *(Committee Action)***

- A. Amended October 23, 2023, Minutes
- B. November 7, 2023, Minutes

**III. RISK REVIEW (75 minutes) - *(Information)* - Mr. Vaidya and Mr. Yu**

(Break)

**IV. PUBLIC MARKETS FUNDS MANAGEMENT PART II<sup>1</sup> (30 minutes) - *(Committee Action)*– Mr. Posch, Mr. Dukart, and Mr. Chin**

**V. HIGH YIELD STRATEGY<sup>1</sup> (30 minutes) - *(Committee Action)*– Mr. Posch, Mr. Dukart, and Mr. Chin**

**VI. INTERNAL DIRECT INVESTMENT COMPLIANCE CONSULTANT AND GENERAL CONSULTANT RFP (10 minutes) - *(Committee Action)* – Mr. Anderson**

**VII. DISCUSSION**

**VIII. ADJOURNMENT**

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<sup>1</sup> Executive Session pursuant to N.D.C.C. 44-04-19.2, 44-04-18.4 (2)(a) and NDCC 44-04-18.4(2)(d) to review and discuss confidential commercial information and trade secrets.

**STATE INVESTMENT BOARD  
INVESTMENT COMMITTEE MEETING  
MINUTES OF THE  
October 23, 2023, MEETING**

**MEMBERS PRESENT:** Thomas Beadle, State Treasurer, Chair  
Joseph Heringer, Trust Lands Commissioner, Vice Chair  
Scott Anderson, CIO  
Eric Chin, Deputy CIO  
Dr. Prodosh Simlai, External Representative  
Dr. Ruilin Tian, External Representative

**STAFF PRESENT:** Derek Dukart, Investment Officer  
Jennifer Ferderer, Fiscal Investment Admin Assistant  
Missy Kopp, Executive Assistant  
George Moss, Sr. Investment Officer  
Jan Murtha, Executive Director  
Chad Roberts, Deputy Executive Director  
Matt Posch, Sr. Investment Officer  
Ryan Skor, CFO/COO  
Nitin Vaidya, Chief Risk Officer  
Jason Yu, Risk Officer  
Lance Zietlow, Sr. Investment Officer

**GUESTS:** Alexander Browning, Callan  
Craig Chaikin, Callan  
Members of the public

**CALL TO ORDER:**

Treasurer Beadle called the State Investment Board (SIB) Investment Committee (IC) meeting to order at 9:02 a.m. on Monday, October 23, 2023. The meeting was held virtually.

The following Investment Committee members were present representing a quorum, Mr. Anderson, Treasurer Beadle, Mr. Chin, Commissioner Heringer, Dr. Simlai, and Dr. Tian.

**AGENDA:**

The agenda was considered for the October 23, 2023, meeting.

**IT WAS MOVED BY MR. CHIN AND SECONDED BY DR. SIMLAI AND CARRIED BY A VOICE VOTE TO APPROVE THE AGENDA FOR THE OCTOBER 23, 2023, MEETING AS DISTRIBUTED.**

**AYES: COMMISSIONER HERINGER, MR. ANDERSON, MR. CHIN, DR. TIAN DR. SIMLAI, AND TREASURER BEADLE**

**NAYS: NONE  
MOTION CARRIED**

**MINUTES:**

The minutes were considered for the September 8, 2023, meeting.

**IT WAS MOVED BY COMMISSIONER HERINGER AND SECONDED BY MR. ANDERSON AND CARRIED BY A VOICE VOTE TO APPROVE THE MINUTES FOR THE SEPTEMBER 8, 2023, MEETING AS DISTRIBUTED.**

**AYES: DR. SIMLAI, COMMISSIONER HERINGER, MR. CHIN, DR. TIAN MR. ANDERSON,  
AND TREASURER BEADLE  
NAYS: NONE  
MOTION CARRIED**

**PUBLIC MARKETS FUNDS MANAGEMENT**

Mr. Chin reviewed information on the public equity portfolio for the U.S. and internationally. In 2022, both the U.S. and international markets suffered but rebounded in 2023, noting companies in the technology and communication sectors have done well. Mr. Chin reviewed equity manager performance, noting LA Capital's outstanding performance and continued excellence.

Mr. Dukart provided an overview of fixed income markets, noting Bloomberg U.S High Yield has recovered from 2022, unlike Bloomberg U.S. Aggregate Index, which is still trending downward. The U.S Treasury Yield Curve has continued to shift up since January 2022. Mr. Dukart reviewed manager performance, noting plans to bring an in-depth attribution of manager performance to the Investment Committee in the future.

Mr. Posch provided an overview on an internally generated analytics tool ("the tool,") that analyzes and conducts initial screens on investment managers, calculates returns-based statistics across multiple time frames, and can customize groupings to allow for comparison of groups against individual managers.

The Committee recessed at 9:52 a.m. and reconvened at 10:00 a.m.

**INTERNAL DIRECT INVESTMENT STRATEGY INTRO**

Mr. Anderson reviewed the Internal Direct Investment Strategy, which would give RIO staff the ability to manage assets while lowering cost, increasing returns, and decreasing risk. The strategies to implement are Optimal Implementation, Exposure Management, Enhanced Rebalancing, Enhanced Liquidity, and Enhanced Indexing. Mr. Anderson outlined the need to enhance fund after cost return for risk at a prudent level of risk for the funds in the care of RIO and outlined the strategies to achieve the goal. Mr. Anderson shared information for the sequence of capability which consists of overlaying cash, rebalancing internally, offsetting exposures, internal indexing, and enhanced indexing. Lastly, Mr. Anderson shared the talent management necessary to implement the strategies shared in the presentation, noting the strategy and structure would evolve with the size of the program.

**PRIVATE MARKETS POOL HARMONIZATION**

**IT WAS MOVED BY COMMISSIONER HERINGER AND SECONDED BY DR. SIMLAI AND CARRIED BY A ROLL CALL VOTE TO ENTER INTO EXECUTIVE SESSION TO DISCUSS CONFIDENTIAL COMMERCIAL INFORMATION AND CONTRACT NEGOTIATING STRATEGY PURSUANT TO NDCC 44-04-19.2, AND 44-04-18.4 (1), AND 44-04-19.1.**

**AYES: COMMISSIONER HERINGER, MR. ANDERSON, DR. SIMLAI, MR. CHIN, AND  
TREASURER BEADLE  
NAYS: NONE  
ABSENT: DR. TIAN  
MOTION CARRIED**

The executive session started at 11:05 a.m. and ended at 11:38 a.m. and was attended by Committee members, Mr. Dukart, Ms. Ferderer, Ms. Kopp, Mr. Moss, Ms. Murtha, Mr. Posch, Mr. Vaidya, Mr. Yu, and Mr. Zietlow.

**IT WAS MOVED BY COMMISSIONER HERINGER AND SECONDED BY DR. SIMLAI FOR AN ISSUANCE OF AN RFP TO HIRE A VALUATION CONSULTANT TO DETERMINE THE FAIR MARKET VALUE OF RELEVANT PRIVATE MARKET ASSETS FOR THE PRIVATE ASSETS HARMONIZATION PROJECT.**

**AYES: COMMISSIONER HERINGER, MR. ANDERSON, DR. SIMLAI, MR. CHIN, AND TREASURER BEADLE**

**NAYS: NONE**

**ABSENT: DR. TIAN**

**MOTION CARRIED**

### **DISCUSSION**

The Committee discussed an active RFP. The investment team was under the assumption ~~that this RFP was following the appropriate exemption rules, but when IT and legal were consulted, the Attorney General's office deemed this RFP as a large IT project, instead of an investment procurement project; therefore, the RFP will go through a normal North Dakota procurement process.~~ that this RFP fell under an exemption from standard procurement statute, but the state procurement office disagreed and coordinated with their assigned assistant attorney general that the exception did not apply. Additionally, NDIT deemed the investment IT systems project a large IT project, therefore, subject to additional procedures. The project and active RFP will go through a standard North Dakota procurement and large IT process. Mr. Anderson expects the timeline to be extended months beyond the original schedule, but a definite timeline is not yet available. When more information is available, it will be shared with the Investment Committee.

With no further business to come before the Investment Committee, Treasurer Beadle adjourned the meeting at 11:42 a.m.

Prepared by:

Jennifer Ferderer, Assistant to the Board

**STATE INVESTMENT BOARD  
INVESTMENT COMMITTEE MEETING  
MINUTES OF THE  
November 7, 2023, MEETING**

**MEMBERS PRESENT:** Thomas Beadle, State Treasurer, Chair  
Joseph Heringer, Trust Lands Commissioner, Vice Chair  
Scott Anderson, CIO  
Eric Chin, Deputy CIO  
Dr. Prodosh Simlai, External Representative  
Dr. Ruilin Tian, External Representative

**STAFF PRESENT:** Derek Dukart, Investment Officer  
Jennifer Ferderer, Fiscal Investment Admin Assistant  
Missy Kopp, Executive Assistant  
George Moss, Sr. Investment Officer  
Jan Murtha, Executive Director  
Matt Posch, Sr. Investment Officer  
Jason Yu, Risk Officer  
Lance Zietlow, Sr. Investment Officer

**GUESTS:** Alexander Browning, Callan  
Craig Chaikin, Callan  
Eileen Neill, Versus  
Marc Gesell, Versus  
Members of the public

**CALL TO ORDER:**

Treasurer Beadle called the State Investment Board (SIB) Investment Committee (IC) meeting to order at 9:04 a.m. on November 7, 2023. The meeting was held virtually.

The following Investment Committee members were present representing a quorum, Mr. Anderson, Treasurer Beadle, Mr. Chin, Commissioner Heringer, Dr. Simlai, and Dr. Tian

**AGENDA:**

The agenda was considered for the November 7, 2023, meeting.

**IT WAS MOVED BY MR. CHIN AND SECONDED BY COMMISSIONER HERINGER AND CARRIED BY A VOICE VOTE TO APPROVE THE AGENDA FOR THE NOVEMBER 7, 2023, MEETING AS DISTRIBUTED.**

**AYES: MR. ANDERSON, TREASURER BEADLE, MR. CHIN, COMMISSIONER HERINGER, DR. SIMLAI**

**ABSENT: DR. TIAN**

**MOTION CARRIED**

**MINUTES:**

The minutes were considered for the October 23, 2023, meeting.

**IT WAS MOVED BY DR. SIMLAI AND SECONDED BY COMMISSIONER HERINGER AND CARRIED BY A VOICE VOTE TO APPROVE THE MINUTES FOR THE OCTOBER 23, 2023, MEETING AS DISTRIBUTED.**

**AYES: MR. ANDERSON, TREASURER BEADLE, MR. CHIN, COMMISSIONER HERINGER,  
DR. SIMLAI  
ABSENT: DR. TIAN  
MOTION CARRIED**

**BENCHMARK MEMO**

Mr. Anderson discussed the significance of having an independent view of benchmarking and performance assessments and affirmed Versus' continued efforts through the process. Mr. Anderson then introduced Eileen Neill and Marc Gesell from Versus Consulting to present the Benchmark Memo.

Ms. Neill provided the committee with strategic benchmark recommendations for a variety of asset classes and emphasized the importance of setting appropriate benchmarks, as they are the mechanism in evaluating the success of the respective investment program in meeting its stated policy objectives. Ms. Neill reviewed desirable qualities used to evaluate investment performance and how they tie into different asset classes, and provided an overview of the recommended benchmarks for Public Markets, Private Markets, and the In-State Investment Program. Committee discussion followed.

**IT WAS MOVED BY DR. TIAN AND SECONDED BY DR. SIMLAI AND CARRIED BY A VOICE VOTE TO BRING THE MEMORANDUM TO THE STATE INVESTMENT BOARD.**

**AYES: COMMISSIONER HERINGER, MR. ANDERSON, DR. SIMLAI, MR. CHIN, DR. TIAN,  
TREASURER BEADLE  
NAYS: NONE  
MOTION CARRIED**

**PRIVATE EQUITY AND REAL ESTATE UPDATE**

Mr. Moss provided the committee with a broad overview of private markets, including allocations by pool and strategy overview. The investment team's strategy includes detailed analysis, finding skilled partners, developing valuable investment drivers, and geographic exposures. Mr. Moss provided information on private equity, including market commentary and allocations by strategy and geography. It was noted that private equity fund raising is down since 2021, which works to the advantage of the Legacy Fund and gave valuable information regarding the private equity performance of the pension plans.

Mr. Zietlow provided information on real estate, including market commentary, an overview of real estate strategies, and real estate allocations by pool and strategy. Mr. Zietlow started with core real estate performance, noting income returns were positive across sectors and regions, and most property sectors experienced negative appreciation. The committee was also informed of the liquidity of assets, pricing, trailing performance, and strategies. Mr. Zietlow discussed the different strategies, Core, Core-Plus, Value-Add, Opportunistic, and REITs and their performance. Committee discussion followed.

The Committee recessed at 11:01 a.m. and reconvened at 11:09 a.m.

**REAL ESTATE STRATEGY UPDATE - EXECUTIVE SESSION**

**IT WAS MOVED BY COMMISSIONER HERINGER AND SECONDED BY DR. SIMLAI AND CARRIED BY A ROLL CALL VOTE TO ENTER INTO EXECUTIVE SESSION TO REVIEW AND DISCUSS CONFIDENTIAL COMMERCIAL INFORMATION AND TRADE SECRETS PURSUANT TO NDCC 44-04-19.2, 44-04-18.4 (2)(a), AND 44-04-18.4 (2)(d).**

**AYES: DR. SIMLAI, MR. CHIN, COMMISSIONER HERINGER, DR. TIAN, MR. ANDERSON,  
TREASURER BEADLE  
NAYS: NONE  
MOTION CARRIED**

The executive session began at 11:09 a.m. and ended at 11:35 a.m. The session was attended by Committee members, Mr. Dukart, Ms. Ferderer, Ms. Kopp, Mr. Moss, Ms. Murtha, Mr. Posch, Mr. Yu, and Mr. Zietlow.

### **MACHINE LEARNING AND INVESTMENTS**

Mr. Posch provided an overview of the history of artificial intelligence, the opportunity to provide efficiencies for the agency, and the opportunities the state of North Dakota has been researching. Mr. Posch discussed the key technologies for AI, including the subset machine learning (ML) which focuses on pattern recognition and predictive modeling, and the subset of ML, which is natural language processing (NLP), which is the understanding, interpreting, and manipulation of human language by machines. Information regarding generative AI, market reaction to AI advancements, ethical and regulatory concerns, and investment implications was given. Mr. Posch reviewed the opportunities and potential uses for AI within the agency, the ways RIO has been utilizing AI, and the future plans with AI, such as Microsoft Copilot.

### **DISCUSSION**

**IT WAS MOVED BY DR. TIAN AND SECONDED BY MR. CHIN AND CARRIED BY A ROLL CALL VOTE TO APPROVE THE EXPANSION OF THE ESTIMATED BUDGET RANGE FOR THE RIO INVESTMENT IT SYSTEMS PROJECT FROM \$670,000 - \$1.165 MILLION TO \$950,000 - \$1.9 MILLION.**

**AYES: MR. ANDERSON, DR. TIAN, MR. CHIN, COMMISSIONER HERINGER, DR. SIMLAI,  
TREASURER BEADLE  
NAYS: NONE  
MOTION CARRIED**

With no further business to come before the Investment Committee, Treasurer Beadle adjourned the meeting at 12:11 p.m.

Prepared by:

Jennifer Ferderer, Assistant to the Board



# RISK ALLOCATION AND MANAGEMENT

Investment Staff  
Dec 08, 2023

NORTH  
**Dakota**  
Be Legendary.

Retirement & Investment



# AGENDA

- Country Assessment
- Risk Exposures
- Investment Systems Acquisition
- Annual Compliance Review

# COUNTRY ASSESSMENT

## RISK FRAMEWORK

From risks time horizons' perspective, we customized the model to sixteen factors and thereafter we assigned the following weights:

- Political: 50% these are perpetual risks
- Economic: 30%
- Financial: 20%
- The latter two are additionally broken down into:
  - 9% to longer term econ/political risk indicators
  - 21% to current macro-economic conditions
  - 20% to near term economic risk indicators
- Quarterly review of risk changes by RIO

Investment Staff: December 08, 2023

## CUSTOMIZED BLOOMBERG COUNTRY RISK MODEL

FACTORS	WEIGHT IN GROUP	Model #1		COMMENTS
		NET WT.		
<b>Economic</b>	100.0%	30.0%		
GDP Forecast	20.0%	6.0%		Current condition
CPI	25.0%	7.5%		Current condition
Unemployment	25.0%	7.5%		Current condition
Budget Surplus	5.0%	1.5%		Longer term economic/political risk indicator
Current Account	5.0%	1.5%		Longer term economic/political risk indicator
Currency Reserves	10.0%	3.0%		Longer term economic/political risk indicator
Total External Debt	10.0%	3.0%		Longer term economic/political risk indicator
<b>Financial</b>	100.0%	20.0%		
5-yr CDS	30.0%	6.0%		Near term economic risk indicator
Sovereign Bond Yield	30.0%	6.0%		Near term economic risk indicator
FX change forecast	30.0%	6.0%		Near term economic risk indicator
3-mo Implied Volatility	10.0%	2.0%		Near term economic risk indicator
<b>Political</b>	100.0%	50.0%		
Rule of Law	30.0%	15.0%		Perpetual risk
Regulatory Quality	10.0%	5.0%		Perpetual risk
Govt. Effectiveness	10.0%	5.0%		Perpetual risk
Corruption	20.0%	10.0%		Perpetual risk
Ease of Doing Business	30.0%	15.0%		Perpetual risk
		100.0%		

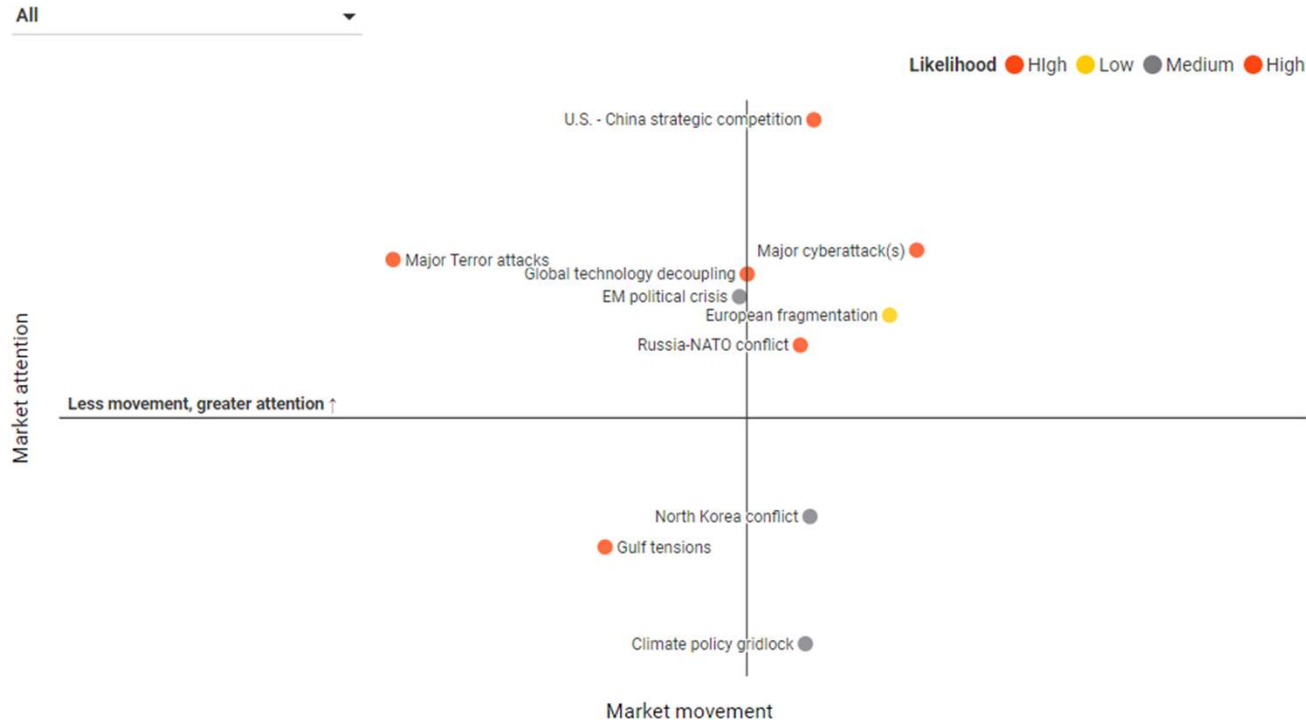
# COUNTRY ASSESSMENT

## RISK FRAMEWORK

### BLACKROCK GEOPOLITICAL RISK MAP

#### Risk map

BlackRock Geopolitical market attention, market movement and likelihood



Source: BlackRock Investment Institute, October 2023

Investment Staff: December 08, 2023

The U.S. and China have settled into a long-run, competitive posture. Both sides seek to stabilize the relationship, though any thaw would be fragile, in our view. We do not see military action in the near term but see the risk increasing. Headwinds for Chinese and Taiwanese equities and bonds.

The U.S. and China are pursuing targeted decoupling, focused especially on advanced and military-related technologies. The U.S. is executing a multi-pronged strategy to limit China's access to key technologies and know-how though some Chinese companies have demonstrated an ability to evade western export controls. Headwinds for CNY, US corporate bonds and Chinese technology companies.

# COUNTRY ASSESSMENT

## CHINA: Qualitative Geo-political Summary

### Selected BCA Research Observations

- “China, like Russia, has reverted to **autocratic government** and lacks domestic political checks and balances. Hence the **odds of a major policy mistake are not low**. The policy mistake could be social repression, economic austerity, foreign aggression, or all three.”
- “China’s first problem is that even if China’s economy were still growing rapidly, its **growing security vulnerabilities and interests would create national security threats and fears that translate into regional insecurity**. Rising import dependency is the critical driver of insecurity.”
- “The second problem is that **property-driven growth has also peaked**, forcing China to transition into an even slower phase of growth.”
- “The **administration’s main priority is different from the past** - to prevent the property bubble from taking down the economy and to prevent the Americans from cutting off China’s access to technology”
- “**China has not rushed to provide major economic stimulus** due to funding constraints, a shrinking pool of projects, and only minor improvement in government revenues.”

# COUNTRY ASSESSMENT

## CHINA

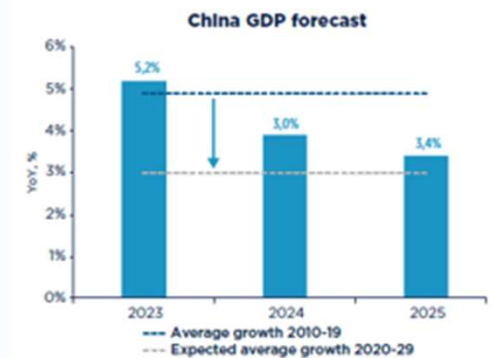
### CURRENT CHALLENGES

- Beijing's long-term vision shifts away from a singular focus on growth and incorporates national security as well as income equality.
- This shift comes as China grapples with secular challenges including demographic ageing, diminishing capital returns, and geopolitical fragmentation.
- High debt weighing on growth in both private and household sectors along with debt deflation
- Decline in real estate investments as home prices declined into deep recession. Developers have been hit hard.
- Consumer confidence is near record lows and consumption growth has slowed considerably
- Declining working age population; dependency ratio near 50%. But, unemployed youth at a record high
- US and China less dependent on each other for trade as US imports more from Mexico. Plunging FDI; declining global holdings of Chinese stocks and bonds
- Monetary and Fiscal support is subdued

Investment Staff: December 08, 2023

### China: a new growth trajectory

Slower growth with debt discipline



Source: Amundi Investment Institute. Data is as of 25 October 2023. Forecasts are by Amundi Investment Institute as of 24 October 2023.

# COUNTRY ASSESSMENT

## CHINA vs. INDIA

### Wealth and Pension Funds Survey

- London's Official Monetary and Financial Institutions Forum conducted survey of 100 funds with \$26 trillion in assets

### INDIA ADVANTAGES

- Broad based economic expansion is ongoing. Composite PMI outperforming China. Most economic metrics are continuing to improve.
- Domestic activity and consumption driving growth. Private sector credit is surging. Business sentiment near record.
- Surge in CAPEX. \$1.2t plan to improve infrastructure including \$125b in 2024 - nearly 20% of federal budget.
- The policy mix is expected to remain supportive on the fiscal side.
- Unlike China there is a growing working age population that should support continued growth

**Figure 2.4. India is the most attractive emerging market**

What is the most attractive emerging market? Share of respondents, %



Sources: Bloomberg

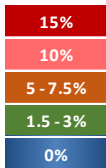
Investment Staff: December 08, 2023

# COUNTRY ASSESSMENT

## Bloomberg Country Risk Model

### Q/Q Changes (2023Q2 vs. 2023Q3)

- Q/Q, political risk factors (50% weights in the score) are unchanged, and the score changes are driven by financial risk factors and economic factors.
- China 5-year CDS hiked Q/Q due to largest real estate developers' debt crisis, slowing economic growth, and negative sentiment among businesses.
- Japan 5-year CDS hiked after BOJ began phasing out yield curve control (YCC) program



Country	Bloomberg Country Risk Score			RIO Adjusted Country Risk Score			Financial Risk									Economic Risk														
							Near Term Economic Risk Indicators															Current Condition								
							Credit & Interest Rate Risk						Foreign Exchange Risk			Economic Activity														
							5 Year CDS			Local Sovereign Bond Index Yield			Next Period FX Forecast (%Chg)			GDP YOY%			CPI Actual			Unemployment								
Q2	Q3	Δ	Q2	Q3	Δ	Q2	Q3	Δ	Q2	Q3	Δ	Q2	Q3	Δ	Q2	Q3	Δ	Q2	Q3	Δ	Q2	Q3	Δ							
Australia	92.7	92.4	-0.2	92.7	92.4	-0.2	25	24	-1.7	4.10	4.33	+0.2	(3.6)	(4.3)	-0.8	2.4	2.1	-0.3	7.0	6.0	-1.0	3.5	3.7	+0.2						
Canada	85.1	83.9	-1.2	90.5	89.3	-1.3	-	-	-	3.78	4.35	+0.6	0.8	1.5	+0.8	2.1	1.1	-1.0	5.1	3.5	-1.6	5.4	5.5	+0.1						
China	62.7	63.7	+1.0	63.6	64.6	+1.0	61	83	+22.1	2.51	2.57	+0.1	5.1	4.9	-0.1	4.5	6.3	+1.8	1.3	0.1	-1.2	4.0	4.0	0						
France	82.5	83.9	+1.4	87.8	83.9	-3.9	26	27	+1.0	3.03	3.36	+0.3	-	(3.6)	-	0.8	1.0	+0.2	7.0	6.1	-0.9	7.3	7.3	0						
Germany	91.8	92.4	+0.6	99.1	93.8	-5.3	14	22	+8.1	2.63	2.91	+0.3	-	(3.6)	-	(0.2)	(0.2)	0	8.8	6.9	-1.9	3.0	3.0	0						
India	32.3	32.9	+0.7	41.3	42.2	+0.9	-	-	-	-	-	-	0.5	0.6	+0.2	6.1	7.8	+1.8	6.2	4.6	-1.6	-	-	-						
Ireland	91.4	91.4	+0.0	97.2	91.4	-5.8	25	24	-0.6	2.95	3.28	+0.3	-	(3.6)	-	1.1	(0.7)	-1.8	7.5	5.5	-2.1	3.8	4.2	+0.4						
Israel	80.1	81.2	+1.1	82.6	83.7	+1.1	39	39	0	3.98	4.38	+0.4	5.1	3.5	-1.6	4.0	3.1	-1.0	5.2	4.6	-0.6	3.5	3.1	-0.4						
Japan	91.8	91.0	-0.7	91.8	91.0	-0.7	16	27	+10.5	0.39	0.67	+0.3	6.3	8.4	+2.1	2.0	1.6	-0.4	3.6	3.3	-0.3	2.5	2.7	+0.2						
Netherlands	92.3	92.4	+0.1	101.2	101.3	+0.1	5	5	0	2.82	3.14	+0.3	-	(3.6)	-	2.1	-	-	6.7	5.7	-1.0	3.5	3.5	0						
Sweden	90.0	89.2	-0.8	90.0	89.2	-0.8	4	4	0	2.85	3.11	+0.3	4.3	5.5	+1.2	0.8	(0.8)	-1.6	11.4	9.8	-1.6	7.9	8.0	+0.1						
Switzerland	93.7	92.5	-1.2	99.7	98.4	-1.3	-	-	-	0.98	1.09	+0.1	(2.2)	0.6	+2.7	1.4	0.6	-0.8	3.2	2.2	-1.0	2.0	2.1	+0.1						
Taiwan	85.7	87.1	+1.4	95.4	97.0	+1.5	-	-	-	1.25	1.31	+0.1	1.8	4.0	+2.1	(2.9)	1.4	+4.2	2.6	2.0	-0.6	3.5	3.4	-0.0						
United Kingdom	89.5	90.5	+1.0	89.5	90.5	+1.0	10	10	0	4.71	4.63	-0.1	0.8	(1.6)	-2.4	0.5	0.6	+0.1	10.2	8.4	-1.8	4.2	4.3	+0.1						
United States	89.1	88.9	-0.2	89.1	88.9	-0.2	5	5	0	4.37	4.85	+0.5	1.4	2.7	+1.3	1.7	2.4	+0.7	5.8	4.0	-1.8	3.5	3.5	0						

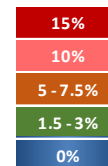


# COUNTRY ASSESSMENT

## Bloomberg Country Risk Model

### Current Quarter Scores (2023Q3)

- Based on our exposures, we identified 15 countries to our watch list for country risk
- China and India scored lowest based on Bloomberg country risk model tuned with our customized weights
  - China has a relatively low score due to low scores in rule of law and control of corruption
  - India has a low score due to low scores in control of corruption, low ranking in terms of ease of doing business, and low score in rule of law



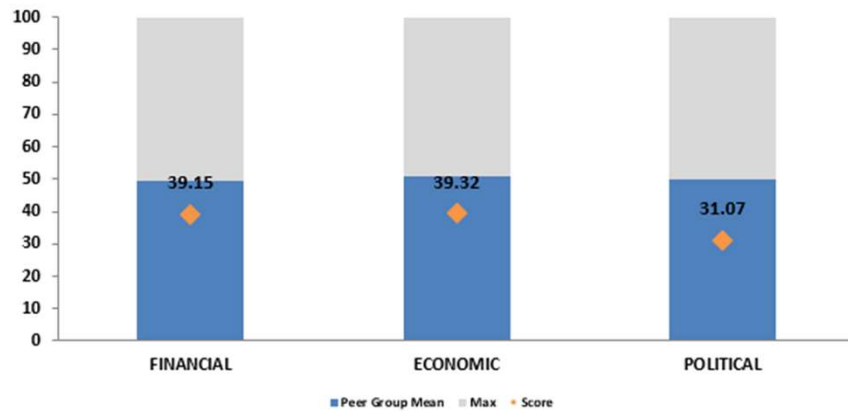
Country	Bloomberg Country Risk Score	FINANCIAL RISK				ECONOMIC RISK						POLITICAL RISK				RIO Adjusted Score		
		Near Term Economic Risk Indicators				Current Condition			Longer Term Economic/Political Risk Indicator			Perpetual Risk						
		Credit & Interest Rate Risk		Foreign Exchange Risk		Economic Activity			Sovereign & Fiscal Risk		External Balance & Foreign Exposure		Government Risk				Business Environment	
5 Year CDS	Local Sovereign Bond Index Yield	Next Period FX Forecast (%Chg)	3 Month Implied Volatility	GDP YOY%	CPI Actual	Unemployment	Budget Surplus/Deficit (% GDP)	Total External Debt (% GDP)	Current Account (% of GDP)	Currency Reserves (% GDP)	WGI Control Of Corruption	WGI Govt Effectiveness	WGI Regulatory Quality	WGI Rule Of Law	Ease Of Doing Business Rank			
Australia	92.43	23.6	4.3	(4.3)	9.8	2.1	6.0	3.7	(3.2)	69.4	1.2	12.4	1.8	1.5	1.9	1.5	14	92.43
Canada	83.91	-	4.4	1.5	5.8	1.1	3.5	5.5	(3.2)	72.1	(1.0)	5.3	1.7	1.6	1.7	1.6	23	89.26
China	63.65	82.7	2.6	4.9	5.3	6.3	0.1	4.0	(4.7)	-	2.2	39.8	0.0	0.5	(0.4)	(0.0)	32	64.62
France	83.94	27.0	3.4	(3.6)	7.1	1.0	6.1	7.3	(4.7)	123.0	(1.9)	9.9	1.3	1.2	1.2	1.2	33	83.94
Germany	92.39	22.4	2.9	(3.6)	7.1	(0.2)	6.9	3.0	(2.6)	-	5.0	8.9	1.8	1.3	1.5	1.5	22	93.80
India	32.93	-	-	0.6	3.9	7.8	4.6	-	(6.6)	-	(1.7)	-	(0.3)	0.4	(0.1)	0.1	62	42.16
Ireland	91.36	24.4	3.3	(3.6)	7.1	(0.7)	5.5	4.2	1.6	71.6	10.5	8.7	1.7	1.6	1.6	1.5	24	91.36
Israel	81.20	39.1	4.4	3.5	10.0	3.1	4.6	3.1	-	-	4.2	162.0	0.8	1.2	1.2	1.0	35	83.69
Japan	91.02	26.5	0.7	8.4	9.3	1.6	3.3	2.7	(6.7)	216.3	2.2	29.3	1.5	1.6	1.4	1.6	30	91.02
Netherlands	92.42	4.8	3.1	(3.6)	7.1	-	5.7	3.5	-	-	9.6	10.3	1.9	1.6	1.7	1.7	42	101.34
Sweden	89.16	3.6	3.1	5.5	11.2	(0.8)	9.8	8.0	0.9	44.0	5.0	34.6	2.1	1.6	1.7	1.7	10	89.16
Switzerland	92.53	-	1.1	0.6	7.4	0.6	2.2	2.1	(0.1)	20.9	9.8	370.8	2.0	2.1	1.6	1.8	36	98.43
Taiwan	87.09	-	1.3	4.0	5.2	1.4	2.0	3.4	1.3	-	11.9	-	1.2	1.4	1.4	1.3	15	96.97
United Kingdom	90.48	10.2	4.6	(1.6)	8.0	0.6	8.4	4.3	(5.6)	195.4	(1.8)	18.0	1.6	1.2	1.6	1.4	8	90.48
United States	88.94	4.7	4.9	2.7	7.1	2.4	4.0	3.5	(8.5)	126.4	(3.2)	0.9	1.1	1.3	1.4	1.4	6	88.94



# COUNTRY ASSESSMENT

## INDIA: Risks

RISK SCORES PERFORMANCE  
RELATIVE TO MEAN OF PEER GROUP



- Scores poorly on financial, economic and political risks including very long-term risks – Corruption, Rule of Law and Ease of Doing Business.
- Being democratic also brings higher risk of policy changes.
- Also scores poorly on budget deficit and current account. Current account depends on price of oil as it is a huge importer.
- While demographics is in its favor, female labor participation rate is very low which limits economic growth

### India is still not an easy place to do business

Ease of Doing Business rank for G20 economies in 2019

South Korea	5
United States	6
United Kingdom	8
Australia	14
Germany	22
Canada	23
Russia	28
Japan	29
Spain	30
China	31
France	32
Turkey	33
Italy	58
Mexico	60
Saudi Arabia	62
<b>India</b>	<b>63</b>
Indonesia	73
South Africa	84
Brazil	124
Argentina	126

Source: World Bank

Ned Davis Research

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# COUNTRY ASSESSMENT

## KEY TAKEAWAYS

- RIO utilizes both quantitative risk models as well as qualitative risk analysis. Quantitative risk factor models provide aggregate country risk scores indicating riskiness of countries.
- Qualitative risk analysis provides insight to the observations in quantitative models explaining the underlying dynamics behind such scores.
- China has moved past its high growth phase and faces several challenges even as its government is constrained in its policy choices. This is further compounded by a higher risk of policy mistakes by an autocratic government. Relationship with other countries is now more strained.
- India has emerged as a viable alternative to China as it sustains a higher growth underpinned by capital expenditure and consumption growth.
- Yet, our risk models show India is not without risks, riskier than China, and rightfully so, in each of economic, financial and political risks.
- Therefore, a one-to-one transition from China to India can be seen as a one that increases risk even as India return opportunity is higher. As investments move away from China (currently ~9% of international index) a more prudent risk-adjusted approach may be to not only increase exposure to India but to also diversify exposures to other higher growth economies.

# RISK EXPOSURES

## Risk Exposures Reports

- Use the Legacy fund as representative portfolio
- Two reports each for Legacy fund, Legacy fund equities and Legacy fund fixed income portfolios. The purpose is to view these from two different lenses.
- One report shows the risk factor drivers for each of three portfolios
- The other report shows the underlying fund drivers of risk
- On each report, the active risk contribution is the most significant metric.
- Collectively, these provide a more holistic view of risk in the portfolios

# RISK EXPOSURES

## LEGACY TOTAL PORTFOLIO BY FACTOR DRIVERS OF RISK

Title	Standalone Risk			Risk Contribution		
	Portfolio (bp)	Benchmark (bp)	Active (bp)	Portfolio (bp)	Benchmark (bp)	Active (bp)
NDRIO_LEG	1,038	1,030	106	1,038	1,030	106
Equity	785.73	793.73	56.93	740.82	733.70	24.86
WRLD Style	721.39	744.19	42.19	666.23	677.33	8.16
Size	73.37	94.38	21.01	28.45	39.35	5.33
Momentum	46.58	31.61	14.97	-20.24	-14.93	5.01
WRLD Country	153.48	137.76	31.70	66.44	51.94	11.49
China Offshore	13.50	27.74	14.24	-2.53	-4.06	5.94
Equity Specific	61.82	59.82	23.25	3.68	3.47	5.10
WRLD EQ Idiosyncratic	61.82	59.82	23.25	3.68	3.47	5.10
Foreign Exchange	142.93	166.15	25.88	91.03	113.74	8.66
FX Spot	142.92	166.15	25.88	91.02	113.74	8.65
Rates	254.66	288.26	44.71	88.32	117.46	18.15
USD Int Rates	254.10	266.79	15.41	87.97	104.00	6.83
Tsy 2Y	2.72	17.56	14.84	0.44	3.67	6.91
Tsy 5Y	59.23	42.90	16.33	17.67	15.00	-7.78
Tsy 7Y	13.99	43.88	29.89	4.80	17.28	13.86
GBP Int Rates	0.06	23.68	23.71	0.00	8.70	5.49
Alternative	103.47	67.01	76.17	82.85	39.71	43.87
Real Estate-v2	63.75		63.75	48.18		23.74
Real Estate - Systematic	60.48		60.48	47.79		19.90
US Off RE	18.95		18.95	13.77		6.21
Infrastructure Equity	40.90		40.90	29.02		13.20
Infra Eq World	35.73		35.73	24.56		7.08
Real Estate	10.33	67.01	58.65	5.96	39.71	6.40
Real Estate - Public	7.57	48.84	41.27	5.85	36.99	-8.58
US RE Public	4.06	26.17	22.11	3.22	20.11	-6.60
RE Private Excess	5.38	34.73	29.34	0.03	1.17	8.12
Real Estate Idiosyncratic	4.04	27.75	28.04	0.02	0.75	7.42
Spreads	54.90	40.20	22.32	32.89	21.54	7.35
USD Inflation	24.51	9.30	16.03	-2.05	-1.01	5.48

# RISK EXPOSURES

## LEGACY TOTAL PORTFOLIO BY UNDERLYING FUND DRIVERS OF RISK

Title	Standalone Risk			Risk Contribution		
	Portfolio (bp)	Benchmark (bp)	Active (bp)	Portfolio (bp)	Benchmark (bp)	Active (bp)
NDRIO_LEG	1,038	1,030	106	1,038	1,030	106
PUBLIC FIXED INCOME	714.29	759.22	128.14	120.00	140.83	17.84
Inflation Protected Securities	752.64	1,256.95	873.56	11.86	33.90	7.74
Investment Grade Fixed Income	726.69	732.44	93.63	108.15	106.93	10.10
IG Credit	637.84	732.44	258.17	19.68	18.34	5.71
ALTERNATIVES	910.52	610.00	656.23	125.97	72.91	73.13
Infrastructure	1,450.93	51.08	1,457.48	67.58	-0.23	18.94
Macquarie Infrastructure Partners IV Legacy	1,967.70		1,967.70	13.04		6.74
Global Real Estate	1,371.33	1,481.75	1,100.75	55.30	55.62	37.94
Invesco Core Real Estate-USA, LP	1,178.63	1,481.75	1,234.29	19.20	25.27	16.77
J.P. Morgan U.S. Real Estate Income and Growth	1,672.39	1,481.75	1,368.42	29.14	25.21	20.26
Private Credit	308.21	732.44	756.37	3.09	17.52	16.26
PUBLIC EQUITIES	1,649.83	1,724.22	136.76	792.95	816.94	14.93
Large Cap Domestic	1,893.02	1,906.06	94.59	450.38	445.57	6.63
International Equities	1,550.02	1,663.04	242.21	267.04	286.00	11.17
ItI Developed Large Cap	1,820.33	1,670.91	408.18	121.96	111.55	8.36
State Street World xUS-Legacy	1,820.32	1,670.91	408.18	121.96	111.55	8.36

Source: Blackrock Aladdin

## LEGACY EQUITIES PORTFOLIO BY FACTOR DRIVERS OF RISK

Title	Standalone Risk			Risk Contribution		
	Portfolio (bp)	Benchmark (bp)	Active (bp)	Portfolio (bp)	Benchmark (bp)	Active (bp)
L_PUB_EQ	1,619.77	1,738.67	186.72	1,619.77	1,738.67	186.72
Equity	1,498.87	1,585.64	158.44	1,484.80	1,565.88	150.16
WRLD Style	1,373.46	1,474.35	117.27	1,335.95	1,432.59	91.13
Market	1,391.03	1,461.91	70.88	1,332.91	1,406.28	45.71
Momentum	84.57	66.57	18.01	-31.54	-25.93	7.07
Liquidity	63.60	76.95	13.35	38.26	47.63	7.28
Profitability	72.67	42.01	30.66	1.91	-0.36	9.44
Emerging	29.14	7.72	21.43	-8.83	-2.48	7.76
WRLD Country	293.87	308.68	65.29	130.16	138.60	26.77
France	14.12	33.22	19.10	-1.97	-3.31	5.34
Equity Specific	123.98	107.39	55.81	9.49	6.63	16.68
WRLD EQ Idiosyncratic	123.98	107.39	55.81	9.49	6.63	16.68
WRLD Sector	98.28	58.94	67.85	9.40	-11.94	15.47
Diversified Banks	40.77	75.07	34.30	3.03	8.10	12.39
Foreign Exchange	244.77	303.56	62.85	131.80	172.80	39.02
FX Spot	244.77	303.56	62.85	131.80	172.80	39.03
CAD/USD	18.22	28.65	10.43	11.58	18.69	5.83
CHF/USD	16.35	30.22	13.87	6.34	12.46	6.59
EUR/USD	67.66	107.42	39.76	34.64	57.92	23.07
GBP/USD	46.30	57.56	11.26	25.98	33.31	5.86

Source: Blackrock Aladdin

Investment Staff: December 08, 2023

# RISK EXPOSURES

## LEGACY EQUITIES PORTFOLIO BY KEY UNDERLYING FUND DRIVERS OF RISK

Title	Standalone Risk			Risk Contribution		
	Portfolio (bp)	Benchmark (bp)	Active (bp)	Portfolio (bp)	Benchmark (bp)	Active (bp)
L_PUB_EQ	1,619.77	1,738.67	186.72	1,619.77	1,738.67	186.72
Domestic Equities	1,839.90	1,932.77	218.72	1,082.35	1,114.14	81.03
Large Cap Domestic	1,845.39	1,859.21	92.47	923.54	926.98	36.07
LA Capital 60% Large Cap/40% Large Cap Active	1,832.59	1,859.21	156.80	417.85	422.93	27.87
Small Cap Domestic	1,912.02	2,282.12	564.56	158.81	187.16	44.96
Atlanta Capital High Quality Small Cap Legacy	1,827.81	2,282.12	741.74	49.10	61.87	19.27
Riverbridge Small Cap Growth-Legacy	2,072.97	2,282.12	889.75	54.21	61.00	14.49
Sycamore Small Cap Value-Legacy	1,960.06	2,282.12	538.13	49.66	58.43	11.20
International Equities	1,534.81	1,649.26	215.57	537.42	581.79	105.70
ItI All Cap	1,735.05	1,656.20	251.67	238.56	232.43	17.74
William Blair International Leaders	1,706.08	1,656.20	511.06	97.62	95.78	21.28
Emerging Markets	388.27	1,626.79	1,360.33	16.42	119.22	68.31
ItI Developed Large Cap	1,804.55	1,656.20	401.02	244.05	226.47	16.63
State Street World xUS-Legacy	1,804.55	1,656.20	401.02	244.05	226.47	16.63

Source: Blackrock Aladdin



# RISK EXPOSURES

## LEGACY FIXED INCOME PORTFOLIO BY FACTOR DRIVERS OF RISK

Title	Standalone Risk			Risk Contribution		
	Portfolio (bp)	Benchmark (bp)	Active (bp)	Portfolio (bp)	Benchmark (bp)	Active (bp)
L_GLB_FI	684.98	703.02	100.52	684.98	703.02	100.52
Rates	723.10	706.39	50.91	702.20	695.14	22.88
USD Int Rates	721.53	706.36	29.48	698.92	695.07	5.82
Tsy 2Y	12.58	46.78	34.20	9.53	37.61	15.73
Tsy 3Y	111.72	83.35	28.38	92.94	72.84	-12.57
Tsy 5Y	164.94	112.90	52.03	149.45	106.08	-20.65
Tsy 7Y	39.65	115.23	75.57	37.26	111.35	26.88
Unexpected Convexity	45.62	6.87	40.77	3.04	0.07	16.53
Tsy 2Y Convexity	42.75	1.07	41.68	2.83	0.01	16.90
Inflation	65.94		65.94	-28.19		42.84
USD Inflation	66.04		66.04	-28.27		42.87
USD INF 3Y	8.79		8.79	-3.54		6.04
USD INF 5Y	9.23		9.23	-3.46		6.33
USD INF 20Y	19.11		19.11	-8.49		11.21
Spreads	138.90	113.46	47.24	4.51	2.82	34.09
Corporate	99.75	74.66	26.78	4.51	0.43	16.11
Investment Grade	88.97	74.66	15.52	5.96	0.43	8.58
USD Cash Bonds	88.44	74.54	14.61	5.86	0.40	8.23
US Corp IG Ind	122.63	101.76	21.05	2.92	-4.77	11.14
High Yield	12.63		12.63	-1.44		7.39
USD Cash Bonds	11.47		11.47	-1.24		6.66
US Corp HY Ind	10.86		10.86	-1.22		6.31
Other Spreads	48.86	58.14	30.44	4.27	4.53	14.53
Sector	15.72	0.91	14.81	-6.92	-0.44	7.05
Maturity	13.35	0.64	12.72	5.03	0.27	-5.83
ABS Maturity 7	11.32	0.47	10.85	4.23	0.20	-5.13
CMBS	18.48	2.89	15.80	0.75	0.33	7.16
New Issue (CMBS 2.0/3.0)	17.49	2.03	15.55	0.41	0.12	7.05
CMBS post09	17.11	2.02	15.13	0.40	0.12	6.92

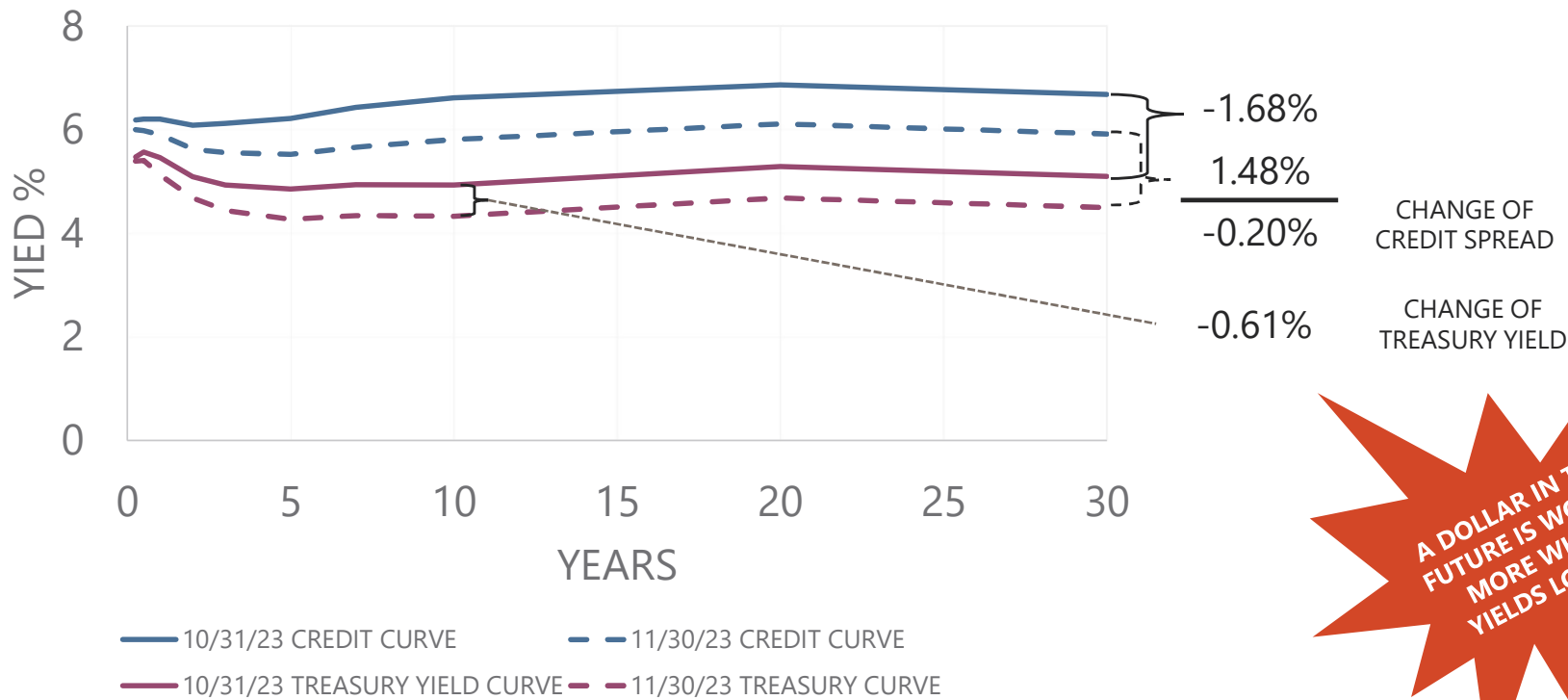
# RISK EXPOSURES

## LEGACY FIXED INCOME PORTFOLIO BY UNDERLYING FUNDS

Title	Standalone Risk			Risk Contribution		
	Portfolio (bp)	Benchmark (bp)	Active (bp)	Portfolio (bp)	Benchmark (bp)	Active (bp)
L_GLB_FI	684.98	703.02	100.52	684.98	703.02	100.52
Inflation Protected Securities	723.66	703.02	431.37	78.60	88.95	34.22
Investment Grade Fixed Income	696.29	703.02	90.16	606.38	614.07	66.29
Core Fixed Income	728.21	703.02	85.88	452.94	439.06	35.84
PIMCO Core Plus Constrained	681.61	703.02	80.82	118.51	124.51	-0.37
Prudential Core Fixed Income	711.29	703.02	63.13	158.19	157.24	8.73
WAMCO US Core Fixed Income - Legacy	803.01	703.02	222.78	176.24	157.31	27.49
IG Credit	611.52	703.02	248.01	88.05	105.32	25.10
State Street Credit Index-Legacy	787.71	703.02	217.76	20.97	19.16	2.94
Wells Capital Medium Quality Credit	905.44	703.02	329.94	60.34	48.56	9.16
IG Gov	666.10	703.02	99.93	65.39	69.69	5.35
BANK OF NORTH DAKOTA CDS	689.08	703.02	157.71	42.86	44.45	6.16
State Street Gov Index-Legacy	650.51	703.02	134.53	22.53	25.24	-0.81

Source: Blackrock Aladdin

# CHANGE OF CREDIT AND TREASURY YIELDS DRIVE RISK<sup>1</sup>



**A DOLLAR IN THE FUTURE IS WORTH MORE WHEN YIELDS LOWER!**

# FIXED INCOME RISK<sup>2</sup>

- Two of the funds have longer duration basis, the other two are much more aligned with the benchmark; longer durations are exposed to higher risks as expected

Description	Credit Rating	Duration	Active Key Rate Duration			Yield	OAS	Spread Duration	Risk
			Short	Medium	Long				
<b>BBG U.S. Aggregate Index</b>	AA	6.2	1.0	2.6	2.6	5.0	47.9	3.7	685
<b>PIMCO Core Plus Constrained</b>	AA+	(0.5)	0.1	(0.4)	(0.2)	(0.3)	13.2	0.1	665
<b>Prudential Core Fixed Income</b>	A	0.2	0.0	(0.1)	0.3	0.8	79.7	0.9	726
<b>WAMCO US Core Fixed Income</b>	A+	1.0	0.3	(1.1)	1.7	0.7	111.0	1.2	766
<b>Wells Capital Medium Quality Credit</b>	BBB	2.0	(0.1)	0.9	1.2	1.2	119.6	3.3	851

## Risk Exposures Next Steps

- Continue the data verification and validation process to ensure that reports are accurate.
- Expand the capabilities to more effectively account for private capital.
- Create client level risk and attribution reports
- Create manager level risk and attribution reports

# INVESTMENT SYSTEMS ACQUISITION

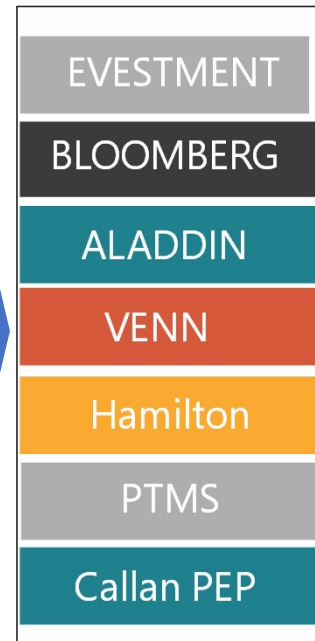
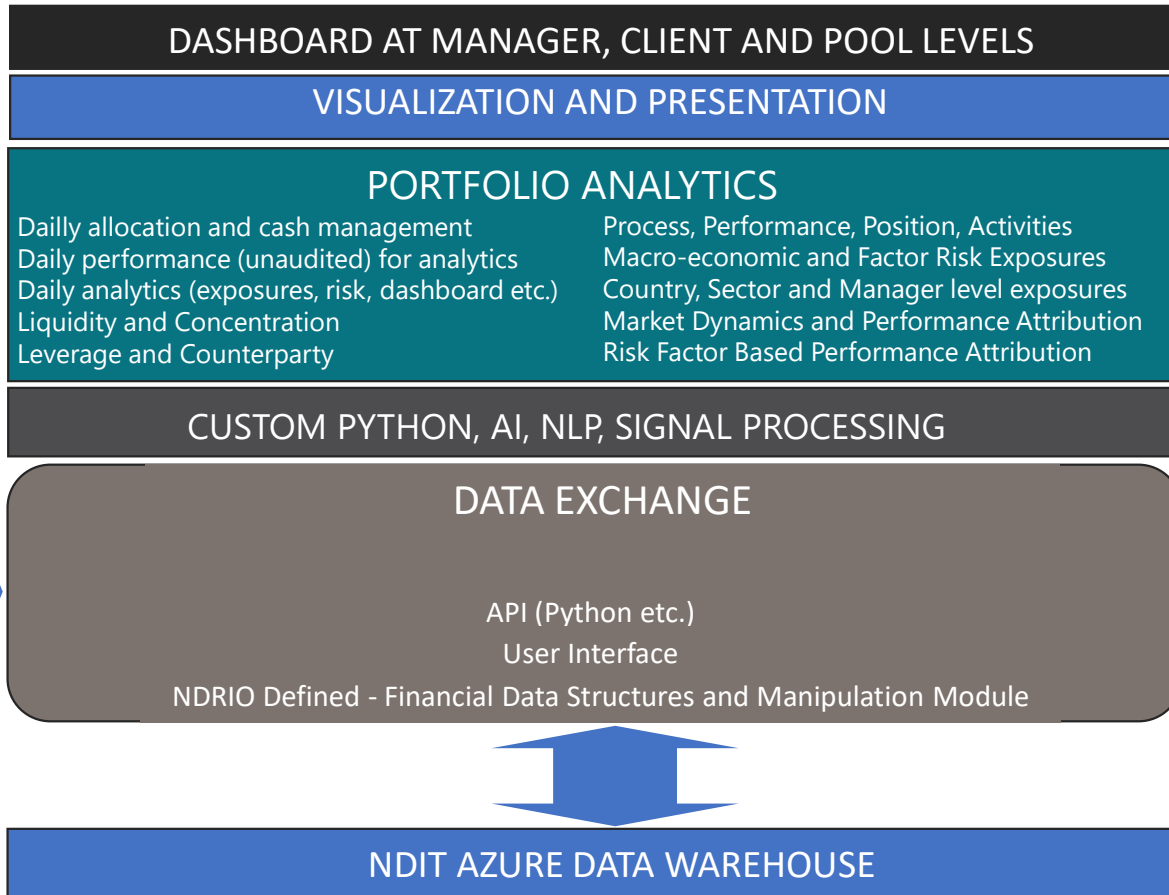
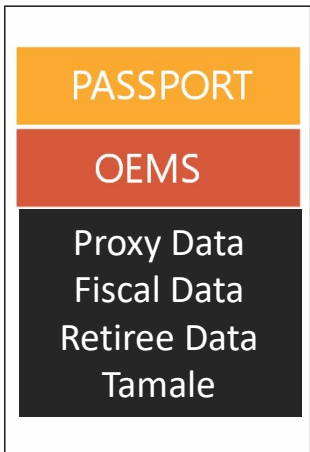
# INVESTMENT SYSTEMS STRATEGY GOALS

Procure or develop databases, systems/tools and processes that allow NDRIO Investments team the ability to:

- Leverage high frequency data for portfolio management including daily allocation and cash management
- Create timely and high-quality portfolio and risk analytics, including visualization and presentation, for enhanced investment decision making
- Access and control its current and historical data irrespective of custodian relationship

# TECHNOLOGY ENABLEMENT

INTEGRATED DATA AND MESSAGES, SOFTWARE AS A SERVICE, AI/MACHINE LEARNING, ADVANCED ANALYTICS





# PLATFORMS TO ENHANCE INVESTMENT RETURNS

## Project Initiated to Acquire These Platforms

### Order Execution Management System

- Transaction Execution
- Market Data
- Post Trade Actions
- Compliance Monitoring
- Realtime IBOR
- Transaction Reporting
- Commission Reporting
- Real time portfolio monitoring

### Portfolio & Treasury Management System

- Portfolio modeling and construction
- Risk management, stress testing and scenario analysis
- Performance attribution
- Cash management
- Collateral management
- Securities lending

### Data Warehouse + Data Exchange

- Central repository
- Integrated portfolio data and analytics
- AI, Machine Learning & Advanced Analytics
- Analysis and reporting overlays
- Dashboard

## RIO Investment IT Systems Project Progress

- State categorizes this as a large IT project to be procured through Executive Steering Committee (ESC).
- ESC has been formed and project charter has been approved
- Expected total cost of \$950k to \$1,900k.

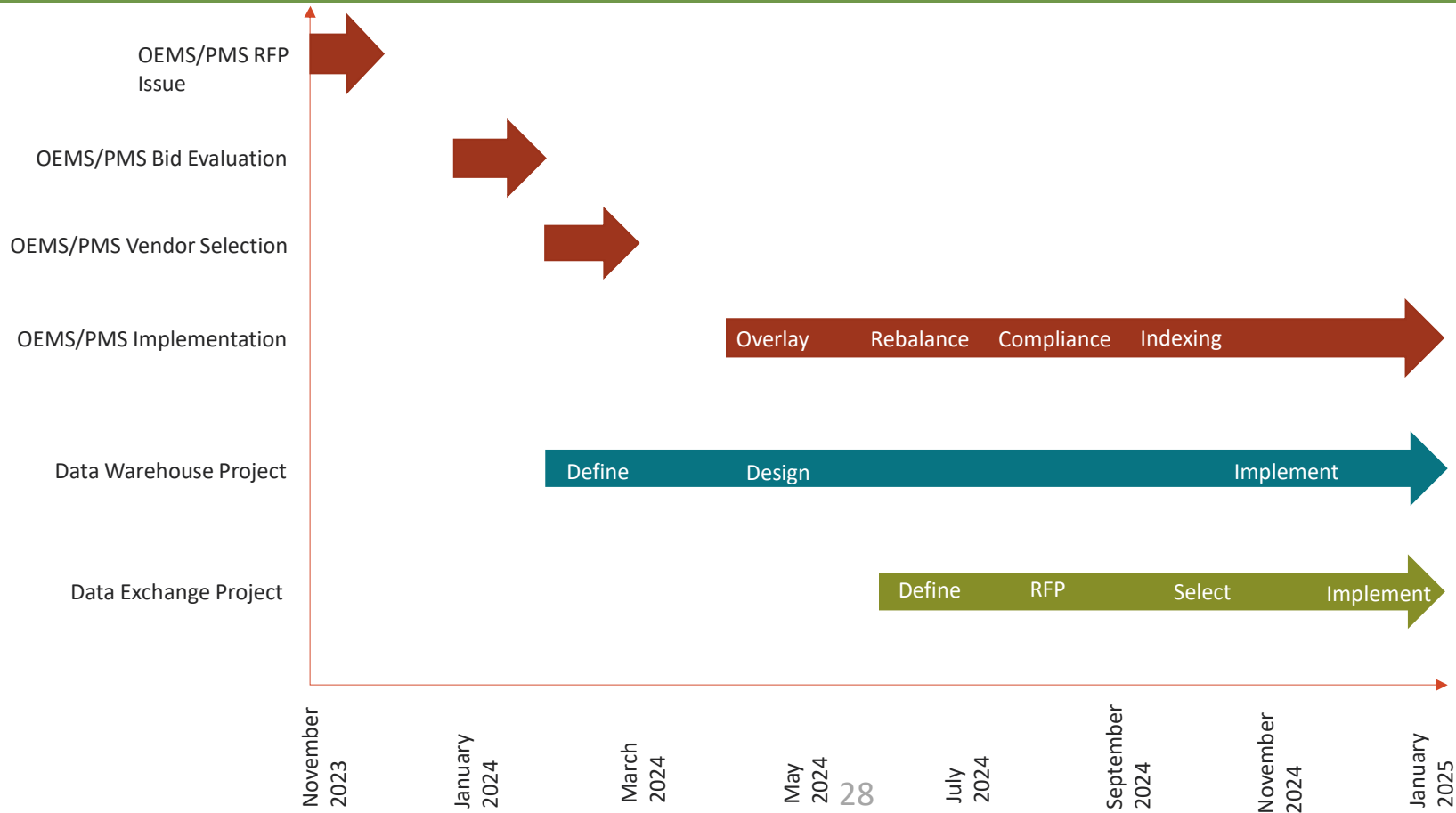
### OEMs/PMS

- Leveraged Gartner industry research along with knowledge of leading peer fund vendors to identify key vendors for engagement
- Limited procurement initiated among 8 pre-selected vendors.
- RFP has been issued. Bids expected by January 2024; expect to sign contracts early 2Q'24 and implementation by end of 2Q

### Data Warehouse and Exchange

- Expect to launch Data Warehouse acquisition in middle of 1Q'24
- Expect to launch Data Exchange acquisition in 3Q'24
- Expect to complete both projects in 2025

# DEPLOYING INVESTMENT SYSTEMS TIMELINE



Investment Staff: December 08, 2023

# **ANNUAL COMPLIANCE REVIEW**

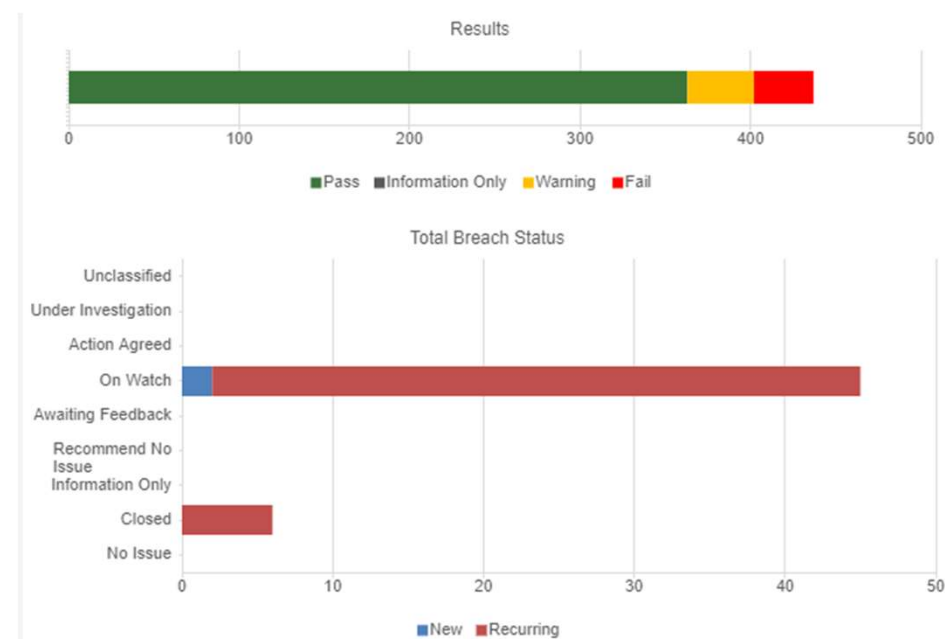
# INVESTMENT MANAGER NOTIFICATIONS

- Managers are required to notify RIO staff when positions fall out of portfolio guidelines
- Notifications were predominantly related to fixed income securities
- Over the past fiscal year, managers identified 10 items for review

Investment Manager	Security Defaults	Sector Limit Breach	Total	Approved/Waived	Additional Actions
Loomis Sayles	9	-	9	9	-
Ares	-	1	1	1	-
<b>Total</b>	<b>9</b>	<b>1</b>	<b>10</b>	<b>10</b>	<b>-</b>

# PORTFOLIO COMPLIANCE MONITORING

- Northern Trust’s compliance monitor tool was updated and refined earlier this year
  - Monitors daily positions of public market portfolios
  - The tool identifies potential breaches of portfolio guidelines
  - Currently 437 rules implemented in the tool compared with 380 rules initially implemented a year ago
  - The rules are developed based on portfolio guidelines, due to this data availability constrains, some rules are proxied (e.g., use “current credit rating” in the rule instead of “credit rating at purchase”)
- Investment team reviewed the breaches reported from the tool and have not identified additional items to address



# ANNUAL COMPLIANCE DOCUMENT REVIEW

- On an annual basis, RIO staff reviews documents for each investment manager. These include:
  - Annual Certification of Investment Guidelines
  - Updated Due Diligence Questionnaire
  - Audited Financials
  - SOC-1 Report
  - Form ADV Brochures
  - Notifications of any materially adverse changes
- There are currently forty-three funds overseen by RIO which are managed by thirty-nine managers. Thirty-eight managers have provided the above documents, with one of the managers is liquidating due to bankruptcy and has minimal impact on pension pool.
- Of these thirty-eight managers, an additional four are winding down and those provided only a limited set of documents. Notably, SOC-1 documents were only provided by 28 managers. Of the remaining ten, four are winding down, two provided auditor opinion in lieu of SOC-1 and further four are exempt per their agreements.

# FUTURE DEVELOPMENTS

- **Internal Direct Investment Team Rules (IDIT) and Monitoring**
  - This will necessitate additional rules implementation on the new OEMS platform
  - There will also be a need for automatic pre-emptive compliance notification and controls on this platform
  - Ability to trade by IDIT and “access” individuals will need to be restricted and monitored
  
- **A formal compliance role given the expanded needs**
  - A more effective program to monitor compliance with state and client requirements
  - Rule definitions, monitoring and controls
  - Review and audit managers and their documents and reports
  - Employee compliance



Confidential materials will be sent separately to Committee Members via a secure link.