

Briefing paper prepared for Mastercard
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With total transaction volumes of €299bn in the EU and growing,¹ commercial cards are an important enabler of business transactions.² In this briefing note we explain:

- the significant differences between the consumer and commercial card market;
- how commercial cards offer benefits to both businesses and merchants when compared to alternative payment methods such as cash, cheque and bank transfers;
- how the Merchant Indifference Test (MIT) can be applied to commercial cards
- why merchants would likely be worse off if commercial interchange were reduced, based on survey insights from France, Germany, Italy, Poland, Spain and the UK; and
- the impact observed when commercial interchange was regulated in Poland.

1. Commercial cards provide different value than consumer cards

There are a number of important differences between commercial and consumer cards. The cards differ in the way they are used, in the viable alternatives to the purchasing business, and in the economics behind them.

Businesses need to incur costs upfront in order to generate revenues; the availability of credit is therefore critical. Commercial cards are a potential source of credit, and this is reflected in Mastercard's mix of cards in Europe: 60% of consumer cards are credit cards, compared with 97% of commercial cards.³ Where businesses are not able to make payments with a commercial card, they will often look to suppliers for flexible payment terms, transferring the unavoidable costs and risks of obtaining this funding up the value chain.

Commercial cards also bring value to businesses by providing tools for tracking and controlling costs as well as monitoring employee compliance with spend policy. Three-party card schemes compete strongly with four-party card schemes in this part of the cards market.

From a merchant perspective, even though commercial cardholders typically make up a smaller proportion of their customer base, they are a valuable customer segment with higher average spend per transaction. In 2016, the average transaction value (ATV) for commercial credit cards in the in-scope European countries was €105, while the same metric for consumer credit cards was only €55.⁴

Card schemes like Mastercard set commercial interchange to promote the growth of commercial card use according to local market conditions and many alternatives are available to the purchasing business. The European Commission exempted commercial cards from the Interchange Fee Regulation (IFR) introduced in 2015, recognising they 'cater for a specific market segment and their needs, not for the average consumer'.⁵

2. Commercial cards protect merchants from defaults and delays

The choice of payment method for businesses is different to that for consumers. For example, to settle invoices, the most common alternatives to commercial cards include bank transfers and cheques. Although these may have lower direct costs to the merchant (i.e. the merchant pays a lower/no fee), they entail higher indirect costs that merchants wouldn't incur, or would incur less frequently if they instead accepted the payment with commercial cards. Such costs can include:

- administration: higher costs of preparing the invoices, tracking outstanding amounts, sending reminders, enforcing payment terms and processing costs (the 'end to end' administration cost); and
- payment delay: delays receiving the funds and the risk that the customer defaults and does not pay at all.

We estimate that the 'end to end' administration cost associated with relying on invoicing rather than commercial card payments amounts to 4.3% of the average transaction value.⁶ This is much higher than current commercial interchange fees. Furthermore, when the combined cost of late/non-payments is included, this rises to 5.6%.⁷

Overall, our calculations indicate that the estimated full costs of acceptance of cheque and bank transfer are approximately 35–110% higher than those of commercial cards.⁸ Consequently, the benefit of allowing merchants to avoid administration and payment delay costs through the use of commercial cards will be significant (see section 5).

3. The optimal interchange is different for commercial cards

Economists have for a long time understood that in the absence of an interchange fee, consumers may use cards less frequently than is optimal from the point of view of society as a whole. This is because, when making the choice of which payment method to use, purchasers fail to

¹ RBR (Commercial Cards 2018), value in 2016.

² Consistent with the interchange fee regulation, a commercial card is defined as a payment instrument used only for business expenses charged directly to the account of the business, public sector entity, or self employed individual.

³ Mastercard 2016 domestic transition data for the six in-scope countries.

⁴ Ibid.

⁵ European Commission (2013), 'IFR impact assessment'.

⁶ Oxera analysis based on ¹Billentis (2016), 'E-Invoicing/E-Billing: International market overview & forecast', May. This is calculated as the average across six European countries (France, Germany, Italy, Poland, Spain, UK).

⁷ Oxera analysis based on ¹Billentis (2016), 'E-Invoicing/E-Billing: International market overview & forecast', May and Atradius (2017), 'Payment Practices Barometer'.

⁸ Per transaction, based on Oxera analysis.

take into account any benefits (such as avoided costs of cash handling) that their card use will imply for the merchant but will take into account any fee they are charged by issuers; an example of a positive externality.

This can result in a suboptimal outcome where for example, without an interchange fee, an issuer seeks to recover all their costs from the purchaser. The level of service required by businesses with regard to reporting, cost control and fraud prevention, as well as costs to issuers for providing credit, means these costs can be particularly high in the case of commercial cards. This could motivate purchasers to use cash or some other more expensive alternative even where a merchant would prefer the use of a card. The application of an interchange fee allows purchaser and merchant incentives to be better aligned; it is a mechanism by which the benefit to the merchant can be properly reflected in the cost to the consumer of using a card.

The merchant indifference test⁹ (MIT) is a theoretical benchmark that draws on these insights to provide a way of calculating optimal level of interchange fee for society as a whole. We describe it in the box below.

Merchant indifference test

The MIT states that the economically optimal interchange fee should be set such that the merchant becomes *indifferent* between accepting a payment by card and the alternatives. The MIT is sometime presented using a scenario of a non-repeat consumer (often referred to as a tourist) offering to pay with a card for a given transaction.

The test is whether, assuming it was under no obligation to do so, the merchant would accept or refuse the card for this transaction. If the merchant would accept, it must be that the alternatives are most costly to process, and the interchange fee is at or below its optimal level. A modified version of the MIT, recognising the different costs of alternative payment means used by businesses, can be applied to commercial cards.

Source: Oxera.

A version of the MIT framework was used by the European Commission in its determination of the interchange fee caps set out in the interchange fee regulation (IFR) for consumer cards.

Drawing on a bespoke theoretical model of commercial cards¹⁰, we have developed an analogous framework that can be applied in the context of commercial cards. The key theoretical result remains in place. Subject to some assumptions, the optimal interchange for commercial cards is one that leaves merchants indifferent between accepting cards and their alternatives.

However, because the alternative to commercial cards are different to those for consumer cards, the optimal interchange is also different.

4. Evidence indicates commercial interchange is currently set close to efficient level

In assessing the optimal level of commercial interchange, the MIT requires us to consider the cost to the merchant of alternative forms of payment a business would use if commercial cards were not available. This is not to say that commercial cards wouldn't be available absent an interchange fee – they would be more costly to issue, but many businesses would still decide to hold them. Rather, it is a way of understanding the mix of payments that would be used absent the commercial card, and thus the cost saving benefit to merchants from each transaction, and the optimal level of interchange according to the commercial card MIT.

How is it possible to tell in practice what these alternatives to commercial cards would be? One way is through directly asking a representative group of businesses how they choose their payment methods. We have conducted such a survey, detailed in the box below, looking at the use of commercial cards for Travel and Entertainment (T&E) expenses, accounting for the large majority (~60%) of the commercial card expenditure in most countries.¹¹

Oxera/Ipsos Mori commercial card survey

Oxera has worked with Ipsos Mori to survey commercial card users. Interviews were conducted with a total of 148 businesses across France, Germany, Italy, Poland, Spain and the UK.

The sample was stratified so as to ensure a suitable mix of business sizes were represented, with the smallest businesses defined as those with fewer than 19 employees and the largest businesses defined as those with more than 250 employees. This allows us to build a representative picture of alternatives that users of commercial cards consider when paying for Travel & Entertainment (T&E) related goods and services.

Source: Oxera.

Note: The survey reflects T&E expenditure.

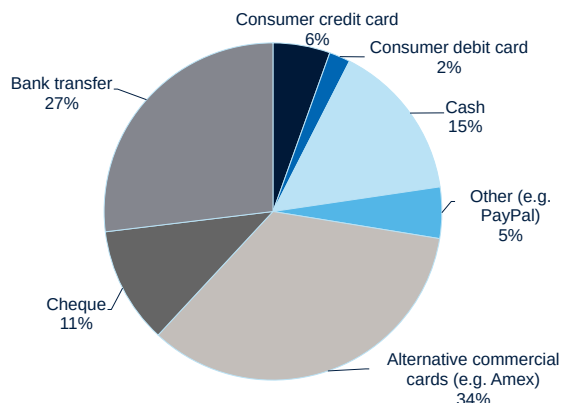
Using this survey, we are able to estimate the mix of alternatives that European businesses would use if commercial cards were not available, as shown the figure below.

⁹ Rochet, J. C., & Tirole, J. (2007). *Must-take cards and the tourist test*. De Nederlandsche Bank.

¹⁰ Wright, J (2017). 'Note on interchange fees for Commercial Cards', Paper prepared for Oxera Consulting, 31 December

¹¹ Oxera analysis based on Mastercard data

Figure 2: Chosen alternatives to commercial cards



Source: Oxera analysis of survey data.

By combining this information with the best available public data on the merchant cost of accepting these alternatives, we were able to estimate the MIT level of interchange.¹² These costs include the administration and payment delay costs discussed in section 2, as well as fees charged by alternative payment methods such as Amex and PayPal. Based on this analysis, we found that for the countries in our survey, Mastercard's commercial interchange is currently less than or approximately equal to its efficient level.

5. Reductions in commercial interchange would impose significant costs on merchants

This finding is significant in the context of any regulatory assessment of commercial interchange, because it means that a reduction would result in worse overall outcomes for businesses and merchants through higher total transaction costs as businesses switch to more costly alternative payment methods such as cheque or bank transfer. This finding would be even stronger if we were to consider the outcome for small businesses, that not only might face more costly alternatives than large businesses but they might also have reduced access to short-term credit.

To get a sense of the scale of the impact for merchants, we combined our survey responses with information on total commercial payment volumes in the six countries to understand how an illustrative approximate 25% cut in commercial interchange would increase merchants' costs of accepting payments as a result of businesses switching payment methods.¹³ Such switching drives two effects: merchants avoid card merchant service charges (MSCs) associated with four party commercial cards but are exposed to the higher cost of the alternatives.

Table 1 below illustrates the overall results, with the sources of additional cost shown on the first three rows. The largest of these costs is the use of three-party commercial cards which, although not the most expensive alternative on a per transaction basis, would be the most commonly used according to survey data. Conversely, the cost per transaction of settling invoices using cheque or bank transfer is greater than the cost of accepting three-

party cards, but these are less likely to be used as an alternative to cards. Offsetting these increased expenses is avoided MSCs that would have been paid had these transactions been settled with a commercial card.

Table 1: Illustrative interchange reduction and merchant impact of switching

Factor	Total Cost*
Net additional cost from businesses using more expensive three-party cards or using personal cards	€385m
Net additional costs (incl. defaults) from businesses settling invoices using cheque or bank transfers and Paypal	€253m
Net additional cost from businesses using cash	€17m
Offsetting benefit: avoided commercial card MSCs	-€482m
Total net impact:	€174m

Note: Estimate of total cost in France, Germany, Italy, Poland, Spain and the UK. * Cost impact per year.

Source: Oxera analysis based on survey data.

The table above focuses on switching transactions. Where businesses continue to use commercial cards, merchants may also receive an offsetting benefit if acquirers pass through the interchange reduction to MSCs. However, we estimate that the scale of the cost increases is such that this saving would not be sufficient to offset the incremental costs even before allowing for the risk to merchants of suffering lost sales as businesses have less credit and working capital available to fund their corporate spending.

Commercial interchange ensures issuers can afford to provide commercial cards to businesses, which are low-cost for merchants to accept – as demonstrated by the MIT. As such, commercial interchange incentivises businesses away from the use of alternatives such as cheques and bank transfers that impose delays, defaults, additional administration costs and higher fees on merchants. This reduces the overall costs of making payments and enhances the efficiency of business transactions across Europe.

6. Impact of Commercial IF regulation on card use: Poland case study

We have cross-checked the economic assessment above with an empirical case study. In 2015, Poland extended the IFR to apply to commercial cards in addition to consumer cards.¹⁴ To review the effect of the cap on the commercial card market in Poland, we compared its evolution with that of the Czech Republic, a similar market where interchange fees for commercial cards were not capped. This approach is called 'difference-in-differences' (DiD). Further, we controlled for payment market characteristics and factors affecting the market to ensure the appropriate comparability of the countries, namely level of terminalisation, economic growth and business confidence, prevalence of card payments and the size of small business segment.

¹² Public data sources used by Oxera include: Accenture; Billentis; Eurostat; Atradius; Damodaran Online; European Commission; European Central Bank; and PayPal.

¹³ The extent of such switching was derived from the survey.

¹⁴ We note that while the interchange fee is no longer capped by regulation, Polish schemes have not yet changed their prices.

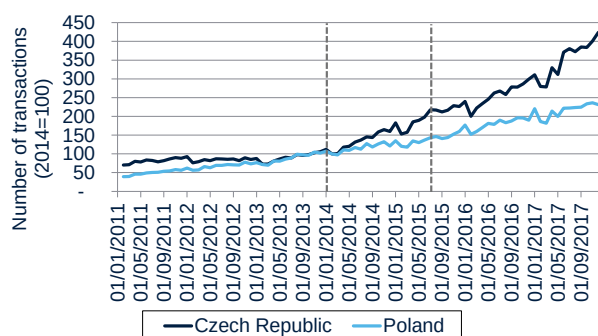
Difference-in-differences

Difference-in-differences is used to estimate the impact of a 'treatment' on a particular outcome by comparing the change over time in a group subject to the treatment ('treatment group') with the change in a group not subject to the treatment ('control group'). Our analysis indicated that the best available comparable country in this case is the Czech Republic, with similar evolution in factors such as real GDP growth, the number of POS terminals and payment regulation. For our analysis, the 'treatment' is the introduction of the cap on commercial card interchange fees in Poland, and the control group is the Czech Republic.

Source: Oxera.

As an example of the application of this method, Figure 3 below shows that the growth in the number of Mastercard commercial card transactions made in both countries are similar before 2014. However, in 2015 the trends start to diverge as the number of transactions in Poland began to grow more slowly than in the Czech Republic, providing evidence that the average annual number of commercial card transactions would have been significantly higher in Poland without the interchange fee cap.

Figure 3: Number of commercial card transactions



Note: For comparability, data indexed such that 2014 = 100.

Source: Oxera analysis of Mastercard data.

Similar results apply for number of cards held, total transaction value, and number of transactions per card. We have repeated the analysis using market-wide data from EuroMonitor on the same measures of commercial card usage. The results from this analysis support the conclusion based on Mastercard data.

As explained above, businesses switching away from commercial cards are expected to have a negative impact on merchants, due to the resulting higher transaction costs in serving these customers. In the case of Poland we can estimate the impact of such switching, a key part of the overall impact of the regulation, based on the lost transactions identified by the DiD analysis.¹⁵ It is not possible to determine from available data which alternative payment methods, if any, these transactions diverted to so

we have conservatively assumed they divert to cash.¹⁶ Table 2 indicates that merchants suffered a negative net impact of €22.4m per year due to the increased cost in processing cash transactions versus four-party commercial cards.¹⁷

Table 2: Commercial interchange reduction in Poland: merchant impact of switching

Factor	Cost*
Additional cost from businesses using cash	€41.1m
Offsetting benefit: avoided commercial card MSCs	-€18.7m
Total net impact:	€22.4m

Note: *Cost impact per year based

Source: Oxera analysis of Mastercard data.

These results should be considered in the context that most of the decrease in commercial card usage following the regulation has been among small and medium-sized enterprises (SMEs). This implies that businesses have lost access to an important source of business credit, with a potentially negative effect on costs and business growth.

7. Wider impacts: the issuing market

This paper has concentrated on the direct effects of Commercial IF regulation on card use, and the implications for merchants of a switch away four-party commercial card schemes. However, a potential regulation on commercial IF could also distort competition in the issuing market. In particular, our analysis of Poland indicates a substantial reduction in the number of commercial cards issued by smaller issuers, even larger than the reduction for larger issuers in Poland following the regulation. This provides evidence of a competitive distortion in the issuing market to the disadvantage of smaller issuers.¹⁸

This is in line with the economic expectation. Smaller issuers are less likely to be able to offset the reduction in interchange revenue with cross-subsidies from other activities. This is particularly so in Poland, where issuers and acquirers are typically separate, limiting the scope to balance costs internally through acquiring activity. Non-bank issuers in particular may have a higher dependence on interchange revenue as they generate fewer revenue streams from other products such as business loans. This means small or non-bank issuers may have to increase fees or reduce benefits proportionately more than large issuers to counter the reduction in revenue, resulting in greater losses of customers.

A reduction of competition in the issuing market is likely to exacerbate the direct effects of Commercial IF regulation for businesses in Poland, through reduced choice and value for those seeking to hold commercial cards.

¹⁵ Market-wide estimate is based on data results from DiD analysis; Galitt (2014), 'Inclusion of commercial cards in the EU draft legislation capping the interchange fees level – impact study for Mastercard'; and information from Mastercard.

¹⁶ This is of course unlikely to be the case in reality, as the transactions will include online payments and credit-dependant transactions that couldn't be made by cash. However, because cash is lower cost to process for merchants than the alternatives that may be used in such situations (for example, three party

cards or cheques), this method can be used to inform a lower bound estimate.

¹⁷ The effect for those transactions that continue to be made by commercial card is ambiguous and not included here; merchants initially benefit if low IFs result in lower MSCs, but cardholders suffer if the cost of using the card increases. Thus, the net effect depends on the level of issuer and acquirer pass-through, and subsequent effect on merchant prices.

¹⁸ Oxera analysis of market-wide data from EuroMonitor