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Credit Where It's Due

How payment cards benefit Canadian merchants and consumers, and how regulation can harm them

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Executive Summary

Payment cards and associated networks facilitate efficient retail transactions, providing enormous benefits to both buyers and sellers:

- Debit cards offer security, convenience, and a ready access to funds that benefits consumers and merchants alike.
- Credit cards provide all these benefits and more, enabling consumers to spend money they don't currently have in their bank accounts.
- This in turn enables merchants to sell additional goods and services they wouldn't otherwise sell.
- By obviating the need for expensive in-house credit operations, credit cards enable small merchants to participate in the modern retail economy.
- Electronic payments expand small merchants' geographic reach online to a degree unthinkable in the absence of credit and debit cards.
- Growth in the use of electronic payments has also created more general benefits to society and the economy by increasing efficiency and expanding the availability of credit.
- One study of European countries estimates that a country may save 1 percent or more of its GDP by switching from all paper to all electronic payments.

These benefits are often impaired by overzealous regulation. The claim – made by Canada's merchants and the NDP – that interchange fee regulations, interference with surcharging rules, and restrictions on the "honour-all-cards" rule are beneficial to "all stakeholders, particularly small and medium sized businesses, entrepreneurs, and consumers" is simply false. The opposite is more nearly the case. There is little reason to believe that most stakeholders would benefit from such regulations, and every reason to believe that consumers would be harmed.

Instead of imposing regulations on the operators of payment card networks, which would undermine competition and harm consumers, Canada should seek to promote competition. The most effective way it can do that is to remove government-imposed restrictions on Interac that limit its ability to compete freely. Perhaps of greatest importance is the removal of restrictions on the setting of interchange fees. The removal of these restrictions would enable Interac members to invest in new technologies and build out their networks knowing that if they offer a superior service, they will be able to charge more for it. Equally important is avoiding the imposition of costly new restrictions, like proposed regulations prohibiting the imposition of no-surcharging or honour-all-cards rules.

Sadly, rather than recognizing that the way forward for Canada is to reform its debit card system in the competitive model of its credit cards, some critics want to dictate significant business practices and impose price controls on the credit card market. As we demonstrate, however, the proposed interventions would almost certainly increase costs for consumers, reduce innovation, and hamper the efficiency of the Canadian payment system.

Competition has been a key driver of the investments that have enabled the emergence of payment card ecosystems. But competition has not always and everywhere been permitted to operate freely. For nearly 20 years, Canada's debit card system has operated as a government-regulated monopoly. By contrast, its credit card

system has been subject to more-or-less open competition.

These regulations have produced unintended and undesirable effects. Generally, they distort incentives, undermine investment in system expansion and the deployment of new technologies, and slow up the shift to electronic payments.

Notably, the Interac Consent Order (a set of restrictions on the operation of Interac, including its nonprofit status, governance structure, and caps on interchange fees, that were established following a ruling by the Competition Tribunal that Interac was anti-competitive), although aimed solely at the "debit market," has artificially lowered the costs of interchange fees for debit card transactions and thereby incentivized merchants to discriminate against other forms of payment, likely slowing the development of credit card and mobile payments in Canada.

This has had follow-on consequences. For example, the difficulty of using debit cards for transactions online and the slower adoption of credit cards has likely contributed to the relatively slow uptake of online transacting by Canadians. Meanwhile, the lack of Interac's international interoperability has made it exceedingly difficult for Canadians travelling abroad to use their debit cards.

In the US, regulation of interchange fees for debit cards under the Durbin Amendment has resulted in harmful cost shifting. Banks have significantly reduced the availability of free chequing accounts, with particularly deleterious effect on poorer consumers. In 2009, prior to Durbin, 76 percent of banks offered free chequing; by the end of 2012, that had fallen to 39 percent.

Australia's experience with interchange fee price controls is similar. There is no evidence that Australia's comprehensive cap on interchange fees – in place since 2003 – has resulted in lower retail prices for consumers. Australian consumers on average are unambiguously paying more and getting less as a result of the country's interchange fee price controls and payment network regulation.

There is no evidence that this regulation of payment cards has benefited consumers in the form of lower retail prices. In other words consumers face considerably higher banking costs, while paying the same for their consumer goods. Since the higher banking costs fall disproportionately on poorer consumers, interchange fee and payment network regulation have been distinctly regressive. Moreover, while the enactment of such regulation may have proven a boon to large "big box" retailers, it has actually resulted in a price *increase* for many small merchants.

Worldwide, large merchants have benefited from payment network regulations at the expense of consumers. There is every reason to believe the same outcome will continue to occur in Canada if current efforts to regulate are enacted and unless existing regulations are relaxed.

Résumé Exécutif

Les cartes de paiement et leurs réseaux rendent plus faciles et plus efficaces les opérations de détail, ce qui procure ainsi d'énormes avantages à la fois aux acheteurs et aux vendeurs :

- Les cartes de débit offrent la sécurité, la commodité et une facilité d'accès à des fonds qui bénéficient autant aux consommateurs qu'aux commerçants.
- Les cartes de crédit offrent encore plus d'avantages, car elles permettent aux consommateurs de dépenser de l'argent qu'ils n'ont pas actuellement dans leurs comptes bancaires.
- En retour, ceci permet aux commerçants de vendre des biens et des services qu'ils ne pourraient offrir autrement.
- En leur évitant de coûteuses opérations internes de crédit, les cartes de crédit permettent aux petits commerçants de participer pleinement à l'économie moderne du commerce de détail.
- En outre, les paiements électroniques leur permettent d'accroître leur portée géographique en ligne à un degré qui serait inimaginable en l'absence des cartes de crédit et de débit.
- L'utilisation accrue des paiements élec-

troniques a également engendré plusieurs avantages généraux pour la société et l'économie en augmentant l'efficacité du commerce de détail et en élargissant la disponibilité du crédit.

- Une étude menée dans les pays européens a révélé que passer des paiements en format papier aux paiements électroniques peut faire économiser à un pays plus de 1 % de son PIB.

Ces avantages sont menacés par la réglementation. Il est donc tout simplement mensonger pour les commerçants canadiens et le NPD de déclarer que la réglementation en matière de commissions d'interchange, les interdictions de suppléments et les restrictions à l'égard du principe qui dicte d'honorer tous les types de cartes sont bénéfiques pour « toutes les parties prenantes, en particulier les petites et moyennes entreprises, les entrepreneurs et les consommateurs ». C'est plutôt le contraire qui est vrai. Il y a peu de raisons de croire que la plupart des parties prenantes bénéficieraient de cette réglementation, et toutes les raisons de croire que les consommateurs seraient lésés.

Au lieu d'imposer une réglementation visant les exploitants de réseaux de cartes de paiement, qui pourrait miner la concurrence et nuire aux consommateurs, le Canada devrait chercher à promouvoir la concurrence. Le moyen le plus efficace de le faire, c'est en annulant l'ordonnance de consentement, ou au moins certaines de ses dispositions clés pour assurer qu'Interac ne soit plus restreint par les règles limitant sa capacité à développer et à soutenir la concurrence. Il est encore plus important de supprimer les restrictions à l'établissement des commissions d'interchange. La suppression de ces restrictions permettrait aux membres d'Interac d'investir dans de nouvelles technologies et de construire leurs réseaux tout en sachant que s'ils offrent un service de qualité supérieure, ils seront en mesure d'établir leur facturation en conséquence. Il est tout aussi important d'éviter l'imposition de nouvelles restrictions coûteuses, telles que celles qui seront prévues dans la réglementation interdisant d'imposer l'absence de suppléments ou des règles relatives à l'obligation d'honorer tous les types de cartes.

Malheureusement, certains critiques veulent imposer des pratiques commerciales et des contrôles de prix sur le marché des cartes de crédit au lieu de reconnaître qu'une réforme du système des cartes de débit au sein du modèle concurrentiel des cartes de crédit est la voie à suivre pour le Canada. Comme nous le démontrons, toutefois, les interventions proposées auraient presque certainement pour effet d'accroître les coûts imposés aux consommateurs, de réduire l'innovation et d'entraver l'efficacité du système de paiement canadien.

La concurrence a joué un rôle clé pour amener les investissements ayant conduit à l'émergence des écosystèmes des cartes de paiement. Mais la concurrence n'a pas toujours été encouragée et n'a pas toujours fonctionné librement en tout lieu. Depuis près de 20 ans, le Canada est doté d'un système de paiement par carte de débit qui fonctionne comme un monopole réglementé par le gouvernement. Par contre, son système de paiement par carte de crédit s'est un peu ouvert à la concurrence.

Ces réglementations ont produit des effets imprévisibles et indésirables. Généralement, elles entravent le bon fonctionnement des mesures incitatives, sapent l'investissement qui vise le développement du système et le déploiement de nouvelles technologies, en plus de ralentir la transition aux paiements électroniques.

Notamment, l'ordonnance par consentement du réseau Interac, bien que visant uniquement le « marché du débit », a artificiellement abaissé les coûts de commissions d'interchange des transactions par carte de débit et ainsi incité les commerçants à décourager d'autres formes de paiement, ce qui a probablement ralenti le développement des cartes de crédit et des paiements par téléphone mobile au Canada.

Cela a eu des conséquences. Par exemple, la difficulté d'utiliser la carte de débit pour effectuer des transactions en ligne et l'adoption plus lente des cartes de crédit a vraisemblablement contribué à l'adoption relativement faible des transactions en ligne effectuées par les Canadiens. Entre-temps, le manque d'interopérabilité de l'Interac à l'échelle internationale a rendu extrêmement difficile pour les Canadiens qui voyagent à l'étranger l'utilisation de leurs cartes de débit.

Aux États-Unis, la réglementation des commissions d'interchange par cartes de débit en vertu du « Durbin Amendment » a été nuisible en termes des coûts. Les banques ont considérablement réduit leurs services de comptes-chèques gratuits, ce qui a eu des effets particulièrement néfastes sur les consommateurs à plus faible revenu. En 2009, avant le « Durbin Amendment », 76 % des banques offraient des comptes-chèques gratuits; à la fin de 2012, cette proportion avait chuté à 39 %.

L'expérience de l'Australie relativement au contrôle des prix sur les commissions d'interchange est similaire. Rien ne confirme que la limite sur les commissions d'interchange mise en place par l'Australie depuis 2003 a entraîné une diminution des prix de détail pour les consommateurs. Sans contredit, les consommateurs australiens paient davantage en moyenne et obtiennent moins de résultats à la suite de la mise en vigueur du contrôle des prix sur les commissions d'interchange et de la réglementation touchant les réseaux de paiement.

Rien ne permet de conclure que cette réglementation des cartes de paiement a entraîné une baisse des prix de détail qui a bénéficié aux consommateurs. En d'autres termes, les consommateurs doivent débourser considérablement plus pour acquitter leurs frais bancaires, tout en payant le même prix pour leurs biens de consommation. Puisque les frais bancaires touchent de façon disproportionnée les consommateurs à plus faible revenu, la réglementation sur les commissions d'interchange et les réseaux de paiement a été nettement régressive. En outre, alors que l'adoption d'une telle réglementation peut avoir constitué une aubaine pour les grandes surfaces, elle a effectivement entraîné une *augmentation* des prix pour un grand nombre de petits commerçants.

À l'échelle mondiale, les grands commerçants ont bénéficié de la réglementation des réseaux de paiement au détriment des consommateurs. Il y a toutes les raisons de croire que les mêmes résultats continueront de se produire au Canada si les efforts actuels se soldent par la mise en place d'une nouvelle réglementation et que celle qui est déjà en place n'est pas assouplie.

Introduction

Canada – and Canadians – have benefited from being relatively early adopters of electronic payments, in the form of payment cards. This was stimulated in part by a consortium of banks and credit unions developing an interoperable payment network in the 1980s, Interac, which enabled widespread use of debit cards. But in recent years, Canada seems to have fallen behind other countries: in a 2010 survey by Nielson, 28 percent of Canadians had never made an online purchase, whereas only 15 percent of Americans said the same. Meanwhile, a Boston Consulting Group study found that in 2010 Canadians made only 3.4 percent of their retail purchases online, compared with 5 percent in the US and 13.5 percent in the UK (Dean et al. 2012).

A recent study for Canada Post looked at online shoppers' decisions and found that of the factors assessed, "ease of checkout" was the second most important in determining whether a purchase was made (2013). Given the importance of payment systems to the checkout process, it is reasonable to conclude that the relatively slow adoption of online shopping is at least in part due to the difficulty of making such transactions using debit cards, which are used for more than half of all consumer electronic payments in the country (Task Force for the Payment System Review 2010).

Canadians benefited from being early adopters of electronic payments.

Paradoxically, the dominance (at least until recently) of debit in Canada may in part be due to a legal challenge brought against Interac by the Director of Investigation and Research at the behest of merchants in 1995, alleging that the payment network had abused its dominant po-

sition. Among other things, the resultant Consent Order imposed by the Competition Tribunal in 1996 capped interchange fees and lifted restrictions on the application of surcharges by merchants. These changes to the contractually agreed terms of Interac transactions reduced the marginal cost to merchants of accepting Interac-based debit cards. As a result, some merchants initially chose to accept only debit cards, which in turn incentivized some consumers to hold debit cards but not credit cards.

But the restrictive nature of Interac's governance framework and fees meant that it was not able to keep up with consumer trends. In particular, it did not quickly adapt to the emergence of online transactions, it was slow to introduce secure online payment methods, and to this day it is nearly impossible to use outside Canada. By contrast, companies in the still competitive credit card market have been quick to innovate, enabling consumers to make transactions online securely, both at domestic and foreign websites. As a result, in the past decade, consumers have shifted towards using credit cards – and the total value of credit card transactions now exceeds that of debit, though the number of debit transactions still exceeds credit.

Perhaps responding to this recent resurgence in use of credit cards, merchants convinced the Competition Bureau to bring a case against the operators of two payment networks, Visa and MasterCard, claiming that they have also abused their dominant position. The Commissioner of Competition had sought an order limiting surcharges on the use of premium cards, relying on language in section 76 of the *Competition Act*. The Competition Tribunal found that neither the legislative history nor other Tribunal decisions could support an order, but suggested that a legislative fix is in order.

The Tribunal case was followed by a call by the New Democratic Party (NDP) for radical political intervention into the payment card network. According to the NDP Orange Paper, "[t]he cost associated with processing electronic payments continues to hamper the competitiveness of Canadian business," and "high" credit card processing fees result in "reduced profit margins for merchants [especially small businesses] and higher retail costs for consumers" (Thibeault 2013). Moreover, although the NDP admits that higher costs to consumers are offset by the use of rewards cards (which essentially amount to a rebate or price reduction on purchased goods or services), this benefit to consumers comes at the expense of small businesses and "cash- and debit-using consumers (indirectly through higher prices)." The NDP touts the Interac network as a more-effective alternative to the market-based process by which credit card processing fees are set.[1]

A restrictive framework prevents Interac from adapting to consumer trends.

Based on these assertions, the NDP urges a new regulatory regime for the Canadian credit card market. Although many of the party's proposals are vague, the NDP supports three specific interventions (Thibeault 2013, 4):

- First, the party urges the imposition of a "hard [price] cap" on interchange fees modeled after the one imposed in Australia several years ago.
- Second, the party urges mandating that merchants be permitted to impose surcharges on credit card transactions.
- Finally, the NDP supports a ban on the "honour-all-cards" rule negotiated as part of the contracts between payment card networks and merchants that choose to accept the network's cards.

The NDP Orange Paper urges the adoption of a "hard cap" on payment card interchange fees, claiming that consumers will benefit because savings to merchants of reduced costs for payment cards will be passed on to consumers in the form of lower prices (2). In addition, it claims that small businesses will benefit through lower costs for accepting payment cards.

An alternative argument made by proponents of

price controls on interchange fees and prohibitions on surcharge restrictions is the claim that use of rewards cards, which are owned predominantly by higher-income consumers, results in unfair wealth redistribution from low-income consumers to high-income consumers.

But does the evidence support these contentions? We thoroughly investigated all the available evidence, from Canada and around the world, in order to assess the merits and likely impacts of such interventions. The paper proceeds as follows:

- We begin with a brief history and explanation of payment card systems, followed by an explanation of the role of payment network providers in building out and maintaining balance in payment systems. We show that a payment network is a classic example of what economists call a "two sided market."
- We next discuss the dynamic nature of this market and the implications for attempts at regulatory intervention. We show, for example, that the scope of a market may be difficult to define *ex ante*. As a result, interventions in one "market" (such as the Interac consent order, which is aimed solely at the "debit market") have repercussions in other "markets" (such as the market for credit cards and mobile payments).
- We next turn to a discussion of the evidence of the economic effects of various examples of payment system regulation, especially interchange fee regulation and interventions that prohibit certain common practices, such as restrictions on fee surcharging. We stress the importance – for the purposes of regulating payment networks – of understanding how costs and benefits are distributed throughout the system, including how and whether merchants' costs are passed on to consumers.
- Finally, we evaluate some recent proposals for payment network regulation, including the Tribunal decision and the NDP Orange Paper. For context and contrast, we describe other regulatory changes that might facilitate more dynamic competition and expand the benefits and range of payment options for Canadian consumers.

The Role, Function, and Benefits of Payment Cards

Although often taken for granted, the modern electronic payment card system is a true marvel: an instantaneous, secure, globally connected system available 24 hours a day, in person, online, or over the phone. Consumers can travel the globe (and businesses can conduct commerce around the globe) without a penny in their pockets. Electronic payments are the cornerstone of the evolving e-commerce economy and mobile banking platforms, which have brought the convenience and efficiency of modern payments systems to billions of people around the globe.

To understand how the modern electronic payment card system works today, it helps to go back to the beginning. In 1914, Western Union began offering charge cards to some customers. In the 1920s, many larger US stores followed suit – several using a system called "Charge Plate." These simple, "two-party" charge cards were a formal way for merchants to offer short-term credit to regular customers, which would typically be paid off in full at a specified date.

Electronic payments are the cornerstone of e-commerce and mobile banking.

While some merchants no doubt accepted cards from other stores early on, Diners' Club established the first full-fledged payment network in 1951. American Express followed in 1958. These "three-party" cards enabled (and still enable) consumers to acquire goods in multiple stores, with payment being made by the card issuer, to

be repaid by the card owner at a later date.

In the 1960s, two groups of banks established their own payment networks, which eventually became MasterCard and Visa. These "four-party" systems (and other similar networks) work as follows: (1) the consumer obtains goods or services from (2) the merchant, and (3) the merchant's "acquirer" then acquires funds from (4) the card issuer (the company who issued the card to the consumer and to whom the consumer will owe payment). Meanwhile, the entire process occurs over a platform operated by one of the payment networks.

As the history of payment cards attests, these payment systems were developed for the mutual benefit of the various parties – not only consumers, but merchants, as well.

The Benefits of Payment Cards for Merchants and Consumers

As a payment device, debit cards offer merchants two important benefits over cash for many transactions: ticket lift and faster throughput of customers (Layne-Farrar 2011, 14). Merchants that accept debit cards reduce consumers' liquidity constraints, enabling them to spend more than they have in their pockets at the time of sale. This could, for example, allow a consumer to take advantage of a temporary sale or make an impulse buy, both of which benefit merchants. As a result, by making payments more efficient (in this case by relaxing liquidity constraints), payment cards provide a benefit to merchants in excess of their cost.

In addition, merchants have benefited from the processing and payment speed of payment cards, which have increased dramatically over time. For example, less than a decade ago, the approximate time for checkout for cash and electronic payments at fast food restaurants was essentially the same. Since that time, however, the payment speed of cash has remained largely the same while the payment speed of payment cards has fallen by half. This increase in payment speed enables merchants to serve more customers at lower labour cost, and to serve customers faster, thus benefiting *other* customers, as well, who do not have to wait as long in line (Layne-Farrar 2011, 17–8). This advantage is especially valuable for high-volume merchants, such as fast food restaurants, for which rapid customer service is an essential part of their business model.

The payment speed of payment cards has fallen by half in less than 10 years.

The relative advantage of electronic payments thus also increases as the wages of retail employees increase. Consider, for example, the dramatic increase in checkout speed, reduction in labour costs, and increased throughput of gas stations adopting "pay at the pump" technology, and the similar benefits from self-check checkout lines at grocery stores.

According to one economist, once the benefits of accepting payment cards are considered (notably ticket lift and faster throughput), for a wide range of transactions payment cards turn out to be less costly for merchants to accept than cash, even including fees (Layne-Farrar 2011, 57). That the value of McDonald's stock rose 2.7 percent on the news that it would start accepting payment cards is additional evidence that the benefits to merchants of card acceptance exceed the costs.[2]

Perhaps most significantly, global electronic payment card systems offer valuable computational and logistical services to supplement their basic payment functionality that other payment systems (such as cash and cheques) can't replicate. These product attributes enable almost frictionless transactions, reduce fraud risk, enhance financial services competition by extending the geographic reach of financial institutions, and enable the customization of payment instruments through rewards and branding.

The enormous growth in use of debit and credit cards is testament to the scale of those mutual benefits. Between 2006 and 2010 alone, the volume of transactions made using the three largest payment networks (Visa, MasterCard, and

American Express) rose from around $4 trillion to over $6 trillion (Chen 2012). Moreover, the growth of credit card usage by consumers and the commensurate growth of the payment card industry have enabled more merchants to outsource their credit operations to banks – specialized and far more efficient providers. This has relieved merchants and consumers of the costs from risk, fraud, expense, delay, and potential customer ill will associated with operating in -house credit operations (Zywicki 2000; Rochet and Wright 2010).

The Benefits of Payment Cards for Society

Beyond the benefits to both consumers and businesses, the growth in the use of electronic payments has benefited society and the economy generally through more efficient payments and credit systems. One study of European countries estimates that a country may save 1 percent or more of its GDP by switching from all paper to all electronic payments (Humphrey 2003).

Electronic payments can also reduce tax evasion. Cash can be used without leaving a paper trail, making tax evasion and other illegal activities, such as the handling of stolen goods, far easier than with electronic payments (Clotfelter 1983).[3] It is estimated, for example, that 70 to 80 percent of OECD currency stock is either held in the domestic underground economy or in developing countries (Rogoff 1998). A study of the effect of the growth of debit card usage from 1988 to 2003 found substantial substitution of debit cards for small denomination currency but almost no impact on larger denomination currency, which the study attributes to the continued usage of large bills for tax evasion and criminal activity (Amromin and Chakravorti 2007).

Credit and debit cards can also reduce crime. Consumers tend to use credit cards more frequently in high-crime geographic areas, as they are less vulnerable to theft than cash (Humphrey, Pulley, and Vesala 1996). Moreover, access to globalized payment networks also facilitates international travel and payments – as any Canadian carrying an Interac-only branded debit card abroad can attest.

The Additional Benefits of Credit Cards, Particularly for Smaller Merchants

Credit cards offer additional benefits to merchants because they enable consumers to make purchases even when they do not have sufficient cash in their bank accounts. Prior to the nearly ubiquitous acceptance and use of bank-type credit cards, many merchants, both large and small, offered credit to their customers (Zywicki 2000, 92–93). It was very expensive and risky for merchants to manage credit operations. Unlike today's large, sophisticated, and specialized credit card issuers and processing networks, retailers lacked the comparative expertise and economies of scale to operate credit operations efficiently and to minimize losses. This was especially so for smaller merchants that simply could not afford to operate credit operations or bear the risk of uncollectible debts. Moreover, many retailers were reluctant to collect from delinquent borrowers for fear of alienating customers and developing a negative reputation.

As a result, the fees charged by credit card issuers to any merchant must be judged against the total cost incurred by that merchant to operate its own credit operation (Rochet and Wright 2010, 1790). There is no strong empirical evidence of how costly proprietary credit operations were for those who ran them. Nevertheless, considering that most retailers have chosen largely to outsource their credit operations to bank card issuers, it seems likely that those costs exceeded the costs of credit card operations, especially once the indirect costs (such as lost goodwill from aggressive collection on delinquent accounts) are considered.

These effects are most significant for small merchants. For these retailers, the cost of operating an in-house credit system would be prohibitive. The availability of widespread, instantly available credit offered by banks permits small merchants to compete in the modern world. Indeed, while it was economically feasible – if often inefficient – for large retailers to operate in-house credit card programs, these programs were simply not practical for the millions of smaller merchants that lacked the resources and sophistication

needed to implement a card program.

Likewise, in the absence of the widespread use of online commerce facilitated by electronic payment systems, smaller retailers were limited in their ability to access geographically-dispersed consumers. As a result, larger retailers were able to use their card programs to make significant sales gains over their smaller competitors. Thus modern-day payment card systems now also provide small businesses with access to the purchasing power of literally millions of cardholders around the world. These important effects enable small businesses to compete with larger merchants for many of the same transactions on a scale that would not be possible in absence of these electronic systems.

In short, credit card systems have created more product market competition and opened up entire new lines of business to entrepreneurs that would otherwise be foreclosed to them.

Credit card systems created more product market competition and opened up new lines of business to entrepreneurs.

Summing Up the Benefits

The ubiquitous acceptance and use of payment cards in the modern economy is evidence of the economic truism that the benefits of successful goods and services must exceed their costs. Nevertheless, merchants often object that they have "no choice" but to accept payment cards, even if they do not want to. But this objection misses the mark. If it is true – and there is no reason to believe that it is – then why is it so? It is not, as merchants imply, because *card networks* require them to accept their cards, but rather because their *customers* request this amenity. As a result, merchants must respond to customer demand, *even if* it results in higher costs. But in that case the cost to merchants of accepting cards in a competitive market is no different than the cost of providing accessible stores, parking, or free samples (for example) – also amenities demanded by consumers. Hiring polite, well-groomed, and helpful sales employees may be more costly to a business than hiring surly, unclean, and rude ones; clean, well-lit stores are more costly to operate than unclean, dark stores. Yet merchants are "forced" to provide polite employees and clean stores in response to customer demand because the benefits that they receive from hiring polite employees exceed the higher wages that they must pay in order to retain them. The same is true for payment cards.

When evaluating (and regulating) particular aspects of payment systems, it is important to keep these benefits in mind. Unfortunately, many analyses of payment systems forget that readily perceived costs are accompanied by less-obvious (but no less significant) benefits, and that the benefits are mutual. When legal or political intervention is based on such a one-sided analysis, there is a danger that intervention will cause more harm than good.

Understanding the Mechanics of Payments Systems: A System in Balance

In some respects, payment systems resemble ecosystems; they are highly complex webs that have evolved over time in response to propagation and selection pressures. The current structure of any payment system represents a fine balance between the felt needs of millions of businesses and consumers. Just as care and caution must be taken when attempting to "improve" an ecosystem, so must care and caution be taken when considering intervention in a successful and complex payment system. Failure to do so may well upset this fine balance.

In a standard two-party payment card system (such as a department store credit system), the merchant is also the card issuer and acquirer. As a result, balance is easily achieved: The merchant offers regular customers terms that balance the benefits of increased sales against the risk of default and the costs of operating the system. But relatively inefficient two-party systems inherently leave many potential transactions on the table by limiting the pool of participants. Three-and four-party payment card systems overcome that defect by enabling the same card to be used in multiple stores, economizing on operating costs by concentrating them in banks and payment processors which can bear them more efficiently. But balance in a three- or four-party system is far more complex than in a two-party system.

Balancing "Two-Sided Markets"

Two-party systems are an example of what economists call "one-sided markets": there is just one seller and one clearly defined group of buyers. These are the kinds of markets that students typically learn about in Economics 101. Sellers seek to meet the needs of buyers in the most effective and profitable way. Changes to their products (in this case, primarily the terms and conditions of their cards) provide them with feedback regarding how best to balance the system.

Three-and four-party systems, by contrast, are examples of "two-sided markets": there are many sellers and many different kinds of buyers, transacting across a platform that belongs to neither. Balance in such systems emerges over time, as the acquirers, issuers, and payment system operators adjust to the needs of sellers (merchants) and buyers (consumers), determining the terms of exchange that will facilitate transactions and maximize value for both groups.

Two-sided markets are ubiquitous in the economy.[4] The quintessential example is the newspaper, which brings together advertisers and consumers, with news coverage (and other content) serving as the bridge to connect the two sides of the market. More modern examples include Apple's iTunes App Store, Internet search engines like Google, and Adobe's portable document format (pdf) software.

Pricing in a two-sided market is complicated and it is common for one side effectively to subsidize the other. Newspapers charge advertisers – and thus subsidize readers – an amount sufficient to attract the optimal number of readers and finance the optimal scope of distribution of the newspaper. Readers pay either a newsstand fee or a subscription fee, which is often much less than the marginal cost of producing and distributing the newspaper; sometimes the fee is zero.

Likewise, advertisers pay app developers, enabling consumers to download apps for free, which in turn incentivizes consumers to buy Apple's products. Meanwhile, Apple profits from ad revenue (it takes 30 percent of gross revenue) and from the sale of products that run the apps (2013). And advertisers pay to promote their wares on Google, enabling users to run the browser and search for items for free.

Adobe's business model is based on *producers* of pdf documents paying to purchase the pdf writer software, which permits them to create documents. Those who simply wish to *read* pdf documents can download the pdf reader software for free, ensuring that creators have an audience for their output. Thus, those who pay to produce pdf documents effectively pay for *both* the pdf writer and pdf reader software.

These examples illustrate a key principle of two-sided markets: "Subsidies" often run from the party on one side of the market to users on the other side through what would otherwise seem to be below-cost or even zero-cost pricing. More generally, in such markets it is typical for the more "inelastic" (less price-sensitive) users of the platform to subsidize those who are more "elastic" (whose consumption decisions are more sensitive to price). Thus, it is to be expected that those who advertise on Google or in a newspaper would bear a disproportionate share of the cost of producing the platform relative to the share borne by consumers directly (Evans 2008).

To reiterate, the key point to recognize about two-sided markets is that *both* parties benefit from the creation, operation, and continued development of the platform that brings the two sides of the market together. In most cases, the

greater the size and efficiency of the network, the more valuable it is to each party. As a matter of basic economics, parties will participate in the network only to the extent that they value the benefits that they receive from it more than the costs that it imposes on them.

Competition and Innovation in a Balanced System

Two-sided markets are often highly dynamic and subject to change wrought by disruptive technologies. But such innovations nearly always benefit both sides of the market, thereby maintaining the balance – or at least achieving a new balance. Consider the impact of ubiquitous access to the Internet on newspapers. Consumers increasingly choose to read their news online or on e-readers, so demand for printed newspapers has fallen, and advertisers have switched to online media, which enable them to reach their target audience more effectively and at lower cost. Again, both consumers and advertisers have benefited from this switch – it is only the newspapers stuck in the old print-based business model that have suffered.

Innovation nearly always benefits both sides of the market.

Likewise, cheques have traditionally been relatively expensive and no-frills payment devices providing a range of benefits to both consumers and merchants.[5] Debit cards provide many of the traditional benefits of cheques but also have other attributes, including significantly lower cost to consumers and reduced risk to merchants of nonpayment. This mutual benefit to consumers and merchants explains the rapid rise of debit cards in the economy and the reduction in cheque use.

These examples demonstrate the benefits of innovation – and also of competition. Specifically, they demonstrate what is sometimes called "platform competition" or "competition for the market." In each case, one type of market or platform (newspapers, cheque-based transactions) is subject to competition from another type of market or platform (Internet-based news, debit cards). When Diners Club was first introduced, it had an effective monopoly in the charge card market and charged merchants a discount rate of 7 percent. When American Express entered the market, the competition drove innovation and led to reduced merchant fees. When the banks created their networks, competition for the market became more intense yet, resulting in innovative products and still lower fees.

In Canada, banks first began to issue debit cards in the 1970s. These early cards could be used only at automated bank machines (ABMs) owned by the issuing bank or trust company. In the early 1980s, Royal Bank of Canada and the Bank of Montreal each made separate arrangements with different international payment networks so that their customers could use wider networks of ABMs. They subsequently each then offered other Canadian banks and trust companies the opportunity to join their proprietary networks, providing interoperability and access to international networks.

In late 1984, Royal Bank of Canada and four other large Canadian banks using the Visa payment network agreed to join their proprietary networks together to form Interac, a fully interoperable network with access to other international systems. A year later, the Bank of Montreal and three of Canada's largest MasterCard-issuing banks and trust companies also joined Interac. These nine banks and trust companies were known as the Charter Members of Interac.

Initially, Interac existed primarily as a "shared cash dispensing" (SCD) service – enabling individuals with a debit card issued by one Interac member to obtain cash from an ABM of any other member. In 1990, Interac began to offer "Interac direct payment" (IDP), a service that enabled debit cardholders to use their cards at merchants' point of sale (POS) terminals. Both of these services offered clear benefits both to consumers and merchants.

The ability to withdraw money at any time of day from any ABM meant that consumers could carry smaller amounts of cash with them, reducing the risk of theft, and enabling them to make unplanned purchases more easily. Merchants benefited from consumers who were able to withdraw money more easily and conveniently. These advantages were magnified with the introduction of IDP, which meant that consumers didn't have to search for an ABM before making a purchase.

These benefits to consumers and merchants of banking with a member of Interac rapidly became apparent, and between 1984 and 1995 a further 18 banks and trust companies joined as "sponsor" members, with access to Interac through the switch of a Charter Member.

Disturbing the Balance: Interac

In 1995, the Director of Investigation and Research brought a case against Interac, alleging

> that the respondents jointly through Interac have substantial or complete control of a class or species of business in Canada; that is, they have joint market power in a relevant market. The relevant market identified by the Director was the supply of shared electronic network services ("SENS"), also referred to as the "intermediate" market. The respondents were alleged to have engaged in anticompetitive acts which has had, is having, and, unless restrained, is likely to continue to have the effect of preventing or substantially lessening competition in Canada in two markets. The first market is the intermediate market for the supply of SENS. The second market is the "retail" market for the supply of shared electronic financial services ("SEFS") to consumers. (*Canada (Director of Investigation and Research) v. Bank of Montreal et al.*)

But whether or not the acts undertaken by members of Interac were anti-competitive depends on one's definition of the "market." The two markets described by the Director of Investigation and Research were, at the time of the case, still evolving. It is difficult to know precisely how they would have evolved. What would have happened to the other 128 deposit-taking members of the Canadian Payments Association that existed in 1995, for example? Would they have joined Interac? Merged? Gone bust? Or would some or all of them have developed a parallel network – or joined another one, such as PayPal?

In any case, the Director's definition of the relevant markets seems at odds with the actual markets that existed at the time. In particular, IDP was in direct competition with the various competing credit card networks (notwithstanding the fact that the IDP ran – and runs – over the same payment networks).[6] But by defining the market very narrowly, the Director effectively defined away this competition. And this narrow definition has had wide-ranging impacts, including – paradoxically – reducing competition.

The Consent Order turned Interac into a non-profit with a new governance structure determined by the Tribunal, opened membership up far more widely, changed the terms on which a member could be a "direct connector" (DC), and revoked Interac's previous service access fee arrangement, replacing it with a narrowly circumscribed "switch fee" (*Canada (Director of Investigation and Research) v. Bank of Montreal et al.*).

Despite initially boosting debit use, Interac's share of electronic transactions is falling.

The upshot of all this was that membership of Interac expanded and the number of merchants offering POS transactions through IDP increased. At the same time, the lower costs of IDP transactions encouraged merchants to give preferential treatment to debit over credit. As a result, by 2003 Canadians had become the highest per capita users of debit cards in the world (Task Force for the Payment System Review 2010).

However, Interac's share of the total volume of electronic transactions has been falling – though it still accounted for 55 percent of all transactions in 2012 (The Nilson Report 2013). Moreover, today credit cards are accepted by a larger number of Canadian merchants (approximately 770,000 accept either Visa or MasterCard or both) (Canadian Bankers Association 2013) than debit cards (approximately 470,000) (Interac). Meanwhile, there are approximately 29 million active Visa and MasterCard accounts (Canadian Bankers Association 2013) and only 23 million active debit card accounts (Interac).

The recent resurgence in use of credit cards in Canada reflects the fact that Canada's credit card system is state-of-the-art and fully integrated with the modern globalized payment system. By contrast, the heavily regulated Interac debit card system has not adapted well to the changing technological environment – and was heavily criticized on this basis by the Task Force for the Payments System Review in its recent report, *The Way We Pay* (2011).[7] For example, whereas Canadians can use credit cards seamlessly to make payments online or throughout the world, their debit cards lack easy e-commerce functionality and only have limited acceptance in the US – and none whatsoever outside the US (Bergevin and Zywicki 2012).

Canadians pay more for banking than Americans but get lower quality.

Moreover, consistent with the economic theory of two-sided markets, whereas merchants gain huge benefits from consumer use of payment cards, these benefits are subsidized by consumers who pay high banking fees to use debit cards, both directly and indirectly through paying higher fees for bank accounts, while receiving lower quality than in other countries. As one set of economists observes comparing payment card systems in Canada and the US, "Canadian consumers pay more and get less … than American consumers" (Evans, Chang, and Weichert 2011, 5).

In the US, in 2009 (prior to the enactment of the Durbin Amendment), 76 percent of US chequing accounts had no monthly service fees and most related products, such as debit cards, online banking, and electronic bill-pay services were free, as well (25). Consumers had unlimited free debit card transactions. Moreover, the average minimum balance needed to qualify for free chequing was only about US$185.

In Canada, by contrast, average annual fees on chequing accounts in 2011 were between C$131-$167 for premium accounts with unlimited debit card transactions and between C$84-$125 for basic accounts with 20 free debit card transactions per month and additional fees for debit card transactions above 20 per month (26). According to one estimate, about 30 percent of Canadian bank accounts pay no service fees, but the average minimum balance for a "free" account was approximately C$1000. Thus, in contrast to the US before the Durbin Amendment, where debit transactions were free for most consumers, once these various monthly fees and additional fees are taken into account, the average cost per debit transaction for Canadian consumers ranges between C$0.27 and C$0.65 (25–26).

Payment Systems out of Balance: Two Case Studies of Regulation

Canada is not the only country where politicians have attempted to improve upon the natural evolution of payment systems with less-than-desirable, unintended consequences. In this section, we discuss political interventions in payment systems in the US and Australia.

The Durbin Amendment and Price Controls in the US

Until 2010, debit cards had become an increasingly attractive payment mechanism in the US, with various innovations – such as contactless cards – being rolled out. As a result, the use of debit increased dramatically, and in the fourth quarter of 2008, consumers for the first time spent more on Visa debit cards than on the network's credit cards (First Data 2010, 5).

But the era of inexpensive, high-quality debit cards came to an end for many consumers with the enactment of the Durbin Amendment in the US. Included in the 2009 *Dodd-Frank Wall Street Reform and Consumer Protection Act*, the Durbin Amendment (named informally after its primary sponsor, United States Senator Richard Durbin of Illinois), imposed severe price controls on debit card interchange fees. The consequences for consumers – especially low-income consumers – and small businesses have been disastrous. The Amendment applies to debit cards issued by all banks and credit unions with assets of more than $10 billion.

The Durbin Amendment provides that "the amount of any interchange transaction fee that an issuer may receive or charge with respect to an electronic debit transaction shall be reasonable and proportional to the cost incurred by the issuer with respect to the transaction." The statute further required that the calculation of "reasonable and proportional" costs should be based on only the *incremental* cost to the issuer of a particular transaction (adjusted by enumerated additional costs), excluding all other costs associated with debit cards, such as the cost of account acquisition, customer service, and other costs of running the program that are not attributable to a particular transaction. It then instructed the Federal Reserve to issue a regulation fixing the price of interchange accordingly.

In June 2011 the Federal Reserve issued its regulation, cutting permissible interchange fees to $0.21 plus 5 basis points of the transaction value, plus an additional $0.01 for fraud protection (Debit Card Interchange Fees and Routing). The average interchange fee for those banks covered by the Durbin Amendment fell from $0.50 to $0.24 per transaction (the average fee charged by exempt banks fell, as well, from $0.45 to $0.43) (Hayashi 2012a, 90–91). The net effect was to dramatically reduce the average interchange fee by approximately 52 percent (98). For signature-authorized debit transactions, the impact was especially large for covered banks, as the permissible interchange fee fell from an average of $0.59 per transaction to $0.24. For PIN debit the reduction was more modest, from $0.34 to $0.23.

Banks lost $6.6–8 billion annually due to the Durbin Amendment's interchange fee cap.

The Durbin Amendment's impact has been disastrous for bank consumers.[8] Early estimates are that banks lost approximately $6.6 billion to $8 billion annually as a result of the interchange fee cap (Hubbard 2013, 29). Confronted with a loss of billions of dollars in interchange fee revenues, banks and credit unions have made up the revenue loss by increasing the cost and reducing the quality of bank accounts for consumers. Some banks initially sought to impose a direct fee on debit card usage by consumers – most notably an effort by Bank of America to impose a $5 monthly fee on debit cards. In response to negative customer reaction, Tara Siegel Bernard writing for the *New York Times* on November 1, 2011 reports banks largely retreated from passing on the loss of revenue directly to those who use debit cards, instead recouping the losses indirectly through higher bank fees and reduced services and access. Most notably, access to free chequing – which had increased from less than 10 percent of accounts in 2001 to 76 percent of accounts by 2009 – fell rapidly. According to a fall 2012 Bankrate.com study, only 39 percent of banks offered free chequing accounts (Bell 2012b), down from 45 percent in 2011, and down by almost half from 76 percent in 2009 (Bell 2011). A summer 2012 survey by MoneyRates.com found that the percentage of

accounts with free chequing fell to 35.3 percent, down from 38.8 percent a year earlier, and that in 2012, only 22 percent of the accounts at large banks (those with more than $25 billion in assets) were still free (Barrington 2013).

Banks also responded by raising other fees and tightening eligibility for free chequing. Bankrate.com's 2012 survey found that the average monthly service charge on a non-interest-bearing chequing account increased 25 percent from 2011, to $5.48 per month, and that the average minimum balance needed to avoid a monthly service fee rose by 23 percent, to $723.02 (with some accounts requiring an average minimum balance as high as $5000) (Bell 2012b). In addition to raising fees, banks reduce costs by reducing services (such as by closing bank branches and laying off workers) (IBC Bank September 22, 2011) and shedding unprofitable customers.

The costs of the Durbin Amendment have been borne disproportionately by low-income consumers.

But the costs of the Durbin Amendment have not been shared uniformly; they have been felt much more harshly by low-income consumers than high-income consumers. For example, Bank of America's CEO stated that the bank will focus on the top 20 percent of its most profitable customers and get rid of the unprofitable ones (Bell 2012a). JPMorgan Chase estimated that new regulations on overdraft programs and price controls on debit card interchange fees made unprofitable 70 percent of customers with less than $100,000 in deposits, which required the bank either to raise fees, reduce costs and services, or shed unprofitable customers, report Dan Fitzpatrick and David Enrich in *The Wall Street Journal*, writing on March 1, 2012. One industry analyst estimated that if debit card revenues fell 50 percent as a result of the Durbin Amendment and overdraft fees fell 30 percent as a result of new regulations, approximately 40 percent of bank customers would become unprofitable, including most of those with incomes under $40,000 per year (Iacobuzio 2010).[9] Thus, the impact appears to have been highly regressive, an ironic (albeit predictable[10]) consequence of reforms that were supposedly intended to benefit consumers.

Lower-income and younger households have been especially hard hit by the new bank fees that have followed in the wake of the Durbin Amendment. Whereas higher-income households can avoid the new fees and still retain access to free chequing by maintaining sufficient minimum balances or using other banks' services, lower-income consumers cannot. Many lower-income consumers have responded by dropping out of the banking system. Surveys by the Federal Deposit Insurance Corporation (FDIC) suggest that the number of unbanked households rose from approximately 9 million (7.7 percent of all households) in 2009[11] to approximately 10 million (8.2 percent of all households) in 2010 (2011, 4).

To determine the net effect of the Durbin Amendment on consumers, it is necessary to compare the increase in the cost of bank accounts for consumers against any pass-through of savings by merchants to consumers (the primary justification offered for the Durbin Amendment). But there is no evidence that the windfall to merchants has been passed through to consumers in lower prices or higher quality. A survey of merchants by the Electronic Payments Coalition, a financial industry supported trade group, found no evidence that the decrease in interchange fees has been passed on in the form of lower retail prices for consumers (2011, 9). Although the survey is not scientific, it does reinforce a key point noted above: although reductions in interchange fee rates are felt immediately by banks and passed on to consumers, it is very difficult to predict how much and in what manner an interchange fee windfall will be passed on to retail consumers. For example, it is estimated that based on a purchase of $40 – the average transaction size for a debit card purchase in the US – the cost savings to the merchant will be approximately $0.07 (Hayashi 2012a, 86). Thus, even if the entire savings from the reduction in interchange fees were passed on to consumers in the form of lower prices, the price difference would

be so small that few consumers would notice.

Moreover, it was argued that the Durbin Amendment would especially benefit smaller merchants. In practice, many small merchants have actually seen interchange fees *increase* as an effect of the Durbin Amendment. Indeed, while the Durbin Amendment has provided a windfall for the big box retailers that lobbied for the legislation, such as Home Depot,[12] it has been a debacle for smaller merchants that have actually seen their interchange fees *rise* as a result of the Durbin Amendment.

Prior to the Durbin Amendment, companies whose transactions tended to be smaller than average paid a special interchange fee that was lower than for other industries. In response to the Durbin Amendment, however, payment card networks eliminated this subsidized rate and decided to charge small firms the same rate as those charged to large firms in order to try to recoup some of the revenue loss imposed by the Durbin Amendment. As a result, many businesses – especially small businesses that previously had preferential pricing – actually saw their per-transaction interchange fees *increase* after the Durbin Amendment went into effect (Shy 2013, 16). For example, Redbox (which rents DVDs from unmanned kiosks) announced that it was forced to raise its prices for a rental from $1.00 to $1.20 in response to the higher fees imposed on it as a result of the Durbin Amendment. Thus, far from receiving the same windfall as stores such as Home Depot, many smaller merchants faced *higher* interchange fees, which at least some of them passed on to their customers.

The bottom line is that low-income consumers must now either pay upwards of $100 per year for a previously free bank account, or pay high fees to cheque cashers or for prepaid cards because they have lost access to a bank account. Such consumers will find little solace in the empty possibility that they *might* save $0.02 on their next Big Mac if savings on debit card interchange fees are passed on to consumers in lower prices for goods and services.

Interchange fees rose for many smaller merchants as a result of the Durbin Amendment.

Things are likely to become even worse for bank customers. In July 2013, in *NACS v. Bd. of Governors of the Fed. Reserve*, a US District Court struck down the Federal Reserve's final regulation as being insufficiently onerous because it allowed issuers to recover some costs not expressly permitted by the terms of the Durbin Amendment. The Court suggested that a proposed earlier version of the Fed's rule, which had essentially permitted interchange fees of approximately only $0.07-$0.12 per transaction, would be more consistent with the Durbin Amendment's restrictions. At that level, permissible interchange fees for covered banks would be slashed by 80 percent or more, which would further exacerbate the consequences of the Durbin Amendment.

Interchange Price Controls in Australia

Australia's experience with interchange fee price controls is similar to that of the Durbin Amendment. The adverse impact on consumers manifested quickly: First, annual fees increased by an average of 22 percent on standard credit cards and annual fees for rewards cards increased by 47–77 percent, costing consumers hundreds of millions of dollars in higher annual fees (Stillman et al. 2008, 13; 15).[13] Second, Australian card issuers reduced the generosity of their reward programs by 23 percent. Third, investments in innovation by card issuers that would have improved card quality likely fell. Fourth, by reducing the profitability of transactional users of credit cards who pay their bill in full each month, the interchange fee cap led card issuers to pursue a more risky pool of borrowers who are more likely to revolve their balances each month.

These negative trends for consumers have continued. A 2012 study by the Payments Policy Department concludes that as a result of the interchange fee price controls consumers are

paying higher fees for lower-quality credit cards, noting that "Overall reward points and other benefits earned from spending on credit cards have become less generous while annual fees to cardholders have increased" (Chan, Chong, and Mitchell 2012). In short, Australian consumers on average are unambiguously paying more and getting less as a result of the RBA's price controls.

In addition, because the RBA's price controls apply only to four-party credit card schemes but not three-party systems such as American Express and Diners Club, its interventions have distorted the competitive marketplace, prompting a growth in three-party schemes at the expense of Visa and MasterCard. The regulatory tipping of the competitive marketplace serves no coherent economic function because three-party schemes charge a merchant discount that is the functional equivalent of an interchange fee in a four-party scheme and serves the identical function of balancing the two sides of the market (Zywicki 2010, 29). But the result is more than economically illogical – it has actually had perverse results because American Express and Diners Club typically charge higher merchant discounts than Visa or MasterCard. As Chan, Chong, and Mitchell observe, "Merchants largely bear the cost of these more generous rewards cards through the *higher* merchant service fees for American Express products, on average, unless they choose to pass that cost back through to cardholders in the form of a surcharge" (2012).

RBA price controls encourage use of three-party systems with higher merchant discounts.

RBA price controls encourage use of three-party systems with higher merchant discounts.

But while interchange fees and the value of rewards have fallen on average, this decline has not been uniform: the authors report that the damage has been much greater to lower-income consumers – card issuers have actually increased interchange fees for high-end platinum/premium cards and reduced interchange fees for standard cards. The authors note that the RBA's rules have created incentives for card schemes to encourage their issuers "to promote cards associated with higher costs" (2012). As a result, "There has … been a substantial increase in the number of platinum card products on offer to cardholders, with some banks replacing their existing gold cards with platinum cards and a number of merchant-branded platinum cards also introduced" (2012). In fact, in 2009 both MasterCard and Visa introduced new *super-premium cards* "with an even higher interchange fee" and even more generous rewards aimed at this most profitable group of customers with the highest spending levels. As in the US, some merchants have also introduced their own premium credit cards that offer substantial benefits and subsidies to favored customers with no indication that they charge those customers a higher price for the higher costs that they presumably impose.[14] As noted above, the regressive impact of Australia's price controls is consistent with the US experience with the Durbin Amendment, which has fallen much more harshly on low-income consumers than the wealthy.

Moreover, there is no evidence that Australia's cap on interchange fees – the longest-lasting experiment to date with regulating interchange fees – resulted in lower retail prices for consumers (Gans and King 2003, 462; 471–472). While several authors have claimed that retail prices have fallen as a result of Australia's imposition of interchange price controls on credit cards, there remains an absence of any real evidence to support this assertion. Indeed, the authors of the RBA's 2012 report simply assert, without a single shred of empirical evidence, that the benefit to merchants is "likely to have been passed on to all consumers, not just those who pay by credit card" (Chan, Chong, and Mitchell 2012). After almost a full decade of experience with price controls, this inability to document any evidence of the size of any alleged pass-through to retail consumers is astonishing. In light of the demonstrable adverse impact on consumers from higher cost and lower-quality credit cards as a result of the RBA's price controls, that the Bank can still blithely assert that retail consumers have ben-

efited, with no hard evidence to support that claim, borders on the irresponsible.

After 10 years of price controls, Australia lacks empirical evidence of lower prices for consumers.

Moreover, even if the RBA is correct to assert that some merchant savings have been passed through to retail consumers, that is only part of the story. Any proper assessment of the welfare impact on consumers requires a comparison of purported lower retail prices with higher credit card prices, yet the authors of the RBA study, and the RBA itself, simply ignore that fundamental question. The unsupported claim by the RBA that "all consumers" have "likely" benefited from lower retail prices would only be true if the total pass-through of merchant savings to retail consumers exceeds the additional costs to consumers from higher fees and reduced card quality. That too is an empirical question – and one on which the RBA and other proponents of price controls have provided no evidence.

The Latest Effort to Regulate in Canada: Targeting the Honour-All-Cards and No-Surcharge Rules

Payment system operators enforce a range of rules that govern the use of cards on their networks by customers, merchants, acquirers, and the like.[15] These rules are designed to ensure the proper functioning of the network, and they impose restrictions that benefit *all* participants, not only merchants. But merchants have focused upon only two of these rules (MasterCard's rules run a few hundred pages, and only a small portion apply to merchants at all) to argue that they are being systematically harmed. The reality is quite different, however.

Among many other things, network rules stipulate that merchants not impose a surcharge on transactions made using their systems and that merchants accept all cards on a particular network if they accept any – the co-called "honour-all-cards" rule. These rules have come under considerable fire and retailers have called for regulation prohibiting the rules (Cowan 2013). The NDP (Thibeault 2013, 4) and the Competition Bureau *(Canada (Director of Investigation and Research) v. Bank of Montreal et al.*) have joined the retailers in seeking prohibition of the rules.

The Honour-All-Cards Rule

The honour-all-cards rule of payment card networks is frequently criticized by merchants, particularly with respect to premium cards that have higher interchange fees for consumers. The "rule" is actually two interrelated rules: an "honour-all-products" rule that prohibits merchants from accepting some but not all cards issued under the network brand and a related "honour-all-issuers" rule that requires merchants to accept cards issued by all issuers under a given logo. Essentially, the rule requires that if a merchant wants to receive the benefits of participating in a particular network, it must accept all cards issued under the network's logo and may not pick and choose which type of cards or issuers within the network it will accept and which it will refuse.

Although contested by merchants, the honour-all-cards rule is essential for a well-functioning payments network. Payment cards are useful to consumers only if they know that their cards will be accepted at any store that accepts a particular network's products. It would defeat the purpose of a payment card network if a consumer who saw a MasterCard logo could learn later that his particular MasterCard product, or

that a card issued by his *particular* issuer bank, would not be accepted by a merchant that otherwise participated in the MasterCard network.

Both the Visa and MasterCard networks are consortiums of many different banks, both as issuers and acquirers. The central purpose of the payment networks is to link together these thousands of issuer and acquirer banks into a network that provides assurance for consumers and merchants that they will be able to pay and be paid within the system. The honour-all-cards rule, therefore, is integral to the networks functioning by assuring consumers that any merchant operating within the card network will accept their cards.

As a result, honour-all-cards rules have been an essential part of the Visa and MasterCard networks from the beginning.[16] And if Canada were to acquiesce to merchants' efforts to prohibit the rule, it would be the first and only jurisdiction in the world to do so (Lipman 2010).

No nation currently prohibits honour-all-cards rules.

The essential role of an honour-all-cards rule within the payment card system can be illustrated by the mirror-image rule that emerged on the other side of the market, the "honour-all-paper" rule, which assures merchants (and their acquirers) that they will be paid (Evans 2011, 11–14). Consider if a merchant chose to accept payment for a Chase Visa card, but a particular issuing bank refused to honour payments to a particular merchant or acquirer. If the issuer could pick and choose which merchant's payments it would honour, then this would obviously reduce the value to the merchant of participating in the payment network – and the value of the network itself. It is only by simultaneously requiring that merchants "honour all cards" to protect consumers, while also requiring that banks "honour all paper" to protect merchants, that the network can function effectively.

It is also worth noting that the honour-all-paper rule is instrumental in the incredible fraud protection that payment networks confer on merchants. Because banks must honour all appropriately processed payments – even if they turn out to be fraudulent – merchants are not on the hook for the costs of fraudulent transactions. This confers enormous benefit on merchants – a benefit balanced in small part by the honour-all-cards rule, which ensures that banks benefit from their participation in the payment network even as they bear the significant costs of fraudulent payments.[17]

In turn, the system of "default" interchange prices is the mechanism by which the card network determines the financial flows among these various actors in the system. Thus, just as issuing banks cannot refuse to accept presentations for payment from particular merchants or acquirers, merchants that choose to participate in a particular network cannot refuse to accept payment from a particular issuer or product. Absent an honour-all-cards rule (and the corollary honour-all-paper rule), the entire payments network could unravel. Once the interchange fee for a particular issuer and product is approved by the payments network, it makes little sense to allow merchants to revisit the question of whether, in its opinion, the fee that has been approved is too high or whether the issuer meets the merchant's standards. Rather, this is what the network is *for*.

The No-Surcharge Rule

Payment networks also generally prohibit merchants from imposing surcharges on payment card transactions, even though the same networks do generally permit merchants to offer discounts for cash.[18] Again the rule serves the overall purposes of the network by assuring consumers who shop at an outlet that accepts their preferred payment card that the consumer's choice of payment method will not result in the consumer paying *more* than the posted or expected price for any goods she purchases.

Because a no-surcharge rule has been adopted in some jurisdictions we have more experi-

ence with its effects. The Interac Consent Order prohibited Interac members from including a no-surcharge rule. Perhaps because merchant agreements with credit card issuers still prohibit surcharging in Canada, surcharging has not been undertaken systematically. However, the Competition Bureau's recent case against Visa and MasterCard was based in part on claims that no-surcharge rules were anticompetitive, harming merchants and consumers alike. Moreover, the NDP recently proposed to introduce a similar measure for Canadian credit cards. So it is worth considering the impact of surcharging restrictions in other jurisdictions.

In Australia, Qantas Airlines implemented a surcharge on credit card users, but did not reduce prices for those paying by cash or cheque, resulting in higher costs for credit card users but no price reduction for others (Stillman et al. 2008, 29). Moreover, the surcharges have been set not by the actual costs imposed by cards, but by what the market will bear: According to a November 25, 2009 *New York Times* article by Kevin Bradsher, one traveler taking a family trip paid a whopping 5.6 percent surcharge to buy a plane ticket using his credit card, far exceeding the interchange fee charged on the transaction. More generally, it has been noted that "[i]n Australia and the UK, some merchants are now imposing surcharges that exceed their acceptance costs or are imposing surcharges in nontransparent ways" (Hayashi 2012b, 3). These problems "tend to be concentrated in certain industries or payment channels, such as online transactions in Australia and the travel sector in the UK."[19]

The willingness of a merchant to surcharge, therefore, appears to be only coincidentally related to whether a particular payment system actually costs more than alternatives. Instead, it is more likely related to consumers' price sensitivity for particular payment systems, rather than costs. If that is true, and merchants are surcharging opportunistically, one would expect to find surcharging in those markets where payment cards are used *most* and especially those for which payment cards are used almost exclusively. Thus, under this view, above-cost surcharging should be most prevalent in industries such as airline tickets, hotels, and online shopping, for which virtually all payments are made by payment cards and for which cash (and usually cheques) is not a viable substitute. And that is exactly what has happened. There is no evidence that card acceptance costs are uniquely high in these industries yet the evidence unambiguously demonstrates that merchants are surcharging above their net costs of card acceptance. In turn, this evidence of abusive surcharging has led to calls for still further political intervention to limit surcharging in both the UK and Australia to cost-based surcharging (Hayashi 2012b, 3) – although without apparent appreciation for the irony that surcharging is most prevalent in those industries where payment card usage is virtually universal.

But the tendency of merchants to surcharge according to elasticity of demand for payment cards rather than cost raises still another difficulty: as the relative cost of various payment systems changes over time, this will also change the efficient surcharge level. And unless regulators constantly monitor and revise their allowable surcharging levels (which also vary from industry to industry), the problem of abusive surcharging will arise again, with the potential to harm consumers and the economy.

Abusive surcharging arises faster than regulation can respond.

For example, in the Netherlands merchants routinely surcharge for sales amounts below €10–15 (Bolt, Jonker, and van Rensellar 2008, 7). This surcharging has had observable effects of dramatically reducing the usage of payment cards for low-value transactions. One study, based on estimates of costs in 2002, suggested that this surcharging pattern may have been efficient: the "break even" point for the net social costs of payment cards versus cash was at that time estimated to be €11.63 (9).[20] On the other hand, as a result of technology and improved processing speed, between just 2002 and 2005/2006, the relative cost of payment cards versus cash was halved. Moreover, since that time, it is likely that

the breakeven point has fallen still further, as processing speeds have become still faster. By contrast, there have been few similar technological innovations in the handling of cash, and as the total cost of employee time has risen over time, the cost of cash handling has experienced no similar decline.

Nevertheless, as the authors of the Netherlands study note, even though the breakeven point for cash versus card transactions fell from about €11 to €5, the threshold at which merchants imposed surcharges did not (23). This meant that merchants were surcharging many debit card transactions for which debit cards were in fact l*ess expensive* than cash transactions, thereby shifting many consumers to an inefficient use of cash. The authors of the study concluded that the social cost of this inefficient surcharging might be more than €50 million (22). This indicates that the claim by retailers that they must surcharge to recoup their costs is disingenuous: although the relative cost of payment cards declined over time they have continued to surcharge at the same threshold rate as they did previously.

In addition, as noted above, there is extensive debate over whether, in fact, debit cards are on net more expensive than cash once all merchant benefits (including faster throughput and ticket lift) are included. Moreover, even while the theoretical case for allowing surcharging is strong, there remains the additional practical problem of determining the appropriate price for surcharging and preventing merchant opportunism.

An alternative to merchant surcharging for payment cards is for merchants to offer discounted prices to those who use cash. Given that merchants are able to discount for cash – which is economically identical to surcharging for card usage – why do they insist on having the right to impose surcharges for payment cards in addition? The most plausible answer is that merchants recognize that by marking products with a lower price on the shelves and then imposing a higher price through a surcharge at the register, they can ambush consumers with higher prices after the consumer has already expended the time and energy to pick out their purchases and thus are unlikely to return the products to the shelves at that point of the transaction.

The difference between a cash discount and a surcharge on cards is precisely that cash discounting is more transparent to the consumer, whereas consumers don't realize that they are being forced to pay a higher price for card usage until they are at the checkout register. If merchants demonstrate a greater willingness to impose card surcharges than cash discounts, the most likely explanation is the relatively non-transparent ambush dynamic of surcharging, as opposed to the more-transparent consumer-friendly dynamic of cash discounts. The primary beneficiaries of any surcharge are merchants, not consumers. In the October 7, 2013 issue of *The Star*, Dana Flavelle writes that reality explains why the Consumer Council of Canada is reported to have responded enthusiastically to the recent decision of the Competition Tribunal to dismiss the case against Visa and MasterCard, noting that it will prevent "price surprises" at the checkout.

In some situations, such as a restaurant, the consumer may have no choice but to acquiesce to a surcharge after the meal has already been prepared and consumed. Likewise, as noted in the examples above, merchants offering more expensive goods – for which the use of credit cards are likely the only solution – are likely to abuse their position opportunistically. Given the lack of evidence that forcibly reducing interchange fees leads to substantially lower prices for consumers in the first place, it seems especially unlikely that permitting surcharging of payment card customers will result in lower prices for cash customers, as opposed to simply higher prices for payment card customers.

The Cost of Cash

To put it in succinct and current terms, money's destiny is to become digital. This general conclusion emerges from an examination of money's long historical record and its likely relationship to future socioeconomic changes. Historically, money has been on the path towards greater abstraction, or pure symbolic representation disassociated from a precise physical materialisation, for millennia.

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (2002, 7)

The inordinate attention given to the cost of credit and debit cards in recent years in Canada, the US, and elsewhere implicitly assumes that cash is a less costly form of payment. Indeed, surveys of merchants by the Bank of Canada (Arango, Hogg, and Lee 2012) confirm that most small business owners prefer cash to credit and debit cards because they believe there is virtually no cost to cash.

The numbers tell a different story. In particular, various studies show that cash has a significant number of hidden costs – private and social – to business and society. These were succinctly summarized in a Tufts University Fletcher School IBGC study by Bhaskar Chakravorti and Benjamin D. Mazzota published in September 2013, which we detail below.

Cost of Cash for Consumer

Consumers seeking to use cash face significant costs in the form of fees for using automated teller machines (ATMs) not owned by their own bank. In the US, ATM fees were $8 billion in 2012. In addition, consumers face transportation and opportunity costs relating to the time taken to visit ATMs or a bank branch. Furthermore, the Tufts study estimated the cost of theft from individuals at $500 million a year (2013).

Cost of Cash to Business

The costs to businesses of accepting cash as a payment instrument are much higher than for consumers. A 2012 ECB study found that almost 50 percent of the cost of the payments system falls on businesses, with cash payments being the single largest driver of costs (Schmiedel, Kostova, and Ruttenberg 2012). Moreover, the various central bank studies involved with the ECB study found that the payment system cost almost 1 percent of GDP with cash representing the largest single component (2012).

The Tufts study found that "cash costs and management processes differ greatly across firm size" (2013). Large firms invest in security systems to a much greater degree than do small businesses. Smaller firms effectively "self-insure" by not investing in secure systems but this obviously leaves them more exposed to "shrinkage" – losses due to theft. The Tufts study estimated annual losses due to cash theft at approximately $40 billion in the US (2013). A 2012 study by PricewaterhouseCoopers estimated total annual shrinkage in Canada to be $4 billion, with the largest amount due to employee theft. But cash imposes additional burdens not included in these estimates, including the need to double count all cash (to reduce shrinkage), the cost of bonding insurance against theft, and the cost of internal audit to detect and prevent employee theft.

Cost of Cash to Government

The most important cost to government of cash is that it facilitates illegal transactions. Dealers in illegal drugs, terrorists, and other criminals typically do not accept credit or debit cards because they are traceable. The Tufts study estimated the lost tax revenues to the US Government at $100 billion a year (2013); in 2012, the IRS estimated the annual tax gap much higher, at $385 Billion in lost revenues. In addition, the cost of production and distribution of cash was estimated at $1.2 billion for 2012.

Summary

In sum, cash has significant private and social costs, many of which are "hidden" as they are classified as "insurance," "shrinkage," ATM fees, robbery, theft, or uncollected taxes.

Understanding the Effects of Regulation: Cross-Subsidies, "Fairness," and Pass-Through of Fees

Fundamental to the assessment of the costs and benefits of these various regulatory regimes – as well as the purported justifications for them – is an understanding of how costs, benefits, and prices (fees) are allocated throughout the system. Most importantly and, unfortunately, most complicatedly, is an understanding of how the imposition (or regulation) of fees affects the broader distribution of costs and benefits.

A Transfer to Merchants or Consumers – and Which Consumers?

Merchants argue that interchange fees, which they agree to pay for the value and convenience of accepting cards, raise their costs of doing business and that they must, in turn, pass this cost on to their customers.[21] But the costs of the payment system must be paid somewhere in the value chain, allocated in some way among banking consumers, banks (and their shareholders and employees), merchants (and their shareholders and employees), and merchant customers. How the costs of operating the payment card system end up being allocated among these various groups depends on a number of complicated factors that vary significantly among different industries.

From the perspective of consumers, however, the relevant tradeoff is evident: to what extent are the costs of the payment system (including interchange fees) borne by banks' customers on the one hand and, on the other, merchants' customers? In other words, if interchange fees were forcibly reduced to a level below that prevailing in a free market, would the increase in prices and reduction in quality to bank customers exceed the decrease in price to merchants' customers?

Would interchange fee caps push prices low enough to offset higher banking costs? Probably not.

Answering this question entails an assessment of the extent to which businesses pass cost increases and reductions on to their customers. Unfortunately, measuring the pass-through of cost changes to consumers is difficult.[22] Nevertheless, by making some generalizations among different industries, it is possible to determine the relative degree of pass-through. And there is strong reason to believe that the pass-through of cost savings to merchant customers is likely small compared to the commensurate increase in price imposed on bank customers.

A recent paper by David Evans and Abel Mateus points out, to begin with, that a "price cap that lowers the interchange [fee] can affect the contracts between

1. the acquirer and the merchant as a result of the acquirer's costs going down;
2. the merchant and the consumer as a result of the merchant's costs going down;
3. the network and the acquirer as a result of the acquirer's costs going down;
4. the issuer and the cardholder as a result of the issuer's revenue going down; and
5. the network and the issuer as a result of the issuer's revenue going down" (Evans and Mateus 2011, 11–12).

In each of these relationships in the payment system chain the parties can, must, and do adjust both prices and services in response to exoge-

nous adjustments to the relationship. But even this fails to convey the full complexity of the system and the difficulty in ensuring that intervention is welfare enhancing. Among many other things, it is also the case that:

- Some cardholders and some merchants (to say nothing of others outside the four-party system) are borrowers from both acquiring and issuing banks and the terms of these relationships may be affected by banks' cost of capital going up.
- Some of these borrowers borrow in the form of revolving credit, and the terms of these arrangements may be affected by banks' revenues changing.
- Some of these same participants are shareholders in those banks, and some consumers and banks are shareholders in merchants' companies, and these relationships will be affected by banks' and merchants' revenues or costs going down (or up).
- Moreover, cardholders very often interact with each other, and merchants with consumers, through cash and cheque transactions, and the relative cost of these transactions will be affected by changes in these other relationships.

As Evans and Mateus discuss, the most important determinant of the extent of the effect on these relationships from a change in the interchange fee (or any cost) is the extent of "pass-through" – the extent to which changes in costs to merchants and banks are absorbed by them or shared a) with merchants on the part of acquiring banks, b) cardholders on the part of issuing banks, and c) cardholders and other customers on the part of the merchants (12–18). On average, the rate of pass-through is about 50 percent, meaning competition induces retailers (whether banks or merchants) to pass on only about half of their cost savings. At the same time, studies demonstrate that even this pass-through is not immediate, and prices tend not to change at all for a year or more following a cost change (15–16; 45–48). Studies also suggest that very small cost changes may not be passed on at all. In this context, recall that one estimate places the total cost saving to a merchant from the Durbin Amendment at a minuscule $0.07 on an average-sized transaction.

For merchants, the analysis is similar: pass-through rates will vary substantially depending on the particular competitive conditions facing each industry and each merchant. More important, the overall effect on consumers (and the overall cost saving for merchants) will depend on the relative mix of debit, credit, cheque, cash, prepaid cards, and other payment technologies, as costs savings would arise only from transactions that would have incurred an interchange fee – certainly not all transactions.[23]

Overall, for consumers the experience in Australia and the US suggests that price controls on interchange fees provide significant windfall cost reductions to merchants and significant cost increases to bank consumers – with no evidence of any corresponding pass-through of merchant savings to consumers, much less in amounts sufficient to outweigh the massive increases in costs to bank consumers. In short, there is no evidence at all – none – to support the belief that consumers as a group, much less low-income consumers, benefit from price controls on interchange fees or permitting merchants to impose higher costs through surcharging consumers for the convenience of using a payment card instead of cash. Moreover, at the risk of being redundant, it should be remembered that even this calculus excludes the social costs of greater cash usage, such as higher risks of crime and tax evasion, not to mention the harm to consumers and society from an increased number of consumers who lose access to credit cards and are thus forced to turn to alternative lenders such as payday lenders, pawnbrokers, and the like.

Back to Mechanics: The Distribution of Costs and Benefits and the Boston Fed Study

Proponents of interchange fee price caps and other invasive regulations often cite a controversial study (Thibeault 2013, 2; Task Force for the Payments System Review 2011, 14) published by the Boston Federal Reserve Bank (the "Boston Fed Study") (Schuh, Shy, and Stavins 2010). This study purportedly demonstrates that lowering interchange fees would increase social wel-

fare (and fairness) by transferring wealth from card-paying households to cash-paying households and from high-income households to low-income households.

Premium cards, which offer rewards and other benefits to users, typically have higher interchange fee rates than normal cards and are typically used by high-income consumers, while lower-income consumers are less likely to use credit cards. Proponents of regulation argue that these higher fees, when passed on to consumers, effect a systematic transfer of wealth from poorer, mostly-cash consumers to wealthy, premium-card using consumers.

The Boston Fed study finds an annual wealth transfer of $8–21 from low-income households.

Applying a number of highly-contestable assumptions, the Boston Fed study finds that the current credit card system in the US produces a small annual wealth transfer of $8–$21 dollars from low-income households and a positive wealth transfer of $430–$750 to high income households, depending on how those categories are defined.[24] The Boston Fed study claims that this transfer occurs because low-income households are more likely to use cash payments for point-of-sale purchases, whereas high-income consumers are more likely to use credit cards. Moreover, higher-income consumers are more likely to use rewards cards, which typically feature a higher interchange fee than standard credit cards. Because merchants are not permitted to surcharge those who use premium cards for the higher interchange fee the merchant incurs upon acceptance, these higher interchange fees are considered to be a cost of business that is passed on to all consumers equally in the form of higher prices, including cash users. The authors conclude that in order to eliminate this transfer from low-income to high-income consumers, it is necessary to impose price controls on interchange fees, which will force card issuers to scale back rewards and other benefits.

Problems with the Boston Fed Study's Methodology

While special interests seeking political intervention into the payment cards market have touted the study extensively, economists have been extremely critical of its methodology and conclusions. In particular, the study's estimates rest on a number of crucial but highly questionable assumptions. In light of the of the relatively small size of the alleged transfers from lower-income consumers ($8–$21 depending on how those categories are defined) (Schuh, Shy, and Stavins 2010, 16), if these assumptions are erroneous at all it could lead to a disappearance of the reported effects, and indeed, under equally reasonable alternative assumptions it is quite plausible that the status quo in the US actually reflects a positive benefit to consumers.

First, and most important, the Boston Fed study's finding of a net loss by low-income consumers rests on the assumption that *all* of the cost saving by merchants from reduced interchange fees will be passed on to retail consumers in the form of lower prices. But, as noted, it is an open question how much of the cost savings will be passed through by merchants to consumers. Astonishingly, however, the Boston Fed study assumes a 100 percent pass-through rate for savings on merchant fees to consumers, a crucial assumption utterly lacking in any empirical support.[25] The authors defend this assumption, stating, "the validity of these assumptions is an empirical mater and the data needed to verify them are not available." But as discussed above, this statement is not accurate. Moreover, even if it were true, there is no defensible reason to use a 100 percent pass-through assumption.

Both economic theory and available empirical evidence make clear that complete pass-through is not a realistic assumption. A 100 percent pass-through rate implies what economists call a "horizontal supply curve." To understand this, it helps to imagine the interchange fee as a sales tax. Typically, we understand that some of the incidence of a tax falls on suppliers and some

on consumers, in amounts that are determined by each group's sensitivity to price. Usually, in the face of a tax increase, consumers (now effectively faced with higher prices) would consume less. Suppliers, however, would respond by lowering the underlying price of goods somewhat to offset the effect, arriving at a new equilibrium price and level of output that splits the effect of the tax between consumers and sellers. If suppliers are more sensitive to price changes than consumers, they will absorb less of the tax (lowering the underlying price of their goods by a smaller amount) and pass-through more of the tax increase to consumers. If they are *completely* sensitive to price (supply is said to be "perfectly elastic"), they will absorb none of the tax and will receive the same amount of surplus (profit) on every sale. Retail prices would stay the same, but consumers would face higher effective prices (equivalent to full retail price plus the full amount of the tax). Retailers would sell less, as a result, but would receive the same profit on each sale. This is what 100 percent pass-through implies.

There are two things glaringly wrong with this assumption. First, it would mean that suppliers (merchants) actually earn no surplus; they would be completely indifferent to factors that affect prices in their markets. But merchants have lobbied hard, expending enormous resources, to convince politicians to force down interchange fees. This would make no sense in a world of 100 percent pass-through. The far more realistic explanation for this rent seeking is that merchants (particularly the larger merchants who have been responsible for most of the lobbying) enjoy some pricing power and *do not* pass through 100 percent of their costs. But in this case, the consumer benefits from interchange fee reductions estimated in the Boston Fed Study based on a 100 percent pass-through assumption are faulty.

Translated back into the context of interchange fees, 100 percent pass-through would mean that the full amount of current interchange fees (merchant costs, which would lower profits if paid by the merchants themselves) is already being borne by consumers in the form of higher prices so that merchants receive the same amount of surplus on each sale regardless of the amount of the interchange fee. It also means that any r*eduction* in interchange fees (merchant costs) would be passed on entirely to consumers in the form of lower prices – again, ensuring merchants receive the same profit per sale, but not any *additional* profit from their reduction in costs. But, as noted, this conclusion is impossible to maintain in the face of merchant lobbying for lower interchange fees. It simply isn't plausible that merchants would incur enormous lobbying expenses simply to confer benefits on their customers without receiving a penny in return.

Second, in the Boston Fed Study paper, the set of merchants studied represents $5.6 trillion of economic activity in the context of the US economy. A sector of that size can only be called "very large," which means that we should expect the merchants' market to have *increasing* costs, even over the long run.[26] In turn, this means that the merchants' supply curve must slope *upward* – which means both that the supply curve cannot be horizontal and that there must be only partial pass-through of bank fees. There is simply no plausible economic argument for the proposition that a substantial fraction of the US economy can be treated as constant-cost.

Of course this is what the empirical evidence demonstrates: that pass-through rates are around 50 percent and, even then, pass-through will occur only gradually and little pass-through would be expected during the first 18–24 months after merchant fees were reduced (Evans and Mateus 2011, 15–16).

Actual pass-through rates are around 50 percent and take two years to appear.

What is most remarkable is that, at this level of pass-through, the transfer from low-income to high-income identified in the study actually reverses. In a revised version of their paper, the authors of the Boston Fed Study admit that, for any wealth transfer to occur, the pass-through

rate by merchants must be greater than 50 percent. As the authors, note, "as pass-through of the payment costs to retail prices falls below 50 percent, the transfer reverses and become progressive" (Schuh, Shy, and Stavins 2010, 4) Thus, once the unrealistic 100 percent pass-through assumption is replaced with a more accurate pass-through estimate, the entire consumer protection basis for interchange fee regulation disappears, and may in fact suggest consumer benefits from *increasing* interchange rates.

In fact, in the revised version of the paper, the authors, using a more complicated methodology, estimate that the average cash-paying household pays a transfer of only $50 annually, rather than the $149 reported in the original study. While the revised study shows a greater average transfer from low-income households ($83 instead of $8), as noted above, this is sensitive to pass-through rates (and other assumptions in the paper). The $83 number is based on a 100 percent pass-through assumption that is irrelevant to real-world policy.

Moreover, the Boston Fed study fails to account for fact that interchange fees actually *increased* for many merchants after the Durbin Amendment went into effect, especially small merchants that make a disproportionate number of small transactions. Moreover, it seems plausible that lower-income consumers would be overrepresented among those who patronize fast food restaurants, for example, relative to high-income consumers. Thus, whereas a high-class steakhouse might have experienced a reduction in its interchange fees as a result of the Durbin Amendment, a small deli or fast food restaurant likely saw its interchange fees increase. On the other hand, this result should not be surprising: it has been long-recognized that price controls on consumer credit products (such as usury ceilings on interest rates) typically result in a wealth transfer from low-income to higher-income consumers (Zywicki 2000, 158–159).

Beyond this, the Boston Fed study's conclusions are based on its particular assumptions about the overlap in retail shopping behavior between high-income and low-income consumers. For a transfer to occur as described by the study's authors, it would have to come from the same merchants, imposing higher costs indiscriminately on both their high-income and low-income (cash and credit) customers. But it is obvious that although high-income and low-income households sometimes shop at the same retail establishments, they often also shop at different stores. Thus, the Boston Fed study's conclusions are highly dependent on the degree of overlap between low and high-income consumers at the same stores. If, to use an extreme example, only low income consumers shopped at Walmart and only high-income consumers shopped at Neiman Marcus, then even if they relied on completely different payments there would be no redistributive effect. The original Boston Fed study seems to ignore this dynamic, and implicitly assumes a 100 percent overlap among high and low-income consumers in the retail market, yet this seems largely arbitrary.

In the revised study the authors acknowledge this dynamic, noting that "if high-income households only used credit cards and low-income households only used cash, and there was complete separation of shopping by households across merchants, there would be no transfers from credit card payments" (Schuh, Shy, and Stavins 2011, 17). In light of residential segregation and other factors, it is easy to imagine a relatively small degree of overlap among consumers.

In addition, as previously noted, many smaller stores with a smaller than average transaction size actually experienced an increase in interchange fees as a result of the elimination of special interchange fees for those merchants. In other words, while a large fancy steakhouse chain likely received a cut in their interchange fees, a local sandwich shop may have seen their interchange fees increase. Given that high-income consumers are more likely than low-income consumers to dine at a fancy steakhouse, this byproduct of the Durbin Amendment presumably exacerbated any possible wealth transfer from poor to rich households.

Any redistributive effect might be reduced even within the same store if high and low income consumers tend to purchase different products (Turner et al. 2013, 34). For example, at a store such as Best Buy, higher income and lower income customers may purchase different prod-

ucts. In particular, high-income consumers may purchase high-end electronics that have a larger markup that they purchase on credit, whereas lower-income consumers may purchase less-expensive products that have smaller markups. In that case, the cross-subsidization would be reduced if Best Buy implicitly takes these factors into account in its pricing policies.

Third, the Boston Fed's study is highly dependent on its estimates of the costs of cash to merchants and consumers. For example, the Boston Fed estimates the cost to merchants of accepting cash as 0.5 percent of the purchase price for consumers and the cost of electronic payments as being much higher (Schuh, Shy, and Stavins 2010, 40). Yet the authors of the study admit that this figure – 0.5 percent – is the lowest estimate of cost that could be adopted, and that economists have estimated the cost of credit card payments in a range running from 0.5 percent to 1.6 percent (Semeraro 2012). Assessing all of the various studies, PERC concludes that a more realistic estimate of the cost of cash is 1.3 percent of the purchase, an adjustment that reduces the already small size of the purported negative wealth transfer from low-income consumers by more than half and the benefit to high-income households by more than half as well (Turner et al. 2013, Table 5).

But even these costs of cash fail to capture all of the social costs to consumers from using cash. For example, liquidity-constrained consumers who use cash may incur expensive overdraft fees, whereas if they used credit cards they would not. They also bear the cost of acquiring cash, such as time spent travelling and waiting at an ABM and the risk of theft or loss of cash. Thus, while cash may seem less expensive to merchants than payment cards, this is in part simply because merchants can externalize some of the costs of cash onto consumers.

Fourth, the Boston Fed study also fails to account for the benefits merchants and consumers receive from accepting debit cards and credit cards. As discussed above, once a proper accounting of the benefits of debit cards to merchants is considered, the truth actually may be the opposite of the conclusions of the Boston Fed study – it may be more accurate that high-income consumers who use payment cards actually subsidize cash-using low-income consumers.

Consumers using payment cards may subsidize cash-using consumers.

Indeed, to the extent that eliminating reward cards caused consumers to switch from use of general-purpose credit cards to store credit, this could exacerbate any redistributive effect from low-income to high-income consumers. During the decades when retailers ran their own in-house credit operations, they usually did so at a loss, on the assumption that providing credit to their customers would increase store loyalty and encourage them to make purchases that they otherwise would not be able to afford at the time (Zywicki 2000, 92–93). In turn, these losses on the store's credit operations were embedded in higher prices for goods and services, forcing cash consumers to subsidize credit consumers.

Retailers today that operate their own credit operations similarly force cash consumers to subsidize their own credit consumers. Target department store, for example, offers a 5 percent rebate for all purchases made using Target's proprietary credit card, despite the fact that Target's credit card customers must be more expensive than its cash customers in light of the administrative cost, credit risk, and delay in receipt of payment.[27] Shell offers a $0.20 per gallon rebate for use of its card at Shell gasoline stations (Credit Card Watcher). Similarly, appliance and furniture stores often offer 12 or 18 month "same as cash" financing through their in-house credit operations that provide those who finance through the retailer's credit system the same price as cash consumers. Even merchants that offer co-branded credit cards under a Visa or MasterCard logo usually provide enhanced rewards for use in their own store.[28] Given the ubiquity of retailers' use of credit programs to redistribute between cash and credit consumers when operating their own credit programs, it is

difficult to accept as sincere their expressions of concern when bank-type credit cards – with cost effects much smaller than the 5 percent discounts offered by Target, for example – are used to pay.

Therefore, if bank-type credit card issuers are effectively prohibited from providing rewards yet retailers are permitted to continue to offer rewards (such as Target's cash-back program or interest-free financing), this will divert consumers from bank-type cards to retailer's proprietary credit programs. This will not, of course, reduce any purported cross-subsidy from low-income consumers (who do not use the store cards) to higher-income consumers (who do). Thus, it is difficult to accept that merchants are motivated by a desire to reduce such cross-subsidies in light of the most likely scenario of shifting consumers to store credit, which has long had exactly the redistributive effect that the Boston Fed study purports to show for credit cards.

Finally, the ubiquity of incentive financing offers by retailers through their own credit operations illustrates a more fundamental principle: the idea of offering rewards and other similar incentives in order to encourage customer loyalty is neither unusual nor unique to credit card issuers. The use of reward programs to promote customer loyalty – from frequent flyer miles to free sub sandwiches – are a common and pro-consumer part of the competitive process. Moreover, many of these programs are indistinguishable from credit cards in their purported wealth transfers.

For example, consider frequent flyer miles programs. Assume that higher-income people fly more frequently than lower-income people and thus accrue more frequent flyer miles. Then higher-income people will also be eligible for more perquisites, such as free travel, free upgrades, and access to other benefits. Lower-income people, by contrast, who fly less often, will have less opportunity to enjoy these benefits, but nevertheless will pay indirectly for the free travel by higher-income co-passengers. Does that mean that regulators should ban frequent flyer programs?

As an even more general matter, this example illustrates the point that cross-subsidies among consumers are ubiquitous in a well-functioning retail economy. For example, many shopping stores offer free parking for customers, a cost that is embedded in the overhead costs of operations. Those who take public transportation or walk, therefore, must subsidize those who drive cars to the store. Because car ownership is positively correlated with income,[29] the widespread practice of free parking unambiguously results in a wealth transfer from relatively poor to relatively rich households.

As these many examples illustrate, the claim by special interest lobbyists that credit cards result in an unfair wealth transfer from high to low-income consumers is largely opportunistic. Merchants routinely engage in reward schemes and other differential pricing (such as free parking) that create a variety of cross-subsidies. Their concern with payment cards, therefore, appears to be less about the presence of cross-subsidies among consumers, but rather that they are unable to capture the benefits from the cross-subsidies themselves. In short, merchants want to capture the benefits of accepting credit cards while avoiding the costs.

Merchants want to capture the benefits of accepting credit cards while avoiding the costs.

The Policy Inferences from the Boston Fed's Study Do Not Follow

The Boston Fed study, originally published as a Working Paper by the Boston Fed, has been substantially revised and reappeared in an altered form in 2011 with numerous methodological modifications, yet the revised version does not appear to have been officially published as a Working Paper (the "Revised Boston Fed Study") (Schuh, Shy, and Stevins 2011). The authors' perception of a need for dramatic revisions reflects the widespread criticism that economists

have leveled at the original version of the paper; yet the revised version has received even more severe criticism than the original version. In short, the Boston Fed study provides an exceedingly weak basis for heavy-handed political intervention such as government price controls on interchange fees.

Even if the authors are correct about the mathematical finding of a small redistributive effect from low-income to high-income cardholders – a questionable proposition – there remain additional questions about the policy inferences that they draw from this finding. In particular, the authors' claim that the finding of a cross-subsidy exists because of reward cards supports the imposition of price controls on credit card interchange fees. But even assuming the validity of their statistical analysis, this conclusion does not follow.

First, the authors' claim implicitly assumes that there is a one-to-one correspondence relationship between interchange fees and credit card rewards, such that any mandated reduction in interchange fees would automatically result in a corresponding decrease in credit card rewards. But the authors offer no basis for this assumption. Credit cards offer multiple price and quality terms and imposing limits on one particular price term – interchange fees – does not necessarily imply a one-to-one reduction in card quality through a reduction in rewards or that any subsequent modification in price or quality terms would have a less regressive impact on consumers.

Many card issuers offer rewards on revolving balances as well as for transactions. Indeed, as noted, even debit cards, which are far simpler than credit cards and offer fewer price points on which issuers can re-price their losses on controlled terms, did not illustrate a one-to-one correspondence between mandated reductions on interchange fees and reduced rewards. Although many issuers have responded to the Durbin Amendment by slashing or eliminating rewards on debit cards, they have taken other steps as well to offset the revenue loss, such as imposing new fees or raising existing fees or reduced access and quality (such as by closing bank branches). As noted, these offsetting adjustments – such as higher bank fees that exceed the size of the alleged cross-subsidy from low-income to high-income retail consumers and the subsequent loss of access to bank accounts for many low-income consumers – have impacted low-income consumers particularly negatively. Thus, the net negative unintended consequences for low-income consumers have almost certainly been negative.

The unintended consequences for low-income consumers of price controls on interchange fees for credit cards are likely to be even more unpredictable and even more harmful to low-income consumers than similar price controls on debit cards. For example, when Australia's central bank imposed a hard cap on interchange fees, credit card issuers reduced the value of their rewards programs to consumers. But Australian card issuers also offset the interchange fee cap through a variety of other means, such as raising annual fees, reducing investments in innovation, and raising interest rates. The imposition of annual fees is especially harmful and regressive in its impact on low-income consumers because annual fees tend to be uncorrelated to the volume of transactions a consumer makes. Thus, a consumer who makes $4000 in charges a year typically pays the same amount as a consumer who makes $40,000 in charges per year.

The imposition of annual fees is especially harmful and regressive.

This consequence of a regressive annual fee is virtually guaranteed by interchange price controls modeled after the logic of the Durbin Amendment – by permitting issuers to recover only the *incremental* cost of debit card transactions, the Durbin Amendment expressly prohibits issuers from recovering the *fixed* costs associated with operating a debit card program, such as customer service, dispute resolution services, and other related services. Moreover, recall that even using the aggressive assumptions of the study's

authors, the transfer from lowest-income households was only $21 per household – an amount smaller than virtually any amount charged by a credit card that charges an annual fee.[30] Thus, if issuers responded to price controls by imposing annual fees on cards, lowest-income households would almost certainly end up paying more for the opportunity to have a credit card than they currently pay in supposed transfers. As a result, while debit card issuers have reduced or eliminated rewards programs, their primary response has been to impose new monthly maintenance fees on bank accounts (typically ranging from $60 to $180 per year), which would logically follow from the particular structure of the price controls that exclude recovery of fixed costs. High-income bank consumers, on the other hand, have experienced little direct negative impact from the Durbin Amendment, as they can usually avoid higher bank fees by meeting the heightened minimum deposit requirements in order to remain eligible for free chequing.

The Durbin Amendment forced low-income consumers out of the banking system.

In addition, as the Durbin Amendment has rendered many low-income consumers unprofitable for banks, this has intensified competition for higher-income consumers, who have remained profitable. Furthermore, many high-income consumers have been able to offset the deterioration in debit card quality that has resulted from the Durbin Amendment's price controls through increased usage of credit cards (whose interchange fees remain unregulated); by contrast, low-income consumers have less opportunity to switch to credit cards, especially after the passage of the *Credit CARD Act* of 2009, which reduced access to credit cards for many low-income consumers. As a result, low-income consumers who have been forced out of the banking system by the Durbin Amendment have instead shifted to increased use of prepaid cards, products that can be more expensive than debit cards or credit cards (Zywicki 2013).

Notwithstanding the above critique, let's assume for the sake of argument that the Boston Fed study's finding of a regressive subsidy is sound. Even so, the authors' implicit assumption that the most logical inference would be to try to force a reduction of rewards for high-income consumers does not necessarily follow. An obvious alternative would be to encourage an *increase* in usage of reward cards by low-income consumers. The Boston Fed study concedes that those who use reward cards derive net benefits from doing so, *regardless of their income level*; that obviously includes low-income consumers (Semeraro 2012, citing Schuh, Shy, and Stavins 2010).[31] Meanwhile, the authors provide no evidence or theory as to why they believe that rewards are available only to high-income consumers. Nor do they make any effort to determine whether the lower usage of reward cards by low-income consumers is involuntary or by choice.

In fact, however, "if high-income households receive disproportionate benefits, they do so in part because individual members of those households choose to use credit cards to make a higher percentage of their purchases than members of low-income households. Any wealth transfer that may occur is thus attributable to individual consumer choices about payment mechanisms" (Semeraro 2012, 12). Moreover, it is not clear whether the lower percentage of households owning non-rewards cards is because they are unable to obtain non-rewards cards on the one hand or because they choose not to use them (or to apply for them) on the other. The fact that reward cards generally also have annual fees suggests the latter may be the more realistic explanation – and that capping interchange fees thus may actually *exacerbate* the transfer effect by further pricing low-income households out of the rewards card market.

Finally, the authors of the Boston Fed study fail to control for whether their various income groups are static over time. For example, those in the low-income group may include college students, newly employed workers, and other households that may be temporarily lower-in-

come and less financially sophisticated. As these individuals age, they likely will rise into higher income brackets and increase their level of financial sophistication. In light of the huge disparity between the relatively small size of the transfer from low-income households (approximately $8–$21 annually) compared to the very large benefits accrued by high-income households (amounting to hundreds or thousands of dollars per year), those who may be low-income sources of transfers early in their lives may become much larger recipients of transfer later in their lives, thereby quickly recovering any amounts transferred at a younger age.

The Knowledge Problem and the Pitfalls of Regulatory Intervention

The case for imposing interchange fee price controls and other restrictions on agreements between the operators of payment networks, card issuers, acquirers, and merchants has been made almost entirely on the basis of economic theory. We have argued that this theory fails adequately to take into account the role of payment networks as a means of balancing a two-sided market. We have also shown that the contentions of those who argue for regulations are not well supported empirically.

But even if government regulation of payment networks were justified theoretically, there would remain the problem of developing and applying regulations that resulted in benefits greater than their costs. In particular, effective regulatory intervention would have to overcome two distinct problems: the *knowledge problem* and the *rent-seeking* problem.

In a dynamic market economy, each individual makes decisions to buy or sell goods and services based on his or her unique knowledge set and decision-making processes. But that knowledge is constantly changing and so too, if perhaps more subtly, are those decision-making processes. Thus, a new estimate of the size of the world's gas deposits or the announcement of a higher speed computer chip, parsed through the minds of millions of individuals, result in a flux of decisions and a constantly changing array of prices. In other words, prices reflect the dispersed knowledge and decisions made by millions of individuals and businesses. And they are constantly changing. Because knowledge and decisions are dispersed, they cannot be known by any single entity – such as a government regulator. This is the knowledge problem.

The knowledge problem means that even well intentioned interventions will have unintended consequences.

The knowledge problem means that even well intentioned interventions will have unintended consequences. In the US, for example, many small merchants have actually seen their interchange fees rise as a result of the Durbin Amendment while large retailers have reaped huge windfalls. Where regulators have imposed a right to surcharge on private contracts, merchants have abused consumers surcharged opportunistically at above-cost rates, giving rise to calls for further intervention. Similarly, in the Netherlands merchants have continued to surcharge for some transactions for which today it is more efficient to use cards than cash, thereby imposing costs on those consumers who would prefer to use the less-expensive payment mechanism. In Australia, the application of price controls to the four-party payment schemes has promoted market share growth for three-party payment schemes. Moreover, the evidence suggests that lower-income consumers to bear the brunt of interchange price controls.

These examples illustrate the basic dynamic of the knowledge problem confronting regulators: even if there is believed to be a market failure, there remains the daunting task of creating and implementing a regulatory framework that will actually bring about the desired ends without unintended consequences that will swamp those desired results. Consider the challenge of setting an efficient interchange fee cap. As Anne Layne-Farrar shows, there is no one single interchange fee price cap that will be appropriate for all industries (2013). A policy based on the "average" payment amount fails to take into account the fact that the average transaction size will vary widely from industry to industry – thus, the breakeven point for the efficiency of payment cards may be higher for hardware stores or sporting goods stores relative to grocery stores or convenience stores. Yet a "hard cap" on interchange fees invariably presupposes one single price for all industries. Such a "one-size-fits-all" cap is also unquestionably a "one-size-fits-none" cap. To state the obvious, there is a sound economic reason why interchange fees vary widely among industries when they are set by market processes: different industries have different efficient interchange fee rates. A one-size-fits-all interchange fee ignores these important economic differences, leading to winners and losers among different industries depending on whether the regulated rate (based on the average rate) is too high or too low.

As the above examples illustrate, the knowledge problem means that there is no unique, objectively correct regulatory solution. Politicians and regulators will therefore seek information enabling them to make decisions regarding how to regulate payments. While the intervention may well have net social costs, the majority of those who gain and lose (consumers and smaller merchants) are dispersed, and are unlikely to be able to voice their concerns effectively except via groups representing consumers and small businesses, who tend to have many different issues. By contrast, larger companies that stand to gain or lose from intervention have strong incentives to lobby. Companies that stand to gain are called *rent seekers* because their aim is to obtain the economic *rent* (or additional profit) created by the intervention. The resources spent on lobbying are considered *waste* because those same resources are not available for productive economic activity (Tullock 1967; Kreuger 1974).

In the US, both merchants and banks spent millions of dollars in lobbying for and against price controls on interchange fees (Zywicki 2010, 53). Today those same parties continue to spend vast sums of money in the political process, money that otherwise could be spent on productive activity (Stearns and Zywicki 2009).[32] Meanwhile, around the world special interests continue to lobby legislatures and regulators on interchange price controls and other market interventions, wasting millions of dollars and distorting the process by which blackboard economic theory is converted into real-world regulation.

The Implications for Payment Card Regulation in Canada

The above analysis of the impacts of regulatory intervention leads to several conclusions regarding existing and proposed regulation of payment cards in Canada.

Price controls on payment cards have made the poor poorer.

First, contrary to the claims of proponents, it is clear that the imposition of price controls on payment cards has adverse effects on most consumers and many retailers. Moreover, these price controls are regressive: they result in greater harm to poorer consumers and smaller retailers. They have literally made the poor poorer.

Second, the claim that restrictions on surcharg-

ing and the honour-all-cards rule harm merchants does not appear to be borne out by the facts. Honour all cards is an essential element of a balanced payments system, and it confers as much benefit on merchants as it does consumers and other participants. Meanwhile, merchants have always been able to discount for cash should they so choose. Moreover, where restrictions on surcharging have been removed by government intervention, such as in Australia and the UK, merchants seem to be surcharging opportunistically (imposing higher surcharges in markets where cards are the primary payment form, such as airline tickets), not on the basis of the interchange fees being charged.

In theory it might be possible to limit this opportunistic behavior by imposing caps on surcharges. As the evidence from the Netherlands indicates, however, innovations mean that it would be necessary to frequently change the permissible surcharge. Moreover, surcharge levels would vary considerably by industry. To make matters worse, knowledge of these costs is dispersed widely and could only be crudely and intermittently estimated using whatever data firms might be compelled to disclose to the price regulator. As a result, such caps would likely have distributional effects, benefiting some merchants while harming others.

Third, the claim that higher-income consumers benefit at the expense of lower-income consumers as a result of the greater use of reward cards by higher-income consumers is contested. As discussed above, this claim is based on one questionable study produced under the aegis of the US Federal Reserve Bank of Boston in 2009 and is described in a misleading manner by the NDP Orange Paper. Moreover, it is unclear to what extent the authors of the Boston Fed study actually stand by their own conclusions in that 2009 analysis, as that publication apparently has been obviated by a subsequent and radically different version of the paper (Schuh, Shy, and Stavins 2011). The apparent reluctance of the authors to stand by their own study should warrant caution about basing sweeping policy interventions on it.

Thus, the claim that interchange fee regulations, prohibitions on surcharging, or restrictions on the honour-all-cards rule are beneficial to "all stakeholders, particularly small and medium sized businesses, entrepreneurs, and consumers" is simply false. The opposite is more nearly the case. As the foregoing analysis of similar interventions elsewhere shows, there is little reason to believe that most stakeholders would benefit. Instead, similar interventions have generally resulted in higher costs and reduced quality for consumers for credit cards and other financial services with no evidence of offsetting retail price reductions. Moreover, while the enactment of the Durbin Amendment in the US has proven a boon to big box retailers, it has actually resulted in a price *increase* for many small merchants and higher bank fees and reduced services for consumers.

What of more specific objections, such as the claim that fees charged to merchants are "unfair" to merchants and consumers? The reality is that the fees charged by operators of payment systems enable those operators to invest in innovations and system expansion that, over time, brings additional benefits to consumers and merchants. To return to our analogy from earlier, newspapers, likewise, are able to increase their circulation and innovate other platforms, such as website and mobile device versions, using fees paid by advertisers – thereby increasing the number of eyeballs seeing those ads. Imagine what would happen if the government capped the fees newspapers could charge for advertising: immediately, newspapers would increase the amount they charge per copy and/or cut their investments in content production. This would harm their readers and likely result in a reduction in the number of readers, to the detriment of most advertisers.

Conclusion: Toward a More Dynamic Market

For a payment system to grow, it must serve the needs of both buyers and sellers. As in other markets, competition – or at least the threat of competition – incentivizes network

operators to identify better ways to serve both sides of the market, driving innovations that improve the quality of service and reduce costs. This is precisely what we see in credit card markets in both the US and Canada. Among other innovations, in the past two decades, we have seen the development of more secure, effective, and rapid payment network architecture; more rapid transaction devices, such as RFID-embedded cards; payment systems embedded in mobile devices; and innovative, competitive payment systems (PayPal, Square).

For a payment system to grow, it must serve the needs of both buyers and sellers.

But Canada is unusual in that its credit card and debit card networks have evolved on divergent tracks. Whereas Canada's credit card market has followed the rest of world to a globally integrated, fully functional payment and credit system, its debit card system has arguably stagnated under the dominance of the Interac system, a unique Canadian development. Although Interac proved quite functional and efficient at delivering payment card services to Canadians, the economy's near-exclusive reliance on Interac, along with regulatory mandates that have hindered new entry and minimized incentives for Interac's continued evolution, have deprived consumers and businesses of the electronic payments functionality taken for granted elsewhere. For example, online shopping using a debit card is exceedingly cumbersome in Canada and not ubiquitously available. And use of Interac cards abroad is exceedingly difficult; in fact, Interac cards work at only some outlets in the US and almost nowhere else. This inefficiency has negative implications for small business development and economic efficiency in the country more generally.

The regulator who attempts to set prices does not have access to the knowledge or decision-making process of the millions of individuals whose actions previously determined the prices, so he will almost inevitably choose a price that differs from the one that would have emerged from the bottom up. Among the many challenges facing the price-fixing regulator is the difficulty of defining the market for which they are fixing the price. In the context of payment systems, for example, the regulator might choose to fix the price of all payment systems, including ones that might be developed in the future; or it might fix the price only of current payment systems; or it might fix the price of only one or a few payment systems. The way the market is defined can have wide ranging consequences for the impact of any regulations.

The solution to this conundrum is not to attempt to regulate prices. (Montesquieu realized this 260 years ago, when he observed in *L'esprit des Lois* that the "just price" is the market price). In the case of Canada's payments system, the solution is to remove the Consent Order – or at least key portions of it – so that Interac is no longer constrained by rules restricting its ability to develop and compete. Perhaps of greatest importance is the removal of restrictions on the setting of interchange fees. The removal of these restrictions would enable Interac members to invest in new technologies and build out their networks knowing that if they offer a superior service, they will be able to charge more for it.

Sadly, rather than recognizing that the way forward for Canada is to reform its debit card system in the competitive model of its credit cards, some critics want to dictate significant business practices and impose price controls on the credit card market (Thibeault 2013, 4; 6–7). Touted as an initiative "to protect consumers or small businesses from excessive credit card costs" (1), in reality, as we have demonstrated, the proposed interventions would almost certainly increase costs for consumers, reduce innovation, and hamper the efficiency of the Canadian payment system.

The modern credit card network is an extraordinary interconnected and complex economic system that serves the needs of consumers, businesses, governments, and society. The notion that regulators can surgically intervene and tinker with some of the dials, such as by setting cer-

tain prices or imposing specific contract terms, without having major unintended consequences that will ripple across the entire payment card system and economy is naïve. Unintended consequences of intervention are inevitable and costly, and they are especially relevant for a market as complex and integral to the functioning of the economic system as the credit card network.

Policy-makers should resist special interest pressures (from, most notably, retailers) for sweeping new interventions whose unintended consequences will almost certainly overwhelm any alleged social benefit. Instead, Canadian officials should retain the existing framework created by the Code of Conduct (which itself still imposes significant restrictions on business practices). The Code of Conduct has provided a useful, effective framework for the evolution of the Canadian credit card system. Although imperfect, the Code of Conduct provides consumer protection, systemic security as well as a sufficiently adaptive environment to facilitate competition and a payment system responsive to changing consumer preferences, technology, and risks.

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Endnotes

1 The NDP Orange Paper suggests that credit card fees are between 2–3 percent of the total purchase prices, while debit card fees are about $0.12 regardless of the size of the purchase.

2 Moreover, according to the same Ari Weinberg March 25, 2004 article for *Forbes*, when McDonald's began accepting cards in 2003, only 14.5 percent of quick-service restaurants accepted cards at that time, belying the claim that merchants have no choice but to accept cards, even if they have negative value. McDonald's decision was more reasonably caused by the recognition that the increased convenience and speed to consumers would increase profitability.

3 In the *Wall Street Journal* on August 9, 2013, John McKinnon and Siobhan Hughes report that the US Internal Revenue Service, for example, has just launched a new enforcement program aimed at alleged underreporting of cash sales by small businesses in order to reduce their tax bills. Interestingly, the methodology used by the IRS to catch scofflaws is whether a particular business reports an unusually high percentage of transactions being made by payment cards, suggesting an underreporting of cash transactions..

4 For a fuller explanation of the economics of two-sided markets generally, and payment systems in particular, see Todd J. Zywicki, 2010, *The Economics of Payment Card Interchange Fees and the Limits of Regulation*.

5 Because cheques are required to clear at par (zero discount) from the perspective of merchants, consumers bear the full costs of acquiring cheques and maintaining bank accounts. Merchants, on the other hand, bear the risk that a cheque will bounce and be returned for nonpayment. Nevertheless, despite these costs, both consumers and merchants used (and still use) cheques because they offered a simple solution to a "liquidity problem": they enable consumers to make purchases (especially larger purchases) even when they do not have sufficient cash on hand. Cheques also enable consumers to make payments remotely, such as paying bills or making purchases by mail.

6 Interestingly, the Competition Tribunal noted that "it is open to third parties participating in a consent proceeding before the Tribunal to challenge the Director's formulation of an abuse of dominance case brought on consent on the grounds that, for example, the Director has artificially or simply mistakenly drawn the boundaries of the relevant markets …" (16).

7 See also Philippe Bergevin and Todd J. Zywicki, 2011, *The Way We Should Pay: Comments on "The Way We Pay: Transforming the Canadian Payments System*."

8 In addition, the Durbin Amendment has had predictable negative consequences on competition and growth in the retail banking industry. Writing for *Forbes* on March 29, 2012, Halah Touryalai tells the story of Prosperity Bancshares, Inc., a mid-sized bank in Houston, Texas. Prosperity Bancshares, Inc. announced in 2012 that it was explicitly keeping its assets below the $10 billion trigger level because exceeding that level would force it to comply with the Durbin Amendment, resulting in an estimated revenue loss of $5 million per year.

9 Although Iacobuzio's estimate of a 50 percent drop in debit card revenues as a result of the Durbin Amendment appears to be largely accurate, overdraft revenues have not dropped by 30 percent. From a high of $37 billion in 2009, overdraft revenue fell to under $32 billion in 2011 but rose in 2012 (Wack 2013). For a review of various new regulations on overdraft protection in the US, see Todd J. Zywicki, 2012, *The Economics and Regulation of Bank Overdraft Protection*.

10 Both historical and economic analysis of hundreds of years of experience with the imposition of price controls in consumer credit markets has demonstrated that the invariable effect of such regulations is regressive in their impact, as they tend to reduce the profitability of serving lower-income consumers and to shift capital toward more-profitable higher-income consumers (Durken et al., forthcoming 2014).

11 The Federal Reserve's 2008 Survey of Consumer Payment Choice reported that 6 percent of those in the study did not have bank accounts (Schuh and Stavins 2011, 6).

12 In a 2010 Q4 Home Depot Inc. Earnings Conference call on February 22, 2011, Home Depot CFO Carol Tomé said,"On the Durbin side …, [b]ased on the Fed's draft regulations, we think the benefit to The Home Depot could be $35 million a year."

13 Annual fees are an especially pernicious form of term re-pricing of credit card contracts because annual fees operate as a sort of "tax" on card ownership, thereby stifling competition. See also Zywicki, 2010, *Economics of Interchange*, at 36.

14 As the authors describe these merchant-branded platinum cards: "These merchant-branded cards typically have relatively generous rewards programs with reward structures not seen for traditional merchant-branded cards; for example, a number of significantly discounted flights per year irrespective of reward points earned. Like many merchant-branded cards, cardholders also earn more reward points for spending at the merchant in question" (2012). The authors appear to ignore or overlook the obvious fact that any purported redistribution among consumers according to payment methods would apply equally to merchant-branded credit cards as independent cards.

15 For instance see MasterCard's "MasterCard Rules."

16 "[T]he honor-all-cards rule appears to have been used by all systems throughout the history of the industry. It ensures the cardholder side of the market that their cards will be accepted on the merchant side" (Evans and Schmalensee 2005, 292).

17 On the magnitude of the cost of fraud to issuing banks, see, for example, Zywicki, 2010, *Economics of Interchange*, at 8–14 ("Visa and MasterCard card issuers alone wrote off almost $50 billion in uncollected credit card debt in the US in 2008, and $65 billion in 2009 – more than 5 percent of the total volume of credit card purchases by their cardholders [in 2009].").

18 See, for instance, MasterCard's "MasterCard Rules."

19 See also Reserve Bank of Australia, 2011. "A Variation to the Surcharging Standards: A Consultation Document"; UK Office of Fair Trading, 2011,"Payment Surcharges: Response to the Which? Super-Complaint."

20 This figure appears to exclude other social costs of cash, such as increased risk of crime and tax evasion. If those costs of cash are included then presumably the break-even point from a social perspective would be at an even lower dollar value.

21 Of course, this assumes that cards are actually more costly than cash. As discussed above, cards are unambiguously less expensive than cash for a large number of transactions and it is arguably only for an ever-shrinking category of small-dollar transactions that the total cost of cash can be said to be lower than cards. As noted, for example, in the Netherlands, the only transactions for which cash is less expensive than cards is for transactions of about €5 or less.

22 As the authors of one paper on the matter note: "measuring price effects over time of interchange fee regulation is difficult" (Carbó Valverde, Chakravorti, and Rodríguez-Fernández 2009, 9).

23 In the US, 29 percent of transactions are made with debit cards (Foster et al. 2011, 14).

24 The NDP Orange Paper is arguably misleading on how it describes the findings of the Boston Fed Study. It states, "[i]n fact, a 2009 paper by the Federal Reserve of Boston estimated that, on average, each cash-using household effectively transfers $149 to card-using households each year, and because of the demographics of card- and cash-/debit-users, this constitutes a regressive transfer from poor consumers to the rich" (Thibeault 2013, 2). The natural reading of that passage would lead one to conclude that the transfer from low-income to high-income households is also estimated to be $149 per year, but that is not the case. That figure ($149) is in fact only the estimated transfer from cash to credit-using households. The transfer from all low-income to high-income households reported in the Boston Fed Study, by contrast, is much smaller, approximately $8–$21 annually. It is difficult to escape the conclusion that the artful phrasing in the NDP Orange Paper is designed to leave the misleading impression that interchange fee reductions would have significant, economy-wide implications, when, in reality, the study's claims are far more limited.

25 Identifying assumption A-2 as "The merchant passes through the full merchant fee to its customers via the retail price."

26 An increasing costs industry is one in which expansions of output are possible only by pulling in inputs that are sufficiently scarce such that their prices rise as a result of the output expansion in the industry in question. Large markets are always faced with this constraint.

27 Writing for *Money Crashers*, Jason Steele reports that Target has recently added a Target debit card that also offers a 5 percent rebate on all purchases. Both cards also provide free shipping for any orders made from Target.com.

28 For example, the L.L.Bean Visa card offers a higher rate of "bonus points" for purchases made at L.L.Bean than at other retailers, although it provides rewards even for purchases made at competitor's stores.

29 In England in 1995, for example, high-income households were more than twice as likely to have regular access to a car than low-income households (Dargay 2001, 807; 809) (only 41 percent of lowest-income quintile families had regular access to a car but 91 percent of higher-income quintile did).

30 The study is confused on this point. The authors respond to this point by noting that in 2003 "low-income households paid an average annual fee of $5.70, while high-income households paid $7.70." The authors cite a 2003 Synergistics Credit Card Market survey as the basis for this statement. We have been unable to locate the details of that study to determine how those figures were calculated, but it is likely irrelevant to the main point. By reporting the *average* annual fee, the study presumably is reporting the *mean* fee, including the majority of cards that have no annual fee. We are aware of no credit card that actually *has* an annual fee for which the annual fee is anywhere near $7.70. A survey reported in 2010 found that while only 28 of 108 credit cards had annual fees, those that did have annual fees reported a median annual fee of about $50. The smallest fee reported was $18 and fees ranged up to several hundred dollars per year. Moreover, the card with the lowest annual fee ($18) and three of the four cards with the lowest annual fees in the survey were secured credit cards, not ordinary credit cards (Simon 2010). Based on the figures reported in that survey, the average annual fee for the entire set of cards was only $12.96 – but that is only because the large number of cards with no annual fee distract from the fact that for cards with an annual fee the median amount was $50 (note that using the median annual fee avoids the obverse problem of a few high-fee cards pulling up the average). Even if $50 is too high, the fact that the lowest fee card in the survey was $18 for a secured card suggests that for those cards that have an annual fee it is highly unrealistic to expect an annual fee of less than $20–$25 per year.

    The authors of the study thus fail to address the relevant question, which is that *if* interchange price controls generate term re-pricing in the form of *new* annual fees on cards that were previously free, then the average rate might rise substantially. For example, prior to the Durbin Amendment, the mean monthly service charge for bank accounts would have been quite low because the vast majority of accounts had no fees. Two years later, however, free chequing has become a shrinking minority of accounts while a majority of accounts now pay monthly maintenance fees that amount $60–$120 per year. Thus, the low *average* account maintenance fee prior to the Durbin Amendment says little about the state of the world after price controls.

31 Table 6 on pages 20–21 of the Boston Fed Study illustrates that low-income buyers receive an annual subsidy of $613.

32 See Chapter 2 of Stearns and Zywicki's *Public Choice Concepts and Applications in Law* describing the process of "rent seeking" and noting that the social cost of rent-seeking is the diversion of real resources from productive to purely redistributive purposes.

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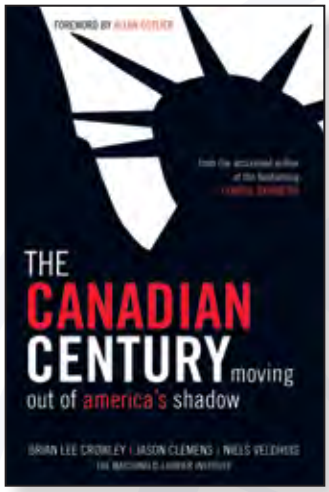

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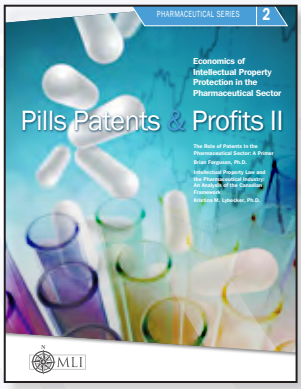

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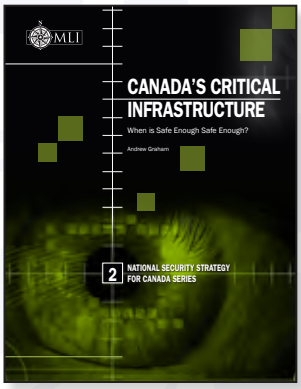

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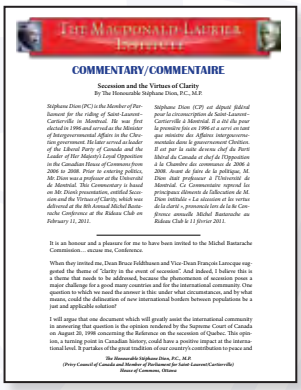

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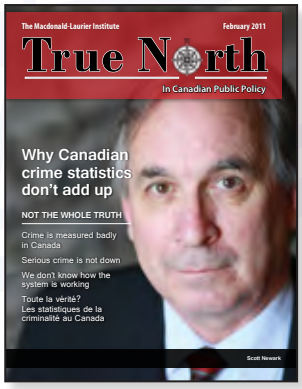

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