

## Traditional Final Pay DB Plan About the Framework

### About the plan being evaluated:

- This is a single-employer, corporate sponsored defined benefit plan, with a final pay (or final average pay) formula. For example, 1% of highest 5 years of salary for each year of service, but no greater than 35% of final average salary.
- We have not assumed any subsidized early retirement or joint and survivor benefits but have considered the right of the employer to include them.
- These ratings would only apply to a corporate single employer plan. The nature of the plan sponsor (corporate vs public, single employer vs multi-employer) might change the evaluations and particularly the effect of moral hazard.
- We are not considering the voluntary nature of the system which means, primarily, that not all individuals have access to coverage. We have considered the ability of the employer to set and adjust benefit levels in setting ratings.
- We are not considering the effect of the PBGC, PBGF or any specific government guaranty fund. We do consider what the presence of a government guaranty fund (generic) may do to increase moral hazard.

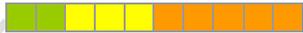
### About the ratings

- The overall ratings were done assuming a “perfect world” where actors understood and took advantage of the best features of plans. They do not consider moral hazard to stakeholders & agents.
- A second set of ratings were developed considering the effects of moral hazard. Moral hazard are defined in this application as when stakeholders (particularly individuals) can be led to not act in their own best interests based on a lack of understanding of features & consequences or, when agents take actions that don't align with interests of stakeholders, particularly individuals or shareholders/owners. While regulatory risk is its own category, we've considered regulatory risk as another adverse incentive (elected officials, including the judiciary, may be guilty of overzealous regulation, affecting the action of individuals, employers and the markets).

## Traditional Final Pay DB Plan About the Framework

### About the categories

- Each of the stakeholder categories has a different number of subcategories, from 6 to 11 subcategories.
- The example below shows you how to read the summary of the society category, with both the composite and sub-category ratings.

Society (composite rating)	Meets society's needs and risks.	<p style="text-align: center;"><b>Yellow- Green</b></p> <p>Individual criteria ratings:</p>  <p>Plans protect long-service workers well (less so short-service workers) avoiding the need for more government sponsored benefits.</p>	<p style="text-align: center;"><b>Yellow</b></p> <p>Individual criteria ratings after moral hazard :</p>  <p>System depends on employer paternalism, and employer moral hazard require government regulation, which destabilizes system.</p>
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The average rating of yellow-green is a composite of the ten society subcategories.

The ratings for the ten -subcategories are shown in the color line. They are color grouped so you can see how many of each rating were received.

Ratings for each subcategory were adjusted for the effects of moral hazard. This shows the new composite rating after moral hazard are considered as well as the new color line.

## Traditional Final Pay DB Plan Summary

Summary			
Criteria	Objective	Evaluation	Effect of moral hazard
Society (composite rating)	Meets society's needs and risks.	<p><b>Yellow- Green</b></p> <p>Individual criteria ratings:</p>  <p>Plans protect long-service workers well (less so short-service workers) avoiding the need for more government sponsored benefits.</p>	<p><b>Yellow</b></p> <p>Individual criteria ratings after moral hazard:</p>  <p>System depends on employer paternalism, and employer moral hazard require government regulation, which destabilizes system.</p>
Individuals (composite rating)	Meets individuals' needs and risks.	<p><b>Yellow- Green</b></p> <p>Individual criteria ratings:</p>  <p>By transferring risks of retirement to the employer &amp; its shareholders, the plan does a good job of handling the risks of individuals</p>	<p><b>Yellow</b></p> <p>Individual criteria ratings after moral hazard:</p>  <p>Individuals could be at risk should the employer enter bankruptcy if plan not fully funded. Presence of lump sums reduces longevity benefits.</p>
Employers (composite rating)	Meets employers' needs and risks.	<p><b>Red-Yellow</b></p> <p>Individual criteria ratings:</p>  <p>The long-term nature of the commitment does not work well for corporate sponsors. Many younger employees do not value benefits.</p>	<p><b>Red-Yellow</b></p> <p>Individual criteria ratings after moral hazard:</p>  <p>Available hedging mechanisms not well used; managers at significant risk to manage plan in a way that increases risks in the future.</p>

## Traditional Final Pay DB Plan Summary

Summary			
Criteria	Objective	Evaluation	Effect of moral hazard
Markets (composite rating)	Meets markets' needs and risks.	<p style="text-align: center;"><b>Yellow</b></p> <p>Individual criteria ratings:</p>  <p>In theory, plans can be hedged to remove risk, although in practice this is rarely done. Transfers risk to shareholders.</p>	<p style="text-align: center;"><b>Red-Yellow</b></p> <p>Individual criteria ratings after moral hazard:</p>  <p>Hedges are available, but not widely used.</p>

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## Traditional Final Pay DB Plan Society

<b>Society's Needs &amp; Risks (Composite Rating: Yellow-Green ■)</b>			
Criteria	Objective	Evaluation	Effect of moral hazard
Adequate	Protects vulnerable citizens.	<p style="text-align: center;"><b>Yellow- Green</b></p> <p>Protects those who are able to hold down employment for long periods of time; less protection for workers who change jobs frequently.</p>	<p style="text-align: center;"><b>Yellow</b></p> <p>Adequacy depends on employer paternalism including the willingness to maintain benefit levels. Would employers provide benefits to all low-paid employees without statutes requiring such coverage?</p>
Affordable	Does not take resources from other social needs. Ensures risk pooling done efficiently.	<p style="text-align: center;"><b>Yellow- Green</b></p> <p>Private employer sponsorship does not put cost burden on state; however costs are generally tax deductible and tax sheltered pre-retirement. May not pool risks efficiently in markets</p>	<p style="text-align: center;"><b>Yellow</b></p> <p>Managers may not use market hedging, preferring to gamble on market returns.</p>
Sustainable	Sustainable across and within generations. Equitable across and within generations.	<p style="text-align: center;"><b>Green</b></p> <p>Can be funded to directly allocate costs back to the current generation of owners/shareholders.</p>	<p style="text-align: center;"><b>Yellow- Green</b></p> <p>Can be tempting to push costs to future generations of owners/ shareholders.</p>
Robust	Fair, covers a great majority, creates shared economic growth, avoids moral hazards.	<p style="text-align: center;"><b>Yellow- Green</b></p> <p>DB plans can provide benefits across income strata, use markets efficiently through group investing and expertise of well trained advisors. However, degree of robustness depends on employer paternalism.</p>	<p style="text-align: center;"><b>Yellow</b></p> <p>Wide range of employer latitude to set benefit level and decide to follow best funding and investing policies.</p>

**Traditional Final Pay DB Plan  
Society**

<b>Society's Needs &amp; Risks (Composite Rating: Yellow-Green ■)</b>			
<b>Criteria</b>	<b>Objective</b>	<b>Evaluation</b>	<b>Effect of moral hazard</b>
Does not promote economic risk	Efficiently allocates resources and encourages labor force participation.	<b>Yellow- Green</b> Final pay plans may encourage employee retention, particularly among older employees, to reach a certain benefit level, but may be harder to encourage employees to work beyond a certain point.	<b>Yellow- Green</b> Moral hazard not significant.
Does not promote political risk	Promotes fiscal/political integrity and political stability.	<b>Yellow- Green</b> Politicians tend to try to “fix” the system (e.g., cash balance plans).	<b>Red-Yellow</b> Politicians may see reducing the tax shelter as potential revenue decreasing system stability. Significant risk of participant litigation if they do not like benefit changes.
Does not lead to system failure	Withstands shocks, not prone to instability or adverse incentives.	<b>Yellow</b> Employers can adjust benefit levels to decrease cost; slowly decreasing benefit levels can create pressure for other parts of the system to compensate.	<b>Red-Yellow</b> Absent regulation, managers have little incentive to promote long-term health of plan if it incurs high short-term costs.
Addresses imperfections of other stakeholders	Promotes strong individual decision making and covers lack of market instruments.	<b>Yellow</b> Individuals with long service get strong benefits but individuals with short service do not, and lump sums create temptations to use benefits for other purposes. Plans have access to market instruments.	<b>Red-Yellow</b> Current array of plan choices does not always encourage individuals to make decisions that best suit retirement needs (e.g., annuity over lump sum). Managers not incentivized to use market instruments to hedge risks.

**Traditional Final Pay DB Plan  
Society**

<b>Society's Needs &amp; Risks (Composite Rating: Yellow-Green <span style="color: green;">■</span>)</b>			
<b>Criteria</b>	<b>Objective</b>	<b>Evaluation</b>	<b>Effect of moral hazard</b>
Promote social solidarity and integrity	Ensures basic standards of living; ensures risks are shared.	<p style="text-align: center;"><b>Red-Yellow</b></p> <p>Where plans are present, do encourage basic living standards and ensure risks are shared. However, Corporate sponsorship by nature does not encourage social solidarity or integrity. Can only encourage through tax subsidies.</p>	<p style="text-align: center;"><b>Red-Yellow</b></p> <p>Moral hazard not significant.</p>
Adjusts to changing demographic and economic conditions	As demographic and economic conditions shift, plan can respond to meet societal needs.	<p style="text-align: center;"><b>Yellow</b></p> <p>Doesn't account for increasing longevity (e.g. fixed retirement age, early retirement provisions). Allows workers to continue to retire during downturn.</p>	<p style="text-align: center;"><b>Red-Yellow</b></p> <p>As plans shift from more active to retired individuals, will be harder to adjust for changing conditions.</p>

## Traditional Final Pay DB Plan Individuals

Individual's Needs & Risks (Composite Rating: Yellow-Green <span style="color: green;">■</span> )			
Criteria	Objective	Evaluation	Effect of moral hazard
Guaranteed income	Provides substantial level of income protection.	<p style="text-align: center;"><b>Yellow- Green</b></p> <p>Benefit promise is well defined and based on final pay (income security). For short service employees, benefits are often quite small and not related to final pay at retirement.</p>	<p style="text-align: center;"><b>Red-Yellow</b></p> <p>If plan terminates not fully funded (rare event), individuals close to or even in retirement can lose some benefits; presence of a government guaranty program could encourage employers to cease funding in financial distress situations.</p>
Predictability of income	Facilitates retirement planning.	<p style="text-align: center;"><b>Yellow- Green</b></p> <p>Fixed promise allows for retirement planning. However, works best if you are with the same employer for a substantial portion of a career.</p>	<p style="text-align: center;"><b>Red-Yellow</b></p> <p>If plan terminates not fully funded, (rare event) participants can lose some benefits; existence of a government guaranty program can offset some risk but may encourage employers in financial distress to underfund plan. Participants could be subject to changes in plan due to corporate events (e.g. merger or acquisition).</p>
Retirement flexibility	Allows choice of retirement age, including possibility to phase into retirement.	<p style="text-align: center;"><b>Yellow -Green</b></p> <p>Ability to choose retirement age, but individuals may not understand how promise changes with retirement age; may not be able to phase into retirement with partial benefits.</p>	<p style="text-align: center;"><b>Yellow</b></p> <p>Early retirement reductions, while actuarially sound, are not easy to understand and can be perceived as unfair by employees, causing them to devalue the plan.</p>



## Traditional Final Pay DB Plan Individuals

Individual's Needs & Risks (Composite Rating: Yellow-Green <span style="color: green;">■</span> )			
Criteria	Objective	Evaluation	Effect of moral hazard
Portability	Minimizes loss upon employment termination.	<p style="text-align: center;"><b>Red-Yellow</b></p> <p>Final pay formula creates very small benefits for those who leave pre-retirement.</p>	<p style="text-align: center;"><b>Red-Yellow</b></p> <p>Lump sums can further expose leakage issues encouraging people to spend what seem to be small lump sums on non-retirement needs.</p>
Sensitive to employment conditions	Benefits may vary in line with employment conditions.	<p style="text-align: center;"><b>Yellow- Green</b></p> <p>Can structure the plan to provide generous early retirement benefits for physically demanding jobs while postponed retirement and phased retirement features can exist in less taxing jobs.</p>	<p style="text-align: center;"><b>Yellow</b></p> <p>Employees without a physical need for early retirement benefits can demand them in a “me too” philosophy, driving up the cost of plans.</p>
Sensitive to family needs	Benefits may vary in line with spousal and children needs.	<p style="text-align: center;"><b>Yellow- Green</b></p> <p>Can structure the plan to provide benefits to spouse and children upon death (pre-and post-retirement).</p>	<p style="text-align: center;"><b>Yellow- Green</b></p> <p>Moral hazard not significant.</p>
Requirement for individual skills	Level of knowledge required to plan for retirement.	<p style="text-align: center;"><b>Green</b></p> <p>Only requires understanding of various benefits offered (not required to convert single sum to annuity stream, or know the level of single sum required).</p>	<p style="text-align: center;"><b>Yellow- Green</b></p> <p>The presence of lump sum benefits can negate the annuities by encouraging people to take single sums and forego the lifetime guarantee.</p>



## Traditional Final Pay DB Plan Individuals

Individual's Needs & Risks (Composite Rating: Yellow-Green ■)			
Criteria	Objective	Evaluation	Effect of moral hazard
Investment risk	Protects against fluctuations in market returns.	<b>Green</b> Risk borne by employer in most cases.	<b>Yellow</b> If employer makes risky investments, and plan terminates not fully funded, individuals can lose some benefits without realizing the risk they faced. Individual only at risk if employer terminates plan.
Longevity risk	Protects against possibility to outlive assets.	<b>Green</b> Efficiently hedged or pooled depending on arrangement.	<b>Yellow- Green</b> Presence of lump sum benefits can encourage individuals to forego the annuity's longevity protection.
Inflation risk	Includes both pre and post retirement inflation.	<b>Yellow</b> Final pay plan offers pre-retirement inflation protection, but corporate DB plans typically do not provide post-retirement inflation protection.	<b>Yellow</b> Moral hazard not significant.
Premature retirement risk	Protects against forced early retirement due to disability, family circumstances, and involuntary termination.	<b>Yellow- Green</b> Plan can be designed to provide early retirement subsidies and generous disability benefits.	<b>Yellow</b> Presence of these benefits depends on employer's degree of paternalism. Employees may not understand where they do or do not have coverage. Early retirement subsidies often misunderstood and seen as a "take-away."

## Traditional Final Pay DB Plan Employer

<b>Employer Needs &amp; Risks (Composite Rating: Red-Yellow ■ )</b>			
<b>Criteria</b>	<b>Objective</b>	<b>Evaluation</b>	<b>Effect of moral hazard</b>
Supports primary business purpose	Enhances core purpose of the employer's business.	<b>Red-Yellow</b> Can aid in the orderly retirement of employees, aiding core business purpose. However, mature plans have significant risk which can detract from core business purpose	<b>Red</b> Action of accounting standards can add volatility to employer cost.
Workforce management: attraction & retention	Enhances business value by allowing attraction and retention of the "right employees".	<b>Yellow</b> Better at attracting older employees and retaining long service employees. Younger employees are indifferent to plan design, and younger, short service employees are disadvantaged.	<b>Yellow</b> Moral hazard not significant.
Workforce management: transition of employees	Enhances business value by facilitating the orderly transition of employees.	<b>Yellow- Green</b> Can provide incentives for employees to stay or retire on a voluntary basis.	<b>Yellow</b> As population ages and baby boom retires, do we need people to retire early or work longer? Incentives may be not be set properly for generational shift.
Supports new norms for work and retirement	As needed, supports shifting norms for work and retirement, e.g. phased retirement, return to work, etc.	<b>Red-Yellow</b> Employees who work with a single employer their whole career derive the most benefit. Difficult to work with phased retirement, return to work. Plan can be designed with needs of different workers in mind.	<b>Red</b> Attempts to adjust the plan to move retirement ages later are seen negatively by employees as a benefit take-away.

## Traditional Final Pay DB Plan Employer

Employer Needs & Risks (Composite Rating: Red-Yellow ■ )			
Criteria	Objective	Evaluation	Effect of moral hazard
Responsive to owners	Responds to needs of owners, e.g., shareholders for public companies, which may limit amount of risk to be taken.	<b>Red-Yellow</b> Financial commitment may extend beyond lifespan of employer. Can decrease or eliminate future benefit accruals. Can be impediment to other business decisions.	<b>Red</b> Managers have concerns around cost volatility, particular accounting cost, which may lead to practices that are not in the best interests of owners. Can mitigate volatility but it has not been common practice.
Business risk	Ability to react quickly to changes in the competitive landscape.	<b>Red-Yellow</b> Sponsor can only reduce future accruals and phase out of benefits can take a long time.	<b>Red</b> Managers are most concerned about volatility of cost which can be hedged but given that most other managers aren't hedging the cost, the cost of the hedge is seen as unaffordable.
Regulatory risk	Allows plan to be operated to fit needs and change to meet conditions easily within regulatory framework.	<b>Yellow</b> Long-term nature of promise attracts significant regulatory oversight. Lack of clarity on rules and multiple oversight agencies can lead employers to make changes later deemed not legal (e.g. cash balance in US).	<b>Yellow</b> Moral hazard not significant (DB plans are already highly regulated; not many additional avenues left for new regulation).
Fiduciary risk	Allows plan to be easily operated to minimize fiduciary liability.	<b>Red</b> Fiduciary responsibility is complicated and often not well understood. Concerns about liability may lead all employers to act in similar manner, which may be detrimental to both employees and shareholders.	<b>Red</b> Moral hazard not significant.

**Traditional Final Pay DB Plan  
Employer**

<b>Employer Needs &amp; Risks (Composite Rating: Red-Yellow ■ )</b>			
<b>Criteria</b>	<b>Objective</b>	<b>Evaluation</b>	<b>Effect of moral hazard</b>
Litigation risk	Allows management of plan to avoid lawsuits.	<p style="text-align: center;"><b>Yellow</b></p> <p>Lawsuits can lead to reputation risk. Long-term nature of promise and length of liability period significantly increase litigation risk.</p>	<p style="text-align: center;"><b>Red-Yellow</b></p> <p>Significant potential for employees to misunderstand the permanence of the benefit formula.</p>

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## Traditional Final Pay DB Plan Markets

<b>Markets Needs &amp; Risks (Composite Rating: Yellow <span style="background-color: yellow; border: 1px solid black; padding: 2px;"> </span>)</b> (includes both financial markets and intermediaries (e.g. insurers))			
<b>Criteria</b>	<b>Objective</b>	<b>Evaluation</b>	<b>Effect of moral hazard</b>
Maximizes use of markets	Effectively uses markets and hedging mechanisms; stakeholders can purchase hedging instruments cost effectively.	<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"><b>Yellow- Green</b></span> Economic hedges are available although cost may be prohibitive for smaller plans; demographic hedges not widely available.	<span style="background-color: yellow; border: 1px solid black; padding: 2px;"><b>Yellow</b></span> While hedges are widely available, they are not widely used or understood and not always feasible for smaller plans.
Transparent (cost)	Costs of plan are transparent (fees, costs to sponsors, other stakeholders, etc).	<span style="background-color: green; border: 1px solid black; padding: 2px;"><b>Green</b></span> Costs can be transparent	<span style="background-color: yellow; border: 1px solid black; padding: 2px;"><b>Yellow</b></span> Regulations and statutes, including accounting requirements, have until recently not required or encouraged transparent costs.
Strong Governance	Fiduciary roles of plan sponsors well defined. Plan structure minimizes agency issues, particularly regarding plan investment and risk taking.	<span style="background-color: yellow; border: 1px solid black; padding: 2px;"><b>Yellow</b></span> Governance regarding benefits is generally strong. Governance regarding plan investment and security to shareholders is weaker.	<span style="background-color: orange; border: 1px solid black; padding: 2px;"><b>Red-Yellow</b></span> Lack of clarity around governance standards leads to “follow the leader” where the industry norm becomes best practice.

## Traditional Final Pay DB Plan Markets

<b>Markets Needs &amp; Risks (Composite Rating: Yellow <span style="background-color: yellow; border: 1px solid black; padding: 2px;">■</span>) (includes both financial markets and intermediaries (e.g. insurers))</b>			
<b>Criteria</b>	<b>Objective</b>	<b>Evaluation</b>	<b>Effect of moral hazard</b>
Efficiently priced	Market price is well understood and accepted by stakeholders. Plan does not contain features which cannot be efficiently priced.  Plans incorporate discipline in pricing.	<b>Yellow</b>  Traditional benefit features (e.g. early retirement subsidies) aren't efficiently priced. However plans can be designed without inefficient market features.	<b>Red-Yellow</b>  Plan costs are subject to manipulation by managers.
Efficient risk bearing	Plan efficiently pools idiosyncratic risks and hedges systematic risks (both economic and demographic).	<b>Yellow- Green</b>  Plan efficiently pools longevity and many other retirement risks. Plan can effectively hedge investment risks although instruments aren't there for systematic longevity risks.	<b>Red-Yellow</b>  Managers tend not to choose risk hedging instruments. Managers may be tempted to choose risky investments that lower cost today but pass risk to next generation.
Allocation of risk	Plan efficiently allocates risk across stakeholders, giving each stakeholder the risk he can best bear.	<b>Red</b>  Plan puts risk to shareholders – doesn't allocate any to individuals or other parties. Plans could be designed to share risks with employees. Investment risks could be hedged although they typically aren't. Demographic risks could be hedged in theory but market instruments aren't available because managers haven't shown interest.	<b>Red</b>  Moral hazard not significant.