Size Matters:

The Balance of Power Is Shifting in the Pension Industry

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This article summarizes Dr. Allan Timmermann's presentation and subsequent discussion at a meeting of The Brandes Center's Advisory Board [i].

Executive Summary
Researchers identify four specific aspects where "large beats small" in the pension plan world:
1. Asset allocation: Large plans have been able to allocate more to alternative asset classes
2. Investment mandates: Large plans have been more likely to adopt internal management across a wider set of sub asset classes
3. Investment management costs: Significant cost economies-of-scale, particularly for public asset classes and for passively managed accounts
4. Return performance: Large plans have earned higher gross and net returns, particularly on their holdings in private asset classes

"If you remember only one phrase from my presentation" said Professor Allan Timmermann[ii], **"remember this…the key number is 0.76"**. Timmermann is the Dr. Harry M. Markowitz Endowed Chair in Finance and Investing and Distinguished Professor of Finance at UC San Diego's Rady School of Management.

Large and small pension funds, their consultants and asset managers may want to understand better the financial and other forces that have changed the asset management industry and will continue to shape it into the future.

Timmermann was presenting a paper (on behalf of himself and three co-authors). "Scale Economies, Bargaining Power, and Investment Performance: Evidence from Pension Plans" runs 60 pages, and he provided 42 charts. The full report is available here.

There is a great deal of information in the paper, and it would be unjust to give the impression that it can be summed up in a single phrase or number.

While I encourage readers to delve into the full paper, in this article I aim to highlight the authors' primary conclusions along with a summary of the research behind them. Also included are comments by members of The Brandes Center Advisory Board on the topics, as well as an eventual explanation of the importance of the "0.76" highlighted by Timmermann.

The authors' research focuses on the importance of plan size for:

- Asset Allocation
- Investment Style
- Investment Management Costs
- Investment Performance

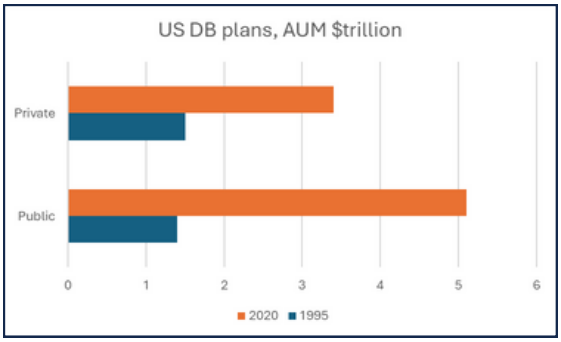
Then, controlling for size, they examine how the impact of a plan's choice of style affects costs and performance when comparing:

- Internal vs external asset management
- Active vs passive

The results are based on extensive and unique data provided by Toronto-based CEM Benchmarking, which surveys and collects data from more than 1,000 defined benefit ("DB") plans worldwide (just over half based in the United States) with collective assets of more than $9 trillion at the end of the study's period of 1991-2019.

"Size matters," notes Timmermann. And despite the freezing or closure of many DB plans in the US, DB plan assets have grown significantly over the past 25 years.

Figure 1 | Growth of US-based DB plan assets (1995-2020)



Source: Scale Economies, Bargaining Power, and Investment Performance: Evidence from Pension Plans

However, size is not always a plus in Timmermann's view. Larger plans do have scale economies, including more bargaining power due to their ability to bring asset management in-house (reducing costs and increasing control). However, in active management of public equities, size can be a disadvantage in the search for alpha.

Led by large plans, the aggregate allocations to alternative asset classes (private equity, real assets and hedge funds) have nearly quadrupled since the early 1990s according to Timmermann, while public market allocations of stocks and fixed income dropped from 90% to around 70% in 2019. Within that allocation, there has been a noticeable shift toward specialization.

As shown in Figure 2, the increase in specialization is particularly notable in stocks, but also significant in bond allocations. While these changes may be initiated by the plans, asset managers have increased their offerings in these specialized areas in which fees tend to be higher, and alpha may be more attainable. Timmermann notes that plan decisions on public asset allocations are more sensitive to costs than decisions on private asset classes, and this leads to the next aspect of the research: comparing internal to external, and active to passive management.

This asset allocation comparison can be measured across four style categories:

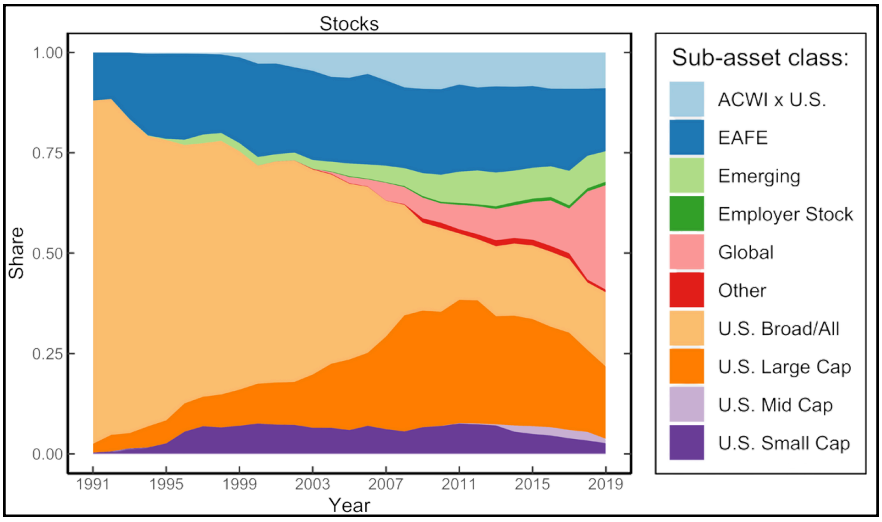
- Internal Passive ("IP")
- External Passive ("EP")
- Internal Active ("IA")
- External Active ("EA")

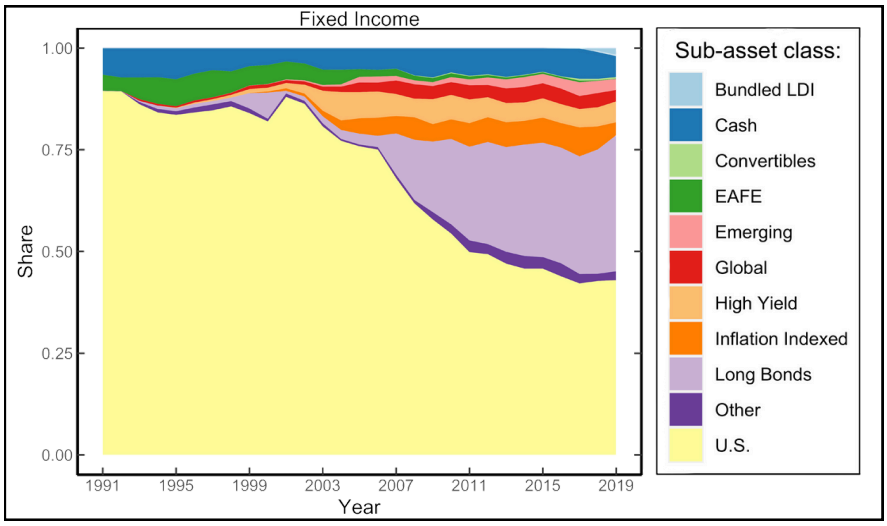
The differences between large and small plans are shown in Figure 3. Large plans' substantial use of internal management (brown and blue bars) is evident for both stocks and bonds. Small plans are minimal users of internal management in the public markets.

Advisory Board member Zev Frishman noted that in his experience as an outsourced CIO for smaller institutions, while they may have highly qualified investment committee members, they generally could not justify internal staff for cost reasons.

Timmermann commented on the scale advantage for large plans, giving them the ability to absorb the relatively fixed costs of an internal team. In response to a question from Board member Paul Erlendson, he pointed out that key individual risk could act as a deterrent for plans below the very largest size bracket. The risk of key people leaving may be acceptable to the biggest plans with substantial personnel and financial resources, but could be a big problem for plans who can afford only a small internal team. Given the competitive hiring environment in the industry, that risk may jump when an internal team or individual is outperforming: exactly when the plan most wants to retain them.

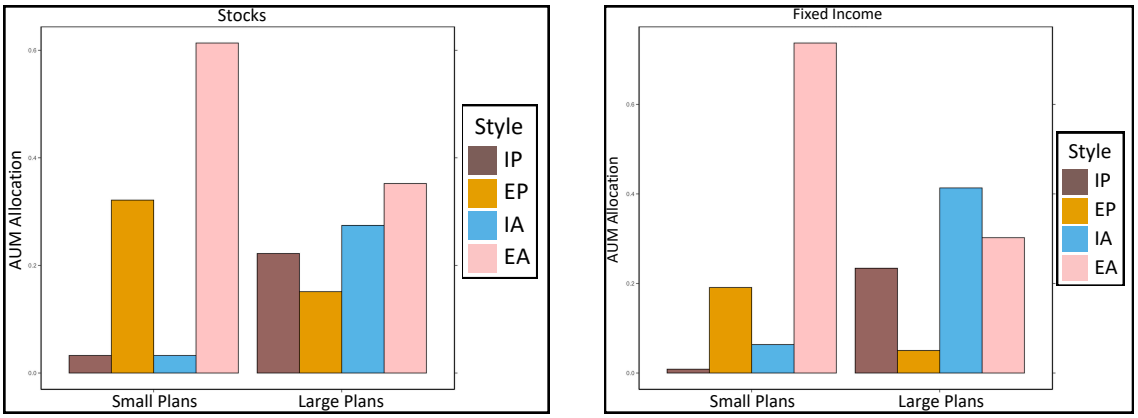
Figure 2 | Increased specialization, DB plan allocation to sub-asset classes, stocks and bonds, 1991-2019





Source: Scale Economies, Bargaining Power, and Investment Performance: Evidence from Pension Plans

Figure 3 | Asset allocation in public markets by mandate and plan size (large vs small)



Source: Scale Economies, Bargaining Power, and Investment Performance: Evidence from Pension Plans. Scale on left axis represents the proportion of total stock or bond allocation in each category. Small plans are defined as the smallest 30% in the survey by AUM, and large plans as the largest 30%.

The active/passive mix does not vary significantly by size of plan (the total of the brown and gold bars), but large plans' extensive use of internal management is clear in Figure 3 for both active and passive assets. With deeper pockets, large plans may be more confident of their ability to identify and hire skilled active managers, generating higher returns at lower cost.

But with great size comes great market impact! Timmermann noted that even if internal teams at the largest plans can identify specific opportunities in public markets, their sheer size may restrict them from taking advantage. This fits with the increased specialization shown in Figure 2, illustrating the need for both external and internal managers to seek out segments in world markets where liquidity and their own capacity management allow them to find opportunities without market impact absorbing all their potential gains.

For asset managers in public markets, the growth of passive investing, along with large plans' tendency to internalize, suggests that increased specialization may be more than a business strategy. It may be a requirement for survival over the long term.

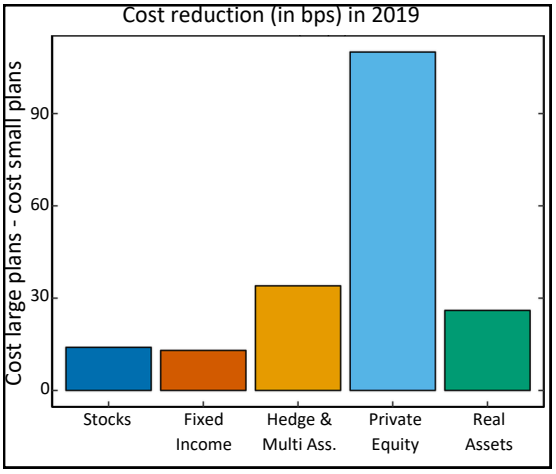
The private markets are a different story, however. With much higher cost structures and the absence of a passive option, to the extent that small plans use private assets, they must rely on external management. Board member Kim Shannon, CFA, questioned whether smaller funds should even be investing in private assets, while noting that "the pressure is enormous."

The authors' research data shows that large plans (especially those outside the US) now use internal management for significant proportions of their private market allocations. For private debt and real assets, this proportion is close to half for the largest funds (top 10% of assets), and around a quarter for private equity.

Board member Barclay Douglas noted that the status of a DB fund may also impact the decision to manage internally. With many such funds now using liability-driven investing ("LDI") strategies, their propensity to use internal management is very different from more active DB funds, or other institutions in their size bracket.

Turning to costs, the research documents the significant impact of the size effect, as well as the differences between the four categories (style mandates). Figure 4 shows the scope of cost reduction between the largest and smallest plans.

Figure 4 | Investment management costs: Spread between smallest (bottom 10%) and largest (top 10%) plans.



Source: Scale Economies, Bargaining Power, and Investment Performance: Evidence from Pension Plans.

While the cost reduction in private equity stands out, readers should bear in mind that private asset fees are much higher than those in public market assets, as illustrated in Figures 5 and 6. Note that while these charts show scaled, not actual costs, the scales on the left axis of these charts are comparable. In every chart, however, it is clear that the cost of External Active ("EA") is materially higher than internal (and of course passive, in the styles where that is an option). Over time, Timmermann noted, there is evidence that internal and external costs are converging for passive mandates, but no sign of that in active mandates.

Economies of scale are evident in the data, and the paper's authors discovered a power law for costs, identifying the degree to which each asset class is truly scalable from a cost perspective. Regardless of whether internal or external, active or passive, they found that a plan's costs were proportional to the assets under management raised to a power "beta." They found that while the law holds for each asset class, the values of beta varied significantly.

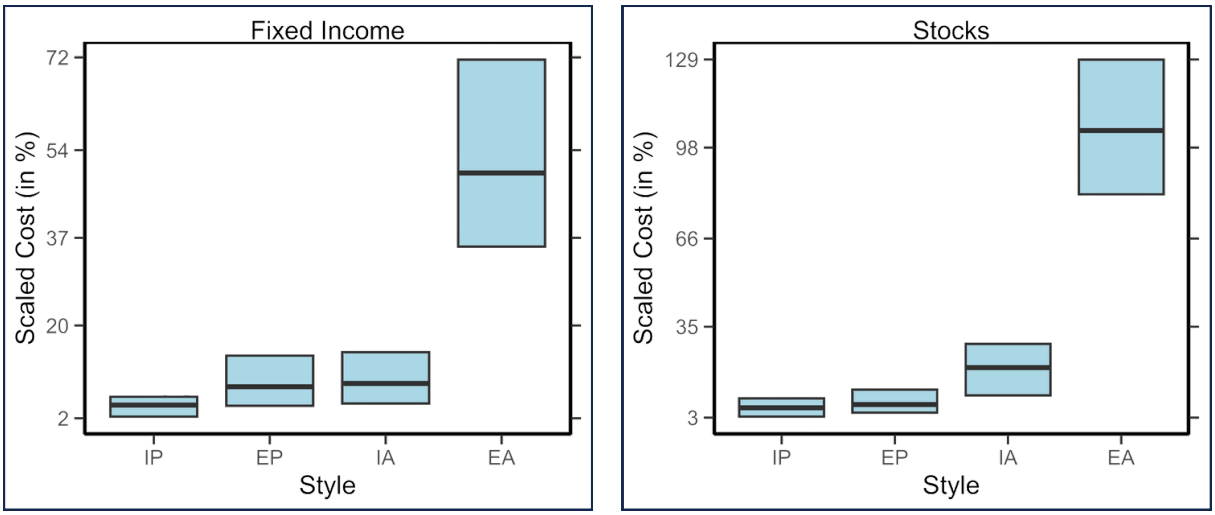
Exhibit 1| Power law for costs and assets under management holds across asset classes.

$$Cost^{\$} \propto AUM^{\beta}$$

Scale Economies, Bargaining Power, and Investment Performance: Evidence from Pension Plans.

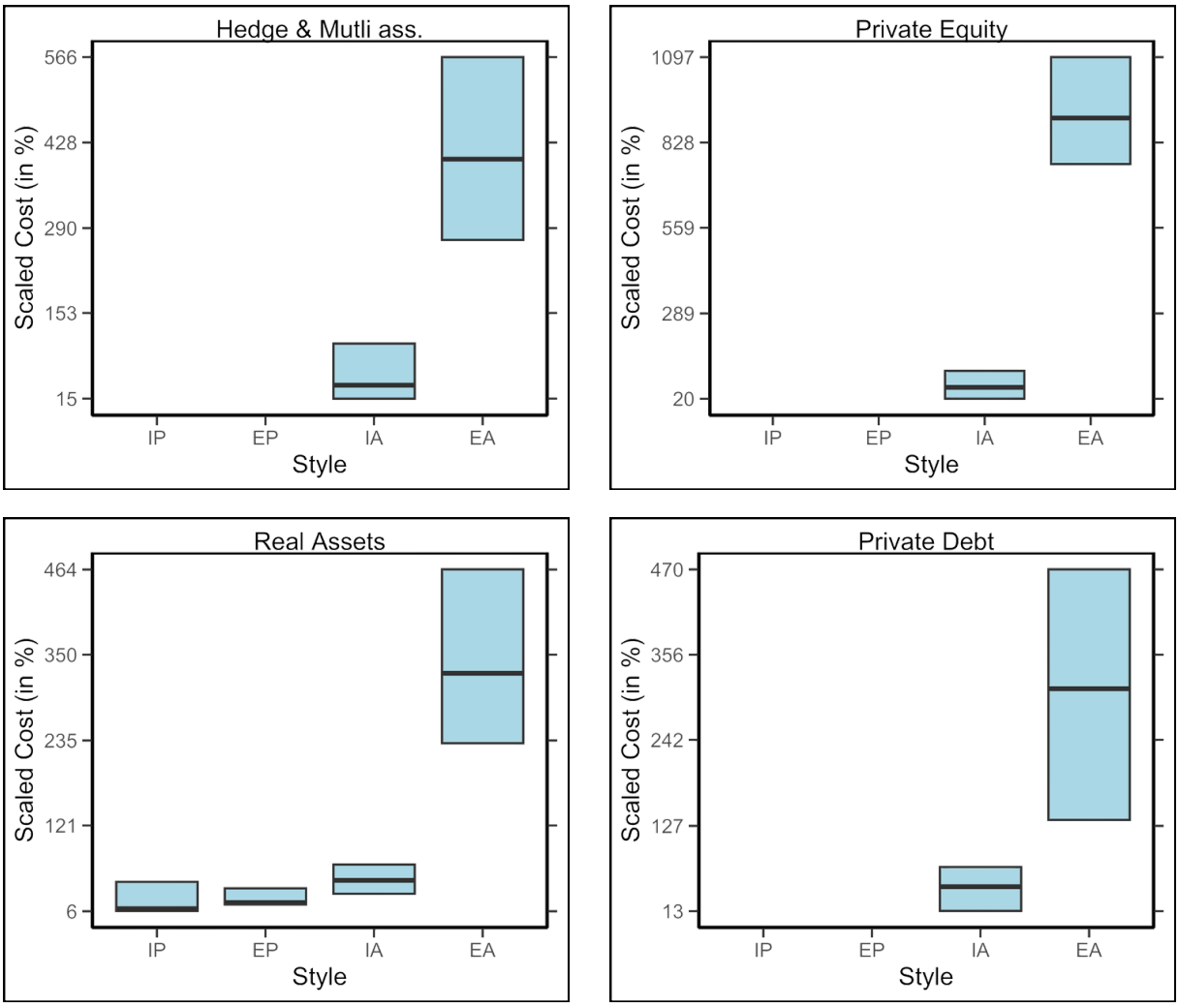
If beta is less than one, it means the asset class is scalable: costs as a proportion of assets decline as assets increase. However if beta is close to (or even above) one, then there is no gain from scaling in size. Recall Timmermann's quote at the start of this article: "...the key number is 0.76". That's the beta the researchers calculated for internal passive management of stocks. Well below one, it signifies that this is one of the most scalable asset classes. In contrast, betas above one signify that these asset classes are not scalable at all in regard to costs. Figure 7 illustrates what the beta for each asset class translates to for the universe of pension plans covered by this research. As well as the beta for each asset class, it shows the percentage reduction in basis point cost when comparing the largest 10% of plans with the smallest 10%.

Figure 5 | Cost spread by category (mandate type), 2019, public assets



Source: Scale Economies, Bargaining Power, and Investment Performance: Evidence from Pension Plans.

Figure 6 | Cost spread by category (mandate type), 2019, private assets



Source: Scale Economies, Bargaining Power, and Investment Performance: Evidence from Pension Plans.

Figure 7 | Economies of scale: The power law beta and resulting reduction in basis point costs between largest and smallest plans

	Beta	% Change in BP Cost (Largest v Smallest)
PUBLIC ASSETS		
STOCKS		
Internal Passive	0.76	-68%
External Passive	0.75	-69%
Internal Active	0.89	-40%
External Active	0.88	-38%
FIXED INCOME		
Internal Passive	0.80	-66%
External Passive	0.79	-58%
Internal Active	0.84	-50%
External Active	0.94	-25%
PRIVATE ASSETS		
HEDGE FUNDS		
External Active	0.95	-18%
PRIVATE EQUITY		
Internal Active	1.01	6%
External Active	0.93	-30%
PRIVATE DEBT		
Internal Active	0.95	-29%
External Active	0.94	-22%
REAL ASSETS		
Internal Active	1.01	3%
External Active	1.02	-29%

Source: Brandes Center; Scale Economies, Bargaining Power, and Investment Performance: Evidence from Pension Plans.
Note: Reduction in costs is the percentage reduction in basis point cost ("BP cost") when comparing the largest 10% of plans with the smallest 10% in the pension plans covered in this research paper.

In the private markets, betas for internal active private equity and real assets are above one. Figure 7 shows that for these asset classes, the largest plans actually pay higher costs (in basis points) than their smaller counterparts. While the bargaining power of larger plans may help them in reducing costs in both public and private assets, the structure of private markets restricts cost scaling there and as such, plan managements are presumably targeting higher returns. This important topic is the final one addressed in the authors' research.

They hypothesize that because larger plans have better access to skilled managers and (debatably) more skill in selecting these, they should be more able to beat their policy benchmarks than their smaller counterparts. Coupling this with the previously identified cost benefits enjoyed by larger plans, the authors expect both gross and net relative returns to improve for large plans versus small.

The study's data bears out this hypothesis, with the improvement more significant for private assets than for public ones. We note that the use of policy-adjusted returns may also contribute to this difference to the extent that larger plans may use more tailored policy-adjusted benchmarks than their less sophisticated smaller counterparts.

Figure 8 shows that large plans benefit from both the cost and return aspects of their size. The higher returns, especially in private asset classes, are boosted at the net level by lower costs.

Timmermann and his co-authors have cast a wide net over the aspects of management that drive the choices of pension plans across the size spectrum. They conclude that plan size is the primary driver of many of these choices, pointing out that it improves bargaining power and access to the best managers while increasing the ability to reduce costs by managing assets internally.

Figure 8 | Improvement in gross and net policy-adjusted returns for large plans vs small

Annualized change in basis points

	Public	Private
Gross	17	139
Net	31	203

Source: Scale Economies, Bargaining Power, and Investment Performance: Evidence from Pension Plans.
**Note: Difference when comparing the largest 10% of plans with the smallest 10% in the pension plans covered in this research paper.*

For smaller plans that may not enjoy the same benefits as larger plans, Timmermann suggested, "Co-managed—pooled—accounts in the private asset space combined with passively managed ETFs for public assets such as stocks and bonds would appear to be a sensible strategy to adopt."

In sum, the researchers identify four specific aspects where "large beats small" in the pension plan world.

1. **Asset allocation:** Large plans have been able to allocate more to alternative asset classes.
2. **Investment mandates:** Large plans have been more likely to adopt internal management across a wider set of sub-asset classes.
3. **Investment management costs:** Significant cost economies-of-scale, particularly for public asset classes and for passively managed accounts.
4. **Return performance:** Large plans have earned higher gross and net returns, particularly on their holdings in private asset classes.

We hope this article has been of help in understanding the key topics addressed in the authors' research. For those who want more detail, please read the full paper. And for those who want less, just remember Timmermann's quote: "the key number is 0.76." As you now know, that's from the power law (see Figure 7) that drives a 68% reduction in the largest plans' cost of internally managing passive stocks compared to the smallest plans.

[i] Advisory Board members who are quoted in this article include Barclay Douglas, Paul Erlendson, Zev Frishman and Kim Shannon, CFA. Frishman is former chief investment officer with Morneau Sheppell and former vice president of global equity strategies with the Ontario Teachers' Pension Plan. Douglas is founder of Criterium Advisors. Erlendson is former senior consultant at Callan and Shannon is founder and co-CIO at Sionna Investment Managers.

[ii] Dr. Allan Timmermann is a member of The Brandes Center's Academic Council.

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