A proposal to maintain jobs, effort standards and human capital during economic crisis:

The scope for insurance in the shirking model

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AGENDA

• Motivation
• Contribution and related literature
• Approach of this paper
• The labor discipline model extended
• Results
• Conclusions and further research
MOTIVATION

• **Basic setting**
  – high quality products/services \(\rightarrow\) attaining of effort standard essential

• **Current crisis**
  – evidence of reallocation of risks
  – incidence of “rewriting” valid collective agreements
    • payment cuts
    • working hours assignment …

• **How to keep performance sufficient during crisis?**
  – efficiency wages driven implicit contracts
  – (informal) bonus payment driven implicit contracts

• **Provision of unemployment insurance in implicit contracts?**
  – (inefficient) private incentives for unemployment insurance
  – mandatory insurance, employment protection/separation payments
CONTRIBUTION AND RELATED LITERATURE

- **Major objective**
  - develop a labor market practice
    - at the firm level
    - with adjustment potential to maintain employment and jobs
    - that simultaneously satisfies incentive constraints

- **Related approaches (in principle)**
  - principal-agent setting
  - random job destruction
  - efficiency wage mechanism
    - shirking model (Shapiro/Stiglitz 1984) most relevant
• **Related literature**
  
  – economic turbulence
  
  – potential insurance in incentive contracts
  
  – competing incentive device: bonus payment
    • MacLeod/Malcomson 1989, Parent/MacLeod 1999, Lemieux/Parent/MacLeod 2007/2009
  
  – dynamic and behavioral extensions of the non-shirking condition
    • Kimball 1984, Danthine/Kurmann 2006
    • Fehr/Hart/Zahnder (2008), Abeler et al. 2009
  
  – stochastic concepts to rank risky prospects
    • Rothschild/Stiglitz 1970, Rasmusen/Petrakis 1992
APPROACH OF THIS PAPER

• **Basic setup**
  – starting point: shirking-model (Shapiro/Stiglitz 1984)
    • “equilibrium unemployment as a labor discipline device”
    • with generalized risk attitudes, and
    • with formal integration of random separation

• **Potential means of labor adjustment**
  – extensive margin vs. intensive margin

• **Adjustment and incentives with working time accounts (wta)**
  – principle idea: internalizing allocative shocks
    • temporary transfer of hours, mutual insurance, non-shirking constraint satisfied
    • double-sided threat, reciprocity, and self-enforceability
    • hours accounting systems, job destruction, and employment

• **Key questions**
  – Do private incentives for unemployment insurance during crisis exist ?
  – What are the properties and expected effects of potential insurance device ?
• **Generalized risk attitudes**
  - non-shirking condition is robust
  \[
  w_{\text{eff}} = w_h + \left(1 + \frac{a + r + b_0}{q(m)}\right) \cdot c(e)
  \]

• **Formalizing random separation and crisis**
  - shock components of job destruction rate
  \[
  b_t = b_0 + \varepsilon_t + \nu_t
  \]
  with \( \varepsilon_t \sim N\left(0, \sigma_{\varepsilon}^2\right) \)
  and \( \nu_t \sim N^+\left(0, \sigma_{\nu}^2\right) \)

• **Intensive adjustment of labor via working time accounts**
  - efficiency wage level is given by \( W_{\text{eff}} \)
  - defining \( \text{wta} \): internalizing allocative shocks and mutual insurance
  - individual accounts
  \[
  \text{wta}_\text{mi} := \left\{ w_{\text{eff}}^{\text{eff}}, h_\mu, \Delta h_t, T_{\text{ref}}, j_{\text{sec}} \right\}
  \]
• The scope for mutual insurance I: firms
  
  – perfectly adjustable production

PROPOSITION 1 (INSTANTANEOUS ADJUSTMENT):
*When costless buffering or perfect price adjustment are feasible, insurance refined labor discipline contracts wta_mi second-order stochastically dominate their pure efficiency wage contract counterparts pew_ld.*

– economic crisis and non-storabilities

PROPOSITION 2 (NON-STORABILITIES):
*With inventories and price adjustments being ruled out (e.g. quality standard threshold), and during economic crisis wta as a mutual insurance device first-order stochastically dominate their pure incentive device counterparts. Firms have strict incentives for the introduction of working time accounts in crisis.*
• The scope for mutual insurance II: employees

  – risk averse workers

PROPOSITION 3 (INCOME SMOOTHING):
*Any risk averse worker prefers working time accounts as a mutual insurance device compared to the pure efficiency wage contract counterpart:* \( wta_{mi} > pew_{ld} \).

  – economic crisis and non-storabilities

PROPOSITION 4 (INCOME GAIN):
*During economic crisis, when instantaneous price adjustment to allocative shocks is not feasible, or with prohibitive storage costs any worker prefers mutual insurance via working time accounts, irrespective of his or her risk attitude.*

• Enforceability: Wta as an effort preserving mutual insurance device

  – hours transfers of employees and firms are mirror inverted
  – de facto randomizing of savings due to uncertainty in hourly wages
    • insights from Chappiori et al. 1994 apply
• An intuitive approach to the proofs in the paper
  – utilize the concept of probability mass shift
    • mean preserving shifts $\Rightarrow$ second-order stochastic dominance (ssd)
    • mean altering shifts $\Rightarrow$ first-order stochastic dominance (fsd)

![ssd Proposition 1 & 3](Image)

![fsd Proposition 2 & 4](Image)
CONCLUSIONS AND FURTHER RESEARCH

• Contribution of the paper
  – proposal to maintain jobs and firm success during crisis without distorting existing incentive mechanisms has been developed
  • approach: stylized extension of the shirking model
  • evaluation: probability mass shifts \(\rightarrow\) mean preserving/augmenting contraction

• Effects on labor market outcomes with binding incentive constraints
  – smoothing of turbulence, lowered rates of job destruction & unemployment
  – improved maintenance of knowledge capital and extended tenure
  – increased employment, higher labor productivity
  – sustaining credibility of employees to cover monthly liabilities
• **Private incentives for insurance during crisis exist**
  – **working time accounts** that are integrated into the labor discipline context (Shapiro/Stiglitz 1984) establish a **self-enforcing institution** of mutual insurance between workers and firms, i.e. provide **reciprocal insurance of profits and jobs/income**
  – insurance operates through inter-temporal adjustment of worked hours. In pecuniary terms the corresponding – hypothetical - **risk premium** is captured by **varying hourly wages**
  – **wta “translate” (un)employment risk into hours risk** where transfer budget is bounded by contracted hours deviation limits

• **Future research**
  – integration of competing incentives as bonus payments
  – working time accounts and job selection: alternative adjustment
  – documentation systems and practical enforcement of wta
  – long-term aspects of wta and inter-firm transfer of balances
Definition 5 (Working time accounts as a mutual insurance device):

With employment security $j_{sec}$ effective, WTA comprise of:

- efficiency wage $w_{eff}$ that captures the appropriate incentive device to meet effort standard,
- indicator variable $1_{ibp}$ takes value 1 if informal bonus payments arrangements exist,
- vector of contracted daily, weekly, etc. standard working time $h_\mu$,
- vector of maximum daily, weekly, monthly, etc. allowance of hours deviation from contracted average $\Delta h_\mu$, and
- reference period $T_{ref}$ to mandatorily balance accounts.