Advanced Topics

Labor and Finance

Gazi Kabas
Tilburg University
Spring 2026

Labor and Finance

- Consider a Cobb-Douglas production function. What are the main inputs? Capital, labor, and technology.
  $\rightarrow$ Corporate finance is interested in the mix of debt and equity to finance this production, mostly focusing on capital
- Labor is different than capital!
  $\rightarrow$ Employees come up with new ideas
  $\rightarrow$ Employees cannot be owned
  $\rightarrow$ Many regulations protect employees
  $\rightarrow$ Employees can act strategically
- Due to these differences, labor and finance have interesting interactions

Unemployment

- Unemployment is costly. Laid-off workers lose app. two years of predisplacement income (Davis & von Wachter 2011)
  $\rightarrow$ Due to job search costs, limited job matches, agency costs, etc.
- Probability of job loss depends on the health of the firms, creating a link between corporate finance and labor
- The most obvious channel is via firm leverage: leverage can affect a firm's labor demand and workers' labor supply
  $\rightarrow$ Challenge 1: If we want to study financial stress, we need to keep the economic stress constant (Benmelech, Frydman, & Papanikolaou 2018).
  $\rightarrow$ Challenge 2: Firm leverage affects other factors, such as agency problems a la Jensen 1986 etc.

Unemployment

- Credit events (bankruptcy filing, bond defaults, covenant violations) reduce the labor demand of the firms (Hotchkiss 1995, Agrawal & Matsa 2013, Falato & Liang 2016)
- Moreover, the firm may fire productive workers in case of a negative event due to the high firing costs of older workers (Caggese, Cunat, Metzger 2018)
- Similarly, distressed firms cannot retain their good employees
  $\rightarrow$ Baghai et al. 2017 find that workers with high human capital leave the firm before the firm enters into bankruptcy

Unemployment

- Workers can react to the firm risk strategically when they look for a job
  $\rightarrow$ Brown & Matsa (2016) find that corporate distress reduces the number of job applicants that the firm attracts
- Since firm leverage increases default probabilities, workers would like to be compensated for the higher firm risk
- The higher wage demanded by workers can reduce the tax shield generated by leverage. Therefore, a calculation of optimal leverage needs to consider the labor's reaction (Berk et al 2010).
  $\rightarrow$ Note that the higher labor cost happens before default. Thus, it is different than typical default costs that we consider in corporate finance literature.
- Moreover, employees may be less willing to make a firm-specific investment if the firm is risky due to high leverage (Lazear 2009)

Labor market regulation

- Any labor market policy that influences unemployment risk creates an immediate link between the labor markets and corporate finance
  $\rightarrow$ Unemployment insurance: UI is one of the most common and most studied labor policies. It provides a limited income to the unemployed during the unemployment duration, reducing workers' unemployment risk
- Agrawal & Matsa (2013) find that firms increase their leverage when UI becomes more generous. Similarly, Baghai et al. (2017) find that firms reduce their leverage when the workers have less legal employment protection.

Labor market regulation

- Ellul and Pagano (2019) consider the seniority of employee claims and debt claims. In some countries, employees' wages have seniority over debt holders. In other countries, there is no difference.
  $\rightarrow$ In financially unconstrained firms, firms increase their leverage if their employees have seniority after a positive collateral value shock. For the others, the seniority does not have any effect.
- Kim (2020) considers the size of the local labor market and finds that a larger labor market increases firm leverage
  $\rightarrow$ He collects data about firms' top location choices for large plant openings
  $\rightarrow$ When the labor market is larger, unemployment is less costly for the employees as they can find a job easier.

Labor market regulation-Employment protection

- To protect the employees, the governments can make firing a worker more difficult for firms, which reduces firms' ability to adjust to economic shocks.
- Simintzi, Vig & Volpin (2015) find that firms in countries with stricter employee protection laws have lower leverage
- Kuzmina (2013) uses a setting in Spain: Firms have to pay a penalty when they fire a permanent worker. In the 90s, regional governments introduced subsidies to support permanent contracts. She finds that firms reacted to this policy by increasing their leverage.
- These findings suggest that firms may be aware of the danger that their leverages create for their employees. Therefore, they decrease their leverage if firing their employees becomes more expensive.

Labor market regulation-Minimum wage

- Minimum wage affects firms directly by increasing their wage expense
  $\rightarrow$ It is natural to think that minimum wage may affect firms' financing decisions
- As a higher minimum wage decreases firms' flexibility, firms may react to it by decreasing their leverage to create a buffer
- On the other hand, the firms may rely on debt to fund the costs that come with a higher minimum wage.
- Gustafson Kotter (2017) find that Compustat firms decrease their leverage and shift their capital expenditures to operating leases after an increase in minimum wage.

Labor Negotiations

- Capital is available to the firm all the time. Yet, the workers can negotiate with the firm and decide to go on strike. Thus, workers can use their actions to take a larger portion of the excess rent. This is similar to a hold-up problem.
- Side note: a single worker may not have enough power to negotiate with the firm. Yet, workers can form unions, which have a significant bargaining power over the firms.
- Workers (unions) may demand a higher wage if they observe that the firm has excess liquidity. Thus, to increase its bargaining power, the firm may increase its leverage, which reduces its flexibility in terms of cash flows.
  $\rightarrow$ Matsa (2010) uses right-to-work laws that reduce the power of unions to create an exogenous shock in union power. He finds that this law reduces firms' leverage, in line with firms using leverage strategically.
- More powerful labor is similar to fixed investments, which reduce firms' capacity to deal with uncertainty.

Financial constraints and wages

- Howell, Brown 2022: How do small, private, high-tech firms share a positive, one-time cash flow shock with employees?
  $\rightarrow$ Setting: SBIR program provides 150k grant to firms. There is a ranking among firms, leading to an RDD design.
- Award immediately increases average wages (elasticity = 0.07), driven by incumbent employees and no effect on new employees
  $\rightarrow$ The effect on incumbent employees increases with tenure
- Traditional view: Unconstrained firm, constrained employee
  $\rightarrow$ Risk-neutral firm insures risk-averse worker$\rightarrow$ Flat wage-tenure profile $\rightarrow$ Worker can smooth consumption, no effect of cash flow
- If firm is financially constrained but can commit to long term contracts, employees can offer financing to the firm
  $\rightarrow$ Worker initially underpaid in exchange for a higher wage later when the firm's situation improves $\rightarrow$ firm to grow faster than would otherwise

Employee talent

- Some workers have hard-to-replace talents or are crucial for the firm. Separation of such workers may leave firms vulnerable
- The importance of retaining high-skilled workers has been rising. Falato, Kadyrzhanova & Sim (2013) find that firms' reliance on intangible capital rose from 25 percent of net book assets in 1970 to 85 percent in 2010. This capital is more important for health, high-tech, and finance companies.
- Departure of hard-to-replace workers reduces the productivity of the firm capital, lowering the value of the firm. Eisfeldt & Papanikolaou (2013) use labor mobility and find that firms with more mobile workers earn 5 percent higher average returns.
- To reduce the labor mobility risk, firms may use a lower leverage. Klasa et al. (2018) find that firms increase their leverage after a law that prevents workers with work-related secrets from switching to a rival firm.

Equity-based compensation

- Typically, equity-based compensation is used for top executives to fix agency problems. Yet, we are witnessing the use of this type of compensation more for a broader set of employees. It has a few advantages
  1. Increase worker productivity (Lazear 2000)
  2. If workers' reservation wages are correlated with firm performance, equity compensation gives workers a rise when labor demand increases, vice versa (Oyer 2004)
  3. It can attract workers who are optimistic about the firm's future (Bergman Jenter 2007)
  4. Workers have more knowledge about the firm and their acceptance of equity compensation could be a strong signal (Lazear 2004)
  5. Paying by equity instead of cash can be helpful for firm liquidity (Core Guay 2001)
  6. Employee stock ownership can deter hostile takeovers (Kim Ouimet 2014)
  7. It enables firms to share the risk (Shimer 2004)

Downward wage rigidity

- Firms almost never decrease wages nominally. This means that firms have limited room to adjust their labor if a bad shock happens.
- Thus, downward wage rigidity increases firms' operating leverage. Schoefer (2015) finds that wage rigidity leads firms to reduce hiring and profitable investment.
- In a similar way, firms may opt for lower leverage due to downward wage rigidity.
- Faia Pezone (2024): Collective bargaining to create an exogenous measure in wage rigidity. Firms with more rigid wages react to monetary policy shocks more.
- Acabbi Panetti Sforza 2023: Rigidities in labor amplifies the real effects of credit shocks $\rightarrow$ Interbank market freeze in 2008 as the credit shock

Firm ownership structure and labor outcomes

- A few papers look into how the changes in firm ownership affect labor outcomes
  1. Initial public offering
  2. Private equity
  3. M&A
  4. Privatization and family ownership

Initial public offering

- How can an IPO affect employees of a firm?
  $\rightarrow$ IPOs can relax financial constraints on the firm, which can increase the investment on labor
  $\rightarrow$ Typically, an IPO changes the ownership of key executives, leading to changes in agency problems in the firm
  $\rightarrow$ The firm may focus on stock market price instead of long-term growth
  $\rightarrow$ An IPO can create a wealth effect on employees if they have ownership
- Challenge: The decision to IPO is correlated to economic performance

Initial public offering

- Bernstein (2015): Focus on the firms that started their IPO process. Note that not all firms complete their IPOs.
  $\rightarrow$ He uses stock market return during the book-building period as an IV for IPO completion while controlling for longer-term market trends.
  $\rightarrow$ Book-building: The Underwriter assesses the demand for the company. Large investors submit their bids and number of shares.
  $\rightarrow$ Stock market returns are uncorrelated to individual stock returns, which influences the completion probability of IPOs.
- He finds that key inventors leave the firm after the IPO and lower firm's innovation
- Borisov et al (2021) and Babina et al (2020) use the same strategy
- After an IPO, firms increase their employment, hire lower-wage employees, pay a higher wage premium, and increase employee turnover.

Mergers and Acquisitions

- Obtaining the employees of a target company can be a direct motivation for an M&A
- Acquiring employees via M&A can have benefits, such as removing frictions that can occur in external hiring (Ouimet and Zarutskie 2020)
- Chen et al (2021) find that a regulation that makes switching to a competitor firm increases M&A activity
- Similarly, firms are more likely to enter a sector via M&As to grow in that sector (Beaumont et al 2021)
- He & le Maire 2021 find that firms with a higher manager wage premium are more likely to be a target. And these wages decline after an M&A.

Mergers and Acquisitions

- M&A affects the employees of the target and acquirer differently. The reduction in wage after M&A is mostly driven by the employees of the target company (Gehrke et al 2021)
- Ma et al (2016) find that firms increase their investment in IT after a merger. This means that the displaced workers in the target company were doing routine-based tasks and therefore not needed anymore.
- Another effect of M&A comes from market power. After a merger, firms enjoy a higher market power in the labor markets, which allows them to offer lower wages (Prager and Schmitt 2021, Benmelech et al 2022)

Mergers and Acquisitions

- Empirical challenges: M&A can change many things in the target (more lenient financial constraints, fewer agency problems, etc.). Also an omitted variable could affect the results
- Methods in the literature
  1. Matching on observables
  2. Comparing completed and exogenously cancelled M&As
  3. Using fixed effects and rich heterogeneity tests to support causal claim

Private Equity Buyouts

- Buyouts aim at increasing profitability by improving the overall efficiency of the target company. This may require firing employees or reducing wages
- Earlier studies found that firms reduce employment after an LBO. Yet, Davis et al (2021) provide a wider explanation
  $\rightarrow$ If the target company was public, employment declines. Otherwise, employment increases
  $\rightarrow$ Credit conditions in the macroeconomy affects employment after an LBO
- Workers who perform routine tasks and managers experience worse outcomes after an LBO (Olsson Tag 2017)
- Similarly, wages of IT workers increase (Agrawal Tambe 2016)
- Fang, Goldman, Roulet (2022): After an LBO, wage inequality decreases. Firms replace expensive employees with cheaper and younger ones. Incumbent employees receive a small wage increase.

Firms and Inequality

- There is a large interest in inequality (Piketty and Saez 2003)
- In addition to obvious reasons, inequality is important for finance research as it can affect both firm and employee productivity.
- One key measure for inequality is within- and between-firm components
  $\rightarrow b_t^{i,f} = \bar{b}_t^f + [b_t^{i,f} - \bar{b}_t^f]$
  $\rightarrow var(b_t^{i,f}) = var_f(\bar{b}_t^f) + \sum_f \omega_f \times var_j(b_t^{i,f})$
- Song et al (2019) document that
  $\rightarrow$ Within-firm variance is larger than the between-firm variance
  $\rightarrow$ However, it is between firm variance that increased over time (2/3s of the increase in overall variance)
  $\rightarrow$ The reason is sorting: high-wage workers are more likely to work at high-wage firms

Firms and Inequality-Reasons

- Gabaix and Landier (2008) argue that within-firm inequality reflects managerial talent.
  $\rightarrow$ CEO pay is higher in larger firms
  $\rightarrow$ More talented CEOs are matched with larger firms
- Edmans et al (2011) use synergies. If employees can create a positive spillover effect on their colleagues, their high pay can be justified.
- Mueller et al (2017) find more talented managers match with larger firms and within-firm pay inequality increases with firm size. Also, firms with higher pay inequality have higher valuations and stronger operating performance.

Firms and Inequality-Consequences

- Within-firm wage inequality can reduce employee effort. Breza et al. (2018) show that this inequality is driven by worker productivity. If the inequality is justified, it has no negative effect on output, etc.
- Cullen and Perez-Truglia (2022) run an RCT: they inform employees about how much their managers and peers earn.
  $\rightarrow$ Employees work harder when they learn that their managers earn more than their expectations
  $\rightarrow$ Yet, employees do not work harder when they learn that their peers earn more than their expectations

Firms and Inequality-Consequences

- As a part of Dodd-Frank act, public companies disclose the pay ratio between the median employee and the CEO
  $\rightarrow$ Pan et al. (2022) find negative abnormal returns upon disclosure of high CEO-worker pay ratios, suggesting investors dislike the inequality measured by that pay ratio.
  $\rightarrow$ LaViers et al. (2022) find that investors respond positively to voluntary disclosures of CEO pay ratios, which tend to be accompanied by more firm-specific information.
  $\rightarrow$ Silva (2021) finds that events that increase wages in one part of a firm (e.g., a local minimum wage increase) increase wages in other parts of the firm.

Banking and Labor

- After the GFC, the literature wanted to understand the real effects of credit conditions
  $\rightarrow$ Many of the empirical banking papers finish with a section where the effect on investment or employment is investigated
- The main premise is that firms are financially constrained. Thus, they react to a decline in loan supply by adjusting their behavior
- Note that showing the real effects of bank lending entails macro models to include a proper banking
- Earlier studies include Bernanke, Gertler type of models that we cover in the first week

Banking and Employment

- Chodorow-Reich (2014) shows that firms that are exposed to a negative loan supply shock reduce their employment
- Setting: post-crisis period
  → Calculates each bank's exposure to Lehman Brothers. The relationship between Lehman Brothers and other banks before the GFC is quasi-random, and if a bank has a larger exposure, it reduces its loan supply more during the GFC.
  → Calculates each firm's exposure to Lehman Brothers via other banks using syndicated loan data

Banking and Employment

- Falato Liang (2016): Do creditor rights increase employment risk?
- This paper considers covenant violations, which give creditors the right to demand the loan immediately
- Firms may reduce their employment to improve net cash flows
- Covenant violations are common and rarely lead to actual default. Yet, they change the decision-making process in the firm substantially.
- This paper finds that firms reduce employment after a covenant violation using an RDD setting

Bank Lending and Labor Allocation

- Bai, Carvalho, Phillips (2018): Do lending affect the reallocation of labor?
  $\rightarrow$ In a frictionless world, firms should use the optimum labor for their activities. Yet, frictions exist.
- This paper uses state-level banking deregulations. These regulations allow banks to open branches in other states. Before, the banks could open branches only in states where they have their HQs.
- Deregulation means more credit is available to the firms.
  $\rightarrow$ After the deregulation, labor is reallocated towards higher marginal product of labor firms, increasing the overall productivity

Banking and Labor Market Policies

- Arslan Degerli Kabas (2024): Does unemployment insurance affect the economy via the banks?
- The vast literature on UI almost always focuses on how job seekers adjust their job search or how firms adjust their job postings
  $\rightarrow$ Documenting a channel that works via the banks should be important
- To the extent that UI reduces unemployment risk, it should also reduce precautionary savings
- Bank deposits are the main saving tool for the HHs. Thus, higher UI lowers bank deposits, which lowers lending with real effects

Banking and Labor Market Policies

- Arslan Degerli Guler Kuruscu Kabas (2024): Does UI work as an automatic stabilizer?
- UI is the textbook example of automatic stabilizers: It provides income to unemployed, decreasing the magnitude of the economic bust
- However, UI also reduces unemployment risk, which enables HHs to obtain higher leverage. We know that HH leverage amplifies economic busts. Which effect dominates?
- We use a calibrated model and county-level evidence from the US to show that UI amplifies the size of the economic busts!
- The channel is that employed increases their leverage due to a higher UI, and their leverage channel dominates the stabilizing effects via the unemployed

Banking and Labor Market Policies

- Kabas Roszbach (2024): Can mortgage restrictions have unintended effects on the labor market?
- Macropru aims to improve financial stability by reducing HH leverage
- We know that liquidity during the job search matters, implying that the amount of mortgage payments may influence job search
- A mortgage restriction enables job seekers to have a longer job search, leading to a higher wages in their new jobs