

## LABEX-ECODEC

### Axis 1: Secure Careers in a Global World

#### Activity report, August 2014

### **1 Main research areas**

This research area focuses on the efficiency of (1) regulations and social security systems and (2) corporate human resource policies. Its research program investigates issues including: (1) Unemployment insurance; (2) Analysis of mobility; (3) Vocational training; (4) Employment protection and flexicurity; (5) Subsidies for employment or firm creation; (6) Social costs of labor mobility; (7) Human resources policies.

### **2 Composition of the team**

PI: Pierre Cahuc (CREST-ENSAE)

Co-PI: Isabelle Méjean (Ecole Polytechnique)

Co-PI: Dominique Rouzies (HEC)

CREST: Bruno CREPON, Denis FOUGERE, Francis KRAMARZ, Thomas LE BARBANCHON, Julien PRAT, Roland RATHELOT.

HEC: Charles-Henri BESSEYRE DES HORTS, Françoise CHEVALIER, Adina DABU, Joëlle EVANS, Michael SEGALLA, Mathis SCHULTE, Anne-Sophie TOURTOULOU

Polytechnique: Christian BELZIL, Raicho BOJILOV, Edouard CHALLE, Gregory CORCOS, Jean-Baptiste MICHAU.

#### **Editorial activity, awards**

American Economic Journals : Macroeconomics (Pierre Cahuc)

European Economic Review (Pierre Cahuc)

IZA Journal of Labor Economics (Pierre Cahuc)

Labour Economics (Pierre Cahuc)

Journal of Economics - Zeitschrift für Nationalökonomie (Pierre Cahuc)

Pierre Cahuc is member of the Conseil d'Analyse Economique du Premier Ministre

Pierre Cahuc is member of the Comité d'experts du salaire minimum, rattaché auprès du Ministre du travail

### **3 Publications**

*In Subsections 1 and 2 we display a selection of published papers and working papers produced by the team within the axis topics. The papers In Subsections 3 and 4 have been specifically funded by the Labex Ecodec.*

#### **1) Published and accepted papers**

A. Alesina, Y. Algan, P. Cahuc and Paola Giuliano, "Family Values and the Regulation of Labor", forthcoming, *Journal of the European Economic Association*, 2014.

Y. Algan, P. Cahuc and M. Sangnier, "Trust and the Welfare State: The Twin Peaks Curve", forthcoming, *Economic Journal*, 2014.

J. Prat, G. Felbermayr, "Efficiency Gains from Trade and Labor Market Outcomes" *Nordic Economic Policy Review*, 2013, Vol. 1, pp. 45-72

Y. Algan and P. Cahuc, "Trust, Growth and Well-being: New Evidence and Policy Implications", with *the Handbook of Economic Growth*, Volume 2, pp 49-120, 2014, edited by Steven N. Durlauf and Philippe Aghion (the "Editor"), in the *Handbooks of Economics Series (the "Series")* edited by Kenneth J. Arrow and Michael D. Intriligator.

Y. Algan, P. Cahuc and A. Shleifer "Teaching Practices and Social Capital", *American Economic Journal: Applied Economics*, vol 5, no. 3, 2013, pp. 189-210.

P. Cahuc, "Research, Flows, Job Creations and Destructions", forthcoming, *Labour Economics*, 2014

P. Cahuc and S. Carcillo, "The Detaxation of Overtime Hours: Lessons from the French Experiment", *Journal of Labor Economics*, Vol. 32, No. 2 (April 2014), pp. 361-400.

P. Cahuc, S. Carcillo, U. Rinne and K. Zimmermann, "Youth unemployment in old Europe: the polar cases of France and Germany", *IZA Journal of European Labor Studies*, 2013, 2:18.

P. Cahuc and S. Carcillo, "Can Public Sector Wage Bills Be Reduced?" in *Fiscal Policy after the Financial Crisis*, edited by Alberto Alesina and Francisco Giavazzi, chapter 9, pp. 359-405, 2013, *NBER, The University of Chicago Press*, 2013.

P. Cahuc and G. Laroque, "Optimal Taxation and Monopsonistic Labor Market: Does Monopsony justify the Minimum Wage?" *Journal of Public Economic Theory*, Volume 16, Issue 2, April 2014, pp. 259–273.

F. Malherbet, P. Cahuc and O. Charlot "Dualisme des contrats de travail et rotation de la main d'oeuvre", *Revue Française d'Economie*, 2012.

F. Malherbet, O. Charlot and M. Ulus "Efficiency in a Search and Matching Economy with a Competitive Informal Sector", *Economic Letters*, 2013.

F. Malherbet with O. L'Haridon and S. Perez-Duarte "Does Bargaining Matter in the Small Firm Matching Model?", *Labour Economics*, 2013.

## 2) Working papers and papers in revision

F. Malherbet, O. Charlot and C. Terra, "Informality in developing economies: regulation and fiscal policies". Revised and Resubmitted, *Journal of Economic Dynamics and Control*.

F. Malherbet, O. Charlot and P. Cahuc, "Explaining the Spread of Temporary Jobs and Its Impact on Labor Turnover", Revise and Resubmit (2nd round), *International Economic Review*.

F. Malherbet, O. Charlot and M. Ulus "Unemployment Compensation and the Allocation of Labor in Developing Countries", Revised and Resubmitted, *Journal of Public Economic Theory*.

## 3) Labex Ecodec published and accepted papers

I. Mejean, J. di Giovanni, A. Levchenko, "Firms, destinations and aggregate fluctuations", *Econometrica*, Vol. 82, No. 4 (July, 2014), 1303–1340.

J. Prat, "Dynamic Contracts and Learning-by-Doing", forthcoming in *Mathematics and Financial Economics*, 2014

J. Prat, B. Jovanovic, "Dynamic Incentive Contracts when Agent's Quality is Unknown", Forthcoming in *Theoretical Economics*, 2014

E. Challe, X. Ragot, "Precautionary saving over the business cycle", forthcoming in *Economic Journal*

## 4) Labex Ecodec working papers and papers in revision

A. Keshavarz, F. Kramarz, D. Rouziès, M. Segalla and B. Quelin, "How Do Sales Organizations Value Job, Firm or Industry Experience? An Examination of Sales Career Paths".

A. Keshavarz, “Retention and Compensation of Sales Talent”.

V. Onyemah, “What Doesn’t Kill You Makes You More Committed  
Rethinking the Link between Organizational Hardship and Organizational Commitment”.

P. Cahuc and S. Carcill, « Do Hiring Credits Work in Recessions? Evidence from France”, *IZA working paper* 8330, July 2014.

J. Prat, G. Felbermayr, G. Impullitti, “Firm dynamics and residual inequality in open economics”,

R. Bojilov, “Estimating the Effects of Incentives When Workers Learn About Ability”, , revised and resubmitted to *Journal of Political Economy*

R. Bojilov, “Incentives to Work or Incentives to Quit?”

R. Bojilov, A. Galichon, “Matching in Closed-Form”, with Alfred Galichon.

E. Challe, J. Matheron, X. Ragot and J. Rubio Ramirez "Precautionary saving and aggregate demand", Working Paper, presented during the following conferences: American Economic Association (Jan. 2014, Philadelphia) and NBER Summer Institute (July 2014, Boston)

I. Mejean, F. Kramarz, J. Martin, Diversification in the Small and in the Large: Evidence from Trade Networks, presented at European Research Workshop in International Trade (ERWIT); Oslo, 4-6 June 2014

S. Blasco, Crépon B., T. Kamionka "Evaluation of the Impact of Training on Individual Labor Market Transitions", presented in Tokyo, July 2014, 20th International Conference on Panel Data

R. Rathelot, I. Marinescu, “Mismatch Unemployment and the Geography of Job Search”,

*The following working papers were presented at the Labex Secure Career Seminar hosted at HEC in January 2014 and will be included in a special issue on employee engagement.*

Bo H. Eriksen, “Absorbing the Costs of Turnover”.

H. Salminen and M. Miettinen, “Affective Organizational Commitment of Ageing and Younger Nurses – Focus on Perceived Development Opportunities”.

S. Taghavi; “To Get More Engaged, Look at the Big Picture: Level of Mental Construal and Employee Engagement”.

G. Dietz and M. Vanhala, "Trust in One's Employer: Main and Moderating Effects in the Relationship Between HRM and Performance".

### Communications and conferences

A. Keshavarz, F. Kramarz, D. Rouziès, M. Segalla and B. Quelin (2014), "How Do Sales Organizations Value Job, Firm or Industry Experience? An Examination of Sales Career Paths", *INFORMS Marketing Science Annual Conference*, Atlanta, USA.

A. Keshavarz (2014), "Dysfunctional Sales Force Turnover: The Effect of Occupational Concentration and Pay Dispersion", *European Marketing Academy Conference*, Valencia, Spain.

A. Keshavarz, F. Kramarz, D. Rouziès, M. Segalla and B. Quelin (2014), "Career Strategies in Sales Organizations", *Thought Leadership on the Sales Profession Conference*, Columbia University, New-York, USA.

A. Keshavarz (2014), "Labor Markets, Compensation Structure and Turnover of Sales Forces", *Best Paper Award Winner at The 3rd BPF-Phd Camp Conference*, ESCP, Paris, France.

A. Keshavarz (2014), "Use of Labor Market Data in Organizational (or Marketing Research)", in "Using Compensation Data to Characterize Sales Organizations", Labex Seminar, January 7th, HEC and "Career Security and Engagement Workshop", Labex Seminar, January 9th, HEC, Jouy-en-Josas.

A. Keshavarz (2013), "Isolating General Human Capital from Competitors", *Strategic Management Society Annual International Conference*, September 28<sup>th</sup>-October 1<sup>st</sup>, Atlanta.

A. Keshavarz (2013), "Career History as a Determinant of Compensation for Sales Managers and Salespeople: Insights from Labour Market Data", *Marketing Science Conference*, July 11th-13rd, Istanbul.

D. Rouziès (2013), Keynote Speaker, *Journée des Chaires*, sponsored by the *Institut de France*, January 23rd, Paris.

## Books

[« Améliorer l'assurance chômage ».](#)

Authors: Pierre Cahuc, Stéphane Carcillo.

This book proposes recommendations for improving the French unemployment insurance system and proposals in terms of individual incentives to work.

[« L'accompagnement des demandeurs d'emploi. En finir avec le retard français ».](#)

Authors: François Fontaine, Franck Malherbet,

Report for the Chair « [Secure Careers](#) »

## Web site

The [Labor Economics](#) website has been launched during the Summer 2014.

This landmark textbook published by The MIT Press combines depth and breadth of coverage with recent, cutting-edge work in all the major areas of modern labor economics. Its command of the literature and its coverage of the latest theoretical, methodological, and empirical developments make it also a valuable resource for practicing labor economists. This second edition has been substantially updated and augmented. It devotes more space to the analysis of public policy and the levers available to policy makers, with new chapters on such topics as discrimination, globalization, income redistribution, employment protection, and the minimum wage or labor market programs for the unemployed. Theories are explained on the basis of the simplest possible models, which are in turn related to empirical results. Mathematical appendixes provide a toolkit for understanding the models.

The book incorporates examples drawn from many countries, and it presents empirical methods using contributions that have proved to be milestones in labor economics. The data and codes of these research publications, as well as numerous tables and figures (with corresponding data and do files) describing the functioning of labor markets, are all available on this website along with slides that can be used as course aids. For each chapter, we provide 3 sets of slides (with pdf, tex files and figures). A «basic» set, that can be used to teach the basics of the chapter to undergraduate students; an «advanced» set, with more advanced material for graduate students; and a «complete» set that you can use to elaborate your own courses. There are also slides provided by users of Labor Economics.

## **4 Grants allocated to research projects**

### **Year 2013**

Researcher		Project title
Bojilov	Raicho	The Determinants of the Quality of the Employer-Employee Match and the Relevance of Past Experience
Cahuc	Pierre	Age and contractual dualism
Challe	Edouard	Unemployment risk, precautionary savings and aggregate fluctuations
Kamionka	Thierry	Statut résidentiel et mobilité individuelle sur le marché du travail
Le Barbanchon	Thomas	The effect of the generosity of unemployment insurance and counseling on job finding rate and match quality
Malherbet	Franck	Who benefits from UI finance?
Méjean	Isabelle	Trade networks and the volatility of exports
Michau	Jean-Baptiste	On the Provision of Insurance Against Search-Induced Wage Dispersion
Prat	Julien	Microfoundation of Labor Market Institutions
Rathelot	Roland	Local labor markets: new evidence using data on jobseekers' applications
Rouziès	Dominique	Dispersion et structure des rémunérations
Segalla	Michael	Parcours professionnels

## Year 2014

Researcher		Project title
Bojilov	Raicho	Matching with tasks, teams and supervisors
Cahuc	Pierre	Evaluation du dispositif "zéro charges"
Cahuc	Pierre	Réalisation d'un site web Labor Economics
Challe	Edouard	Fiscal policy and unemployment in an aggregative model with demand, wealth and liquidity effects
Chevalier	Françoise	La famille dans l'entreprise familiale : réalité ou mystification
Corcos	Gregory	Liberalization of Trade in Goods and Services and Employment: a Firm-Level Analysis
Kamionka	Thierry	Dynamic Labor market behavior of married women
Mejean	Isabelle	Granular Comovements
Prat	Julien	Human Capital and Optimal Redistribution



## *Project Descriptions*

**Project title: The Determinants of the Quality of the Employer-Employee Match and the Relevance of Past Experience**

**Principal investigator: Raicho Bojilov (Ecole Polytechnique)**

Employees often learn about their ability while working and this learning, along with pay incentives, determines employment outcomes, such as labor turnover. As long as worker ability is at least to some extent firm-specific, the firm may be able to capture part of the surplus. I investigate how considerations about the quality mix shape pay policy and profits within a structural model of effort choice, symmetric learning about match quality, and turnover. The results show that labor turnover is a major channel through which incentives affect profits and individual welfare. Then, we study three classes of contracts: (1) compensation depends only on current output; (2) compensation depends also on past output; (3) compensation depends on all available information and may vary with tenure. The results indicate that experimentation to improve the quality mix is a primary concern that affects the optimal contracts in the three classes. Experimentation requires high turnover which is also associated with the destruction of accumulated specific human capital. The trade-off between experimentation and the accumulation of specific capital determines the characteristics of the optimal contract. Finally, we show that ignoring the presence of Bayesian learning leads to biased estimates of the effects of incentives on effort. This work has continued and improved the line of research in my dissertation.

**Project title: Matching with tasks, teams and supervisors**

**Principal investigator: Raicho Bojilov (Ecole Polytechnique)**

**Co-author: Alfred Galichon (Sciences Po)**

Many economic problems involve markets with supply and demand restricted to a unit of an indivisible good. One of the more important examples is occupational choice. Models of discrete choice and selection, such as the famous Roy model, have been applied often to the empirical analysis of such problems. While having important advantages, they do not allow one's choice to affect others, and the specification of rewards rules out price effects. The theory of one-to-one matching with transferable utility provides an alternative framework which relaxes both restrictions. Our paper provides closed-form solution to a bipartite matching problem with transferable utility when sorting occurs on multiple dimensions in the presence of unobserved heterogeneity. Closed-form formulas make it computationally easy to solve problems that involve a large number of matches and characterize the associated equilibrium. They also allow for quantitative predictions about the sorting that will occur and how it evolves as the complementarity on various dimensions changes or the variation in the characteristics of the matching populations changes. Moreover, we use them to evaluate the contribution of sorting to social welfare in equilibrium and decompose the impact of changes in structural parameters on individual welfare into selection and price effects. One can also use the formulas as the basis for asymptotic analysis and hypothesis testing.

We apply the econometric framework to the analysis of occupational choice for the 1979

cohort of the NLSY. The results indicate that occupational choice of college graduates depends significantly on unobserved heterogeneity. Furthermore, sorting takes place on several dimensions, including cognitive, socioeconomic, degree of work abstraction and manual requirements. We also show that worker's welfare depends largely on the compensation provided by the firm rather than alternative sources like non-pecuniary rewards. The closed-form solution allows us to quantify how changes in model parameters affect equilibrium outcomes through price effects and sorting effects. Finally, we characterize the marginal rates of substitution and the overall gains from sorting at the equilibrium.

We plan to extend our work to team formation and scheduling within firms and use the personnel records of a large call center company.

**Title of the project: Age and contractual dualism**

**Principal investigator: Pierre Cahuc (CREST-ENSAE)**

**Co-authors: Franck Malherbet (CREST affiliate and professor at Université de Rouen) and Olivier Charlot (Professor at Université Cergy-Pontoise).**

Over the last decades, many European countries have favored reforms that have promoted the emergence of dual employment protection which can be broadly defined as the coexistence of both long-term contracts, which benefit from stringent protection, and short-term contracts with little or no protection. It is often argued that this combination creates labor market segmentation, traps workers in a recurring sequence of frequent unemployment spells, favors unequal repartition of risk between workers and enhances inequalities. In particular, two-tier systems create excess labor turnover as they increase the incentives to create temporary rather than permanent jobs, reduce job destruction for stable jobs, but increase churning for temporary jobs. For instance in countries with stringent legal constraints on the termination of permanent jobs, such as France or Spain, it turns out that about 90% of entries into employment are in temporary jobs with very short duration (on average less than one month and a half in France). If excess labor turnover and its consequences are a concern for the economy as a whole, the dramatic spread of temporary jobs is even more a concern for young/less experienced workers as they are more likely to be negatively affected by the adverse effects of dual employment protection.

The purpose of this project is to build on and extend Cahuc, Charlot and Malherbet (2012) in order to investigate the differentiated impact of EPL on firm's recruitment strategies by age in a setup with temporary and permanent jobs. We are not aware of any contribution that has studied this issue which is nonetheless very important for many European countries.

The model will be estimated and calibrated on French data and other European countries if possible.

*Report on the project: First, we continued to work on the model of Cahuc, Charlot and Malherbet (2012) to ensure that this model fits the empirical facts. The new version of the model has been submitted to the International Economic Review and presented in various conferences and seminars. Then, we worked on the calibration of the model where individuals are differentiated by age. It turned out that this model was too complicated to solve and to*

provide interesting predictions. Accordingly, we decided to elaborate a new model, in which productivity shocks follow a Brownian motion instead of a Poisson arrival rate. We work on this project with Julien Prat. This new way to represent productivity shocks allows us to reproduce the empirical relation between seniority and separation rates which is crucial to study the unemployment rate of young workers. The model has been written. We are starting to simulate and to estimate the model. We hope to have a first version in December 2014.

**Project title: Etude du dispositif "zéro charges" entreprises moins de 10 salariés**

**Principal investigator: Pierre Cahuc (CREST-ENSAE)**

**Co-authors: Thomas Le Barbanchon (CREST-ENSAE), Stéphane Carcillo (Université Paris 1, OCDE)**

In this research, we evaluate the effect of hiring credits during the Great Recession. More precisely, we study a program called "zero charges", implemented in 2009 in France and targeted at low-wage workers in firms with less than 10 employees. In such eligible firms, the hiring credit reduced by 12% the labor cost of a new hire at the minimum wage level. We find that such program was actually effective at boosting employment during the Great Recession.

**Project title: Precautionary saving and aggregate demand**

**Principal investigator: Edouard Challe (Ecole Polytechnique)**

**Co-authors: Julien Mathéron (Banque de France), Xavier Ragot (Paris School of Economics) Juan Rubio-Ramirez (Duke University)**

Our current research studies the ways in which precautionary savings interacts with the business cycle. In a typical recession, households face greater individual income risk, chiefly a greater risk of falling into unemployment or to remain unemployed. In the face of this risk, they are likely to raise their "buffer-stock" of wealth to provide for future rainy days, i.e., they raise precautionary savings. Whilst this reaction is optimal at the individual level, economywide this is likely to translate into a significantly lower level of aggregate consumption demand. This lower level of aggregate consumption in turn worsens the initial contraction and further deteriorates labour market conditions. Our research aims at constructing and empirically estimating macroeconomic models where this amplification mechanism is at work. This is acknowledged to be a challenging task, because the current models that incorporate the precautionary motive are typically not "tractable", i.e., they are too complicated to be estimated. Our current work aims to construct tractable versions of precautionary savings models that can be taken to the data, so that the role of precautionary saving as a propagator of the business-cycle can be quantitatively evaluated. This investigation suggests, for example, that the precautionary motive amplifies the fall in aggregate consumption in a typical recession by about 35% (relative to an economy where the precautionary motive would be shut down)

**Project title: Liberalization of Trade in Goods and Services and Employment: a Firm-Level Analysis**

**Principal investigator: Gregory Corcos (Ecole Polytechnique)**

**Other co-authors: Andrea Ariu (UC Louvain), Holger Breinlich (University of Essex), Giordano Mion (University of Surrey)**

This project aims to analyze the impact of goods trade liberalization on services trade and its effects on employment and workforce composition.

The project has the following objectives. First, using matched balance sheet and trade data for Belgium in 1995-2005, we will document patterns of goods and services trade at the firm-level. Preliminary results show a significant correlation between firm-specific measures of services trade costs and individual goods exports, and vice-versa, even when controlling for standard determinants of individual trade flows. The same pattern holds for imports. We will further document patterns in employment and skill composition.

Second, we will offer some microfoundations for the complementarity between goods and services trade at the firm level.

The last part of our project will focus on labor market implications. Using firm-level data on employment and some measures of workforce skill composition, we will investigate the impact of these cross-product trade effects on labor demand by skill. In particular, we will exploit heterogeneity across origin and destination countries in trade costs, as well as some trade reforms, to isolate the effects of changes in firms trading status (such as goods-only exporter to goods and services exporter).

The project has been presented at the “Global Challenges” Conference in Milan, June 2014.

**Project title: Dynamic Labor market behavior of married women**

**Principal investigator: Thierry Kamionka (CREST-ENSAE)**

**Co-author: Cyriaque Edon (University of Abomey Calavi)**

We jointly model participation to the labor market, employment, wage and working time decisions of women who live in couple using a dynamic model. In this paper we analyze the labor supply of married or cohabiting women in France at the intensive and extensive margins. We estimate for the period going from 1994 to 2001 a dynamic multivariate model with random effects using the ECHP (European Community Household Panel). The error terms of the equations of the model can be correlated. Each of these error terms can be auto correlated allowing shocks on one of the components of the model to have an impact on all the error terms of the model the next periods. Individual effects, one for each equation, can be correlated allowing, for instance, women who have high preferences for participation to have low preferences for part time work. The model is estimated using simulated maximum likelihood estimator. The initial conditions problem is taken into account. These components of women labor supply behavior are characterized by a significant state dependence. Our

results suggest that these components of labor supply cannot be modeled separately. The results illustrate that the most recent state on the labor market can be more informative than some components of observed heterogeneity

**Project Title: The residential status (owner or renter) and the individual labor market mobility.**

**Principal investigator : Thierry Kamionka (CREST-ENSAE)**

This research consists to study the link between the residential status (owner or renter) and the individual labor market mobility. We want to study the impact of residential status on the unemployment spells (duration, frequency, reemployment probability and employment stability). The impact of residential status on individual labor market mobility is a determinant of the efficiency of public policies who aim to favor the access to housing ownership. The project is still in process. We work on data between 1994 and 2001.

**Project title: The effect of the generosity of unemployment insurance and counseling on job finding rate and match quality**

**Principal investigator : Thomas Le Barbanchon (CREST-ENSAE)**

**Co-authors : Sylvie Blasco (CREST/Université du Mans)**

Discussions between Pôle Emploi (French Employment Agency) and Insee (National Institute for Statistics and Economic Studies) for the delivery of data basis on French unemployment figures are still in process. As soon as we get this information, we will be able to study whether a more generous unemployment dole or a more intensive personalized support to unemployed persons allows these persons to find a better quality job. Apart from Le Barbanchon (2012) and Crépon (2013), this question has never been examined with French unemployment data.

**Project title: Who benefits from UI finance?**

**Principal investigator : Franck Malherbet (CREST-ENSAE and Université de Rouen)**

**Co-authors : Pierre Cahuc (CREST, Ecole Polytechnique), Marc Ferracci (CREST -ENSAE and Université de Nantes), Francis Kramarz (CREST-ENSAE)**

Our project is dedicated to provide a better understanding of the relationship between the Unemployment Insurance System (UIS) and the very nature of the French labor market. In this perspective we have used the methodology developed by by Abowd, Kramarz and Margolis (1999) to understand in the data the contribution of the workers' and firms' to the deficit of UI. To undertake this analysis, we have used matched data from the Fichier National des Assedic (for the workers) and Ficus (for the firms) to create, to the best of our knowledge, the first database with matched employee-data sources dedicated to the evaluation of the contribution of the firms/workers to the UIS. The data cleansing and mining are expected to be completed within the next months though a series of early statistics are readily available. On this basis, we have developed a theoretical framework that borrows from the search and matching literature in order to capture the salient features of the data and to run counterfactual policy experiments.

**Project title: Trade networks and the volatility of exports**

**Principal investigator: Isabelle Mejean (Ecole Polytechnique)**

**Co-authors: Francis Kramarz (CREST-ENSAE), Julien Martin (Université Catholique de Louvain)**

Does the magnitude of aggregate fluctuations depend on the microeconomic structure of an economy? In the recent period, there has been a renewed interest for this long standing question. Gabaix, 2011 shows how aggregate fluctuations can be generated by idiosyncratic shocks to the largest firms in the economy, whenever the distribution of firms is fat-tailed. The aggregate impact of idiosyncratic shocks is further amplified in the presence of firm-to-firm linkages that help propagate shocks. According to di Giovanni, Levchenko, and Mejean, 2014, a substantial share of the macroeconomic volatility is due to such "granular" fluctuations.

One limit of this literature is that the volatility of shocks that individual firms face as well as the structure of the economy in which firms operate are both considered as given. Implicitly, each individual producer is hit by idiosyncratic supply shocks the volatility of which is exogenously given. And the structure of the economy determines the extent to which these supply shocks wash out at the aggregate level. This paper instead introduces the possibility that the volatility of individual sales is driven by a combination of supply and demand shocks. In the presence of idiosyncratic demand shocks, the way individual firms spread out their sales across potential buyers matters for their volatility. In particular, firms with more diversified sales (across buyers) hedge against idiosyncratic demand risk. Heterogeneity in the structure of buyers' portfolios thus translates into an heterogeneity in individual volatilities that will further affect aggregate fluctuations in a granular world.

We study how idiosyncratic demand shocks affect individual and aggregate volatility using highly detailed panel data on trade networks. A useful feature of our data is that our records include the identity of both trade partners; the exporting and the importing firm. For each French exporter, we observe the allocation of sales over its full portfolio of foreign customers and the way it evolves over time. Essential for our approach, we are able to identify when an importer buys goods from several French firms, i.e. the extent to which trade networks are "connected".

We start with the structure of trade networks as observed in 2005. For each individual exporter, we observe the degree of diversification in sales across foreign partners, a measure of exposure to idiosyncratic demand risks. In the data, we show that the amount of heterogeneity in the structure of exporters' trade networks is huge. We also show that more diversified firms tend to display less volatility, on average. In addition, trade networks are shown to be strongly connected, inducing covariance in sales across firms. Firms that share the same buyer face the same demand shocks. Moreover, sharing a buyer creates an indirect link between exporters, that could help propagate shocks. We study these indirect links in detail and show that their number and intensity is correlated with the covariance of sales across firms. We discuss theoretically and empirically how the low level of diversification as well as the connectedness of trade networks generate "granular" fluctuations in bilateral exports. Our data do not make it possible to identify trade networks in the domestic market

of French firms. However, Canals et al. 2007 and di Giovanni and Levchenko, 2012 argue that the "granular" dimension of aggregate fluctuations is likely to be much more pronounced for export activities. Indeed, the self-selection of firms into export markets makes the distribution of firms selling abroad even more fat-tailed. This suggests that our estimates of how the absence of diversification across buyers generate aggregate fluctuations is an upper limit of what we would observe in total sales.

In the next step, we plan to estimate a structural model of connections between exporters and importers to model and simulate economies with differing structures of such networks.

**Project Title: On the Provision of Insurance Against Search-Induced Wage Fluctuations**  
**Principal investigator: Jean-Baptiste Michau (Ecole Polytechnique)**

This paper investigates the provision of insurance to workers against search-induced wage fluctuations. We rely on numerical simulations of a model of on-the-job search and precautionary savings. The model is calibrated to low skilled workers in the U.S.. The extent of insurance is determined by the degree of progressivity of a non-linear transfer schedule. The fundamental trade-off is that a more generous provision of insurance reduces incentives to search for better paying jobs, which is detrimental to the production efficiency of the economy. We show that progressivity raises the search intensity of unemployed worker, which reduces the equilibrium rate of unemployment, but lowers the search intensity of employed job seekers, which results in a lower output level. We also solve numerically for the optimal non-linear transfer schedule. The optimal policy is to provide almost no insurance up to a monthly income level of \$1450, such as to preserve incentives to move up the wage ladder, and full insurance above \$1650. This policy halves the standard deviation of labor incomes, increases output by 2.4% and generates a consumption-equivalent welfare gain of 1.3%. Forbidding private savings does not fundamentally change the shape of the optimal transfer function, but tilts the optimal policy towards more insurance at the expense of production efficiency.

There is no doubt this paper will generate controversy, but it makes sense. Suppose that workers do not like fluctuations in their wages as they move from job to job. Clearly, they would like to obtain insurance against such fluctuations. But if they get it, a moral hazard problem arises whereby they would not search hard enough for a new job if their current one has low pay before insurance. Such an economy would have a poor allocation of resources, as output could be higher with better job matches. The solution appears to be that low-wage jobs should not be insured at all, to preserve incentives for search.

People will object that this provides no insurance to the most vulnerable. We need to define vulnerable here. The common definition would be low-skilled workers who can only obtain low wage jobs. This is not what this paper is about. People who lost out in the life-lottery because they were born with fewer skills or in an environment that is less conducive to accumulate skills should obtain a different type of insurance, likely through social welfare. What this paper is about is how typically young workers bounce around from job to job until they find the right match. You want to provide them some insurance while giving the right incentives to search. And sometimes this involves not giving insurance.

**Project title: Human Capital and Optimal Redistribution**

**Principal investigator: Julien Prat (CREST-ENSAE)**

**Co-authors: Winfried Koeniger (St Gallen Business School)**

Over the last year, we have been studying how contracts are affected by learning on the job. In most occupations, productivity depends as much on training as on effort. Young workers may be highly motivated, they will nonetheless find it difficult to match the efficiency of their experienced colleagues. As the saying goes, practice makes perfect. The importance of learning-by-doing has long been recognized in the literature on human capital. Yet, its implications for agency problems remain largely unexplored. Our research shows that human capital accumulation reinforces the power of incentives, thereby enabling employers to better insure their workers.

This research has been presented at the following seminars/conferences: University of Nottingham (February); CERGE-EI, Prague (February); University of St. Gallen (May); North American Meeting of the Econometric Society, Minneapolis (June); Federal Reserve Bank of Minneapolis (June)

**Project title: Microfoundation of Labor Market Institutions**

**Principal investigator: Julien Prat (CREST-ENSAE)**

The question of whether and how much to redistribute between agents with different income and wealth is of paramount importance for most societies. The seminal contribution by Mirrlees (1971) outlined a rigorous framework to answer this normative question, based on the trade-off between equality and incentives. In that framework redistribution is constrained by its disincentive effect.

In ongoing research with Winfried Koeniger (St Gallen Business School), we build on Mirrlees (1971) and the subsequent literature on optimal taxation in order to analyze the problem of optimal redistribution in a model with human capital. Our analysis is motivated by empirical observations for OECD countries that redistribution correlates with educational attainment. This pattern suggests that the level of human capital affects the optimal amount of redistribution.

We tackle the question with a model of family dynasties in which each generation is fully altruistic. The working-age generation decides how much to consume, to bequeath in terms of bonds and to invest into human capital of their offspring. Bequests and human capital are observable but the ability of each generation is not.

We show that, under common assumptions about preferences and technology, human capital reduces the informational rents of high ability types and relaxes the incentive constraints. Since parents do not take this externality into account when choosing how much to invest into their children, the model provides a rationale for education subsidies.

We have almost completed the theoretical investigation of the model and are currently



working on its numerical analysis. Calibrating the model will allow us to quantify the optimal size of the education subsidies. Since we have already written the main code, we are now searching for realistic parameter values. We hope to be able to produce a working paper before the end of this year.

**Project title: Local labor market: new evidence using data on jobseekers' applications**

**Principal investigator: Roland Rathelot (CREST-ENSAE)**

**Co-author: Iona Marinescu (University of Chicago)**

The conventional wisdom is that we can reduce unemployment by relocating job seekers and jobs closer to each other. However, intervention may not be necessary if job seekers relocate of their own accord. Using data from the large job board CareerBuilder.com, we estimate that a 5 miles increase in distance between the ZIP codes of a job seeker and a vacancy decreases the application probability by 22%. Using this estimate together with a new theoretical model, we find that optimally relocating job seekers would decrease unemployment by at most 5%, implying that geographic mismatch is a negligible driver of US unemployment.

A revised working paper is in process. "Mismatch Unemployment and the Geography of Job Search".

**Project title: Sales careers, pay structure**

**Leaders of the projects: Dominique Rouziès (HEC), Michael Segalla (HEC)**

**Co-author: Moumita Das (HEC)**

We are interested in the idea that successful firms need to attract and retain talented employees and are curious about patterns of career mobility across organizations. For example, why do firms value one career path rather than another?

It is important to understand how companies value changing jobs, firms, or industries as it is costly to recruit and train talented employees. It is also important to understand employee engagement since it has an impact on career security. Our empirical research is based on a multi-year, French national database of employment data that we were able to access in April 2013.

First Project: Drawing on human capital theory, we specify a model examining the influence of job, firm and industry experience on the paychecks drawn by more than 76,000 salespeople and 13,000 sales managers over 17 years in France. This is the first time, to the best of our knowledge, that research is being conducted on longitudinal and exhaustive data pertaining to sales careers. This makes our project unique. The combined areas of sales career history, sales compensation, sales and marketing organizational value are virgin territories in research terms, so the publication potential in marketing and management journals appears substantial. As such, this research will make an important contribution to our understanding of sales human capital.

Second Project: Beyond this first project, we are investigating a second path related to

occupational concentration and its effect on sales pay dispersion, a topic with many theoretical and managerial implications.

Third Project: Moreover, we have a third very exciting project examining the way firms value their sales organizations. Given the increased emphasis on tighter linkages with customers, there is a need for research that examines how firms organize their selling efforts and how different modes of organizing affect performance. We have been given access to Hay Group data (forthcoming September) to complete these analyses.

Fourth Project: We are interested in building a new model of employee engagement which we started with the Labex Secure Career Workshop held at HEC In January 2014. The working papers are being developed for a special issue in an international journal to be announced later this year.

## ***5 Invited professors***

- Winfried Königer (London University) 10/03/ 13 au 15/03/13 : work on the project « Microfoundation of Labor Market Institutions » with Julien Prat
- Julien Martin (Université du Québec) 13/06/14 au 31/07/14: work on the project « Trade Networks and the volatility of exports » with Isabelle Méjean.

## 6 PhD and postdoc grants

Name	Surname	Contract typ	PhD Subject/Research subjects
ANDRE	Mathias	PhD	Risk and Uncertainties in Economics of Education
GODARD	Mathilde	PhD	Health costs of Insecure careers and mobility on the labour market
KESHAVARZ	Ali	PhD	Human Capital Mobility & Firm Performance
KESHAVARZ	Ali	PhD	Competitive Effects of Sales force compensation and Sales force Mobility
NAVZHYLAVA	Kseniya	PhD	How organisational use of the social media reshapes the interplay between transparency and trust

## 7 Conferences

CREST, Sciences Po and Thema have jointly organized a Search and Matching conference in Paris in June 2013. Invited presentations have been given by Philip Kircher (University of Edinburgh, LSE), Dale Mortensen (Northwestern University and Aarhus University) and Jeffrey Smith (University of Michigan).

**Organizers:** Olivier Charlot (THEMA - University of Cergy-Pontoise)

François Fontaine (CREST - University of Lorraine)

Franck Malherbet (CREST - University of Rouen)

Etienne Wasmer (Sciences-Po Paris)

**Date:** June 13, 2013 and June 14, 2013

### Program

#### [Equilibrium, Turnover, Firm Growth, and Unemployment](#)

**Presenter:** Dale Mortensen (Northwestern University)

#### [Identifying Equilibrium Models of Labor Market Sorting](#)

**Presenter:** Marcus Hagedorn (Institute for advanced studies, Vienna)

**Discussant:** Fabien Postel-Vinay (University of Bristol)

The Macro-dynamics of Sorting between Workers and Firms

**Presenter:** Jeremy Lise (University College London)

**Discussant:** Pierre Cahuc (CREST – Ecole Polytechnique)

- [Poster 1: Truth-telling in matching markets](#) (Jeanne Hagenbach, Ecole Polytechnique)
- [Poster 2: Workers' behaviour and job quality: how taxation can alleviate a hold-up problem?](#) (Guillaume Willems, Sciences-Po)
- [Poster 3: Job search and the age-inequality profile](#) (Petra Marotzke, University of Konstanz)
- [Poster 4: Sorting multidimensional types](#) (Ilse Lindenlaub, European University Institute)
- [Poster 5: Equilibrium on-the-job search with heterogeneous wage formation mechanisms: Theory and Estimation](#) (Cynthia Doniger, University of Michigan)
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- [Poster 6: Productivity Shocks, Optimal Contracting and Wage Dynamics \(Thibaut Lamadon, University College London\)](#)

[Equilibrium job search in a system of cities](#)

**Presenter:** Modibo Sidibe (Duke University)

**Discussant:** Manolis Galenianos (Penn State)

[Housing tenure choices with private information](#)

**Presenter:** Jonathan Halket (University of Essex)

**Discussant:** Roland Rathelot (CREST)

[Two-sided heterogeneity in labor markets](#)

**Presenter:** Philipp Kircher (LSE and University of Edinburgh)

[Mortensen and Pissarides meet Holmstrom and Tirole](#)

**Presenter:** Pietro Garibaldi (Collegio Carlo Alberto)

**Discussant:** Edouard Challe (CREST – Ecole Polytechnique)

[Labor Market Dynamics: A Model of Search and Human Capital Accumulation](#)

**Presenter:** Greg Veramendi (Arizona State University)

**Discussant:** Jesper Bagger (Royal Holloway College, University of London)

[Sorting into Fixed-term vs. Permanent contract](#)

**Presenter:** Priscilla Fialho (University College London)

**Discussant :** Thomas le Barbanchon (CREST)

[Thumbscrew for Agencies or for Individuals? How to Reduce Unemployment](#)

**Presenter:** Andrey Launov (Johannes Gutenberg University of Mainz)

**Discussant:** Francis Kramarz (CREST)

## Workshops

- (1) D. Rouziès (2014), Chair, “Using Compensation Data to Characterize Sales Organizations”, Labex Seminar, January 6th, 7th and 8th, HEC, Jouy-en-Josas with the following speakers:
  - i. A. Khesavarz, PhD Candidate, HEC,
  - ii. D. Iacobucci, E. Bronson Ingram Professor of Management in Marketing, Vanderbilt University,
  - iii. V. Onyemah, Associate Professor of Sales and Marketing, Babson College,
  - iv. M. Rouziou, PhD candidate, HEC.
  
- (2) M. Segalla (2014), Chair, “Career Security and Engagement Workshop”, Labex Seminar, January 8th, 9th and 10th, HEC, Jouy-en-Josas with:
  - i. G. Dietz, Senior Lecturer in Human Resource Management/Programme Director MSc Management Programmes in the Business School Fellow of the Wolfson Research Institute for Health and Wellbeing, Durham University.
  - ii. I. Ehnert, Professor of HRM and CSR/sustainability, Louvain School of Management.
  - iii. B. H. Eriksen, Associate Professor Strategic Organization Design Unit Department of Marketing & Management, University of Southern Denmark.
  - iv. A. Khesavarz, PhD Candidate, HEC.
  - v. D. Minbaeva, Professor in Strategic and Global HRM, Department of Strategic Management and Globalization, Head of the Ph.D. School in Economics and Management, Copenhagen Business School
  - vi. V. Onyemah, Associate Professor, Babson College.
  - vii. H. Salminen, Assistant Professor School of Management, University of Tampere, Finland.
  - viii. S. Taghavi, Doctoral Student, HEC.

- (4) D. Rouziès (2013), Chair, "Using Large-Scale Administrative Databases to Investigate Salesforce Related Issues", Labex Seminar, July 8th, Bourse Du Commerce, Paris with the following speakers:
- i. M. Ahearne, C.T. Bauer Chaired Professor in Marketing and Executive Director of the Sales Excellence Institute, University of Houston,
  - ii. A. Coughlan, John L. & Helen Kellogg Professor at the Kellogg School of Management, Northwestern University,
  - iii. M. Das, PhD candidate, HEC,
  - iv. A. Khesavarz, PhD Candidate, HEC,
  - v. F. Kramarz, Professor, Ecole Polytechnique-ENSAE, Academic Director, CREST; Director, Labex,
  - vi. B. Quélin, Professor, HEC,
  - vii. M. Rouziou, PhD candidate, HEC,
  - viii. M. Segalla, Professor, HEC,
  - ix. T. Steenburgh, John L. Colley Associate Professor, the Darden Graduate School of Business, University of Virginia.