Private Equity Program Review

ASRS Staff Presentation

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Outline

1. Background
   - The Private Equity Program
   - Private Equity Investment Approach
2. Private Equity Performance
3. Portfolio Composition

Private Equity

- ASRS has allocated 8% of total assets (+/- 2%) to private equity as part of its strategic asset allocation
- ASRS began investing in private equity in 2007
- The NAV of PE assets was $ 2296 million on September 30, 2014
  - This is 6.73% of total fund and the NAV is $ 433 million below target funding (retroactively applying the recently adopted 8% target)
- We update pacing plans annually to adjust investment levels to achieve and maintain target funding
- Investment pace for 2015 is $600 million in new commitments, although this will be reevaluated in light of the recent increase in the allocation to 8% from 7%

Investment Philosophy

We believe successful private equity investing hinges on three considerations

- Strategy
- Track Record
- Organizational Dynamics

Strategy

- Academic research provides evidence on the performance of private equity[1]
  - Private Equity buyout funds outperform public markets by about 20% in total value over the life of a fund
  - Venture Capital has underperformed
- A review of the ASRS portfolio leads to conclusions about comparative performance
  - Mid sized buyout funds deliver the best and most consistent returns
  - Firms with specialized expertise in restructuring or an industry sector often do well

[1] Harris, Jenkinson and Kaplan. Private Equity Performance: What Do We Know? The Journal of Finance, October 2014.

Strategy

- ASRS favors
  - Buyout strategies that emphasize organizational transformation instead of mere financial engineering
  - Investments in growing sectors with high demand for capital (energy) or high revenue growth potential (technology, healthcare)
  - Investments in sectors impacted by regulatory change (financial services)
  - Investments with sponsors having specialized expertise in restructuring, bankruptcy and turnaround situations
- ASRS is underweight
  - Venture Capital
  - Europe
  - Emerging Markets

Track Record

- Private equity performance has a fairly high level of dispersion
  - "Top quartile" funds outperform median funds by 5% to 10% depending on vintage
  - It is exceedingly rare for managers to perform persistently in the top quartile, but we do find managers persistently above median
  - ASRS implements private equity to provide diversification by manager, strategy and vintage year
- ASRS utilizes "PME" methods for performance assessment
  - PME (public market equivalent) measurements compare private equity returns to returns in public markets as if you invested in the public markets on the same days and in the same amounts as were invested in the PE fund
  - ASRS has been a leader in this realm, implementing software for PME methods nearly two years before it was commercially available through Bloomberg and other services[2]

[2] For a detailed explanation of PME methods, see this conference presentation http://www.rinfinance.com/agenda/2014/talk/KarlPolen.pdf

Performance Tracking

- In connection with creation of the software for the PME calculations, ASRS has built a performance tracking and reporting system for private assets
- Grosvener remains the official book of the record and the ASRS system works from information downloaded from the Grosvener system
- The ASRS system generates
  - a monthly reporting package
  - a quarterly performance chart pack
  - an internal website with cash flow and performance metrics on each partnership

"Hunter, not hunted"

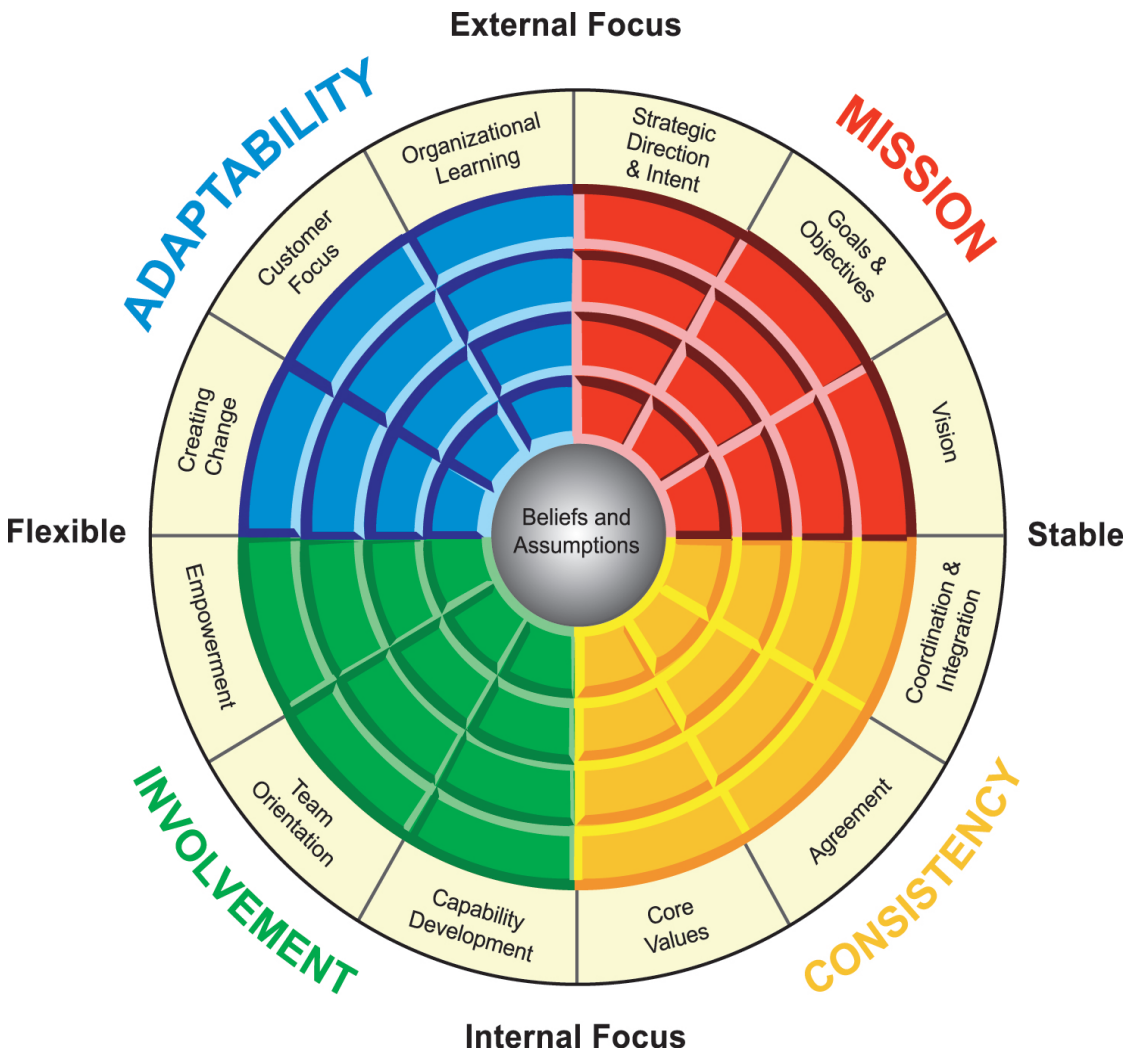
- ASRS uses quantitative screens from the Preqin database and PME methods to discern private equity sponsors with persistent excellent results
- ASRS has established an outbound program to pursue investments with the most highly qualified sponsors

Organizational Dynamics

- Although we place much emphasis on quantitative analysis to discern performance
  - this analysis is not securities analysis
  - the new investor does not participate in the track record deals
  - private equity investing is best thought of as a team hiring decision
- Traditional private equity diligence places emphasis on stability
  - But common sense suggests that the best firms will by dynamic, evolving with changing conditions, weeding out weak performers and promoting high performers
  - Research has found that stability is a negative indicator of performance[3]

[3] Cornelli, Simintzi and Vig. Team Stability and Performance in Private Equity. 2014 Working Paper. http://www.collerinstitute.com/Research/Paper/264

Organization Assessment



- ASRS engaged Denison Consulting to assist in developing skills in organizational assessment
  - Developed interview questions to explore organizational attributes of adaptability, mission, involvement and consistency
  - Ongoing work to explore deeper dive organizational assessment

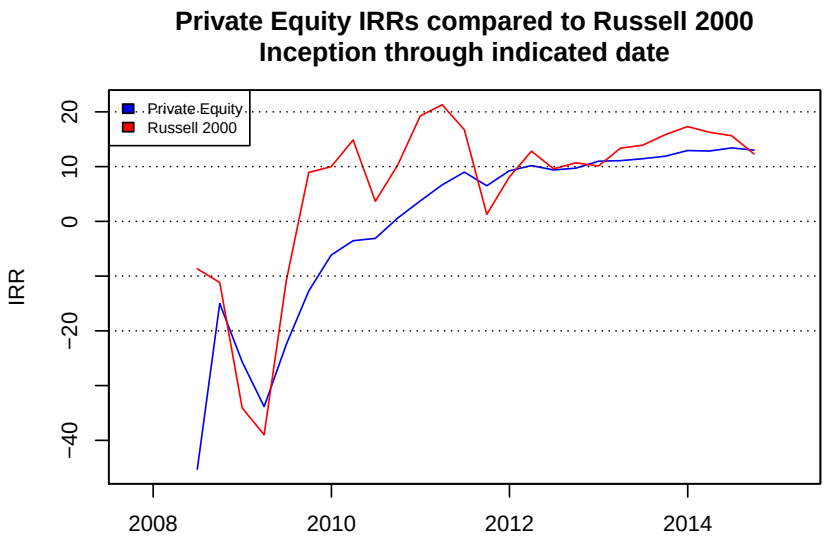
Comparison to Russell 2000 (September 30, 2014)

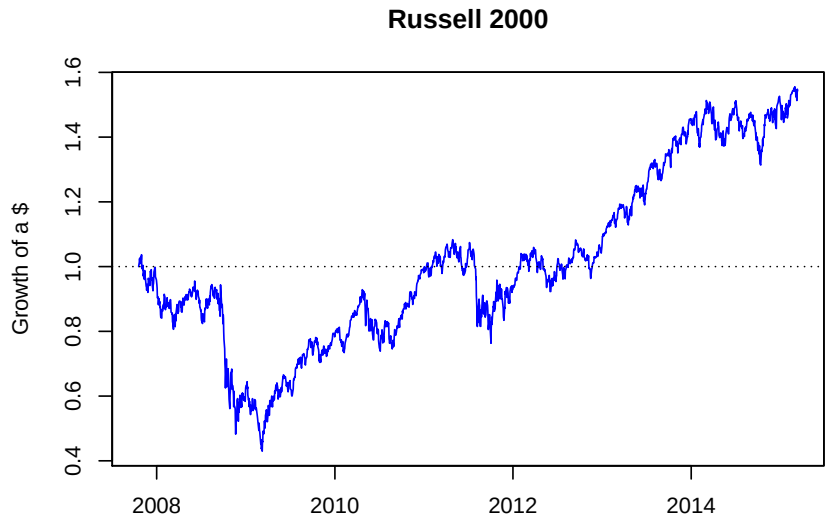
TWRs and IRRs Compared to Russell 2000

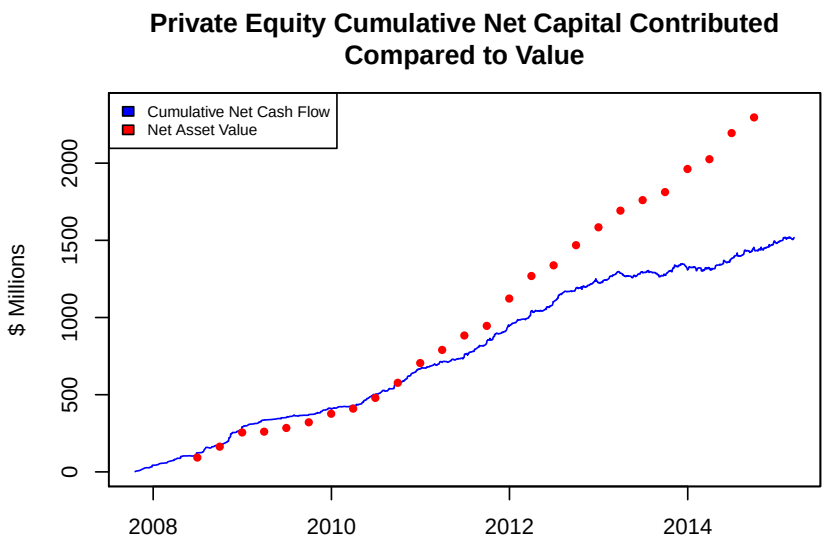
	One Quarter	One Year	Three Years	Five Years	Inception
Private Equity TWR	1.75%	16.75%	16.19%	15.70%	5.29%
Russell 2000 TWR	-7.36%	3.93%	21.26%	14.29%	5.95%
Private Equity IRR	1.75%	16.66%	16.37%	15.75%	13.02%
Russell 2000 IRR	-7.67%	2.33%	18.18%	12.88%	12.30%

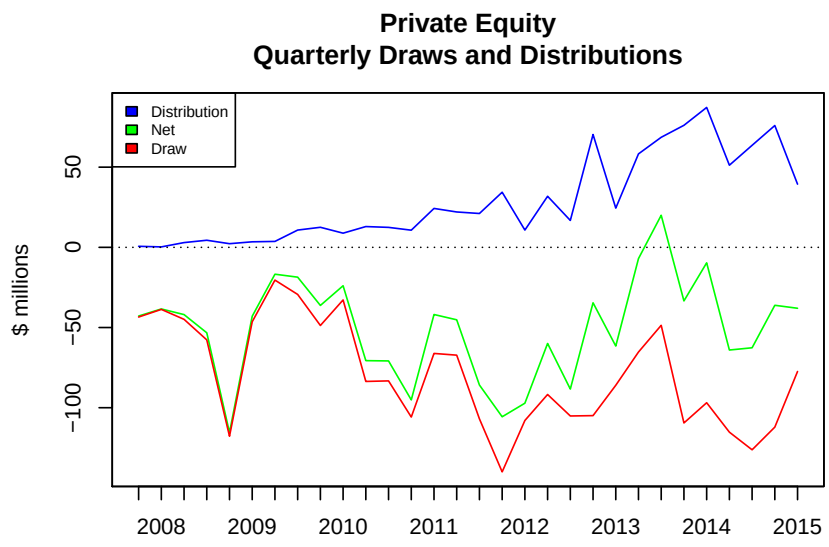
Current and Legacy Portfolios

Fund	R2K PME	Fund IRR	R2K $Mtch IRR	Fund TVPI
Total PE	1.02	13.02%	12.30%	1.39
Total PE Legacy Portfolio	1.02	13.08%	12.52%	1.48
Total PE Current Portfolio	1.02	12.60%	11.02%	1.17


Private Equity IRRs compared to Russell 2000
Inception through indicated date
Private Equity
Russell 2000
IRR
20
10
0
−20
−40
2008
2010
2012
2014


Russell 2000
Growth of a $
1.6
1.4
1.2
1.0
0.8
0.6
0.4
2008
2010
2012
2014


Private Equity Cumulative Net Capital Contributed
Compared to Value
Cumulative Net Cash Flow
Net Asset Value
$ Millions
2000
1500
1000
500
0
2008
2010
2012
2014


Private Equity
Quarterly Draws and Distributions
Distribution
Net
Draw
$ millions
50
0
−50
−100
2008
2009
2010
2011
2012
2013
2014
2015

Performance Compared to Other PE (September 30, 2014)

Private Equity Comparative Performance

	One Quarter	One Year	Three Years	Five Years	Inception
Private Equity TWR	1.75%	16.75%	16.19%	15.70%	5.29%
Russell 2000 TWR	-7.36%	3.93%	21.26%	14.29%	5.95%
Burgiss TWR	0.06%	16.42%	13.84%	13.59%	4.98%
Private Equity IRR	1.75%	16.66%	16.37%	15.75%	13.02%
Russell 2000 IRR	-7.67%	2.33%	18.18%	12.88%	12.30%
Burgiss IRR	0.06%	16.24%	13.95%	13.57%	11.32%

Private Opportunistic Equity (September 30, 2014)

Private Opportunistic Performance

	One Quarter	One Year	Three Years	Five Years	Inception
Private Opportunistic TWR	-1.79%	45.68%	28.17%	NA%	23.71%
Absolute 8 TWR	2.00%	8.00%	8.00%	NA%	8.00%
Private Opportunistic IRR	-1.79%	42.79%	NA%	NA%	31.89%
Absolute 8 IRR	1.96%	8.00%	NA%	NA%	8.00%

- The NAV in private opportunistic equity assets was $372 million as of September 30, 2014
- While we customarily compare opportunistic investments to an absolute return benchmark
  - The inception to date dollar matched IRR for an investment in Russell 2000 would have been 12.73%

Performance Outlook

- Performance above is reported for periods ending September 30, 2014
  - As of the date of preparation of this report, 10 out of 80 funds have year end results in the Grosvener back office system
    - among those ten, one is up in performance, three are down and six are flat (IRR changed less than one percent)
- Energy price changes are expected to impact performance in Q4 numbers
  - Price impacts will be offset by hedging gains since most of our partners hedge two to three years of production
  - 15% of the portfolio in the ground is in energy and the net impact of energy exposure is expected to be negative
  - Only one of the funds with reported year end results is an energy fund
    - Blackstone Energy Partners reports an inception IRR of 39.8% for Q4 2014 compared to 54.2% for Q3 2014

ASRS Portfolio by Vintage

ASRS Portfolio Commitments by Vintage

	Commitment $	# of Funds	Commitment/Fund
2006	50	1	50
2007	483	15	32
2008	688	15	49
2009	386	8	48
2010	370	8	44
2011	659	12	55
2012	325	5	58
2013	550	10	61
2014	620	11	52
	4,131	85	49

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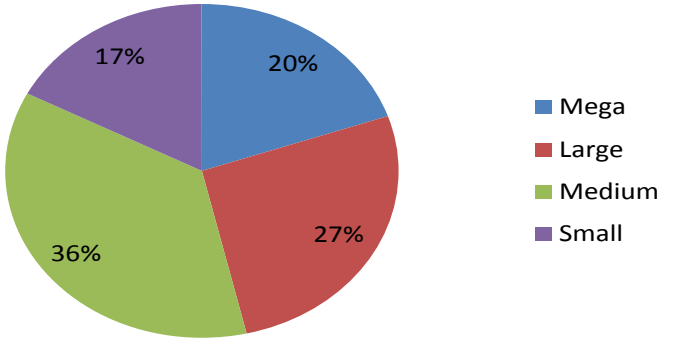
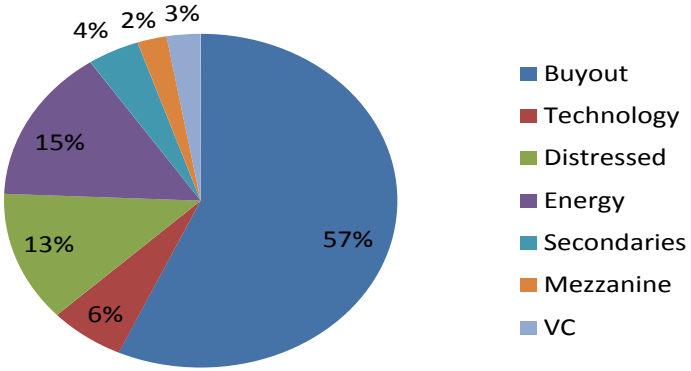
ASRS Commitments by Style

ASRS Portfolio Commitments by Style

	Commitment $
Total Mega Buyout	462
Total Large Buyout	626
Total Medium Buyout	853
Total Small Buyout	407
Total Buyout	2,348
Total Technology	255
Total Distressed	522
Total Energy	615
Total Secondaries	176
Total Mezzanine	100
Total Venture Capital	115
Total	4,131





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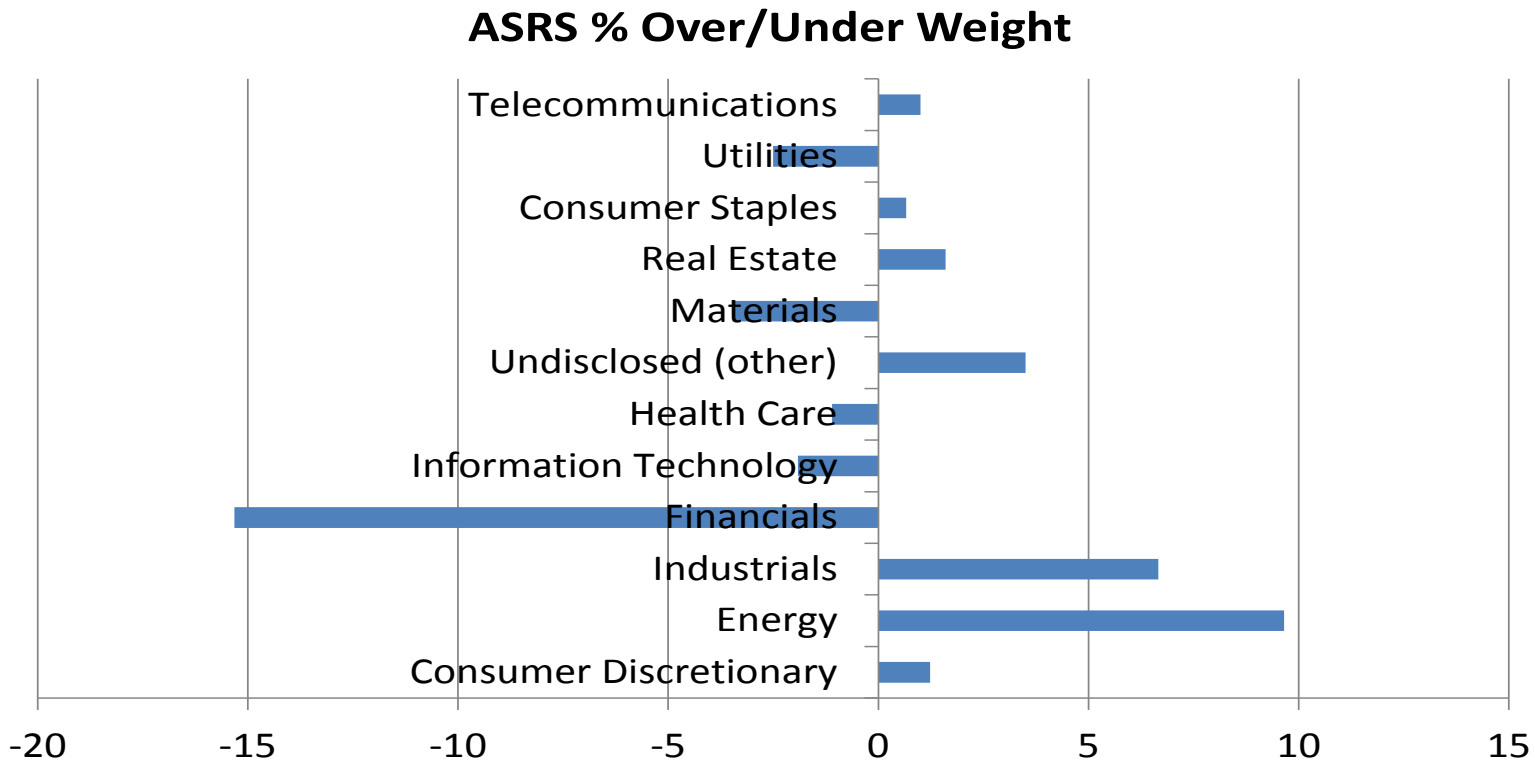
ASRS PE Industry Sectors Compared to R2K

ASRS Portfolio Commitments vs R2K



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