- **Trade-off theory refined:** Now the optimal capital structure balances:

- Tax Shield (positive),
- – Distress Costs (negative),
- – Agency Costs of debt (negative),
-
    - Agency Benefits of debt (positive).

We find a debt level that maximizes $V_L = V_U + PV(ITS) - PV(FDC) - PV(AgencyCost) + PV(AgencyBenefit)$

- **R&D vs. mature firms:** R&D-intensive firms (tech, biotech) often keep debt low because:
- They have valuable growth options that could be underinvested if debt (debt overhang fear).
- They don't generate stable cash now (so not much free cash to waste; rather, they need cash).
- Their asset value is in human capital and intangibles (high distress cost). Thus the costs of debt (distress, underinvestment) outweigh tax benefits. Meanwhile, **mature, low-growth firms** (utilities, consumer staples) often carry more debt:
- Steady earnings (low distress probability),
- Potential free cash that could be wasted – debt forces discipline,
- Tangible assets (low distress costs). So benefits of debt (tax, discipline) outweigh potential costs.

7. Asymmetric Information and Capital Structure

Now we move to how information gaps between insiders (managers) and outsiders (investors) influence financing:

- **Signaling with leverage:** Managers might use debt as a signal of confidence. The idea: if a firm's prospects are truly strong (management knows future cash flows will be high), they are more willing to commit to paying debt (interest) than managers who privately know their future is poor[176][177]. By taking on debt (or high leverage), managers "put their money where their mouth is." If they were lying, the cost would be distress later. Thus, **issuing debt can credibly signal that managers believe the firm will comfortably handle the obligations**.

- **The Credibility Principle:** "Actions speak louder than words" – a claim is credible only if taking the action would be too costly if the claim were false. Taking on large debt is costly for a weak firm (likely leads to bankruptcy), but not for a strong firm. So it separates types: strong firms can signal by leveraging up, whereas weak ones won't mimic because it would ruin them.

- **Empirical note:** Some companies intentionally maintain low debt to signal they don't *need* external funds (they're profitable enough internally). However, classical signaling model suggests a company might take on some debt to differentiate from overly cautious or weaker peers. It's nuanced – but a key observation is that **equity issuance** is often viewed negatively by markets (coming up: adverse selection).

- **Equity issuance and adverse selection:** Suppose managers have private info – if stock is overvalued relative to true value, they are incentivized to issue equity (sell at inflated price). If undervalued, they'd avoid issuing cheap shares. Outsiders know this logic, so they interpret an **equity issuance as a potential signal that management thinks the stock is overvalued**. This is adverse selection ("lemons problem"): the ones willing to sell are those with the worse quality. As a result, announcing a new stock issue often causes the stock price to drop (empirically, SEOs have negative announcement effect). Investors rationally discount the price expecting that issuance happens when shares might be overpriced.

- **Pecking Order Theory:** Due to adverse selection, firms prefer **internal financing first** (retain earnings) since no info asymmetry there, then **debt** (debt claims are safer, less sensitive to info; also interest and

principal are fixed, so less valuation uncertainty to outsiders), and **equity as a last resort**[183][184]. This **pecking order** means:

- Use internal cash.
- If external funds needed, issue debt.
- Issue equity only if debt capacity is exhausted or risk would be too high with more debt (or in really optimistic scenarios where market is extremely overvaluing shares).

This theory explains why profitable firms (with internal cash) often have low debt (they don't need to issue), whereas less profitable (needing funds) will issue debt rather than equity.

- **Implications for equity issuance:** Markets tend to view equity issuance as bad news. In contrast, debt issuance is less negatively viewed (can even be neutral or positive if seen as confidence). This further reinforces companies' reluctance to issue equity – they wait until maybe stock is high (market timing) or use equity for big transformational events (like acquisitions) where debt would be too risky.

- **IPO puzzles:** When a private company goes public (IPO), there's also info asymmetry – investors are wary, hence the phenomenon of **IPO underpricing** (setting initial price low so that first-day pop compensates for info uncertainty risk). We cover IPO specifics in Week 11, but note that the winner's curse and bookbuilding theories align with information asymmetry considerations.

- **Capital structure outcomes:** Considering signaling and pecking order:

- Firms might accumulate debt over time until they become wary of distress (trade-off limit), then if needing more capital and stock looks overvalued or their prospects are bright enough to convince market, they might issue equity. But generally, they avoid equity unless necessary.
- This can lead to some firms with high debt if they consistently avoid equity (lever up) until perhaps a crisis forces an equity issuance (often at a low price).

- **Recap of all factors:** A comprehensive view of capital structure must consider:

- **Taxes:** push towards debt.
- **Distress costs:** push towards equity (limit debt).
- **Agency cost (debt):** limit debt.
- **Agency benefit (debt):** favor some debt for discipline.
- **Asymmetric info:** prefer internal & debt; equity issuance interpreted negatively.
- **Flexibility:** firms might keep some debt capacity unused as a buffer (financial slack).

These, plus industry and market conditions, shape actual capital structures.

Week 5 Summary: We extended the basic trade-off theory to include **financial distress costs** (which increase with leverage and reduce value) and **agency considerations**. Debt brings **agency costs** (risk-shifting and debt overhang can destroy value), but also **agency benefits** (curbing managerial slack, preserving ownership, forcing discipline). We saw that **information asymmetry** makes external equity costly – managers reluctant to issue equity for fear of signaling bad news. These factors together explain why real-world leverage is moderate and varies by firm characteristics. In summary, firms choose capital structures by trading off tax benefits against distress and agency costs, while also considering signaling and flexibility. This provides a richer explanation for the **"target" debt ratios** we observe: firms in stable, mature businesses often have higher debt (tax and discipline benefits outweigh costs), whereas growth firms with intangible assets use less debt (distress and agency costs are too high). The **pecking order** means firms use internal funds and debt before equity, which can result in lower-than-optimal leverage (from a pure trade-off view) if internal cash is plentiful – giving another angle to the low leverage puzzle.

Week 6 – Payout Policy: Dividends and Share Repurchases

Learning Objectives: Week 6 shifts focus from financing to how firms return cash to shareholders – the **payout policy**. Key topics: **(1)** forms of payouts (cash dividends vs. share repurchases), **(2)** the timing and mechanics of dividend payments (declaration date, ex-dividend date, etc.), **(3)** share repurchase methods (open market, tender offers, etc.), **(4)** in a perfect market, dividend vs. repurchase equivalence (Miller-Modigliani dividend irrelevance), **(5)** homemade dividends and why payout policy might not affect value in theory, and **(6)** real-world factors that do make payout policy relevant (taxes, agency, signals).

1. Introduction to Payout Policy

- **Importance of payout policy:** Deciding how and when to distribute cash to shareholders (versus retaining it in the firm) is a significant financial policy. Mature companies generate cash that exceeds their investment needs and must decide whether to pay dividends, repurchase shares, or hoard cash.

- **Two primary ways to distribute cash: (a) Cash Dividends** – the firm pays cash pro-rata to all shareholders, often on a regular schedule (quarterly, etc.). **(b) Share Repurchases** – the firm buys back some of its own shares from shareholders, either in the open market or via a tender offer, thereby returning cash to those who sell and increasing the ownership percentage of those who don't[190][191].

- **Retaining vs. paying out:** Alternatively, the firm can **retain** earnings (hold as cash or reinvest). Retained cash increases equity value internally (like investing in a bank account), but excessive cash retention can lead to agency problems (managers might waste it). Payout policy thus connects to agency and capital structure as well (excess cash is like negative debt in net terms).

- **Why does payout matter?** It's one of the "Big Three" decisions (investment, financing, payout). Historically, debates on whether dividends affect stock price or if investors prefer one form over another have been prominent.

1.1 Why is Payout Policy Important?

- **Shareholder preferences:** Some investors may prefer cash returns (income) while others might prefer the company to reinvest for growth (or to avoid taxes on current income). Also, in absence of perfect capital markets, how and when cash is paid can have tax implications and signal management's confidence.

- **Flexibility:** Dividends tend to be sticky (firms avoid cutting them for fear of negative signals). Repurchases are more flexible (done when conditions are right, not a fixed commitment). Thus, the mix of dividends vs repurchases is a tool for managers to fine-tune payout commitments.

- **Agency considerations:** Paying out excess cash reduces the potential for managers to spend it unwisely (ties to Jensen's free cash flow theory – paying dividends or repurchasing can mitigate agency problems by reducing retained free cash).

- **Market impact and signaling:** Initiating, increasing, cutting dividends – or doing a big buyback – often conveys information. Empirically, dividend cuts usually hurt stock price (signal of trouble), dividend increases are viewed positively (signal of confidence), and share repurchases are often viewed as a sign management thinks shares are undervalued (positive signal).

1.2 Cash Dividends – Mechanics and Types

- **Key dividend dates:**
- **Declaration Date:** The board announces a dividend (amount per share and payable date). This is when a liability is created on the balance sheet.
- **Ex-Dividend Date:** The date when the stock starts trading without the dividend. If you buy on or after the ex-date, you will *not* receive the upcoming dividend. Typically 1 business day before the record date.