

assumed—where a consumer uses credit cards for those transactions for which he or she has a relatively high willingness to pay—and it need not arise in other models of demand, even when there is a monopoly merchant.<sup>63</sup>

80. The models discussed so far demonstrate that the nature of competition among merchants and among issuers can affect the efficiency of the market outcome. A final point to note is that increased competition among acquirers might simultaneously promote increased merchant acceptance and efficient card holding and use. The logic underlying this conclusion is that increased competition among acquirers could be expected to reduce the markup of merchant service fees over the interchange fee and acquisition costs, all else equal. The lower merchant service fees would make card acceptance more attractive to merchants and could lead to lower surcharges (or bigger discounts) for the use of credit and charge cards.

81. In summary, economic theory provides reasons to believe that surcharges can serve as an important means of internalizing external effects but that the market outcome may not be fully optimal in the presence of frictionless surcharging. The lesson of these models is that both the structure of consumer demands and the nature of retailer market structure can affect the degree to which retail price differentials reflect underlying differentials in a merchant's costs and benefits of various payment mechanisms. Under some conditions, these differentials will exactly reflect the underlying cost and benefit differentials, thus perfectly internalizing the external effects. In other cases, the differentials may be smaller or larger than ideal. There is no general finding that merchants with market power will set retail price differentials that are biased against credit and charge cards. Moreover, in some cases the problem is not network effects, it is issuer market power.

## **VI. EQUILIBRIUM IN THE PRESENCE OF NO-SURCHARGE RULES**

82. When merchants are forbidden to surcharge, the neutrality result discussed in the previous section may no longer hold, which raises questions of the welfare effects of interchange fees and the determination of optimal interchange fee levels.

### **A. EQUILIBRIUM FOR A GIVEN INTERCHANGE RATE**

83. The presence of a no-surcharge rule breaks the logic of the interchange neutrality argument presented in the previous section. But even with a no-surcharge rule, neutrality still holds when merchants are perfectly competitive. To see this fact, suppose that card-based transactions are more costly to merchants than are other transactions. Then under a no-surcharge rule, individual merchants will specialize. Some merchants will accept credit and charge cards and will charge relatively high prices. Other merchants will accept only cash and will charge relatively low prices. Any merchant that tried to set a common price for both card

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<sup>63</sup> See Part IX.E below and cross-references therein.

and non-card transactions would lose all non-card sales unless it set the same price as the non-card stores. But then it would fail to cover its card acceptance costs.<sup>64</sup>

84. When there are economies of scale at the retail level and merchants offer differentiated products, it may not be economically viable for retailers to specialize in terms of which payment mechanisms are accepted. For example, suppose a small town has four restaurants, each offering a different cuisine. Given the economies of scale involved in operating a restaurant, the town's market might not be large enough to support eight, twelve, or more restaurants offering the same four cuisines, but some accepting only cash, others accepting only credit and charge cards, and still others accepting only debit cards.

85. The remainder of this section maintains the assumption that economies of scale and merchant differentiation make it economically infeasible to have separate stores for each different type of payment mechanism. In this case, a single merchant will accept multiple payment mechanisms and charge the same price for all types of transaction under a no-surcharge rule.<sup>65</sup> A profit-maximizing merchant sets this common price based on the average marginal cost of a transaction, where the average is taken over types of transaction. Merchant pricing behavior can no longer "undo" the effects of interchange rates because there is no way to distinguish between card users and non-card users.

86. In theory, a no-surcharge rule thus makes it possible to use the interchange fee as a means of internalizing network effects. But, at the same time, the rule takes away surcharges as a means of internalizing network effects. Because of the no-surcharge rule, consumers no longer face retail price signals that convey the net benefits or costs incurred by merchants due to the use of different payment mechanisms. As Professors Gans and King have nicely summarized,

Under the no-surcharge rule, the customer chooses the level of credit card transactions according to their [sic] own marginal costs and benefits. They [sic] ignore the marginal costs and benefits of credit card purchases to the merchant.<sup>66</sup>

Hence, no-surcharge rules substitute one mechanism for the other. Which one performs better? The market outcome under a no-surcharge rule depends critically on the cardholder benefits net of any fees they pay to issuers or rebates they receive from them. These fees and rebates, in turn, depend on the level of the interchange fee.

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<sup>64</sup> For a more detailed analysis of this case, see *An Economic Analysis*, §4.2.

<sup>65</sup> In practice, merchants may offer discounts for the use of cash. However, no-surcharge rules limit merchants' abilities to maintain retail price differentials among other payment mechanisms.

<sup>66</sup> *Regulating Interchange Fees* at 11.

## B. ECONOMIC ANALYSIS OF EFFICIENT INTERCHANGE FEES

87. In principle, the interchange fee could be set to reach an efficient balance of the costs and benefits realized on the two sides of a card-based transaction. There are two central questions. First, what is the socially optimal interchange fee? Second, will economic self interest lead to privately chosen interchange fees that are at least approximately socially optimal?

88. An early and classic analysis of interchange fee setting was provided by Professor Baxter.<sup>67</sup> Recall that the efficiency effects of an interchange fee derive from its effects on merchant service fees and cardholder fees, which in turn affect merchant acceptance and consumer card use. Professor Baxter found that the socially optimal interchange fee is one that results in a card use fee to consumers equal to the total social costs of a card-based transaction (*i.e.*, the sum of the acquirer and issuer's transactions costs measured relative to the transactions costs of the next best payment mechanism) minus the merchant's marginal transactions benefits.<sup>68</sup> This price ensures that, when a consumer compares his or her private benefit of card use with the price of card use, he or she will be comparing the sum of merchant and consumer benefits with the social costs of card use, and thus will make the socially efficient choice.<sup>69</sup>

89. Professor Baxter compares the setting of interchange rates on an issuer-acquirer pair basis with the collective setting of rates at the system level. He argues that "collective institutional determination of the interchange fee is both appropriate and desirable," and that "individual establishment of the interchange fees will almost certainly produce chaotic results, such as higher fees and instability within the card systems."<sup>70</sup>

90. Although, if accepted, this finding indicates that the collective setting of interchange fees is preferable to a decentralized system, this finding does *not* establish that the interchange rate will collectively be set at the economically efficient level. Moreover, Professor Baxter's analysis of whether private parties will set the interchange fee at the efficient level is based on a flawed assumption. Specifically, Professor Baxter adopted the assumption that merchant willingness to pay for card acceptance can be taken as a measure of the transactions benefits that merchants enjoy from card acceptance.<sup>71</sup>

91. This assumption matters because it affects the degree to which market forces—in particular merchants' willingness to "resist" card acceptance—will drive a card system to set an

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<sup>67</sup> William F. Baxter, "Bank Interchange of Transactional Paper: Legal and Economic Perspectives," *The Journal of Law & Economics*, Volume 26, Number 3, October 1983 (hereafter *Baxter*).

<sup>68</sup> Professor Baxter did not explicitly solve for the optimal interchange fee, but it is implicit in his analysis (*Baxter* at 552 and 553).

<sup>69</sup> Recall that this is just what surcharges did in the analysis of Hotelling competition discussed in the previous section.

<sup>70</sup> *Baxter* at 586.

<sup>71</sup> *Baxter* at 545.

efficient interchange fee. As Rochet and Tirole point out, as a consequence of this assumption, Baxter's model generically "overstates merchant resistance by ignoring that card acceptance is a competitive instrument."<sup>72</sup> The reason is that a merchant may be willing to accept cards for the increased-sales benefits, in addition to the transactions benefits. And, as discussed above, an individual merchant's increased-sales benefits may not be social benefits. Because each merchant acting alone may be willing to pay more than the social value to accept credit and charge cards, merchants may accept cards even when the interchange fee and resulting merchant service fees are set inefficiently high.

92. In a more recent and technically sophisticated paper, Professor Richard Schmalensee formally models the private setting of interchange rates and compares the equilibrium interchange rates with the socially optimal ones. Professor Schmalensee finds that, if merchants collectively have a linear demand curve for card acceptance, consumers collectively have a linear demand curve for card use, and acquiring and issuing each is monopolized, then the interchange fee that maximizes total issuer and acquirer profits also maximizes both card use and a measure of economic welfare.<sup>73</sup> He also finds that, when demands are linear but issuing and acquiring are not each monopolized, both the profit-maximizing value of the interchange fee and the welfare-maximizing value depart from the card-use-maximizing value in the same direction.<sup>74</sup>

93. An important and fundamental criticism of Professor Schmalensee's analysis concerns the measure of economic welfare on which his results are based. He adopts the assumption that merchant willingness to pay can be taken as a measure of social benefits. Professor Schmalensee is careful to observe that this assumption deserves scrutiny because merchants' demand for card acceptance derives from consumers' demand to use cards.<sup>75</sup> As he points out, his welfare measure ignores distortions that might arise when merchants exercise market power and set prices above costs.<sup>76</sup> A more important criticism, however, is that merchants' demand for card acceptance may be a very misleading measure of economic welfare. Specifically, *there may be very little connection between an individual merchant's incentives to accept credit and charge cards and the overall effects of card acceptance on merchant and social welfare.*<sup>77</sup>

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<sup>72</sup> Rochet and Tirole at 15.

<sup>73</sup> Richard Schmalensee, "Payment Systems and Interchange Fees," National Bureau of Economic Research, Inc., Working Paper 8256, April 2001 (hereafter *Schmalensee*), at 17.

<sup>74</sup> *Schmalensee* at 18.

<sup>75</sup> *Schmalensee* at 7.

<sup>76</sup> *Schmalensee* at 7 and footnote 22.

<sup>77</sup> Dr. Wright also notes the failure of the Baxter and Schmalensee analyses to provide models in which merchant willingness to accept cards is derived from a model of the underlying benefits of card use. (*Optimal Interchange Fees* at 4.)

94. This point is essentially the same one made in Rochet and Tirole's critique of Baxter's analysis. Nevertheless, it is worth exploring further. The following stylized example illustrates the dangers of Professor Schmalensee's assumption. Consider a market served by two merchants. Some consumers prefer one merchant, other consumers prefer its rival, but each consumer is willing to patronize either merchant depending on the relative prices. Suppose that each consumer purchases exactly one unit of the good sold in this market, so that the only question about a consumer's purchase behavior is from which merchant he or she will make a purchase.<sup>78</sup> Because total consumer purchases are fixed, one immediately sees that, *from the perspective of merchants as whole*, acceptance of credit cards has no effect on total sales. Yet, merchants may still have individual incentives to accept credit cards because an individual merchant may garner increased sales through card acceptance. Summing up individual merchants' acceptance incentives, without accounting for the harm to other merchants, overstates the benefits of card use.<sup>79</sup>

95. The fact that merchants' willingness to pay for card acceptance can be a very misleading measure of economic welfare raises serious doubts about the validity of Professor Schmalensee's conclusions about the relationship between privately and socially optimal interchange fees. There may be models of merchant behavior under which Schmalensee's conclusions are correct, but the existence (and relevance) of any such models should be treated as an open question at this point. In short, Professor Schmalensee's model does not provide a rigorous basis for concluding that privately set interchange rates will be efficient.

96. Rochet and Tirole model merchants' acceptance incentives based on fundamental parameters. They assume that acquiring is competitive and consider a variety of market structures for issuing. When issuers are perfectly competitive as well, the optimal interchange fee is zero.<sup>80</sup> When issuers are less than perfectly competitive, Rochet and Tirole find that a positive interchange fee can promote efficiency.

97. In the Rochet and Tirole model, the role of the interchange fee is *not* to internalize network effects or other externalities. Instead, the interchange fee compensates for the pricing distortions introduced by the exercise of issuer market power. Rochet and Tirole find that subsidizing issuers with market power will induce them to reduce their prices, partially compensating for the standard monopoly output restriction. This finding suggests that policies aimed at increasing issuer competition would reduce both the loss of economic welfare due to issuer market power and the need for an interchange fee. Moreover, it raises the public interest question of whether it is desirable to elevate the prices paid by non-card users (through interchange fees and no-surcharge rules) in order to pay issuers not to exercise their market power with respect to card users.

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<sup>78</sup> This model is studied in depth by *Rochet and Tirole*.

<sup>79</sup> A more complete analysis of this effect is provided in Part IX.G below, where it is shown that Schmalensee's approach overstates the benefits of card use by 100 percent.

<sup>80</sup> Rochet and Tirole do not formally analyse the case of perfectly competitive issuers. A more complete analysis of this case is provided in Part IX.B below.

98. Rochet and Tirole also compare privately and socially optimal interchange rates and find that an “issuer-controlled” association may choose an interchange fee that leads to “overprovision” of credit card services.<sup>81</sup> This finding is one illustration of a more general result: *In the presence of no-surcharge rules, setting relatively high interchange fees can promote inefficiently high levels of credit and charge card usage.*

99. Professors Schwartz and Vincent also find that the combination of a privately optimal interchange fee and a no-surcharge rule can lead to the overuse of credit and charge cards. They find that a monopoly card network with a monopoly issuer may use rebates to create incentives for excessive card use, leading Schwartz and Vincent to make the following observation:

It might be thought that card issuer rebates to cardholders ... is evidence of strong competition for cardholders. These results show, instead, that rebates may be a pricing tactic by a monopolist, designed to increase the impact of the [no-surcharge rule]!<sup>82</sup>

100. Dr. Wright extends the Rochet and Tirole model to allow for heterogeneous merchant transactions benefits from card use. (Rochet and Tirole assume that all merchants enjoy the same benefits per transaction.) He shows that the determination of the socially optimal interchange fee is more complex than is suggested by the Baxter analysis. Wright examines how the interchange fee can balance merchant and consumer incentives to participate in a card system, and how the weights in that balancing depend on the benefits that one party’s participation in the system generates for the party on the other side of a transaction. He establishes that socially and privately optimal interchange fees typically diverge.<sup>83</sup>

101. Dr. Wright also argues that merchants’ socially excessive acceptance incentives (due to the beggar-thy-neighbor aspect of increased-sales benefits) give rise to an efficiency argument for higher interchange fees.<sup>84</sup> The logic is that merchants are willing to remain on a card network even if the merchant service fee exceeds their transactions benefits, while consumers will drop off if the price of card use exceeds their transactions benefits. As an argument for a positive interchange fee, this logic hinges on the assumption that the net transactions benefits that would be enjoyed by merchants if merchant service fees were equal to acquirer transaction costs are positive so that there is a positive external effect in need of internalization.<sup>85</sup>

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<sup>81</sup> Indeed, the only time the privately optimal interchange fee level does not exceed the socially optimal level is when each is set at the highest level consistent with merchant acceptance of cards. (*Rochet and Tirole*, Proposition 3 at 17.)

<sup>82</sup> Marius Schwartz and Daniel R. Vincent, “Same Price, Cash or Credit: Vertical Control by Payment Networks,” draft version November 2000 (hereafter *Schwartz and Vincent*) at 15.

<sup>83</sup> *Optimal Interchange Fees* Propositions 1 and 2 at 17 and 18, and at 30.

<sup>84</sup> *Optimal Interchange Fees* at 8 and 29.

<sup>85</sup> Stated in terms of the formal notation described in the Technical Appendix, the

102. Professors Gans and King consider the case of a monopoly merchant in their baseline model. Like other authors, they explore the role of interchange fees in balancing the costs and benefits enjoyed by two sides of a transaction. For their baseline model, Gans and King find that the socially optimal interchange fee is sensitive to the relative marginal benefits enjoyed by consumers and merchants from card-based transactions.<sup>86</sup> They also find that the socially optimal interchange fee depends on the degree of issuer competition (the fee helps offset the reduction in card use due to issuer market power) but not the degree of acquirer competition, because consumers (not merchants) choose the payment method.<sup>87</sup>

103. Summarizing the findings on socially optimal interchange rates, there are situations in which it is optimal to use interchange fees to rebalance the costs and benefits enjoyed by the two sides of a card-based transaction. The socially optimal fee level depends on the nature of merchant, issuer, and acquirer competition, as well as consumer characteristics. As a general matter, when no-surcharge rules are in effect, there is little reason to believe that it is optimal to set the interchange fee equal to either an issuer's marginal costs of a card transaction or zero.

104. The findings on the relationship between the interchange rate chosen by a rationally self-interested association and the socially optimal interchange fee can be summarized as follows. In general, they can be expected to differ from one another. One source of the divergence is that private parties will respond to merchants' willingness to accept cards, which may be a poor measure of the overall effects of card acceptance on merchant welfare. Because of this distortion in acceptance incentives, privately optimal interchange fees may promote socially excessive card use.

### C. CURRENT PRACTICES

105. Economic theory notwithstanding, an important question is: How do the associations and their members actually set interchange fees? Even if there were fully developed models establishing conditions under which privately optimal interchange rates are socially optimal, the question of whether the associations conform to these models would remain. To date, there is little hard evidence on how the associations actually set their interchange fee levels in Australia. Moreover, the processes that have been attributed to them in various responses to the *Joint Study* do not conform to the recommendations of the various economic models that have been cited.

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assumption is that  $b_m - c_A > 0$  for at least some merchants.

<sup>86</sup> *Regulating Interchange Fees*, Proposition 2 at 12.

<sup>87</sup> *Regulating Interchange Fees*, Proposition 5 and discussion following at 17. This result appears to assume that the merchant would never refuse to accept cards at the socially optimal interchange fee. Moreover, as the authors note (at 18), acquirer competition could matter if there were endogenous entry of merchants.

106. Neither the associations nor their members provide much detail regarding their current procedures for determining interchange fees in Australia.<sup>88, 89</sup> Instead, each association asserts that competition among payment mechanisms ensures that there cannot be a problem with interchange fees. For example, MasterCard argues that they have set the fee at an appropriate level because if it had been set

too high or too low in relation to what benefits the system can deliver to all its participants -- then the participants will behave (according to incentives created by the inappropriate interchange fees) in such a way that the four party systems are rendered not viable.<sup>90</sup>

This argument, however, fails to account for either the possibility of credit card system market power or the divergence between an individual merchant's private acceptance incentives and social benefits.

107. Although both MasterCard and Visa point to competition as a guarantee that interchange will be set efficiently, the premise of competition is suspect. As noted earlier, there is overlapping ownership and governance of Bankcard, MasterCard, and Visa, and both issuing and acquiring are concentrated markets. In his widely cited paper arguing in favor of collectively setting interchange fees, Professor Baxter stated that

antitrust and banking authorities should be alert to ensure that the number of payment systems is as large as the attainment of economies of scale permits. Though unbridled autonomy within a system cannot be attained, unbridled rivalry between a multiplicity of systems should be encouraged.<sup>91</sup>

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<sup>88</sup> According to MasterCard's rules,

The interchange fee, the incentive interchange fee, cash disbursement accommodation fee, and the ATM cash disbursement fee are designed to compensate a member for particular expenses that it incurs as the result of interchange transactions. For sales transactions, various elements of expense make up the interchange fee, including cost of processing, costs of money, and increased risk due to the use of MasterCard cards in interchange transactions. (*MasterCard Bylaws and Rules*, May 1999, §11.09(a))

<sup>89</sup> Visa asserts that

The setting of interchange fees is a complex matter that requires commercial judgment. In the current arrangements, this judgment is shaped by the realities of market-place competition: between VISA and its open credit card network competitors; between the open credit card networks and their closed counterparts; between credit cards and debit cards; and between cards and other means of payment. This judgment is then tested in the negotiating process over interchange between members, which elicits information about the likely outcomes with alternative possible fee levels. (*Visa Response* at 25.)

<sup>90</sup> *MasterCard Submission* at 6.

<sup>91</sup> *Baxter* at 587.



The current system of governance and ownership does not encourage full competition. At a minimum, this finding highlights the importance of policy makers' understanding the process by which the associations set their interchange fee levels.

108. According to the Australian Bankers' Association (ABA), the MasterCard methodology is based on the recovery of specific issuer costs attributable to the provision of services to merchant acquirers.<sup>92</sup> According to the ABA, the interchange cost comprises a per-transaction element to cover processing costs and a percentage element to cover risk and funding costs. In determining actual interchange fees, the interchange cost may be adjusted to take into account the fees charged by other schemes, the need to encourage adoption of new technologies, and the need to improve merchant acceptance in certain segments.<sup>93</sup>

109. According to the ABA, under the Visa methodology all costs attributable to the "payment functionality" of credit cards are allocated to issuers and acquirers based on cardholder and merchant demand for that functionality.<sup>94</sup> Interchange is then the difference between the issuers' allocated costs and actual costs. Interchange fees in this methodology may be adjusted based on the setter's commercial judgment.<sup>95</sup>

110. As described by the ABA, MasterCard and Visa's processes of basing interchange fees on allocations of cost components between merchants and consumers based on functionality do not conform to any of the economic analyses that have been cited in this matter. In all of the models, the optimal merchant service fees and consumer card services charges depend only on the *sum* of the marginal costs of providing service and the conditions of demand.<sup>96</sup> To the extent that the formulas for optimal interchange fees depend on the individual components—issuer marginal cost and acquirer marginal cost—it is because those components affect the pricing decisions separately made by issuers and acquirers.

111. Dr. Wright, who has served as a consultant for Visa, briefly describes Visa's interchange methodology in one of his papers analyzing issues raised by the *Joint Study*. He

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<sup>92</sup> Australian Bankers' Association, "Credit Card Networks in Australia: An Appropriate Regulatory Framework," Submission to the Reserve Bank of Australia, July 2001 (hereafter *ABA Submission*), at 50.

<sup>93</sup> *ABA Submission* at 50. It is my understanding that, notwithstanding this claim regarding the calculation of interchange costs, credit card interchange fees are collected entirely on an *ad valorem* basis in Australia.

<sup>94</sup> *ABA Submission* at 50.

<sup>95</sup> *ABA Submission* at 50.

<sup>96</sup> Cost allocations based on specific functionality could be economically sensible if specific services were sold to merchants and card users on an unbundled basis and the consumption of these services by one side of a card-based transaction had no effect on the welfare of the other side. The interchange fee, however, affects the prices charged for bundles of services associated with a card-based transaction which, as respondents have emphasized, affect both sides of the transaction.

characterizes the Visa Australia fee-setting process as “the balancing of profitability between acquiring and issuing banks, where profits are scaled by revenue.”<sup>97</sup>

112. When issuers and acquirers have constant unit costs (which need not be the same for issuers and acquirers), this rule is equivalent to an equal markup rule. Hence, the rule ascribed to Visa indicates that, if issuers are less competitive than acquirers and tend to have higher markups, then the interchange fee should be lower than otherwise if this will lower issuer markups relative to acquirer markups. This is the opposite of what is indicated by the analyses of Professors Gans and King, Professors Rochet and Tirole, and Dr. Wright.<sup>98</sup> Indeed, if acquirers were perfectly competitive, and thus earned zero average markups, the process described by Dr. Wright could lead to negative interchange fees designed to make issuers’ net costs so high that even with the exercise of market power they would not earn positive economic profits. This is a rather perverse feature of the process, and it strongly suggests that it does not promote efficiency.

113. Although several parties have made representations about the process by which the associations’ members set interchange fees in Australia, it is my understanding that no respondent has provided contemporaneous documents showing the actual processes used to set current interchange levels. Moreover, there are questions whether the associations and their members possess the knowledge needed to follow some of the processes that they are said to follow or aspire to follow. For example, the interchange formulas cited by Visa as justifying unconstrained private rate setting depend in part on the price elasticities of consumer and merchant demand for cardholding and acceptance.<sup>99</sup> Yet Visa has provided no evidence that it explicitly takes into account these price elasticities. Indeed, it is my understanding that no respondent has submitted elasticity estimates. Further, in the United States, but not in Australia, Visa has interchange fees that vary across merchant categories. This difference raises the question of whether costs and elasticities are more uniform in Australia than in the U.S., or suggests that Visa uses different methodologies in different countries. If the latter is the case, then three important policy questions are: (1) what explains the differences; (2) is there a reason that Visa follows an optimal policy in one country but not the other; and (3) is Australia the country in which Visa and its members are not pursuing the optimal policy? Finally, Visa’s Australian members last updated the interchange rate in 1993, which raises the question of whether the relevant market conditions have remained unchanged since then or if Visa is pursuing a different approach than laid out in responses to the *Joint Study*.

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<sup>97</sup> *An Economic Analysis* at 33. Acquirer revenues in this scaling are equal to merchant service fees minus interchange fees paid. In other words, in calculating profit-to-revenue ratios, interchange fees are treated as negative revenues rather than costs.

<sup>98</sup> See *Regulating Interchange Fees*, Proposition 5 at 17, *Rochet and Tirole* at 17 (if issuers have a given margin of card fees minus net issuing costs, for example, then the socially optimal interchange fee in their model increases one for one with that margin, as long as merchants continue to accept cards), and *Optimal Interchange Fees* at 23.

<sup>99</sup> *Visa Response* at 14, citing *Schmalensee*.

#### D. PROPOSALS FOR FUTURE RATE SETTING

114. There are benefits from allowing collective rate setting rather than having each issuer-acquirer pair negotiate separately. At the same time, it does not follow that private parties will collectively choose the interchange fee level that is optimal in terms of its effects on economic efficiency and consumer welfare. The possible divergence between social and private incentives has several implications:

- It is desirable to promote inter-network competition broadly.
- Transparency is valuable, so that competition policy and banking authorities can monitor the interchange fee-setting process for signs of trouble.
- There may be scope for public intervention to improve matters. This intervention could take the form of mandatory procedures to ensure transparency, implementation of policies designed to increase competition in the credit and charge card industry, the imposition of ceilings on interchange fee levels, or direct fee setting, for example.
- An assessment of the value of intervention must consider not only the problems with the current outcome, but also the possible adverse consequences of intervention.

115. Several proposals have been put forward for ceilings or caps on interchange fee levels:

- In its Avoidable Cost methodology, the ABA proposes that, rather than prescribing an explicit methodology for setting interchange fees, key principles should be set to which any interchange methodology must conform.<sup>100</sup> The key pricing principle is that the interchange methodology used recovers

in aggregate *no more than the stand alone economic costs* of sustainably delivering the ‘buy now, pay later’ payment functionality only – with *differentiation* of fees allowed where appropriate on the basis of significant cost differences among classes of transactions.<sup>101</sup>

- Professors Gans and King appear to suggest that setting an interchange fee that equalizes issuers and acquirers’ net marginal costs of a transaction may be a reasonable approach in the face of incomplete information about underlying consumer and merchant benefits.<sup>102</sup>
- MasterCard asserts that the interchange fee should redress any imbalance between issuer costs and revenues; issuers should be compensated for costs in providing certain services to merchants, namely, the payment guarantee, funding of delayed payment (by the cardholder), and transaction processing.

The interchange fee is then established by taking these costs as a starting

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<sup>100</sup> *ABA Submission* at 51-55.

<sup>101</sup> *ABA Submission* at 54.

<sup>102</sup> *Regulating Interchange Fees* at 3 and 12.

point and taking into consideration other factors, including the need to provide incentives for widespread issuance and for merchants to accept cards or deploy technology and the level of competitors' fees.<sup>103</sup>

- In Europe, Visa International recently agreed to reduce the level of the interchange fees charged on intraregional credit transactions over a period of several years.<sup>104</sup> Visa also proposed that an “objective benchmark” consisting of the sum of three cost components be used as a ceiling on the association’s interchange fee.<sup>105</sup> The costs to be included, in whole or in part, in the benchmark are those associated with transactions processing, financing of cardholder float, and guarantee of payment to the merchant.<sup>106</sup>

116. An immediate difficulty with the ABA proposal arises from the need to figure out what it actually says. It could be read as saying the interchange fee is subject to a cap equal to the average unit costs of a card-issuing operation not part of a larger organization (*i.e.*, an issuer that derived no economies of scope from related operations). This cap does not appear to have been derived from *any* of the economic analyses cited by respondents to the *Joint Study*.<sup>107</sup> The ABA does not provide an economically sound basis for concluding that its proposed approach would promote consumer welfare or efficiency.

117. The MasterCard and Visa approaches also do not appear to be based on economic analyses. In each case, the approach attempts to allocate costs based on functionality, with only vague reference to demand conditions. As the economic analysis of credit and charge card

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<sup>103</sup> *MasterCard Submission* at 39.

<sup>104</sup> The interchange fee charged on transactions varies with the type of card used. By 2007, the weighted average interchange fee on consumer credit and debit card products will be capped at 0.7 percent. (European Commission, Directorate-General Competition, “Notice pursuant to Article 19(3) of Council Regulation No. 17, Case COMP/29.373 – Visa International (2001/C 226/10),” *Official Journal of the European Communities*, August 11, 2001, at §4.1.)

<sup>105</sup> In some circumstances, Visa would be allowed to charge an interchange fee higher than the benchmark. (*Ibid* at §4.2.)

<sup>106</sup> *Ibid* at §4.2.

<sup>107</sup> To the extent that this proposal can be equated with a cap of  $c_1$  in Dr. Wright’s formal model, he found that such a cap would be optimal under the “extreme assumption” that “acquiring banks pass on all their costs to merchants while issuing banks do not rebate any of the interchange revenue back to cardholders.” (*Optimal Interchange Fees* at 28.)

When acquirers pass through the interchange fee to merchants via merchant service fees on a one-for-one basis, setting the interchange fee equal to the issuer’s transactions costs results in the merchant’s bearing all of the transactions costs of card use (before shifting some of these costs back to all of its customers, card-users and non-card users alike). But the merchant is not the party making the choice of payment mechanism. The Baxter logic suggests that card users should face the net social transactions costs because they are the ones making card use decisions.

markets demonstrates, however, card-based transactions may have costs and benefits for both sides of the market simultaneously, many costs are common, and efficient pricing must be based in part on demand conditions.

118. Only the Gans and King “proposal” stems from an explicitly stated model. However, as the authors note, it is a rule of thumb based on a special case that may be a plausible starting point. Moreover, as discussed in the Technical Appendix, the model itself is a specialized one.<sup>108</sup>

119. The ABA’s proposed approach would include loyalty program expenditures in the calculation of issuers’ standalone costs. The treatment of rebate costs in determining cost-based interchange rates has been a contentious issue. The *Joint Study* asserts that the costs of loyalty programs should not be included in calculating a cost-based interchange rate.<sup>109</sup> The ABA argues that loyalty program costs should be included in any cost-based interchange calculation because loyalty programs are a resource cost and a means of promoting credit cards and attracting cardholders to a specific issuer.<sup>110</sup>

120. The relevant policy question is not whether issuer expenditures on loyalty programs constitute economic costs to issuers. The policy question is whether including rebate expenditures in a (partially) cost-based cap promotes efficiency and consumer welfare. Although rebate expenditures are an economic cost from the issuer’s perspective, one has to be careful about their treatment in setting caps on interchange fee levels. If the costs of rebate and reward programs are included in the calculation of a cap or safe harbor for interchange fees, then public policy might place little limit on the ability of issuers to use inefficiently high interchange fees to support inefficiently high rebates and rewards for card use. The reason is that raising the interchange fee to fund increased rebates and rewards would raise the cap. Under market conditions where merchants accept credit and charge cards even at inefficiently high merchant service fees, issuers might thus be able to set a relatively high interchange rate to exploit the incentive problems created by no-surcharge rules that can lead to socially excessive card use.<sup>111</sup>

121. There is also the practical question of how rebate and reward costs would be included in the calculation of a cap, given that these costs differ widely across different cards. Lastly, it is notable that the formal economic models cited by respondents to the *Joint Study* do not include rebate costs in their analyses of optimality.<sup>112</sup>

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<sup>108</sup> See Part IX.E below.

<sup>109</sup> *Joint Study* at 44.

<sup>110</sup> *ABA Submission* at 31.

<sup>111</sup> See the discussion in §VI.B above.

<sup>112</sup> For example, in the models of *Optimal Interchange Fees*, *Regulating Interchange Fees*, *Rochet and Tirole*, and *Schmalensee*, the formulas for optimal interchange fees depend on the marginal costs of issuing cards, the transactions costs of issuing and acquiring, and demand conditions. The marginal costs of issuing in these models,  $c_1$ ,

**E. WILL PUBLIC INTERVENTION DISTORT COMPETITION?**

122. Visa raises a number of objections to public policy intervention with respect to interchange fees based on the claim that such intervention will distort competition between open and closed credit and charge card schemes.<sup>113</sup>

123. Visa characterizes designation of Bankcard, Mastercard, and Visa as “differential regulation based purely on differences in organizational form.”<sup>114</sup> However, this claim ignores the fact that Bankcard, MasterCard, and Visa have overlapping ownership and governance and collectively dominate the credit card systems market in Australia, and thus designation can be viewed as intervention based on the extent of market power.<sup>115</sup>

124. Visa recognizes the general argument that policy intervention with respect to one competitor may—through market forces—induce other competitors effectively to abide by the same policies.<sup>116</sup> Visa asserts, however, that this general argument does not apply to the specific case of the Australian credit and charge card schemes.<sup>117, 118</sup> Ironically, Visa’s argument that American Express would have unfair and inefficient advantages if Visa’s interchange fee were regulated is based on identifying distortions that follow from card-user rebates, merchants’ inability to surcharge, and the fact that merchants garner individual increased-sales benefits of card acceptance even if there are no collective merchant benefits.

125. Moreover, Visa appears to be of two minds on the efficacy of inter-systems competition and American Express market power. At one point, Visa asserts that

One card with quite low penetration among merchants is American Express.

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comprise transactions costs unrelated to the equilibrium size of per-transactions fees (or rebates) levied by issuers on their cardholders. See, for example, *Optimal Interchange Fees* at 8.

<sup>113</sup> *Delivering a Level Playing Field*.

<sup>114</sup> *Delivering a Level Playing Field* at 7.

<sup>115</sup> Visa also ignores the fact that the associations involve horizontal competitors acting together for certain purposes. Competition policy often draws distinctions between unilateral and coordinated actions. For example, a single firm’s growing to a market share of 60 percent through innovation and the introduction of superior products might raise no competitive concerns, whereas the creation of a firm with a 60 percent market share through the merger of two firms each with 30 percent shares might raise competitive concerns.

<sup>116</sup> *Delivering a Level Playing Field* at 16.

<sup>117</sup> *Delivering a Level Playing Field*, §3.5.

<sup>118</sup> Access Economics argues to the contrary that systems without market power would be forced to lower their merchant service fees in response to competition from other systems. (Access Economics Pty Limited, “Notes on Further Matters Related to Australian Credit Card Regulation,” prepared for American Express International, Inc., August 2001, at 5.)

There would seem to be two possible reasons for this low penetration rate.

The first is that merchant service fees for American Express are too high, so merchants select lower cost methods, such as VISA. Alternatively, one might argue that merchants do not feel as much need to accept American Express because there are fewer cardholders for this card. Both of these reasons are likely to have some validity. [footnote omitted asserting that merchants are less willing to pay the American Express merchant service fee because it has fewer cardholders than other schemes.]<sup>119</sup>

Yet, Visa also declares:

The decision by merchants to accept a particular type of card depends not so much on the number of cardholders that the system has, but rather on the additional cost of accepting the card versus the margin they earn on additional customers attracted by accepting the card (as well as other benefits obtained through card acceptance). [footnote omitted]<sup>120</sup>

and asserts that high merchant service fees are unlikely to drive away merchants when these fees can be used to finance cardholder loyalty benefits.<sup>121</sup>

126. Another claim made by Visa is that designation will impair the association and its members' ability to maximize the number of card transactions. For this claim to be of policy relevance, Visa would have to establish that a designated system would try to maximize the number of card transactions absent designation and that maximizing the number of transactions would be in the public interest.

127. With respect to the first point, Visa assumes that, absent public intervention, an association would set its interchange fee at the level that maximizes the card transactions volume. Visa points to the *Schmalensee* and *Rochet and Tirole* models to provide theoretical justification.<sup>122</sup> However, this result is sensitive to the specific models used and the association's objective function. For instance, in Professor Schmalensee's analysis of the linear demands case cited by Visa, he finds that an association chooses the transactions-maximizing interchange fee when the system's goal is to maximize the sum of issuer and acquirer profits, but he finds that an issuer-controlled system sets the interchange rate above the transactions-maximizing level.<sup>123</sup> Moreover, the following argument demonstrates that an association can have incentives to set the interchange fee higher than the transactions-maximizing level more generally. Suppose the association seeks to maximize some weighted sum of issuer and acquirer profits and that the correspondingly weighted sum of issuer and acquirer margins is an increasing function of the

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<sup>119</sup> *Visa Response* at 32.

<sup>120</sup> *Delivering a Level Playing Field* at 32.

<sup>121</sup> *Delivering a Level Playing Field* at 32.

<sup>122</sup> *Delivering a Level Playing Field* at 21.

<sup>123</sup> Schmalensee at 19.

interchange rate.<sup>124</sup> Suppose, counterfactually, that a system set the interchange fee below the transactions-maximizing level. Then the system could choose a higher fee that both raised the number of transactions and their weighted margins. Hence, weighted profits would rise, contradicting the private optimality of the original choice. Similarly, starting at the transactions-maximizing fee level, there is no first-order loss of quantity from a small increase in the fee, but there is a first-order increase in weighted margins. Hence, profits would rise here too.

128. With respect to the second point, as has already been discussed, setting the interchange fee to maximize the use of credit and charge cards may not be socially optimal. Instead, it may promote the overuse of cards.

129. Lastly, Visa asserts that policy restrictions on interchange fees could lead large banks to set up their own credit card schemes.<sup>125</sup> As Visa points out, one should take into account any increases in organizational costs and the possible loss of network benefits.<sup>126</sup> Visa fails to point out, however, that increased inter-systems competition resulting from new schemes might generate static and dynamic efficiency gains.

## VII. WELFARE ANALYSIS OF NO-SURCHARGE RULES

130. No-surcharge rules are attempts by the credit and charge card networks to regulate retail pricing. The welfare effects of this regulation are equal to the differences in the welfare levels under the equilibrium outcomes with and without no-surcharge rules in effect. At a broad level, the imposition of no-surcharge rules has several effects:

- No-surcharge rules may force retailers to engage in price discrimination because the rules induce the same prices for transactions with potentially different costs.
- No-surcharge rules alter the nature of competition and thwart the use of retail price signals to guide consumers' choices among payment mechanisms.
- No-surcharge rules remove the neutrality of interchange rates.

Several arguments have been put forth for and against no-surcharge rules.

### A. ADVERSE WELFARE EFFECTS OF NO-SURCHARGE RULES

131. Consider first the adverse effects of imposing a no-surcharge rule.

#### 1. Suppressed Consumption by Non-Card-Users

132. Under a no-surcharge rule, a merchant charges the same price for card-based transactions and others. In setting this common retail price, a rational, profit-maximizing

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<sup>124</sup> This relationship between weighted margins and the interchange rate holds in the *Rochet and Tirole* model, for instance.

<sup>125</sup> *Delivering a Level Playing Field* at 43, for example.

<sup>126</sup> *Delivering a Level Playing Field* at 45.