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CHAPTER 1.
SHOULD MARKET DEFINITION BE ABANDONED IN ESTIMATING MARKET POWER? AN AFFIRMATIVE ANSWER FROM QIHOO V TENCENT

ABSTRACT
Professor Louis Kaplow’s proposal to abandon market definition in estimating market power has been criticised by a number of scholars. Both the proposal and its criticism were analysed theoretically. The recent Chinese landmark case of Qihoo v Tencent provides an empirical examination of the proposal and its criticisms, because the courts deciding the case applied market definition analysis to identify market dominance. The facts and analysis in the decision provide support for Kaplow’s proposal because, despite clear facts proving a direct relationship between a firm’s unilateral conduct and competitive harm, neither the so-called relevant market nor the dominant firm were successfully identified. By examining the facts and analysis in the decision, this article concludes that the market definition approach to identifying market power is misleading and counterproductive, supporting the position of Kaplow. This conclusion further supports an argument that the market definition methodology provisions of Article 19 of China’s Anti-Monopoly Law 2008 (AML) and of the Anti-Monopoly Committee of the State Council Guidelines for the Definition of the Relevant Market (Guidelines) should be repealed or modified.

I. INTRODUCTION
Market power is often referred to as the ability to raise price profitably. Landes and Posner’s statement that ‘the ability of a firm (or a group of firms, acting jointly) to raise price above the competitive level without losing so many sales so rapidly that the price increase is unprofitable and must be rescinded’ has been widely accepted. Analysis of this ability is often detrimental in antitrust analysis. After a firm with market power has increased price, consumers who are unable to switch to other products will suffer harm from exploitative pricing and may assert a claim for antitrust violation; if such consumers are downstream competitors, they are likely to be excluded

20 This part addresses the initial step of analysing market power abuse; namely, the methodology of estimating market power. At the same time, it offers observations on how a developing country, China, is implementing Western competition law. This first part of the thesis, which is the last completed part, is independent from but interrelated with other parts. The implementation of competition law by developing-countries is a central concern of the entire analysis. This chapter initially explores the controversial theories on market power evaluation that arose in the Western theoretical realm, together with the corresponding legislation in China.

from the market, and antitrust litigation becomes unavoidable. This litigation is only tenable if market power exists in a particular market, and it is therefore the threshold concern of courts dealing with this litigation to determine whether it does indeed exist. Governments are cautious in granting merger approval, because if market power is the consequence of their approval, they may later become defendants in lawsuits filed by allegedly harmed consumers or competitors.

Courts have looked to a few major indicators to identify market power. If a firm maintains persistently high profits after increasing prices, this indicates the presence of market power. Although there are inherent problems associated with using profitability to gauge market power, this indicator has been used by a number of courts. Direct evidence inferred from conduct is also important in indicating market power. A firm which profitably practises price fixing or price discrimination can usually be considered to possess the power to control price. The implementation of predation strategies can also be an indicator, such as when a firm initially supplies an entire market and then later establishes a high price to recoup its costs. However, courts have in general not accepted the sufficiency of direct evidence to indicate market power without analysing cost–price structures and profits, which are subject to data availability and reliability. This is why direct evidence has often been used only as secondary evidence of market power or market dominance (market power and market dominance are used interchangeably in this chapter). Rather, market share is currently considered by courts to be the most reliable indicator of the presence of market power. The most important reason for this is that market elasticities affecting demand, cost and other factors are difficult to measure, while the simple metric of market share appears to offer a more convincing demonstration of market power – it is plausible that a firm with a majority of the market share will have greater market power than its competitors.

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23 United States v E.I. duPont de Nemours & Co., 351 U.S. 377 (1956). Du Pont collected high profits on cellophane (net return after taxes of 15.9%) but some end users were not able to switch to substitute products; *In re IBM Peripheral EDP Devices Antitrust Litigation*, Transamerica Computer Co.Inc. v IBM, 481 F.Supp. 965 (N.D.Cal.1979). (Less direct evidence can also be persuasive. Many courts have examined defendant’s profit record on the theory that persistent excess profits are inconsistent with the competitive model and attributable to the possession of monopoly power); Conwood Co., L.P. v U.S. Tobacco Co. (2000 WL 33176054) (W.D.Ky., 2000. 10 August, 2000). (UST’s high market share, coupled with UST’s raising prices and high profit margins, and the fact that not a single new firm entered the moist snuff industry after 1990, indicate that it was reasonable for a jury to find that UST possessed monopoly power in the relevant Market). For further cases please see: United States v Aluminum Co. of America, 148 F.2d 416 (2d Cir. 1945) (Alcoa); Banana Distributors v United Fruit Company, 162 F.Supp. 32 (S.D.N.Y.1958); United States v General Electric Co., 82 F.Supp. 753, (D.N.J.1949).


However, market share by itself is meaningless in inferring market power in the absence of a careful analysis of a relevant market with a limited scope. Market share provides an inference of a target firm’s market power in the defined ‘relevant market’, after which there is a final step in the analysis – market power assessment using a pertinent legal standard.

This market share/market definition paradigm for determining market power has been strongly criticised by Professor Louis Kaplow. Kaplow’s research has led him to conclude that the paradigm is impossible and counterproductive and should therefore be abandoned entirely. Kaplow has summarised his central arguments as follows:

(1) as a matter of economic logic, there exists no valid way to infer market power from the market shares in redefined (non-homogeneous goods) markets-short of entirely reversing the market redefinition; and

(2) choosing a best market requires already having in hand one’s best estimate of market power, rendering the exercise pointless-actually worse, since the market power inference from the chosen market is inferior to the estimate with which one began.

Kaplow’s proposal to abandon the market share/market definition paradigm has generated a handful of supporters but also a dozen critics. The critics have stressed three points: (1)

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27 Commission notice on the definition of relevant market for the purposes of Community competition law [Official Journal C 372 of 9.12.1997]. (Uniform definition of relevant market does not exist in the US; The definition of relevant market in the EU is: the relevant market combines the product market and the geographic market, defined as follows: a relevant product market comprises all those products and/or services which are regarded as interchangeable or substitutable by the consumer by reason of the products’ characteristics, their prices and their intended use; a relevant geographic market comprises the area in which the firms concerned are involved in the supply of products or services and in which the conditions of competition are sufficiently homogeneous.)

28 Malcolm B Coate and Joseph J Simons, In Defense of Market Definition 57 Antitrust Bull 667 (2012). (Product groups that offer very similar attributes are considered relatively homogeneous, while product groups that offer a range of attribute patterns are considered relatively differentiated (non-homogeneous)).


Kaplow’s conclusions are based on a misunderstanding of market definition;\(^\text{32}\) (2) Kaplow misuses applicable economic tools such as the Lerner Index\(^\text{33}\); and (3) it is necessary in practise to employ the market share/market definition paradigm in building the foundation for a case-specific analysis.\(^\text{34}\)

Both sides have comprehensively developed the theoretical debate over the paradigm. This article is not intended to extend this theoretical analysis; instead, it examines contributions to the debate offered by the recent landmark Chinese dominance abuse case of *Beijing Qihoo Technology Co. Ltd (Qihoo) v Tencent Technology Co. Ltd and Shenzhen Tencent Computer System Co., Ltd (Tencent) (Qihoo v Tencent)*.\(^\text{35}\) The analysis applied by the two Chinese courts which addressed the case, both of which adopted the market definition approach, has created controversy. The concept of abuse of market power is referred to in China’s AML, but the relevant provisions do not define it according to the definition widely accepted in the Western academia; namely, to raise prices above the competitive level. Instead, the AML specified numerous abusive practises in Article 17. These enumerated abusive practises together with presumptions concerning market power set forth in Article 19 of the AML echo the academic debate on identifying market power via market definition.

The key points of the debate were analysed comprehensively in *Qihoo v Tencent*. The plaintiff Qihoo filed dominance abuse litigation based on the fact that in mainland China’s instant messaging (IM) software product market, “Tencent’s market share is 76.2%, and QQ software’s percolation rate is 97%”\(^\text{36}\). Based on this fact, Tencent could be presumed to own the dominant position because, according to Article 19(1) of the AML, if a firm’s market share exceeds 50% in a relevant market, it can be presumed to enjoy a dominant position. The plaintiff based its allegations on the defendant’s majority market share, which shows that the plaintiff had


\(^{36}\) QIHOO v TENCENT 民三终字第 4 号 (2013).
formulated its best estimate of market power without additional investigation; this estimate became the basis for choosing the IM software market as the relevant market. Both the Higher People’s Court of Guangdong Province (HPC) (the court of first instance) and the Supreme People’s Court (SPC) (the court of final instance) conducted market definition analyses pursuant to the Guidelines.\textsuperscript{37} Both the HPC and the SPC held that Qihoo correctly defined the original product but that the scope of the relevant product market was too narrowly defined. Despite the fact that Tencent enjoyed the majority market share, the court held that it did not have the power to raise prices profitably and exercise exclusionary practises. The courts ruled in favour of Tencent notwithstanding the fact that Qihoo’s product, 360 Koukou Guard,\textsuperscript{38} was excluded from competing with Tencent’s QQ Doctor,\textsuperscript{39} when only Qihoo and Tencent competed for users of security software to protect QQ accounts and privacy. These compelling facts in favour of the plaintiff, together with the court’s controversial market definition analysis, call into serious question the procedure of market definition in determining market power.

Part II of the article begins with an analysis of the academic debate, including a description of Kaplow’s arguments. In section A, this part also describes and analyses the leading mechanism for conducting a market definition – the hypothetical monopolist test (HMT) and “small but significant non-transitory increase in price” test (SSNIP) (together the HMT/SSNIP mechanism). The final section of part II introduces the facts in \textit{Qihoo v Tencent}.

Part III examines the initial step of market definition – choosing the relevant market – as performed in \textit{Qihoo v Tencent}. The way in which the relevant market was chosen in the case provides support for Kaplow’s position – the parties chose the relevant market via prior-estimate. The approach of Kaplow’s opponents’ – the HMT/SSNIP mechanism – was implemented in the case with questionable results because a key market was neglected.

Part IV investigates how substitution analysis was conducted in \textit{Qihoo v Tencent}. The analysis shows that the SPC used inconsistent criteria to include and exclude substitutive products from the redefined market, which finally resulted in an incorrect estimate of market power.


\textsuperscript{38} 360 KouKou Guard’s main function: QQ chatting privacy protection, accelerating the running speed of QQ software, protecting the safety of QQ software, preventing QQ account from being stolen, and filtering advertising via QQ software. All the functions can be manipulated by users. Tencent’s claim before the HPC.

\textsuperscript{39} QQ Doctor is a free security software developed by Tencent. It is an assistant for Internet users to protect and optimize their system, and can effectively detect all kinds of risks including prevalent Trojans and system vulnerability. With its ease of use and comprehensive functions, it is suitable for Internet users everyday. Available at: http://www.tencent.com/en-us/ps/imservice.shtml (visited 7 May 2015).
Finally, Part V provides an in-depth analysis of the provisions of Article 19 of the AML and the Guidelines and how these provisions led to questionable results in the landmark case. The courts’ analytical errors in *Qihoo v Tencent* provide empirical support for Kaplow’s argument and support for amending China's AMLs. This section concludes with specific recommendations about how the AML and Guidelines should be amended.

**II. MARKET DEFINITION IN DETERMINING MARKET POWER — CRITICISMS AND COURT DECISION**

**A. CHOOSING THE RELEVANT MARKET**

Choosing the relevant market is the first step in the market definition procedure, and assists with locating and delineating market power. However, there is no consensus from the pertinent academic debate on how this step should be undertaken.

According to Kaplow, choosing the best market by adopting one's best estimate of market power is pointless and possibly leads to erroneous outcomes. Kaplow has explained that market power cannot be measured directly, and that market definition is only a way of indirectly determining market power. Estimating market power as a step towards market definition is tautological, and exposes an error in logic. Furthermore, in practice, an estimate of market power is normally made by calculating market share, which gives inaccurate results, because market share alone is meaningless. These factors provide little useful information and render market definitions meaningless.

Kaplow argues that there are inevitable errors involved in the process of defining markets. Defining the market according to the inaccurate market share criterion leads to two possible negative consequences. If the real, “correct” market is a broad one, and instead a narrow market is defined, then a firm’s market power would be overstated. Conversely, if the market defined is broad, but the correct market is narrow, the firm’s market power would be understated. Both results lead to erroneous responses, either wrongly condemning the firm for excess market power, or failure to undertake proper market regulation.

Duncan Cameron, Mark Glick and David Mangum have criticised Kaplow, asserting that he has understated the usefulness of market definition. These scholars argue that market definition

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40 This market-share-based market power assessment is used as the main reference to derive one’s best estimate of market power, and is used to locate the relevant product market. This is a popular way of making pre-estimation. However, it should be distinguished from the ‘market share based market power assessment’ in the market power assessment procedure of the market definition/market share paradigm, because in the paradigm, market share is also used to assess market power according to pertinent legal criteria within the relevant product market. Market share, however, is not the measure of market power.
is useful despite its weakness in determining market power. Their thinking is that the market definition/market share paradigm is used “as a screen for market power issues; that serves as a first step in a complete competitive analysis.” It is also used “as an analytical exercise to identify the primary constraints on a firm’s ability to exercise market power and to identify potential entrants, which are essential aspects of competitive analyses.” Malcolm Coate and Joseph Simons argue that “the best market definition” is not the result of estimation according to a market share threshold; rather, it is the result of a screening function. Gregory Werden agrees with these scholars about the function of market definition, stating that “Alleging a relevant market does more than denominate the portion of the economy directly impacted by the challenged conduct; the allegation identifies the competitive process alleged to be harmed.”

Kaplow’s critics support use of the HMT/SSNIP mechanism, with one of them stating: “The practice of delineating a market with the hypothetical monopolist test gives added meaning to relevant market allegations.”

The aim of the HMT/SSNIP mechanism is to assist in determining whether a particular product is a close substitute for another. Article 10 of the Guidelines describes how the HMT/SSNIP mechanism works:

Under the HMT, normally the relevant product is initially defined. The HMT starts by considering the product offered by market players (the target product). The HMT hypothesises that a market player is the monopolist aiming at profit maximization (the hypothetical monopolist), and then under the assumption that the distribution conditions of other products remain unchanged, the hypothetical monopolist is able to continuously (normally one year) increase the price of the target product to a small extent (normally 5% to 10%). The price increase of the target product will result in consumers switching to close substitutes, which consequently leads to the hypothetical monopolist’s sales decreasing. Under this situation, if the hypothetical monopolist still gains a profit, this target product constitutes the relevant product market.

If consumers switching to a substitute product made the hypothetical monopolist unprofitable, then the substitute product must be included in the relevant market, and this product and the target product will constitute product aggregate. Then analysis is made of whether the

41 Duncan Cameron, Mark Glick and David Mangum, Good Riddance to Market Definition? 57 Antitrust Bull 719, p 720 (2012).
42 Duncan Cameron, Mark Glick and David Mangum, Good Riddance to Market Definition? 57 Antitrust Bull 719, p 721 (2012).
hypothetical monopolist can make a profit when the product aggregate increases price. If the result is affirmative, then this product aggregate is the relevant product market, otherwise, the above analysis process shall continue.

With the expansion of the product aggregate, fewer and fewer products offer substitution. Eventually a particular product aggregate emerges, in which the hypothetical monopolist can gain profit through price increase. Hence, the relevant product market is defined.46

Under the reasoning of Cameron, Glick and Mangum, careful use of the HMT/SSNIP mechanism allows a well-defined, relevant market to be identified. They argue that Professor Kaplow’s point loses its theoretical support once “one goes beyond the dominant firm model relationship and the narrow homogeneous goods market”,47 especially in the context of a merger between suppliers of substitutive products. For them, Kaplow’s key question “Why ever define markets when the only sensible way to do so presumes an answer to the very question that the method is designed to address?”48 is irrelevant to the process of defining a relevant market and “Kaplow asks the wrong question and therefore reaches the wrong conclusion.”49

Coate and Simons explain that Kaplow’s best market estimate and the market share reference can be replaced by the HMT/SSNIP mechanism and the Lerner Index.50 In the context of a merger, these techniques “will identify a market comprising (in part) of significant rivals, defined as firms whose independence limits the ability of the merged firms to achieve a specific anticompetitive outcome.”51 These mechanisms avoid “the movement from a narrow market to a broad market to generate a specific relationship between the relevant elasticities”52 and the

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47 Duncan Cameron, Mark Glick and David Mangum, Good Riddance to Market Definition? 57 Antitrust Bull 719, p 729 (2012).
48 Louis Kaplow, Why (Ever) Define Markets? 124 Harv. L. Rev. 437 (2010); This chapter focuses on estimating market power. It sometimes refers to merger control assessments, as this issue forms part of the theoretical discussion. The merger control process involves ex ante evaluation of the market power of the post-merger firm. It, therefore, differs from the ex post analysis of market power in market power abuse analysis. The ex ante / ex post distinction in this chapter mainly relates to the different legal basis of identifying market power. Ex post analysis of market power relies on multiple bases: e.g., established facts on a price increase. Conversely, ex ante analysis of market power must rely on non-factual issues; sometimes, estimation techniques (e.g., the hypothetical monopolist test) become the basis for estimation and decision making. The court analysis in Qihoo v. Tencent is an ex post assessment of market power. Though the established facts are valuable for assessing this case, the Chinese courts solely relied on the hypothetical monopolist test, ultimately leading to a controversial judgment. This contradiction is an important part of this chapter, contributing to a better understanding of the evaluation of market power and, thereby, furthering the chapter’s main theme.
49 Duncan Cameron, Mark Glick and David Mangum, Good Riddance to Market Definition? 57 Antitrust Bull 719, pp 730,731 (2012).
problem associated with market redefinition. According to these authors, these mechanisms assist with developing a full competitive analysis, and simplify the process of market definition.

Werden argues that the HMT/SSNIP mechanism provides a more precise definition of the relevant market, because it “imposes an upper bound on (the absolute value of) the market elasticity of demand”, and it

Actually requires less, and largely different, information than assessing the power of a firm in the market, unless it has only one [relevant market]. In principle, and often in practise, determining whether a candidate market passes the HMT is simple. If the candidate market’s demand elasticity is low, it passes; if it is high, it fails.

Kaplow disputes the ability of the HMT/SSNIP mechanism to locate the relevant market because, as described in Article 10 of the Guidelines, the HMT/SSNIP mechanism mainly involves substitution analysis, and does not actually purport to define the best market. As to its alleged usefulness in analysing a merger situation, Kaplow notes that there are deep flaws associated with the mechanism: “For example, it is demonstrated that it presumptively allows (safe harbors) a merger that generates more than thirty-five times the price elevation of one that is presumptively challenged.”

In spite of extensive debate over the many theoretical aspects of defining the relevant market, the critics do not respond to some of Kaplow’s arguments including, importantly, the tautology problem. With regard to the HMT/SSNIP mechanism, Kaplow’s critics are right that the relevant product can be included in the relevant product aggregate, but neither the HMT/SSNIP mechanism nor Kaplow provides a valid way of identifying which products are not relevant.

B. MARKET POWER DETERMINATION IN A REDEFINED MARKET

Under the market definition approach of determining market power, finding market power in a redefined market (which includes substitutive, non-homogeneous products) is as important as

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54 Gregory J. Werden, Market Definition Possible and Productive 80 Antitrust L.J. 1, p 3 (2014).
this determination in the original product market (homogeneous products only); when prices are increased, the fact that some consumers switch to substitute products restrains the effectiveness of the price increase. For this reason, closely substitutive products are included in defining the relevant market. Analysts, law enforcement officials and regulators often use a redefined market to determine market power. Jurisdictions that do not distinguish between homogeneous and non-homogeneous product markets easily accept the inclusion of substitutive products into product market analyses. Some jurisdictions explicitly include market redefinition analysis in their antitrust laws.\(^ {56}\)

Inclusion substitute products in market analyses triggers the problem of addressing products with different substitution ratios. Each substitutive product has its own demand elasticity, and including all of these products into the market definition analysis necessitates examining the interchangeability, or cross-elasticity of demand, applicable to these products. According to the market definition approach, all kinds of products that offer restraints on price elevation should be considered. It is an established fact that when the demanded product’s price rises, some consumers turn to equivalent products. For example, if the price of apples is higher than usual, some fruit-seeking consumers will turn to pears or oranges. As a result, interchangeable products should be included in the market definition analysis.

Kaplow argues that both meaningful market share assessment and the inference of market power based on market share can occur only within a homogeneous market. Under the market definition approach, an important question arises immediately, after the market share in the redefined market is determined – what are these market shares used for in practise by the companies that hold them? According to Kaplow, the answer to this question is unknown, not only because of the unclear practical purpose of market shares in redefined markets, but also because the concept on which on which the analysis is founded – the redefined market – is not clear in economic analysis.

Kaplow has applied the widely accepted Lerner Index to infer market power in homogeneous product markets. Using formulas based on the Lerner Index, Kaplow has shown that a firm’s market power can be correctly calculated in the context of a chosen homogeneous product market without accounting for the number or substitutability of alternative products.\(^ {57}\)

Cameron, Glick and Mangum responded that substitute products “exert attenuated competitive effect, they still play a role in constraining prices. How much of a constraint turns on


the particular market circumstances, and the own elasticity of demand for the subject product does not, by itself, contain sufficient information about the non-homogeneous goods that are constraining price.” 58 As a result, they conclude that “the Kaplow approach risks ignoring important information on competitive constraints.” 59 In addressing the inherent problems associated with including non-homogeneous products in the analysis, for example problems drawing market boundaries, they noted that boundaries can easily be established via a “diversion ratio”. This ratio measures “the percent of lost sales following a price increase for one product that is captured by a particular competing product.” 60 In the event that the ratio does not work, for example, if “all products are highly differentiated, so that there is little substitution to products other than those being analyzed” 61 the criterion for drawing the boundary becomes the HMT/SSNIP mechanism. Werden supported this idea by contributing his analysis of a situation in which a firm sells the original homogeneous product and a possible substitute with the smallest diversion ratio. He asserted that, under the above circumstances, Kaplow’s approach of looking only at homogeneous product market would be flawed.

This part of the debate seems not to be well focused, as Kaplow emphasises homogeneous products while his critics analyse substitutive products. In any event, none of the scholars provide criteria for assessing the extent of competitive restraints coming from substitutive products. The focus has now become whether economic analysis is capable of determining market power from a redefined market including substitute products.

Kaplow has extended the Lerner Index formula into analysing the situation that “there are some substitutes deemed to be sufficiently close that we should broaden the market to include them.” 62 His results show that making market power determination using the target firm’s market share in combined, non-homogeneous goods markets is beyond the capability of current tools available to economists. 63 In order to make existing technology work, “one essentially has to undo the market redefinition.” 64 According to Kaplow’s interpretation of the analysis using the Lerner Index, 65 the key inputs in the formula are: the firm’s output, the elasticity of demand, the elasticity of supply, and market share. When substitutes are included in the analysis, and the formula must account for the data from these inputs for all possibly relevant products, the resulting complexity overwhelms the formula’s capability. Kaplow concludes that current

58 Duncan Cameron, Mark Glick and David Mangum, Good Riddance to Market Definition? 57 Antitrust Bull 719, p 736 (2012).
59 Duncan Cameron, Mark Glick and David Mangum, Good Riddance to Market Definition? 57 Antitrust Bull 719 (2012).
60 Duncan Cameron, Mark Glick and David Mangum, Good Riddance to Market Definition? 57 Antitrust Bull 719(2012).
61 Duncan Cameron, Mark Glick and David Mangum, Good Riddance to Market Definition? 57 Antitrust Bull 719(2012).
63 Louis Kaplow, Why (Ever) Define Markets? 124 Harv. L. Rev. 437 (2010); Louis Kaplow, Market Definition Alchemy, 57 Antitrust Bull 915(2012);
analytical tools can only determine market power in the context of homogeneous product markets.

Kaplow’s assertion in this regard has received many criticisms. Werden has stated that, “Economists routinely work with supply and demand curves for aggregates of goods, and this formula is no exception.”66 Coate and Simons suggest that critical loss analysis (CLA) offers a solution to the impossibility problem, but this technique bears the inherent problem that “Solid evidence for the static differentiation analysis is not always easy to obtain”,67 and the CLA must be applied in a case-specific manner because “the actual loss from a SSNIP must be estimated from the facts. And in some cases, the product differentiation will generate a competitive environment too complex to model with the simple pricing structure required for a static analysis.”68

In rebutting Werden’s criticism, Kaplow examined the merger scenario involving substitutive product suppliers and found in that situation that there is no need to engage in market redefinition. However the market redefinition is carried out in the merger situation, Kaplow concludes that the economic tools used will break down.69 Besides, according to Kaplow, in mergers between firms producing substitutive products, the main technique of HMT/SSNIP “does not actually purport to choose a best market and that the market redefinition process is counterproductive.”70 Furthermore, in redefined markets, “there does not exist a formula indicating, as a function of firms’ market shares therein, how much price will be elevated before the merger or after—and thus, how much prices rise as a consequence of the merger.”71

Although Kaplow has responded to numerous criticisms, new criticisms have focused on empirical analysis or case law evidence. In response to this trend, Kaplow has declared that his analysis is only theoretical and not empirical. The validity of Kaplow’s position and the corresponding criticisms received some elucidation in the Chinese case of Qihoo v Tencent.

**C. QIHOO V TENCENT**

Market definition has been accepted and applied as a way of determining market power in many different jurisdictions for a long time. The established empirical material has been important to policy-makers, but is perhaps not particularly helpful in resolving the theoretical issues raised in

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this article. The landmark case of *Qihoo v Tencent* may provide some information important to the debate. Because the court in *Qihoo v Tencent* applied the market definition approach in determining market dominance, but reached a questionable result, it will be valuable to examine the arguments of both parties. *Qihoo v Tencent* is the first antitrust case heard by the SPC, and it addressed many important provisions in both the AML and the Guidelines.

Market definition, which is at the core of the debate between Kaplow and his critics, is also the main issue addressed in *Qihoo v Tencent*. The plaintiff Qihoo supplies a number of Internet-based software products at no cost, including the antivirus software ‘360 Anti-virus’,72 the computer security software ‘360 Safe Guard’,73 the QQ security protection software ‘360 Koukou Guard’,74 and ‘360 Web Browser’.75 Tencent offers the instant messaging ‘IM’ software – QQ,76 which enjoys the majority of market share in the IM software and services market. This free-of-charge software, according to Tencent’s prospectus disclosed in the Hong Kong Stock Exchange, is a value-added service, its IM service offers users unique function. Compared with social networking sites, e-mail and telephone, QQ IM service offers the following function: cross-platform and cross-terminal communication device; detect and inform user’s real-time online

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72 Qihoo 360 Technology Company Ltd, Products & Services: 360 Anti-Virus (2015). (360 Anti-Virus is an anti-virus application that uses multiple scan engines to protect our users’ computers against all kinds of malware, including traditional viruses, and may operate without Internet connection. These applications protect our users’ computers against trojan horses, viruses, worms, adware and other forms of malware.) Available at: http://corp.360.cn/ps/coresecuritylayer.html#3sg (visited 7 May 2015).

73 Qihoo 360 Technology Company Ltd, Products & Services: 360 Safe Guard (2015). (360 Safe Guard is our flagship Internet security product and a one-stop solution for Internet security and system optimization. 360 Anti-Virus is an anti-virus application that uses multiple scan engines to protect our users’ computers against all kinds of malware, including traditional viruses, and may operate without Internet connection.) Available at: http://corp.360.cn/ps/coresecuritylayer.html#3sg (visited 7 May 2015).

74 360 Koukou Guard was embedded in 360 Safe Guard later.

75 Qihoo 360 Technology Company Ltd, Products & Services: 360 Browsers (2015). (360 Browsers integrate Trident and Webkit technologies and provide users secure and optimized Internet access points. 360 Safe Browser also allows users to visit and access the contents of malicious sites safely by integrating 360 WebShield and using sandbox technology we licensed from a third party. Sandbox technology is a virtual environment where malicious actions can be performed without actual consequence to the user’s computer. 360 Safe Browser can automatically block malicious websites, identify them among search results and scan files downloaded through the browser.) 360 Safe Browser also offers a “‘private browsing” option to allow users to surf the Internet anonymously without leaving historical access records. Furthermore, certain functions of 360 Safe Browser allow users to use Internet applications and services in a faster and smoother fashion, which we believe leads to greater user loyalty to this product. For example, its microblog update reminder function enables users to better utilize social networking applications. In addition, with the identification attribute, 360 Safe Browser’s online bookmark folders allow users to store their bookmarks on our central server in the cloud and visit their bookmarks at any time in any location with their 360 accounts.’ Available at: https://corp.360.cn/ps/accesslayer.html#3b. (visited 7 May 2015).

76 Tencent, Instant Messaging Service (2014). (Tencent QQ provides total solution for Internet-based instant messaging (IM) platform. It supports comprehensive basic online communication functions, including text messaging, video and voice chat as well as online (offline) file transmission. It also supports cross platform communication between PC and wireless terminals. The new QQ2009 edition is fully compatible with Windows XP, Vista, Linux, Mac and other systems. Meanwhile, the third-generation QQ with ‘Hummer’ as its core has strengthened the integration of various Internet services to build a complete, mature and diversified online life platform for users.) Available at: http://www.tencent.com/enu-us/ps/imservice.shtml (visited 7 May 2015).
status; obtaining user’s information and save QQ friends’ name; conducting intimate and privacy communication.\textsuperscript{77}

In addition to QQ, Tencent also provides the QQ security software ‘QQ Doctor’, and the computer security software ‘QQ Software Manager’,\textsuperscript{78} for free.

On 3 November 2010, Tencent published ‘a letter to QQ users’ announcing that it would not provide service for QQ users that had installed Qihoo software. Later, Tencent took technical steps to implement this policy. At the same time, Tencent made available its own security software, QQ Software Manager, to substitute for Qihoo’s 360 Koukou Guard and 360 Safe Guard.\textsuperscript{79} On 20 November 2010, the Ministry of Industry and Information Technology of the People’s Republic of China condemned and forbade Tencent’s implementation of its policy.\textsuperscript{80}

A year later, on 15 November 2011, Qihoo filed a lawsuit in the HPC claiming:

1. Tencent owns dominant position in the IM software and service market. The relevant graphic market in this case is the IM software and service market in mainland China. In this market, Tencent’s market share is 76.2%, QQ software’s percolation rate is 97%. Based on these facts, Tencent can be presumed to own dominant position. Tencent owns financial and technical power; this power can be used to raise price, prevent potential competitors from entering into market and being competitive, it can also be used to eliminate competition within the relevant market. Because Tencent owns a very huge user network, it is hard for potential competitor to enter the relevant market, even if they do enter, effective competition cannot be conducted.

2. Tencent abused its dominant position, excluded and hindered competition and violated the AML. On 3 November 2010, Tencent published “a letter to QQ users” forbidding QQ users from using Qihoo’s software. In the letter, Tencent declared that if this was not adhered to, Tencent would terminate its service to them; Tencent refused to offer relevant software service to users who were also using Qihoo’s software, forcing them to uninstall Qihoo’s software; technically forbidding 360 Web Browser from visiting QQ Zone, during this period; therefore, a massive number of users uninstalled Qihoo software. Tencent’s above practise constituted restraint of trade. Tencent bundled its QQ Software Manager with IM software, it also tied QQ

\textsuperscript{77} QIHOO v TENCENT 民三终字第 4 号(2013).

\textsuperscript{78} (QQ Software Manager currently provides users with the download, installation, upgrade and uninstallation of most popular client software products from Tencent, the most complete and reliable software products that secure users to enjoy one-stop service and to install the latest, most stable version. The innovative one-key-to-install function solves various problems when entry-level users install software; and also allows advanced users to save time and effort.) Available at: http://www.tencent.com/en-us/ps/imservice.shtml (visited 7 May 2015).

\textsuperscript{79} QIHOO v TENCENT 民三终字第 4 号(2013).

\textsuperscript{80} QIHOO v TENCENT 民三终字第 4 号(2013).
Doctor to QQ Software Manager in the form of upgrading QQ Software Manager, which constituted tying.

3. Tencent should be liable for its AML violation. Tencent Technology (Shenzhen) Company Limited and Shenzhen Tencent Computer Systems Co. Ltd abused its dominant position and caused Qihoo harm, therefore it should share the liability. In summary, Qihoo here requested the court to order, Tencent stop abusing its dominant position immediately, including but not limited to restraining QQ users from trading with Qihoo, bundling and tying security software to QQ software; Tencent compensate Qihoo for economic loss of RMB 150 Million; Tencent apologise to Qihoo, in the form of publishing a declaration of apology on Tencent’s website “QQ.com”, on People’s Daily and China Popular Computer Weekly for a continuing three days. The content of the declaration of apology should satisfy Qihoo’s requirement; Order Tencent to pay the costs of Qihoo in protecting its rights, including survey fees, notary fees and lawyer fees totaling RMB 1 million; Tencent pay for all the litigation fees of this case.81

After the hearing, the HPC held that:

As Qihoo incorrectly defined the relevant product market, its evidence was not sufficient to prove Tencent’s dominance in the relevant product market, Qihoo’s claims lacked evidential and legal foundation, could not be established and should be dismissed. Pursuant to Article 64(1) of the Civil Procedure Law of the People's Republic of China 1991, the court dismissed all Qihoo’s claims and held that the cost for hearing the case, of RMB 796,800, should be paid by Qihoo, and any appeal to the SPC should be addressed within 15 days of receiving this court decision.82

Qihoo appealed to the SPC, claiming that:

The HPC unclearly identified facts, did not apply the law correctly and violated procedural law, therefore requesting revocation of the HPC decision and requiring a rehearing or reversal of the decision in favour of Qihoo’s claims; Qihoo also requested that the court costs generated in the first instance and the second instance should be borne by Tencent.83

After the hearing, the SPC held that:

81 QIHOO v TENCENT 民三终字第4号(2013).
82 QIHOO v TENCENT 民三终字第4号(2013).
83 QIHOO v TENCENT 民三终字第4号(2013).
The HPC’s findings of facts in the first instance judgement were basically authentic, the HPC applied the law correctly and the judgement was adequate. The SPC also found that although Qihoo’s appeal was partly reasonable, it was not sufficient to overrule the HPC decision. Pursuant to Article 17, Article 18 and Article 19 of the AML and Item 1 of Paragraph 1 of Article 170 of the Civil Procedure Law of the People’s Republic of China 1991, the judgement was to dismiss the appeal and uphold the HPC decision.

III. CHOOSING THE RELEVANT MARKET

As can be seen from the facts recited by the court in Qihoo v Tencent, the plaintiff, the defendant and the courts employed the same process in choosing the relevant market. Both the AML (Articles 18 and 19) and the Guidelines require using the market definition approach. However, a thorough look at the arguments of both sides in Qihoo v Tencent reveals the flaws of this approach, flaws which affected the parties in Qihoo v Tencent, but also will apply in the broader Chinese context.

A. CHOOSING THE RELEVANT MARKET

Above we discussed Kaplow’s assertion that there is a logical error associated with the market definition analysis. This error manifested itself in Qihoo v Tencent. Qihoo estimated the extent of Tencent’s market dominance the IM market and then defined that market as the relevant product market according to its majority market share. The predetermined choice of the relevant market thus ensured that the litigation would focus on irrelevant products and irrelevant substitutes.

Furthermore, Qihoo’s method of defining the original product was never challenged in any way by the defendant, the HPC or the SPC, all three of which simply accepted Qihoo’s choice. This fact showed that choosing the relevant market according to a party’s best estimate of market power is the prevailing approach.

Tencent agreed with Qihoo’s chosen original product but disagreed with the scope of the relevant product market, stating that:

There are many products offering IM service in the relevant market; other Internet-based products and services also offer IM function. Qihoo intentionally adopted an overly narrow standard to divide and define the relevant product market in the case – this leads to the overestimation of the market power status of QQ software.

84 Qihoo v Tencent 民三终字第4号(2013).
85 Qihoo v Tencent 民三终字第4号(2013).
Tencent further asserted that mobile phones, social networking sites, micro-blog (Weibo) services and e-mail are all substitutes for QQ and hence should be included in the relevant product market.

While the HPC and the SPC held that Qihoo had correctly chosen the original product, they both concluded that it had incorrectly defined the scope of the relevant product market. The HPC noted that the definition of the relevant product market should be governed by the Guidelines. The HPC concluded that the market scope was not broad enough to include some of the potentially substitutive products Tencent mentioned. The HPC further held that:

Non-integrated product such as text, voice and video IM service should be included into relevant product market; the IM function provided separately by Weibo, social networking sites (in the webpage format) and IM software service constitute strong competition and substitution relationship to QQ, all of them belong to the same relevant product market aggregate; mobile phone text message and converse, fixed-line telephone converse offer less substitution to QQ, they are not substitutes; as there is huge difference on the function and purpose between e-mail and QQ, even QQ charge users, they are not likely to turn to e-mail, therefore e-mail and QQ do not belong to the same relevant product market aggregate.

The SPC disagreed with the scope of the relevant product market advocated for by Tencent and adopted by the HPC. The SPC modified the HPC’s scope of the relevant product market, holding that:

IM service can be supplied via personal computer, smart phone, tablet and other platforms. Terminal devices such as smart phone and tablet offer close substitution to IM, and act as competitive restraint for personal-computer-based IM service. Therefore mobile terminals such as smart phone and tablet-based IM service should be included into relevant product market; there is no dispute with the HPC’s identification that IM service offered by social networking sites and Weibo should be included into relevant product market, however other functions offered by social networking sites and Weibo should not be included into relevant product market.

86 QIHOO v TENCENT 民三终字第 4 号(2013).
87 QIHOO v TENCENT 民三终字第 4 号(2013).
88 QIHOO v TENCENT 民三终字第 4 号(2013).
The substitution analysis was misguided because none of the substitutive products competed with Qihoo’s products. Moreover, Tencent was not even a competitor of Qihoo in the IM market. Most importantly, the courts chose an inferior market. Neither the IM market nor the redefined market were the best possible market – there were facts indicating that Tencent’s unilateral exclusionary practise that was the basis of the lawsuit led to competitive harm in the QQ privacy security software market, but this market was neglected by the courts’ analysis (this issue is analysed in Part Three of this section).

B. THE HMT/SSNIP MECHANISM

Qihoo’s method of choosing the relevant market followed Kaplow’s description precisely. Qihoo initially evaluated Tencent’s market share data, and then compared this data to the language of Article 19 of the AML. As defined in Article 19, Tencent’s market share exceeded the dominant level and it could be presumed to hold a dominant position. This, in turn, became the basis for Qihoo to identify the dominant firm and then the original product.

Qihoo chose the IM market as the relevant product market and stated that:

IM software and service refers to online-based IM service system, it allows information transfer among multiple users; such information includes: text, files, voice and video. IM software and service is categorised as: integrated instant-messaging service, for example Tencent QQ, Microsoft MSN, Cross-platform IM service, for example China Mobile Fetion, Cross-network IM, for example Tom Skype.89

Qihoo argued that the relevant product market was the ‘integrated instant-messaging service market,’ in which Tencent’s market share, according to Qihoo’s estimate, was 76.2%.90

The SSNIP technique of choosing the relevant market was not applied in Qihoo v Tencent. One reason for this is that the IM market does not feature price competition. The SPC suggested the ‘small but significant non-transitory decline of quality’ test (SSNDQ) instead of the SSNIP, but neither the HPC nor the SPC adopted this second technique, in part because the inclusion of quality-degraded products (for example, YY Voice Chat) into the relevant product aggregate is contrary to SSNDQ. The fact is that both courts made market power estimates according to market share and then chose the relevant market.

89 QIHOO v TENCENT 民三终字第 4 号(2013).
90 QIHOO v TENCENT 民三终字第 4 号(2013).
The most important reasons that led to SSNIP’s inapplicability in *Qihoo v Tencent* are the flaws associated with the technique itself. First, the inclusion of substitutive products into the relevant market works contrary to the spirit of market definition, as market definition aims to narrow the scope of the relevant market. Second, the SSNIP test only works within a homogeneous product market, and not with a market that aggregates both homogeneous and non-homogeneous products. The fact that the main technique supporting the market definition approach does not actually work to define the market casts serious doubt on the approach itself, and not only in case law or in the context of China.

Analysis of *Qihoo v Tencent* indicates that Werden’s comments on the capabilities of the HMT/SSNIP mechanism are inconsistent with practice. His assertion that the mechanism is useful as a reference for choosing the relevant market is overstated in light of the fact that the courts’ adoption of the mechanism in *Qihoo v Tencent* produced a questionable result. The market power reference chosen by the courts in *Qihoo v Tencent* was in fact that of Article 19(1) of the AML, not the market analysis described in the Guidelines. Werden’s assertion about the usefulness of collaboration between market share and the HMT/SSNIP mechanism in choosing the relevant market is not correct, not only because the SNNIP is difficult to apply, but also because he neglected the possible errors introduced in considering market share. For example, in *Qihoo v Tencent*, Tencent’s market power existed in the QQ security software market, but both the parties and the courts neglected to discuss this market. Moreover, *Qihoo v Tencent* was a monopolisation case, a category of cases to which Werden claims market share analysis especially applies.

### C. THE UNCHOSEN BUT MORE “RELEVANT” MARKET

Because of Tencent’s high market share in the IM market, the parties and the courts all agreed to choose that market as the relevant product market. However, this method of choosing the relevant market is subject to various errors. There are problems with choosing the original product and subsequently the chosen product market is wrongly broadened in the course of the market definition procedure.

The security software market may have been more relevant than the IM market, because both Tencent and Qihoo offered competing security software, while in the IM market they were not in a competitive relationship. QQ Doctor and 360 Koukou Guard were competing software products within the QQ security software market, and 360 Safe Guard’s QQ security function

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91 Tencent’s market power in the QQ security software markets comes from its control over QQ software. This market power is further evidenced by Tencent’s refusal to offer service and successful elimination of Qihoo during the enforcement of its announcement.

92 ‘Market share has special value in a monopolization case, as it provides one gauge for determining when the defendant’s market power rises to the level of monopoly power.’ Gregory J. Werden, *Why (Ever) Define Markets: An Answer to Professor Kaplow*, 78 Antitrust L.J. 729 (2012).
competed with QQ Software Manager. Qihoo and Tencent were thus in competition for QQ users. Both the HPC and SPC held that Qihoo was not harmed in the security software market, but they made this determination without any market analysis. This shows that the correction provision in Article Seven of the Guidelines was not followed.93

It appears from the language of the opinion that the SPC mistook the QQ security software market for the broader security software market:

During the period of Tencent’s elimination of Qihoo’s software, the amount of users of 360 Safe Guard and 360 Anti-virus were reduced by 10% than the previous week, the amount of users of 360 Safe was reduced by 12% than the previous week. If this decline was expressed with market share change, according to the appellee’s experts, Qihoo’s market share in security software market was dropped from 74.6% to 71.3% by 3.3%. During the same period, Tencent’s market share had increased from 3.89% to 4.46% by only 0.57%. These facts proved that Tencent’s “product un-interoperable” practise has extremely weak impact on security software market, and didn’t eliminate or restrain competition in the security software market significantly.94

The SPC calculated Tencent’s market share in all kinds of security-related software products without distinguishing between relevant and irrelevant product. The security software used to protect QQ accounts and chat privacy is a subset of the broader market for security software, but it is precisely the QQ security software market where Qihoo competes with Tencent and suffered competitive harm. The SPC failed to distinguish the different markets, and therefore failed to analyse the competitive relationship between 360 Safe Guard and QQ Software Manager. This also shows that the SPC deviated from Articles 18 and 19 of the AML and from the entirely of the Guidelines.

The SPC’s failure in this regard led the court to a questionable conclusion. The facts showed that Qihoo was completely excluded from the QQ privacy security market during Tencent’s enforcement of its announcement, but that Tencent suffered a customer loss of 1.1% in the IM

93 Article 7 provides that substitution analysis is the general method for market definition. The article provides that: ‘The method for defining relevant market is not sole. In AML enforcement, different methods can be adopted according to specific condition. When defining relevant market, demand substitution analysis can be adopted based on product character, purpose, price, etc. If necessary, supply substitution analysis should be adopted. When market scope is not clear, the HMT way of analysis can be adopted (detailed in Article 10).’ Besides, Article 7 provides ‘product’s basic attribute of meeting the demands of consumers’ as the basis for correcting any obvious deviation in defining the relevant market.

94 QIHOO v TENCENT 民三终字第 4 号(2013).
market as a whole. This indicated that Tencent’s market power enabled it to restrict competition and that demand elasticity for QQ is low. Given the existence of manifest competitive harm, the courts should have analysed the security software market, or at least should have explained why this market is less relevant than the IM market. The court opinions reveal the problematic nature of choosing the relevant market via the market definition/market share paradigm.

*Qihoo v Tencent* demonstrated the validity of Kaplow’s key assertions and the problems faced by his critics. Specifically, the critics agree that market definition should drive the competitive analysis, and this was the procedure purportedly undertaken by the courts in *Qihoo v Tencent* — in addition to their analysis of market share, the courts also considered market entry, using it to broaden the scope of the relevant market. However, despite the courts’ statements, their market definition neither drove the competitive analysis nor helped in choosing the original product and the corresponding relevant product market. The bottom line is that both the parties and the courts neglected the security software market, with the result that an incorrect choice of original product and product market was made. These incorrect choices misled the courts into spending most of their efforts in analysing the scope of an incorrectly redefined market.

### IV. MARKET POWER DETERMINATION IN REDEFINED MARKETS AND DRAWING MARKET BOUNDARIES

Kaplow’s assertion that it is not possible to make meaningful determinations of market power in the context of a redefined market is supported by the facts and reasoning in *Qihoo v Tencent*. It should first be noted that in neither the IM market nor the QQ security software market was price a feature of competition, leading the SPC to conclude that there was no price change data enabling application of the SSNIP test. Second, the SSNDQ technique could not be employed; and third, CLA could not be used to determine market power from the redefined market because there was insufficient data on consumer loss in all the redefined markets. In contrast, during Tencent’s enforcement of its policy, the data show that most QQ users who switched products switched to homogeneous products. These contrasting facts suggest that the impossibility of determining market power in a redefined market is not only a matter of constraints on the tools of economics, but also may be seen in the fact that meaningful customer switching (indicating a restraint on market power) exists only in the context of a homogeneous product market.

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95 ‘during the month Tencent eliminated Qihoo, there was an increase in the users of QQ’s competitors, MSN, Fetion and Ali Wangwang. Assessing the monthly user coverage, compared with that of the last month, MSN increased 61.93%, Fetion increased 9.95%, Ali Wangwang increased 5.15%, and all their growth significantly exceeded the average amplitude of change in the previous three months, especially MSN, which had particularly been suffering long-term negative growth in monthly user coverage. This month, the monthly user coverage unusually increased 61.93%, to 23 million people, from the previous month.’ *QIHOO v TENCENT* 民三终字第 4 号 (2013).
A. INCLUDING NON-HOMOGENEOUS PRODUCTS IN THE RELEVANT MARKET DISABLES MARKET POWER DETERMINATION IN REDEFINED MARKETS

In *Qihoo v Tencent*, redefined markets including many non-homogeneous products were considered by both the HPC and the SPC. However, both courts’ grounds for including non-homogeneous products in the relevant product market were untenable. When Tencent implemented its policy, most lost users switched to homogeneous products such as MSN, Fetion and Ali Wangwang rather than to non-homogeneous products that were included in the relevant market. This fact provides an empirical rebuttal to the assertion that including non-homogeneous products in the relevant product market analysis is useful.

In its supply substitution analysis, the SPC neglected or underestimated low demand elasticity in the integrated IM service market. Article Four of the Guidelines provides that demand substitution analysis, rather than supply substitution analysis, should be the primary methodology for market definition. The facts showed that Tencent’s market share in the integrated IM service market was 87.6%, and other competitors’ market shares were no more than 4.4%, which was roughly equal to Tencent’s monthly customer fluctuation.\(^\text{96}\) What is more, even during Tencent’s implementation of its policy, its customer loss was less than 1.1%. All of this means that most QQ users demand QQ far more than other software, and that even competing integrated IM services, much less single-function IM software, did not pose a competitive threat to Tencent’s market share.

Nevertheless, both the HPC and the SPC included many non-homogeneous products in the relevant product market, leading to numerous problems.

One problem relates to the ease or difficulty of entering a market. The possibility of entry into a relevant product market by new competitors is an important factor in considering an existing firm’s power to raise price in that market – when a firm increases the price of a product, new competing homogeneous products will enter the market. Non-homogeneous product markets are characterised by different levels of entry cost and thus by varying levels of entry barriers. Incorporating the different entry barriers in the market power analysis for a homogeneous product market is problematic. In the situation of *Qihoo v Tencent*, both HPC and SPC included integrated IM service products with high market-entry barriers in the analysis with YY Voice Chat and the instant messaging function of Weibo and MSN, which are low market-entry barrier products. This raises the obvious problem of whether entry is difficult or easy in the relevant product market. In this situation, the courts’ conclusion that entry into the IM market was easy is at the very least questionable. The existence of this difficult problem lends support to

\(^{96}\) *Qihoo v Tencent* 民三终字第 4 号 (2013).
Kaplow’s assertion that market power determination in redefined markets is misleading or impossible.

Another related problem is a firm’s ability to manipulate product price and sales, which the HPC and SPC considered as important as market entry in determining market power. The courts’ analysis of this ability after including non-homogeneous products into the relevant product market resulted in questionable conclusions. The principle behind the phenomenon is the same as that in analysing market entry. When non-homogeneous products are included, there will be different levels of demand and supply elasticity, and a firm’s ability to manipulate product price and sales becomes difficult to measure. The price and sales of non-homogeneous products are unlikely to be manipulated by the allegedly dominant firm in a homogeneous product market, so both courts concluded that Tencent had no ability to manipulate product price and sales. The courts’ erroneous analysis led to a questionable outcome. The same principle also applies to other factors considered by the courts – for example, the financial and technical status of competitors.

B. INCLUDING NON-HOMOGENEOUS PRODUCTS IN THE RELEVANT MARKET BLURS MARKET BOUNDARIES

The courts’ inclusion of non-homogeneous products in the relevant product market analysis caused serious conceptual problems regarding the correct degree of difference between an original product and a non-homogeneous product before the latter is included in the redefined market. Both the HPC and the SPC included and excluded numerous products based on a diversion ratio. However, the facts show that some products with the same diversion ratio – for example, certain quality-degrading integrated IM service products – were included in the redefined market and some were not. The SPC attempted to address this problem by stating that: “There is no necessity to define the market explicitly and clearly in every market dominance abuse case.” However, the SPC’s subsequent analysis directly contradicted this principle. After slightly correcting the scope of the HPC’s definition of the relevant product market, the SPC not only confirmed the HPC’s judgement as to most of the products it included in the redefined market, but the SPC also added mobile IM service, a product never mentioned by the parties, as a substitutive product. In including this product in relevant market, the SPC explained that, “definition of relevant product market in substance is the finding of fact procedure of a decision and is also the basis for making the decision.” This explanation runs contrary to the basic requirement of market definition that there be a clear market boundary; that is, that the court’s findings of fact in every competition case explicitly and clearly define the market.

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97 QIHOO v TENCENT 民三终字第 4 号 (2013).
98 QIHOO v TENCENT 民三终字第 4 号 (2013).
The SPC’s analysis was in conflict as regards single-function IM services and e-mail, both of which include an IM function. From a technical and substitutive perspective, these are both quality-degrading products as compared to integrated IM service products. Despite this fact, the SPC determined that, these two products should be treated differently in the market definition process. In analysing single-function IM services, the court reasoned that:

First, from product character angle, IM services that with only one or two functions have almost identical characteristics with integrated instant-messaging service: Internet-based, detecting users’ online status, real-time communication, privacy communication, free of charge, etc. Second, from product availability angle, all the three services can be accessed easily from the Internet for free. Third, from product function and purpose angle, they own at least one exact same function, their difference is from whether they offer voice or video communication. However, users’ preference and frequency of use in fact weakened the difference in function and purpose between integrated instant-messaging service and non-integrated instant-messaging service.99

It is clear that the court intended to diminish the diversion ratio between integrated IM service and single-function IM services. However, the court came to the opposite conclusion with respect to e-mail:

E-mail and IM software differ greatly in product character, function and purpose. Although e-mail and IM software share some similar characters and functions; for example, they are Internet-based and encompass text, image, voice and video file transfer functions, as well as being free of charge, and they differ substantially in core function and character. E-mail has no real-time communication function, nor the function of notifying online status, while the real-time character is the most attractive and core function for IM user communication. Suppose a hypothetical monopolist IM software supplier degraded the quality of its IM software to some extent – it is believed that there would be no substantial number of users who would switch to e-mail as a substitute. Therefore, e-mail does not offer close substitution for IM software and should not be included in the relevant product market.100

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99 QIHOO v TENCENT 民三终字第4号(2013).
100 QIHOO v TENCENT 民三终字第4号(2013).
The court exaggerated the diversion ratio between integrated IM service product and e-mail. However, both the underestimation of the ratio for single-function IM and the exaggeration of the ratio for email ignore the fact that YY Voice Chat, Fetion and e-mail are all single-function, quality-degrading IM software products, and that they bear the same degree of substitutability with respect to integrated IM services.

Arguing in favour of including single-function IM in the relevant product market, the appellant’s experts noted that:

The service quality of an IM service that only offers text chat is lower than that of an IM service that offers both text chat and voice chat, the service quality of IM that offers text chat and voice chat is lower than IM that offers video chat, voice chat and text chat. Users will only switch from single-function IM software to integrated IM service, not vice-versa; therefore, the non-integrated IM software service with the single function of text, voice or video communication probably constitutes a separate, overlapping, relevant product market, and this market can only be a dependent market to the integrated IM service market.101

Arguing for the exclusion of e-mail from the relevant product market, Tencent asserted that the real-time chat function of e-mail offers a strong substitution for Tencent QQ, and that the capability to send attachments with e-mail offers a strong substitution for QQ’s functions of asynchronous communication and sending offline messages and files.102

The SPC’s responses to these arguments by the parties are controversial. In replying to the appellant’s experts, the court explained that:

First, this analysis neglected that there is huge user usage frequency and user preference difference on text chat, voice chat, video chat function and this leads to exaggerated product difference caused by function difference. Second, this analysis didn’t consider the non-integrated IM software provider’s possible reaction according to competition element change, this diverts from the supply substitution analysis angle. Finally, based on the above notice (appellant’s experts), there will exist single text, single voice, single video IM software service markets, text and voice IM software service markets, integrated instant-messaging service markets, while there are partly overlapping functions among these services. As excessive

101 QIHOO v TENCENT 民三终字第 4 号(2013).
102 QIHOO v TENCENT 民三终字第 4 号(2013).
subdivision of market is not beneficial for analysing this case, this court disagrees with the argument.\textsuperscript{103}

In replying to the appellee’s argument, the court explained that:

First, the HPC pointed out, currently, e-mail service supplier’s embedded function in the e-mail interface differs substantially from that of IM service; these functions include: friends chatting, voice communication, video communication and picture capture. Besides, they differ substantially in convenience of operation. All these factors result in low rate of usage of e-mail, and therefore it cannot be an effective substitute to QQ. Second, that the asynchronous communication function attached by Tencent QQ can be substituted by e-mail can’t equate to the close substitution between IM and e-mail. As a result, Tencent’s assertion cannot be established.\textsuperscript{104}

These explanations are untenable and biased. It is clear from the court opinions in \textit{Qihoo v Tencent} that there are no reliable criteria for determining the precise diversion ratio which would make it possible to draw clear market boundaries. The SPC’s arbitrary inclusion of certain non-homogeneous products in the relevant product market and exclusion of certain other non-homogeneous products from the relevant product market was based on biased criteria and led to an erroneous decision.

\textbf{C. SUMMARY OF SECTION IV}

The courts’ inclusion of non-homogeneous products in the relevant product market disabled relevant economic analysis and provides empirical support for Kaplow’s positions summarised above. Products with widely varying diversion ratios were included in the relevant product market. In these quality-degraded product markets, competition was adequate and entry barriers were low. The market redefinition introduced different demand and supply elasticities into the relevant product aggregate, preventing any one firm from possessing market power. This process

\textsuperscript{103} \textit{Qihoo v Tencent} 民三终字第 4 号(2013).

\textsuperscript{104} \textit{Qihoo v Tencent} 民三终字第 4 号(2013).
made it impossible to determine market power using the available techniques of economic analysis. HMT/SSNIP and SSNDQ became unworkable.

Kaplow’s critics have asserted that substitutive products act as a competitive restraint and that therefore it is possible to determine market power in redefined markets. *Qihoo v Tencent* demonstrates that the critics are wrong. This is proven by the fact that price increases cause most customers to switch to homogeneous products; in other words, only the existence of homogeneous products is capable of restraining a dominant firm’s price increase. Kaplow’s critics have been unable to explain the extent to which non-homogeneous products restrain the effects of price elevation, and now *Qihoo v Tencent* has demonstrated that price restraints arising from the non-homogeneous product market are negligible. Meaningful restraint comes only from the homogeneous product market.

**V. IMPLICATIONS FOR AMENDING CHINA’S ANTI-MONOPOLY LAWS**

Though it has been shown to be theoretically and practically misleading, market definition as a method for determining market power has been enshrined into Chinese law by the AMLs. The inherent problems associated with market definition are now part of China’s AMLs. Article 19 of the AML and the Guidelines which provide methodology and guidance for undertaking market definition have been challenged seriously.

**A. ARTICLE 19(1) OF THE AML**

Article 19 is a market dominance presumption provision, which states:

> The conclusion that an undertaking holds a dominant market position may be deduced from any one of the following circumstances: (1) the market share of one undertaking accounts for half of the total in a relevant market; (2) the joint market share of two undertakings accounts for two-thirds of the total, in a relevant market; or (3) the joint market share of three undertakings accounts for three-fourths of the total in a relevant market.\(^{105}\)

This provision provides that market power presumptions can be made according to market share. The presumptions may be rebutted: “Where an undertaking that is considered to hold a

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dominant market position has evidence to the contrary, he shall not be considered to hold a dominant market position.” Article 19(1) was relied on by the plaintiff in *Qihoo v Tencent*.

Article 19(1) AML is intended to provide a basis for shifting the burden of proof to the alleged monopolist and to bring greater legal certainty. However, in practise, the provision has not always achieved these goals and, worse, has provided the ground and methodology for conducting market definition analysis. The market share presumptions of Article 19(1) AML assume that a market share threshold provides the correct criterion for determining the extent of market power required by competition law, yet these presumptions are beset by manifest theoretical and policy defects. In examining the market share threshold in *Alcoa*, Kaplow demonstrates that the threshold provides no meaningful criteria for judgement and “no real basis for deciding cases.” This is supported by the questionable results received of applying the market share presumption in *Qihoo v Tencent*.

As discussed previously, market share provides little important information and is subject to error, so it is not valid to presume market dominance from a certain market share. According to the Lerner Index formula, market share is only one of three factors relevant to measuring market power. Suppose a firm’s market share is above the AML threshold of 51%, and other considerations are equal. When the firm raises its price, if there are one or more firms that are equally competitive but have lower market shares, then the price-raising firm will lose most of its customers to those competitors. A market share presumption is further weakened when the 51% firm is facing a competitor or competitors with a strong supply capacity, because if the largest firm elevates its price, its competitor(s) can quickly supply customers with lower-priced products. The market share presumption might be even weaker when the possibility of market entry is considered.

The market share presumption’s expected value for judicial procedure may be overstated. Once a firm is presumed to be dominant, if it fails to provide evidence rebutting the presumption, or if the court rejects rebutting evidence, the firm will automatically be identified as dominant. Incorrect findings of dominance are bound to lead to erroneous judicial decisions. Although Tencent’s market share exceeded the minimum level of 50%, the court in *Qihoo v Tencent* did not adopt the presumption.

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107 *Alcoa*, at 424. In the decision, Judge Lerner Hand asserted that: “percentage ninety is enough to constitute a monopoly; it is doubtful whether sixty or sixty-four percent would be enough; and certainly thirty-three per cent is not.”

Furthermore, the market presumption may improperly affect firms’ market operations. A firm with a market share that exceeds the threshold may unnecessarily constrain or change its strategies, especially in highly competitive markets, for fear of negative legal consequences.\textsuperscript{109} This result is contrary to the spirit of the AML. A more serious consequence discussed above, is that a plaintiff can be misled into choosing the wrong original product as happened in Qihoo v Tencent.

All the theoretical issues and relevant empirical evidence highlighted in Qihoo v Tencent point to the same conclusion – Article 19 of the AML should be amended or struck from the law or should be applied under a detailed guideline.

### B. ANTI-MONOPOLY COMMITTEE OF THE STATE COUNCIL GUIDELINES ON RELEVANT MARKET DEFINITION

The Guidelines, by adopting the market definition procedure into anti-monopoly analysis, provided much of the basis for the defendant’s conduct of the litigation, as well as the framework for analysis in the HPC and the SPC opinions. Article Two of the Guidelines explicitly provides that market power is identified via market definition:

Any competition (including practises that have or may have the effect of excluding and limiting competition) happen in certain scope of market. The aim of defining relevant market is to identify the market scope in which market players compete.

A scientifically and reasonably defined relevant market is important to such issues: identifying competitors and potential competitors, determining the market share of market players and the degree of market concentration, identifying the market power status of a market player, analysing the competition effect of a conduct, judging whether market player’s conduct is illegal and the legal liability issue related to violations of law. Therefore, defining relevant market is usually the initial point for analysing competition conducts and an important step in enforcing AML.\textsuperscript{110}

Article Four of the Guidelines provides that the basis for defining the relevant market is substitution analysis. It specifies that:


In the AML enforcement practices, the scope of relevant market is mainly determined by the product’s (or geographical area) degree of substitutability.

The definition of relevant market is mainly undertaken using demand-side substitution analysis, because the source of direct and meaningful competition is restricted to competitors with substitute products or within the geographical area. When the competition restrict effect demonstrated by supply substitution is resembles that of demand substitution, supply substitution analysis should also be considered.\textsuperscript{111}

As demonstrated by the analysis of \textit{Qihoo v Tencent} set forth above, the procedure outlined in the Guidelines is deeply flawed.

The substitution analysis provided for in the Guidelines must be preceded by a correct identification of the original product. There is, however, no provision in the Guidelines specifying the appropriate methodology for doing this. In \textit{Qihoo v Tencent}, the original product was identified by the plaintiff pursuant to Article 19(1) AML, not pursuant to the Guidelines. Both the HPC and the SPC declared that their market definition was conducted pursuant to the Guidelines, but they both agreed with Qihoo’s choice of original product.

This error caused the original product to be incorrectly identified, which then led to the incorrect inclusion and exclusion of certain substitutive products, which led inevitably to an incorrect resolution of the case. To alleviate this defect, the Guidelines should be amended to provide guidance regarding the methodology of identifying the original product. If the choice of original product is relevant to the market share threshold set forth in Article 19 of the AML, the relationship of the threshold to the Guidelines should be made clear in the Guidelines.

The Guidelines offer no helpful criteria for drawing market boundaries. The Guidelines emphasise substitution analysis, making market redefinition analysis necessary (Article 2 of the Guidelines). This echoes Kaplow’s statement that “it seems necessary to inquire whether or not each plausible substitute is sufficiently close.”\textsuperscript{112} This in turn leads to an inquiry into cross-elasticity of demand.\textsuperscript{113} The Guidelines provide for distinguishing different degrees of demand substitution so as to provide the basis for including certain products in and excluding certain other products from the relevant product market; however, they offer no hint as to the degree and kind of substitutability that should form the basis of a boundary. As we have seen in the landmark case, where much of the analysis was conducted pursuant to the Guidelines, the market


boundary was drawn by the courts by applying inconsistent standards to products with the same degree of substitutability. Criteria for drawing market boundaries should be included in the Guidelines.

Due to the lack of criteria in the Guidelines for drawing market boundaries, a comparatively broad market is usually defined and subsequent efforts are spent in identifying substitutive and interchangeable products. Such efforts can misdirect the analysis towards focusing on the demand substitution of particular products rather than the demand substitution for the whole market. In *Qihoo v Tencent*, the SPC’s opinion focused on excluding social networking sites such as Weibo (their non-IM function), from the relevant product market, and including mobile IM services. The courts held that Tencent was not a dominant firm. However, the court neglected the low demand elasticity of QQ users, which was shown by the fact that although the court added many substitutive products into the relevant product market, Tencent’s customer switch was less than 1% of its total users.

The main reason for the difficulty in drawing market boundaries is that the Guidelines do not appreciate the importance of homogeneous product analysis. As shown above, meaningful consumer switching happens only among homogeneous products, and including non-homogeneous products in market definition analysis is therefore flawed. In certain cases, substitution analysis is fundamentally misleading, not only because including non-homogeneous products in the analysis is flawed and taxes economic techniques beyond their capacities, but also because it leads the analysis to focus on cross-elasticity of demand, a focus which makes it impossible to draw market boundaries. The solution to the problem is either to find criteria for drawing market boundaries, or to abandon substitution analysis entirely. While criteria for drawing market boundaries are difficult to find, perhaps the most meaningful would distinguish homogeneous products from non-homogeneous products. However, despite the fact that avoiding non-homogeneous products in market power analysis would significantly improve the validity of the market definition approach, it is unlikely to mitigate the extent of false positives if the wrong relevant market is chosen.

VI. CONCLUSION

The defects involved in determining market power via market definition have been the subject of criticism for decades. Only recently has Kaplow advanced a rigorous examination of these issues and suggested that market definition should be abandoned entirely. Although Kaplow’s opponents have failed to discredit his position with theoretical argumentations, some of them

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114 Louis Kaplow, *Why (Ever) Define Markets?* 124 Harv. L. Rev. 437 (2010). (redirects our attention from the evidence that bears most directly on market power to other evidence and relationships that provide inferior guidance on the question at hand.)
have introduced arguments based on empirical analysis. However, the facts and analysis contained in the landmark Chinese case of *Qihoo v Tencent*, which provides a comprehensive examination of both sides of the argument, suggest that Kaplow’s argument is consistent with practise. This result further suggests that the prevailing method of inferring market power is problematic and proper criteria are yet to be formulated. One practical solution to this dilemma would be to seek compromise. Multiple methods must be used to infer market power, rather than relying solely on market definition technology. This compromise has appeared in some major antitrust jurisdictions (e.g. the US and the EU). According to the analysis in *Qihoo v Tencent*, the adoption of this method is more appealing for courts in developing countries (e.g. China).

The case highlights problems with market redefinition and with presumption of market power according to market share. According to Kaplow, these are normally based on a guesstimate without any formal basis of support. In *Qihoo v Tencent*, market redefinition and market power presumptions were determined by following provisions in China’s AMLs. As a result, it is suggested herein that anti-monopoly practise would be improved if the AMLs were amended. There are no guidelines as to how Art 19 AML is to be applied. Detailed guidelines are necessary to specify its function and the scope of its application. With regard to the Guidelines, major amendments will be necessary. As a minimum, the following will be required: provide guidance on identifying the original product; add one of the most important elements into the analysis of market power – established facts; and emphasise the importance of homogeneous product analysis.