Thoughts on Discount Rates

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Economic theory:

3 primary components drive discount rates: Inflation, Risk, time preference

Inflation – we all understand. Easy to adjust for. Typically use real dollars and apply a real DR.

Time preference – future benefits worth less than current. Theory is that one can use current money to create future benefits. Bird in hand is better than a bird promised in the future. Actual value of DR is basically a measure of the time preference, and typically varies by entity. However, much of the variation by entity is really about the risk profile of the entity (*e.g.,* venture capitalists have very high DR because they are in business of taking high risks and therefore demand high return for that; governments generally have very low DR because low risk and focusing on longer term public benefits).

Risk – higher leads to higher DR. Typically biggest component of DRs. Why junk bonds pay higher interest than low risk bonds.

WACC is weighted average of the utility bond and equity investors returns. They are trying to recoup all three components. They perceive risk more similar to private unregulated Company's, although somewhat lower because of regulated monopoly system. This is based on the supply-side investments which dominate investments that utilities usually make and the regulatory and market risks related to them. Supply-side investments require lots of capital up front, and are only paid back over long term and could be stranded asset and pose significant risk to investors. Also, these last very long times (as much as 40-60 years) and if future market prices drop or regulations require retirement/environmental expenditures, they could become uneconomic and regulators may make investors absorb loss (*e.g.,* what is currently happening with Exelon Nukes and numerous older coal plants). Therefore, this DR reflects the perceived risk and investment opportunities of bond and equity investors, and is much more similar to a private business DR and not a societal rate. It is based on not getting money back for a very long time with uncertain future prices and regulation and very large up front investments.

EE funds are very different risk profile from those funds being invested by bond and equity investors. First, they reflect public programs using public (ratepayer) funds, and so are really much more similar to longer term government investments. Further, while technically the utilities are at some risk of loss of this recovery for imprudence, in practice, this is risk is tiny and virtually non-existent. Also, because program funds are expensed and recovered simultaneously, there is really no time preference risk involved on the investment side (except for the very deminimis risk of a portion of already recovered money being denied for imprudence and returned). The risk on the benefits side is the EM&V risk that savings aren't real, or that avoided costs will be different. However, this is not based so much on market

or economic conditions, and is deemed based on established EM&V and planning practices. While there is uncertainty and it is possible that future benefits will be less, we deem these and treat as known amounts for planning purposes, and actual future results don't drive any cost recovery like it does in supply markets. In theory one could argue that ratepayers bear this risk and that if avoided costs in the future are way cheaper they may not get return. However, this same argument strengthens the argument that these are public funds and should be valued at more of a societal DR.

Tests should consider:

Which parties are affected and what is their time value of money and risk.

Tests:

SCT clearly should be societal – argument is we are looking at how society values its future, and policy generally values it fairly highly. Financial risk is low. A societal value is most closely represented by a long term U.S. treasury bond yield.

TRC and PAC: DSM is low risk, customers pay back immediately, expensed. So no real risk to utilities similar to supply side investments. The party taking all the risk are ratepayers (*e.g.,* society as a whole, not the utilities). Further, not actually invested in by bond and equity investors, but rather ratepayers (*e.g.,* society), and since ratepayer funded rather than financial markets, should still be societal DR.

Removing risk premium leads to T-bills.

Long term U.S. T-bills represent closest financial instrument we have that is perceived to be relatively risk-free

This also creates consistency within the state among different utilities. Makes sense from a policy perspective that societies (ratepayers) perceived risk and valuation of future should not vary based on individual utility debt/equity ratio or underlying risk profile or financial health of each utility. Utilities all have different WACCs because of debt/equity ratios and other perceived management and investment risks, but these are not relevant to statewide evaluation of EE programs. Using a societal DR will ensure consistency and comparability across the state. For instance, DCEO is a government entity so even if agreed to use WACC for ComEd should still assume a low societal DR for DCEO. Given that both are using the same public ratepayer dollars this makes no sense. If anything, the performance risk for DCEO delivered EE may actually be higher than that for ComEd.

10-year Tbills are reasonable. Argument being that average portfolio measure life tends to be around 10 yrs.

Consider fixing at a longterm historic average rather than a floating value.

Allowing the DR to vary based on actual prevailing T-bill yield means that it will constantly change based on things like strength of current currency and stock markets and Fed and global policies.

This doesn't make sense and will mean it is somewhat random which monthly number you pick and when you do a screening. An example is how rate went down recently because China devalued its currency, which clearly does not change the risk profile of Illinois DSM.

Participant test could use participant DR, which is likely more like commercial lending or prime rates + adder. Not important for IL.

WACC ok for RIM, but this test is also not important for IL. Rationale is that this test is analyzing the utilities finances rather than societies. If the utilities are not recovering lost revenue then analyzing the utilities shareholder economic impact to determine impact on rates makes sense.

ACEEE 2012 survey of what jurisdictions currently use for primary test:

49% use WACC

17% use long term T-bill

6% use utility or customer ROI (probably mostly similar to WACC)

29% use other (mostly a societal value similar to T-bill)

In summary, jurisdictions nationally are roughly split evenly between a WACC/utility rate and a societal/t-bill type rate. If weighted by leading states contributions overall this would tend to skew more heavily toward a societal rate because it tends to be leading states in NE and West Coast that are using the lower DRs.

ACEEE Found average of 5.5% among 12 states surveyed

As of spring 2015 when looked current T-bill values were:

10 yr T-bill currently 2.16%

20 yr.2.62%

30 yr 2.88%