NORTH Dakota | State Investment Board
Be Legendary. RETIREMENT & INVESTMENT

Investment Committee
Friday, July 14, 2023, 9:00 a.m.
Virtual Only
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AGENDA

I. **CALL TO ORDER AND ACCEPTANCE OF AGENDA**

II. **ACCEPTANCE OF MINUTES (JUNE 2023)**

III. **LEGACY FUND INVESTMENT POLICY STATEMENT – MR. ANDERSON**

IV. **PRIVATE MARKETS FUNDS MANAGEMENT STRATEGY – MR. MOSS, MR. ZIETTLOW**

V. **SECONDARIES GUIDELINE CHANGE - MR. MOSS, MR. ZIETTLOW**

VI. **VALUATION - MR. DUKART**

VII. **BANK RISK – MR. VAIDYA, MR. YU**

VIII. **CODE OF CONDUCT AFFIRMATION – MR. VAIDYA**

IX. **DISCUSSION**

X. **ADJOURNMENT**

Any individual requiring an auxiliary aid or service, please contact the Retirement and Investment Office (701) 328-9885 at least three (3) days prior to the scheduled meeting.

STATE INVESTMENT BOARD
INVESTMENT COMMITTEE MEETING
MINUTES OF THE
June 16, 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
Rachel Kmetz, Accounting Manager
Missy Kopp, Exec. Assistant
George Moss, Sr. Investment Officer
Matt Posch, Sr. Investment Officer
Ryan Skor, CFO/COO
Nitin Vaidya, Chief Risk Officer
Jason Yu, Risk Officer
Lance Ziettlow, Sr. Investment Officer

GUESTS:
Alex Browning, Callan

CALL TO ORDER:

Commissioner Heringer called the State Investment Board (SIB) Investment Committee (IC) meeting to order at 9:08 a.m. on Friday, June 16, 2023.The meeting was held virtually.

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

AGENDA:

The agenda was considered for the June 16, 2023, meeting.

IT WAS MOVED BY MR. ANDERSON AND SECONDED BY MR. CHIN AND CARRIED BY A VOICE VOTE TO APPROVE THE AGENDA FOR THE JUNE 16, 2023, MEETING AS DISTRIBUTED.

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

MINUTES:

The minutes were considered for the May 12, 2023, meeting.

IT WAS MOVED BY MR. ANDERSON AND SECONDED BY DR. SIMLAI AND CARRIED BY A VOICE VOTE TO APPROVE THE MINUTES FOR THE MAY 12, 2023, MEETING AS DISTRIBUTED.

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

NAYS: NONE
ABSENT: TREASURER BEADLE
MOTION CARRIED

PUBLIC MARKETS FUNDS ALPHA STRATEGY:

Mr. Chin provided an overview of the Alpha and Funds Management (AFM) investments and team members. Mr. Chin discussed the current capabilities and tools and what is needed as the program grows. The sources of value added include an indexed reference portfolio, asset allocation, strategy and manager selection, investment implementation, and funding, lending, and liquidity management. AFM beliefs, objectives, and strategy were discussed. Mr. Chin outlined the four key pillars to generate excess returns, active management, and the manager selection process. AFM portfolio construction was discussed. Mr. Chin outlined the near-term timeline of activities for AFM. Key projects to be completed by the end of 2023 include Equity 2.0, Equity Report Package V 1.0, IG Fixed Income Universe Analysis, IG Fixed income Report Package V 1.0, and Sub IG Portfolio Structure 1.0. Committee discussion followed.

PRIVATE EQUITY:

IT WAS MOVED BY MR. ANDERSON AND SECONDED BY MR. CHIN AND CARRIED BY A ROLL CALL VOTE TO ENTER INTO EXECUTIVE SESSION PURSUANT TO NDCC 44-04-18.4(1), 44-04-19.1(9), AND 44-04-19.2 TO DISCUSS CONFIDENTIAL COMMERCIAL INFORMATION AND CONTRACT NEGOTIATING STRATEGY.

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

The executive session began at 10:23 a.m. and ended at 11:14 a.m. The session was attended by Committee members and staff.

Treasurer Beadle joined the meeting at 10:49 a.m.

IT WAS MOVED BY TREASURER BEADLE AND SECONDED BY DR. SIMLAI AND CARRIED BY A ROLL CALL VOTE TO PROCEED WITH THE STAFF RECOMMENDATION TO MAKE A PRIVATE EQUITY INVESTMENT OF UP TO $30 MILLION CONTINGENT UPON APPROVAL OF A NEW ASSET ALLOCATION BY THE LEGACY AND BUDGET STABILIZATION ADVISORY BOARD AND THE SIB.

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

WELLINGTON INTERNATIONAL SMALL CAP:

Mr. Posch provided an update on Wellington International Small Cap (WISC). Staff were informed that WISC is closing in August 2023 and returning capital to investors. The strategy has struggled with intermediate term performance and experienced significant staff turnover. Staff recommends redeeming out of WISC prior to the winddown on August 31, 2023, and investing in a passive index strategy. In the upcoming equity portfolio 2.0 analysis, staff will develop a new portfolio structure and look to underwrite a new international small cap strategy if necessary.

IT WAS MOVED BY TREASURER BEADLE AND SECONDED BY DR. SIMLAI AND CARRIED BY A ROLL CALL VOTE TO REDEEM OUT OF WELLINGTON INTERNATIONAL SMALL CAP AND INVEST IN THE PASSIVE INDEX STRATEGY STATE STREET MSCI WORLD EX-US SMALL CAP INDEX FUND.

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

INVESTMENT GUIDELINES:

Mr. Chin provided an overview of staff's use of investment guidelines. Investment guidelines are intended to mitigate the risk of undesired outcomes and are followed by the manager when implementing their strategy. The guidelines act as guardrails. Creating guidelines is a collaborative process between the manager, staff, and legal team. Mr. Chin summarized how the team implements soft and hard guidelines, the investment guidelines process, and the difference between the guideline process for SMAs and Commingled funds. Mr. Vaidya reviewed guideline criteria and the guidelines that have been created for DFA Emerging Markets All Cap Core, DFA Emerging Markets All Cap Core Ex-China, State Street MSCI Emerging Markets Ex-China, and State Street MSCI China. Committee Discussion followed.

IT WAS MOVED BY TREASURER BEADLE AND SECONDED BY MR. ANDERSON AND APPROVED BY A ROLL CALL VOTE TO APPROVE THE INVESTMENT GUIDELINES AS PRESENTED

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

With no further business to come before the Investment Committee, Commissioner Heringer adjourned the meeting at 11:54 a.m.

Prepared by:

Missy Kopp, Assistant to the Board

LEGACY & BUDGET STABILIZATION FUND ADVISORY BOARD

Scott M Anderson, CFA – Chief Investment Officer
Jan Murtha, J.D., M.P.A.P. - Executive Director
Ryan Skor, C.P.A. - Chief Fiscal Officer/Chief Operating Officer
June 21, 2023

NORTH Dakota Be Legendary. | Retirement & Investment

ASSET ALLOCATION STUDY

NORTH
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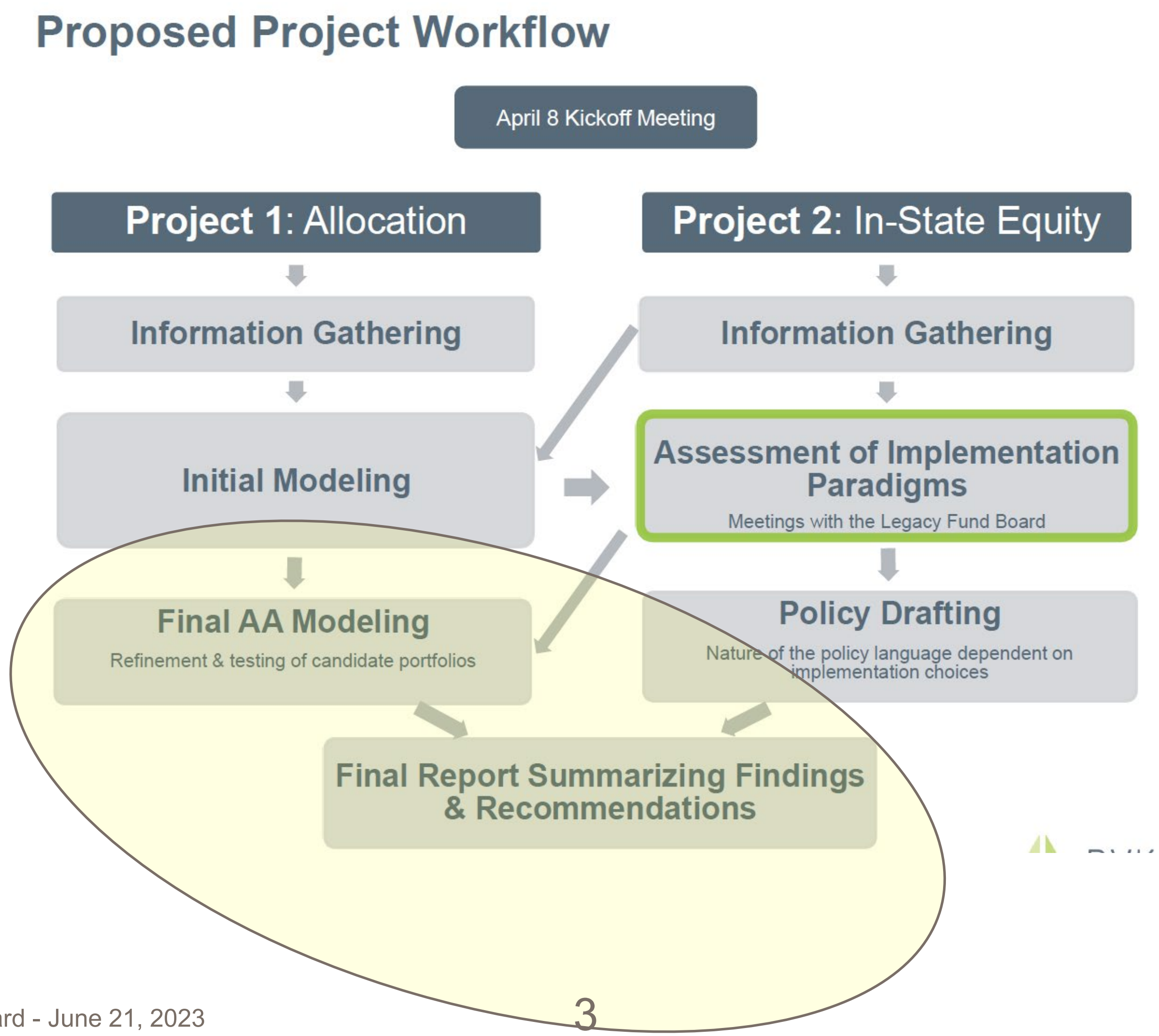
RVK PROJECT



Proposed Project Workflow
April 8 Kickoff Meeting
Project 1: Allocation
Project 2: In-State Equity
Information Gathering
Information Gathering
Initial Modeling
Assessment of Implementation Paradigms
Meetings with the Legacy Fund Board
Final AA Modeling
Refinement & testing of candidate portfolios
Policy Drafting
Nature of the policy language dependent on implementation choices
Final Report Summarizing Findings & Recommendations

RVK ASSET ALLOCATION

	Min	Max	1	2	3	4	5	6	7	8	9	10	NDLF Target	Risk Eq: 1425	EF2_P6	EF2_P7	EF2_P8	EF2_P9
Broad US Equity	10	50	15	15	15	15	18	21	24	28	30	36	30	20	21	24	28	30
Broad International Equity	10	40	10	10	10	10	12	14	16	19	20	24	20	14	14	16	19	20
Private Equity	0	12	0	0	3	6	7	7	7	7	9	12	1	0	7	7	7	9
In-State Private Equity	3	7	3	3	3	3	3	3	3	3	3	3	0	10	3	3	3	3
Core Fixed Income	10	40	40	40	37	36	31	25	19	14	10	10	29	36	25	19	14	10
High Yield Fixed Income	0	5	5	5	5	5	5	5	5	5	5	0	0	0	5	5	5	5
Private Credit	0	10	4	9	10	10	10	10	10	10	10	10	3	0	10	10	10	10
BND CD Match	4	6	6	6	6	4	4	4	4	4	4	4	2	6	4	4	4	4
Infrastructure Loans	1	2	2	1	1	1	1	1	1	1	1	1	0	4	1	1	1	1
TIPS	0	5	5	1	0	0	0	0	0	0	0	0	5	5	0	0	0	0
Private Real Assets	0	10	10	10	10	10	10	10	10	10	8	0	10	5	10	10	10	8
Total			100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Capital Appreciation			37	42	46	49	54	60	66	71	77	85	54	44	60	66	71	77
Capital Preservation			48	47	44	41	36	30	24	19	15	15	31	46	30	24	19	15
Inflation			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alpha			15	11	10	10	10	10	10	10	8	0	15	10	10	10	10	8
Expected Arithmetic Return			**5.5**	**5.7**	**5.9**	**6.1**	**6.3**	**6.5**	**6.8**	**7.0**	**7.2**	**7.4**	**6.3**	**5.4**	**6.5**	**6.8**	**7.0**	**7.2**
Expected Risk (Standard Deviation)			**7.0**	**7.3**	**7.9**	**8.5**	**9.3**	**10.1**	**11.0**	**11.8**	**12.7**	**14.2**	**9.5**	**9.5**	**10.1**	**11.0**	**11.8**	**12.7**
Expected Compound Return			**5.2**	**5.4**	**5.6**	**5.8**	**5.9**	**6.1**	**6.2**	**6.3**	**6.4**	**6.5**	**5.9**	**5.0**	**6.1**	**6.2**	**6.3**	**6.4**
Expected Return (Arithmetic)/Risk Ratio			0.8	0.8	0.8	0.7	0.7	0.7	0.6	0.6	0.6	0.5	0.7	0.6	0.7	0.6	0.6	0.6
RVK Expected Eq Beta (LCUS Eq = 1)			0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.6	0.5	0.6	0.6	0.7	0.7
RVK Liquidity Metric (T-Bills = 100)			68	64	61	60	60	60	61	61	61	66	79	69	60	61	61	61

- Broad corridors to accommodate private markets an in-state investments
- Corridors allow flexibility in sub-assets to allocate based on current market conditions
- Should use corridor-based benchmarks
- Real asset bucket gives flexibility to identify best real asset investments
- Total income like spending rule percent of market value

- Use of liquidity adds an <u>expected</u> ~$2 Billion of return over 10 years while increasing earnings by more than $200 million

NORTH DAKOTA LEGACY FUND
INVESTMENT POLICY STATEMENT

1. PLAN CHARACTERISTICS AND FUND CONSTRAINTS

The North Dakota legacy fund was created in 2010 when the voters of North Dakota approved a constitutional amendment--now Article X, Section 26, of the Constitution of North Dakota--to provide that 30 percent of oil and gas gross production and oil extraction taxes on oil and gas produced after June 30, 2011, be transferred to the legacy fund. The principal and earnings of the legacy fund may not be spent until after June 30, 2017, and any expenditure of principal after that date requires a vote of at least two- thirds ·of the members elected to each house of the Legislative Assembly. Not more than 15 percent of the principal of the legacy fund may be spent during a biennium. The legislative Assembly may transfer funds from any source to the legacy fund, and such transfers become part of the principal of the fund. The State Investment Board (SIB) is responsible for investment of the principal of the legacy fund. Interest earnings accruing after June 30, 2017, are transferred to the general fund at the end of each biennium. North Dakota Century Code Section 21-10-11 provides that the goal of investment for the legacy fund is principal preservation while maximizing total return

2. FUND MISSION

The legacy fund was created, in part, due to the recognition that state revenue from the oil and gas industry will be derived over a finite timeframe. The legacy fund defers the recognition of 30 percent of this revenue for the benefit of future generations. The primary mission of the legacy fund is to preserve the real inflation-adjusted purchasing power of the money deposited into the fund while maximizing total return for a prudent level of risk.

3. RESPONSIBILITIES AND DISCRETION OF THE STATE INVESTMENT BOARD

The legacy and Budget Stabilization Fund Advisory Board (the "Advisory Board") is charged by law under Section 21-10-11 with the responsibility of recommending policies on investment goals and asset allocation of the legacy fund. The SIB is charged with implementing policies and asset allocation and investing the assets of the legacy fund in the manner provided in Section 21-10-07--the prudent institutional investor rule. The fiduciaries shall exercise the judgment and care, under the circumstances then prevailing, that an institutional investor of ordinary prudence, discretion, and intelligence exercises in the management of large investments entrusted to it, not in regard to speculation but in regard to the permanent disposition of funds, considering probable safety of capital as well as probable income.

Management responsibility for the investment program not assigned to the SIB in Chapter 21-10 is hereby delegated to the SIB, which must establish written policies for the operation of the investment program consistent with this investment policy.

The SIB may delegate investment responsibility to professional money managers, which are also required to employ investment strategies consistent with the investment policy. Where a money manager has been retained, the SIB's role in determining investment strategy and security selection is supervisory not advisory.

At the discretion of the SIB, the fund's assets may be pooled with other funds. In pooling funds, the SIB may establish whatever asset class pools it deems necessary with specific quality, diversification, restrictions, and performance objectives appropriate to the prudent investor rule and the objectives of the funds participating in the pool.
The SIB is responsible for establishing criteria, procedures, and making decisions with respect to hiring, retaining, and terminating money managers. The SIB investment responsibility also includes selecting performance measurement services, consultants, report formats, and frequency of meetings with managers.

The SIB shall notify the Advisory Board within 30 days of any substantial or notable changes in money managers; performance measurement services; and consultants, including hiring or terminating a money manager, performance measurement service, or a consultant.

The SIB, after consultation with the board, will implement necessary changes to this policy in an efficient and prudent manner.

The Policies governing the investment of Legacy Fund assets fall into three categories.

- Those applicable to all investment for Legacy Fund assets.
- Those applicable to those assets – referred to here as the Core Legacy Fund (CLF) – that are not invested under the In-State Investment Program.
- Those assets defined under law made within the In-State Investment Program (ISIP)

A. Policies governing the investment of All Legacy Fund assets.

a. Risk Tolerance

The Advisory Board's risk tolerance with respect to the primary aspect of the legacy fund's mission is low. The Advisory Board is unwilling to undertake investment strategies that might jeopardize the ability of the legacy fund to maintain principal value over time. The Advisory Board recognizes that the plan will evolve as the legacy fund matures and economic conditions and opportunities change.

b. Investment Objectives

The Advisory Board's investment objectives are expressed in terms of reward and risk expectations relative to investable, passive benchmarks. The legacy fund's policy benchmark is comprised of policy mix weights of appropriate asset class benchmarks as set by the SIB:

i. The legacy fund's rate of return, net of fees and expenses, should at least match that of the policy benchmark over a minimum evaluation period of five years.

ii. The legacy fund's risk, measured by the standard deviation of net returns, should not exceed 115 percent of the policy benchmark over a minimum evaluation period of five years.

c. The Prudent Investor Rule

All investments and the investment strategy in its totality will adhere to the Prudent Investor Rule.

B. ~~Policies specific to the Core Legacy Fund (CLF)~~Asset Allocation Policy

~~For the purpose of this Investment Policy the Core Legacy Fund is defined as all non in-state investments.~~ The SIB and the Legacy Board recognize that the most important determinant of long-term return and risk is the asset allocation decision. The asset allocation decision is intended to reflect the return objective and risk tolerance expressed in this Investment Policy Statement. The table below delineates the following key guidelines for the ~~Core~~ Total Legacy Fund:

a. The approved asset classes to be utilized.

b. The policy target allocations for each.

c. The application of a rebalancing program.

At its discretion, the SIB advised by the Legacy Board may adjust these targets on an interim or a long-term basis to account for (a) extreme market conditions, (b) the specific composition of Legacy Fund assets deployed via the In-State Investment Program (ISIP), a decision by the North Dakota State Legislature to withdraw and spend an amount above that consistent, with capital preservation of the Legacy Fund assets up to but not exceeding 15% of the Fund and (c) the long-term implementation nature of alternative assets (such as private equity and private real assets).

Asset Class	Policy Target	Policy Target Ranges	Additional Guidelines
Broad US Equity	27.5~~30~~%	18~~20~~% - 40%	Rebalanced with the total invested in-state ~~equity AUM~~and private markets~~-~~ equity and real assets; apply corridor treatment~~ equity~~
Broad International Equity	19~~20~~%	14~~5~~% - 24~~5~~%	Rebalanced with the total invested in-state and private markets~~-~~ equity and real assets; apply corridor treatment

Private Equity	7%	0% - 12%	Rebalance with public equity; apply corridor treatment
Continued on next page			
Asset Class	Policy Target	Policy Target Ranges	Additional Guidelines
Fixed Income	28.5~~35~~%	2~~3~~3~~0~~% - 34~~40~~%	Rebalanced with the total invested in-state ~~fixed income AUM~~and private markets fixed income and real assets; apply corridor treatment ~~fixed income~~
Core Fixed Income	*13.5%*	*10% - 17%*	
High Yield Fixed Income	*5.0%*	*0% - 7%*	
Private Credit	*10.0%*	*0% - 13%*	Rebalance with public fixed income; apply corridor treatment
~~Real Estate~~	~~5%~~	~~3% - 8%~~	
~~Diversified~~ Private Real Assets	10%	5~~7~~% - 15~~3~~%	Rebalance half public equity/half public fixed income; apply corridor treatment
In-state Fixed Income			Target of $700 million; rebalance with public fixed income; apply corridor treatment
In-state Infrastructure Loan	*1%*	*0% - 2%*	Up to $150 million
BND CD Match Program	*4%*	*0% - 6~~10~~%*	~~m~~Minimum ~~target~~ of $400 million
~~Long-Term Target of $150 M~~ In-state Equity	3%	0% - 7~~10~~%	~~minimum target of 3% growth investments~~ Long-Term Target of $600 million; rebalance with public equity; apply corridor treatment~~M~~
TOTAL	100%		

Rebalancing of the fund to these targets will be done in accordance with the SIB's rebalancing policy. Additionally, for rebalancing purposes, portfolio weights of private markets (equity, fixed income and half equity/half fixed income for real assets) can be applied to benchmark weights using the policy target ranges stated in the table above.

C. Policies Specific to the In-State Investment Program

In 2021, House Bill 1425 (HB 1425) was approved by the North Dakota legislature and signed into law. It establishes a program for the investment of a portion of Legacy Fund assets within the state and empowers the State Investment Board advised by the Legacy and Budget Stabilization Fund Advisory Board ("Advisory Board") to execute that program.

The in-state investment program ("ISIP") provides specific direction that grants the SIB and the Advisory Board substantial latitude in the implementation of the program.

In 2023, ~~Specifically, HB~~ Senate Bill ~~1425~~ 2330 amended NDCC 21-10-11 by directing~~s~~ the SIB advised by the Advisory Board to invest in the ISIP program in the following way:

- A target allocation of **seven hundred million dollars** ~~10%~~ to fixed income investments within the state, including~~of which~~:
  - Up to **one hundred fifty million** dollars ~~40% must be targeted~~ for infrastructure loans, with the fixed net return to the legacy fund of 1.5%.
  - ~~Up to 60%, with the~~ A minimum of ~~**$400**~~ **four hundred million dollars** million ~~, must be designated to~~for the Bank of North Dakota's ("BND") certificate of deposit match program with an interest rate fixed at the equivalent yield of the United State treasury bonds having the same term, up to a maximum term of 20 years; and
  - Other qualified fixed income investments within the state based on guidelines developed by the legacy and budget stabilization advisory board.~~.~~
- A target allocation of **six hundred million dollars** ~~10%~~ to equity investments in the state, ~~of which~~ including:

- ~~at least 3% may be targeted for i~~Investment in one or more equity funds, venture capital funds, or alternative investment funds with a primary strategy of investing in emerging or expanding companies in the state. Equity investments must:
    - Be managed by qualified investment firms, financial institutions, or equity funds.
    - Have a benchmark investment return equal to the 5-year average net return for the legacy fund, excluding in-state investments.
- Other eligible investments under this subdivision based on guidelines developed by the legacy and budget stabilization fund advisory board.

In addition to the policies covering all Legacy Fund assets noted above in Section 3.A. – risk tolerance, return objectives, and the Prudent Investor Rule – policies specific to the investments made within the ISIP include:

a. Specific to the assessment of acceptable risk and return targets for the ISIP in total and all ISIB investments, in-state investments should offer credible evidence that they will meet or exceed the forward expected returns of similar investments with similar levels of risk and liquidity present in the Core Legacy Fund.

b. All proposed investments will be made using third party asset managers. Direct investments by the SIB advised by the Advisory Board are not contemplated.

c. All investments must be subject to the same level of due diligence that similar investments considered for funding using Core Legacy Fund assets.

d. The Board at its discretion may choose to direct asset managers retained in the ISIP to utilize either equity, fixed income, convertible debt, debt with warrants or a combination of any of these securities to best meet the risk, return and prudency in the ISIP investments.

e. The Board will create and maintain an annual investment pacing schedule that – subject to the successful sourcing, due diligence and deal structuring that meets the Board's policy requirements for the ISIP, fluctuations in market values and distributions back to the Legacy Fund – will create the opportunity to commit funds at a rate such that the full amount of the equity capital limit for the ISIP set in statute ~~(currently 10%)~~ is reached within ten years.

f. The Board will direct asset managers retained in the ISIP to:

    i. require in the structuring of transactions that the State never becomes a majority equity owner of a business,

    ii. require that private capital provided by independent third parties always be invested alongside capital provided from Legacy Fund assets,

    iii. give strong preference for investments that provide the Board the ability to exit from the investment to recycle capital into new ISIP opportunities. The Board, to the extent prudent, will give special consideration to qualified and experienced institutional asset managers domiciled or having operating offices within the state for participation in implementation of the ISIP,

    iv. capital provided to any one direct investment by an in-state portfolio fund manager should not exceed $10 million, with two exceptions per fund commitment of up to $25 million.

~~Target Allocation for the In-State Investment Program Assets~~

~~Asset Class~~	~~Restrictions~~	~~Total Target~~
~~Fixed Income~~	• ~~Up to 40% for infrastructure loans~~ • ~~Up to 60% with a minimum target of $400 million to BND's CD match program~~	~~10%~~
~~Equity~~	• ~~A minimum target of 3% in growth equity funds~~ • ~~Other eligible investments based on Advisory Board Guidelines~~	~~10%~~

4. RESTRICTIONS

While the SIB is responsible for establishing specific quality, diversification, restrictions, and performance objectives for the investment vehicles in which the legacy fund's assets will be invested, it is understood that:

a. Futures and options may be used to manage underlying systematic exposures for fund rebalancing and risk management~~hedge or replicate underlying index exposure, but not for speculation~~.

b. Derivatives use will be monitored to ensure that undue risks are not taken by the money managers.

c. No transaction may be made that would threaten the tax-exempt status of the legacy fund.

d. All assets will be held in custody by the SIB's master custodian, or such other custodians as are acceptable to the SIB.

e. No unhedged short sales or speculative margin purchases may be made.

f. Social investing is prohibited unless it meets the exclusive benefit rule, and it can be substantiated that the investment provides an equivalent or superior rate of return for a similar investment with a similar time horizon and similar risk. For the purpose of this document, social investing is defined as the consideration of socially responsible criteria in the investment or commitment of public fund money for the purpose of obtaining an effect other than a maximized return to the Fund.

g. Economically targeted investing is prohibited unless the investment meets the exclusive benefit rule.

For the purpose of this document, economically targeted investment is defined as an investment designed to produce a competitive rate of return commensurate with risk involved as well as to create collateral economic benefits for a targeted geographic area, group of people, or sector of the economy. Also, for the purpose of this document, the exclusive benefit rule is met if the following four conditions are satisfied:

- The cost does not exceed the fair market value at the time of investment.
- The investment provides the legacy fund with an equivalent or superior rate of return for a similar investment with a similar time horizon and similar risk.
- Sufficient liquidity is maintained in the legacy fund to permit distributions in accordance with the terms of the plan.
- The safeguards and diversity that a prudent investor would adhere to are present.
- Where investment characteristics, including yield, risk, and liquidity, are equivalent, the Advisory Board's policy favors investments which will have a positive impact on the economy of North Dakota.

5. INTERNAL CONTROLS

A system of internal controls must be in place by the SIB to prevent losses of public funds arising from fraud or employee error. Such controls deemed most important are the separation of responsibilities for investment purchases from the recording of investment activity, custodial safekeeping, written confirmation of investment transactions, and established criteria for investment manager selection and monitoring. The annual financial audit must include a comprehensive review of the portfolio, accounting procedures for security transactions, and compliance with the investment policy.

6. EVALUATION AND REVIEW

Investment management of the legacy fund will be evaluated against the fund's investment objectives and investment performance standards. Emphasis will be placed on 5-year and 10-year results. Evaluation should include an assessment of the continued feasibility of achieving the investment objectives and the appropriateness of the investment policy statement for achieving those objectives.

Performance reports will be provided to the Advisory Board periodically, but not less than quarterly. Such reports will include asset returns and allocation data. Additionally, not less than annually, reports will include information regarding all significant and/or material matters and changes pertaining to the investment of the legacy fund, including:

- Changes in asset class portfolio structures, tactical approaches, and market values.
- Loss of principal, if any.
- Management costs associated with various types of investments.
- All material legal or legislative proceedings affecting the SIB. Compliance with this investment policy statement.
- An evaluation of the national economic climate.
- A forecast of the expected economic opportunities and dangers.
- Management of risk by the SIB.

In addition to the quarterly and annual evaluation and review process, the SIB shall notify the Advisory Board within 30 days of any substantial or notable deviation from the normal management of the legacy fund, including any anomalies, notable losses, gains, or liquidation of assets affecting the fund.

Approved by:

LEGACY AND BUDGET STABILIZATION FUND ADVISORY BOARD

X_______________________________
Representative Glenn Bosch, Chairman

Date: ________________

STATE INVESTMENT BOARD

X_______________________________
Scott Anderson, Chief Investment Officer

Date: ________________

Approved by the LBSFAB: 2-16-2021
Approved by the SIB: 2-26-2021
Amended by LBSFAB 10-12-2022 and 12-6-2022
Approved as amended by SIB 12-16-2022

PRIVATE MARKETS STRATEGY

INVESTMENT STAFF

JULY 14, 2023

NORTH Dakota Be Legendary. | Retirement & Investment

AGENDA

North Dakota Be Legendary.™

- Recap & Overview
  - Team
  - Beliefs & Objectives
  - Asset Overview
  - Private Markets Overview
- Value Proposition
- Strategy
  - Historical context
  - Allocation & Pacing
  - Manager Sourcing & Selection
  - Monitoring & Benchmarking
- Conclusion

DESIGN A STRUCTURE FOR SUCCESS

NORTH Dakota Be Legendary.™

PHASE	ACTIVITIES
1.0	**DATA GATHERING & ANALYSIS** • STAFFING: GEORGE MOSS (NOV '22), LANCE ZIETTLOW (MAR '23) • TECHNOLOGY PLATFORM FOR AGGREGATING AND ANALYZING THE ASSETS • BENCHMARKING • PACING MODELS FOR EACH STRATEGY AND EACH POOL
2.0	**OPTIMIZATION** • MOVE AWAY FROM EXTERNAL FUND-OF-FUNDS, AND TO THE EXTENT POSSIBLE BE CONSISTENT ACROSS POOLS • ADDRESS CONCERNS IN SUB-ASSET CLASSES • CONSIDER DEDICATED PRIVATE MARKET CONSULTANT
3.0	**ADVANCED FUNDS MANAGEMENT** • FULLY OPERATIONAL INTERNAL FUND-OF-FUNDS STRUCTURE • MANAGE LIQUIDITY AND EXPOSURES WITH PUBLIC MARKET PROXIES • BUILD OUT A COINVESTMENT PLATFORM

RETIREMENT AND INVESTMENT OFFICE TEAM

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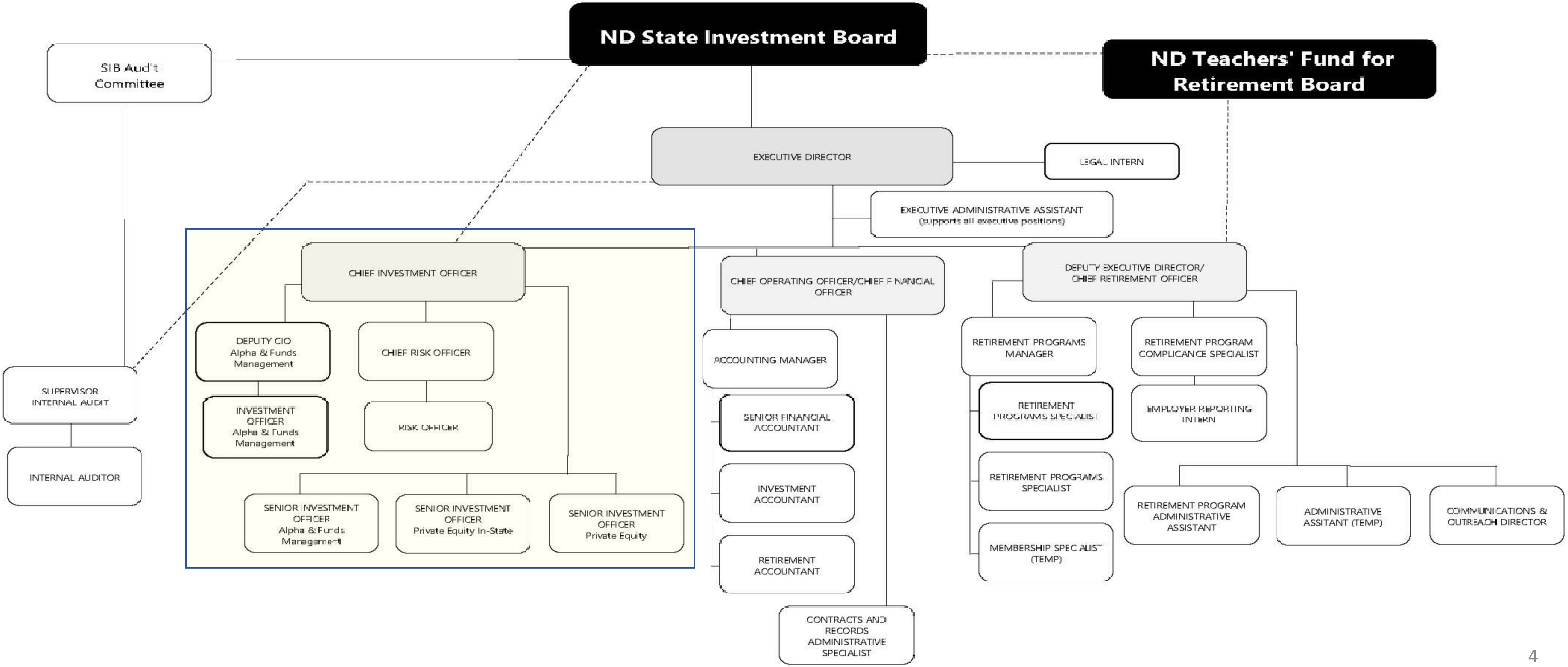

INVESTMENT TEAM

Scott M Anderson
Chief Investment Officer (CIO)

George Moss
Senior IO/Private Funds Mgt

Lance Ziettlow
Senior IO/Private Funds Mgt

PRIVATE MARKETS
FUNDS MANAGEMENT

> 20 YEARS AVERAGE INVESTMENT EXPERIENCE

PRIVATE MARKET EXPERIENCE

- NETWORK OF GLOBAL MANAGER RELATIONSHIPS
- DEEP UNDERSTANDING OF LIMITED PARTNERSHIP TERMS AND CONDITIONS
- SERVED ON LIMITED PARTNER ADVISORY COMMITTEES
- INVESTMENT STRATEGY, PROCESS AND DESIGN
- HISTORICAL KNOWLEDGE OF THE PRIVATE MARKETS AND SUB-CLASSES

GENERAL INVESTMENT EXPERIENCE

- ASSET AND RISK ALLOCATION
- DIRECT PUBLIC AND PRIVATE INVESTMENT
- FUND AND PORTFOLIO MANAGEMENT
- MANAGER SELECTION
- PENSION, ENDOWMENT AND FAMILY OFFICE
- MULTI-ASSET PORTFOLIO MANAGEMENT
- FUND OF FUNDS MANAGEMENT
- QUANTITATIVE ANALYSIS
- RISK MANAGEMENT
- LIQUIDITY MANAGEMENT

TECHNOLOGY PLATFORM

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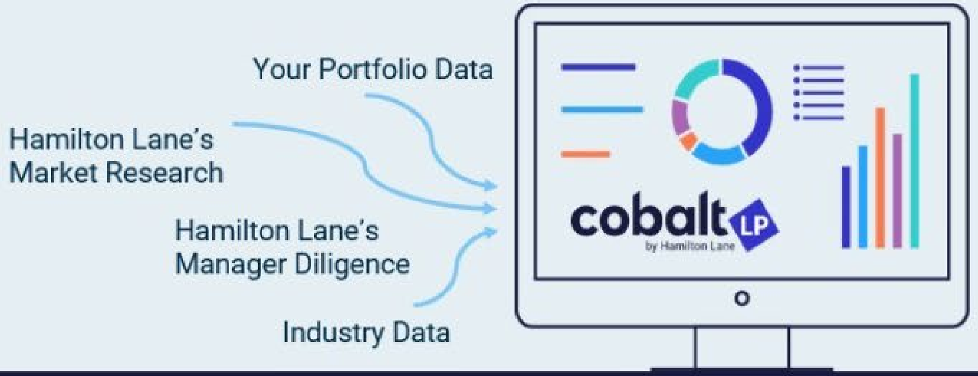
A Complete End-to-End Solution

Power your private markets investing process with access to your portfolio data, along with leading technology and trusted market data from a global leader in the private markets.



Market Data & Intelligence	Market Data & Intelligence	Industry Trend Analysis	Private Markets Education
Manager Diligence	Strategic Portfolio Construction	New Fund Selection	Manager Track Record Analysis
Portfolio Analytics & Reporting	Forecasting/Portfolio Planning; Outsourced Data Management	Risk/Return Analysis; Portfolio Stress Testing	Reporting

WE BELIEVE

- Private markets are a strategy, not an asset class.
- Illiquidity risk must be compensated for, and such an illiquidity premium is achievable.
- Private markets are less efficient than public markets leading to a wider dispersion of excess returns.
- Manager selection has a bigger impact vs. public markets as return dispersion and persistence are higher.
- The best managers follow a consistent process of fact based, reasoned judgements of compensated risks and return expectations.
- Certain private markets have long cycles of under/outperformance, which can be managed around, but in a more measured way vs. public markets.
- Accessing top-performing managers is crucial, yet challenging and time consuming.

INVESTMENTS: PRIVATE MARKETS

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PRIVATE MARKETS FUND OF FUNDS	PUBLIC MARKETS FUND OF FUNDS	RISK ALLOCATION AND MANAGEMENT	PUBLIC MARKETS DIRECT

PRIVATE MARKETS FUND OF FUNDS

- Asset class strategies transacted in private markets
- Diversified industry, geography and asset classes such as private debt/loans, real estate, infrastructure, equity, and commodities
- Use of best in class data sources and tools to identify opportunities, construct portfolios and manage risks such as valuation, diversification, currency, liquidity and cash flow
- Manages investments over a life cycle, by pacing investments appropriately based on stage of economic cycle

PUBLIC MARKETS FUND OF FUNDS

- Asset class strategies transacted in public markets over the counter or on exchanges
- Diversified strategies, geography and asset classes such as global equities, investment grade fixed, high yield, multi-asset class, and commodities
- Use of best in class data sources and tools to identify opportunities, construct portfolios and manage risks such as idiosyncratic, market, credit, currency, liquidity, interest rate, and derivative
- Manages investments with manager selection, advanced portfolio construction, exposure management, dynamic allocation and rebalance

RISK ALLOCATION AND MANAGEMENT

- Develops quantitative analysis and mitigates uncompensated risks to ensure an optimal return for risk at a prudent level of risk in all investment strategies
- Integrated in all investment decisions including allocation of risk capital, portfolio construction and investment manager selection and oversight. Validate investment adherence to optimal risk adjusted return objective.
- Use and develop best in class data sources, analytics and tools to identify risks, measure return per risk and manage risks.
- Provides risk communication and portfolio transparency to policy makers and investment teams.

PUBLIC MARKETS DIRECT

- Asset class strategies directly transacted in the public markets over the counter or on exchanges
- Diversified low risk strategies that enhance portfolio return but at a lower cost and risk for the same return as available with external managers
- Facilitate portfolio operations like proxy voting, overlays, security lending, exposure management, alpha beta separation, cash and liquidity management
- Use and development of best in class data sources, analytics and tools to identify opportunities, construct portfolios, transact and manage portfolio risks

OVERVIEW

RIO AT A GLANCE
As of May 31, 2023

Total AUM	Private Markets AUM		
$19.4B	$4.23B		
3 Pools & 28 Client Funds	Pension $2.57B	Insurance $0.26B	Legacy $1.41B
40+ Managers Public & Private Markets	20+ Managers Private Equity, Private Debt, & Real Assets		

INVESTMENT FOCUS
Global multi-asset public and private market fund of funds organization

OBJECTIVE
To maximize after cost return for risk at a prudent level of risk for the funds in our care

Global, Multi-asset

Advanced Funds Management

OUR COMMITMENT
- Client Focused
- Value Added Results
- Efficient Delivery

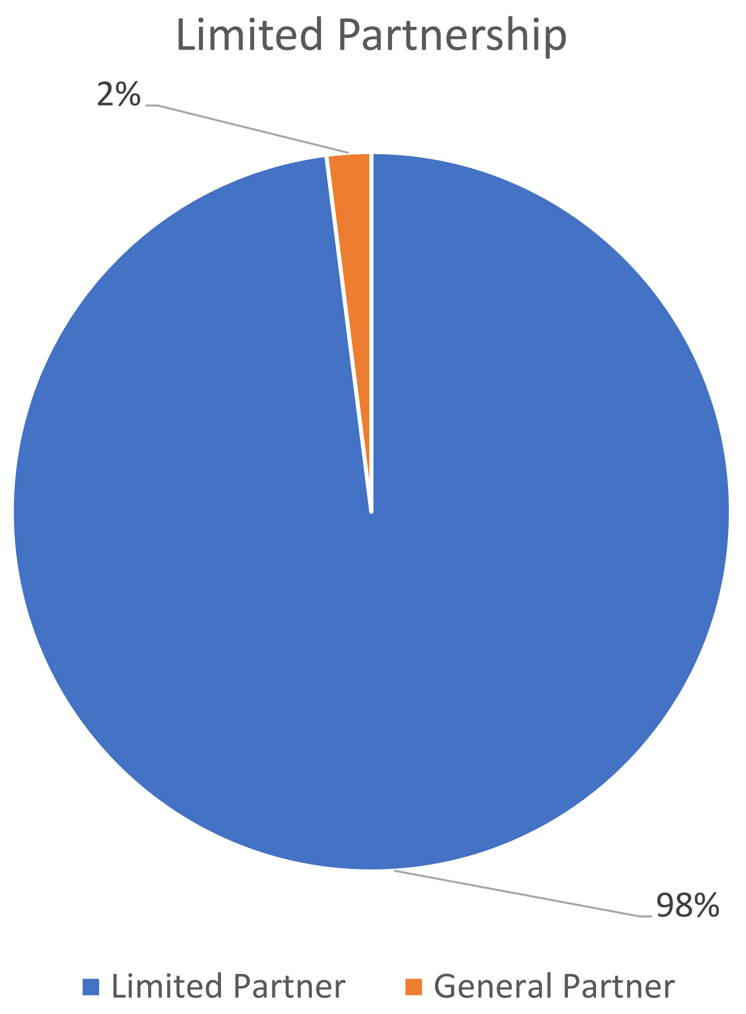
TYPICAL LIMITED PARTNERSHIP STRUCTURE

Limited Partnership Terms

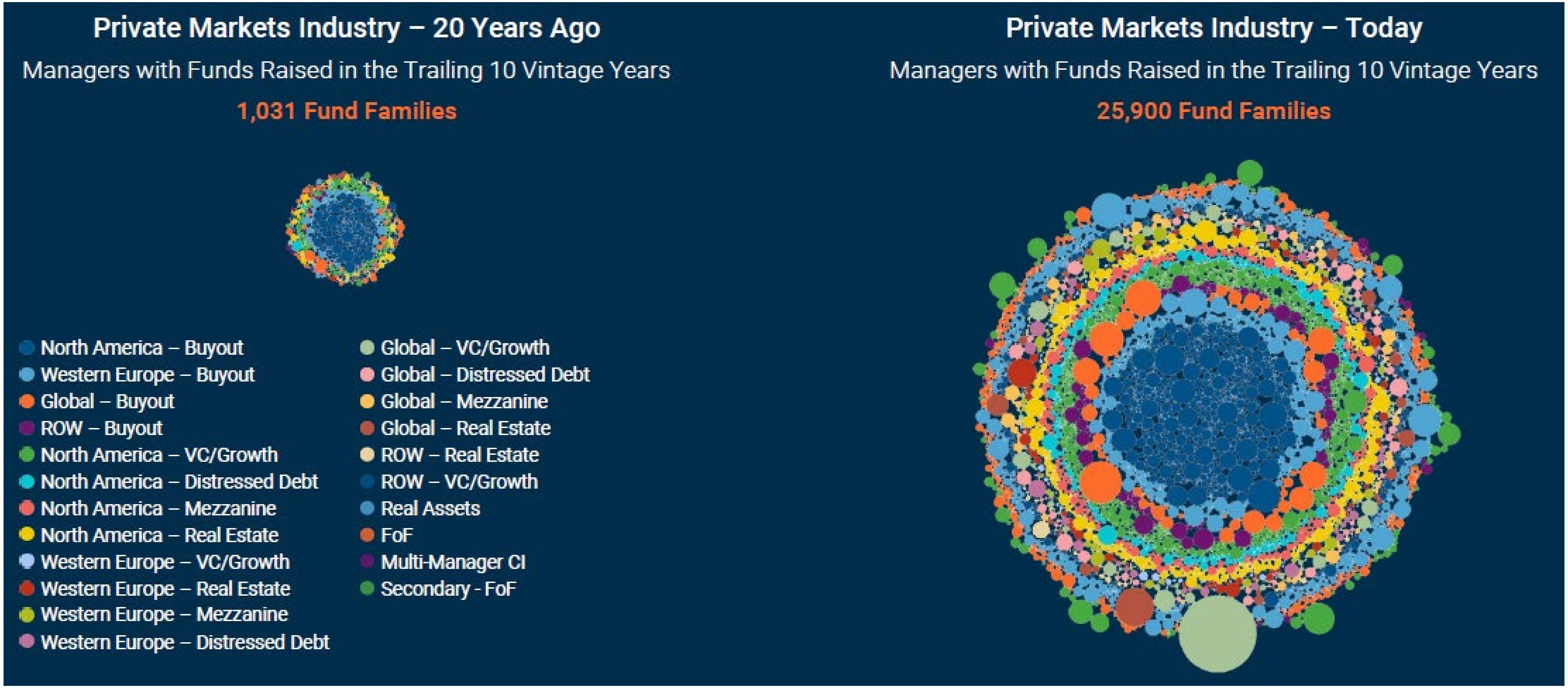
- Investment Period: 3-5 years
- Fund term: 7-10 years with two one-year extensions
- Management fee: 1.5% - 2%
- GP Carried Interest: 15%-20% of profits after an ~8% preferred return

Some strategies use open-end structures which provide better liquidity (e.g., core real estate).

- Liquidity terms: Quarterly with a 30-to-90-day notice period.
- Management fee: range from 0.5%-1.5%
- Carried interest: 0%-12.5% of profits after an ~6% preferred return



INCREASING COMPLEXITY & SIZE



Source: Hamilton Lane

PRIVATE MARKET LANDSCAPE

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	Equity	Debt	Real Assets	Other/Opportunistic
	Buyout Large/Mega Small/Mid Growth Equity Venture Seed Stage Early Stage Late Stage	Senior/Direct Lending Mezzanine Distressed Special Situations Sector Based Real Estate Infrastructure	Real Estate Core/Core+ Value-Added Opportunistic Infrastructure Core/Core+ Value-Added Opportunistic Natural Resources Farmland Timber Oil & Gas	Asset Leasing Life Settlement Litigation Royalties
Pension **$2.57B / 36.2% / 100%**	$0.70B / 10% / 27.4%	$0.45B / 6.4% / 17.6%	$1.35B / 19.2% / 52.8%	$0.06B / 0.8% / 2.2%
Insurance **$0.26B / 8.7% / 100%**	-- / -- / --	-- / -- / --	$0.21B / 7.0% / 80.5%	$0.05B / 1.7% / 19.5%
Legacy **$1.41B / 15.4% / 100%**	$0.02B / 0.3% / 1.7%	$0.33B / 3.7% / 23.8%	$0.95B / 10.3% / 67.2%	$0.10B / 1.14% / 7.4%

As of May 31, 2023

VALUE PROPOSITION

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Buyout Illustration

	Index Return	Illiquidity Premium	Illiquid Return	Active Return	Pooled Return	Superior Return	Top Q-tile Return	
	9.8%[1]		12.2%[2]		14.5%[3]		20.9%[4]	
Gross Return	9.8%	2.4%	12.2%	2.3%	14.5%	6.3%	20.9%	
Cost	0.1%[5]		2.5%[6]		2.9%[6]		4.2%[6]	
Net Return	9.7%	0.0%	9.7%	1.9%	11.6%	5.1%	16.7%	
Risk	16.6%		16.6%		10.8%		10.8%[7]	16.6%[8]
Efficiency[9]	0.51		0.51	⇒	0.96	⇒	1.43	0.93

1. Russell 1000 Total Return Index (quarterly 2004-2022).
2. Hypothetical result that maintains the same efficiency at the same risk level.
3. Pooled return and risk information calculated from Burgiss Private i (quarterly 2004-2022). Pooled return is the time weighted return from the aggregate cashflow data for the funds tracked by Burgiss over that time period.
4. Median of top quartile outperformance vs. the pooled return from Burgiss Private i (2004-2022 vintages)
5. Cost based on the Vanguard Russell 1000 ETF.
6. Cost assumption based on 2% management fee and 20% carry with an 8% preferred return.
7. Assumes same risk as pooled return
8. Assumes same risk as the referenced index.
9. Efficiency: Sharpe Ratio which assumes a 1.24% risk-free return (3M T-bill 2004-2022).

STRATEGY

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- Through bottoms up analysis, seek to partner with the best managers globally that we can access.
- Seek consistency while also being cognizant of prevailing conditions.
- Develop valuable investment trade-offs of return, risk and liquidity with make-versus-buy decisions as drivers.
- Geographic exposures would roughly equate to the opportunity set.

Illustrative PM Allocation:

	Legacy*		Pension		Insurance	
	Current	New	Current	New	Current	New
Private Equity	1.7%	50 - 70%	27.3%	30 - 50%	0.0%	10 - 30%
Private Debt	23.8%	10 - 30%	17.7%	20 - 40%	0.0%	30 - 50%
Real Assets	67.2%	10 - 30%	52.9%	20 - 40%	80.5%	30 - 50%
Other/Opportunistic	7.4%	0 - 10%	2.1%	0 - 10%	19.5%	0 - 10%

High — Risk Tolerance — Low

* Assumes the 15% call on assets is reduced to 5% in 2024, and includes in-state investment program.

Private Equity

- Primarily middle-market buyout
- <= 25% venture capital

Private Credit

- Primarily senior/direct lending
- <= 25% distressed

Real Assets

- Focus on core/core-plus real estate, consider more value-add/opportunistic
- De-emphasize infrastructure and other real assets

Other/Opportunistic

- Compelling strategies in less developed markets (e.g., Healthcare Royalties)
- Investments with a relatively short window of opportunity that would not be a consistent allocation within the other strategies.

RETURN DISPERSION

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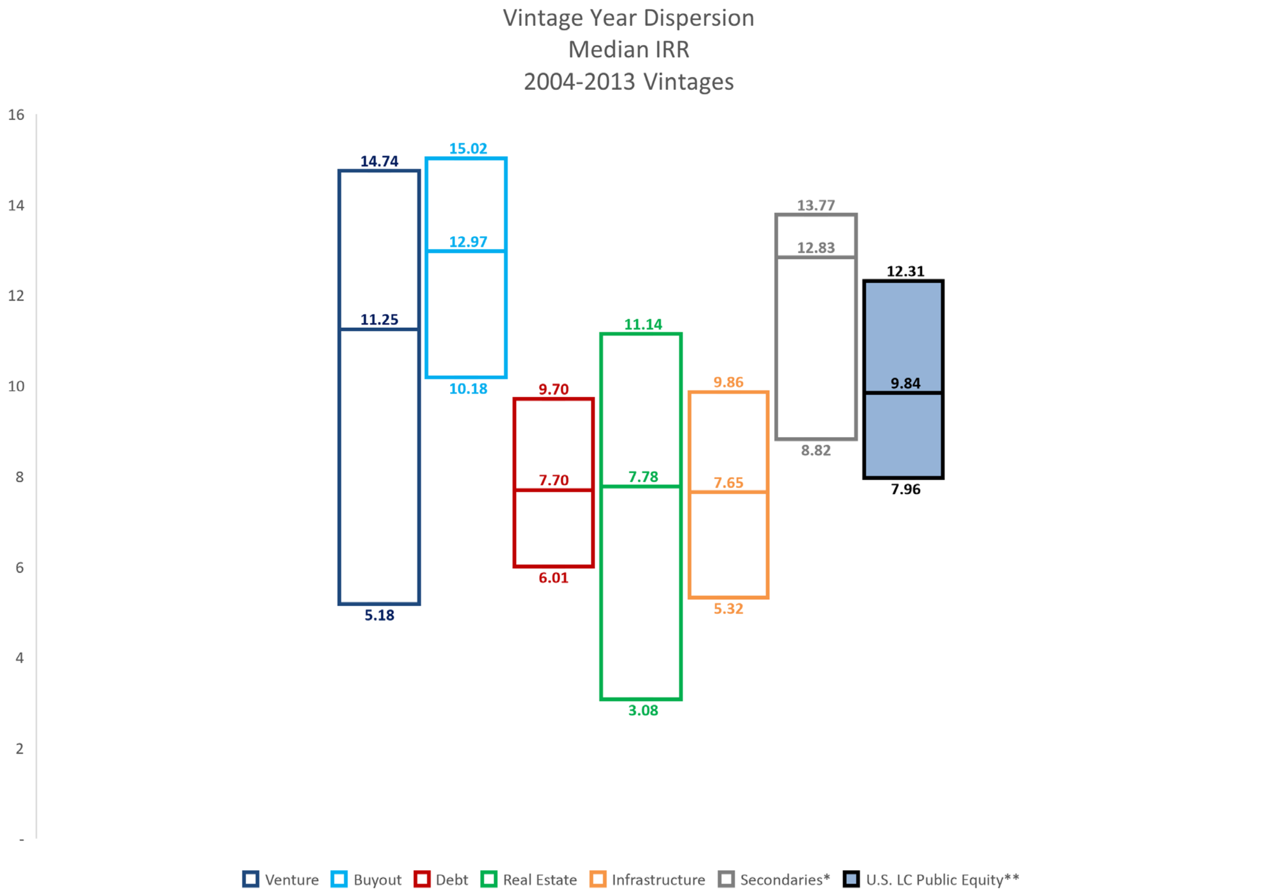

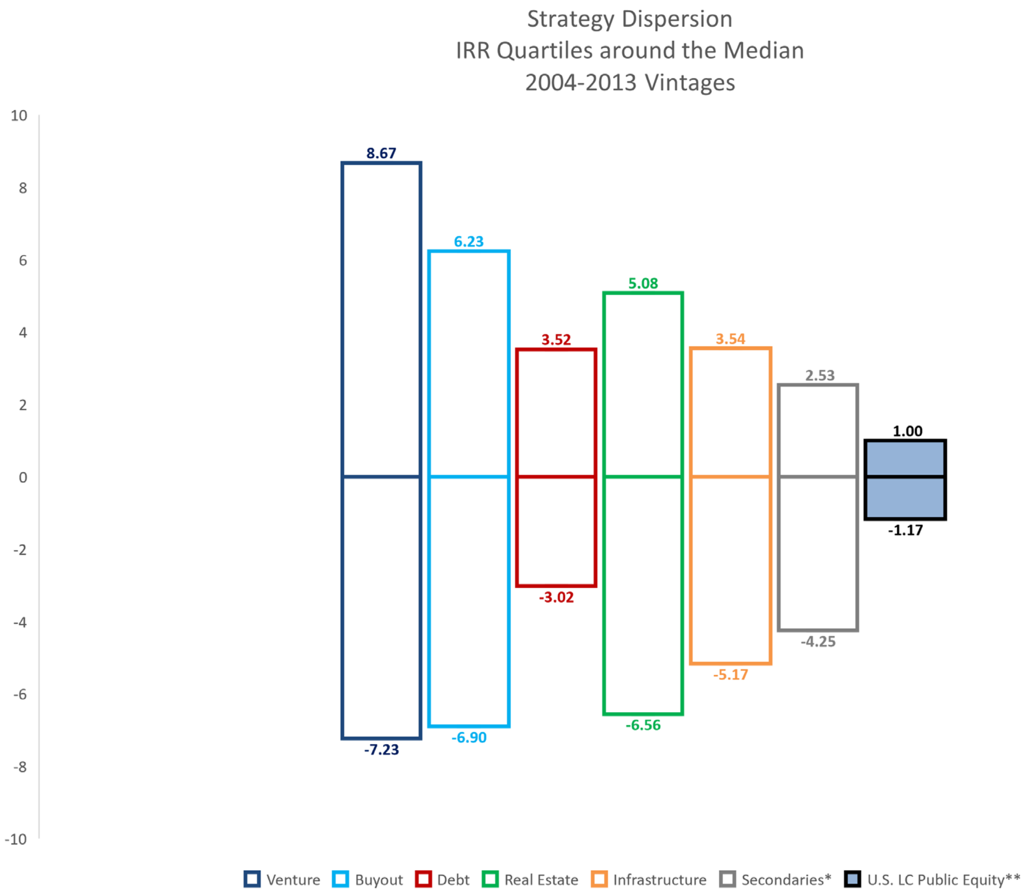

All data net of fees

Sources: Burgiss Private iQ, *Cambridge Associates, and **eVestment (10-year returns from each Vintage start)

MANAGER SELECTION

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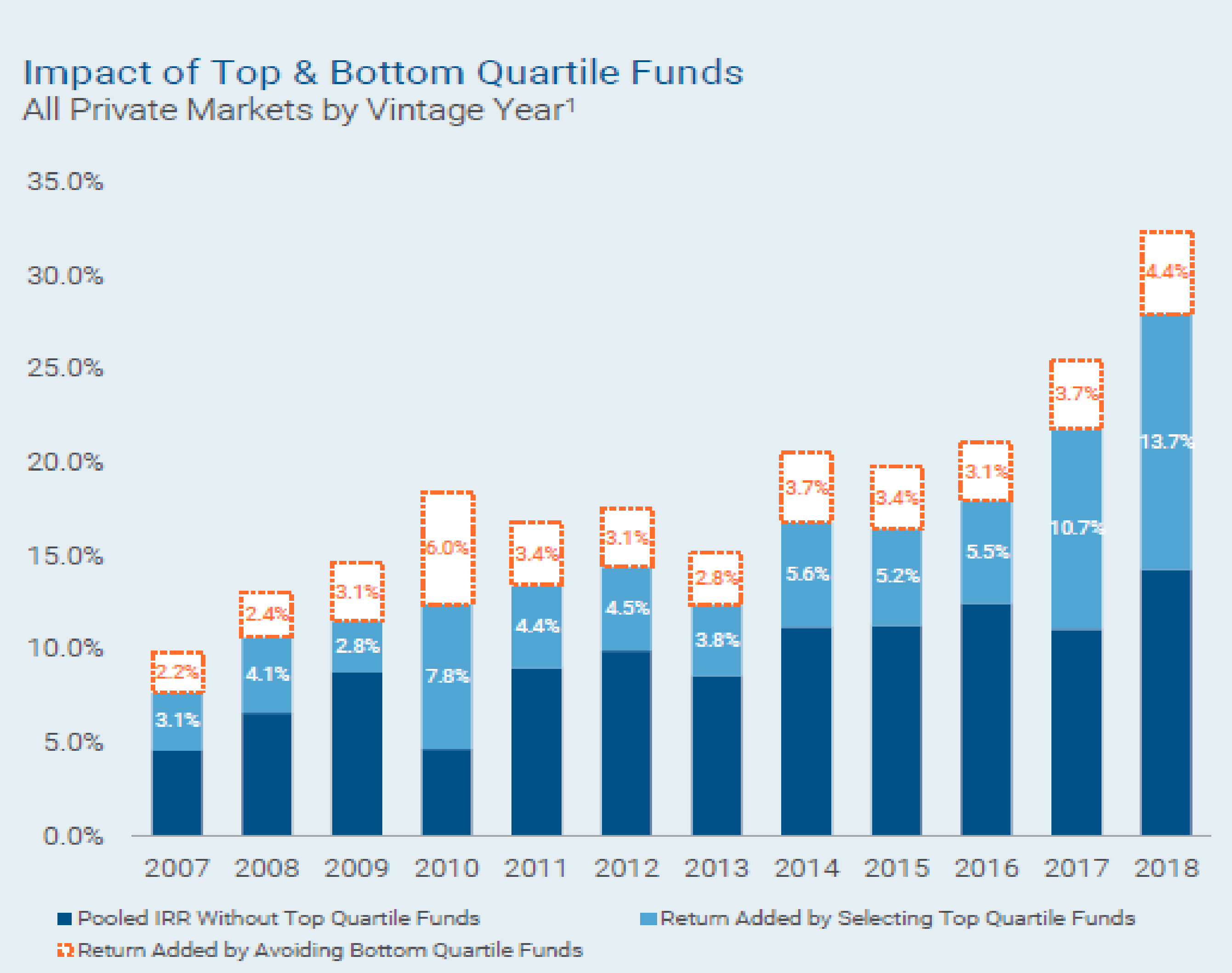
It's not simply about gaining access to top-quartile managers, but avoiding the bottom-quartile can be just as additive:

- Top-quartile managers added >3% to IRR over the median.
- Avoiding the bottom quartile enhanced IRR by >2%



Source: Hamilton Lane Database (November 2021)

MANAGER PERSISTENCE

Panel A: Buyout Funds

		Current Fund Quartile 1	2	3	4	N	Average Current Fund IRR (%)	MOIC	PME
Whole Sample									
Previous Fund Quartile at Fund End	1	35.4%	23.6%	25.0%	16.0%		17.2	2.00	1.29
		51	34	36	23	144			
	2	22.8%	23.4%	34.5%	19.3%		15.3	1.88	1.18
		33	34	50	28	145			
	3	20.3%	30.4%	28.3%	21.0%		13.1	1.70	1.11
		28	42	39	29	138			
	4	13.8%	21.3%	26.3%	38.8%		8.9	1.46	0.97
		11	17	21	31	80			
NA, but not first fund		20.3%	30.7%	22.2%	26.9%		13.1	1.74	1.14
		43	65	47	57	212			
First funds		25.7%	22.9%	23.8%	27.6%		15.1	1.92	1.25
		54	45	46	59	204			

- Buyout managers with a previous fund in the top quartile remain in the top quartile 35.4% of the time and above median 58.2% of the time (green box).
- Buyout managers with a previous fund in the bottom quartile remain in the bottom quartile 38.8% of the time and below median 65.1% of the time (red box).
- Finally, buyout managers flip from top to bottom quartile 16% of the time.

Panel B: Venture Capital Funds

		Current Fund Quartile 1	2	3	4	N	Average Current Fund IRR	MOIC	PME
Whole Sample									
Previous Fund Quartile at Fund End	1	45.1%	23.6%	19.0%	12.2%		35.6	4.08	2.22
		107	56	45	29	237			
	2	25.5%	26.4%	31.0%	17.1%		17.2	2.19	1.25
		55	57	67	37	216			
	3	16.6%	32.1%	30.5%	20.9%		11.4	1.88	1.05
		31	60	57	39	187			
	4	10%	20%	26%	44%		2.6	1.34	0.75
		13	25	32	55	125			
NA, but not first fund		14.4%	26.1%	28.8%	30.6%		8.6	1.80	0.95
		48	87	96	102	333			
First funds		27.1%	24.8%	21.0%	27.1%		15.6	2.46	1.35
		84	77	65	84	310			

- Venture managers with a previous fund in the top quartile remain in the top quartile 45.1% of the time and above median 68.7% of the time (green box).
- Venture managers with a previous fund in the bottom quartile remain in the bottom quartile 44.0% of the time and below median 70.0% of the time (red box).
- Finally, venture managers flip from top to bottom quartile ~12% of the time.

Source: Harris, Robert, Tim Jenkinson, Steven Kaplan, and Ruediger Stucke, 2013, Has Persistence Persisted in Private Equity? Evidence From Buyout and Venture Capital Funds, Working Paper, University of Chicago.

INVESTMENT ENVIRONMENT

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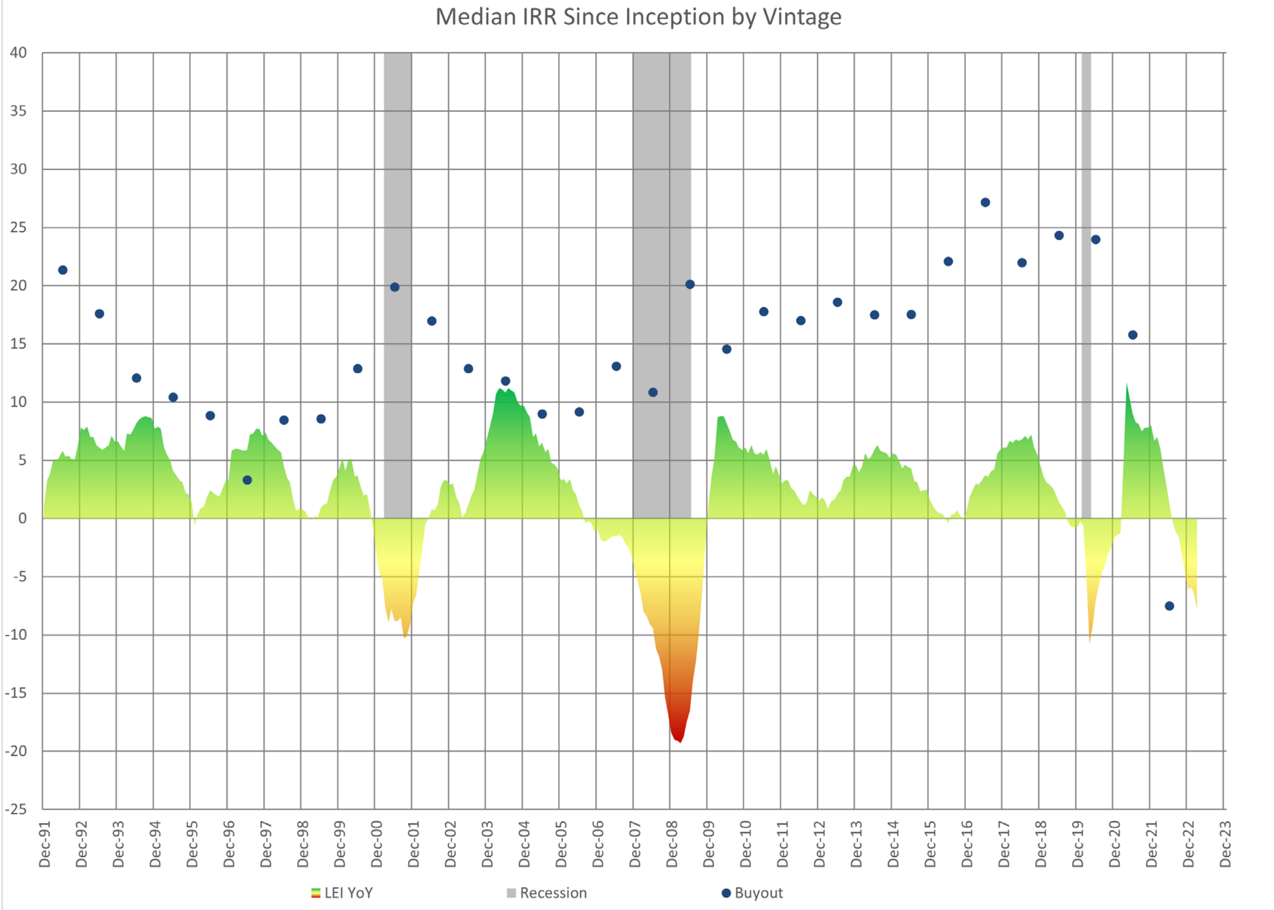
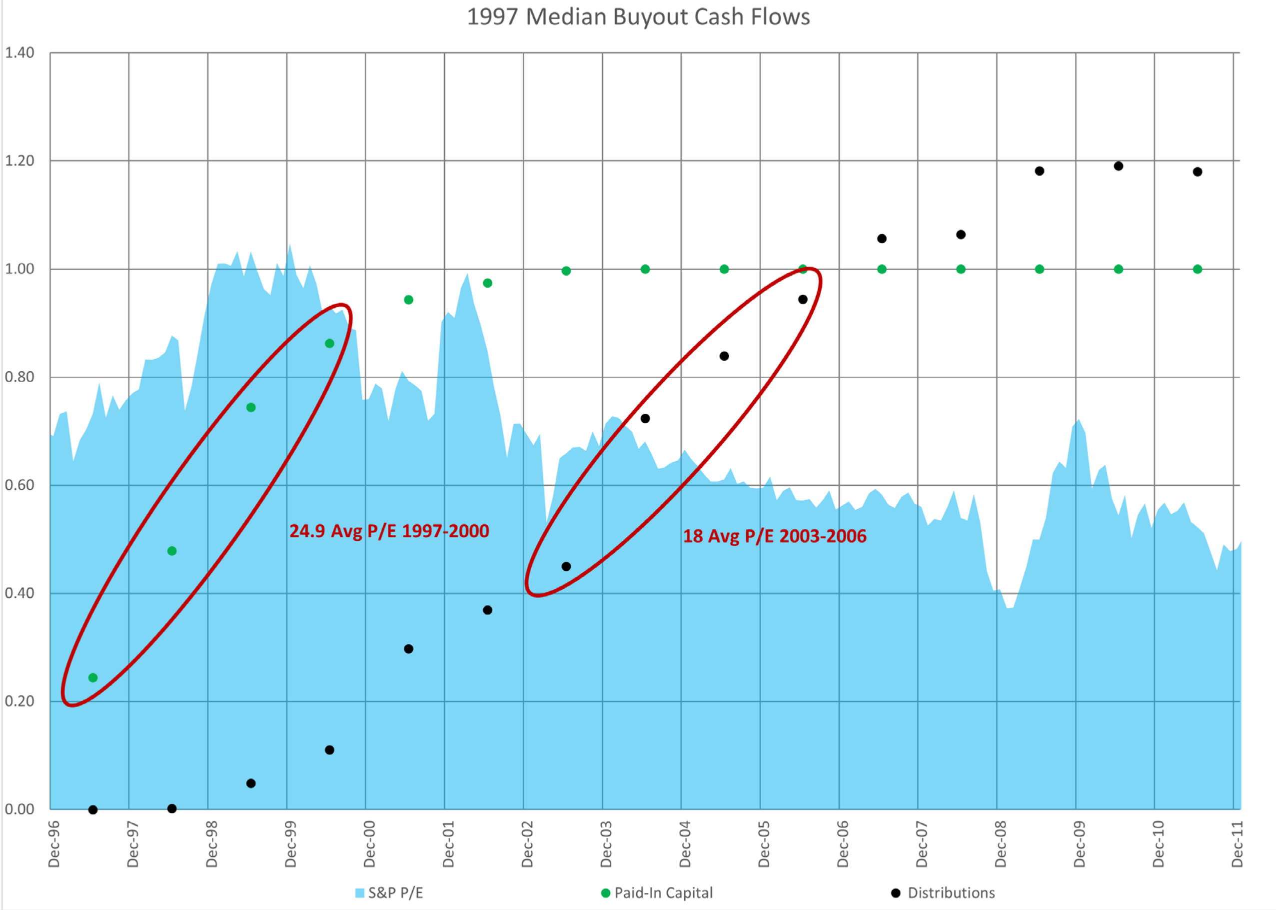
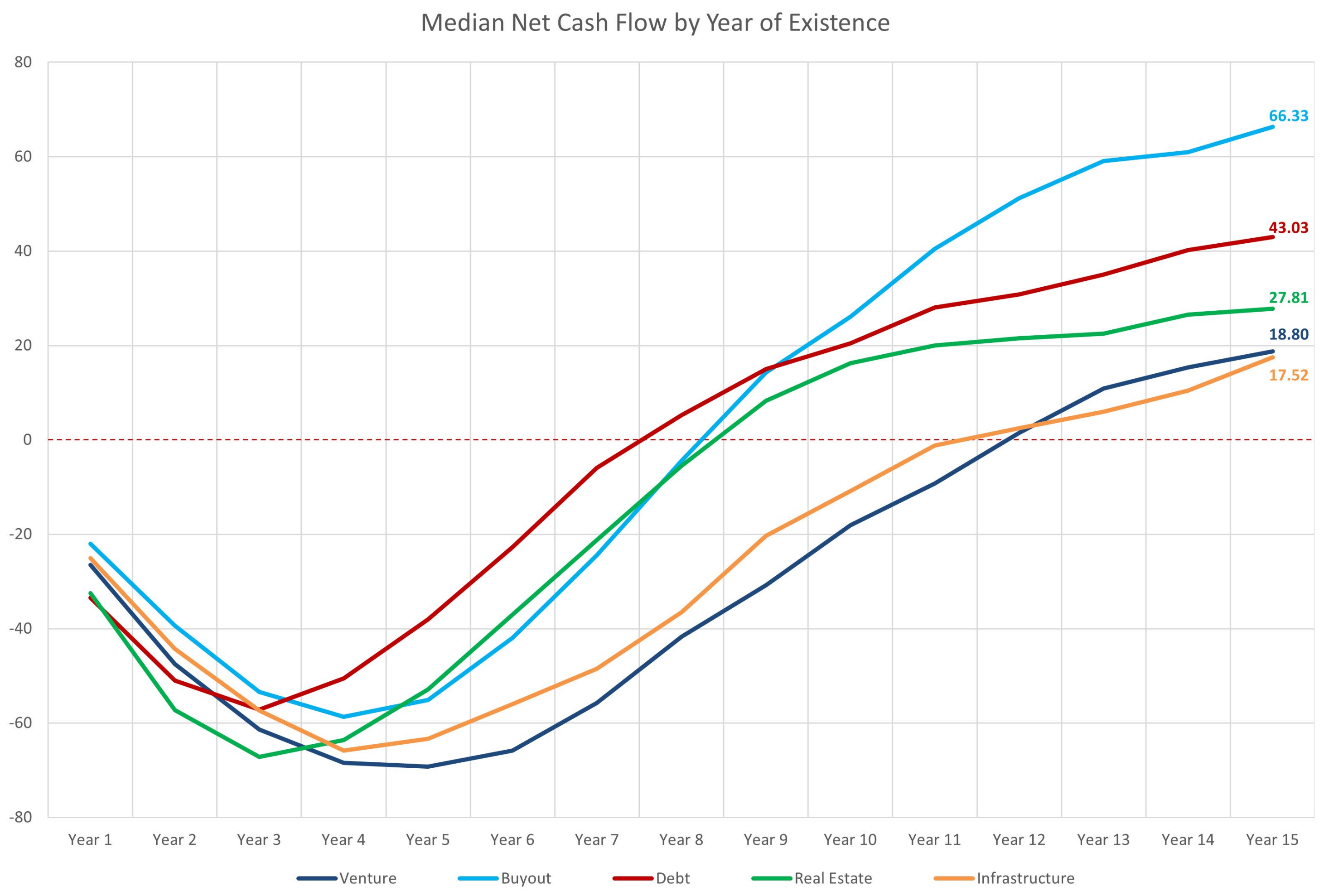




Source: Burgiss Private iQ (net of fees)

CASH FLOWS



Source: Burgiss Private iQ (net of fees)

LIQUIDITY & RETURN

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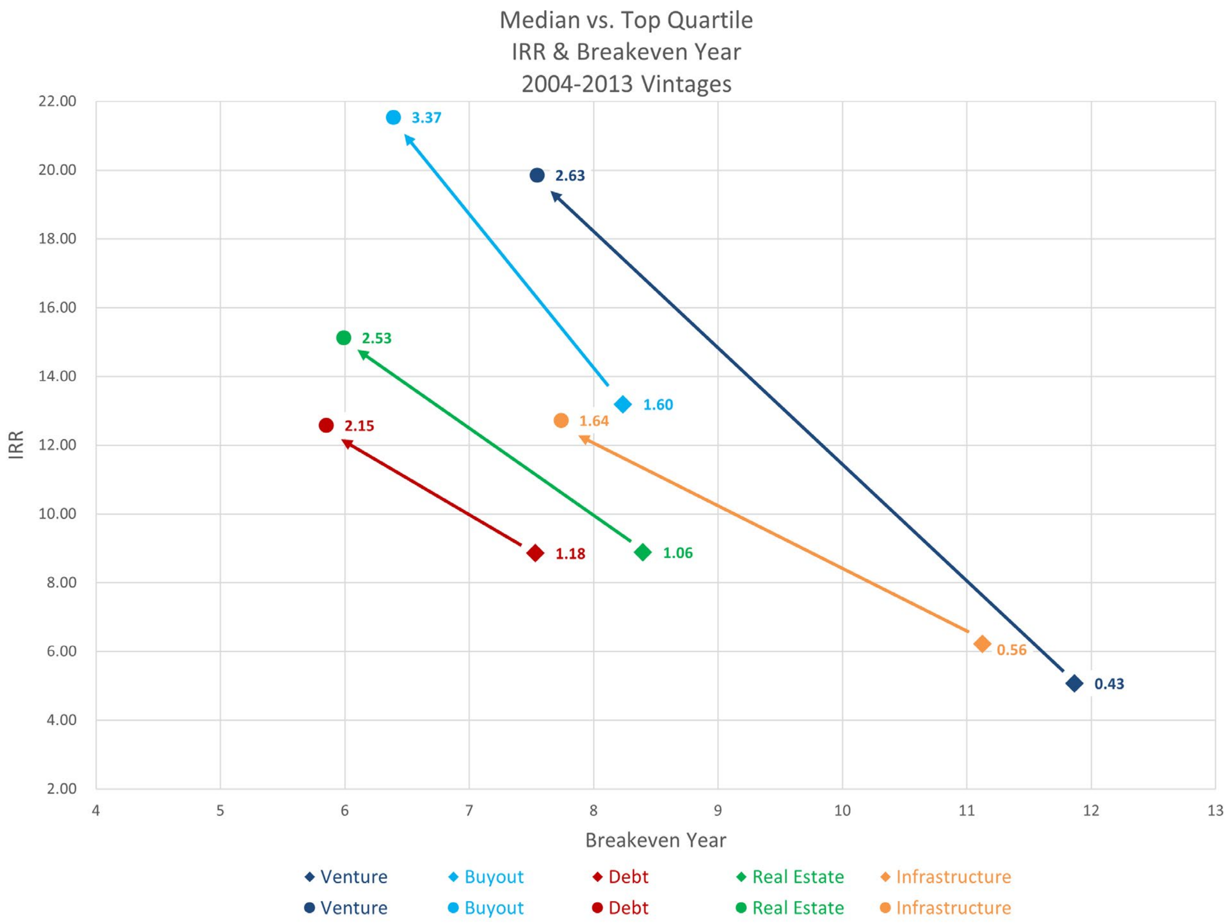

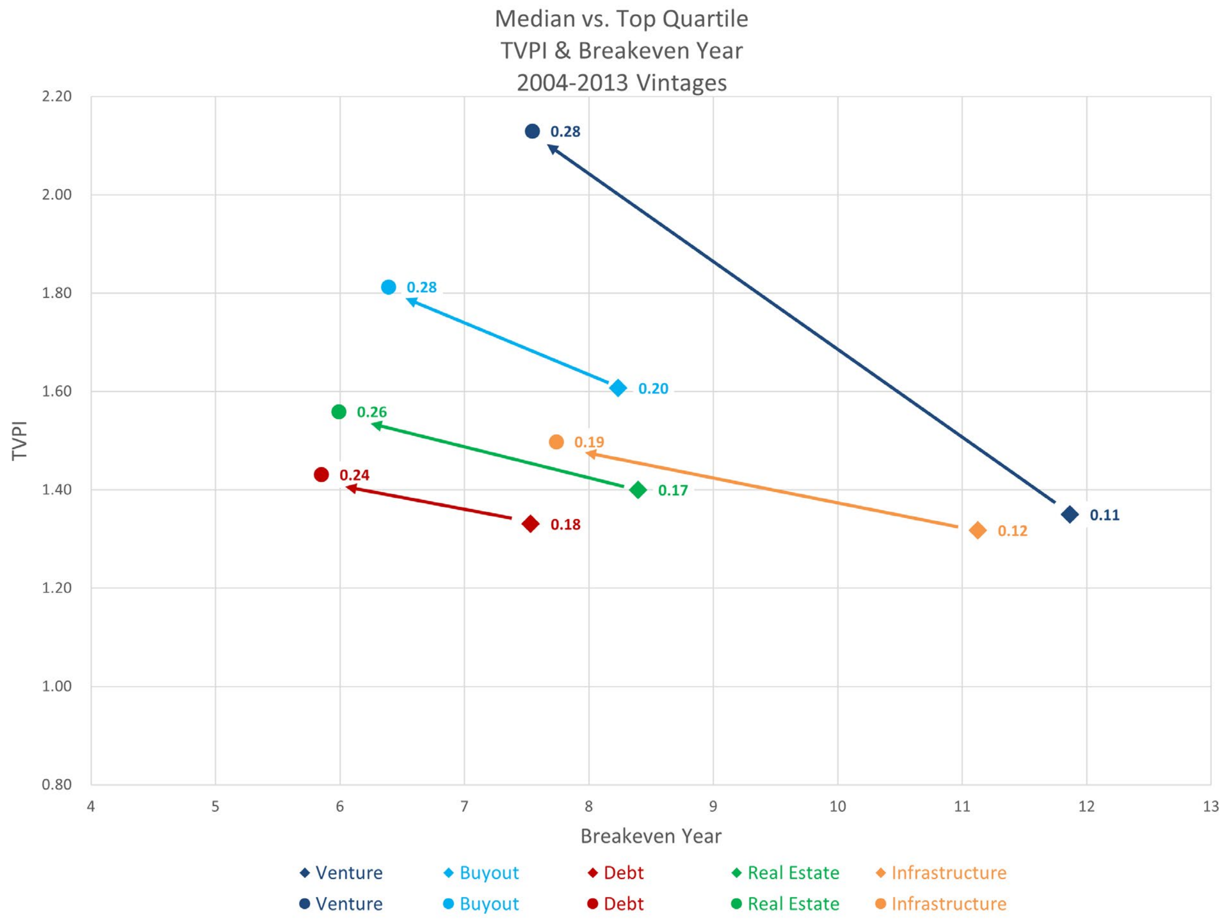

♦ = median
● = top quartile
Source: Burgiss Private iQ (net of fees)

PACING EXAMPLE (ND PERS)

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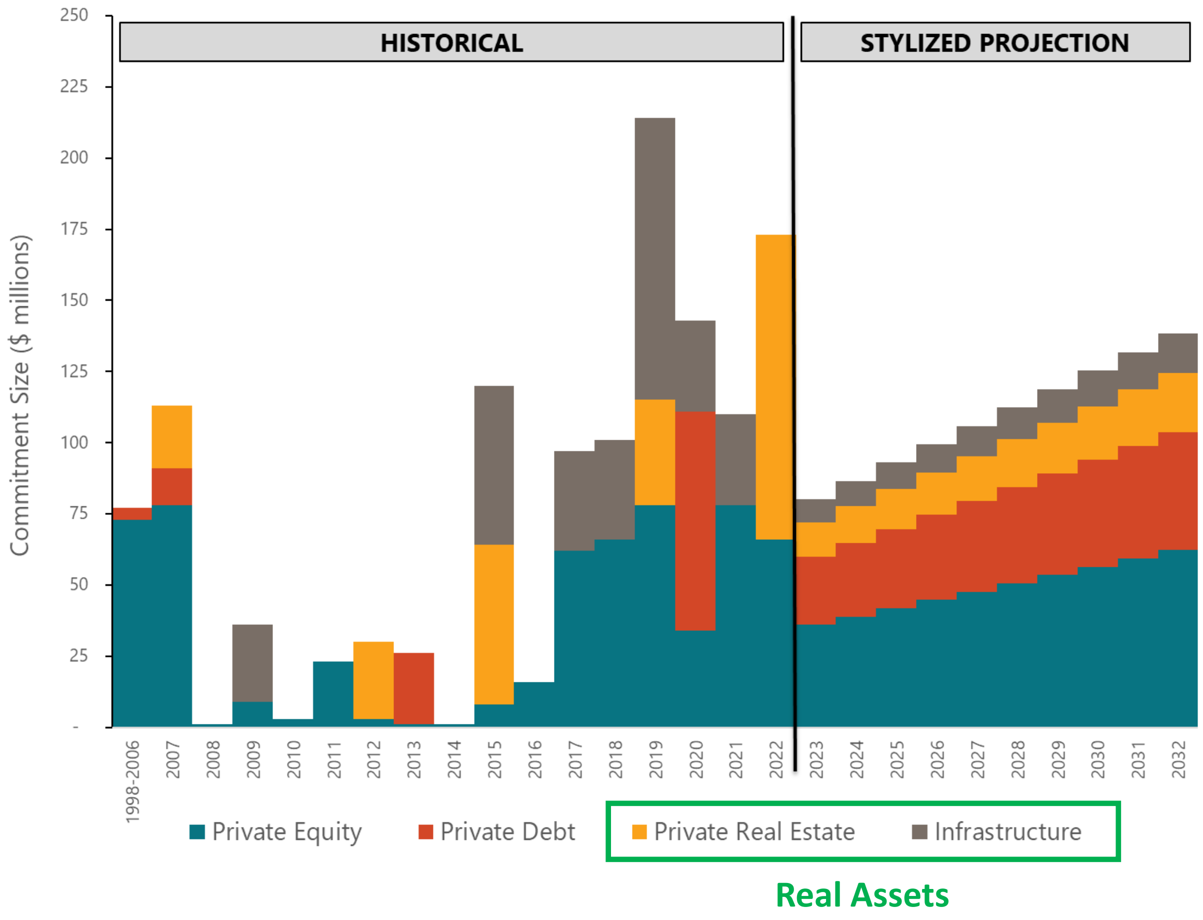
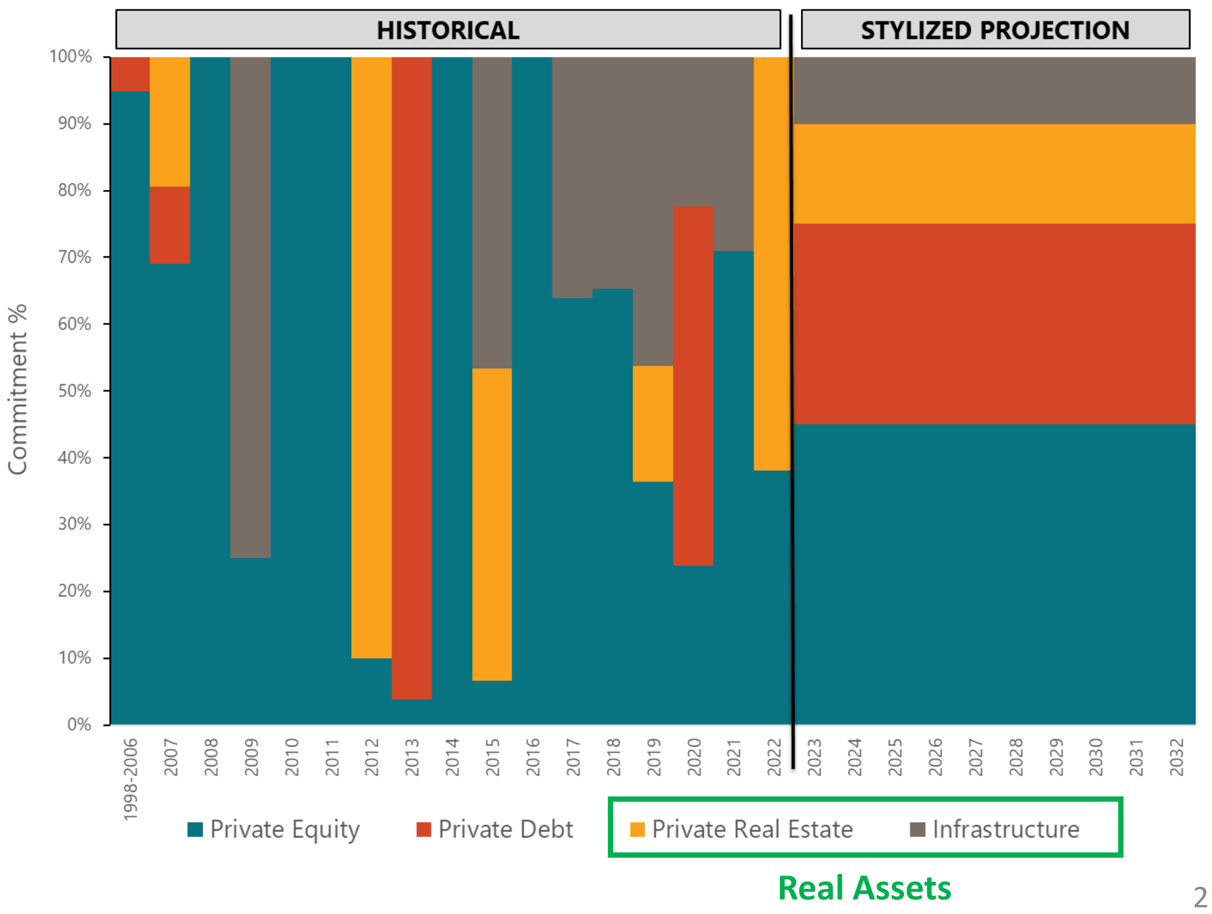
According to recent research from Ares, more consistent pacing provides better vintage & asset diversification which leads to a reduction in volatility.





PROACTIVE SOURCING

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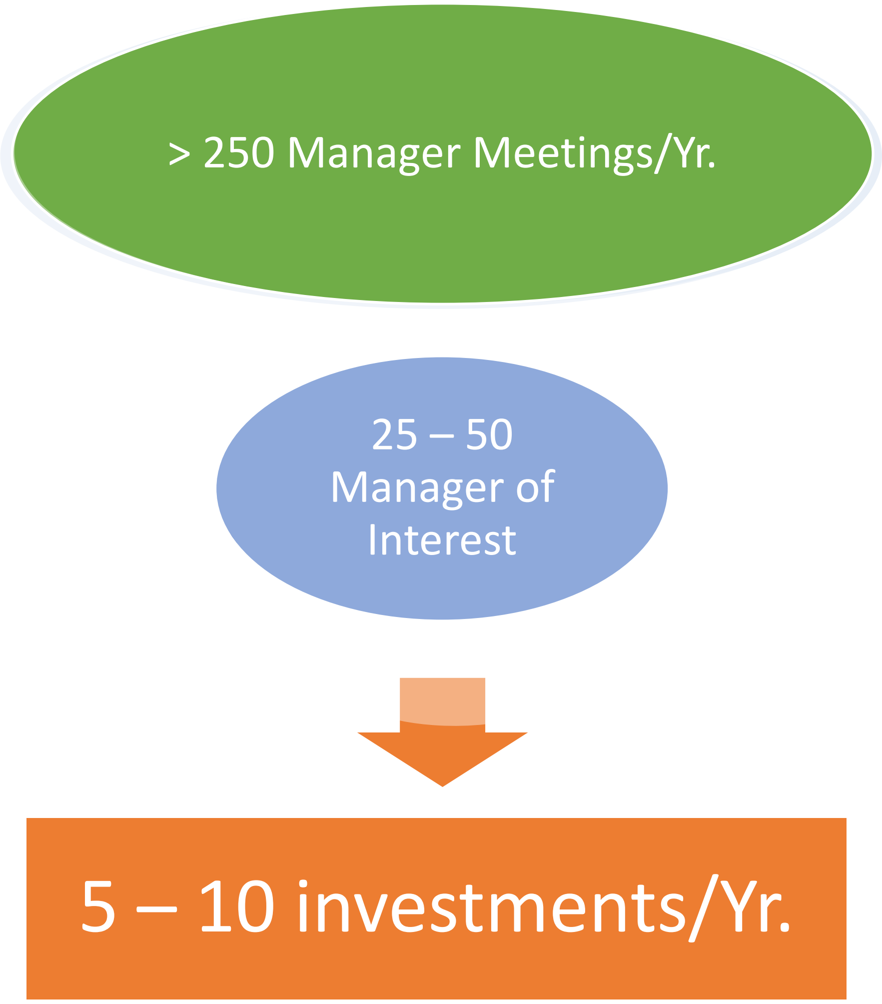
- Leverage GP discussions, LP networks, and technology platforms/databases to find the most compelling managers and strategies.
- Initiate discussions to determine attractiveness, accessibility, and fundraising cycle.
- Maintain a forward calendar of prospective managers which facilitates an efficient prioritization process and informs allocation decisions.

Forward Calendar Excerpt

							Fund Raising Timeline					
							2023					
Source	**Manager**	**Asset Class**	**Sub-Sector**	**Description**	**OE/CE**	**Geography**	**Q1**	**Q2**	**Q3**	**Q4**	**2024**	**2025**
LZ network	Altor VI	Private Equity	Buyout	Mid-Market	CE	Nordic/DACH						
Existing mgr.	50 South II (In-State Program)	Private Equity	Venture/Growth	Diversified	CE	North Dakota						
LZ network	Kelso XI	Private Equity	Buyout	Mid-Market	CE	N. America						
Existing mgr.	Ceberus SMA	Private Credit	Corporate credit	Senior secured	CE	Global						
GM network	K1 Ventures III	Private Equity	Venture	Enterprise Software	CE	N. America						
GM network	Commonfund IV	Secondaries	Buyout	LP-led	CE	N. America						
EC network	TPG	Private Equity	Secondaries	GP Secondaries	CE	Global						
LZ network	Accel Partners XVI	Private Equity	Venture	Early State	CE	N. America						
GM network	Trivest	Private Equity	Buyout	Mid-Market	CE	N. America						

INVESTMENT PROCESS



- Meetings with existing and prospective managers
- Prospective managers sourced via GP discussions, LP network, and Manager databases (e.g., Hamilton Lane)

- Some level of due diligence conducted (Franchise/Team/Track Record)
- Determine Portfolio fit
- Internal Investment Team discussion

- Full investment and operational due diligence conducted
- Legal negotiation of LPA terms
- Full Investment team support
- Investment Committee Approval

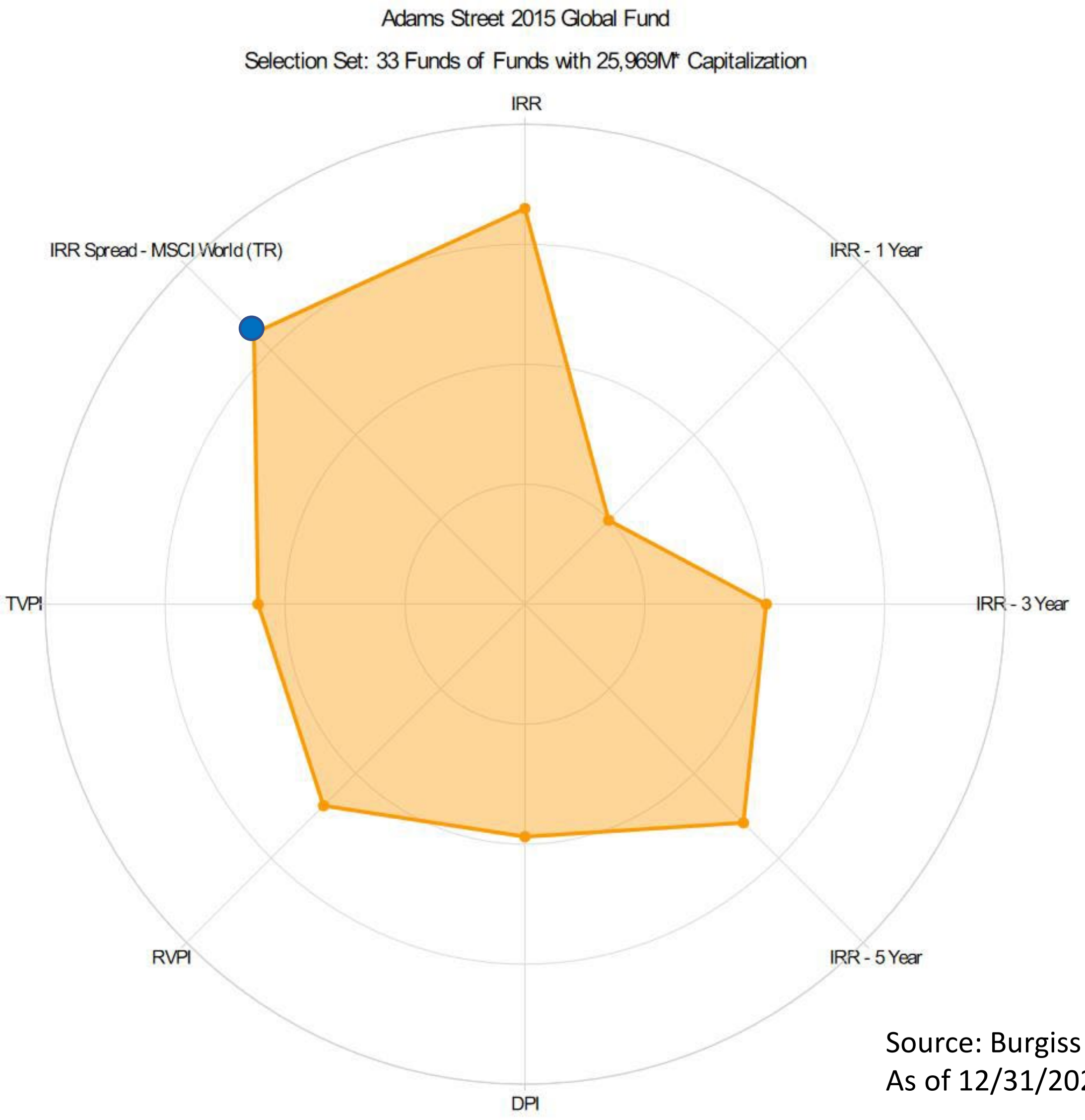
DUE DILIGENCE PROCESS

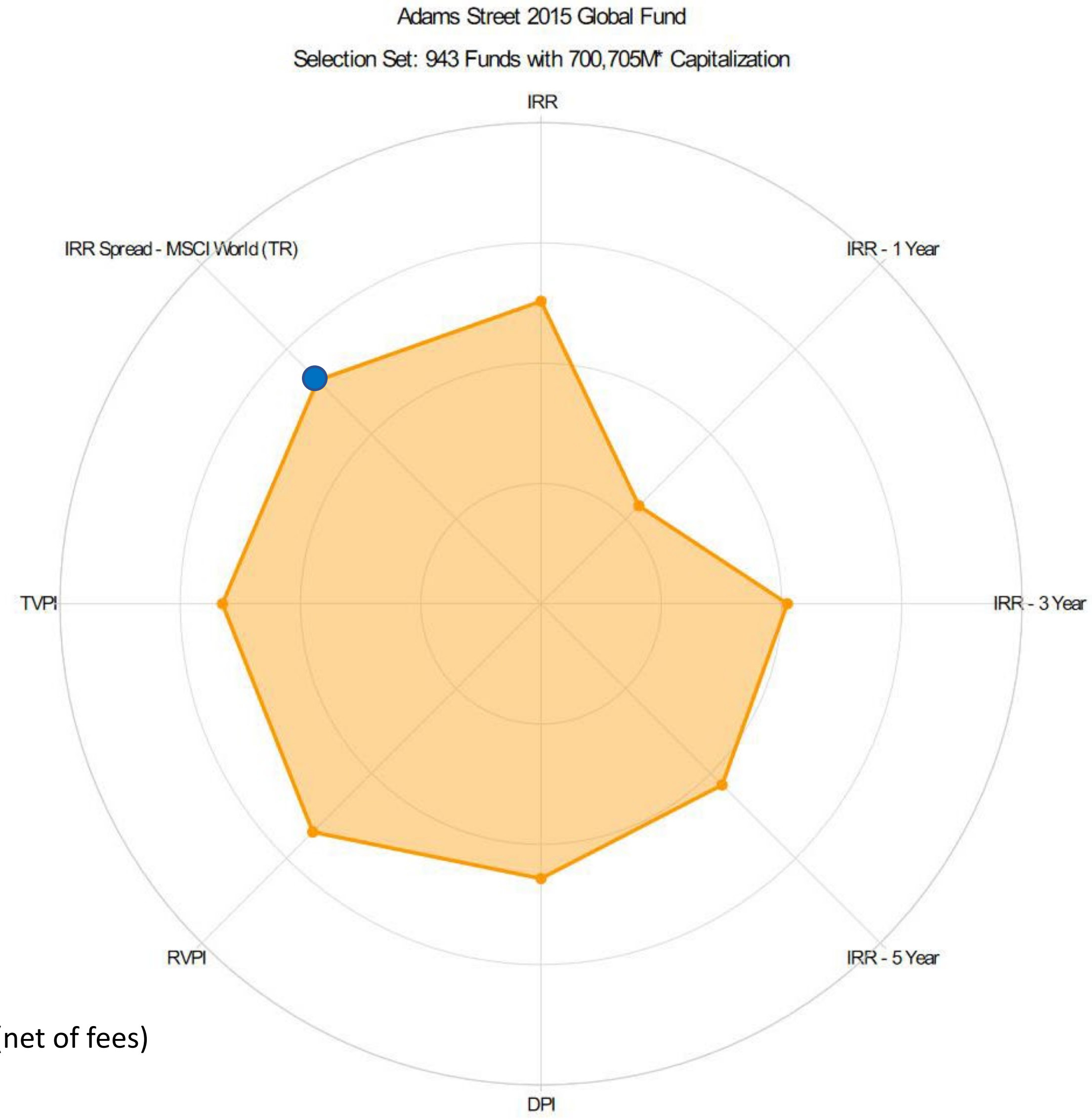
- Leverage existing relationships for outside perspectives.
- Leverage data sources for quantitative analysis.
- Conduct meetings and on-site visits to get a complete understanding of:
  - Management structure, incentives, and succession planning
  - Philosophy and process
  - Team-cohesion and buy-in
  - Drivers of return
  - Alignment of interests
- Operational due diligence assisted by trusted third-parties.

POST INVESTMENT MONITORING

- Regular Quarterly Updates: review published materials and participate in calls
- Limited Partnership Advisory Committees (LPAC): seek membership wherever possible in an official or observer capacity
- In-person Annual Reviews: on-site in the manager's office or in North Dakota
- Constant monitoring of market environment through existing managers as well as prospective managers and other third parties.
- NDRIO is working with a benchmarking consultant to select the appropriate benchmarks and return hurdles.
  - Manager peer-based measurements to determine whether manager selection was successful within a vintage, asset class, and sub-asset class
  - Long-term measurements against public markets to determine whether a particular manager or broader private strategy produced sufficient risk-adjusted returns to compensate for the illiquidity.

BENCHMARKING: PEER BASED





Source: Burgiss Private iQ (net of fees)
As of 12/31/2022

BENCHMARKING: PUBLIC MARKET EQUIVALENT

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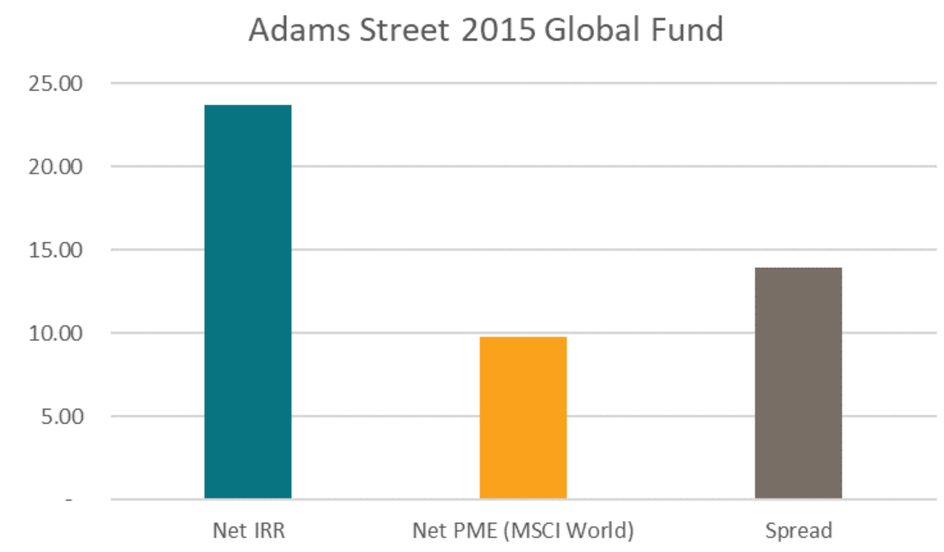

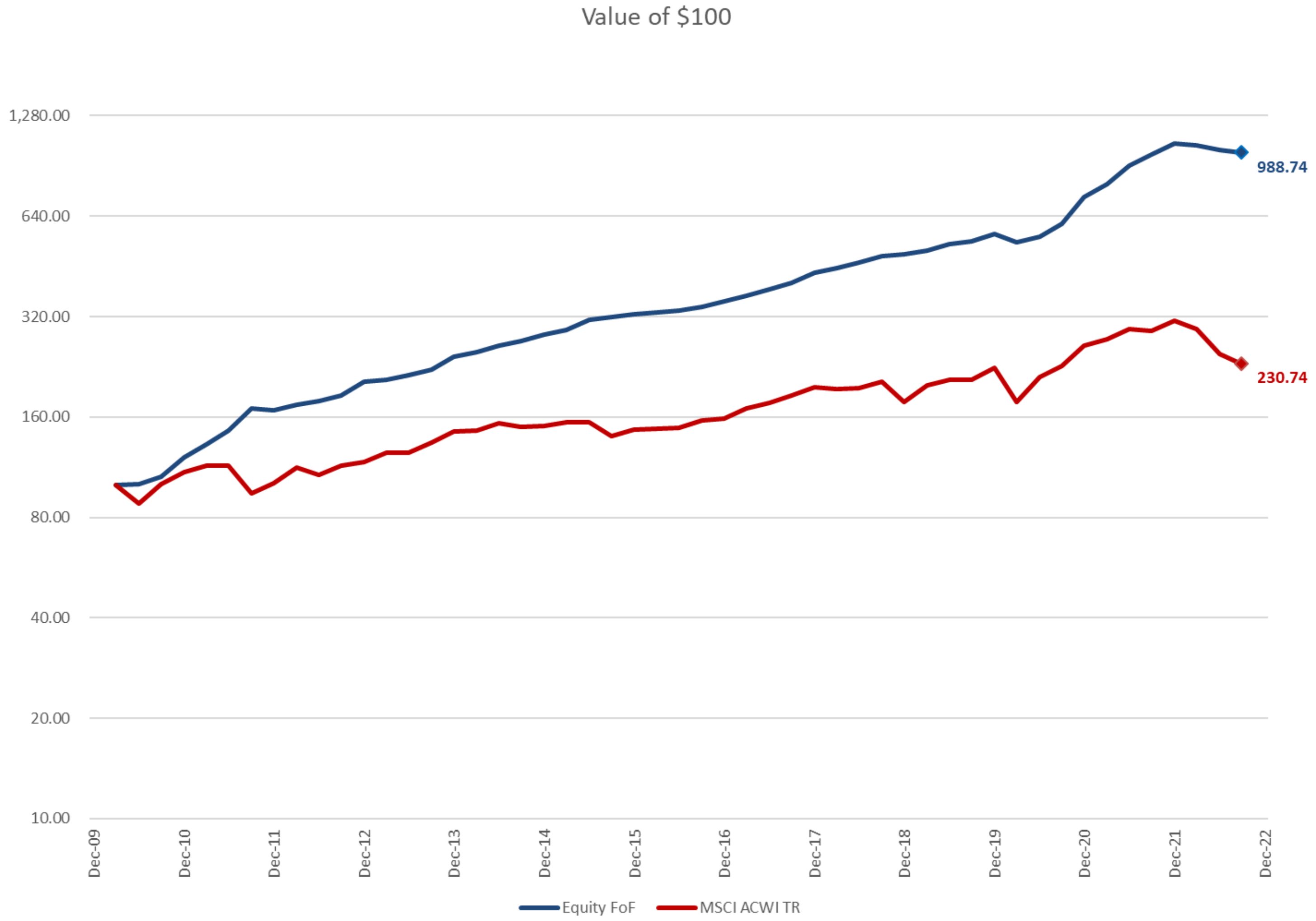

Source: Burgiss Private iQ

CONCLUSION

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We will utilize the team's experience in conjunction with existing relationships and technology to access top-ranked managers and construct a well-diversified private market portfolio. A portfolio that is diversified across vintages and strategies and has been informed by history with the awareness of prevailing conditions.

SECONDARY MARKET

INVESTMENT STAFF

JULY 14, 2023

NORTH Dakota | Retirement & Investment

Be Legendary.

AGENDA

- Guideline change to increase secondaries via existing BlackRock commitment
  - Executive Summary
  - Characteristics & Environment
  - Pricing & Historical Performance
  - Request for Approval

EXECUTIVE SUMMARY

NORTH Dakota Be Legendary.™

- $250 million commitment to Private Opportunities Fund 2020 series (~$86 million drawn)
- 2020 Series Allocation Guidelines
  - Current: 60% Primaries / 30% Co-investments / 10% Secondaries
  - Proposed: ***50%*** Primaries / 30% Co-investments / ***20%*** Secondaries
- Given the characteristics, market environment, and historical analysis of the secondary market, now is an advantageous time to increase secondaries exposure.
- Expect an accretive tradeoff between primaries and secondaries when consider liquidity.

SECONDARY CHARACTERISTICS

The secondaries market was created to provide LPs liquidity in an otherwise illiquid strategy. Over time, the secondary market has evolved into a means of providing various liquidity solutions to GPs and LPs (sellers and buyers).

- GPs: alternative avenues of liquidity

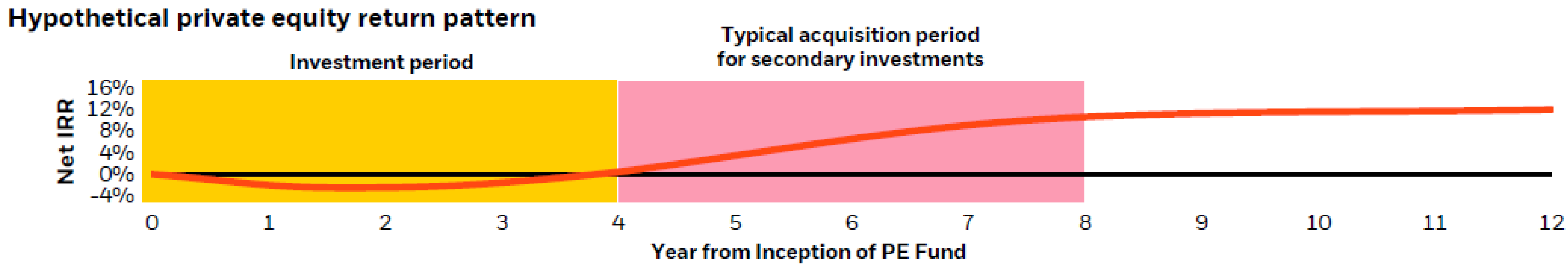
  While GPs have traditionally relied on the secondary market to facilitate liquidity for LPs via tender offers and strip sales, today, GPs are increasingly relying on secondaries to provide incremental growth capital to and extend the duration of existing assets in their portfolios.

- LP Sellers: obtain liquidity and rebalance portfolios

  LPs and holders of private portfolios already regularly consider secondaries as a sensible tool for portfolio management, often in response to leadership and team/organizational changes, institution-specific challenges and complexities, strategy adjustments, and/or regulatory changes and pressures.

- LP Buyers: gain diversification with attractive risk-return profile

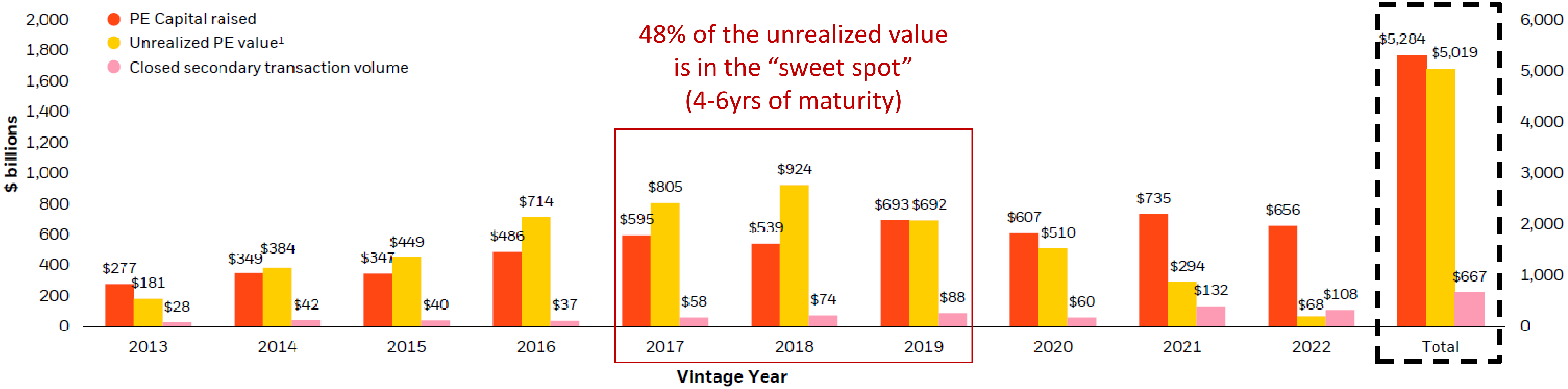
  The ability to invest in mature, substantially funded assets and portfolios allows for the potential to generate attractive risk-adjusted returns and results in a mitigated "J-Curve" effect.



SECONDARY ENVIRONMENT

Historically, 10%-15% of the Private Equity Capital raised ends up trading in a secondary market. However, given fundraising levels over the past few years and current exit dynamics, secondary volumes are expected to increase and at favorable pricing.

Private equity by vintage year



Source: BlackRock; Jefferies – Global Secondary Market Review, 31 December 2022; Preqin

1 Includes all alternative asset classes except hedge fund side pockets.

LP AND GP SECONDARY CHARACTERISTICS

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LP-led Secondaries

Purchasers typically acquire interests in a fund's remaining assets (interests in portfolio companies) and assume the seller's commitments to meet capital calls in the future

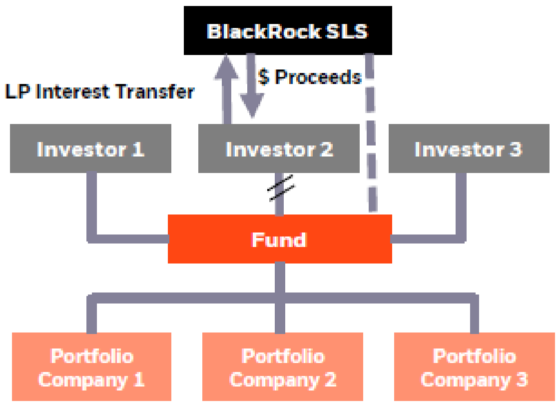
Historically, secondaries transactions involved the sale of Limited Partner (LP) interests in **individual funds or portfolios of funds**

GP-led Secondaries

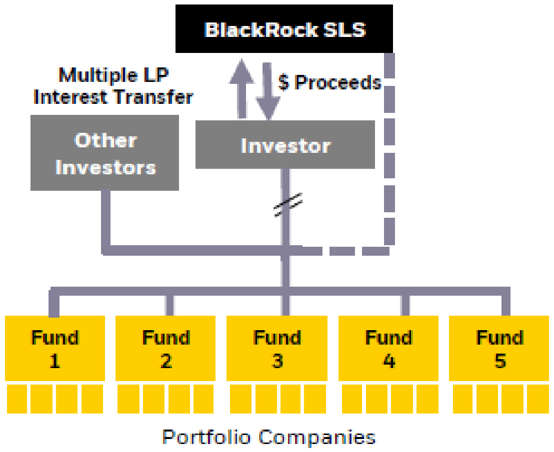
The secondary market has evolved to include **portfolios of direct investments** in companies or assets not held in typical fund structures

General Partner (GP)-Led liquidity transactions (involving the sale of the assets from, or restructuring of, older vintage funds with the close involvement of managers) are a driving force of growth and innovation in non-traditional secondaries

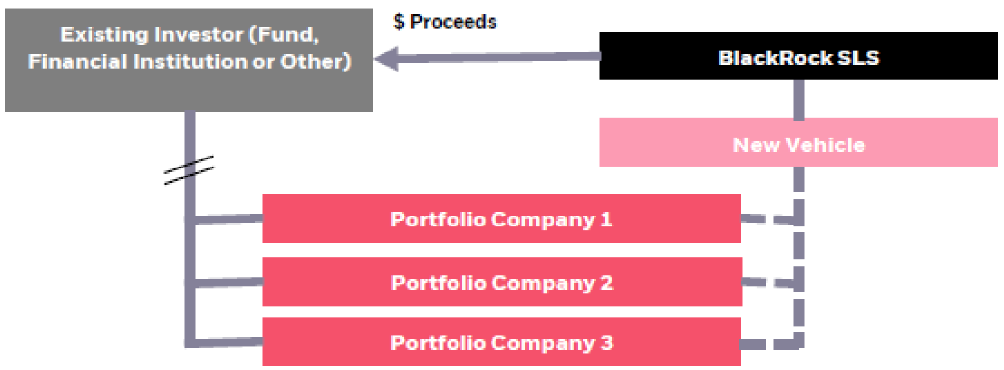
Single Fund LP Secondary



Multi-Fund LP Secondary



GP-Led & Direct Secondary



Market return profile and duration	• **10-13% unlevered**, ~2-3 year target average deal duration	• **15-18+% unlevered**, ~4 year target average deal duration

Source: BlackRock

LP/GP SECONDARY TRANSACTION VOLUME

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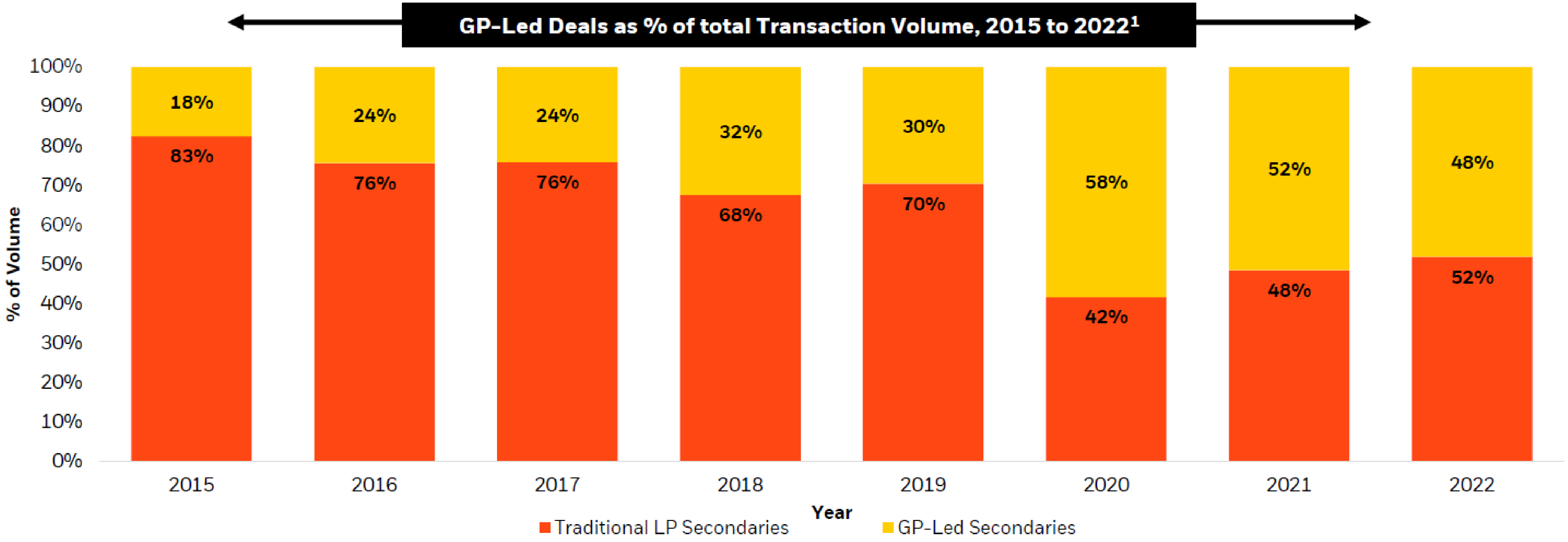

Source: BlackRock. [1] Jefferies – Secondary Market Trends/Outlook, 31 December 2022. All dollar figures in USD.

LP SECONDARY PRICING ENVIRONMENT

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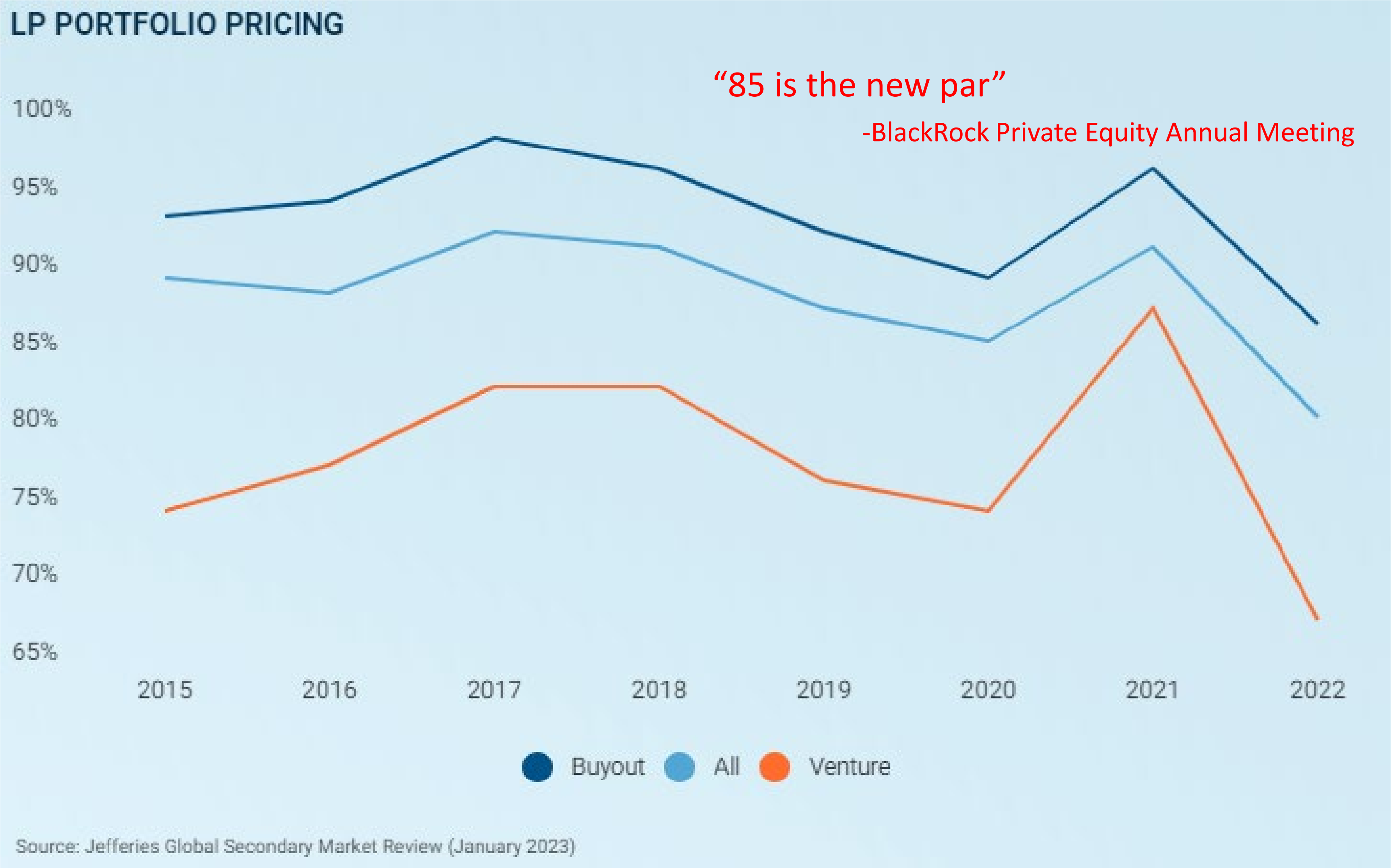
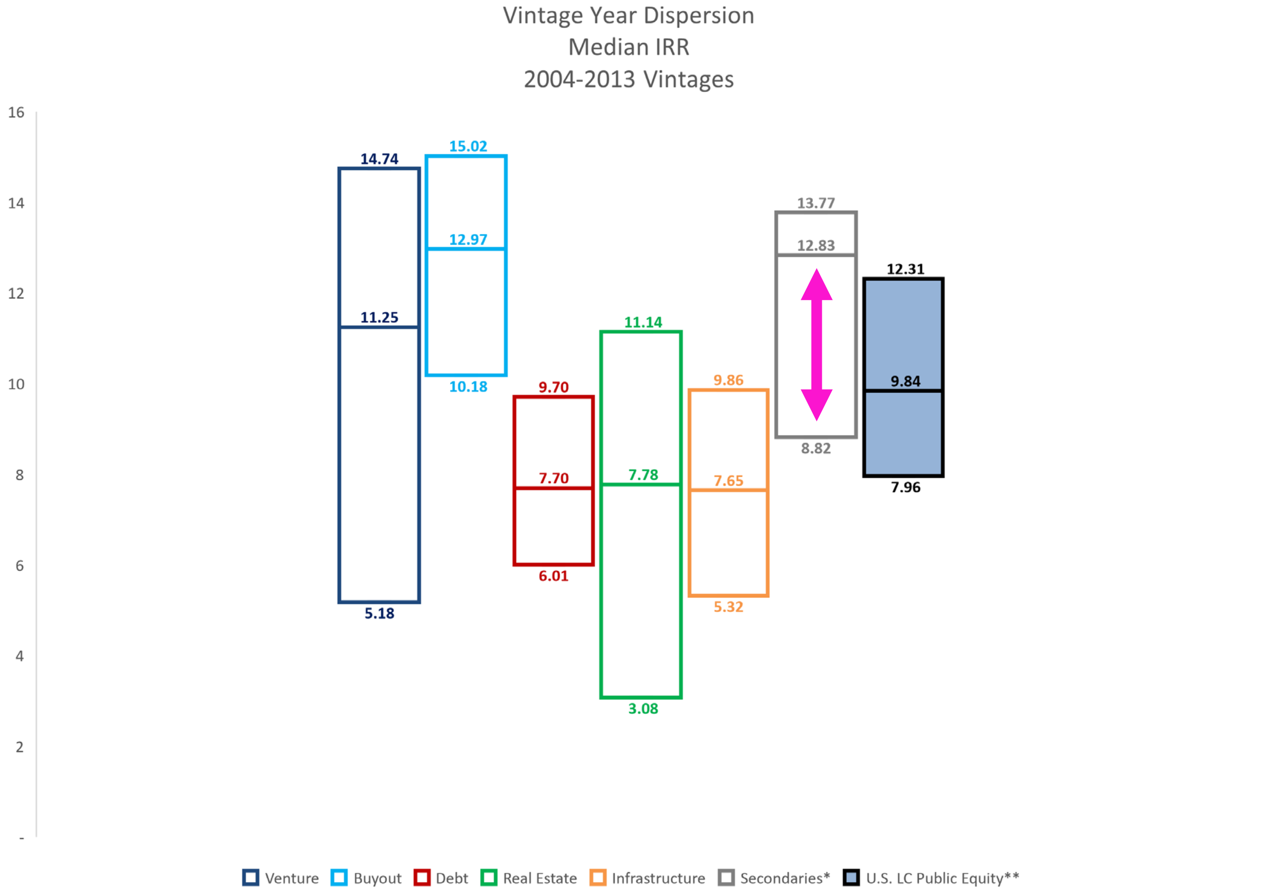
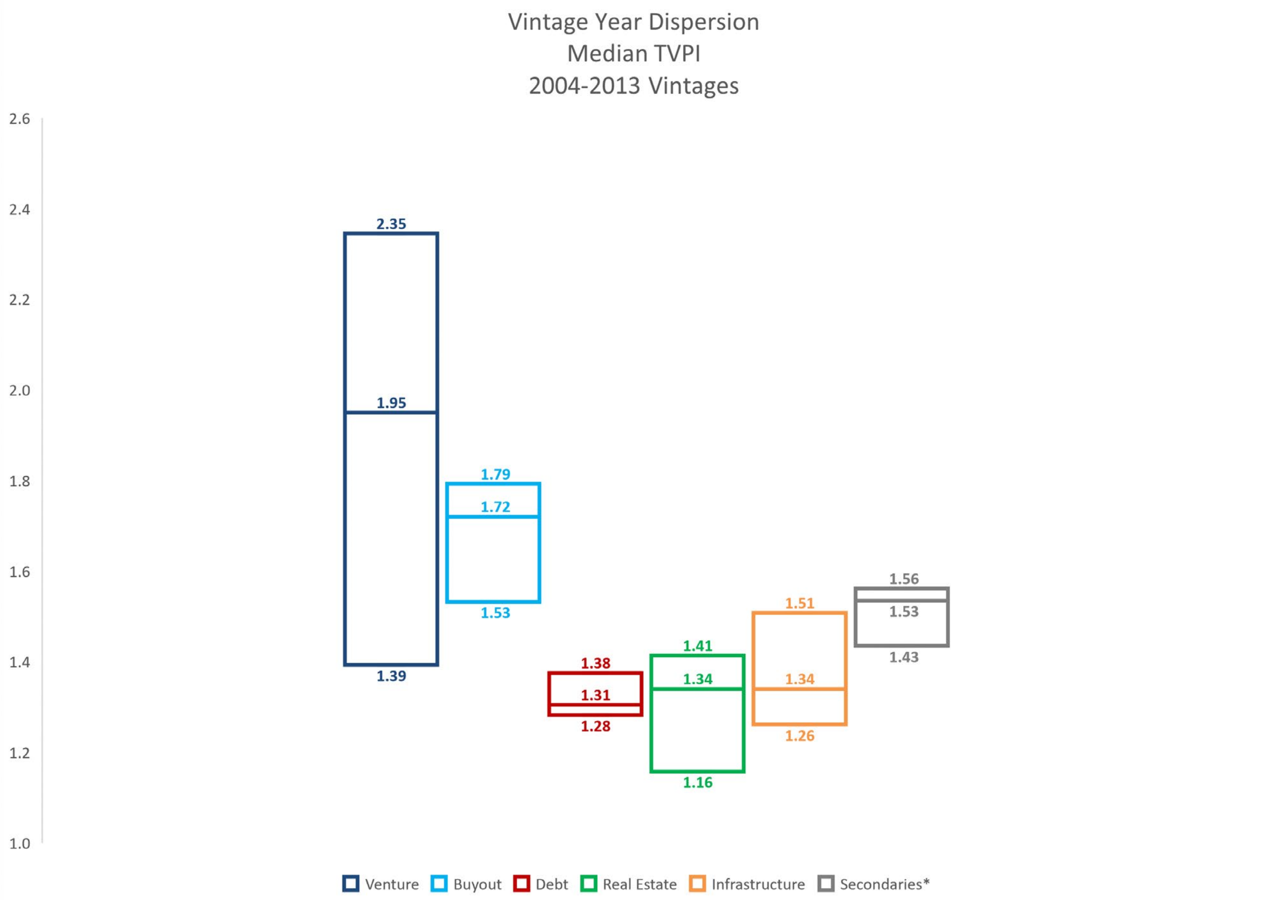
- LP secondary portfolios pricing has improved.
- After multiple discussions with secondary managers, the underlying quality of a secondary portfolio is also better because secondary managers have become more selective with a renewed focus on portfolio company fundamentals and the quality of GPs.



HISTORICAL PERFORMANCE





All data net of fees
Sources: Burgiss Private iQ, *Cambridge Associates, and **eVestment (10-year returns from each Vintage start)

REQUEST FOR APPROVAL

Within BlackRock Private Opportunities 2020 Fund, staff is recommending an increase in the allocation to secondaries from 10% to 20%, via a reduction to primaries from 60% to 50%.

INDEX VALUATION

INVESTMENT TEAM
JULY 14th, 2023

NORTH Dakota Be Legendary. | Retirement & Investment

INDEX VALUATION INTRODUCTION

OBJECTIVE

- Communicate introduction to index valuation that is intended to assist with rebalance and exposure management decisions

DISCUSS

- Valuation, price, different ways to value markets, and benchmarks
- Inputs and outputs of a discounted cash-flow multi-stage S&P 500 valuation model
- Example of S&P 500 model with yield curve sensitivity to exhibit testing market assumptions
- Present consensus expectations for S&P 500 and discuss why testing those assumptions can be a useful exercise in navigating markets

WHY?

- Index valuation enables an understanding of absolute and relative valuation of securities, benchmarks, and indices. This is a value-add exercise for testing market views and enabling rebalance and exposure management decisions

INDEX VALUATION

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VALUE VS. PRICE

There's no right or wrong price of any asset:

- Overpaying can lead to poor returns
- Underpaying can lead to higher returns

MODELING AND VALUING INDICES

Allows analyst to:

- Understand underlying fundamental data
- Assess price relative to value
- Test various market narratives and hypotheses

DIFFERENT WAYS TO VALUE MARKETS

Discounted Cash Flow Model (single and multi-stage)

Sentiment Indicators

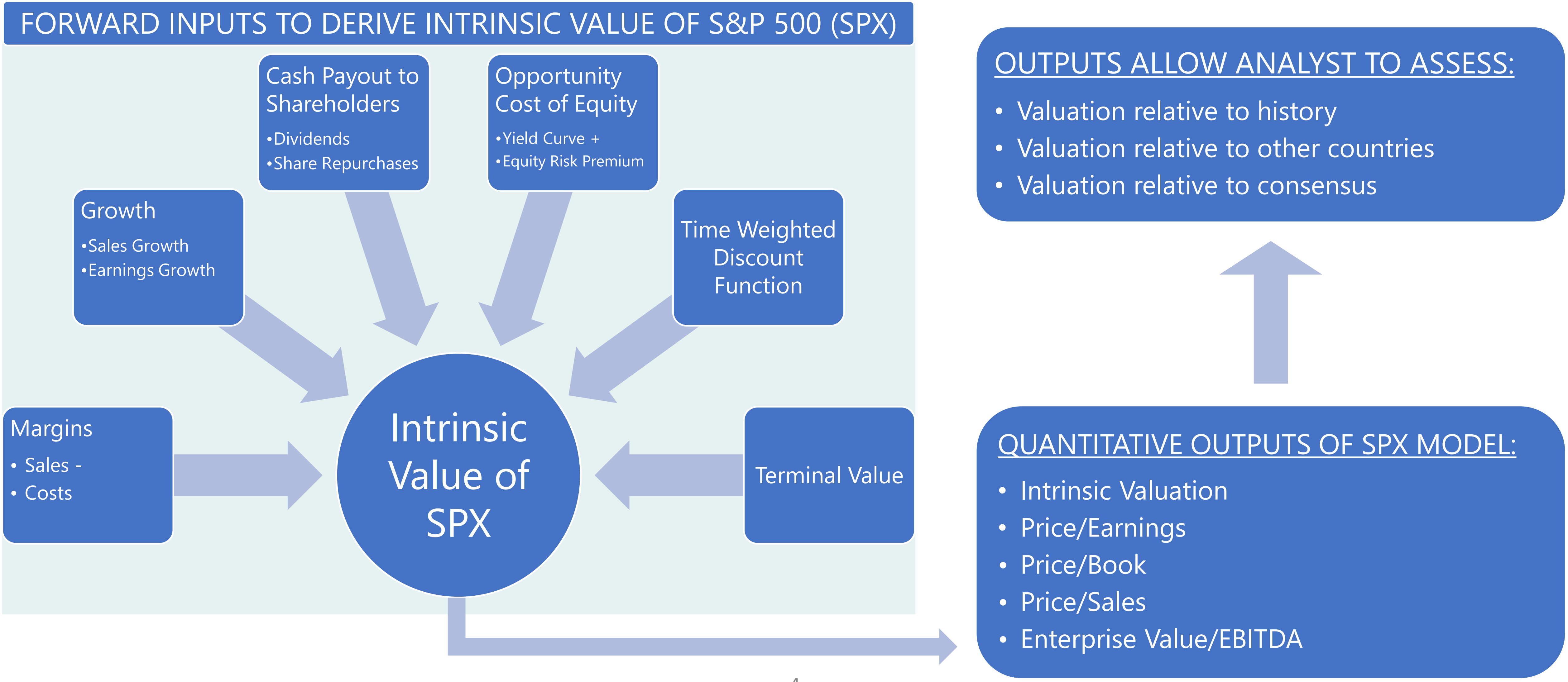
Relative Valuation (Multiples)

REPRESENTATIVE ASSET CLASS BENCHMARKS THAT MAY BE VALUED

ASSET CLASS	BENCHMARK
US Large Cap	Russell 1000 or S&P500
US Small Cap	Russell 2000 or S&P600
Total International	MSCI ACWI ex-US IMI
International All Cap	MSCI ACWI ex-US IMI
Developed International Large Cap	MSCI World Ex US
Developed International Small Cap	MSCI World Ex US Small Cap
Emerging Markets	MSCI Emerging Markets
Fixed Income	Bloomberg Aggregate/High Yield

Price is what you pay.
Value is what you get.
- Warren Buffett

HOW TO VALUE MARKETS: SPX EXAMPLE



UTILIZATION OF INDEX MODELS

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Testing Market Views

- Assess value of various market narratives
- Assess value of change in market parameters such as inflation, economic growth, earnings, etc.

Enabling Exposure Management Decisions

- Identify risk of overweights and underweights
- Assess value of current index weights
- Enable offsetting exposures or hedges

Enabling Rebalance Decisions

- Forecast period end exposures
- Assess value of period end exposures
- Enable rebalancing of exposures

SPX INDEX VALUATION EXAMPLE: YIELD CURVE SENSITIVITY ANALYSIS

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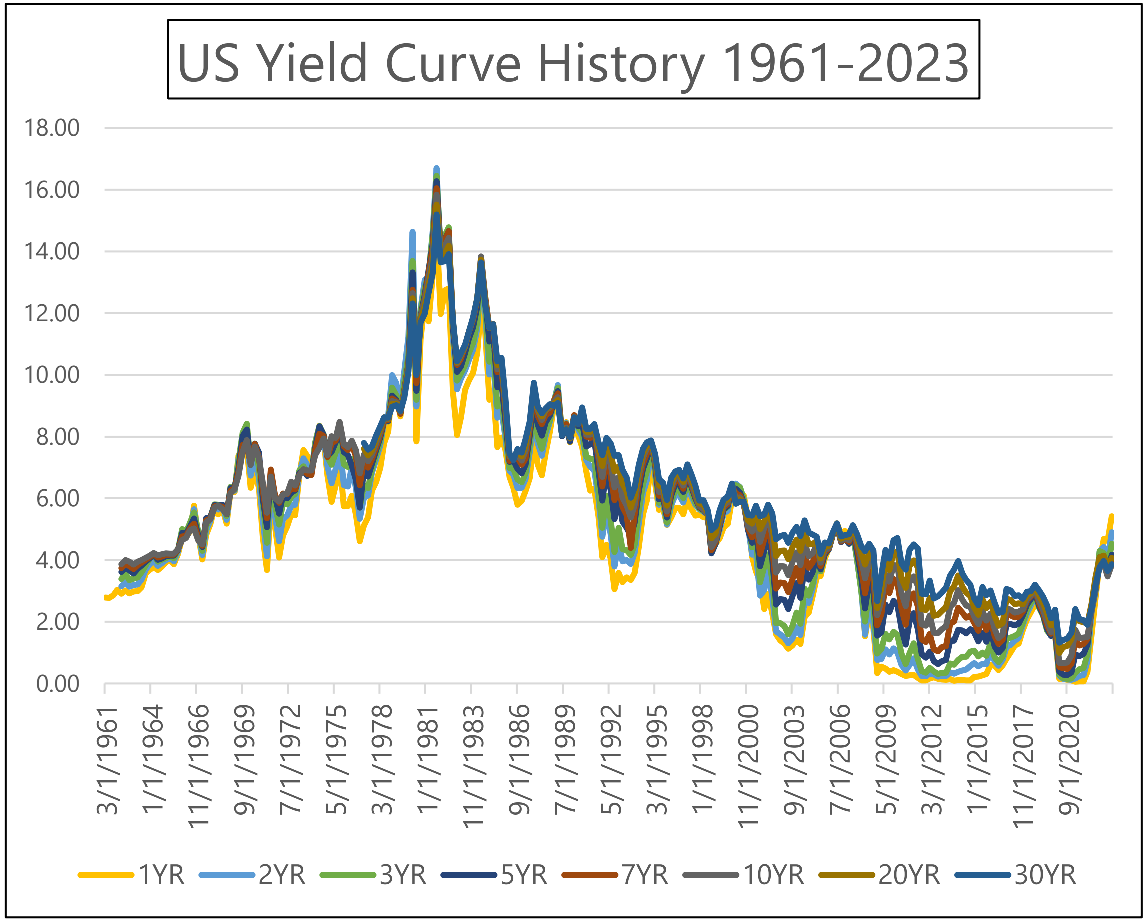
SPX Valuation Model Base Case Assumptions	
SPX 2022 EOY Earnings	**220.00**
Earnings & Sales Growth EOY 2023	**0.0%**
Earnings & Sales Growth EOY 2024	**7.0%**
Earnings & Sales Growth EOY 2025 to Perpetuity	**5.5%**
Net Margin	**13.0%**
Net Income Cash Payout to Shareholders	**85.0%**
Yield Curve Interpolated from Table	**-**
Equity Risk Premium	**5.2%**

Yield Curve	7/6/2023	6/29/1984	9/30/1991	3/31/1993	12/31/2004	3/30/2018	12/31/2021	
1YR	5.47	12.25	5.41	3.28	2.82	2.08	0.38	
2YR	5.05	13.16	5.98	3.96	3.07	2.27	0.73	
3YR	4.74	13.38	6.22	4.35	3.22	2.38	0.96	
5YR	4.40	13.71	6.91	5.24	3.61	2.56	1.26	
7YR	4.24	13.82	7.29	5.72	3.91	2.68	1.44	
10YR	4.06	13.84	7.45	6.02	4.22	2.74	1.51	
20YR	4.25	13.74	7.63	6.48	4.52	2.86	1.93	
30YR	4.01	13.64	7.81	6.93	4.83	2.97	1.90	
SPX Model Output	4,388	1,512	2,947	3,593	4,605	5,795	7,040	
Model Disc/Prem to SPX Price	-0.27%	-65.64%	-33.02%	-18.34%	4.66%	31.70%	60.00%	
Weight	20%	1%	10%	19%	25%	25%	0%	100%
Weighted Avg of Scenarios	878	15	295	683	1,151	1,449	0	**4,470**
					Wtd Avg Intrinsic Value			**4,470**
					SPX Price (7/6/2023)			**4,400**
					Model Premium/Discount			**1.59%**

OTHER YIELD CURVES ARE POSSIBLE SUCH AS: FORWARD YIELD CURVES



SPX INDEX VALUATION : CONSENSUS ESTIMATES

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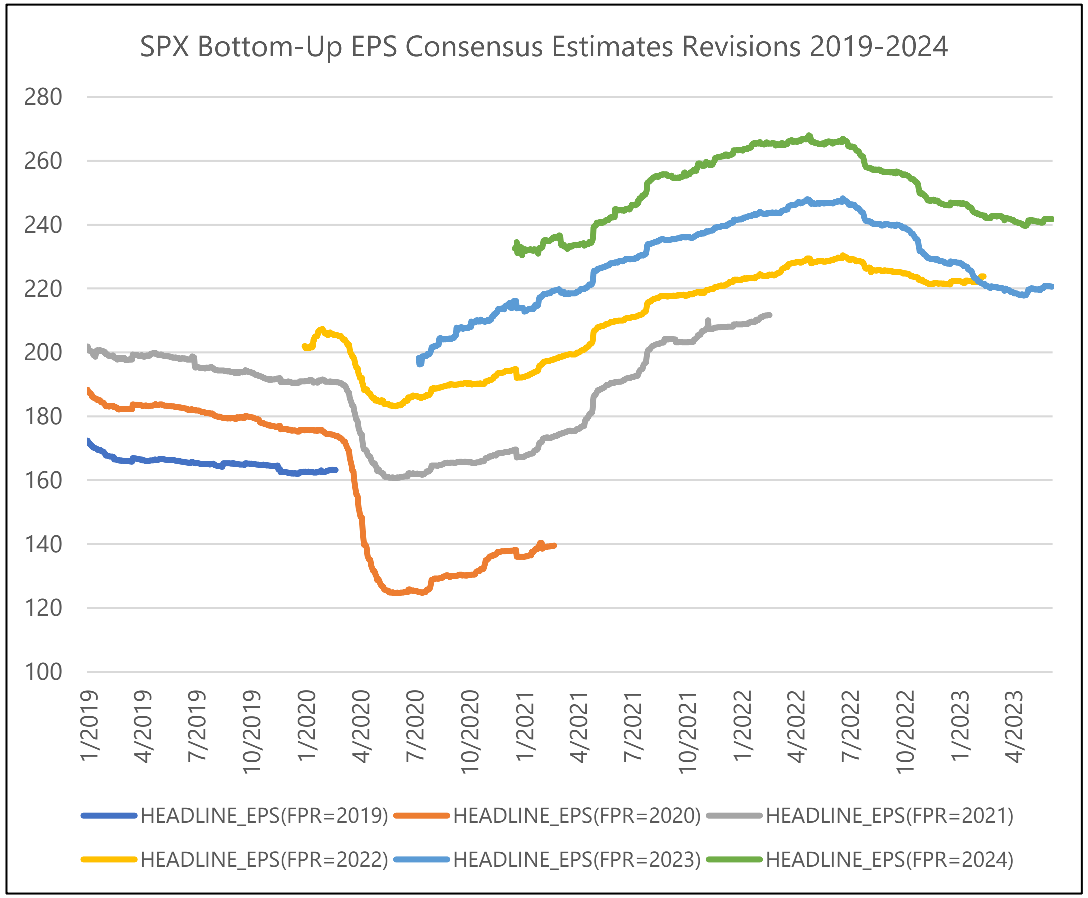
Consensus Estimates Considerations

- Input consensus estimates into model to assess likelihood of being realized
- Are analysts biased, overly optimistic, pessimistic, or fair?
- What could exacerbate or hinder growth? Are model assumptions logical and based in reality?
- How does news about macroeconomics, fiscal policy, monetary policy, or geopolitics influence consensus?

Top-Down Consensus Price Targets, Earnings Estimates, and Implied Price to Earnings Ratio

Firm	Strategist	EOY 2023	2023 EPS	EPS to Avg	2023 P/E
Bank of America	Savita Subramanian	4,300	$215	1.1%	20.0x
BMO	Brian Belski	4,550	$220	3.3%	20.7x
Barclays	Venu Krishna	3,725	$200	-6.3%	18.6x
BNP Paribas	Greg Boutle	3,400	$204	-4.4%	16.7x
Cantor Fitzgerald	Eric Johnston	3,500	$205	-3.7%	17.1x
Citigroup	Scott Chronert	4,000	$215	1.1%	18.6x
Credit Suisse	Jonathan Golub	4,050	$215	1.1%	18.8x
Deutsche Bank	Binky Chadha	4,500	$224	5.1%	20.1x
Evercore ISI	Julian Emanuel	4,450	$214	0.6%	20.8x
Fundstrat	Tom Lee	4,825	$250	14.9%	19.3x
Goldman Sachs	David Kostin	4,500	$224	5.1%	20.1x
HSBC	Max Kettner	4,000	$225	5.5%	17.8x
JPMorgan	Dubravko Lakos-Bujas	4,200	$205	-3.7%	20.5x
Morgan Stanley	Mike Wilson	3,900	$185	-15.0%	21.1x
Ned Davis	Ed Clissold	4,500	$200	-6.3%	22.5x
Oppenheimer	John Stoltzfus	4,400	$230	7.5%	19.1x
Piper Sandler	Michael Kantrowitz	3,225	$215	1.1%	15.0x
RBC	Lori Calvasina	4,250	$213	0.2%	20.0x
Scotiabank	Hugo Ste-Marie	3,900	$206	-3.2%	18.9x
Societe Generale	Manish Kabra	3,800	$212	-0.3%	17.9x
Stifel Nicolaus	Barry Bannister	4,400	$202	-5.3%	21.8x
Wells Fargo	Chris Harvey	4,200	$200	-6.3%	21.0x
Average		4,117	$213		19.4x
SPX Market Price & Avg 2023 EPS		4,400	$213		20.7x
2023 Avg Price Target Relative to SPX Market Price					-6.9%
2023 Top-Down EPS Consensus Relative to SPX 2022 EPS of $220					-3.3%
**Data as of (7/6/23)*					



Source: Bloomberg

BANKING RISK

RISK TEAM
July 14th, 2023

NORTH Dakota Be Legendary. | Retirement & Investment

SUMMARY

Challenges

- Fed action to increase interest rate in order reduce inflation resulting in deposit outflows
- Risk from outflows related to debt deal
- CRE valuation compression among offices and retail

CRE

- Delinquencies remain below pre-pandemic level even in the hard-hit office and retail sectors and further valuation compression is expected
- Banks hold $390b of office debt which is less than 25% of CRE debt held by banks
- Smaller regional banks are the largest lenders to office and retail landlords and have loans several times their capital unlike larger banks which are better capitalized
- But, among regional banks median of office CRE loans is 2% of all loans held by banks and these banks carry 1.3% loan loss reserves for CRE. Further, LTV at 55-60% for almost all regional banks provides cushion

Bank Deposits

- Deposits as % of total asset remain elevated above historical levels even after recent withdrawals while loans-to-deposits remain low
- Net loan losses below the pre-pandemic level and near historical levels
- Fed's discount window usage is now a fraction of the elevated levels in March/April, and BFTP outstanding balance have maintained at the same level in since June, implying banks funding has stabilized
- As non-interest bearing deposits decreased, bank funding mix has changed towards brokered deposits and wholesale borrowings
- 23 large banks with >$100b assets recently passed Fed stress test
- There is enough cushion in the reverse repo balance to handle the additional outflows related to the debt deal

AGENDA

1. Challenges

2. Real Estate Stress

3. Bank Exposures to CRE

4. State of Bank Deposits

5. Conclusions

CHALLENGES

Fed drive to reduce persistent inflation

- Increased withdrawals due to better rates on government bonds; also hurts capital ratios
- FDIC backstop allows Fed to continue to increase rates
- Consumption impact
- Banks chastened by the regional banking crisis in March
    - Tightening lending standards; lower revenue hurts profitability
    - Higher refinancing costs for both commercial and retail
    - Residential mortgage holders unable to move due to higher costs
- Increased likelihood of recession

Outflows due to Debt deal

- Issuance of new government debt expected to reduce capital liquidity following the debt deal

Valuation compression among offices and retail

- Commercial mortgage holders are beginning to walk away leaving lenders holding the bag

AGENDA

1. Challenges

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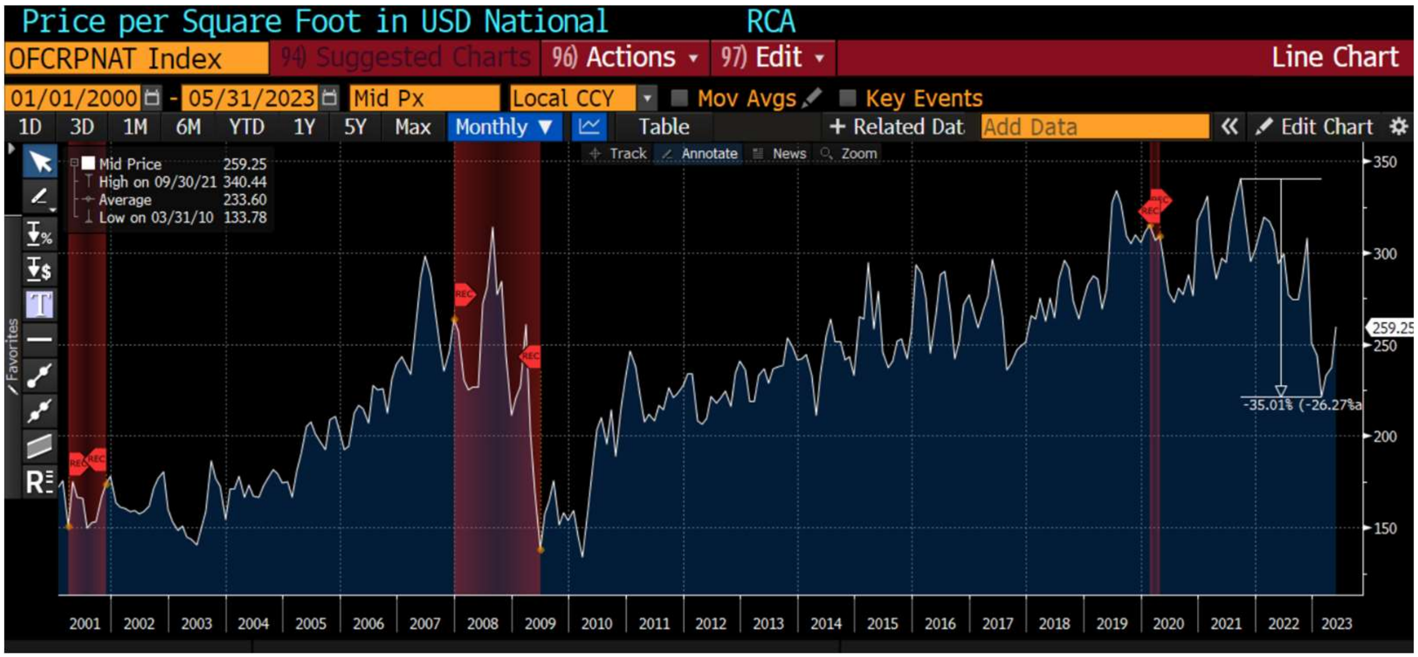
REAL ESTATE STRESS – OFFICE VALUES



- Office values declined as much as 35% before rebounding.
- Utilization of offices remains low following the pandemic and "work from home" has become the norm.
- Further downside is expected as office values are additionally constrained by higher interest rates and tighter lending by banks.

REAL ESTATE STRESS – LOAN DELINQUENCY RATES

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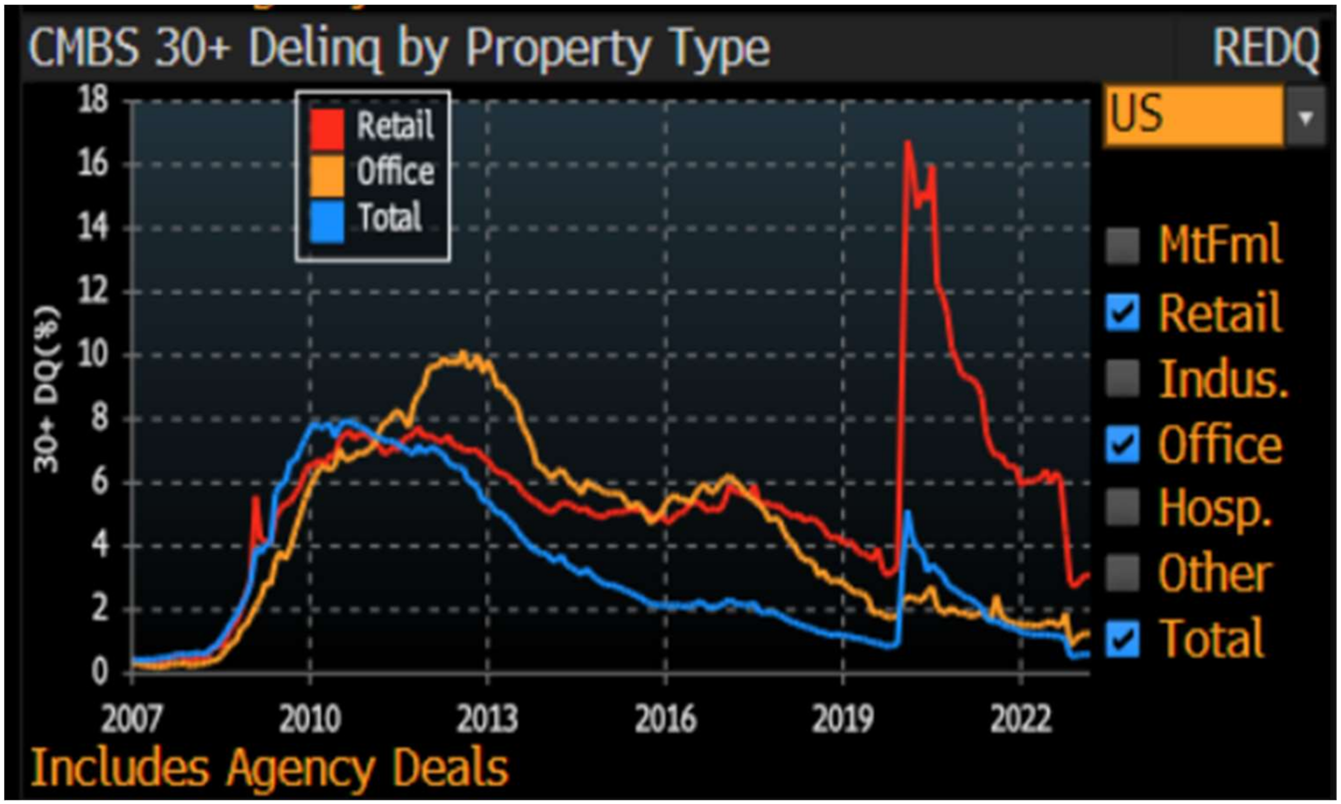

- Loan delinquency rates have declined considerably since the pandemic hit
- Yet, these have remained elevated above the pre-GFC rates
- Higher delinquencies due to rise in interest rates and expected onset of a recession are not yet evident
- Recent uptick in office delinquencies may be a harbinger for further increases

AGENDA

1. Challenges
2. Real Estate Stress
3. Bank Exposures to CRE
4. State of Bank Deposits
5. Conclusions

BANK EXPOSURES TO CRE –CRE AND OFFICE EXPOSURE

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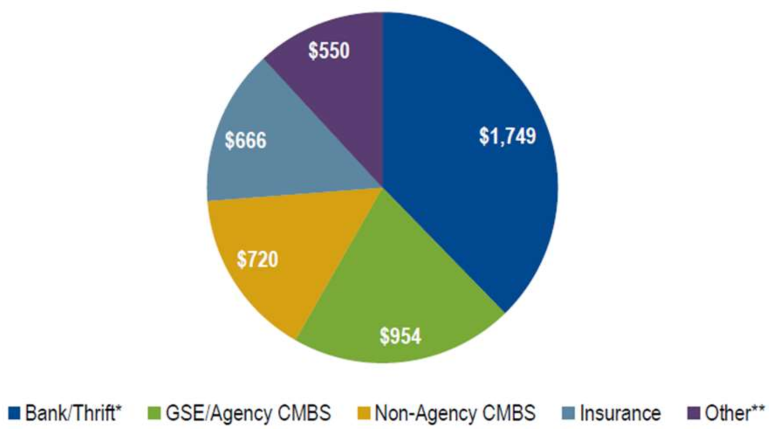
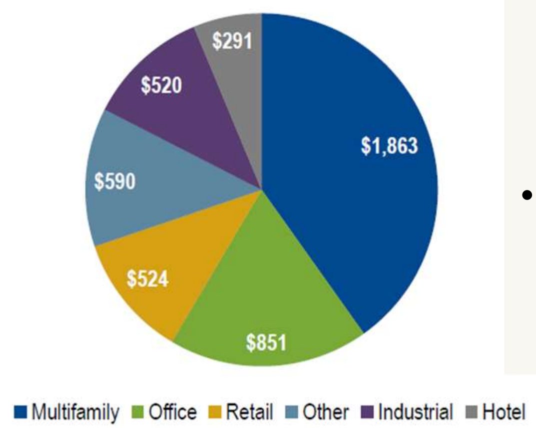
CRE Debt Outstanding

CRE Debt by Holder (USD Bn)



CRE Debt by Property Type (USD Bn)



- Banks hold nearly $390b of office debt which is over 45% of total office debt.
- But this less than 25% of total CRE debt held by banks and just 8% of the entire CRE debt

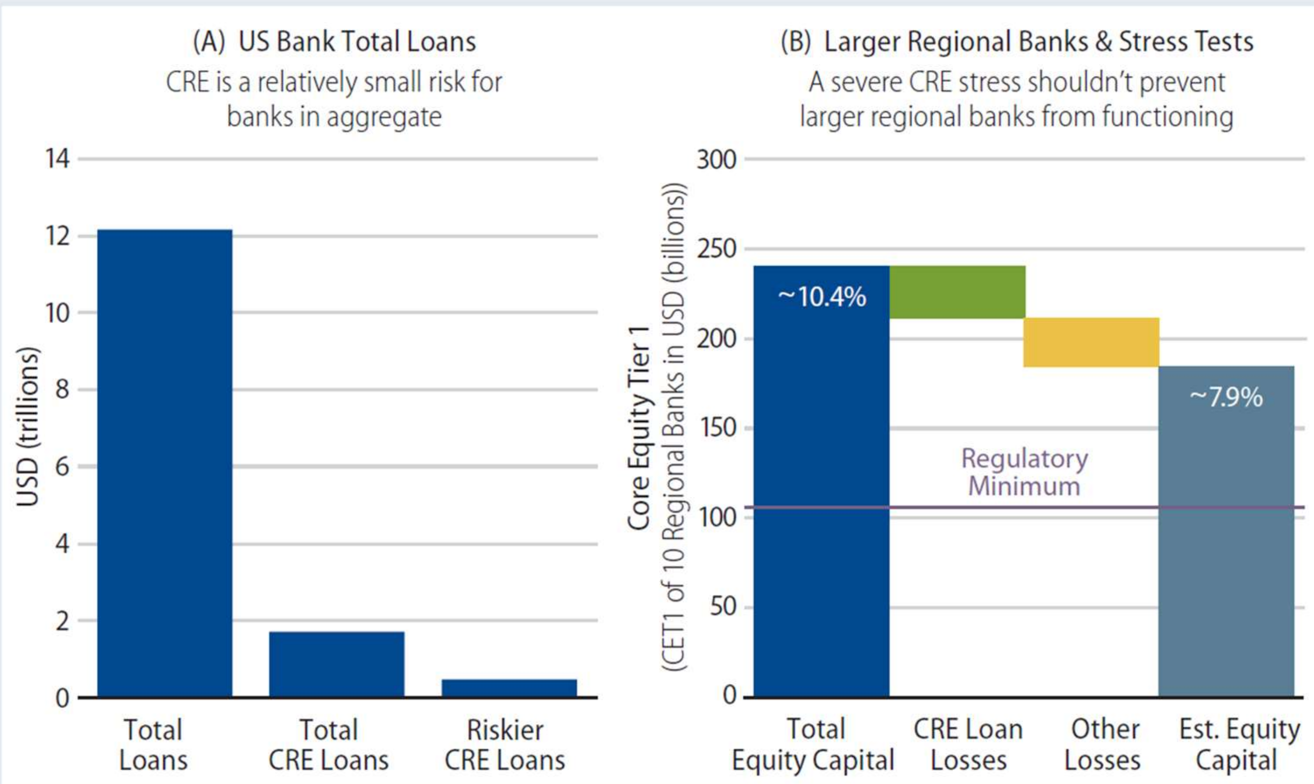
	Total 4Q 2022 (USD bn)	%	Multifamily (USD bn)	Office (USD bn)	Retail (USD bn)	Other (USD bn)	Industrial (USD bn)	Hotel (USD bn)
Bank/Thrift*	$1,749	38%	$437	$388	$197	$338	$263	$125
GSE/Agency CMBS	$954	21%	$953	$0	$0	$0	$0	$0
Non-Agency CMBS	$720	16%	$137	$180	$124	$119	$59	$101
Insurance	$666	14%	$200	$156	$125	$45	$121	$21
Other**	$550	12%	$136	$127	$78	$88	$78	$43
Total	$4,639	100%	$1,863	$851	$524	$590	$520	$291

Source: Bank of America. As of 03 May 23
**Excludes owner occupied and construction.*
***Other includes REIT, Govt, Pensions.*

WESTERN ASSET

BANK EXPOSURES TO CRE – LOSS ABSORPTION CAPACITY

Exhibit 2: Banks Have Sufficient Capital To Sustain CRE and Other Loan Losses



Source: (A) FDIC Q4 2022, (B) Federal Reserve Q2 2022.

- Out of a total of $12t in total loans, CRE loans are less than $2t and further riskier loans are less than $500b.
- Stress tests of large regional banks show their CET1 ratios to be well above regulatory minimum after accounting for CRE and other losses.

Western Asset

BANK EXPOSURES TO CRE – LARGE VS. SMALL

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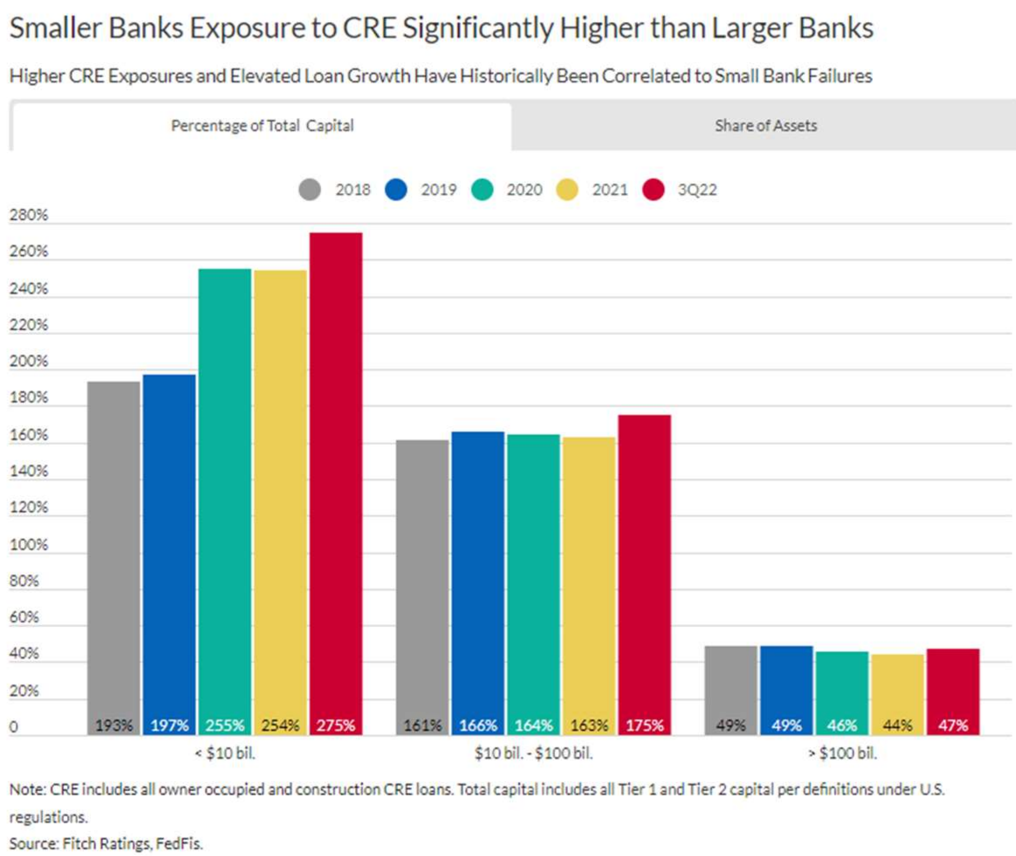

- As a percentage of total capital, small banks have CRE loans many times their assets.
- These small banks, however, are less than $10b in assets each. Mid sized banks also have CRE loans greater than total capital
- The impact of CRE exposure on bigger banks likely to be muted as bigger banks have both less exposure and are also better capitalized.

REGIONAL BANKS CRE RISK – OFFICE EXPOSURE

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Balances in millions	Office CRE Exposure			Comments
	($) Balance	As a % of Total Loans	Loan-to-Value	
Bank OZK	1,932	9%	≤65%	Updated office appraisals in 1Q indicate LTV only increased 3%
Citizens	6,282	4%	~60%	Class 'A' office reflects 57% of exposure
Comerica	553	1%	~50%	Most of office exposure was to suburban geographies
East West	2,377	5%	52%	No property type comprises more than 10% of the CRE book
Fifth Third	1,607	1%	N/A	Class 'A' office represents 70% of non-owner occupied office exposure
First Citizens	2,837	2%	N/A	44% of office CRE book scheduled to mature in 2026 and beyond
Huntington	2,068	2%	N/A	Office exposure is predominately suburban and multi-tenant
KeyCorp	950	1%	N/A	Class 'B/C' office comprises 13% of total exposure
M&T	5,150	4%	56%	75% of portfolio matures in 2025 or later
NY Community	3,420	4%	56%	Primarily class 'A/B' with no delinquencies or NPLs as of 1Q23
PNC	8,880	3%	55% - 60%	44% of office exposure to suburban market types, followed by central business districts at 29%
Regions	1,792	2%	58%	Office consists of 85% class 'A' and 17% class 'B' in terms of secured loan commitments
Truist	5,151	2%	~60%	Class 'A' office comprises about 60% of exposure
U.S. Bancorp	7,171	2%	N/A	Adjusted NCO rate on CRE was 19 Bps in 1Q23
Western Alliance	2,514	5%	<55%	Largely suburban exposure in "Work from Home" MSAs
Zions	2,193	4%	56%	Excercised CRE discipline with loan growth lagging peers over the past five years
Median		2%	56%	

Note: FITB office exposure reflects just non-owner occupied CRE. MTB Office LTV reflects investor-owned CRE properties.
OZK Office LTV reflects RESG portfolio absent of one credit at 85% and another at 84%

Bloomberg

- In sizing exposure across regional banks in our coverage, office CRE represents only 2% of loans at the median.
- Low loan-to-value ratios, at 55-60%, illustrate conservative underwriting and a healthy cushion to protect against potential losses even if office valuations decline another 20-30%.

AGENDA

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1. Challenges

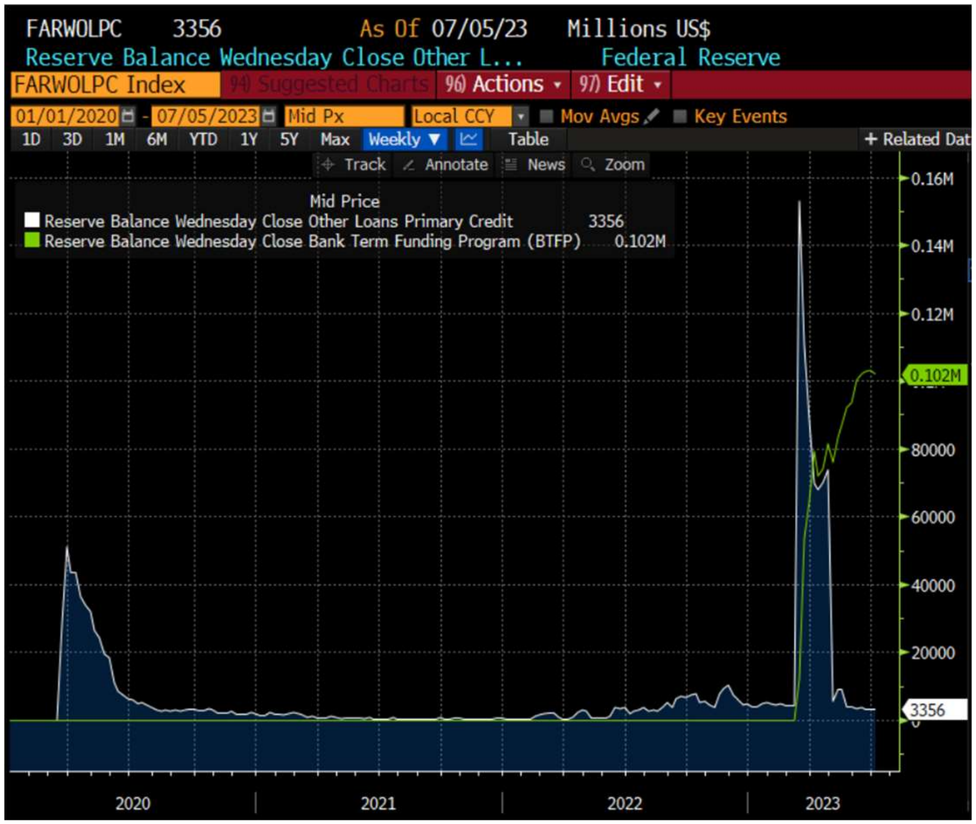
2. Real Estate Stress

3. Bank Exposures to CRE

4. State of Bank Deposits

5. Conclusions

STATE OF BANK DEPOSITS – BANK FUNDING FROM FED



- **Fed's discount window** usage is now below its elevated levels in March/April, implying banks funding has stabilized.

- In response to Silicon Valley Bank and Signature Bank's failure, Fed created a new **Bank Term Funding Program (BTFP)**, offering loans to depository institutions to pledge US Treasury, agency debt and MBS and other qualifying assets as collateral. The outstanding amount of BTFP has slowed after March crisis and maintained at $100bn since June.

STATE OF BANK DEPOSITS – LOAN TO DEPOSIT RATIO

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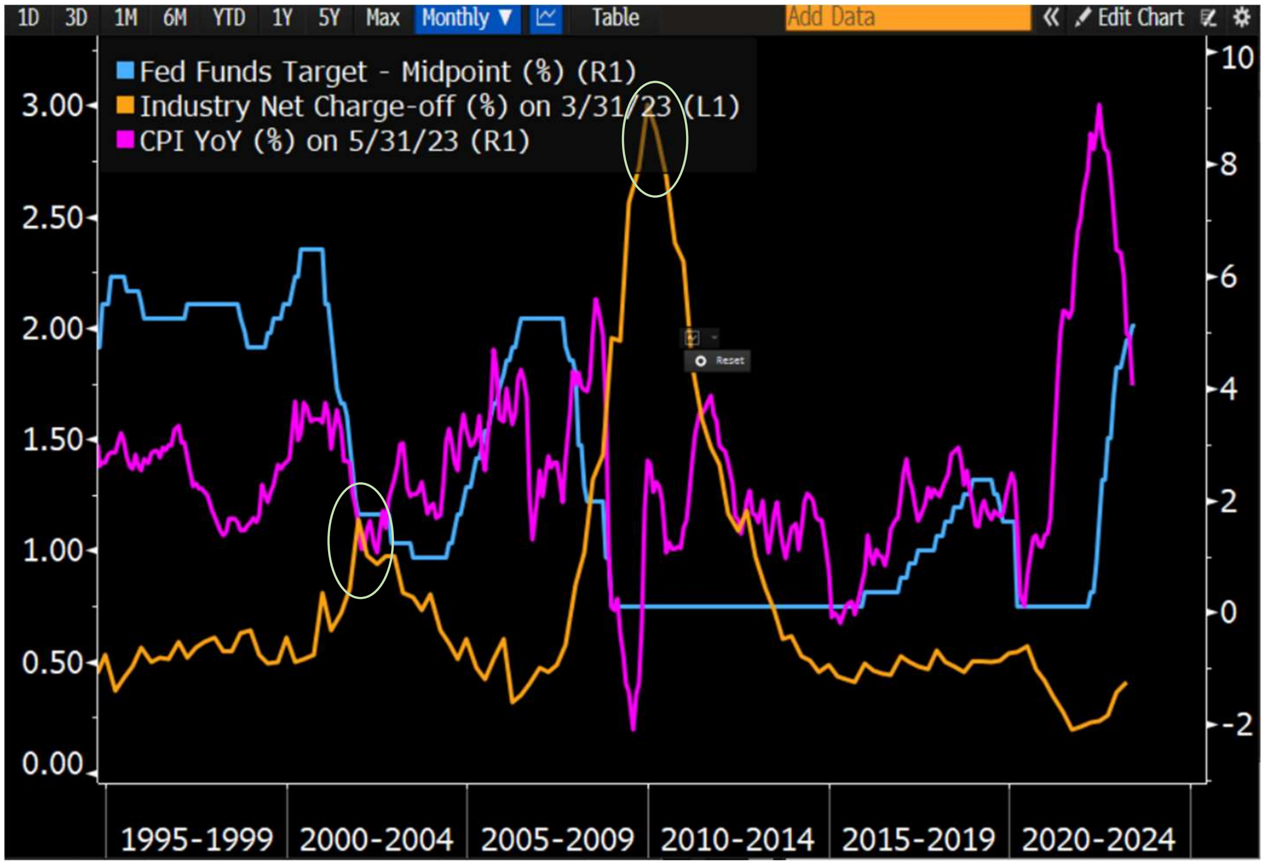
- Loan to deposit ratios in aggregate have risen recently from historic lows reached following the pandemic
- Prior to GFC, the aggregate Loans to Deposit stayed above 90%.
- Banks became more conservative thereafter as the ratio dropped to about 75% where it stayed until the pandemic
- Even after recent increase, the ratio remains below the pre-pandemic level low.

STATE OF BANK DEPOSITS – LOAN LOSSES



- Charge-offs remain near historical low
- Net loan losses accounted for 36bps of average loans in 4Q, below the pre-pandemic level. In comparison, median losses have been 56 bps over the past 20 years
- For context, following the tech bubble burst default rates went above 1% while the highs in the past 30-yrs was nearly 3% during GFC

STATE OF BANK DEPOSITS – FUNDING MIX CHANGE

	Net Interest Income	Non-Int Bearing Deposits	Int Bearing Deposits ex. CDs	CDs	Wholesale Borrowings	Int-Bearing Deposit Costs	Wholesale Borrowing Costs	Total Int-Bearing Liability Costs
Bank OZK	4%	-6%	2%	20%	-23%	87 Bps	15 Bps	77 Bps
Citizens	-3%	-9%	-1%	13%	12%	51 Bps	67 Bps	56 Bps
Comerica	-5%	-9%	0%	17%	102%	55 Bps	48 Bps	92 Bps
East West	-1%	-8%	-6%	25%	94%	75 Bps	83 Bps	80 Bps
Fifth Third	-4%	-7%	0%	51%	-3%	64 Bps	61 Bps	62 Bps
First Citizens	6%	0%	4%	27%	8%	61 Bps	36 Bps	59 Bps
Huntington	-4%	-6%	0%	37%	17%	64 Bps	75 Bps	71 Bps
KeyCorp	-10%	-14%	0%	72%	13%	62 Bps	73 Bps	70 Bps
M&T	0%	-12%	1%	88%	114%	69 Bps	80 Bps	88 Bps
NY Community	46%	76%	12%	31%	44%	47 Bps	94 Bps	65 Bps
PNC	-3%	-9%	2%	58%	6%	59 Bps	91 Bps	65 Bps
Regions	1%	-7%	-2%	25%	18%	34 Bps	23 Bps	37 Bps
Truist	-3%	-7%	-2%	64%	17%	64 Bps	70 Bps	72 Bps
U.S. Bancorp	8%	9%	5%	3%	14%	42 Bps	80 Bps	51 Bps
Western Alliance	-5%	-14%	4%	30%	25%	78 Bps	70 Bps	83 Bps
Zions	-6%	-10%	-4%	58%	76%	50 Bps	87 Bps	95 Bps
Median	-3%	-8%	0%	30%	17%	62 Bps	72 Bps	71 Bps

Bloomberg

- Zero-cost deposits (checking and demand deposit account) balance has came down since its peak last year.
- To offset this, Banks use fundings from CD (including retail and brokered CD) and wholesale borrowing (including Fed funds, FHLB advances etc.)
- Funding mix changes drove up banks’ funding costs and will likely impact income

STATE OF BANK DEPOSITS – STRESS TEST

Table 5. Capital ratios, actual 2022:Q4 and projected 2023:Q1–2025:Q1 under the severely adverse scenario: 23 banks

Percent

Bank	Common equity tier 1 capital ratio			Tier 1 capital ratio			Total capital ratio			Tier 1 leverage ratio			Supplementary leverage ratio[1]		
	Actual 2022: Q4	Ending	Mini-mum	Actual 2022: Q4	Ending	Mini-mum	Actual 2022: Q4	Ending	Mini-mum	Actual 2022: Q4	Ending	Mini-mum	Actual 2022: Q4	Ending	Mini-mum
Bank of America	11.2	11.1	10.6	13.0	12.9	12.4	14.9	14.9	14.6	7.0	6.8	6.6	5.9	5.8	5.6
Bank of NY-Mellon	11.3	16.0	12.8	14.4	19.0	15.8	15.3	20.0	16.8	5.8	7.6	6.3	6.8	9.0	7.5
Barclays US	13.5	10.2	9.3	15.1	11.8	11.0	16.9	13.8	13.0	8.2	6.3	5.8	5.8	4.4	4.1
BMO	12.6	9.3	9.3	13.5	10.2	10.2	15.0	12.2	12.2	9.9	7.4	7.4			
Capital One	12.5	8.0	8.0	13.9	9.3	9.3	15.8	11.3	11.3	11.1	7.5	7.5	9.5	6.3	6.3
Charles Schwab Corp	21.9	27.0	22.8	28.9	34.0	29.8	28.9	34.3	29.9	7.2	8.4	7.4	7.1	8.4	7.3
Citigroup	13.0	9.7	9.1	14.8	11.5	10.9	17.3	13.9	13.5	7.1	5.3	5.0	5.8	4.4	4.2
Citizens	10.0	6.4	6.4	11.1	7.5	7.5	12.8	9.6	9.6	9.3	6.3	6.3			
Credit Suisse USA	27.8	20.7	20.5	29.0	21.9	21.7	29.2	21.9	21.7	19.8	14.8	14.6	16.4	12.3	12.2
DB USA	26.1	17.5	17.4	34.4	26.7	26.6	34.4	27.0	26.9	10.4	7.4	7.3	9.5	6.7	6.7
Goldman Sachs	15.0	12.6	10.1	16.6	14.2	11.7	19.1	16.6	14.6	7.3	6.2	5.0	5.8	4.9	4.0
JPMorgan Chase	13.2	11.9	11.1	14.9	13.5	12.7	16.8	15.4	14.8	6.6	6.0	5.6	5.6	5.1	4.8
M&T	10.4	7.0	7.0	11.8	8.4	8.4	13.6	10.3	10.3	9.2	6.5	6.5			
Morgan Stanley	15.3	14.9	11.2	17.2	16.8	13.2	19.3	19.0	15.5	6.7	6.5	5.0	5.5	5.4	4.1
Northern Trust	10.8	12.2	11.4	11.8	13.2	12.3	13.9	16.0	15.0	7.1	7.9	7.4	7.9	8.8	8.3
PNC	9.1	8.0	7.9	10.4	9.4	9.2	12.3	11.1	11.1	8.2	7.4	7.3	6.9	6.2	6.1
RBC USA	15.0	10.8	10.8	15.0	10.8	10.8	15.6	12.0	12.0	9.9	7.0	7.0			
State Street	13.6	17.8	13.8	15.4	19.7	15.7	16.8	21.3	17.2	6.0	7.6	6.0	7.0	8.8	7.0
TD Group	17.4	15.9	15.9	17.4	15.9	15.9	18.6	16.9	16.9	9.2	8.4	8.4	8.1	7.4	7.4
Truist	9.0	6.7	6.7	10.5	8.2	8.2	12.4	10.8	10.8	8.5	6.6	6.6	7.3	5.7	5.7
UBS Americas	16.1	8.0	8.0	23.3	16.1	16.1	23.4	17.4	17.4	8.5	5.3	5.3	7.7	4.8	4.8
US Bancorp	8.4	6.9	6.6	9.8	8.4	8.1	11.9	10.5	10.3	7.9	6.7	6.4	6.4	5.4	5.2
Wells Fargo	10.6	8.4	8.2	12.1	9.9	9.7	14.8	12.7	12.6	8.3	6.7	6.6	6.9	5.6	5.4
23 banks	12.4	10.7	10.1	14.1	12.4	11.8	16.1	14.5	14.1	7.5	6.6	6.2	6.3	5.6	5.2

Note: The capital ratios are calculated using the capital action assumptions provided within the supervisory stress testing rules. See 12 C.F.R. §238.132(d); 12 C.F.R. §252.44(c). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratios are for the period 2023:Q1 to 2025:Q1.

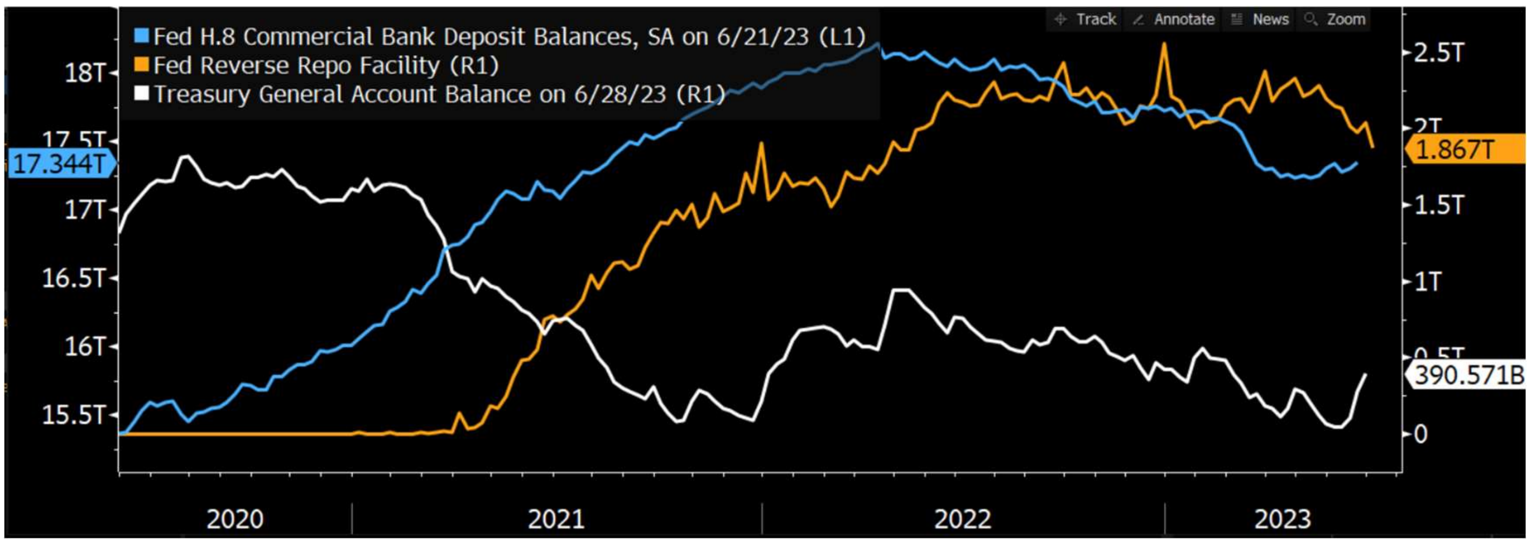
[1] Supplementary leverage ratio projections only include estimates for banks subject to Category I, II, or III standards.

2023 Fed Stress Test

- Participants
  - 23 banks with over $100bn assets are subjected to this year's stress test
- Severely Adverse Scenario
  - This scenario is characterized by a severe global recession with unemployment peak to 10%, Real GDP declines 8.75%, equity prices fall 45%, VIX reaches 75, home prices fall 38%, commercial real estate prices drop 40% etc.
- Results
  - All 23 banks passed the stress test

STATE OF BANK DEPOSITS – DEBT DEAL IMPACT

NORTH Dakota Be Legendary.™



- Treasury's new issue debt is expected to pull liquidity from Bank Deposits and Reverse Repo.
- Reverse repo balance started to trend lower since debt deal approved but still has $1.9tn balance
- Although deposit volume has declined ~$1tn since its peak in 2022, it's still $3tn cushion before it hits the pre-pandemic level

AGENDA

North Dakota Be Legendary.™

1. Challenges

2. Real Estate Stress

3. Bank Exposures to CRE

4. State of Bank Deposits

5. Conclusions

CONCLUSIONS

Limited systemic risk

- Fed action to increase interest rate in order reduce inflation resulting in deposit outflows mitigated by banks' liability mix changes and Fed's BTFP program
- 23 large banks recently passed Fed stress tests showing their ability to handle such outflows and systemic risk is limited
- Risk from outflows related to debt deal is mitigated by substantial reverse repo balance
- CRE valuation compression among offices and retail remains a concern
- Some smaller banks have a higher risk from capital outflows and commercial real estate, yet collectively these are well positioned to handle significant CRE losses

NORTH Dakota | Retirement and Investment
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MEMORANDUM

To: **SIB Investment Committee**

From: **Nitin Vaidya**

Date: **July 11, 2023**

RE: **Annual Affirmation of Code of Conduct Policy**

Governance Process Policy B-8, *Board Members' Code of Conduct,* which is attached to this memorandum, details the Code of Ethical Responsibility for the SIB. Item #10 of this policy indicates that each Board Member is required to reaffirm their understanding of this policy annually and disclose any conflicts of interest. Therefore, please read and sign the statement below to comply with this requirement.

"I have read and understand SIB Governance Process Policy B-8 *Board Members' Code of Conduct*. I have disclosed any conflicts of interest as required by this policy."

Name (printed) ________________________________

Signature_____________________________________

Date____

Detail of any conflicts of interest (if any):

POLICY TYPE: GOVERNANCE PROCESS

POLICY TITLE: *BOARD MEMBERS' CODE O F CONDUC T*

The following will be the Code of Ethical Responsibility for the SIB:

1. SIB members owe a duty to conduct themselves so as to inspire the confidence, respect, and trust of the SIB members and to strive to avoid not only professional impropriety but also the appearance of impropriety.

2. SIB members should perform the duties of their offices impartially and diligently. SIB members are expected to fulfill their responsibilities in accord with the intent of all applicable laws and regulations and to refrain from any form of dishonest or unethical conduct. Board members should be unswayed by partisan interest, public sentiment, or fear of criticism.

3. Conflicts of interest and the appearance of impropriety shall be avoided by SIB members. Board members must not allow their family, social, professional, or other relationships to influence their judgment in discharging their responsibilities. Board members must refrain from financial and business dealings that tend to reflect adversely on their duties. If a conflict of interest unavoidably arises, the board member shall immediately disclose the conflict to the SIB. A board member must abstain in those situations where the board member is faced with taking some official action regarding property or a contract in which the board member has a personal interest. Conflicts of interest to be avoided include but are not limited to: receiving consideration for advice over which the board member has any direct or indirect control, acting as an agent or attorney for a person in a transaction involving the board, and participation in any transaction involving for which the board member has acquired information unavailable to the general public, through participation on the board.

   "Conflict of Interest" means a situation in which a board member or staff member has a direct and substantial personal or financial interest in a matter with also involves the member's fiduciary responsibility.

4. The board should not unnecessarily retain consultants. The hiring of consultants shall be based on merit, avoiding nepotism and preference based upon considerations other than merit that may occur for any reason, including prior working relationships. The compensation of such consultants shall not exceed the fair value of services rendered.

5. Board members must abide by North Dakota Century code 21-10-09, which reads: "No member, officer, agent, or employee of the state investment board shall profit in any manner from transactions on behalf of the funds. Any person violating any of the provisions of this section shall be guilty of a Class A misdemeanor."

6. Board members shall perform their respective duties in a manner that satisfies their fiduciary responsibilities.

7. All activities and transactions performed on behalf of public pension funds must be for the exclusive purpose of providing benefits to plan participants and defraying reasonable expenses of administering the plan.

8. Prohibited transactions. Prohibited transactions are those involving self-dealing. Self-dealing refers to the fiduciary's use of plan assets or material, non-public information for personal gain; engaging in transactions on behalf of parties whose interests are adverse to the plan; or receiving personal consideration in connection with any planned transaction.

9. Violation of these rules may result in an official reprimand from the SIB. No reprimand may be issued until the board member or employee has had the opportunity to be heard by the board.

10. Board Members are required to affirm their understanding of this policy annually, in writing, and must disclose any conflicts of interest that may arise (See Exhibit B-I).

Policy Implemented: June 23, 1995.
Amended: January 22, 1999, February 25, 2011, January 27, 2012, February 27, 2015.