

# Analysis of Competition Policies between U.S. and EU in the Era of Inter-Industry Convergence

Gusang Kang Associate Research Fellow, Americas Team, Advanced Economies Department (gskang@kiep.go.kr)

Yungshin Jang Associate Research Fellow, Southeast Asia and Oceania Team, New Southern Policy Department (ysjang@kiep.go.kr)

Taehyun Oh Senior Researcher, Europe Team, Advanced Economies Department (asroc101@kiep.go.kr)

Jeewoon Rim Senior Researcher, Americas Team, Advanced Economies Department (jwrim@kiep.go.kr)

## I. Introduction

Due to inter-industry convergence in the era of the fourth industrial revolution, the implementation of competition policy has become more difficult in many sectors all over the world. Specifically, abuses of substantial market power by large digital platforms such as Google, Apple, Facebook, and Amazon, and their increasing number of acquisitions of small- and medium-sized tech-firms, thus potentially eliminating future competitors, are representative issues in the ICT sector. In fact, those big tech firms have significantly grown in recent decades by developing their own digital platforms and acquiring many promising tech-startups. Competition authorities in advanced economies have investigated those big tech firms' anti-competitive behaviors as well as M&A in order to promote competition in markets and to protect consumer welfare. In addition, alternative competition policies have been discussed to effectively deal with firms' anti-competitive behaviors in a changing environment of competition, caused for instance

by the emergence of a digital platform economy, instead of traditional policies.

The U.S. and EU have historically developed their own competition policies and laws conditional on their own situations and environment. The Department of Justice (DOJ) and Federal Trade Commission (FTC), two U.S. competition authorities, have implemented policies based on the Sherman Act, Clayton Act, and FTC Act. On the other hand, the European Commission (EC) as the competition authority in EU has applied the Treaty on the Functioning of the European Union (TFEU) to firms' anti-competitive behaviors in EU area. Recently, authorities both in the U.S. and EU have paid more attention to anti-competitive cases arising from large digital platforms. In this regard, we examine the U.S. and EU competition policy responses to ICT firms' anti-competitive behaviors in order to provide policy implications for Korea's competition authority under the changing competitive environment in the era of the inter-industry convergence.

## II. Case Study

There have been many cases related to ICT firms' abuse of their market power and anti-competitive M&A in recent decades. Among them, we choose some representative cases in order to compare policy responses between the U.S. and EU competition and legal authorities. When it comes to abuse of market power, Google's search engine case, also known as a "search bias" case, is an appropriate example. U.S. and EU competition authorities investigated Google's fabrication of search results on comparison-shopping websites. As a result, they reached quite different conclusions. The U.S. authority concluded that Google's behavior had contributed to increasing consumer welfare without the intention of excluding its competitors. The EC, however, fined Google €2.42 billion for transferring its power in the search engine market to the comparison shopping market.

In regard to M&A reviews, we take the acquisition of WhatsApp by Facebook as a representative case. U.S. and EU competition authorities both approved this deal. A specific feature of this acquisition application was that the revenues of WhatsApp in the EU area (less than €1 billion) did not meet the criteria for EU merger reviews. However, the EC reviewed this case from the perspective that the results of merger reviews in individual EU member countries could be different. Both the U.S. FTC and EC concluded that this deal would not harm market competition. The FTC approved the deal with the condition that Facebook would implement privacy policies of

WhatsApp following the acquisition. The EC argued that since the user data in WhatsApp aimed to be utilized in advertising and Facebook would not control them exclusively, this deal would not harm market competition. This case shows that U.S. and EU competition authorities consider specific characteristics of digital platform M&A when they decide to approve deals.

## III. Analysis on the Impacts of Digital Platform M&A on Market Competition

We empirically analyze the impacts of digital platform M&A on market competition. Specifically, this study examines the acquisition of WhatsApp by Facebook, utilizing data on the characteristics of 15 mobile social network service (SNS) applications (apps) and an estimation using a structural model combining generalized method of moments (GMM) with instrumental variable (IV) estimation as the empirical methodology. The baseline model of estimation is as follows.

$$u_{ijm} = x_{jm}\bar{\beta} + \alpha p_j + \xi_{jm} + \sum_{rc=1}^{RC} \sigma_{rc} x_{jm}^{rc} v_{i,rc} + \epsilon_{ijm},$$

where  $u_{ijm}$  represents a consumer  $i$ 's utility level obtained by purchasing an app  $j$  in a market  $m$ ,  $x_{jm}$  and  $\xi_{jm}$  indicate observable and unobservable characteristics of the app  $j$  in the market  $m$ .  $p_j$  is a price of the app  $j$  and  $x_{jm}^{rc}$  represents observed app characteristics varying with distributions of unobserved consumer characteristics ( $v_{i,rc}$ ).  $\epsilon_{ijm}$  indicates an unobserved error term. According to the empirical

results, app file size negatively affects SNS app demand, whereas the number of apps provided by an individual digital platform has a positive impact on consumer demand. Furthermore, we calculate the own- and cross-demand elasticity in response to changes in app characteristics. The results show that a 1% increase in the number of apps provided by Facebook leads to an increase in the market share of apps in the Facebook group but a decrease in the market share of competitor apps. For example, when the number of Apps provided by Facebook increases by 1%, the market share of WeChat decreases by 0.298%p in 2013. In addition, the magnitude of reduction in market share of Facebook Group's competitor apps such as

WeChat or Google+ becomes greater as time goes by according to the results in Tables 3, 4, 5, 6, and 7. This indicates a tipping effect in the market for mobile SNS apps due to Facebook's acquisition of WhatsApp. In addition, we compare the markups of 15 SNS apps before and after the acquisition deal by using a simulation method. As a result, we find that apps in the Facebook group experienced more increase in markups following acquisition relative to competitor apps (according to Red Box in Figure 1). In particular, the markups of WhatsApp increase by about 83% after the acquisition compared to before the deal. This implies that Facebook's acquisition of WhatsApp harms competition in the market for mobile SNS apps.

**Table 1. Results of GMM-IV Estimation for Mobile SNS App Demand**

Explanatory variable		(1)	(2)	(3)	(4)
$\alpha$	App price	0.140 (1.227)	-2.413 (2.044)	-3.780* (1.792)	-0.378 (1.758)
	App file size	-1.530** (0.573)			-1.935* (0.876)
$\bar{\beta}$	The number of App screenshots		-0.161 (0.289)		0.135 (0.372)
	The number of Apps provided by the same App developer			0.488† (0.259)	0.624† (0.323)
$\sigma_{rc}$	App file size	0.191 (1.611)			0.482 (0.937)
	The number of App screenshots		0.225 (0.256)		-0.005 (8.089)
	The number of Apps provided by the same App developer			0.003 (19.585)	-0.001 (30.330)
	Platform dummy variable	Included	Included	Included	Included
Minimum value of GMM objective function		608.2736	743.237	699.7868	498.6229
Observations		47	47	47	47

Note: 1) Standard errors are in parentheses.

2) Significance level: † p<0.1, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001.

Source: Author's estimation based on AMR Database (2020).

**Table 2. Own- and Cross-Demand Elasticity in Response to Change in Number of Apps Provided by an Individual SNS App Developer (2013)**

SNS apps	Facebook	Facebook Messenger	WhatsApp	Instagram	WeChat	Google+
Facebook	3.47	-0.229	-0.07	-0.034	-0.058	-0.36
Facebook Messenger	-0.25	3.521	-0.071	-0.035	-0.05	-0.36
WhatsApp	-0.234	-0.218	1.176	-0.036	-0.044	-0.358
Instagram	-0.223	-0.214	-0.072	0.587	-0.041	-0.356
WeChat	-0.298	-0.233	-0.068	-0.032	0.556	-0.355
Google+	-0.239	-0.22	-0.072	-0.036	-0.046	5.881

Source: Author's calculation based on AMR Database (2020).

**Table 3. Own- and Cross-Demand Elasticity in Response to Change in Number of Apps Provided by an Individual SNS App Developer (2014)**

SNS apps	Facebook	Facebook Messenger	WhatsApp	Instagram	WeChat	Google+
Facebook	3.057	-0.409	-0.026	-0.079	-0.012	-0.49
Facebook Messenger	-0.409	3.057	-0.026	-0.079	-0.012	-0.49
WhatsApp	-0.213	-0.213	0.383	-0.061	-0.012	-0.242
Instagram	-0.258	-0.258	-0.025	1.037	-0.012	-0.298
WeChat	-0.199	-0.199	-0.023	-0.059	0.186	-0.225
Google+	-0.431	-0.431	-0.026	-0.08	-0.012	3.294

Source: Author's calculation based on AMR Database (2020).

**Table 4. Own- and Cross-Demand Elasticity in Response to Change in Number of Apps Provided by an Individual SNS App Developer (2015)**

SNS apps	Facebook	Facebook Messenger	WhatsApp	Instagram	WeChat	Google+
Facebook	5.282	-1.777	-0.02	-0.06	-0.009	-0.144
Facebook Messenger	-1.777	5.282	-0.02	-0.06	-0.009	-0.144
WhatsApp	-0.457	-0.457	0.365	-0.054	-0.011	-0.099
Instagram	-0.578	-0.578	-0.022	0.984	-0.011	-0.109
WeChat	-0.421	-0.421	-0.022	-0.053	0.177	-0.096
Google+	-0.769	-0.769	-0.023	-0.06	-0.011	1.925

Source: Author's calculation based on AMR Database (2020).

**Table 5. Own- and Cross-Demand Elasticity in Response to Change in Number of Apps Provided by an Individual SNS App Developer (2016)**

SNS apps	Facebook	Facebook Messenger	WhatsApp	Instagram	WeChat	Google+
Facebook	7.409	-3.966	-0.012	-0.036	-0.006	-0.111
Facebook Messenger	-3.965	7.409	-0.012	-0.036	-0.006	-0.111
WhatsApp	-0.663	-0.663	0.344	-0.049	-0.011	-0.102
Instagram	-0.833	-0.834	-0.021	0.921	-0.011	-0.111
WeChat	-0.612	-0.612	-0.021	-0.048	0.168	-0.099
Google+	-1.241	-1.241	-0.021	-0.053	-0.011	2.256

Source: Author's calculation based on AMR Database (2020).

**Table 6. Own- and Cross-Demand Elasticity in Response to Change in Number of Apps Provided by an Individual SNS App Developer (2017)**

SNS apps	Facebook	Facebook Messenger	WhatsApp	Instagram	WeChat	Google+
Facebook	7.3	-3.767	-0.013	-0.037	-0.006	-0.235
Facebook Messenger	-3.766	7.3	-0.013	-0.037	-0.006	-0.235
WhatsApp	-0.645	-0.645	0.345	-0.049	-0.011	-0.152
Instagram	-0.811	-0.811	-0.021	0.925	-0.011	-0.171
WeChat	-0.595	-0.595	-0.021	-0.048	0.168	-0.146
Google+	-1.603	-1.604	-0.021	-0.053	-0.01	3.524

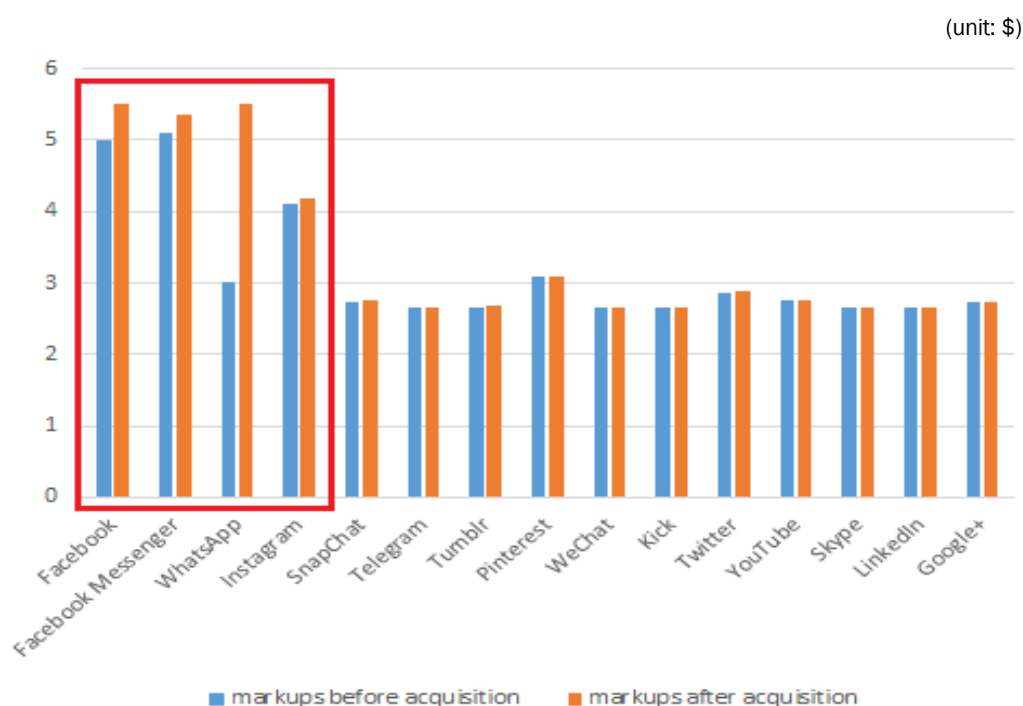
Source: Author's calculation based on AMR Database (2020).

**Table 7. Own- and Cross-Demand Elasticity in Response to Change in Number of Apps Provided by an Individual SNS App Developer (2018)**

SNS apps	Facebook	Facebook Messenger	WhatsApp	Instagram	WeChat	Google+
Facebook	7.382	-3.986	-0.013	-0.036	-0.006	-0.113
Facebook Messenger	-3.986	7.382	-0.013	-0.036	-0.006	-0.113
WhatsApp	-0.677	-0.677	0.345	-0.049	-0.011	-0.103
Instagram	-0.85	-0.85	-0.021	0.924	-0.011	-0.111
WeChat	-0.624	-0.624	-0.021	-0.048	0.168	-0.099
Google+	-1.262	-1.263	-0.021	-0.053	-0.011	2.262

Source: Author's calculation based on AMR Database (2020).

**Figure 1. Change in Markups of SNS apps before and after Facebook's acquisition of WhatsApp**



Source: Author's calculation based on AMR Database (2020).

## IV. Conclusion

In conclusion, it may be difficult to determine whether firms' abuse of market power and M&A are unlawful using the existing competition policies. Drawing upon this perspective, and the case studies and empirical results of our study, we derive the following policy implications. First, Korea's competition authority should transition out of the current regulatory paradigm and introduce new legal systems in cases where the dynamics of competition and innovation should be ensured. Second, if the authority cannot clearly determine whether the anti-competitive impacts of a certain platform's behavior are greater than pro-competitive impacts, it needs to use ex-post regulation instead of ex-ante regulation to promote innovation and increase efficiency. Third, the authority needs to increase personnel to respond to the increase in M&A of small- and medium-sized startups by large digital platforms. Fourth, the authority needs to find a regulation level optimal to establish an environment where competition and innovation can coexist, as innovation will drive growth under the digital economy. Finally, the authority has to apply flexible regulation measures to diverse M&A cases instead of unconditional non-approval of M&As, as small- and medium-sized startups often use M&A as their exit strategy. **KIEP**

## References

Kang, Gusang, Yungshin Jang, Taehyun Oh, and Jeewoon Rim. 2020. "Analysis of Competition Policies between U.S. and EU in the Era of Inter-Industry Convergence". KIEP Policy Analyses 20-08 (in Korean).