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Barcelona GSE Winter Workshops

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Summary of Day 1 - APPLIED ECONOMICS AND SOCIAL POLICIES Session

Prepared by CHRISTOPHER RAUH (IDEA)

On Monday December 16th researchers of the Barcelona GSE came together to present and discuss their work on "Applied Economics and Social Policies" in the first Barcelona GSE Winter Workshop. The agenda was composed of seven presenters from the Universitat Pompeu Fabra (UPF), Universitat Autònoma de Barcelona (UAB), the Institut d'Anàlisi Econòmica (IAE) and the University of Warwick.

The workshop kicked off with the presentation "**Prospect of Legal Status and the Employment Status of Undocumented Immigrants**" by **FRANCESCO FASANI**. The authors CARLO DEVILLANOVA , TOMMASO FRATTINI and FRANCESCO FASANI estimate the impact of eligibility to a conditional amnesty decided by the Italian government in September 2002. Amnesties are widely used as a policy tool, but are hardly understood besides their short run efficiency and intertemporal inconsistency.

In the examined amnesty undocumented immigrants could become regular by proving residency of 3 months and providing proof of employment, which imposed the employer to pay a 3 month retrospective tax contribution payment. This created an incentive for immigrants that arrived before June 10th to find employment.

The effect of the natural experiment is exploited with a regression discontinuity design and a difference in difference estimation of the employment probability conditioned on eligibility. It is estimated to increase by 12-30 percentage points. Furthermore, evidence suggests that 2/3 of this increase in employment is attributed to job creation. Theoretically these findings are justified from the supply-side by the idea that eligible undocumented immigrants increase their job search effort in order to avoid the possibility of deportation, while on the demand side employers have greater incentives to contract these immigrants because of the prospect of their status being regularized.

The data was collected by NAGA, a non-governmental NGO including the presenter himself in his younger years, in a hospital for undocumented immigrants in Milan. Patients were surveyed about basic socioeconomic characteristics, time of arrival and employment status.
Francesco successfully transmitted his passion for the topic and, spiced with personal anecdotes from his time working for the NGO, managed to give insight into the world of undocumented immigrants, which is hardly observed or studied, but the harsh reality for an estimated 1.9 and 3.8 million in the EU, accounting for 0.4-0.8% of the population.

In terms of content the next presentation started, where the previous had ended. Now, that we had heard about immigrants finding jobs, we where to hear about "**The Effect of Immigration on Wages: Exploiting Variation at the National Level**" by **JOAN LLULL**. In the skill cell analysis employed, natives and immigrants are separated into cells by education and experience. The corresponding immigrant population in a cell is included in the wage regression as an explanatory variable of natives' wages. The novelty in the estimation presented lies in the correction of the endogeneity problem typically encountered in skill cell analysis. Using exogenous push variation through conflicts and political regime changes in the countries of origin as an instrumental variable, estimates of the negative impact of immigration

on native's wages increase to 2-3 times larger in magnitude than estimated by OLS. In accordance with the literature a 1% point increase in the stock of immigrants in the respective education-experience cell decreases native's wages by 0.5%, while the IV estimate attributes a reduction of 1.5%. Conflict in the country of origin is captured by variation in the widely used polity IV political regime index, which captures the level of autocracy/democracy in a country. Since immigrants, ceteris paribus, are more likely to move to a country closer to theirs, log distance is interacted with the regime change, which creates variation across destination countries. The presentation exhibited a wide range of suggestive evidence justifying the approach, such as the fact that during the Balkan War more immigrants went to Europe than to Australia or North America. Interestingly one could consistently observe that the more educated travelled further.
Due to lack of availability of income data only the first stage regression includes a large variety of countries, whereas the second stage is restricted to the US and Canada. Considering the results presented were robust already, it will be interesting to see what more Joan can contribute once he has extended the approach to female wages, labor supply and has added more regional variation.

After the morning session on immigration, next the audience received answers to the challenging questions: **"Should we sustain? And if so sustain what? Consumption or the quality of life?"** Presenter **HUMBERTO LLAVADOR** and his coauthors JOHN E. ROEMER and JOAQUIM SILVESTRE carry out a utility function reform reheating the discussion on climate change. The carbon concentration of the atmosphere has increased to high levels, which will cause global effects with a long time lag. This creates the problem of intergenerational and intragenerational justice, while the presenter focused on questions between generations. Each generation is represented by a representative agent, who maximizes more than just consumption. The Cobb-Douglas utility applied is an extended notion of welfare similar to the Human Development Index, including leisure and knowledge stock, such that human capital does not only enter through the production function. This approach counters the usual approach of the discounted utilitarian sum by instead maximizing the utility, or its growth, they can guarantee over all time periods. This leads to the finding that sustaining consumption implies a 41% fall in welfare, while sustaining welfare only causes a 7% fall in consumption.
The presenter demonstrated that the discounted utility approach is ethically isomorph between the interpretation of a long-lived consumer with impatience or altruistic parents. Both cases lack an ethical component and one only cares about the present, such that aggregate consumption truncates goods contributing to welfare, such as education and knowledge. Their sustainabilitarian approach, as the authors coin it, could also be considered for other macroeconomic models, which do not consider climate change, as the holy grails of consumption and GDP growth fail to capture amenities individuals (should) value.

After the forward-looking presentation about climate change **JORDI VIDAL-ROBERT** of the University of Warwick, who completed his Masters at the UPF in 2006, took us back to the past, all the way to the dark ages with the presentation "**The Persistence of the Inquisitoral Mind: Long-run Effects of the Spanish Inquisition**" Investigating the origins of Spanish backwardness he finds that the Spanish Inquisition, which lasted from 1478-1834 and carried out more than 100,000 trials left its marks in society today. The Spanish Inquisition is said to have had the function of oppressing ideas differing from the Church and was the first de facto power in Spain. Using individual trial data of 32,255 trials in 947 Catalan municipalities he finds that municipalities, which experienced a trial, had a persistently lower population growth during the end of the 19th and the beginning of the 20th century. Using data from the World Values Survey he finds that even today, in municipalities where trials had been conducted, people have less mistrust in the government and parliament and less trust in scientific advances. This suggests that the oppression of new ideas in the dark ages might have worked and its effect might have lasted until today. It will be interesting to see, whether the trials affected libraries and cultural centers once Jordi has assembled the database on Catalonia, which is in progress.

After the lunch break **LIBERTAD GONZÁLEZ** presented **"The Effect of a Universal Child Benefit on Conceptions, Abortions, and Early Maternal Labor Supply"** exploiting the natural experiment, where the Spanish government paid a 2,500€ bonus to mothers right after birth. The goal of this measure announced in a State of Nation address in July 2007, was to encourage fertility and help families overcome the financial burden of having a child. Comparing households who gave birth just before (treatment) and just after (control) July 1st, Libertad finds that the fraction spent on daycare actually decreased by about 200€, because mothers tended to work less. For instance, 6 months after giving birth 43% of the treated

mothers tended to work less. For instance, 6 months after giving birth 43% of the treated group compared to 48% of mothers in the control group had been back to work. One year after birth no persistent difference in labor supply could be identified. Therefore the bonus payment could be interpreted as bought maternal time, of which about 1800€ were found to be saved.
The effect on fertility was found to be a 5% increase in the 38,000 conceptions on average per month, and a 6% decrease in the 6,700 abortions on average per month. In total this accounts for 6% more births in 2008 compared to in absence of the payment of 4.5 times the monthly minimum wage. It will be interesting to see the reversal effects because the payment was removed in January 2011.

After the presentation about giving birth to life, the audience received information on how to save it. In the presentation **"Saving Lives: Evidence from a Nutrition Program in Ecuador"** presenter **STEPHAN LITSCHIG** explained the effects of an experiment, where in rural Ecuador mothers of kids aged 6-24 months received a voucher for a monthly ration of micronutrient packaged powder conditioned on a medical checkup of the child. Stephan and his coauthor Marian Meller find the intent to treat to have reduced mortality by 1 to 2.5% points, where the cost of saving a life is estimated to be only 1,600$. This effect is identified with a regression discontinuity design using the National health center census of 1999 and 2000, which is a novelty considering that these types of programs are usually monitored via lab or field experiments.
Reasons strongly supporting the importance of the experiment are the facts that worldwide 56% that die younger than age 5 die of undernutrition, and in Ecuador half of all children under age 5 were chronically undernourished in the 1990s. Stephan observes the impact on the mortality rate and number of health visits by looking at maximum differential exposure, as the "Programa de Alimentación y Nutrición Nacional" was launched as a pilot in August to 2000 running until March 2001, when the program was extended to the rest of the country. The eligibility of rural communities to participate in the pilot was based on the consumption poverty index with a cut-off point of 90%, so it was targeted at the very poor. Counseling on infant feeding practices and maternal health can be excluded as explanations as they were not included in the pilot of the program. Whether the nutrient packages, which only cost 0.4% of average monthly household income, or the observed increase in health check ups, are responsible for halving child mortality cannot be identified by the available data. Anyway, simply the fact that even under routine conditions the nutrition program had such a pronounced impact is encouraging for future programs and research.

Last but not least **ANDREA CAGGESE** rounded off the day with a presentation on "**Financing Constraints, Firm Dynamics and Innovation**". In his model firm entry, growth and exit are mainly driven by innovation. Evidence of the life cycle of plants suggests that in the US plants become larger and more productive with time, while in India they become smaller and productivity increases much less. Heterogeneous firms' entry and exit with financing frictions and its impact on innovation is evaluated theoretically and simulated. Financing frictions are assumed to affect innovation directly, as young firms might not have access to funds, and indirectly, as they create barriers to entry and therefore reduce competition. The indirect effect is found to dominate the direct one, but can be either positive, when innovation has no downside risk, or negative when innovation has a downside risk. Downside risk is the possibility of an innovation failing, while when successful it decreases marginal cost. When innovations are safe, current profits are compared with profits at the frontier, and the higher the financing frictions the fewer firms survive, increasing the profits for those remaining in the market. When innovation is risky, less financing frictions lead to more firms surviving and profits decreasing, but firms innovate more and earlier.
Empirically Andrea uses a firm survey on financing constraints to categorize each 4 digit manufacturing industry and creates two groups, the quartile of the most constrained sectors and the quartile of the least constrained sectors. The calibrated model shows that the most important effect of financing frictions is the indirect effect, which affects competition. The analysis is consistent with a negative effect of financing frictions on innovation due to the innovation risk involved.

In summary the first the day of the first GSE winter workshop was an interesting mix of socially oriented research, neither lacking theory nor empirics. Many presenters were able to add personal anecdotes to the topics, making it easy for the audience to imagine the problems involved with the research question. The atmosphere was encouraging and productive as discussions fostered by the audience ranged from philosophical comments on the endogeneity of preferences to technical doubts and advice for research in progress.

Summary of Day 2 - MACROECONOMICS Session

Prepared by ISABEL CAIRÓ (GPEFM)

This summary describes papers presented at the Barcelona GSE Winter Workshop in Macroeconomics held December 18, 2012, at Campus Ciutadella in Barcelona. Conference papers explore a variety of fields in macroeconomics.

Financial development, sovereign debt problems, and public finances sustainability

The recent financial crisis has brought renewed attention to the role of financial development and its links with the real economy and public finances. Also, the sovereign debt crisis in the euro area created big challenges for the authorities in terms of designing effective tools to resolve sovereign debt problems. Three papers presented in the conference shed new light on those issues.

There is ample evidence on how fund interventions can help to resolve sovereign debt problems. However, there is very scarce theoretical research about how a fund set by a group of countries, such as the European Stability Mechanism, should be designed and operated. The main contribution of ÁBRAHÁM, CARCELES-POVEDAZ, AND **MARIMON** in the paper **"On the Optimal Design of a Financial Stability Fund"** is to fill this gap, by developing and computing a model of a Financial Stability Fund (FSF) using advanced tools of dynamic contract design. In particular, the authors model the FSF as a long-term partnership with double-sided limited commitment. The model represents a useful instrument to study the gains of implementing a FSF, and to estimate how different sovereign debt crisis could be, and could be handled with it. In order to do that, the authors compare two economies that only differ in their financial regimes: the first one has access to a FSF, which in turn has access to international financial markets, while the second one is an incomplete markets economy with debt-financing and direct access to international financial markets. The quantitative results show important efficiency gains in establishing a well-designed FSF, particularly large when the economies experiment negative shocks.

ARCALEAN in the paper **"International Tax Competition and the Defiicit Bias"** focuses on two notable trends in public finance observed during the last 30 years in the OECD countries: a steady decline in the rates of corporate income tax and a twofold increase in the debt to GDP ratio. The existing literature shows that higher capital mobility induces competitive reduction in capital taxation as countries attempt to expand their domestic tax base. However, the interactions between tax competition and the intertemporal government budget constraint have been largely ignored. The objective of this paper is thus to bridge this gap and understand the joint evolution of corporate taxation and public debt in the industrialized countries during the last 30 years. In order to explore that, the author builds a political economy model of dynamic tax competition in a multi-country open economy setup with capital accumulation and public debt. The first contribution of the paper is to show that, when countries compete in tax rates, a permanent increase in capital mobility (brought by international financial deregulation) can lead not only to lower capital tax rates by also to higher public budget deficits. Thus, this result suggests that the bias towards public budget deficits may be optimal from the point of view of the median voter. The second contribution of the paper is to provide a normative analysis of international policy coordination. By comparing the welfare levels attainable by the median voter under coordinated versus independent policies, the author shows that international policy coordination is not implemented by democratically elected governments unless the level of capital mobility is high enough. Finally, allowing for heterogeneity in capital mobility across countries, the model predicts that higher capital mobility is associated with lower capital taxation and lower public budget deficits. Therefore, the theoretical analysis highlights the role of tax competition in generating external imbalances in addition to the deficit bias. An empirical analysis using OECD data shows strong support for the predictions of the model.

Motivated by the severe effects of the financial crisis of 2007-2009 on output, PINHEIRO, RIVADENEYRA, and **TEIGNIER** in the paper **"Financial Development and Income Volatility"** analyze the relationship between the level and the volatility of income induced by financial development. They do so by developing a theoretical general equilibrium model with heterogeneous agents in production technology and with financial frictions in the form of borrowing constraints. The results show that financial development improves capital allocation and increases the income level of an economy. Interestingly, when the economy is hit by technological shocks, there is a non-monotonic relationship between the volatility of income

and financial development. The non-monotonicity result is due to two opposing effects. First, notice that in an environment with endogenous borrowing constraints, financial development increases the sensitivity of the credit limits to changes in the value of the collateral. Thus, when a technology shock reduces the value of the collateral, the credit limits fall more in economies with a more developed financial sector. This effect amplifies the impact of the shock. Nevertheless, as the economy recovers from the shock and the collateral increases in value, the credit limit increases more in economies with more financial development. This second effect accelerates the recovery, and dampens the impact of the shock. Overall, the results of the paper are consistent with the empirical observation that financial liberalization is usually followed by financial crises, in economies with underdeveloped financial systems. More generally, the paper provides an attempt to rationalize the empirical findings that even though financial development is positively linked with economic growth over long periods, it is also linked with recessions and macroeconomic instability over the short run.

New advances in the use of the economic theory of index numbers

The observed permanent decline of the price of equipment relative to nondurable consumption prices have rendered fixed-base quantity indexes to measure real GDP growth obsolete, due to the well-known substitution bias. Thus, since the early 1990's the Bureau of Economic Analysis (BEA) features in its National Income and Product Accounts (NIPA) a flexible-base (chained) indexes based on the Fisher Ideal index. Other countries, such as the European Union Member States, also followed BEA. However, the theoretical justification of this measure is still missing and this is indeed what DURÁN AND **LICANDRO** provide in the paper **"Is the GDP Growth Rate in NIPA a Welfare Measure?"**. More specifically, this paper uses the economic theory of index numbers to formulate a true quantity index of output growth. With that in hand, the authors apply it to the two-sector AK model which reproduces the observed trends in relative prices. The main contribution of the paper is to show that the chained-type Fisher Ideal index used by NIPA is the welfare-relevant quantity index in this framework. In turn, this means that National Accounts real growth rates are welfare-based measurements and, in particular, that the growth rate of investment does contain information relevant to the welfare of the representative individual.

Employment, Wages, Trade and Policy Evaluation

Recent developments in the labor markets were also a widely discussed topic during the conference. Three papers offered new perspectives on the links between trade and wage inequality, on the desirability of wage flexibility to bring down unemployment rates, and on how should we think about the models that we use for policy evaluation.

FELBERMAYR, IMPULLITI, AND **PRAT** in **"Firm Heterogeneity, Directed Search, and Wage Dispersion in the Global Economy"** study the link between trade and residual wage inequality. Two empirical observations motivate their work. First, the authors show that raising residual inequality accounts for most of the increase in total inequality in the 1970s and for about two thirds in the 1980s and 1990s for Germany (similar conclusions are reached for other countries like the United States). Second, using German data, the authors find that industry-level export shares are positively correlated to residual inequality. Thus, the objective of this paper is to quantify the importance of trade liberalization in accounting for the observed increase in residual wage dispersion. In order to answer this question, the authors build a tractable model of trade with firm heterogeneity and directed search to generate an endogenous wage dispersion across homogenous workers. The results show that trade liberalization, modeled as a decline in iceberg trade costs, increases real wages for all workers. This finding is particular to a framework with directed search, and differs from existing models in the literature based on bargaining. As in standard models of trade, globalization induces a selection effect, through a reallocation of resources towards exporters. In turn, bigger exporters offer higher wages. Thus, trade liberalization also induces higher wage dispersion, due to a higher export wage premium.

The Great Recession and the recent crisis of the euro have reinforced the view that wage flexibility and wage moderation are desirable to bring down the high unemployment rates that we see in most of the developed economies. However, **GALÍ** paper **"Notes for a New Guide to Keynes (I): Wages, Aggregate Demand, and Employment"** concludes that this is indeed a more subtle issue. The author revisits the discussion of The General Theory' on the role of wages in employment determination through the lens of the New Keynesian model. The

starting point of the paper is to present the fundamental differences between the classical and Keynesian views of employment determination. In a classical environment, employment is determined by the real wage and, in the Walrasian equilibrium, no involuntary unemployment exists. Thus, unemployment will emerge only if the prevailing wage lies above its Walrasian level, due to the effects of collective bargaining or legal or institutional constraints. Therefore, a solution to the unemployment problem would come from real wage reductions or by employment subsidies. The fundamental objection of Keynes to the classical theory of employment is the assumption that employment is determined by the real wage. In short, Keynes views the real wage as being determined by employment, and indirectly by the aggregate demand for goods. Therefore, a cut in nominal wages or employment subsidies will leave employment unchanged, unless it is accompanied by an expansion of aggregate demand. The latter is thus the only solution to the unemployment problem. Similarly, in the New Keynesian environment, wage adjustments do not play a direct role in the determination of employment. Their possible impact on employment is only indirect, through the change in aggregate demand resulting from the endogenous monetary policy response to the variations in inflation caused by the wage adjustments. Accordingly, the monetary policy rule in place will be critical in determining the degree to which more wage flexibility can play a stabilizing role. However, from a welfare perspective, it is not generally true that welfare is higher when wages are more flexible. The author concludes, based on his findings, that the effectiveness of downward labor cost adjustment in fighting unemployment and, more generally, the desirability of more wage flexibility are questions whose answers are more nuanced that what we may have thought.

Current policy evaluation builds on general equilibrium models in which households are heterogeneous along some dimension. A key ingredient in the strategy is to assume that agents are subject to idiosyncratic risks for which insurance markets are missing, and the usual procedure takes the distribution of risks as exogenously given. **OBIOLS-HOMS** in **"Search and Matching in the Labor Market Without Unemployment Insurance"** stresses the view that the idiosyncratic uncertainty that agents face has an endogenous component which depends on their own actions. In order to make that point, the author introduces costly search into an otherwise standard neoclassical model of growth and finds that all aggregate economic variables are substantially smaller under incomplete insurance markets that under complete markets. The key for this result is that the probability of finding a job is endogenous, and under incomplete markets, there is a strong non-monotone wealth effects on search effort. In particular, at both high and low levels of wealth, it is optimal not to search in the labor market and thus agents remain out of the labor force. This result is at odds with the one obtained under complete markets and also with the one obtained in other incomplete markets frameworks that disregard the effect of the market arrangement on the decisions of agents and, in turn, on the distribution of idiosyncratic uncertainty. Therefore, neglecting feedback effects in performing policy evaluation exercises can be seriously misleading, as the quantitative results of the paper show that the bias might be large. Thus, the author concludes that incorporating these insights in current policy evaluation exercises might be warranted.

Methodological contributions to the literature on time-varying VARs

RONDINA in **"Time Varying SVARs, Parameter Histories, and the Changing Impact of Oil Prices on the US Economy"** provides a methodological contribution to the macroeconometric literature that investigates the development and implementation of techniques that can account for the possibility of structural changes in the true data generating process of the economy. In particular, the paper studies the changes in the relationship between oil prices and US domestic variables (Federal funds rate and core CPI inflation) in the postwar period. In order to do that, a time-varying VAR model of the economy is used. However, the paper departs from the existing contributions in the literature by introducing a new approach for modeling parameter changes in a VAR model, and by detailing the Bayesian techniques that can be employed for the implementation of this method. The ability of the new framework to capture a larger variety of time-varying features of the data offers a different interpretation of some specific events in the postwar history. More precisely, the changes in the volatility of the variables of interest in the early/mid 1980s are interpreted by the model as temporary variations in their contemporaneous relationships rather than as shifts in the variance of the exogenous shocks. This result departs in a relevant manner from previous studies. Moreover, the author finds no evidence that the changes in the volatility of the variables of interest were due to a systematic policy response to exogenous oil price shocks. Instead, the model suggests that they were caused by a different reaction to other types of shocks, in particular aggregate demand shocks. Finally, the results support the evidence of a decline in the impact of oil prices on US core in‡flation starting from the mid 1970s.

Summary of Day 3 - MICROECONOMICS Session

Prepared by HRVOJE STOJIC (GPEFM)

Caterina Calsamiglia and Antonio Miralles: **"All about priorities: No school choice under the presence of bad schools"**

In the past the dominant method of assigning children to schools was based on the place of residence of the household. Thus, if parents wanted for their children to go to a specific school, only choice they had was a so-called Tiebout-choice - moving to a corresponding area. In last 20 years many countries expanded the school choice by implementing preference based methods, instead of residence based ones. The most common one is a "Boston mechanism" and "Deferred acceptance mechanism", by which family submits a list of schools ordered according to their preferences and a centralized mechanism allocates children to schools taking into account preferences according to certain rules. Taking these methods at face value they should be improving families' situation concerning the school choice by removing the residence constraints in matching their preferences with the assigned school. However, Caterina Calsamiglia presented a convincing case which indicates that such conclusion might not be warranted. Using a matching model of schools and children, the authors show that allowing for choice *does not* necessarily imply that families' preferences will mater in allocation of children to schools. Their central most argument is that priorities defined to break ties play a big role in determining the final allocation. They show that, if residence criterion is applied to break ties between over demanded schools (which often seems to be the case in practice), and if there exists at least one school that all families believe is worse than the rest, then the final result will be an allocation which places each student to the school for which it has highest priority, regardless of families' preferences. Under these arguably weak conditions, conclusion holds for both "Boston mechanism" and "Deferred acceptance mechanism". However, some questions were raised regarding the model. Existence of outside options, such as private schools, could significantly modify behavior, but it has not been included in the model. Furthermore, preferences are exogenous in the model, while it could be argued that they should be endogenous. Nevertheless, results of Casamiglia and Miralles are quite relevant and have important policy implications.

Matthew Ellman, Jordi Brandts and Gary Charness: **"Let's talk: How communication affects contract design"**

Contract design is a very active research area, but surprisingly, how communication affects contracts between buyers and sellers has not been studied. Authors examine the communication in the situation where seller experiences a cost shock. Importantly, seller and buyer observe the shock *after* already having committed to a trade and when contract was made shocks could not have been included. Contracts also do not specify the quality of the product, so that after observing the cost shock, the seller still has an option to decide on the quality. Authors examine two possible types of contracts for this situation: *rigid* and *flexible* contract. In the rigid contract, the price is fixed before observing the cost-shock and traders cannot change this price, while in the flexible contract traders fix the price, but the buyer can modify it after observing the cost-shock. Authors' primary goal was to investigate how communication affects efficiency, earnings and choice between flexible and rigid contract. What makes this an interesting question? Taken at face value, flexible contract seems like a better deal. It gives you an opportunity to renegotiate after observing the cost shock. However, experiments (both laboratory and field ones) are giving an advantage to rigid contracts. Rigid contracts are very simple, there is no ambiguity and no possibility of having conflicts with the other party after observing the cost shock. These features make rigid contracts very attractive. Authors point out that studies so far excluded communication. This gives an incomplete picture since communication could remove the negative aspects of flexible contracts while keeping the benefits. To lend support to these claims authors use experiments. More precisely, they use a one-shot trading game of two players – buyer and seller, with "rigid" and "flexible" experimental groups in combination with three different communication regimes – no communication, structured communication and free communication. In total 616 subjects were recruited online and participated in a laboratory experiment. Results indicate that without communication subjects are more likely to choose rigid contract and it yields higher efficiency and earnings. In conditions with communication subjects choose more often flexible contract which also leads to higher efficiency and earnings. Authors also analyze the content of the messages to get a glimpse of the underlying mechanism, why exactly is communication beneficial and find some support that it is because communication allows for clarification of transfer intentions. In whole, results supported

authors' expectation that communication might remove disadvantages of flexible contracts, but the underlying mechanism is still unclear.

Marta Troya Martinez: "Vertical Relational Contracts and Trade Credit"

Supplier trade credit is a form of credit between the supplier and the retailer, where supplier gives the goods to the retailer, but the payment is made when the goods are sold. This type of credit has an important role in market supply chains. To illustrate its importance, about 15% of the assets of US manufacturing firms consist of supplier trade credits, while in the developing countries it is more important than the bank credit. Interestingly, it is usually used when there is a long term relationship between parties, it is rarely secured on collateral, and it is difficult to enforce its repayment through courts. Following on these features, Marta Troya Martinez models the supplier trade credit as a relational contract, rather than as a legal contract. As such, it is self-enforced thanks to the gains from the future trade, but there is an important source of uncertainty in this relationship. In the model, the retailer is uncertain about the demand for the manufacturer's good so that revenues are stochastic. Moreover, the manufacturer cannot observe the revenue, so it is up to the retailer to decide how much he will repay to him. With this last feature information asymmetry is incorporated into the model. The author uses the model to study how trade credit affects the contract characteristics and obtains a surprising result - even though she starts with a relational contract, at the end it has features similar to the debt credit. It consists of a fix repayment, which guarantees the continuation of the contract if it is respected. If the repayment is not met, the retailer has to repay all the profits of the period and the relationship is terminated. Moreover, to tackle the information asymmetry, manufacturer chooses to sell the quantity that is lower than optimal, but he can improve his situation by serving more than one retailer. This result has some implications for the industrial organization literature. In the market where supplier trade credit is important, removing the externalities stemming from the market power may not be enough to guarantee that the quantity of the goods in the market will be efficient.

Stephen Hansen and Massimo Motta**: "Vertical Exclusion with Endogenous Competition Externalities"**

Horizontal mergers eliminate the competition between the merging firms and change the level of market concentration. In general they are likely to have negative economic consequences. On the other hand, vertical mergers between the firms at different levels of the supply chain might have positive consumer welfare effects. This is thought to be achieved by eliminating double margins, having less opportunism, lower transaction costs and so on. However, under some conditions vertical merger could lead to foreclosure concerns. Stephen Hansen presented a paper that concerns one type of foreclosure - input foreclosure. Input foreclosure happens when firms in a vertical relation foreclose their competitors on the downstream market, either by charging them higher prices of the input goods or not selling the input goods at all. If competitors are unable to find alternative suppliers, they might be forced to increase their prices or exit the market. However, conditions that could lead to foreclosure and whether foreclosure leads to anticompetitive end results are still debated. Current standing in the literature on this matter is that input foreclosure is likely to happen when contracts between an upstream firm and downstream retailers are unobservable or privately renegotiable. In such a situation, upstream firm cannot be committed *not* to sell the input good to the rest of the market. This commitment issue is then solved with giving exclusivity rights to the downstream retailers, which serves as a commitment device for the upstream firm and thereby monopoly profits are restored. Hansen and Mota examine whether input foreclosure can exist even when commitment is not an issue. To that end they develop a model which shows that is possible to have input foreclosure even when the contracts are public information. In the model there is one upstream firm which offers a contract and downstream firms compete for it. In doing so, they impose externalities on each other. When downstream firms are heterogeneous (i.e. they have different costs) and this information is private, the size of this externality is unknown ex ante and it depends endogenously on offered contracts. From a downstream firm viewpoint, future profits are uncertain as they depend on costs of its competition and whether it will get a contract. The upstream firm has a clear benefit from offering contracts to more than one firm due to production efficiency. However, if downstream firms are risk averse the upstream firm has to pay them a risk premia when it offers output to more than one firm. Main result is that if downstream firms are sufficiently risk averse, size of the risk premia will outweigh production efficiency benefits and the upstream firm will choose only one downstream retailer. Introducing risk preferences into the model is a non-standard feature, but the authors cover their sides by getting the same result with downstream firms having limited liability instead of being risk averse. The authors relate their model to the

having limited liability instead of being risk averse. The authors relate their model to the franchise industry, where the contract franchisers offer is publicly available (e.g. McDonalds). Contract is the same for everyone and downstream retailers have to compete for it. Their model suggests that retailers' risk aversion is associated with exclusivity rights and plan to test for it in future studies. Given the wide spread of the franchise industry, their results might have important competition policy implications.

David Perez-Castrillo and David Wettstein: **"Innovation contests"**

Innovations are a crucial part of technological advancement, and thus of our economic systems. Innovations are also often solicited through some form of competition. One of the more popular innovation contests in recent times are the ones organized by X Prize Foundation. For example, their Ansari X Prize was a space competition where the aim was to develop a reusable manned spacecraft and stimulate non-government investments in space industry. The US$10,000,000 prize was won by the experimental space plane SpaceShipOne, financed by Microsoft co-founder Paul Allen. However, investments of all competitors totaled more than US$100,000,000. Of course, this is but one example, such contests are used more widely and the authors refer to more examples, from areas like mathematics, food preservation or maritime navigation. There are many approaches in studying this topic, but David Perez-Castrillo and David Wettstein setup the innovation contests as follows. A firm solicits an innovation that can be produced by two agents, and it sets up a contest where the agent with the highest-quality innovation wins a certain prize. Each agent has ability and after he observes it, he decides on the effort he will devote to the task. The quality of the innovation depends on both his ability and effort. Importantly, both ability and effort are private information, only the agent knows his ability and effort. Thus, there is asymmetric information in the model and it is introduced in the model in a novel way for this literature – agent's ability and effort are substitutes – which reflects the idea that ability and effort together generate the final outcome. Another novel feature is the authors' analysis of what happens when the company can choose the size of the reward and discriminates between agents. The authors managed to obtain equilibrium strategies and outcomes when company does not discriminate between agents. Strategies were continuous and the equilibrium consisted of quality regions where both agents devote positive efforts and quality regions where both agents devote zero effort. The authors obtained some surprising results in the contests where the company discriminates between agents – in certain regions discriminatory contests is more optimal than nondiscriminatory ones. Discrimination is optimal because it elicits higher efforts on the part of the agents, which outweighs the increase in costs. For the discriminatory contests the authors provide a qualitative analysis of the structure of equilibrium strategies and the main difference is that strategies are more complex in this case and results depend on distribution functions. In general, the model can be used to study the role of heterogeneity and private information in contests and the authors aim to expand it in the future with studying environments with more than two contestants or more than one company organizing the contest. In a more applied sense, the authors believe the model could be useful in analyzing lobbying activities, procurements, promotion competitions or the design of sports events.

Maria Cubel and **Santiago Sanchez-Pages: "The effects of within-group inequality in a conflict against a unitary threat"**

Conflicts and wars between groups of people have been going on as long as mankind exists. In the paper presented here the authors focus on a role of within-group differences in conflicts. Assuming that the group's members differ with respect to the income, they examine how this inequality affects the group's chances of winning in a conflict with an out-group, and vice-versa, can the presence of the external conflict influence the income distribution within a group. The authors presented a model in which two groups are in conflict and their members differ in income. Members of both groups invest a costly effort in the conflict. Winning prize is the income of the other group. Results of the model crucially depend on the technology of conflict and the cost of effort. The technology of conflict can be summarily illustrated by considering two extremes – members' efforts being either perfect substitutes or perfect complements. Main result is that within-group inequality increases the probability of winning when members' efforts are substitutes and cost is linear, while it decreases the probability of winning when members' efforts are complements and cost is convex. Moreover, if members anticipate this kind of result, they can redistribute incomes in order to influence their chances of winning. However, the direction of redistribution depends on complementarity of efforts. If efforts are complements, richer members have an incentive to transfer income to poorer

members. If efforts are substitutes, poorer members may want to transfer income to the richer ones. The authors nicely relate these two cases with the historical military development. In the middle ages kings' armies were consisting mainly of mercenaries. In such a case, quality of the army depends on the total sum of money spent and defense efforts are thus substitutes. Group member's incentive to contribute to the defense depends on his income, and moreover, poorer members have an incentive to free-ride on richer ones. In this case inequality is beneficial for the group, the richer the richest members are, the better army can be bought and the group will be better protected. And indeed stark inequality between citizens was a rule in these societies. Later on, with the gunpowder on the scene, mercenaries were simply too few as the conflicts between armies were mostly decided with greater number of troops. Greater involvement of all citizens was required to successfully defend the country. In this case defense efforts can be described as complements, contribution of each member is important and the defense is as strong as its weakest part. Here equality between members would help as the group will be better protected the richer the poorest members are. Again, this is what was historically noted, elites increasingly redistributed income towards working classes.

Xavier Vives: "Endogenous public information and welfare"

The interest in the welfare analysis of economies with respect to the nature of information available to the agents has been growing in the last decade. **Xavier Vives** presented a welfare analysis of a market game model where price has both information and allocation role. Importantly, public information is generated within the model following the restricted-efficiency tradition. The author illustrated on a couple of examples how endogenous public information is relevant for a broad array of markets and situations. For example, in financial markets price is a noisy indicator that emerges out of individual decisions of traders. The author stresses two messages. One is that informational efficiency need not be aligned with economic efficiency. The other is that agents may not put welfare-optimal weights on public and private information due to payoff and information externalities. One of the surprising results is related to information externalities. Information externalities can be considered more generally as examples of the private supply of a public good. Classical result is that the public information that agents learn from observing the actions of others may lead them to underweight or completely ignore their own private information. One would expect that this intuition extends to situations with endogenously formed public information. However, Vives shows that this logic breaks down in his market game model, where the price depends on a fundamental on which agents receive a private signal and on a payoff relevant shock. In his case, agents may end up putting too much weight on their own private information and prices may contain too much information. With respect to the welfare analysis main results are the following. In an economy which is restricted team efficient with exogenous public signals, restricted efficient equilibrium will not be team-efficient even when the allowed allocations share similar properties as the market equilibrium. Under strategic substitutes prices will contain too much information in the normal case where the allocation role of prices prevails over the information role, while it will contain too little in the opposite situation, when the information role of prices prevails over the allocation role. Under strategic complements prices always contain too little information. Moreover, these results extend to an economy which is not restricted efficient with exogenous public signals because of a payoff externality.

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