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I. Main duties of the research institute in 2018

In 2018, the institute continued to implement the objectives of its research strategy. It complied with its obligations undertaken under various research contracts and agreements. Its main tasks included the time-proportionate implementation / completion of the research projects supported by the European Commission and the continuation of research, studying mechanism design, agglomeration and social networks, corporate strategies and competitiveness under the Lendület (Momentum) programme of the Hungarian Academy of Sciences (HAS), as well as compiling the Hungarian version of the 2017 Competition and Regulation Yearbook (*Verseny és Szabályozás*) and the Hungarian and English version of the 2017 Labour Market Yearbook (*Munkaerőpiaci Tükör*).

II. Major research and other results in 2018

a)   **Major research results**

MACROECONOMICS AND GROWTH

Two projects have analyzed facts and challenges for economic growth in Hungary and in Europe. One such project studied the evolution of Hungarian labor productivity in a regional context. When calculating labor productivity, researchers controlled for human capital (the skill level of employees), average hours worked, and those involved in workfare programs. Results show that between 2010-2017 Hungarian labor productivity increased modestly (at most). Changing this is probably the greatest challenge for Hungarian economic growth. Another project with a greater scope has concluded that while the main reason for Hungarian underdevelopment is productivity, there are possible efficiency gains on the capital and – to a gradually vanishing extent – on the labor markets.

A project has studied the main stylized facts of real and price convergence, and possible connections between economic growth (convergence) and the misalignment of the real exchange rate among members of the European Union (EU) in the period 1995-2016. Besides the relative price level of GDP, the researchers calculated another real exchange rate indicator, the internal relative price of services vs. goods. Misalignment was defined as a deviation from the level of these indicators from the average level conditional on relative development. There are two main policy messages: while it is highly desirable to avoid overvaluation, trying to maintain an overly undervalued currency does not benefit economic growth.

In the studies of structural change, it is typically assumed that investment spending falls mostly on goods, and not on services. A project shows that at least in the United States this assumption is not justified empirically. The weight of services in the production of investment goods has been gradually increasing, and by now it has overtaken the share of goods. Using this fact, the paper builds a new model, which yields three main results. First, the main beneficiary of technological change is the investment sector. Second, technological growth is different across sectors. And finally, labor and capital flows to the sectors where productivity growth is slowest.

EMPIRICAL INDUSTRIAL ORGANISATION

In the field of regulatory economics there were two important achievements. The research on the outstanding figure of law and economics, Ronald Coase, re-evaluated his activity, pinpointed the contradictions surrounding the reception of his thoughts and shed light on the

importance of studying the public services in his oeuvre. The project on *network sharing agreements* (NSAs) found undeniable advantages to operators and consumers alike, but also the potential for consumer harm. It emphasized that not all NSAs are created equal: the assessment of harms and counterweighing benefits to customers due to an NSA is a complex endeavour. The research formulated a framework for the competitive assessment of NSAs, detailing the possible concerns that may arise, ways to mitigate the concerns and the principles of assessing efficiency benefits.

The research on the *penetration of Information Communication Technology (ICT) into the health industry*, focused on the problem of asymmetric information. The online capabilities alter the traditional patient-doctor asymmetric information relationship. The research showed how the ICT penetration radically changed the institutional setup of the health industry and unfolded the causes of the Hungarian backwardness. The results were published in a book.

EDUCATION AND LABOUR

In an exploratory study, in addition to cognitive abilities, the authors link measures of preferences with outcomes of school performance. In an incentivized way risk, time, social and competitive preferences and cognitive abilities of university students are measured. The paper's aim is to look for associations between these measures and two important academic outcome measures: exam results and Grade Point Average (GPA). Unsurprisingly, the authors find that cognitive abilities are very well correlated with school performance. Regarding non-cognitive skills, they report that time preferences associate with exam grades and GPA. Competitive students have a higher average GPA. Risk-averse students perform a little better than more risk-tolerant students in exams. Finally, they have also detected that cooperative preferences are correlated strongly with GPA. Most of these associations are non-linear, which calls for the use of more flexible functional forms in similar studies in the future.

In 2012, smoking restrictions were extended to hospitality venues in Hungary. Women working in bars and restaurants were primarily beneficially affected by the intervention. In this research, they analyze the effect of this smoking ban on the outcomes of their intended pregnancies. Using complete individual live birth, foetal loss (miscarriage, stillbirth), and infant mortality registry data, they examine the probability of live birth, indicators of health at birth, and the probability of death in the first year of life. They perform a difference-in-differences estimation and show that the smoking ban has improved health at birth of the newborn of mothers working in bars and restaurants and has reduced infant mortality among them. Performing a series of robustness tests, we provide evidence that strongly supports the causal interpretation of our results. We also show that the ban was more beneficial for the newborn of parents with low educational attainment and with lower foetal health endowments

The paper estimates the effect of subsidized childcare availability on Hungarian mothers' labor supply, using a discontinuity in kindergarten eligibility for a child at age 3. The effect is identified in a setting where policy intervention has a high potential impact, since maternal labor supply is very low when children are aged under 3, but high for mothers with older children. The access to subsidized childcare increases maternal labor supply by 11.7 percentage points or 24%, an impact that is higher than that which has been found in previous quasi-experimental studies from most other countries. However, the potential effectiveness of future childcare expansion under age 3 may be constrained by further institutional factors, such as very long parental leave, traditional cultural views regarding maternal employment and institutional childcare, and the lack of flexible work forms. A comprehensive policy approach, including linked reforms of these other factors, is needed to achieve such a high effect.

This study examines friendship and hostility relations between Roma students and the ethnically homogeneous non-Roma majority in Hungarian schools. Using data on friendship and hostility relations of 15-year-old students from 82 schools the study focuses on the interaction between exposure to the other ethnic group and the academic achievement of Roma students. High-achieving Roma students are shown to have significantly more friends and fewer adversaries than low-achieving ones, due to better inter-ethnic relations while having similar within-ethnic group relations. As a result, higher exposure to Roma students translates to more friendship and less hostility from non-Roma students in environments where more of the Roma students have higher achievement. Therefore, policies helping the achievement of Roma students can have immediate as well as long-term positive effects. Simulations suggest that a mixed policy of desegregation and closing the achievement gap may best foster positive interethnic relations. The results also support the conclusion that exposure is more likely to improve intergroup contact if status is more equal.

PUBLIC ECONOMICS AND PUBLIC POLICIES

Their international comparative analysis demonstrated that the negative sign of the correlation between retirement age and length of career is a consequence of poor incentives pertaining to the Hungarian and the Austrian public pension system. Further modeling proved that in the Female40 (where women with 40 years of rights are allowed to retire before reaching the full benefit retirement age without any actuarial deduction) it is frequently profitable to work longer. Our analysis also showed that a flexible system is generally welfare superior to a rigid one. Finally if the indexation to prices is replaced by indexing partly or fully to wages, then incentives to delay retirement weakens.

The international policy review has shown that best female employment results are achieved by countries where work-family balance is easily managed: where a large proportion of children take part in institutional daycare/kindergarten for longer hours, part-time female employment rate is high, monetary and the in-kind family benefit system is generous, while parental leave and child-care related holidays are under average lengths. However, the effects of the same policies can be different in different country contexts. Experience and evidence has also shown that such work-family policies easing better re-integration of women to labor markets also boost fertility rates and child development indicators.

The research dealt with Hungarian public tenders from 2009 to 2016 and pointed out that there is a negative correlation between the price drop relative to estimated value and the corruption risks. The tenders where the corruption risks were low and at least six competitors participated in the tender procedure the price drop was the highest. The next phase of the research focused on the links between the total factor productivity of winner companies and the corruption risks of tenders won by these companies. The preliminary results show that winner companies with high total factor productivity (tfp) participate less in public tenders with high corruption risks and the winner companies with low tfp more significantly win tenders with high corruption risks. The comparative analysis of EU financed and non-EU financed tenders from 2009 to 2016 points out that the EU funding had negative effects in the Hungarian public procurement. The EU funding helped to reduce the intensity of competition, to increase the level of corruption risk and the weight of price distortion.

AGRICULTURAL ECONOMICS AND RURAL DEVELOPMENT

The aim of the research is to identify the factors that influence the importance small-scale farmers place on different marketing channels of short food supply chains. The focus concerns two entirely different types of market: 'conventional' markets, and newly-emergent farmers' markets. Results confirm that different markets are visited by different types of

farmers. Farmers who favour conventional markets are typically less educated, operate on smaller scales and are more committed to their chosen markets via long-term contracts (which reduce the probability of their trying other outlets). The preference for farmers' markets is stronger with farmers who are more open to cooperation, have specific investment plans for developing their farms and among those who are specifically looking to directly interact with their customers to avoid middlemen. The relevance of the findings is highlighted by the ongoing Short Food Supply Chain Thematic Sub-programme in the present European Union financing period; farmers' profiles in any given marketing channel must be understood if short food supply chains are to be effectively promoted. Different types of small-scale farmers will benefit from different supporting frameworks, interventions, and initiatives.

The objectives of this paper were twofold: to explore if there are differences in the perceptions about supply chain performance (SCP) and relationship quality (RQ) among traditional food supply chain members, and to examine the influence of individual relationship variables and aggregated relationship quality on SCP in the traditional Croatian food sector. It was found that there were no significant differences in the perception of overall SCP and RQ among supply chain members. It was identified that aggregated RQ and all individual relationship variables (trust, commitment, economic satisfaction, non-coercive and coercive power, reputation and conflict) have a significant influence on perceived SCP of the traditional food supply chains. This study provides a systematic approach to investigate the SCP and supply chain RQ in the traditional food sector. The findings suggest that managers should not neglect any aspect of supply chain relationship to keep high SCP and to be competitive on the market.

The research assesses whether Common Agricultural Policy (CAP) subsidies stabilise farm income and examines how subsidies may reduce the variability of farm income over time. The analysis is developed on a constant sample of Hungarian and Slovenian Farm Accountancy Data Network farms during the period 2007–2015. Variability in farm income over time is high due to the high variability in the market revenue component. Subsidies mitigate instability in farm income because their variability is lower than that of market revenue income. While CAP subsidies thus represent a stable source of farm income, they have played a limited countercyclical role in stabilising total farm income. Subsidies are not found to be targeted at the farms that face the highest level of income variability and thus may not be an efficient tool for stabilising farm income.

GAME THEORY

Members of the Game Theory Group studied the effect of Brexit on the power balance in the Council of the European Union and found that it may be beneficial for the larger members in a financial sense. Interestingly the result – due to the complex rules of the voting – is dependent on the Union's composition. Before the entry of Croatia the countries opposing Brexit would be the very same, largest countries.

A game theoretical evaluation of the European natural gas pipeline network presents results on the various countries' and region's influence, and, actually on their costs to supply internal gas demand. Using a comparative study they have shown that the construction of Nordstream 2 is very beneficial for the constructing lands, but is rather disadvantageous for the Balkan region. The effect is even more drastic when the possibility of pipeline failures is also considered. The fact that – after the foreseeable closure of the Ukrainian transit corridor – practically the entire gas supply of the region comes via Germany, transport disruptions may cause severe shortages. In sum, Nordstream 2 is against the principles of the Energy Union.

Several theoretical and experimental results have been found in the study of bank runs. They looked at the timing and quality of depositors' decisions, studied panic bank runs, where the

runs have no economic grounds; the behaviour of banks to avoid bank runs when they do not want to consume all their liquidity; finally they look at the effect of financial networks in bankruptcy.

They have looked into the effect of investors' risk aversion on the formation of financial bubbles. The experiment was motivated by MiFID (Markets in Financial Instruments Directive), the EU directive prescribing the risk screening of banking clients. They have shown experimentally that the exclusion of investors with more conservative investment attitudes led to the risk of more frequent and more severe financial bubbles.

The apportionment problem is a special case of allocation problems. The primary question is the allocation of voting districts among counties and states: it is a natural requirement that the district boundaries should follow their boundaries. They have already introduced the Leximin algorithm that takes the Venice Commission's recommendation fully into account. Now they presented bounds on the errors of several of the widely used methods, that is, how removed they are from fair representation.

FIRMS, STRATEGY AND PERFORMANCE – MOMENTUM RESEARCH GROUP

One of the topics investigated is the consequences of innovation activities at the firm level. This project exploits a unique firm-level survey linked to employee data from Hungary that allows us to examine broadly defined innovation activities including the introduction of new products, process innovation and organizational innovation. The results show that these innovation activities are skill-biased insofar as they lead to an increase both in the share of college educated workers and in their wage premium. The skill bias is not solely driven by high-novelty, R&D-based innovation, but also, to a comparable extent, by the low-novelty kind. Among low-novelty innovation types, product and process innovation are the most skill-biased, while organizational innovation is less so. These results highlight the fact that low-novelty innovations contribute substantially to wage inequality.

The research investigates knowledge spillovers in importing through fine spatial and managerial networks. By identifying from the variation in peers' import experience across source countries, by comparing the spillover from neighboring buildings with a cross-street placebo, and by exploiting plausibly exogenous firm moves, we obtain credible estimates and establish three results. (1) There are significant knowledge spillovers in both spatial and managerial networks. Having a peer which has imported from a particular country more than doubles the probability of starting to import from that country, but the effect quickly decays with distance. (2) Spillovers are heterogeneous: they are stronger when firms or peers are larger or more productive, and exhibit complementarities in firm and peer productivity. (3) The model-implied social multiplier is highly skewed, implying that targeting an import-encouragement policy to firms with many and productive neighbors can make it 26% more effective. These results highlight the benefit of firm clusters in facilitating the diffusion of business practices.

A study for the European Commission analyzed the causes and mechanisms of productivity slowdown in Hungary after 2008 in detail. The study showed that the whole firm-level productivity growth distribution shifted to the left. More importantly, the slowdown was especially severe in the case of frontier firms, which is in contrast to what has been found in other EU countries. The duality in terms of ownership was persistent both in terms of productivity and wages. The study did not find characteristic changes in terms of the reallocation process, but the inferred cost of capital increased, especially in the case of young firms, even though many policies aimed at reducing their cost of capital. The report also consists

of a case study in retail trade, with a characteristic trend break in the expansion of large chains and productivity growth around 2010.

ECONOMICS OF NETWORKS

The researcher investigates the technological proximity network ("industry space") of Hungarian industrial sectors using linked data on corporate balance sheets and product statistics. As the technological relatedness of industries influences the appearance and development of new industries in regions and countries, new approaches in regional development policies also emphasize this approach (e.g. in smart specialization). The applicability of these relationships in mapping the regional economic base was presented in a case study, which can help the Hungarian regional economic development policy. They used the data of the Central Transdanubian Region as an example. Examining the role of technological relatedness in the firms' product portfolios, it has been discovered that the technological similarity between industries (and production processes) and the resulting cost efficiency plays an important role in the design of firms' product portfolio. It has also been proved that the role of these factors intensifies during an economic crisis, thus firms' product portfolio will be better aligned with the technology-based relationships of industries.

The research examines the life-cycle of the *International Who is Who* (iWiW) online social network, the social and geographical characteristics of its diffusion process. Researchers examined the process and causes of the spread and decline of an online innovation. The key players in these processes were discovered and how the diffusion and collapse were influenced by these actors' network position. Results are important not only for understanding the lifecycle of the studied online social network, but also for understanding the general process of the spread and decline of social innovations and its determinants.

MECHANISM DESIGN – MOMENTUM RESEARCH GROUP

The goal of the kidney exchange programmes is that the patients with end-stage renal disease can exchange their amenable but immunologically incompatible donors among each other. They studied the stable exchange problem with colleagues using integer programming techniques. Furthermore they studied the gains of the countries in international programmes with simulations, where the sizes of the pools and the optimisation criteria used can differ across countries. They considered a fair solution concept that provides mutual benefits for the participating countries over the long-term by a dynamic compensation system..

The research analyses the internship allocation and university admissions. The research group has been assisting in the allocation of students at the CEMS programme of the Corvinus University of Budapest to company projects. Since then the application has been extended to two universities in Germany and Poland by using a web application developed by the research group. A modified version of this web-application is under development for coordinating university admissions in Hungary for so-called dual programmes (where a student is allocated to a university programme and a company at the same time). The research group also continued the study of the Hungarian university admission programme from an optimisation point of view. Here the main challenge is to develop an integer programming technique that is suitable for computing the solution of the real application that has several special features, such as ties and common quotas.

The task in a cake-cutting problem is to allocate the cake to players in a fair way, where the players have heterogeneous valuations over the pieces. The goal is to give a piece at least as valuable to everyone at his/her fair share, where the latter can be different across players. On the one hand they designed a protocol that finds a fair allocation faster than previous protocols

in the literature. On the other hand, they gave a lower bound for showing that their protocol is the best possible for the model. Both results are valid in a very general cake-cutting setting.

AGGLOMERATION AND SOCIAL NETWORKS – MOMENTUM RESEARCH GROUP

To understand spatial relations between technological development and collaboration networks, members of the research group have investigated the spatial dynamics of inventor collaboration networks. They distinguished newly created inventor collaborations that span across European regions from repeated ones. Interestingly, only 5% of co-inventor ties have been repeated and the networks of these inter-regional relations are concentrated in smaller geographical clusters than the full collaboration network. Applying a multivariate gravity model, the authors have demonstrated that the repeated collaborations drive the innovation systems towards geographical lock-in, in which regional innovation systems follow path-dependent technological development. The results have direct consequences for EU innovation policy and indirect implications for the Hungarian innovation policy.

Collaboration networks influence the performance of firms and regions indirectly, through the performance of individuals. They have analyzed the collaboration network of a creative industry in a metropolitan area to demonstrate how network position influences individual success. They have used the database of Hungarian movies from the 1990-2012 period and reconstructed the filmmakers' collaboration networks. Their results confirm previous findings in the literature concerning the increased likelihood of central creators and also broker creators to be successful, measured by award winning. However, they found that those creators who are in the center of the collaboration network and also broker the network gain extra likelihood of individual success if they link the center of the network with the periphery of the network. These results suggest that advantages that can be found in the center of the network (eg. recognition) favor creative work; however, advantages at the periphery of the network (eg. non-conformity, free capacities) complement them.

Besides understanding network conditions of economic growth and success, it is important to reveal how social network influence inequalities in society. Advantages from network positions and social relations are not equally distributed and therefore, network externalities can be expected to increase inequalities. To prove this proposition, the researchers have used network data from iWiW social media in year 2011. The iWiW network can be assumed to represent the social network of the internet users in the country. The research team finds that income inequalities have increased from 2011 to 2016 more in those towns where the social network was fragmented and initial inequality was also high. Consequently, social networks increase income inequalities if the fragmentation of the network is based on inequalities because individuals from different wage categories sort themselves into distinct network fragments. A further finding is that the fragmentation of the social network is primarily due to geographical fragmentation of towns. Therefore, by improving the geographical structure of towns, policy can remedy the negative spiral of network fragmentation and income inequality.

HEALTH AND SOCIETY – MOMENTUM RESEARCH GROUP

Using administrative data from Hungary, we analysed the effect of general practitioner (GP) care availability on the consumption of antibiotics. According to our estimates from fixed effects panel regressions, if the single GP position of a village becomes unfilled, the days of therapy (DOT) as well as public expenditures on antibiotics decrease by 3.2 – 4.1%. The negative effect on antibiotic consumption is stronger in smaller settlements, in settlements where secondary care is less available, and where antibiotics were previously overprescribed. The quality of prescribing behaviour measured by the ratio of narrow-spectrum to broad-

spectrum antibiotics deteriorates significantly as a consequence of worse primary care availability. The number of GP consultations decreases by 9.8%, but prescribed antibiotic DOT per GP visit goes up by 7.2%.

The researchers analysed the causal effect of job loss on disability insurance enrolment on a five year horizon. We analysed the implications of these enrolments on public health care expenditures and investigated if the health expenditure patterns of disability insurance enrolees depend upon being laid off earlier. We looked at individuals being displaced due to a mass layoff, and compared their labour force status to non-laid-off individuals with a similar employment and health history, who were chosen with propensity score matching. According to our estimates from discrete time hazard models, being laid off increases the transition probability to disability insurance by 50 - 100% (or 1 – 1.4 % points) in 2 - 4 years. We found a greater than average effect among older individuals and those who were in worse health previously. Outpatient, inpatient and pharmaceutical expenditures increase to 3.5 - 4 times when a laid-off individual takes up disability benefit, and decrease slightly afterwards, but do not reach the pre-disability levels. The time pattern of health expenditures around disability insurance enrolment is similar to those individuals who were not laid off but still became disabled, although the level of expenditures is lower. Overall, disability insurance enrolment of laid-off workers seems to be mostly the consequence of health shocks, rather than a misuse of the disability insurance system.

b) Science and society

The Institute sets great store on the premise that by publishing the research results society is likely to put them to good use, raising awareness of them in the right forums and public events and making them available for the interested public at its website.

The results of labour market research are given publicity annually at a labour economics conference in Szirák.

Volume 17 of the Labour Market Yearbook presenting the topical characteristics of the Hungarian labour market and employment policy in Hungary and analysing various areas of this topic in detail was published in Hungarian. The yearbook presents the characteristics of the processes in, and the internal interconnections of, the Hungarian labour market on the basis of available statistics, theoretical research and empirical analyses, in an easy-to-follow style and structure and by an international comparison. In keeping with the earlier practice adopted by the editors of the series, an area that is key to understanding labour market processes in Hungary and the success of fact-based employment policies was selected for special discussion. The Close-up (*Közelkép*) chapter of this year's edition discusses the labour shortage in Hungary.

The research results achieved in the Institute and discussed in seminars were published in 34 working papers and 6 issues of the Budapest Working Papers on Labour Market (Budapesti Munkagazdaságtani Füzetek). A professional blog serving as a discussion forum for the Institute's research results, policy opinions and topical economic, public and socio-political issues is in place and is regularly used by the staff to impart their opinions and papers thereby facilitating social interaction. News about the media presence of the staff is available in the Press Survey section. The website offers up-to-date information in both English and Hungarian on the main activities, publications and projects as well as the conferences and seminars organised by the individual research groups.

The Institute organizes several annual domestic and international conferences. Researchers have been active organizers and participants of the annual conference of the Hungarian Society for Economics (Magyar Közgazdaságtudományi Egyesület, MKE). This is the largest, and most comprehensive scientific event for economic science in Hungary, attended by leading

Hungarian scientists working locally and abroad. More importantly, many PhD students participate, and get valuable feedback on their work. The Annual Summer Workshop provides an excellent opportunity for young Hungarian scholars studying abroad to present their research and to establish and to keep contact with colleagues working in Hungary. The Agricultural economics and Rural development research group organizes an annual international workshop in the field of agricultural economics (Transition in agriculture – agricultural economics in transition) with prominent European scholars. This workshop provides a good opportunity for the Hungarian agricultural economics community especially for Ph.D. students to meet and discuss subjects with qualified researchers. The Institute organizes a biannual international workshop in the field of economics of network entitled "Networks, Complexity, and Economic Development". The event provides an opportunity for the participants to learn first-hand about the latest results of prestigious international research. In recent years researchers have organized four international conferences on mechanism design theory and practices.

III. National and international relations and co-operation in 2018

Researchers of the Institute teach at nearly all Hungarian higher education institutions offering undergraduate and graduate courses in economics (CEU, BCE, ELTE, DE, PTE, KE etc.). Furthermore, they are engaged in PhD programmes at Pannon University in Veszprém, Kaposvár University, Szeged University, Corvinus University and Szent István University under a co-operation agreement. They also teach at other universities (Cardiff University, UK Open University) and work as external researchers in prestigious research institutes (CEPR, IZA) abroad.

As a result of the measures taken in the interest of establishing the professional integration of research in competition regulations, a forum has been set up for lecturers and professionals at universities, research institutes and institutions of public administration in Hungary and abroad dealing with competition regulations, the economics of network industries and the legal issues of regulations.

Researchers provide expert services for the Competition Office, the Central Statistical Office, TÁRKI, FIW, Czech Science Foundation, Polish Science Foundation and the Fiscal Council. Its researchers include consulting experts of the Monitoring Committee of the Economic Development and Innovation Operational Programme, members of the Advisory Panel of Parliaments and Civil Society in Technology Assessment (PACITA) and the Expert Group 'Strategic Foresight for R&I Policy in Horizon 2020' (SFRI) at the European Commission's DG Research and Innovation. Its researcher is a member of the Scientific Council of the Technical University of Ostrava. The Institute is an advisory member of the Evaluation Committee of the National Strategy entitled "Let's Make Things Better for Our Children" and the Indicator Sub-committee.

The Hungarian kidney exchange programme, which is under development with the help of our research group, will potentially save the lives of Hungarian patients with end-stage renal disease. The matching algorithms developed and implemented by the research group for two-sided applications have been used in the Hungarian university admissions, project allocation of students at Corvinus University to companies, and for kindergarten allocation.

Its senior research fellow was invited to the MTMT Scientific Metrology Committee. Many researchers are founders or members of the presidium of the Hungarian Society of Economics and participate as members of the presidium in the work of the Hungarian Economic Association.

Our researchers are active members of the Hungarian Academy of Sciences and Economics, the Scientific Committee for Human Resources, the Agricultural Economics Committee, the Scientific Committee for Development Economics and the Doctoral Committee on Economics.

IV. A brief description of successful national and international research proposals in 2018

There were 40 OTKA / NKFIH projects in progress in 2018. Research in 12 new topics was commenced. Our Institute won 3 grants for research groups with internationally outstanding high impact results (KH_18). The HAS Momentum Programme funds three research group – mechanism design, health and society, agglomeration and social networks – in the Institute. The Firms, strategy and performance Momentum Research group's 5-year-long research activity and its final report was deemed 'excellent' by the Hungarian Academy of Science and the Council of Research Institutes' joint committee and the team was granted a permanent position in the Institute.

The Institute continued to implement the objectives of the research project entitled *Education Economics Network*. The project is financed under the H2020. It marks the start of an enhanced cooperation in the field of education economics between three top ranked economics of education research groups in EU-15 countries - KU Leuven, U Maastricht and Politecnico di Milano - and the CERSHAS. Education economics is one of the most important applied economics fields that provide direct evidence to policy makers on educational issues. The proposed project focuses on three clusters of methodologies – program evaluation, structural modelling and efficiency analysis – and fosters cooperation between the institutions along more specific research lines within these clusters.

At the end of 2016, SKIN - Short supply chain Knowledge and Innovation Network H2020 project was launched, which aims to build an international network covering various actors in the short supply chains and to find good practices and innovations.

Low-Input Farming and Territories – LIFT is a research project funded under the European Union's Horizon 2020 research programme, its goal is to identify and understand how socio-economic and policy drivers impact on the development of ecological approaches to farming and assess the performance and sustainability of such approaches, taking into account different farming systems at farm, farm-group and territorial scales.

V. Major publications during the year

Fleiner, T: A Note on Restricted List Edge-Colourings COMBINATORICA 38 : 5 pp. 1265-1267. , 3 p. (2018)

Baráth, L ; Fertő, I ; Bojnec, Š: Are farms in less favored areas less efficient? AGRICULTURAL ECONOMICS 49 : 1 pp. 3-12. , 10 p. (2018)

Mesic, Ž ; Molnár, A ; Cerjak, M: Assessment of traditional food supply chain performance using triadic approach: the role of relationships quality SUPPLY CHAIN MANAGEMENT-AN INTERNATIONAL JOURNAL 23 : 5 pp. 396-411. , 16 p. (2018)

Kóczy, Á L ; Sziklai, B Bounds on Malapportionment OPERATIONS RESEARCH LETTERS 46 : 3 pp. 324-328. , 5 p. (2018)

Hajdu, M ; Pápay, B ; Szántó, Z ; Tóth, I J: Content analysis of corruption coverage: Cross-national differences and commonalities EUROPEAN JOURNAL OF COMMUNICATION 33 : 1 pp. 7-21. , 15 p. (2018)

Juhász, S ; Lengyel, B: Creation and persistence of ties in cluster knowledge networks JOURNAL OF ECONOMIC GEOGRAPHY 18 : 6 pp. 1203-1226. , 24 p. (2018)

Péter, Csóka ; P, Jean-Jacques Herings: Decentralized Clearing in Financial Networks MANAGEMENT SCIENCE 64 : 10 pp. 4681-4699. , 19 p. (2018)

Bakucs, L Z ; Fertő, I ; Varga, Á ; Benedek, Zs: Impact of European Union development subsidies on Hungarian regions EUROPEAN PLANNING STUDIES 26 : 6 pp. 1121-1136. , 16 p. (2018)

Hajdu, G ; Hajdu, T: Intra-couple income distribution and subjective well-being: the moderating effect of gender norms EUROPEAN SOCIOLOGICAL REVIEW 34 : 2 pp. 138-156. , 19 p. (2018)

Bisztray, M ; Koren, M ; Szeidl, A: Learning to import from your peers JOURNAL OF INTERNATIONAL ECONOMICS 115 pp. 242-258. , 17 p. (2018)

Ashwin, A ; Cseh, Á ; Groß, M ; Manlove, D F ; Jannik, M Matchings with Lower Quotas: Algorithms and Complexity ALGORITHMICA 80 : 1 pp. 185-208. , 24 p. (2018)

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Benedek, Zs ; Fertő, I ; Molnár, A: Off to market: but which one?: Understanding the participation of small-scale farmers in short food supply chains - a Hungarian case study AGRICULTURE AND HUMAN VALUES 35 : 2 pp. 383-398. , 16 p. (2018)

Csercsik, D ; Kiss, H J: Optimal Payments to Connected Depositors in Turbulent Times: a Markov Chain Approach COMPLEXITY 2018 Paper: 9434608 , 14 p. (2018)

Cseh, Á ; Kavitha, T: Popular edges and dominant matchings MATHEMATICAL PROGRAMMING 172 : 1-2 pp. 209-229. , 20 p. (2018)

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Segal-Halevi, E ; Sziklai, B: Resource-monotonicity and population-monotonicity in connected cake-cutting MATHEMATICAL SOCIAL SCIENCES 95 pp. 19-30. , 12 p. (2018)

Hajdu, T ; Hajdu, G: Smoking ban and health at birth: evidence from Hungary ECONOMICS AND HUMAN BIOLOGY 30 pp. 37-47. , 11 p. (2018)

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