

CSEF-EIEF-SITE Conference on Finance and Labor

Einaudi Institute for Economics and Finance

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Summary of presentations and comments by discussants and audience

Day 1: Friday, August 28th

Morning session

- **Liu Yang**, “*The Human Factor in Acquisitions: Cross-Industry Labor Mobility and Corporate Diversification*” (with **G. Tate**).

Diversifying acquisitions account for 25% of all acquisitions in the US between 1990 and 2008. Why do firms diversify into seemingly unrelated industries? **Tate** and **Yang** suggest that transferability of human capital can help explaining unrelated diversifying acquisitions. To test this hypothesis the authors build a measure of human capital transferability using a rich dataset of *external* job changers. For each pair of industries the human capital transferability index is given by the average of the fraction of workers from each industry that move to the other industry in the pair. They find that diversifying acquisitions occur more frequently among industry pairs with higher transferability and that such acquisitions result in larger labor productivity gains and less frequent divestitures. Moreover, following those deals, acquirers retain more high skill workers and they exploit the real option to move workers from the target firm to jobs in other industries inside the merged firm.

During his discussion, **Han Kim** points out that the authors interpret divestitures following acquisitions as a “failure”, while they might well be a success for the acquirer firm if the value to the shareholders increases. Furthermore, the authors use sales to employment ratio as a productivity measure without taking into account that the relevance of a productivity measure based on sales may vary a lot across industries, which may affect the results substantially given that the authors do not include industry-pair fixed effects.

- **Rui C. Silva**, “*Talent in Distressed Firms: Labor Fragility and Capital Structure*” (with **R. P. Baghai**, **V. Thell** and **V. Vig**).

The talent premium and the importance of human capital in organizations have been rising over the last decades. Human-capital-intensive firms can be held up by their employees, and within them the separation between ownership and control is impossible. Using detailed micro data from Sweden, **Baghai**, **Silva**, **Thell** and **Vig** analyze movements of talented workers around bankruptcy or restructuring. When approaching distress, firms tend to lose their more talented workers relative to the control group, whereas there is no significant difference in their ability to attract new talented workers. Such results are stronger when there are readily available outside options for the workers. Using a diff-in-diff approach that exploits the staggered introduction of no-compete clauses in the US, the authors show that firms that are less

exposed to the fragility induced by labor mobility respond by altering their capital structure, especially by increasing leverage.

In his discussion, **Fabiano Schivardi** points out a concern with the analysis: it is impossible to distinguish whether workers leave the firms that are approaching distress or rather it is the loss of talent that induces bankruptcy or reorganization. Furthermore, the data set used does not allow to distinguish whether workers are leaving the firm voluntarily or are laid off. The implications may differ substantially, e.g. firms may be firing top managers in order to reorganize the firm.

- **Francisco Palomino**, “*Leisure Preferences, Long-Run Risks, and Human Capital Returns*” (with **R. F. Dittmar** and **W. Yang**).

Labor income provides a natural link between consumption and leisure that has not been explored by the previous asset pricing literature. **Dittmar, Palomino** and **Yang** analyze the contribution of leisure preferences to a model of long-run risks in leisure and consumption growth. The incorporation of leisure in utility allows the authors to model implications for the price of human capital and for its expected return. According to their model, the expected return of human capital is between 25% and 60% of the equity premium, with a Sharpe ratio for human capital that is 50% larger than that of equity.

In his discussion, **Christian Lundblad** points out two main concerns related to the analysis: 1) the authors de-trend the leisure series by using the Hodrick-Prescott filter, but productivity shocks might well induce significant changes in the labor/leisure choice; 2) data on leisure might not be capturing leisure as usually intended in the economic literature. By looking at the time series data for leisure for males and females separately, it clearly appears that home production is not correctly accounted for. Furthermore the data does not make any distinction between “voluntary” and “involuntary” leisure.

Afternoon session

- **Daniel Carvalho**, “*The Impact of Bank Credit on Labor Reallocation and Aggregate Industry Productivity*” (with **J. Bai** and **G. Phillips**)

There have been several studies establishing a causal link between credit markets and growth, mostly focusing on the allocation of capital and the entry/exit of firms. **Bai, Carvalho** and **Phillips** argue that credit markets can affect aggregate productivity also through the reallocation of labor and show that state banking deregulation laws in the US indeed led to significant increases in the reallocation of labor towards higher marginal product firms within local industries, whereas there are limited effects for capital reallocation. The empirical methodology develops in two steps. First, the authors isolate the contribution of industry resource reallocation to industry productivity growth by building on previous research by Petrin and Levinsohn (2012). In the second step, they estimate the effect of credit market deregulation on reallocation gains by using a differences-in-differences approach that exploits the staggered implementation of banking deregulation across the US from 1976 to 1993. The sensitivity of the employment share to the marginal product of labor increases as a result of deregulation for small firms, and such changes translate into 1% to 3% gains in the aggregate productivity of local industries. The

extensive margin also has an impact on aggregate productivity, although it seems to play a smaller role than labor reallocation.

The results presented are robust to several specifications and to the restriction of the control group to a matched sample of firms. However, as pointed out by **Andrew Ellul** in his discussion, the strategic use of debt in order to compress wages could be another channel that explains the relation between higher ability to borrow and differential employment growth. Ex-ante firms' financial resources matter and might help distinguishing between the two channels at play. Furthermore, the analysis focuses exclusively on capital market frictions, but labor market frictions may also play a relevant role and interact with banking deregulation in a very interesting way.

- **Denis Sosyura**, *“Winners and Losers of Financial Crises: Evidence from Individuals and Firms”* (with **D. Hochfellner**, **J. Montes** and **M. Schmalz**)

Do financial crises lead to creative destruction or do they merely cause deadweight losses? **Hochfellner**, **Montes**, **Schmalz** and **Sosyura** address this question in the context of Germany by using a unique feature of the German banking system: when regional banks – Landesbank – incur losses, they must be bailed out by local saving banks. Several regional banks speculated in US mortgage-backed securities and lost billions in 2007-2008. Saving banks in the corresponding states had to replenish their capital from their own reserves. The result was a shock to local saving banks' capital supply imported from the US which affected local private firms (which depend almost exclusively on local saving banks for their financing, due to high switching costs). The authors find that German regional banks' trading losses caused a deep economic contraction in the banks' exclusive geographic domains. Loan growth and output growth declined by 20 and 0.6 percentage points per crisis year, respectively, and the unemployment rate rose by 1.4 percentage points during each year of the crisis in affected states compared to unaffected states. Workers in affected firms experienced persistent earnings losses of approximately €2,400 per year, nine weeks longer unemployment spells, and a lower probability of climbing the job ladder than workers in unaffected firms.

The lack of data on bank-firm relationships induces the authors to base the empirical methodology on the comparison between listed and private firms, which however may differ along several dimensions and thus respond very differently to the financial crisis. In his discussion, **Adrien Matray** suggests an alternative approach: use firms from “bordering counties” as control group, in order to compare firms operating on the same local market but exposed to different credit supply shocks. The presentation of the results would also benefit from relying more on graphs, in order to show the dynamic impact of the credit supply and provide a visual test of the identifying assumptions.

- **Daniel Metzger**, *“Since You're so Rich, You Must be Really Smart: Talent and the Finance Wage Premium”* (with **M. Böhm** and **P. Strömberg**).

In the last 20 years, the ratio of the pay of finance workers to that of non-finance workers has increased from 120% to 170% in Sweden, and from 150% to 170% in the US. Similar trends have been observed in the relative pay of information technology, professional and consulting workers. These facts are pervasive: they have also been observed in the UK, Canada and most other developed countries. The increase in relative pay may be a sign of excessive pay, wrong incentives and/or talent absorption. Several finance

papers are consistent with the “brain drain” concern: Shu (2013), Goldin and Katz (2008), Oyer (2008), etc. But the measures used in the previous literature fail to take into account whether the expansion in graduate education has been accompanied by a change in the cognitive ability of (entering) graduates. **Böhm, Metzger and Strömberg** test whether finance is becoming more talent-intensive over time and whether the increase in earnings is associated with an increase in talent absorption. The authors use administrative data from Sweden from 1991 to 2010, matched to military records for measures of cognitive ability. They find that, on average, relative talent in finance has not increased over time and the same is true of the fraction of highly talented workers that goes into finance.

In his discussion, **Boris Vallee** points out that it is puzzling that talent does not move towards finance despite the fact that there is a finance premium. This suggests that talent may be not measured appropriately in the analysis – perhaps the skill measure does not capture the type of talent that is productive in finance. The study also suffers from the impossibility to follow up people that move abroad and from the lack of finer data that would allow to distinguish between different subsectors within finance.

Day 2: Saturday, August 29th

Morning session

- **Marco Pagano**, “*Strategic Leverage and Employees’ Rights in Bankruptcy*” (with **A. Ellul**).

The seniority of employees’ claims relative to other creditors in the liquidation of insolvent firms, and their rights in the renegotiation of their debt varies greatly across countries. **Ellul and Pagano** show that the balance between these rights of employees and those of other creditors affects the strategic value of debt. In a strategic debt model, the ability to deter employees’ wage demands by increasing leverage is lower the higher is the seniority of employees. This in turn implies that the optimal debt level increases with employees’ seniority, if bankruptcy costs are not too high. Moreover, employees’ seniority invariably increases the response of leverage to increases in the value of the firm’s assets and in its cash flow. Conversely, stronger employees’ rights in the renegotiation of corporate debt should decrease firm leverage. To test these predictions, the authors construct novel measures of employees’ protection in bankruptcy from questionnaires to law firms and other sources, and investigate whether these measures affect the response of firm leverage to the value of real estate assets in a sample of 12,445 companies in 28 countries between 1988 and 2013. Increases in the value of these firms’ real estate is associated with a greater increase in leverage for companies located in countries where employees have stronger seniority in company liquidation and weaker rights in debt renegotiation, as predicted by the strategic debt model.

Unlike the previous literature, this paper focuses on labor bargaining in the shadow of bankruptcy. In his discussion, **David Matsa** questions how relevant workers’ recovery of claims in bankruptcy is in practice. In the US, wages are only a small percentage of liabilities in typical bankruptcy filing and most firms have very short payroll cycles. However, in many countries payroll cycles are longer and there are large severance pay at stake in bankruptcy. This suggests that it would be useful to look at an indicator that takes into account also the seniority of employees’ claims to severance pay.

- **Antonio Falato**, “*Do Creditor Rights Increase Employment Risk? Evidence from Loan Covenants*” (with **N. Liang**).

A growing body of the literature studies the impact of firms' financial conditions on their labor decisions. Using regression discontinuity design, **Falato** and **Liang** study the impact of loan covenant violations on employment and find a large and robust negative impact of violations on employment and employment growth. Furthermore they find that job cuts following violations in bad times are concentrated among firms with lower access to credit and in less unionized industries. In the second part of their analysis, the authors look at the impact of unionization on loan spreads and find that firms where unions win elections pay higher loan spreads.

The analysis focuses on the impact of loan covenant violations on labor outcomes but does not compare it to their impact on capital investment. In his discussion, **Effi Benmelech** asks whether labor is *more* affected than capital. On which margin do firms adjust more when financial constraints bind? He proposes a model in which the adjustment margin depends on the adjustment costs that firms have to face. If adjustment costs for labor are lower than for capital, there will be more adjustment on the former. The relative response to financial shocks also depend on the complementarities between capital and labor. Floor discussion focuses instead on identification issues related to the manipulation of the running variable.

- **Roberto Marfè**, *"Income Insurance and the Equilibrium Term-Structure of Equity"*.

Marfè documents that GDP, wages and dividends are co-integrated but feature term-structures of risk that are respectively flat, increasing and decreasing. Income insurance within the firm from shareholders to workers can explain those term structures: distributional risk smooths wages and enhances the short-run risk of dividends. A simple general equilibrium model, where labor rigidity affects dividend dynamics and the price of short-run risk, reconciles standard asset pricing facts with the term structures of equity premia and volatility and those of macroeconomic variables, which instead are at odds in leading models. Income insurance also helps to explain dividend growth predictability, cross-sectional value premia, counter-cyclical Sharpe-ratios, and interest rates term-premia.

The study provides important new empirical evidence that advances our understanding of the term-structure of risk premia and builds a solid model providing a justification for a previous study by the same author (Marfè, 2015). However, **Miguel Palacios**, in his discussion, points out that the model still leaves some of the empirical regularities unexplained and that there is still work to do on the topic.

Afternoon session

- **Mindy Zhang**, *"Financing Intangible Capital"* (with **Q. Sun**).

Recently intangible capital has become increasingly important for firms' success. How do firms finance intangible capital accumulation? **Zhang** and **Sun** document that intangible capital investment is highly correlated with employee deferred compensation. They analyze the endogenous choice of intangible capital investment, employee compensation contracts, and financial leverage, through the lenses of a dynamic theory in which intangible capital is embodied in a firm's employees. To finance intangibles, firms can borrow through collateralized debt contracts, or borrow by delaying payment to workers in the form of employee equity. While investors can liquidate the firm's assets when the firm defaults on debt,

the workers' option of leaving with portable intangible capital serves as implicit collateral when the firm delays payment to the workers. The accumulation of intangible capital imposes two effects on firms' capital structure: a precautionary effect and an intangible capital overhang effect. Quantitatively, the model prediction is consistent with cross sectional empirical evidence. The structural estimation, along with counterfactual exercises, indicates that (1) increasing intangibles shrink firms' debt capacity but boost their total financing capacity, and (2) the overhang effect explains cross-industry differences in financial leverage.

In his discussion, **Vincenzo Quadrini** points out that the main novelty in this study is that it features two mechanisms for wage financing: 1) to bypass the standard financial constraints, 2) to retain workers. It would thus be useful to augment the analysis with a clear account of these two mechanisms and to compare the predictions of this model with a simpler version.

- **Benjamin Schoefer**, "*The Financial Channel of Wage Rigidity*".

How does wage rigidity amplify the business cycle? The literature highlights two canonical channels: rigidity of the incumbents' wages causes more layoffs during recessions, whereas rigidity of new hires' wages cause less hiring. But the canonical model does not predict any impact of the incumbents' wage rigidity on hiring. **Schoefer** shows that, when firms face financial constraints, incumbents' wage rigidity is key because it affects the ability of the firm to borrow (through the collateral constraint). The interaction between these two frictions lets the calibrated model account for more than 50 percent of hiring fluctuations in the U.S. data. The author also presents new firm-level evidence that employment responds to cash flow shocks, and that internal funds help firms stabilize employment during recessions. Moreover, calculations show that a slight increase in incumbents' wage pro-cyclicality could smooth aggregate profits and internal funds.

A likely implication of this study is that in recessions wages should fall to boost borrowing capacity of financially constrained firms. In his discussion, **Claudio Michelacci** points out that this implication contrasts with the "Keynesian view" that wages should rise in recessions in order to sustain aggregate demand. In the last recovery, he shows, US firms were net lenders, and thus they were not financially constrained. The drop in employment in the US seems much more driven by financial constraints of households, rather than those of firms.

- **Hengjie Ai**, "*A Mechanism Design Model of Firm Dynamics: The Case of Limited Commitment*" (with **D. Kiku** and **R. Li**).

Firms' policies vary with their size. Small firms tend to invest at a much higher rate, pay out less dividends compared with large firms and have higher managerial compensation. In addition, both the distribution of firm size and the empirical distribution of CEO compensation are characterized by a power law. The authors propose a model of firm size dynamics with two-sided limited commitment. In the model, shareholders cannot commit to holding negative net present value projects, and managers cannot commit to compensation plans that yield life-time utility lower than their outside options. In the first best, CEOs should be fully insured against risk (i.e. constant pay) and there should be no relationship between investment and firm size. When one takes into account limited commitment by shareholders and limited commitment by managers, there is imperfect risk sharing and small firms have to invest more in order to push up the managers' outside option. The model endogenously generates a power law for firm size and

CEO pay, but a key ingredient of the model is that managers' outside option is proportional to capital in the firm.

In his discussion, **Gian Luca Clementi** shows that constant returns to scale in production and i.i.d. shocks to the capital stock imply that the growth rate of capital does not depend on its current value. This in turn implies that the distribution of capital (firm size in the model) converges to a Pareto distribution. While these points are not novel, he also points out that the model has interesting implications for a number of stylized facts about the current and deferred components of CEO compensation, which would be worth exploring further.

Day 3: Sunday, August 30th

Morning session

- **Hyunseob Kim**, "*The Labor Impact of Corporate Bankruptcy: Evidence from Worker-Firm Matched Data*" (with **J. Graham**, **S. Li** and **J. Qiu**).

What are the effects of corporate bankruptcy on employee outcomes? How do wage losses upon bankruptcy affect corporate policy decisions ex ante? How do they affect capital structure? **Graham**, **Kim**, **Li** and **Qiu** address these questions using employer-employee matched panel data from the US Census. The data cover thirty states from 1985 to 2008. The event study analysis shows no anticipatory effects and a persistent drop in wages following bankruptcy of about 15%. The majority of workers leave bankrupt firms within three years and experience an even larger wage loss. Such difference seems to be driven by changes between industries. How does the risk of bankruptcy affect wages ex-ante? The authors show some evidence of compensating differentials: firms with high leverage pay higher wages. This has implications for firms' optimal capital structure: firms should take into account the adverse effect of leverage on wages, as it goes towards reducing the tax benefit of leverage.

In her discussion, **Paige Parker Ouimet** underlines that the analysis uses a rich and detailed dataset that could be exploited more in order to shed light on the mechanism through which higher financial distress translates into higher wages. The main concern about this study relates to the identification of the causal effect of interest. Bankruptcy is clearly not a random event and, even though the identification strategy is based on the staggered timing, the bankruptcy filing might be driven by unobserved changes that also affect the outcomes. It would also be useful to relate these findings to the literature on the human costs of layoffs. Finally, the discussant suggests that the second part of the paper on the capital structure implications would need to be developed further, possibly in a separate paper.

- **Thomas Schmid**, "*Employee Representation and Financial Leverage*" (with **C. Lin** and **Y. Xuan**).

What is the impact of employees' power on financial leverage? **Lin**, **Schmid** and **Xuan** address this question by exploiting a German law which mandates that firms' supervisory boards consist of an equal number of employees' and owners' representatives. The law only applies to firms with more than 2000 employees and the authors exploit such discontinuity for identification. They find that employees' representation is associated with greater financial leverage, and explain this result as a supply-side effect:

credit providers have similar interests as workers and therefore are more willing to lend to firms where they can count on employees' power to reduce risk-taking. This is consistent with the fact that employees' board representation is also associated with a drop in interest rates, an increase in debt maturity and a decline in the frequency of covenants. Also the cash sensitivity of investment declines, there are less M&As, and the idiosyncratic volatility of returns drops.

In his discussion, **Ernst Maug** suggests possible conceptual frameworks that would give a unified view to interpret the many results shown in the analysis. The authors suggest that employees' representation reduces risk-taking. However, he says, if firms engage in too little risk-taking we would expect to see a drop in shareholder value for these firms, a point on which no evidence is provided in the paper. The analysis instead only shows positive effects from employee representation, which raises the question of why not all firms choose to have employees' representatives in their boards.

- **Joachim Tåg**, *“Private Equity, Layoffs and Polarization”* (with **M. Olsson**).

Buyouts are becoming more and more common in the US and in other developed countries. They are often criticized for generating layoffs, although little evidence exists to support this evidence. **Olsson** and **Tåg** use a comprehensive Swedish employer-employee matched dataset to investigate whether workers lose their job in private equity buyouts, what explains layoffs in private equity buyouts and which workers are more likely to suffer. In their data, each firm undergoing a leveraged buyout is matched to the firm with the closest propensity score. The resulting sample of treatment and control firms is used to estimate the impact of leverage buyout (LBO) on existing workers' unemployment incidence in a diff-in-diff setting. A preliminary analysis of firm-level outcomes following an LBO reveals that there are two types of buyouts depending on the target firms. For ex-ante low-productivity firms, the LBO increases productivity but does not affect size in a significant way. For ex-ante high-productivity firms, it is the opposite: the latter are “growth LBOs”, whereas the former are “reorganizations”. Consistently with these findings, LBOs do not have a significant impact on employees' unemployment incidence in firms with ex-ante high productivity, whereas the opposite is true for workers in “routine” and “offshorable” tasks in ex-ante low-productivity firms. The authors interpret their findings in the light of the job polarization literature: “reorganizations” lead to the acquisition of skill-biased technologies and automation that displace workers in “routine” tasks and complement workers in “non-routine” tasks. Furthermore, employees in offshorable tasks lose their jobs and so do blue collar workers in firms with ex-ante low leverage and aggressive unions, as the LBOs increase the bargaining power of the firm against unions.

In her discussion, **Annalisa Scognamiglio** underlines that the analysis offers a novel pitch as it studies the impact of LBOs from the point of view of the worker rather than that of the firm. She then points out some concerns about the analysis: 1) there could be spillover effects on the control group because it is formed by workers who likely belong to the same local labor market as the treated workers, 2) differential exits of treated firms might also constitute a problem as the difference in workers' outcomes between treatment and control might be driven by exits rather than by LBOs. It would also be helpful, she suggests, to provide more direct evidence of the acquisition of new technologies, as workers in “routine” tasks might differ from workers in “non-routine” tasks along other dimensions, and to complement the evidence on unemployment incidence with evidence on earnings.