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Applying Merton's Law on Unintended Consequences to Have a Better Understanding on the Battle in Ruling Interchange Fees in Card Payments

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Abstract. *The battle in ruling interchange fees in card payments is mainly discussed in four jurisdictions: Australia, Canada, EU, and US. In general, government interventions to the interchange fees arrangement aim to promote market efficiency. Such interventions appear in two forms: regulation and competition law enforcement. Industry then questions these interventions, whether they are justified. Many have claimed that instead of benefitting consumers, such interventions are harmful since the outcome is consumers suffer from the higher prices. Using literature studies, this paper tries to seek why government seems fail to take industry's opinion into consideration. Using Merton's theory on unintended consequences, this paper outlines the rationales behind such "failure". As for the substance, this paper gives full credits to previous studies on pricing of two-sided market and employs them as fundamental grounds.*

Keywords: interchange fees, payment systems, competition, credit card, debit card.

1 Introduction

1.1 Background

There are enormous empirical studies demonstrating that interchange fees of card payments are essential to card network operations.[1] They lay down as fundamental ground to the existence and sustainability of card payment operations, balancing the demand of market players and consumers, and stimulating innovation in retail payments.[2] However, there are also an amount of research showing that recent interchange fees have been set up too high by network owners so they cause more burden to the retailers and harmful to the consumers.[3] Retailers in many countries then begin to file lawsuits against the card networks, arguing that the

[1] After Baxter's study in 1983, there were quite long pauses in studying interchange fees of card network operations. Studies on this major have become popular since 1990's and 2000's, in particular after the debate whether market-set price of interchange fees is favorable to the society and whether government's intervention is desirable to the market.

[2] For earliest study see William F. Baxter, 'Bank Interchange of Transactional Paper: Legal and Economic Perspectives' (1983) 26.3 Journal of Law and Economics . For more recent studies see David S. Evans, *Interchange Fees,The Economics and Regulation of What Merchants Pay for Cards* (Competition Policy International 2011); D. S. Evans, 'Payments innovation and interchange fees regulation: How inverting the merchantpays business model would affect the extent and direction of innovation' (2011) 7 Compet Policy Int Competition Policy International 74; and Ann Borestam and Heiko Schmiedel, 'Interchange fees in card payments' (2012) 6 Journal of payments strategy & systems 50.

[3] Most of these studies were initiated by retailers, association of retailers, or those in favor of retailers. This is common facing the fact that retailers as merchants are the ones that currently have to bear the cost of interchange fees. However such more neutral studies also exist. For an in-depth elaboration, see for instance Ozlem Bedre-Defolie and Emilio Calvano, 'Pricing payment cards' (2009) .

interchange fees arrangement has violated competition laws by creating price-fixing[4] and entry barriers to the card industry.[5]

On top of the court proceedings to resolve private dispute on interchange fees between card operation players, public authorities have also been recalled to solve this issue. Government policies to resolve this issue mainly appear in two forms: competition law enforcement and regulation. Regulation approach is adopted by US[6] and Australia[7], while competition law enforcement approach is adopted by EU[8] and Canada[9].

In the EU, the competition commission has decided to prohibit the application of interchange fees since they violate competition law and brings harm to the consumers.[10] This decision has been confirmed by the general court's decision, so now the card network owners are appealing against this decision.[11] However, far before EU, Australia and the US had the same experiences in dealing with interchange fees. As results of long process, Australia has had regulation since 2003 to reduce interchange fees and allow retailers to surcharge credit card transactions,[12] so has the US with the Durbin amendment, capping the interchange fees for debit card transactions.[13]

In response to policies implementation on interchange fees by government, many scholars argue that instead of benefitting to the consumers, such policies are harmful.[14] Banks start to charge consumers more fees in return to the revenue losses from the cut of interchange fees. In addition, retailers have tendency to surcharge the consumers more than the cost the retailers actually bear.[15] In the end consumers suffer more, with higher banking cost and higher price of goods and services.

1.2 Problem Concerns

This paper tries to seek the reasons why regulator seem fail to take the voices of industry into consideration and learn from the experiences of Australia and the US before deciding that interchange fees are harmful. This in particular applies to the case of EU, in which currently the interchange fees dispute between card network and European Commission as competition authority is taking place before the appellate court.[16] Using theory on unintended consequences of purposive action introduced by Robert K. Merton in 1936,[17] this paper studies whether the causals conditions explained by Merton provide a better understanding on the reasons behind government intervention on interchange fees. Merton's theory on unintended consequences

[4] Or resale price maintenance in case of, for instance, Canada.

[5] See for instance EuroCommerce v. Visa.

[6] Durbin amendment in 2010, followed by Federal Reserve regulations in 2011.

[7] RBA regulations enacted in October 2003.

[8] *MasterCard and Others v European Commission Case C-382/12 P* .

[9] Visa and MasterCard v. Competition Commission.

[10] See *European Commission Decision C (2007) 6474* .

[11] Se general court decision *MasterCard and Others v European Commission Case T-111/08* and also opinion of advocate general on *MasterCard and Others v European Commission Case C-382/12 P*

[12] RBA regulations in 2003.

[13] Section 1075 of the Dodd-Frank Act in 2010, followed by Federal Reserve regulations in 2011.

[14] See for instance David S. Schmalensee Richard Evans, 'The economics of interchange fees and their regulation : an overview' (*MIT Sloan School of Management*, 2005) <http://dspace.mit.edu/bitstream/handle/1721.1/18181/4548-05.pdf?sequence=1> accessed ; David S. Evans Daniel D. Garcia Swartz Howard Chang, 'The Effect of Regulatory Intervention in Two-Sided Markets: An Assessment of Interchange-Fee Capping in Australia' (2005) 4 Review of Network Economics ; and Evans, 'Payments innovation and interchange fees regulation: How inverting the merchantpays business model would affect the extent and direction of innovation'.

[15] See Evans, *Interchange Fees,The Economics and Regulation of What Merchants Pay for Cards*, in particular on chapters discussing the impacts of regulatory interventions on interchange fees.

[16] *MasterCard and Others v European Commission Case C-382/12 P.*

[17] Robert K. Merton, 'The Unanticipated Consequences of Purposive Action' (1936) 1.6 American Sociological Review 894.

has rooted from earliest thoughts of unanticipated consequences of purported actions such as Adam Smith's "the invisible hands", that of John Locke,[18] and Bastiat's the "seen" and "unseen".[19]

1.3 Methodology

At first, this paper will outline the interchange fees from economics theory and legal perspectives, and the policies adopted by four jurisdictions relating to interchange fees. Such policies appear in forms of regulation by government and central banks, and competition law enforcement by competition authority. Policies in forms of regulation are adopted by Australia for credit card operations and the US for debit card operations, while policies in forms of competition law enforcement are the case of EU and Canada. The later policies are applicable only to credit card operations.[20]

After reviewing policies on interchange fee, this paper will analyze whether Merton's theory on unintended consequences provides more understanding on the reasons behind the policy adoptions. Although the focus of this study is EU decision,[21] elaborations on policies of other major jurisdictions mentioned above are also provided because of two reasons: firstly, the basic economics rationales of policies whether in Australia, US, EU, and Canada are quite similar; and secondly, the economics and legal literatures discussing the rationales of such policies are established cross-jurisdictions.[22] Literatures elaborated on policies in Australia or US, for instance, can be used to analyze the policies adopted by EU.

1.4 Theoretical Frameworks and Originality

Studies on interchange fees of two-sided market, from economics as well as legal perspective, are enormous. Rochet and Tirole (2006, 2008) for instance studied tying in two-sided markets and the honor all cards rule imposed by the principals of credit cards.[23] Bolt, W., and Tieman, A.F. (2008) also emphasized Rochet's report that two-sided markets tend to have heavily skewed pricing.[24] In a study on credit card interchange fees, Rochet and Wright (2010) indicated that the fees involved in credit card payments are biased against the merchants and therefore in favor of cardholders.[25] On the other hands, Wright (2012) in her recent study suggested that the bias on credit card fee against the merchants did not always have negative impacts. Sometime it is necessary to encourage innovation and competition among the merchants.[26] Previously, Verdier (2009) highlighted a survey of the literatures on credit card interchange fees. From such survey, there are some approaches he believed to be used in viewing interchange fees.[27] Wang (2010) studied about market structure and what driving the interchange fee in credit card industry[28] and PilChoiw (2010)

[18] John Locke, 'Some Considerations of the Consequences of the Lowering of Interest and the Raising the Value of Money' (1691) .

[19] Frederic Bastiat, 'What Is Seen and What Is Not Seen' (1850) Available at http://commonsenseeconomicscom/wp-content/uploads/Bastiat_SeenUnseen_CSEpdf .

[20] For EU policies see EU decision *MasterCard and Others v European Commission Case T-111/08*, while for policies in Canada see *The Commissioner of Competition v. Visa Canada Corporation and MasterCard International Incorporated* Comp Trib 10, File No: CT-2010-10, Registry Document No: 03.

[21] The reason is because this is the only case remaining under judicial proceedings.

[22] The best example for this literatures is Evans, *Interchange Fees,The Economics and Regulation of What Merchants Pay for Cards*. In this comprehensive report, Evans studies interchange fees cross-jurisdictions among Australia, EU, and US.

[23] See Jean-Charles Rochet and Jean Tirole, 'Two-sided markets: a progress report' (2006) 37 RAND The RAND Journal of Economics 645 for early report on two-sided market issues and Jean-Charless Rochet and Jean Tirole, 'Tying in two-sided markets and the honor all cards rule' (2008) 26 International Journal of Industrial Organization 1333 , for a later study on the same issues.

[24] W. Bolt and A.F. Tieman, 'Heavily skewed pricing in two-sided markets: Short communication' (2008) 26 International Journal of Industrial Organization 1250, pp. 1250–1255

[25] J. C. Wright J. New Contributions to Retail Payments Conference at Norges Bank November Rochet, 'Credit card interchange fees' (2010) 34 Journal of Banking and Finance 1788.

[26] Julian Wright, 'Why payment card fees are biased against retailers' (2012) 43 RAND The RAND Journal of Economics 761.

[27] Marianne Verdier, 'Interchange fees in payment card systems: a survey of literature' (2011) 25 JOES Journal of Economic Surveys 273.

[28] Z. Wang, 'Market structure and payment card pricing: What drives the interchange?' (2010) 28 International Journal of Industrial Organization 86.

elaborating on tying in two-sided market with multi-homing.[29] This paper will take great benefits from and give credits to all those studies in understanding pricing in two-sided market and its impact on competition. As for contribution, this paper contributes more in understanding the reasons behind the government interventions on interchange fees by analyzing the policies using Merton's theory on unintended consequences.

1.5 Structure

Upon the introduction containing background study, problem concerns, methodology and theoretical frameworks, this paper will review the interchange fees within card network and their problems, based on study literatures and provided on section 2. This contains historical review, the economics of interchange fees, and competition issues surrounding the policies on interchange fees. The review of this section uses general theory and not necessarily touch upon particular jurisdiction. Discussions on interchange fees relating to certain jurisdiction are provided on section 3, which contain policy on interchange fees in EU, Australia, US, and Canada. After having a better understanding on interchange fees, theoretically and policies adopted by related jurisdictions, this paper will analyze the reasons behind such policies, in particular that of EU, using Merton's theory on unintended consequences. This analysis is provided on section 4, before (preliminary) conclusions and further discussion on section 5.

2 Interchange Fees within Card Network and Their Problems

2.1 Historical Review

Historically, the setting of interchange fees cannot be separated from the shifting of proprietary card systems[30] into multiparty card systems. The first unitary system of credit card was initiated by Bank of America in 1958. It then went to franchising system in 1966, involving other banks in issuing cards under the control of Bank of America, but the story started in 1970 when such system changed into multiparty system. Interchange fees was set for the first time in 1971 for such multiparty system in order to balancing the operational of the system and stimulus innovations and efficiency. It was set at amount of 1.95% of transaction value.[31]

In 1979, the first lawsuit against interchange fees was filed by National Bankcard Corporation (NaBanco), alleging that such fees were a form of price-fixing and therefore violating US antitrust law. First and appellate court decided in favor of credit card network, rejecting the allegation and approving the interchange fees as such fees were efficient to the market and led to competitive market. The appellate court's decision was made in 1986. Slightly beforehand, William Baxter introduced paper discussing the economic rationale of interchange fees. This 1983's paper is now recognized as the first scientific paper elaborating the rationale of interchange fees.[32]

The next histories of the interchange fees 'battle' were marked at least four major events. First, a lawsuit in Europe was filed by association of retailers, EuroCommerce, against Visa in 1997. It reached settlement in 2007 where Visa agreed to pay settlement fees in forms of reduction of interchange fees.[33] Second, Reserve Bank of Australia adopted regulations capping interchange fees for credit card operations in 2003. These

[29] J.P. Choi, 'Tying in Two-Sided Markets with Multi-Homing' (2010) LVIII The Journal of Industrial Economics 607.

[30] In this case is credit card systems.

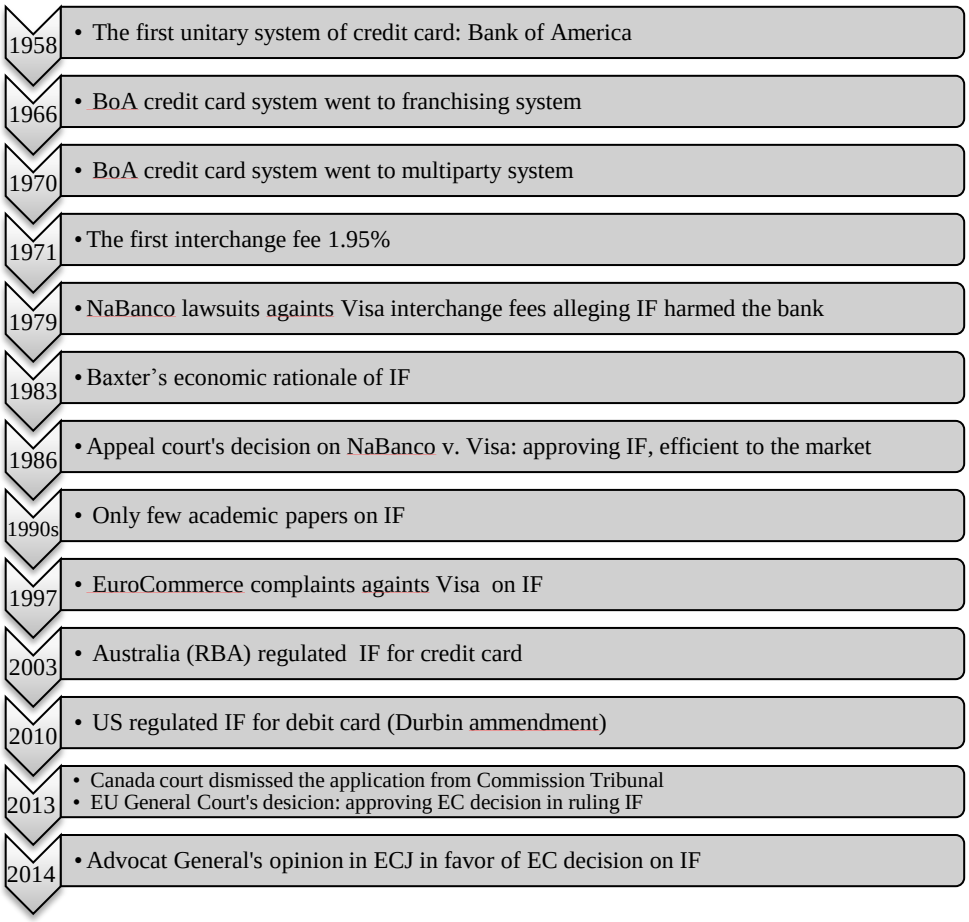
[31] For discussion on this case, see for instance Richard Schmalensee, 'Payment Systems and Interchange Fees' (2002) 50 JOIE The Journal of Industrial Economics 103.

[32] William F. Baxter, 'Bank Interchange of Transactional Paper: Legal and Economic Perspectives' (1983) 26 Journal of Law and Economics 541.

[33] See for instance The World Bank, *Balancing Cooperation and Competition in Retail Payment Systems: Lessons from Latin America Case Studies* (Financial Infrastructure Series, Payment Systems Policy and Research, 2008)

regulations have been argued by many scholars harming consumers.[34] Third, Durbin amendment was adopted by US in 2010, capping interchange fees for debit card operations. Similar to those of Australia, some scholars has also strongly argued that consumers are the ones most suffering to bear the impact of the regulations; among others are in forms of higher prices.[35] Lastly, EU general court in 2013 adopted a decision on MasterCard vs European Commission (EC).[36] The decision was in favor of EC, stating that interchange fees violated competition law. MasterCard is now appealing this case to the ECJ, and the advocate general had recently delivered his opinion.[37] The complete historical review on interchange fees is provided in **Figure 1**.

Figure 1 History of Interchange Fees



2.2 The Economics of Interchange Fees

Under economics theory, card payment operations are considered as two-sided business.[38] Thus, policies adopted for this payments scheme must consider the economic theory of two-sided market. Applying policies applicable to one-sided business for two-sided market, or applying policies using economic rationale rooting

[34] For early discussion, see for instance Julian Wright, 'Optimal card payment systems' (2003) 47 EER</cja:jid> European Economic Review 587.

[35] Wright, 'Why payment card fees are biased against retailers'.

[36] *MasterCard and Others v European Commission Case T-111/08*.

[37] *MasterCard and Others v European Commission Case C-382/12 P*.

[38] Julian Wright, 'The Determinants of Optimal Interchange Fees in Payment Systems' (2004) 52 The Journal of Industrial Economics 1

from one-sided business, will disturb market equilibrium of two-sided market and in the end will harm consumers.[39]

Interchange fees have important roles in card payments networks. They balance the demand of card issuers (usually banks), merchants, and consumers. In theory, setting interchange fees too high will provide less incentive for merchant to accept cards for payments, whereas setting interchange fees too law is unattractive to banks in issuing more cards, which is in the end will also provide less benefits to consumers. That is why the socially optimum price of interchange fee is important in order to support the existence and the sustainability of card network operations. The question is always whether the socially optimum price of interchange fees equals to market-set price of interchange fees, or less, and how to define or calculate socially optimum interchange fees. Afterward, the further question is whether market needs government interventions to define the interchange fees.[40]

Regarding the government's intervention in setting interchange fees, Evans challenged that such intervention needs more considerations rather than only fix cost variable.[41] Using the price control by government for monopoly market such as that of electricity industry, Evans argued that variable cost must also be taken into account in setting the socially optimum price. Furthermore, the demand of both merchants and consumers must also be considered as variables in defining the price. In his study, Evans used the model created by Bedre-Defolie and Calvano (BC)[42] in order to determine the socially optimum price of interchange fees:[43]

$$\frac{f(i*)}{m(i*)} = \frac{nb}{ns} \div \frac{vb}{vs}$$

$i*$ = *socially optimum interchange fees*
$\frac{f}{m}$ =*optimal per transaction prices paid by issuer and acquirers, depend on i**
nb = *consumers price elasticity demand*
ns = *merchants price elasticity demand*
vb = *consumers average surplus per card transaction*
vs = *merchants average surplus per card transaction*

Assuming that demand curve of consumers and merchants is linear, Evans came up with following equation for socially optimum interchange fees:[44]

$$i(*) = iM - \frac{vb + vs}{12}$$

2.3 Competition Issues

Competition issues relating to interchange fees were brought up on the table by three distinct parties. The first party, which appeared in the most cases, is retailers or association of retailers as a merchant. They alleged that card-owner-set interchange fees have violated competition law in forms of price-fixing. The fees are set too high and therefore overburden merchants with paying more fees. Merchants argue that such

[39] For general yet valuable discussion on this issue see L. Gyselen, 'Multilateral Interchange Fees Under E.U. Antitrust Law: A One-Sided View on a Two-Sided Market?' (2005) Columbia business law review 703

[40] As discussed above, can be in forms of regulations or competition law enforcement. For advance elaboration, see Wright, 'Why payment card fees are biased against retailers'.

[41] Evans, *Interchange Fees,The Economics and Regulation of What Merchants Pay for Cards*, pp. 51-54.

[42] Calvano, 'Pricing payment cards', pp. 14-15

[43] See Evans, *Interchange Fees,The Economics and Regulation of What Merchants Pay for Cards*, pp. 52.

[44] This model was created by Evans using simplified assumptions. See ibid, pp. 53,

arrangement is not efficient to the market. The fees must be set zero, or at least lower than those set by card networks. In the end, as merchants argue, this arrangement will harm consumers in forms of higher prices. By diminishing or at least lowering the interchange fees, merchants will save more money and will pass-through this savings to the consumers in forms of lower price. Thus, interchange fees are price-fixing that create inefficient market and harm consumers, and therefore they need to be diminished.

The second party complaining the interchange fees was rather peculiar. It occurred in the past when interchange fees were at their early stage. The case was filed by NaBanco in 1979, alleging that interchange fees set by Visa harmed banks with paying more cost for the benefit of card-network owner. It also violated antitrust law by fixing price to be paid by the banks. However, the court ruled that interchange fees were neither violating antitrust law nor harming banks. They are essential for four-party-scheme of credit card, guaranteeing its operations and sustainability.

Lastly, the party disputing interchange fees for violating competition law is competition authority itself. This appeared in Canada during 2013 and is currently subject for proceedings in the EU. These two competition authorities, of course separately and independent each other, argued that interchange fees are price-fixing, creating inefficient market and harming consumers. In Canada, the competition tribunal dismissed the application of the competition authority and therefore ruling this case in favor of credit card industry. Furthermore, the tribunal argued that instead of under competition law enforcement, it ought to be investigated using another different approach such as regulation under the central bank's power. Distinct with that of Canada, EU has different stories. The general court approved the EC decision that interchange fees violate competition law in forms of price-fixing and therefore must be adjusted.

3 Current Policies on Interchange Fees

As having mentioned previously, policies on interchange fees in existence can be divided into two forms: regulations capping the price level of interchange fees into certain amount and competition law enforcements stating that interchange fees have violated competition law. The later policies apply in the EU and Canada, with distinctive outcome each other, while the earlier policies are adopted in Australia for credit card operations and the US for debit card operations.

3.1 EU

The phase of the battle in ruling interchange fees in the EU started with a complaint filed on 20 March 1992 by the representative of UK retailers, the British Retail Consortium. This association of merchants alleged MasterCard (as credit card network owner) had restricted competition among the credit card players (in particular banks as card issuers and retailers as merchants) by certain arrangement that put merchants liable to pay the cost of cross-border or multilateral interchange fees.[45] In 1997, the complaint scaled up not merely covering UK but all EU, and the EuroCommerce took over as complainant. The legal analysis of European Commission, DG Competition, and the outcome of this case are as follows.

First of all, the European Commission in general agreed on the ground rules supporting payment systems operations, namely network externalities and the function of interchange fees. Network externalities guarantee that certain payment systems are not only feasible but also sustainable, while interchange fees in forms of income transfer between the acquiring banks and the issuing banks can optimize the operation of the network to the users. However, the European Commission argued that to define the interchange fees, employing economic theory alone is not sufficient. This is mainly because theories are based on assumptions

[45] *Official Journal of the European Union* C 264/8, 6112009, pp. 1

that often do not reflect the market reality. Therefore, there is a need to employ comprehensive analysis that is not only based on assumptions but also facts and empirical data.[46]

Second, the Commission argued that the multilateral interchange fees set by MasterCard had restricted competition by increasing the base price the acquirers must charge to the merchants under the merchant fees. The Commission believed that if MasterCard as card network owners did not do so, the merchant fees charged by the acquiring banks would definitely be lower. [47]

Lastly, the Commission pointed out the fact that interchange fees guaranteed incomes for the issuing banks to issue credit cards, so those banks shared the same interest with that of card network owners. This leads to the condition that both network owner and its members tried to protect the network.[48] This fact is supported by evidence that there is another open card network similar to that of MasterCard that is able to operate without interchange fees. [49]

The Commission came to the decision that interchange fees arrangement has violated competition law and therefore must be adjusted.[50] This decision has been adopted based on above evaluations, and after the Commission requested MasterCard to submit empirical evidence proofing that interchange fees have positive impacts to the system's efficiency, and MasterCard failed to do so.

MasterCard brought the Commission's decision before the general court, arguing that the Commission had 'incorrectly' applied the analysis by, one of them, ignoring MasterCard's empirical study on the positive impact of interchange fees, and therefore requesting the court to repeal such decision. In its decision, the general court rejected the MasterCard lawsuit and ruled in favor of the Commission.[51] Now, MasterCard is filing this case before the appellate court, and this case is still pending.[52]

3.2 Canada

Canada case on interchange fees is similar to that of EU, with a quite distinct outcome from the court ruling. Recently, the Competition Tribunal of Canada had dismissed the application filed by the Commissioner of Competition of Canada on unfair behavior conducts by credit card network owners.[53] The application proposed that such unfair conducts violated Article 76 of Canadian Competition Act and therefore the Tribunal sought for an order prohibiting such conducts.[54] The conduct consisted of three activities imposed by the principal of credit card system to the merchants: (1) no-surcharge rule, (2) honor all cards rule, and (3) no-discrimination rule.[55]

In its decision, the Tribunal agreed with the Commissioner's arguments that such unfair conduct had, to some extent, adverse impacts on competition in credit card industry in Canada.[56] In addition, the Tribunal also took into account the result of similar cases occurred in other jurisdictions: Australia, New Zealand, UK

[46] Ibid, pp. 3. Here, the Commission used the terms "*…detailed, robust and compelling analysis that relies in its assumptions and deductions on empirical data and facts*."

[47] Ibid, pp. 2

[48] Ibid

[49] Ibid

[50] *European Commission Decision C (2007) 6474*.

[51] *MasterCard and Others v European Commission Case T-111/08*.

[52] *MasterCard and Others v European Commission Case C-382/12 P*.

[53] Competition Bureau of Canada, *Competition Bureau to Review Competition Tribunal's Credit Cards Ruling* (23 July 2013).

[54] *The Commissioner of Competition v. Visa Canada Corporation and MasterCard International Incorporated*.

[55] Ibid, para 56, pp. 18.

[56] Ibid, para 391.

& EU, and US.[57] Yet, the tribunal came up with a decision to dismiss the application and let the authorities employ different approach other than those of competition law.[58] Such different approach required by the Tribunal is regulatory approach,[59] something the Tribunal never employed for competition cases before.[60]

3.3 USA

Distinct from policies in other jurisdiction which apply to credit card operations, policies on interchange fees in the US are so far only applicable for debit card operations. Coming up lastly with Dodd-Frank Act in 2010, the policies appeared under Durbin amendment, mandating the Federal Reserve Bank to regulate the interchange fees of debit card operations "*reasonable and proportional to the cost incurred by the issuer with respect to the transaction*".[61] In the summer 2011, the Federal Reserve adopted the final regulation on interchange fees for debit card operations, which took into effect on 1 October 2011.[62] Such regulation rules that interchange fees applicable to the financial institutions with assets more than $10 billion are capped to: a base fee of 21 cents, 5 basis points to cover losses from fraud, and 1% applicable to certain issuers to prevent fraud. In addition to interchange fees cap, the Federal Reserve also set certain rules prohibiting the network's restrictions imposed to the merchants, such as restrictions on merchant offering customer discount for using debit card[63] and setting the minimum value of transaction using credit card.[64]

3.4 Australia

Australia adopted regulations to cap interchange fees for credit card networks in 2003. However, these regulations only apply to four-party scheme of credit card networks such as MasterCard and Visa and are not applicable to three-party schemes such as Amex or Diners. The regulations cap the interchange fees for credit card networks to around 0.55 percent, reducing at 0.40 percent from market-set interchange fees that previously were set at around 0.95 percent.[65] This ruling takes place after a number of studies conducted by the Reserve Bank of Australia, in which it comes to conclusion that the existing arrangement of credit card operations to some extent leads the consumers to use less-efficient payment instruments. This is because such arrangement guarantees the yield income for issuing banks (to issue more cards) on the burden of the merchants. Thus, the Reserve Bank of Australia has enacted regulations mainly in order to increase the cost of using inefficient payment instruments, so consumers will not over-use them and move to more-efficient payment instruments.

4 Analysis

Robert K. Merton introduced five main reasoning on why purposive actions often have unintended consequences. Those five rationales are *ignorance*, *error*, *imperious immediacy of interest*, *basic value*, and

[57] Tribunal Decision, para 49-89.

[58] *Ibid*, para 391-401.

[59] *Ibid*, para 394.

[60] The exact sentence is "*We are typically reluctant to decline to exercise our discretion in favour of regulation as we agree that generally speaking even very imperfect competition is preferable to regulation*".

[61] Section 1075 of the Dodd-Frank Act.

[62] See for instance Wang

[63] The aim of this rule is good, which is to give flexibility to merchant to offer consumers with more efficient payment instruments.

[64] Considering that the merchants bear some burden of cost in using credit cards more than other payment system instruments such as debit cards, it is just to give flexibility to merchants to set the limit amount for credit card transactions. However, the limit amount must not exceed USD10.

[65] Set by three associations of banks in Australia. See Evans, *Interchange Fees,The Economics and Regulation of What Merchants Pay for Cards*, pp. 58.

so-called *self-defeating prophecy*.[66] It is worth noting that under this Merton's law, the consequences, even though unintended, do not always mean undesirable. Some of unintended consequences can be desirable.[67] To have a better understanding before applying this theory to the case of interchange fees, those five rationales will be briefly outlined.

The first reasoning, *ignorance* comes when many of purposive actors focus on certain conditions demanding for immediate actions, and therefore it involves ignorance of other aspects resulting in unexpected conditions.[68] Slightly different from *ignorance*, *error* simply means that the doers employ their own assumptions, too-ready assumptions, that they believe will lead to certain outcome, and resulting in incorrect analysis.[69] *Immediacy of interest* is quite distinctive from *ignorance* or *error*. It refers to condition that the actors concern only to the immediate consequences and exclude the further impact of their actions.[70] In case of *basic value*, the purposive actors react upon their fundamental value and therefore there is no necessity to consider other non-value-related actions.[71] Lastly, *self-defeating prophecy* occurs when the doers prepare their intended actions to prevent certain consequences occurring and neglect to prepare when such consequences fail occurring.[72] Since the explanation of *self-defeating prophecy* under the theory of unintended consequences is quite clear, and this cannot be applied to the case of interchange fees, this last reason of unintended consequences will not be discussed

Ignorance

The argument stating that policy makers have been *ignorance*[73] in adopting policies on interchange fees is plenty. As Merton's definition of *ignorance*, basically it means that the actors have incomplete analysis or consideration before taking actions. The incomplete analysis serves as basis consideration in adopting policy on interchange fees is as follows. Assuming that there is a market failure in the interchange fees arrangement[74], and therefore the need for government intervention arises, the question is then what price of interchange fees considers as socially optimum price, and what variable used. Answering this question, the policy makers simply come up with regulations capping the interchange fees to the certain amount, around 0.55 percent per credit card transaction in Australia, and generally more or less than 21 cents per debit card transaction in the US.[75]

The claims that government analysis in determining the interchange fees is incomplete mainly lay down on two variables. First, in determining the price level of interchange fees the regulator only takes fix cost into account.[76] As having used in determining the price level at the monopolistic legitimate market such as electricity, one should also take into account variable cost. Thus, the price level determined by the regulator is not based on accurate analysis. Second, regulator has also forgotten to take into account the demands of merchants and of consumers. As card payment scheme is two-sided market, and interchange fees are essential in two-sided market in order to balancing the demand of the parties involved, taking into account

[66] Merton, 'The Unanticipated Consequences of Purposive Action'.

[67] Ibid, pp. 895.

[68] Ibid, pp. 900.

[69] Ibid, pp. 901.

[70] Ibid, pp. 901-902.

[71] Ibid, pp. 903.

[72] Ibid, pp. 904.

[73] Under Merton's definition, which is the actors focus on the certain conditions that demand immediate actions, and therefore they involve ignorance of other aspects that will have results in unexpected conditions, not under literal meaning.

[74] This assumption is necessary because the card networks and scholars go in favor of them claim that there is actually no market failure in their scheme.

[75] Canada and EU have not come up with number yet since they are still under proceeding or investigation.

[76] In the US, this was based on the assessment of the Federal Reserve on the fix cost spent by the issuing banks in processing a transaction, for instance clearing fees.

the demand of merchants and consumers is necessary. Otherwise, the regulator-set price of interchange fees will not reflect the market reality and probably too low compared to market-set interchange fees. As having discussed on section on the economics of interchange fees,[77] Evans suggested that assuming that demand curves of merchants and consumers are linear, there is still discrepancy between socially optimum interchange fees and market-set interchange fees, equals to $\frac{vb+vs}{12}$. Assuming that government-set interchange fees are socially optimum interchange fees, then calculating the (government-set) interchange fees without including demands of merchants and consumers will make this discrepancy bigger and bigger. Thus, the government-set interchange fees will be far below the market-set interchange fees.

Error

As having described above that *error* means the doers employ their own assumptions, too-ready assumptions that they believe will lead to certain outcome, and resulting in incorrect analysis of certain conditions. The claims that policy makers have *error* appear as follows.

Firstly, it has been claimed that the policy makers have failed to determine whether market failure exists in case of interchange fees. Market failure determination is a necessary tool for the regulator to assess whether government intervention is needed to make any correction of market failure. It roots from the cardinal virtue of regulation: "*to do good or to do no harm*".[78] Card networks and many having opinion in favor of them claim that there is actually no single market failure on card payment scheme (inclusive interchange fees) and therefore no need for government intervention in whatever forms.[79] Interchange fees are essential to support the sustainability of card network operations and not market failure.

Secondly, the *error* in form of wrong assumptions lays down on the predictions that merchants will pass-through 100 percent of savings they earn from the reduction of interchange fees to the consumers. This in particular applies to the case of Australia, and certain extent to US. The reality is merchant almost never pass-through their savings resulting from the reduction of interchange fees to the consumers. Empirical studies on savings pass-through demonstrate that the average rate of pass-through is often less than 100 percent rather than equals to 100 percent or more, while research on retail pricing shows that price in retail is sticky and tend to increase rather than decrease.[80]

Imperious immediacy of interest

The immediate interest as one rationale of purposive actions leading to unintended consequences was best described by English philosopher and modern economist, John Locke.[81] In 1961, Locke challenged a proposed regulation to cut the interest rate from 6 percent into around 4 percent, arguing that instead of benefitting the consumers who borrow the money, the regulation would harm them in forms of less credit available to the borrowers because the lenders would cut the availability of the credits (for allocating the money to other more valuable investments). In the end, lay people[82] would face issues in income since the regulation would disturb the existing equilibrium.

To some extent, the claim that government intervention on interchange fees brings harm to the consumers is quite similar with Locke's analysis. Policy makers only see immediate interest in adopting policies on

[77] See section 2.2.

[78] Hippocrates, 'Of the Epidemics' written 400 BCE, translated by Francis Adams, available at http://classicsmitedu/Hippocrates/epidemics1ihtml . See also Evans, *Interchange Fees,The Economics and Regulation of What Merchants Pay for Cards*, pp. 35.

[79] Thus, this analysis applies to all four jurisdictions with no exemption: Australia, Canada, EU, and US.

[80] See for instance Evans, *Interchange Fees,The Economics and Regulation of What Merchants Pay for Cards*, pp. 64-66.

[81] Locke, 'Some Considerations of the Consequences of the Lowering of Interest and the Raising the Value of Money'

[82] Locke gave examples widow and orphan. See ibid, pp. 3-5.

interchange fees and override the long-term goals. The immediate interests here appear in form of justification that interchange fees have been set too-high by card networks and therefore need to be reduced. Regulator has failed to observe long-term consequence in reducing interchange fees, in which consumers suffer from higher cost of checking account services and higher level of prices. To make it worst, as stated by French economic Journalist, Frederic Bastiat, in his paper "What is Seen and What is not Seen" there is great distinction between a good economist and bad economist: the good economist considers both the seen and the must-be-foreseen impacts in taking actions, whereas the bad economist focuses only to the seen effect.[83]

Basic value

Basic value as one reason leading to unintended consequences under Merton's theory can explain more in understanding the battle in ruling interchange fees in card payment operations. Merton stated that under basic value rationale, the purposive actors react upon their fundamental value only, and believe that there is no necessity to consider other actions having no relevancy to the basic value. In case of interchange fees in card payment operations, there is strong evidence that the basic values are different between those of the policy makers and of card payment networks.

The basic values of card networks in general appear in two values: the sustainability of the card scheme operations and the profitability. It looks very simple and seems to be simplified, but in fact it does not. Sustainability of card scheme is the most essential value of card payment scheme. Thus, it must be maintained and supported if the economy wants to keep gaining the benefits of such scheme. As one demonstrated on its study, electronic payments, which are recently dominated by card payments, have contributed to the increase of nation's GDP by 0.3 percent for developed economies and 0.8 percent of developing countries.[84]

In addition to the existence of the card network operations, the sustainability notion includes balancing the demands of issuers in issuing payment cards, of merchants in accepting cards as payment methods in selling goods and services, and of consumers in using cards for payments. The interchange fees arrangement serves the best in functioning this balance, stimulating issuing banks to invest more in innovation and provide more services/benefits to consumers, allowing merchants to increase their sales by accepting cards, and encouraging consumers to perform transactions more using cards. It is actually easy to understand why card networks strongly defend their scheme inclusive the interchange fees arrangement because they want –or they need to be exactly- to survive and develop.

The second value of card networks is profitability. Although one may see this value as "less" valuable –at least from broaden perspective such as society benefits- than sustainability, this value is actually not less important. This has roots from the basic reason why one establishes corporation, to get profit. However, this value might be less important once it conflicts with a more justified value such as justice or compliance to law and order. In this case, there is strong argument that this value needs to be adjusted, in line with the 'higher' value.

So, what are the basic values of policy makers and why do they insist to adopt certain policies if it brings harm to consumers? The basic values of policy makers differ from one jurisdiction to another. However the values can be classified into two main values: achieving and maintaining payment systems stability and efficiency,[85] and improving market competition to create market efficiency that lead to consumer's welfare. The first value is applicable to jurisdictions adopting policies on interchange fees in forms of regulation. Those are Australia for credit cards and US for debit cards.[86] This value, in more particular maintaining

[83] Bastiat, 'What Is Seen and What Is Not Seen'

[84] Moodys, 'Moody's Analytics: The Impact of Electronic Payments on Economic Growth' (2013)

[85] Achieving payment system's efficiency is more relevant to this case. However, since the mandate and power of the central bank cover mainly to the payment systems stability (that includes efficiency), both stability and efficiency are highlighted.

[86] See elaboration on recent policies on interchange fees having described above.

payment system efficiency, comes from the mandate and power of the central bank as payment system authorities: to regulate and to oversee payment systems operations.[87] The oversight power includes conducting assessments, monitoring, and inducing changes if necessary to correct market failures or irregularities.

The second value of the policy makers is to improve market competition in order to achieve market efficiency that leads to consumer's welfare. This value applies to jurisdiction adopting policies on interchange fees in forms of competition law enforcement such as that of EU and Canada. However, the case of Canada has no relevancy for further elaboration since the competition tribunal has dismissed the application filed by competition authority.[88] The tricky part in discussing this value comes when one tries to analyze whether the intended-results of employing competition law enforcement to interchange fees are achieved. One indicator to determine the successfulness of competition law enforcement is to see whether consumers are benefited with such policies, for instance with more choices of products, better services, and lower prices.[89] Many claims that this policy harms consumers in forms of higher prices (Australia and US) because merchants fail to pass-on their savings resulting from the reduction of interchange fees to the consumers (Australia), or do not change the price because of other factors such as sticky prices (US), and in form of higher checking account cost to consumers because banks try to recover their revenue-loss from the interchange fees reduction (US). The summary of comparison of basic values between policy makers and card networks is provided on **Table 1** below.

Table 1 Comparison of basic values between policy makers and card networks

Jurisdictions	Policy Makers		Outcome (Challenges)	Card Networks Basic Value
	Interchange Fees Policies	Basic Values (Policy Approach)		
Australia	Regulation capping credit card interchange fees.	Achieving and maintaining payment systems stability and efficiency (power and mandate as payment systems authority).	- Changing the structure of the market (shifting from 4-party scheme to 3-party scheme). - Decreasing consumer's welfare in forms of high price to consumers (merchants fail to pass-through their savings to consumers).	- Sustainability of network operations - Profitability
Canada	Competition law enforcement on interchange fees, but dismissed by the competition tribunal.	Improving market competition that leads to market efficiency and consumers welfare (power and mandate as competition authority).	Prediction that consumer will suffer from higher level of prices.[90]	- Sustainability of network operations - Profitability
EU	Competition law enforcement on interchange fees, endorsed by general court but still pending	Improving market competition that leads to market efficiency and consumers welfare (power and mandate as competition	Prediction that consumer will suffer from higher level of prices.[91]	- Sustainability of network operations - Profitability

[87] Under Payment Systems Act and Central Bank Act in Australia, RBA need to first designate certain payment systems operations under their power to be able to assess and oversee such payment systems operations. Visa and MasterCard scheme have been designated under RBA oversight. However, US law does not apply 'designation' process, meaning that all payment systems operations are basically under the oversight of payment systems and relevant authorities.

[88] See previous elaboration on recent policies in Canada.

[89] Joaquín Almunia, 'Competition and Consumers: the Future of EU Competition Policy, a speech delivered on European Competition Day' (May 12, 2010)

[90] Not happen yet because the policy has not been implemented since it has been dismissed by the competition tribunal of Canada.

[91] Similar with that of Canada, the outcome based on other values has not happen yet because the policy in the EU has also not been implemented until the appellate court reaches its decision.

Jurisdictions	Policy Makers		Outcome (Challenges)	Card Networks Basic Value
	Interchange Fees Policies	Basic Values (Policy Approach)		
	under appellate court.	authority).		
US	Regulation capping debit card interchange fees.	Achieving and maintaining payment systems stability and efficiency (power and mandate as payment systems authority).	Decreasing the consumer's welfare in forms of higher charges of banking cost (checking account fees) and higher prices for goods and services.	- Sustainability of network operations - Profitability

5 Conclusions and Further Discussion

Robert K Merton's theory on unintended consequences provides a framework to have a better understanding on the battle in ruling interchange fees in card payment networks, from policy makers' side as well as from card networks' side. Using the previous studies on the economic and legal perspectives of interchange fees as substances, in particular those under the theory of two-sided market, and combining with Merton's theory as the framework, it becomes clearer that such battle exists because of several reasons.

First, it can be argued that the regulator using incomplete analysis before adopting policies capping the interchange fees. The incomplete analysis appears in determining the level of the interchange fees without including the variable cost and the demands of merchants and consumers. Thus, the government-set interchange fees fall below the market-set fees. Under Merton's theory of unintended consequences, this is classified as *ignorance*. Second, although this is still debatable, the regulator has applied its analysis incorrectly, based on their own assumptions –so-called too ready assumptions that will lead to intended outcomes. These assumptions are namely defining market-set interchange fees as market failure and confidently assuming that merchants will pass-on their savings resulting from the reductions of interchange fees to consumers. In fact, interchange fees have been set up for more than 40 years and are essential for the feasibility and sustainability of card payment schemes. In addition, the intended pass-on of savings from merchants to consumers has never existed but in small amount. Almost 80 years ago, Merton recognized this symptom and called it as *error*.

The third reasoning is *the imperious immediacy of interest.* By judging that the recent market-set interchange fees is too high, policy makers tend to reduce the level of interchange fees, by promulgating regulation or enforcing competition law, without observing long-term consequences. More than 160 years ago, Frederic Bastiat warned us the possibility of this circumstance by mentioning that the good economist must observer not only the seen but also the foreseen, while the bad economist only sees the seen.

The last rationale, and this is the strongest compared to the previous ones, is the distinct basic values between the regulators and the card networks. For Australia and US, as their policies appear in forms of adopting regulation, the basic values of regulators are achieving and maintaining payment systems stability and efficiency, under the mandate and power of payment systems authorities. It is worth noting that payment system efficiency is more relevant in this case, since one objective of regulating the interchange fees is to encourage consumers using more efficient payment instruments. As for EU and Canada, as their policies appear in forms of competition law enforcement, the basic values of the authorities are improving market competition that can lead to market efficiency and consumers welfare. However, it comes into puzzle when determining the outcome of these policies since the obvious indicators to measure the successfulness of competition law enforcement are the state of consumers having more choice of product, better services, and lower prices. The real outcome so far, however, is the opposite. Those basic values of the regulators are actually not only different but also "attacking" the values of card networks, which are sustainability of card operations and profitability. The value of profitability perhaps can be ignored or at least reduced once it conflicts with another more 'valuable' values such as justice or constitutional values. However, the value of

sustainability cannot be ignored because it is simply realization of the reason why card payment systems today exist.

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