

**Report of the State Board of Education
Committee of the Full Board
Work Session
March 10, 2010**

The State Board of Education Committee of the Full Board met at 9:08 a.m. on Wednesday, March 10, 2010, in the State Board of Education Room, #1-104, of the William B. Travis Building, 1701 N. Congress Avenue, Austin, Texas. The following members of the committee were present:

Presiding: Gail Lowe, chair; Rick Agosto, Lawrence A. Allen, Jr., David Bradley, Barbara Cargill, Bob Craig, Cynthia Dunbar, Pat Hardy, Mavis B. Knight, Terri Leo, Don McLeroy, Ken Mercer, Rene Nuñez

Absent: Mary Helen Berlanga, Geraldine Miller

DISCUSSION ITEM

1. Work Session on Review of the Long-Term Strategic Asset Allocation Plan of the Permanent School Fund
(Board agenda page I-233)

Mrs. Lowe introduced this item and reminded committee members that asset allocation for the Fund is the most important decision that the board makes. Mr. Rhett Humphreys, Partner and Sr. Consultant, with NEPC began his presentation by giving a brief overview of his firm. He stated that NEPC ran the current portfolio through their capital assumption model which encompasses their five to seven year outlook for the global economy and individual asset classes. He further stated that the results of these simulations help NEPC understand how the Fund would perform going forward and where the risks to the portfolio were embedded. Mr. Humphreys continued with a description on how his firm developed their capital market assumptions and asset return forecasts.

Mr. Humphreys stated that 2009 was a welcome respite from the 2008 market meltdown. He added that market valuations are at normalized levels, credit markets are functioning as intended and there has been a general return to normalcy across most of the financial spectrum. He further stated however, with the run up in equities and credit spreads coming back down there are new issues that have surfaced which include inflation, value of the U.S. dollar and expected long term returns. He stated that given the amount of money that will be required to pay for the federal budget deficit there is a concern that inflation will rise over the next 12-18 months. NEPC has some ideas on how the PSF asset allocation should be adjusted to reflect the inflation concerns they forecast. He added that the value of the U.S. dollar is also a concern as it would have an effect on domestic inflation. He added that this theme should be manifested in the portfolio. He continued by stating that his third concern was their forward looking returns which are somewhat more subdued than previous forecasts. He stated that these lower forecasts have consequences for the PSF as well as other funds.

Mr. Humphreys continued by describing the general action items based on their observations which include understanding where their clients risks reside and looking at risk budgeting. He added that this is the most important and insightful outcome of the asset allocation process. Mr. Humphreys continued with a review of the role of fixed income, building a strategy exposure to real assets including real estate, commodities and TIPS. He added that clients are considering illiquid investments for increased expected returns. He stated that the Fund is already moving in that direction with a six percent allocation to both real estate and private equity to exploit this sector. He continued by stating that his firm is advising clients to invest in emerging market equity and debt as these countries are in good fiscal condition.

Mr. Humphreys stated that the first step of NEPC as an advisor is to come up with quantitative numbers that include risk, correlations and returns. He described the process by which his firm develops these numbers and the assumptions behind them. Mr. Humphreys explained what is meant by geometric return which is mainly a calculation that compounds returns. Mr. Craig asked whether NEPC had a forecast for risk parity returns. Mr. Humphreys responded that they do. He added that risk parity is a collection of asset classes and not an asset class per say. So in coming up with an assumption they have to collect all asset classes and weight them according to the specific manager being used. He added that there are approximately half a dozen managers that do this and do it differently and thus they have forecasts for each manager. Mr. Craig noted that in the major asset class review table, there was a very significant decline in capital market assumptions from the peak in 2009 to 2010. Mr. Humphreys responded that equity markets were cheap in 2007 and 2008 so they moved their forecast for 2009 large cap equities up from 8.50% to 9.25%. He stated that in 2009 the market corrected and went back to more normalized levels and in fact was somewhat overvalued, so NEPC moved the 9.25% to a more subdued level.

Mr. Humphreys continued with a brief description of the theory behind the efficient frontier and described the chart plotting it. Mrs. Hardy asked how did the arithmetic chart compared with the geometric chart. Mr. Humphreys responded that they have habit of showing both charts but that the two curves in the chart one for 2009 and one for 2010 tie these two concepts together. He added that by taking the returns, risks and correlations and putting them through an optimizer they build a set of portfolios and plot them in the chart one gets the 2009 line which is in geometric terms. He continued by describing the changes that have occurred in their forecast during the last three years. He continued with describing the 2010 asset allocation and portfolio characteristics of the PSF. He added that this was an illustration and not a recommendation to the board. He stated that page 16 of the presentation illustrates to the board what NEPC could do that would either increase the return of the portfolio, or more importantly keep the return about the same but decrease its risk.

Mrs. Hardy stated that in the chart, NEPC has risk parity as an asset class and that Mr. Humphreys had stated earlier that it was a strategy that should be part of absolute return. Mr. Humphreys responded that risk parity is not a traditional asset class in the same way that absolute return is not an asset class since it is a collection of hedge funds. He added that risk parity was a collection of asset classes made up of U.S. large cap equities, international and emerging market equities, bonds, commodities and emerging market debt. Mr. Bradley asked that if this was a collection of asset classes why would a fund not apply that to 100% of their assets. Mr. Humphreys responded that in

theory one would do this in the traditional portfolio. He stated that however, NEPC is not advocating this and that risk parity was a way to implement an asset allocation. He also added that it was not a panacea since there are other issues and risks involved. He stated that they would not recommend more than five or ten percent in risk parity which is their typical approach with their clients.

Mr. Craig stated that in the illustrative example NEPC had picked a particular manager for that illustration and asked who was picked. Mr. Humphreys responded that they used Bridgewater Associates because they were the first firm in the country implement this strategy. He added that they manage passively and not actively. Mr. Craig added that he realized that NEPC was not necessarily recommending a new asset allocation at this time, but they may come back with a recommendation that would include with multiple scenarios to consider or just one. Mr. Humphreys stated that they would come with a number of options.

Mrs. Lowe asked Mr. Humphreys if there were guidelines on the appropriate risk in the portfolio or is it based on the risk tolerance of the trustees. He responded that risk is very difficult to predict but that the asset allocation quantitatively reduces risk and the outcome will not be exact. He added one can try to target a risk of 10% but since there is no great confidence that it will exactly come true. He stated that they look at risk metrics, particularly the Sharpe Ratio and ask from the policy construct how is a return earned relative to the risk and how this risk/return measure up with institutional averages. He stated that you cannot control risk you can only control diversification.

Mrs. Hardy stated that he mentioned that they used the model of Bridgewater for risk parity and since this was a new area it would be hard to go back in history, she wanted to know what happened with Bridgewater during the downturn in the financial markets. Mr. Humphreys responded that they had managed their portfolio for eleven years with an average return in double digits. He stated that everything has been working for the last 11 or 12 years and in 2008, their portfolio went down just like everybody else.

Mrs. Knight asked whether there was a relationship between risk and leverage. Mr. Humphreys responded that there is a very direct relationship between risk and leverage. He stated that leverage is added to a portfolio, the risk is implicitly increased. He added that this is a simplistic view and added that you can use leverage to reduce risk in a portfolio. Mr. Agosto asked how leverage would be implemented in the portfolio. Mr. Humphreys stated that there are many types of leverage including plan level leverage similar to that used in portable alpha strategies. He added there is also leverage at the individual level of the portfolio such as in the direct underlying hedge funds in the absolute return portfolio. Mr. Agosto asked on how funding to risk parity would take place. Mr. Humphreys responded that to the extent that the Board moved ahead, they may want to move slowly.

Mr. Humphreys added that the final piece of the presentation was to describe how the risk of the portfolio was comprised. He stated that risk budgeting determines where risk in the portfolio comes from. He gave an example of having a portfolio of 50% equities and 50% bonds with a 10% risk. He added that if you were to decompose that risk of 10% you would find that about 80% of the risk

would come from equities. He stated that equities in this case dominate the risk budget. He added that the board is already moving in the direction of minimizing that risk by diversifying the portfolio. He explained the risk budget of the Fund's policy target and stated that the risk from public equities was 77% with 53% capital allocation to equities. Mrs. Hardy stated that she understands what she is looking at on page 18 but going back to page 16, it implies that the illustrative portfolio is not a recommendation and asked to know why it was not a recommendation. Mr. Humphreys stated that they were timing this out with staff and the investment committee and did not want to rush in to giving a recommendation.

Mr. Humphreys continue with NEPC's 2010 generalized recommendations which include reducing equity centric risk, add emerging market debt and equity allocations, add inflation protected asset classes, and consider a new asset category of risk parity. Mr. Craig stated that in the appendix on page 21 two specific managers were identified Bridgewater and Putman and asked why were those two picked and if there was a geometric return calculation for specific managers and whether there is a benchmark that is used. Mr. Humphreys responded that for returns they used a Bridgewater and Putman composite. Secondly, he stated that they come up with their own assumptions for Bridgewater returns and did the same thing for Putman. As for the benchmark, Mr. Humphreys stated that there are different benchmarks for different managers.

Mr. Humphreys ended his presentation by describing risk parity. He gave a brief description of the CAPM model which underpins their forecast suggests that there are three components to any return stream. The first being the risk free rate, the second one is the holding of the assets and the third component is the active management component. He added that what is really being talked in risk parity is that beta or the holding of assets component and not the active management piece. He stated that he is talking about asset allocation and the better management of the risk is being manifested in the portfolio. Mr. Humphreys described again the efficient frontier showing the optimum portfolio and if more returns are desired that portfolio should be levered up. He continued with a further description of risk parity concepts and compared a conventional portfolio and a risk parity portfolio. He added that there is leverage in these portfolios and that is one of the risks of risk parity but is also a tool to manage the portfolios.

Mr. Humphreys explained the efficient frontier charts with the use of leverage. He added that by levering the less risky equal risk portfolio, one can build a portfolio with a higher risk/return profile. Risk parity uses this thesis.

Mrs. Lowe adjourned the work session at 11:05a.m.