Research Highlights in 2019

Markus Reisinger and Emanuele Tarantino on **Patent Pools in vertically related Markets**

A patent pool is an agreement among patent owners to license a bundle of patents to each other or to third parties. From the 1890s to the 1940s, many manufacturing industries in the U.S. had a patent pooling arrangement. Following a number of unfavorable Antitrust rulings, pools essentially vanished between the mid-1950s and the mid-1990s. This changed in 1995, after the release of new guidelines on the licensing of intellectual property by the Department of Justice and the Federal Trade Commission. In the years that followed, American authorities approved patent pools tied to major technologies in electronics, information technology, and medicine.

The theoretical literature has typically studied patent pools in models where licensors and licensees are separated firms and licensees are active in independent markets. However, patent pools are ubiquitous in markets where patent owners sell to manufacturers competing with each other on the product market. Moreover, many patent pools' members are vertically integrated. In this paper, then, MaCCI researcher Tarantino and his co-author Reisinger study the welfare consequences of the formation of patent pools in industries where licensees compete against each other and licensors and licensees may be vertically integrated. They also give guidance on the policies that are best suited at screening anticompetitive pools. Specifically, they consider information-free policies that break the anticompetitive outcome without relying on the specific number of firms or market structure in the industry.

Reisinger and Tarantino find that the impact of pools on welfare depends on the industry structure: Whereas pools are procompetitive when no manufacturer is integrated with a licensor, the presence of vertically integrated manufacturers triggers a novel trade-off between horizontal and vertical price coordination. On the one hand, since integrated manufacturers are members of the pool through their upstream licensors, all licensors, even the non-integrated ones, reduce their patent prices to these manufacturers. On the other hand, all licensors benefit from increased profits of vertically integrated manufacturers, and therefore have an incentive to soften price competition. They achieve this by raising the patent prices to non-integrated manufacturers. As a result of this trade-off, pools are anticompetitive if the share of integrated firms is large, procompetitive otherwise.

Reisinger and Tarantino finally turn to public policy formulation. They show that the imposition of an unbundling and pass-through requirement is able to screen anticompetitive pools. Under this requirement, the pool must set a tariff for each patent in the bundle, instead of a single tariff for the bundle, and then ensure that each

member obtains only the revenue generated by its own technology. Essentially, this requirement boils down to a ban on monetary transfers among pool members.

Reisinger, Markus and Emanuele Tarantino (2019), Patent Pools, Vertical Integration and Downstream Competition, RAND Journal of Economics, 50(1):168-200.

Philipp Boeing and Elisabeth Mueller on the **Measurement of China's Patent Quality**

As the Chinese economy becomes increasingly innovation-driven, research and development (R&D) expenditures and patent applications have significantly increased. China's ratio of gross expenditures for R&D to GDP has overtaken that of the European Union, and in gross R&D expenditure China is second only to the USA. China is already leading in patent applications and ranks second in applications made under the Patent Cooperation Treaty (PCT). In recent years, China's patent applications have risen disproportionately against its R&D expenditures, resulting in decreasing R&D inputs per patent.

It is well documented that patent subsidies are a driver of patent quantity in China. Additionally, there are other policy instruments, such as tax allowances, that increase the expected value of patenting for the applicant and may thereby incentivize more applications. Typically, patent applications are determined by R&D inputs and the expectation that the economic value of a patent exceeds its cost. Following the argument that a cost reduction, e.g. through subsidies, disproportionately incentivizes patents of marginal value, the increase in China's patent quantity may have happened to the detriment of patent quality.

In this paper, MaCCI researchers Philipp Boeing and his co-author Elisabeth Mueller address the challenges of the empirical assessment of China's patent quality. One issue is that China's patent office does not publicly disclose citation data that is widely used to measure patent quality. Moreover, even if citations were observable, further problems arise. Citation inflation through an increase in subsidy-induced, low quality patent applications may introduce an upward bias on this quality measure. To perform a comprehensive analysis of China's patent quality they validate domestic citations in comparison to foreign ones, which are invariant to China's economic policy, as economic indicators. International comparability of citation data is ensured by restricting the analysis to citations generated by international search reports in the PCT system.

Whereas the use of foreign citations shows that Chinese PCT patent applications reach only a third of the non-Chinese quality benchmark, the extension towards domestic and self citations suggests a higher quality level that converges to or even surpasses the international benchmark. Boeing and Mueller investigate these differences based on firm-level regressions and find that in China, only foreign citations, but not domestic and self citations, are a valid indicator of patent quality. Using Germany as a representative country without patent subsidies, they show that all three citations types may be used as economic indicators if policy distortion is not a concern. In conclusion, the results show that in China, domestic and self citations suffer from an upward bias and should be employed with caution if they are to be interpreted as a measure of patent quality. More generally, the findings support the concern that indicators fail as

reliable measures if they become the target of policy. The policy implications of the paper have been recently taken up in the Annual Report 2019/20 of the German Council of Economic Experts and by the World Bank, 2019, Innovative China: New Drivers of Growth.

Boeing, P., Mueller, E. Measuring China's Patent Quality: Development and Validation of ISR Indices, China Economic Review 57, forthcoming.

Jens-Uwe Franck and Martin Peitz on **Market Definition and Market Power in the Platform Economy**

In May 2019, a study by MaCCI researchers Jens-Uwe Franck and Martin Peitz for the think tank Centre on Regulation in Europe (CERRE) was released in Brussels. With the rise of digital platforms operating in concentrated markets, competition authorities and courts have to increasingly investigate and decide merger and abuse cases that involve platforms. When handling platform cases authorities are faced with complex interactions and market environments that require a thorough understanding.

Franck and Peitz provide detailed guidance to competition authorities and courts on how to define markets and how to assess market power when dealing with two-sided platforms. With the Vestager special advisers' report on competition policy for the digital era, the European Commission has received proposals on how to deal with digital platforms. But before any competition policy intervention, this new study insists that adequately defining markets and assessing market power is a fundamental step. As Franck and Peitz write, "the special advisers' report states that in the case of platforms less importance should be given to market definition and more emphasis put on the theories of harm and identification of anti-competitive strategies. We would challenge this conclusion. Given the complexity of the market in which many platforms operate, particular care is needed not to go down the wrong track. Starting with the wrong market definition would profoundly impact the assessment of a case."

When defining markets for multi-sided platforms Franck and Peitz stress the need for a multi-markets approach and for the inclusion of market without a price. In particular, in case of two-sided platforms, competition authorities and courts should always define separate markets for both sides of the platform. Such a so-called multi-markets approach does naturally account for different substitution possibilities by the respective user groups and is less prone to error compared to the competing single-market approach. Given that platforms often do not charge a price to users on one side (typically the consumers' side), the adoption of a multi-markets approach makes it necessary to recognize "zero-price markets" as "markets" which can be subject to competition practice. Yet, as it is an essential purpose of competition law to protect consumer welfare, competition practice should indeed recognize straightforwardly that there can be "markets" for products offered free of charge.

For a market power assessment, Franck and Peitz see an assessment of barriers to entry as fundamental, since they are at the core of persistent market power. The

absence of successful entry attempts may be seen as an indication of market power. However, it must not be overlooked that entry threats may arise from firms offering different services, as long as they provide a new home for users' attention and needs.

Using market shares as an indicator of market power in the context of competition law, is particularly problematic for two-sided platforms. Even more than in traditional markets, they are only one out of a plurality of factors that may indicate market power.

In conclusion, Franck and Peitz write "we do believe that EU and national competition and courts would benefit from clarifications on how to apply competition law when defining markets and assessing market power in the context of platforms."

Jens-Uwe Franck and Martin Peitz (2019), Market Definition and Market Power in the Platform Economy, CERRE Report

Selected News in 2019

December 2019: MaCCI Member Martin Peitz at ACE Conference

At last year's annual conference of the Association of Competition Economics in Copenhagen, Martin Peitz contributed to the plenary panel "Reflections on the need for a reform of merger rules – Increased concentration and digital mergers" and discussed the German Facebook case.

December 2019: MaCCI Member Martin Peitz on Digital Platforms in Brazil

At the second Rio Conference on Advances in Competition Policy Analysis, Martin Peitz gave an invited lecture on "Antitrust in the Attention Economy" and contributed to the panel "What has been learned about digital markets?". He also gave a short course on "The Economics of Platforms" at the Brazilian competition authority CADE in Brasilia.

October 2019: MaCCI Senior Member Volker Nocke on Mergers in Chicago

At the 12th Annual Conference on Antitrust Economics and Competition Policy in Chicago, organized by the Northwestern Center on Law, Business, and Economics, MaCCI Senior Member Volker Nocke gave a talk on "Merger Remedies in Multimarket Oligopoly". At the same conference, MIT-Professor Michael D. Whinston presented joint work with Nocke, titled "Concentration Screens for Horizontal Mergers."

February 2019: MaCCI Member Achim Wambach as Expert at Deutsche Bundestag

MaCCI member Achim Wambach discussed the Biennial Report of the German Monopolies Commission 2018, as well the recommendations of the commission with

regard to energy, telecommunication, postal system as well as fixed book prices at the Deutsche Bundestag.

February 2019: MaCCI Members Martin Peitz and Achim Wambach at the Bundeskartellamt

MaCCI members Peitz and Wambach together with seven other German-speaking competition economists contributed to the discussions at the third meeting of the workgroup "Competition Economics" at the Bundeskartellamt.

February 2019: MaCCI Member Thomas Fetzer as Expert at Deutsche Bundestag

MaCCI member Thomas Fetzer gave an expert testimony on a revision of the German Telecommunications Act at the Deutsche Bundestag.

Upcoming Events in 2020

2-3 March 2020: EPoS-MaCCI Workshop on Banking Regulation

5-6 March 2020: MaCCI Annual Conference

15 May 2020: MaCCI IO Day

27-28 May 2020: MaCCI Workshop on "Economics of Innovation"

15-19 June 2020: MaCCI Summer Institute on Competition Policy

2-3 July 2020: ICT Conference

More Information

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