DIVERSIFIED EQUITY FUND REVIEW

JOINT PENSION BOARD PRINCIPLES

	CHOICE	FAIRNESS	LIQUIDITY	WELL-INFORMED DECISIONS	RESPONSIVE TO MEMBER PREFERENCES	PRUDENCE	COST EFFECTIVE ADMINISTRATION
Small Cap Equities	Adding small cap equities doesn't increase or reduce the choice available to members since the assets will come from existing managers of the Diversified Equity Fund. Members will continue to be offered a broad and diversified choice of both investment and retirement vehicles.	Given that small cap equity can accommodate at least monthly contributions and redemptions, then there are no issues with unfairness with any plan members. All retirement plan members will be exposed to the same fees, transition costs, contribution and withdrawal rules and regulations.	No issues with liquidity for small cap equities as most options available would provide daily liquidity.	It is important to clearly explain the working of any new product added to the Diversified Equity Fund and the potential risks that they bring. The resources needed to educate members may be greater than what we used in the past. Compared to existing options on the Western Retirement plans, the level of complexity of Small Cap Equities would be considered low.	There have been various levels of interest expressed by members regarding the proposed investment strategies in this table. In addition, all members should prefer to receive enhanced returns if they don't come with increased risk and they look to the Joint Pension Board to seek out investment portfolios that will allow them to achieve that goal. There haven't been widespread requests for small cap equities.	Small cap equity investing has a long history and is commonly used by DC plans. However, it is a strategy that is riskier than average.	Small cap equities are more expensive than large cap equities and would cost the Western Plans about 0.75% in investment management fees.
Emerging Markets Equities	No changes (see Small Cap Equities)	No changes (see Small Cap Equities)	No issues (see Small Cap Equities)	Compared to existing options on the Western Retirement plans, the level of complexity of Emerging Markets Equities would be considered low.	There haven't been widespread requests for emerging markets equities.	Emerging markets equity investing is relatively recent and is not commonly used by DC plans, although there's a growing acceptance level. Also, it is a strategy that is riskier than average.	Emerging markets equities are the most expensive public equities. A separate mandate would cost about 1.00% in investment management fees. Allowing a global equity or an EAFE equity

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							manager to invest opportunistically in emerging markets would allow the Western Plans to invest in emerging markets equities for the price of a cheaper mandate (typically 0.20% to 0.40% less). Emerging markets investing also involves higher custodian costs, including the requirement to register with the securities regulator of each jurisdiction, although these problems can be eliminated by investing in pooled funds.
Low-Volatility Strategies	No changes (see Small Cap Equities)	No changes (see Small Cap Equities)	No issues (see Small Cap Equities)	Compared to existing options on the Western Retirement plans, the level of complexity of Low-Volatility Strategies would be considered Moderate.	There haven't been widespread requests for low-volatility strategies.	Low-volatility strategies are relatively new, although they're made up of holdings that already account for a large portion of most equity portfolios. Low-volatility strategies have gained more traction in the DB world. By definition this type of strategies is less risky than average as it	Low-volatility strategies are typically priced at the same level as large cap equities, which is around 0.30% for Canadian equity mandates, 0.75% for EAFE equity mandates and 0.70% for global equity mandates.

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						invests in companies with low leverage or whose stock exhibits low volatililty.	
Private Equity	Adding private equity doesn't increase or reduce the choice available to members since the assets will come from existing managers of the Diversified Equity Fund. Members will continue to be offered a broad and diversified choice of both investment and retirement vehicles. Although private equity is an investment option with a low level of liquidity, adding it should not reduce members' choice of liquid options as only a portion of the Diversified Equity Fund will be invested in private equity and overall the fund will retain the same liquidity level.	Given that private equity offers less than monthly liquidity, existing members of the Diversified Equity Fund could potentially own a disproportionate share of the illiquid assets if a large number of members decide to redeem their units from the fund. In that case the principle of Fairness would not be upheld. In addition, the "J-Curve", i.e. the tendency of private equity to deliver negative returns in early years and investment gains in later years, may favour future unitholders of the fund, at the expense of current unitholders. One way to mitigate this is to invest in a portfolio of secondary investments,	Private equity is an illiquid asset class. Private equity investments may be sold on the secondary market but at a discount and timing dictated by market conditions. Discounts of 10% to 15% and delays of two months to complete the transaction are typical.	Compared to existing options on the Western Retirement plans, the level of complexity of private equity would be considered High.	There haven't been widespread requests for private equity.	Private equity has been around since the 1970s, It is fairly common among DB pension plans but extremely rare among DC plans because of the lack of liquidity and the absence of a listed alternative, as for real estate and infrastructure. Only one DC plan has been identified with private equity. Private equity has the highest expected return of all asset classes, but is also the riskiest.	The investment management fees for a private equity mandate with a fund of funds structure would be around 1.00%. These fees are on top of those charged by the underlying funds.

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		where the "J-Curve" is less pronounced.					
Commodities	No changes (see Small Cap Equities)	No changes (see Small Cap Equities)	No issues (see Small Cap Equities)	Compared to existing options on the Western Retirement plans, the level of complexity of commodities would be considered Moderate. Although the commodities themselves (gold, oil, silver, etc.) are well known by members, the way to access them (through ETFs, managed futures, etc.) may be hard to understand.	The Joint Pension Board has received some requests regarding adding commodities to the Western plans.	Direct commodity investing is mostly used by large institutional investors and few DC plans offer commodities. The volatility of commodities is in line with large cap equities.	The investment management fees for an active commodity mandate would be around 0.50% to 1.00%.

JOINT PENSION BOARD STATEMENT OF INVESTMENT BELIEFS

Statement	Comments
1. Good governance policies improve investment returns	No impact on the decision.
2. Diversification is an investment risk management mechanism; it should provide protection on the downside and the long-term	The proposed investments tend to have a lower correlation with traditional equity markets.

Correlation Matrix (Source: Russell Investments)

	Canada Equity	US Equity	EAFE Equity	Emerging Markets Equity	Global Equity	Private Equity	Global Commodities	Global REITs	Global Listed Infrastructure	Market Neutral Strategy
Canada Equity	1.00									
US Equity	0.59	1.00								
EAFE Equity	0.71	0.74	1.00							
Emerging Markets Equity	0.61	0.73	0.74	1.00						
Global Equity	0.72	0.93	0.91	0.86	1.00					
Private Equity	0.65	0.85	0.84	0.79	0.91	1.00				
Global Commodities	0.32	0.52	0.39	0.49	0.51	0.47	1.00			
Global REITs	0.63	0.77	0.79	0.71	0.84	0.77	0.54	1.00		
Global Listed Infrastructure	0.58	0.55	0.60	0.54	0.62	0.55	0.38	0.68	1.00	
Market Neutral Strategy	0.46	0.39	0.42	0.38	0.45	0.38	0.36	0.40	0.44	1.00

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<td>3. Asset classes have specific risk/return characteristics</td>
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Some of the proposed investments have higher expected returns, which come with higher volatility. Emerging markets equities and private equity offer the two highest expected returns but are also riskier. Market neutral strategies offer a lower expected return but are much less volatile.

20-Yr Expected Return and Volatility (Source: Russell Investments)
<table>
<tr><th></th><th>Canada Equity</th><th>US Equity</th><th>EAFE Equity</th><th>Emerging Markets Equity</th><th>Global Equity</th><th>Private Equity</th><th>Global Commodities</th><th>Global REITs</th><th>Global Listed Infrastructure</th><th>Market Neutral Strategy</th></tr>
<tr><td>20-Yr Return</td><td>7.40%</td><td>7.80%</td><td>7.80%</td><td>9.00%</td><td>8.00%</td><td>9.60%</td><td>5.10%</td><td>7.50%</td><td>6.50%</td><td>4.30%</td></tr>
<tr><td>20-Yr Volatility</td><td>19.40%</td><td>22.90%</td><td>20.60%</td><td>30.00%</td><td>20.90%</td><td>24.30%</td><td>20.20%</td><td>22.70%</td><td>17.70%</td><td>9.50%</td></tr>
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<td>4. Alternative investments should be considered on a case by case basis and should meet the following three conditions:
a. They’re fully liquid
b. They have a consistent valuation method
c. They’re fully transparent</td>
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Of all the proposed investment strategies, the following ones meet all three criteria:
• Small cap equities
• Emerging markets equities
• Low volatility strategies
• Real estate (with REITs only)
• Infrastructure (with listed infrastructure only)
• Active currency management
• Global tactical asset allocation
• Commodities

The following strategies don’t meet all three criteria:
• Private equity: A private equity investment would not be fully liquid. It is a long-term commitment, i.e. approximately 12 years to get all your investment back. Investments can be sold on the secondary market, but at a discount and the process can take up to a few months. Although a consistent valuation methodology is applied, the assets are not marked-to-market, which means that the valuations are based on appraisals and assumptions. There’s no issue with transparency, as the name of the underlying investments can be obtained.
• Market neutral and long/short strategies: Although the assets that these strategies invest in are typically marked-to-market and fully liquid, the investment vehicles available don’t meet the standards of our traditional managers with respect to redemptions. The norm for market neutral and long/short strategies would be to require a 10 to 15 business day notice before a withdrawal can be made, although some hedge funds may have
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	tougher restrictions. This would require administration to go outside of our normal rebalancing process to redeem assets from these strategies. There are no issues with valuation as the assets are marked-to-market. A number of strategies offer full transparency and in general the level of transparency in the hedge fund industry has improved.
5. Portfolio rebalancing between asset classes allows members to maintain the risk of the portfolio and is the member's responsibility (except for the Balanced Growth & Balanced Income funds)	No impact on the decision.
6. Active management may add value in some markets but passive management is the Pension Board's default choice	The following strategies can be implemented with passive management: • Small cap equities • Emerging markets equities • Real estate (with REITs only) • Infrastructure (with listed infrastructure only) • Commodities However, research has demonstrated the potential to add value in these strategies with active management. In addition, some asset classes (such as small cap equities and emerging markets equities) are difficult to implement passively as some of the names in the benchmarks are difficult to invest in. The following strategies can only be implemented with an active manager: • Low-volatility strategies • Private equity • Active currency management • Global tactical asset allocation • Market neutral strategies • Long/short strategies
7. Liquidity is extremely important for a Defined contribution plan	See Joint Pension Board Principles and belief #4 for comments on liquidity.
8. It is very difficult to repeatedly time the market through ongoing changes to	No impact on the decision.

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<tr><td>the equity/bond mix</td><td></td></tr>
<tr><td>9. Investment costs must be monitored</td><td>Investment management fees are expected to be higher for most of the asset classes under consideration. The table below presents some fee estimates:
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<tr><th>Asset Class</th><th>Expected Fees</th></tr>
<tr><td>Canadian Equity Large Cap</td><td>0.30%</td></tr>
<tr><td>Canadian Equity Small Cap</td><td>0.75%</td></tr>
<tr><td>EAFE Equity</td><td>0.75%</td></tr>
<tr><td>Global Equity</td><td>0.70%</td></tr>
<tr><td>U.S. Equity (Passive)</td><td>0.07%</td></tr>
<tr><td>U.S. Equity Small Cap</td><td>0.85%</td></tr>
<tr><td>Emerging Markets</td><td>1.00%</td></tr>
<tr><td>Global REITs</td><td>0.60% to 1.00%</td></tr>
<tr><td>Global Listed Infrastructure</td><td>0.70% to 1.00%</td></tr>
<tr><td>Private Equity</td><td>1.00%</td></tr>
<tr><td>Active Currency Management</td><td>0.50%</td></tr>
<tr><td>GTAA</td><td>1.00%</td></tr>
<tr><td>Commodities</td><td>0.50% to 1.00%</td></tr>
<tr><td>Hedge Funds</td><td>1.00% to 2.00% management fee + 20% incentive</td></tr>
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<tr><td>10. Foreign currency hedging is desirable to reduce risk</td><td>Currently, 50% of the Diversified Equity Fund is exposed to currency fluctuations and the remainder is either hedged or invested in Canadian dollars. Most of the proposed strategies have at least some foreign exposure. Given that the new strategies are expected to represent approximately 15% of the Diversified Equity Fund, it should not present any major challenges to maintain a 50% hedge ratio with the publicly traded equity strategies in the portfolio.</td></tr>
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