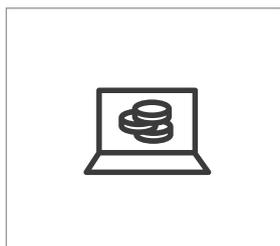


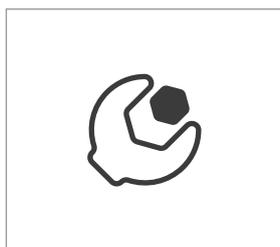
FEBRUARY 2019
SERIES: COSTS OF PAYMENTS IN DENMARK 2016

Business-to-business payments entailed social costs of kr. 4.2 billion



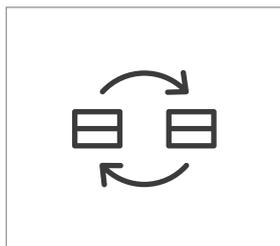
In B2B payments, credit transfers entailed the lowest social costs per krone spent in 2016

A credit transfer involved social costs of 0.03 øre per krone spent in 2016, making it the most inexpensive solution for society, followed by inpayment forms and direct debits at 0.07 and 0.09 øre, respectively, per krone spent.



Manual procedures for processing payments are resource-intensive

Manual processing of payments is resource-intensive. When payments are processed digitally, the costs to society are reduced.



Digitalisation of small businesses can reduce the social costs of payments

Small businesses are less digitalised than large businesses. More manual procedures mean that the social costs are higher for small businesses.

The Danish Payments Council has surveyed the social costs of payments in Denmark

The Danish Payments Council¹ has surveyed the social costs of payments in Denmark. This analysis is part of a series of analyses and presents the social costs of domestic business-to-business payments in Denmark. In the analysis, they are referred to as B2B payments.²

The social costs of payments express the aggregate use of resources by the parties involved in a payment transaction, i.e. the payment intermediaries and the businesses³, which are both payer and payee in B2B payments, cf. Box 1. Social costs do not comprise transfers between the parties, such as fees, and hence do not say anything about the individual businesses' aggregate costs of receiving and making payments.

The survey estimates the average social costs of B2B payments, i.e. it does not say anything about the marginal cost of making an extra payment. Nor does the analysis say anything about businesses' payments to and from abroad or about the costs of consumer-to-business, C2B, payments.⁴

Social costs

Box 1

Every day, businesses in Denmark send and receive many payments, and large amounts are transferred between businesses within a year.

This analysis estimates the average social costs of payments between Danish businesses. Social costs express the aggregate use of resources by the parties involved in a payment transaction. A B2B payment involves three parties: the payee, the payer and payment intermediaries. Payment intermediaries are banks, card companies, etc. and providers of online payment modules.

The social costs do not comprise transfers between the parties, such as acquirer fees. From society's point of view, such payments cancel out each other as a fee is an expense for one party and income for another. Consequently, the social costs do not say anything about e.g. the aggregate expenses incurred by the individual business for receiving or making payments.

For businesses, the social costs comprise internal costs for invoicing, payment, reconciliation and book entry. In addition, the business incurs costs if it has to follow up instances of non-payment. Losses resulting from fraud have not been included in the calculation.

The businesses included in the analysis are Danish private sector retailers and businesses. Industry associations and public sector entities are not included. The costs of businesses' payments to and from public sector entities are not included in the data on which the analysis is based.

The survey is limited to payments in Denmark, excluding cross-border payments. This means that all costs are net of activities that are attributable to cross-border payments.¹

The data and method of calculation of the social costs are described in more detail at the Danish Payments Council's website ([link](#)), where a description of the method and the other analyses in the series can be found.

1 An example is the use of payment cards abroad, for which costs relating to activities that are directly attributable to the use of the cards abroad have not been included. Another example is costs for currency exchange.

1 The Danish Payments Council is the framework for collaboration on the payments of consumers and businesses. The Council was set up by Danmarks Nationalbank and includes representatives of a broad range of stakeholders in the Danish payments infrastructure.

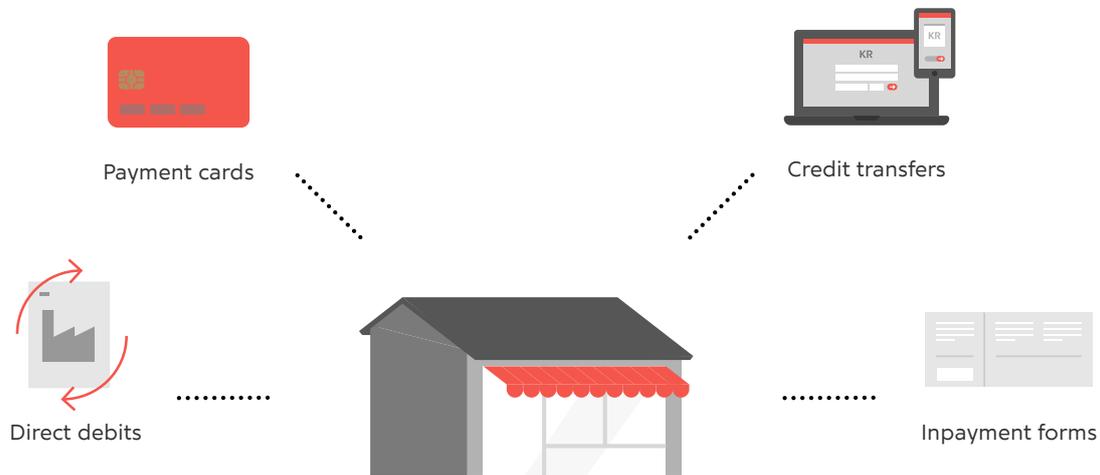
2 Payments between two businesses are often referred to as business-to-business, B2B payments.

3 In this analysis "businesses" is used as an aggregate term for retailers and businesses in Denmark.

4 The Danish Payments Council has previously published an analysis of the social costs of C2B payments, see Danish Payments Council, *The costs of consumer-to-business payments have decreased considerably*, September 2018.

The most frequently used payment methods for B2B payments

Chart 1



Note: *Direct debits* is an aggregate term for the Leverandørservice (B2B direct debit) and Betalingservice (C2B direct debit) products. *Payment cards* comprise the national card scheme, Dankort, international debit cards and international credit cards used for B2B payments in physical and remote trade. *Credit transfers* and *inpayment forms* are treated as separate payment methods in the analysis, although the underlying transaction is a credit transfer in both cases. The payment situation differs, and this has an impact on the social costs. For both payment methods, the analysis also distinguishes between staffed transfers, e.g. at the counter in a bank, and unstaffed transfers, e.g. made by the business via online banking.

The Danish Payments Council's survey gives payment market participants and other stakeholders insight into the social costs of various methods of payment. The survey is based on data from 2016. Hence, it cannot be used to draw conclusions about developments in the payments market since 2016.

The Council has previously looked at B2B payments and in 2015 published a report on, inter alia, various B2B payment solutions in Denmark and how the businesses viewed them.⁵ But the present analysis is the first one to shed light on the social costs of B2B payments.

Businesses have a number of options when it comes to deciding how to make payments to and receive payments from other businesses. The most frequently used B2B payment methods are payment cards,

credit transfers, inpayment forms and direct debits, cf. Chart 1.⁶ These are also the payment methods included in the analysis, where direct debits comprise recurring and automated collection of B2B payments, i.e. Leverandørservice and Betalingservice. Cash is not among the most frequently used B2B payment methods and hence it is not included in the analysis. Furthermore, the analysis does not comprise cross-border payments.

A B2B payment occurs when two businesses trade with each other. The trade comprises several elements: ordering, invoicing, payment and reconciliation and book entry. When the order has been placed and the goods delivered, the supplier typically sends an invoice with details of the trade and demand for payment. The client business then checks the order against its own information and remits payment.

⁵ See Danish Payments Council, *Report on business-to-business payments*, May 2015.

⁶ For a detailed description of these payment methods, see Danish Payments Council, *Report on business-to-business payments*, May 2015.

When the supplier has received payment, reconciliation can take place and both parties can enter the payment in their books. So the social costs comprise the businesses' internal costs for invoicing, payment, reconciliation and book entry.

According to the Danish Payments Council's survey, Danish businesses in 2016 made just over 370 million payments to other businesses in Denmark. Danish consumers made approximately 2 billion payments to Danish businesses.

The social costs of B2B payments amounted to kr. 4.2 billion in 2016

The aggregate social costs of B2B payments in Denmark were kr. 4.2 billion in 2016, equivalent to approximately 0.2 per cent of GDP.

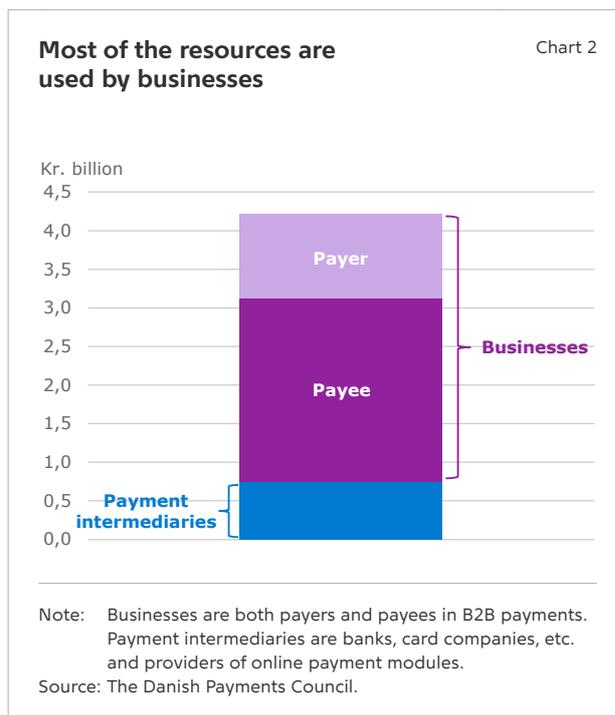
Most of the social costs were borne by the businesses, whose costs accounted for 83 per cent (kr. 3.5 billion) of the aggregate social costs of B2B payments, while payment intermediaries, etc. accounted for 17 per cent (kr. 0.7 billion), cf. Chart 2.

For businesses, the social costs comprise internal costs for invoicing, payment, reconciliation and book entry, as previously mentioned. More specifically, this can be payroll costs for the employees involved and costs for IT systems for receiving or making payments, e.g. an accounting system. There may also be costs for the required physical devices and equipment, such as a cash register or a payment terminal. Likewise, the social costs incurred by payment intermediaries comprise payroll costs for employees, costs for operating and developing IT systems, expenses for physical equipment, and any payments-related losses covered by the payment intermediaries.

The large share of the social costs of B2B payments borne by the businesses should be viewed in light of the fact that businesses are both payers and payees in B2B payments. The largest social costs are those related to receiving payments. In 2016, the costs of receiving payments made up almost 70 per cent of the social costs borne by businesses, cf. Chart 2. This is because the business receiving a payment uses resources for invoicing and for reconciliation and book entry of the payment.

Direct debits are one of the most inexpensive B2B payment methods

In 2016, direct debits were among the B2B payment methods involving the lowest social costs. On aver-

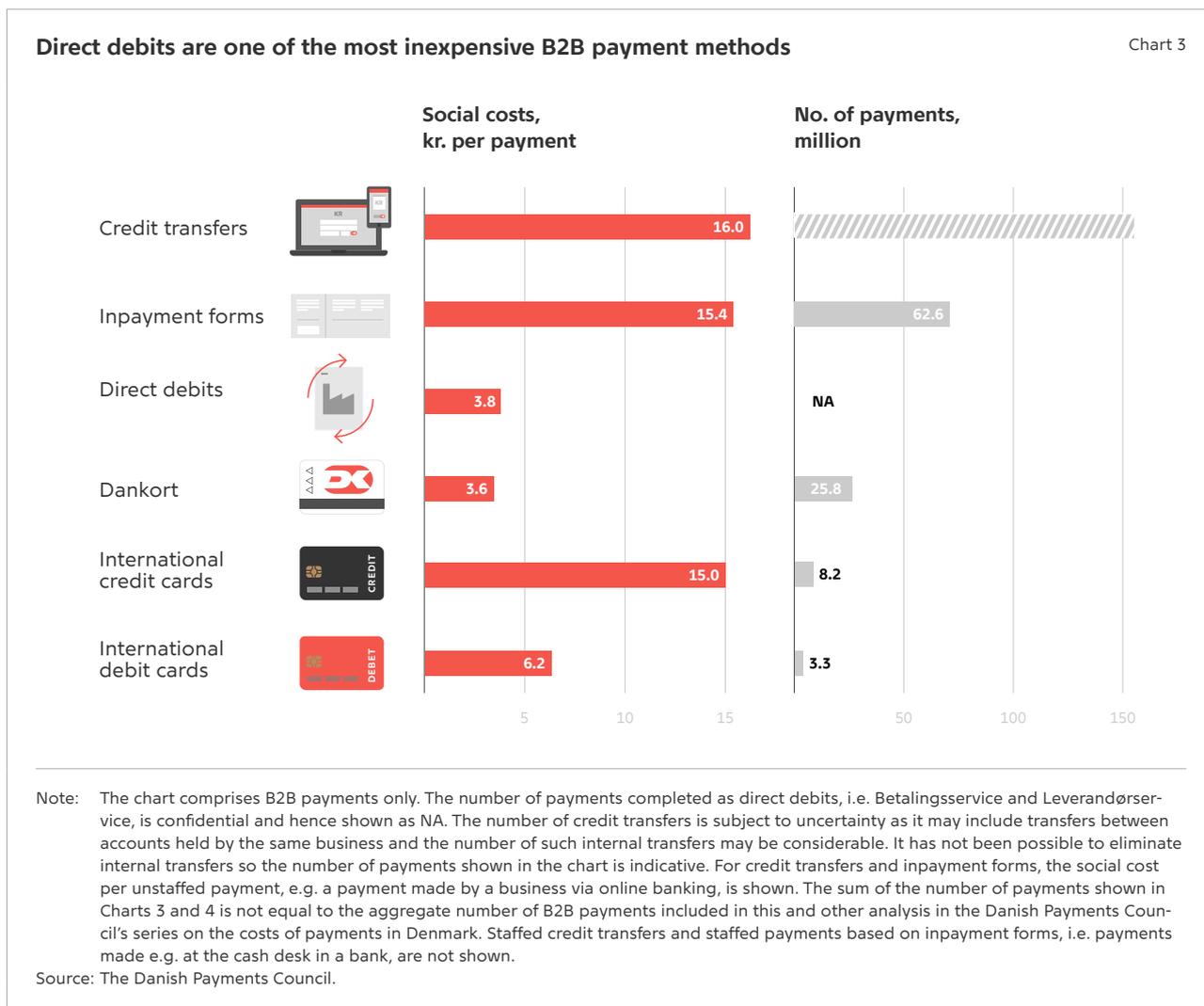


age, each direct debit involved social costs of kr. 3.8. Similarly, payments made using an inpayment form or by credit transfer entailed average social costs of kr. 15.4 and 16.0, respectively, per payment, cf. Chart 3.

Payment by Dankort involved social costs of kr. 3.6 per B2B payment, while payment by international debit and credit cards cost kr. 6.2 and 15.0, respectively, per payment. So Dankort payments are slightly cheaper than direct debits. However, card payments are not directly comparable with the three other types of B2B payments as they are generally used for smaller day-to-day purchases such as breakfast and presents.

Moreover, use of payment cards accounts for a relatively small share of aggregate B2B payments, as only 10 per cent of the total number of payments are card payments.

The social costs of the most frequently used B2B payment methods vary considerably. A key factor in this calculation is the amount of manual work involved in each method of payment. Direct debits entail low social costs because these payments are, as a main rule, automated once they have been entered into the system. Both credit transfers and payments based on inpayment forms typically involve several manual processes in connection with



the actual payment, as well as costs for sending an invoice with payment details or an inpayment form. This has an impact on the social costs.

The number of payments also plays an important role in terms of each method of payment. This is because there are substantial fixed costs related to making payments, so a larger number of transactions reduces the average social costs. The result for B2B payments using the Dankort reflects how the economies of scale resulting from the widespread use of the Dankort for payments by consumers to retailers and businesses have a knock-on effect on B2B payments.

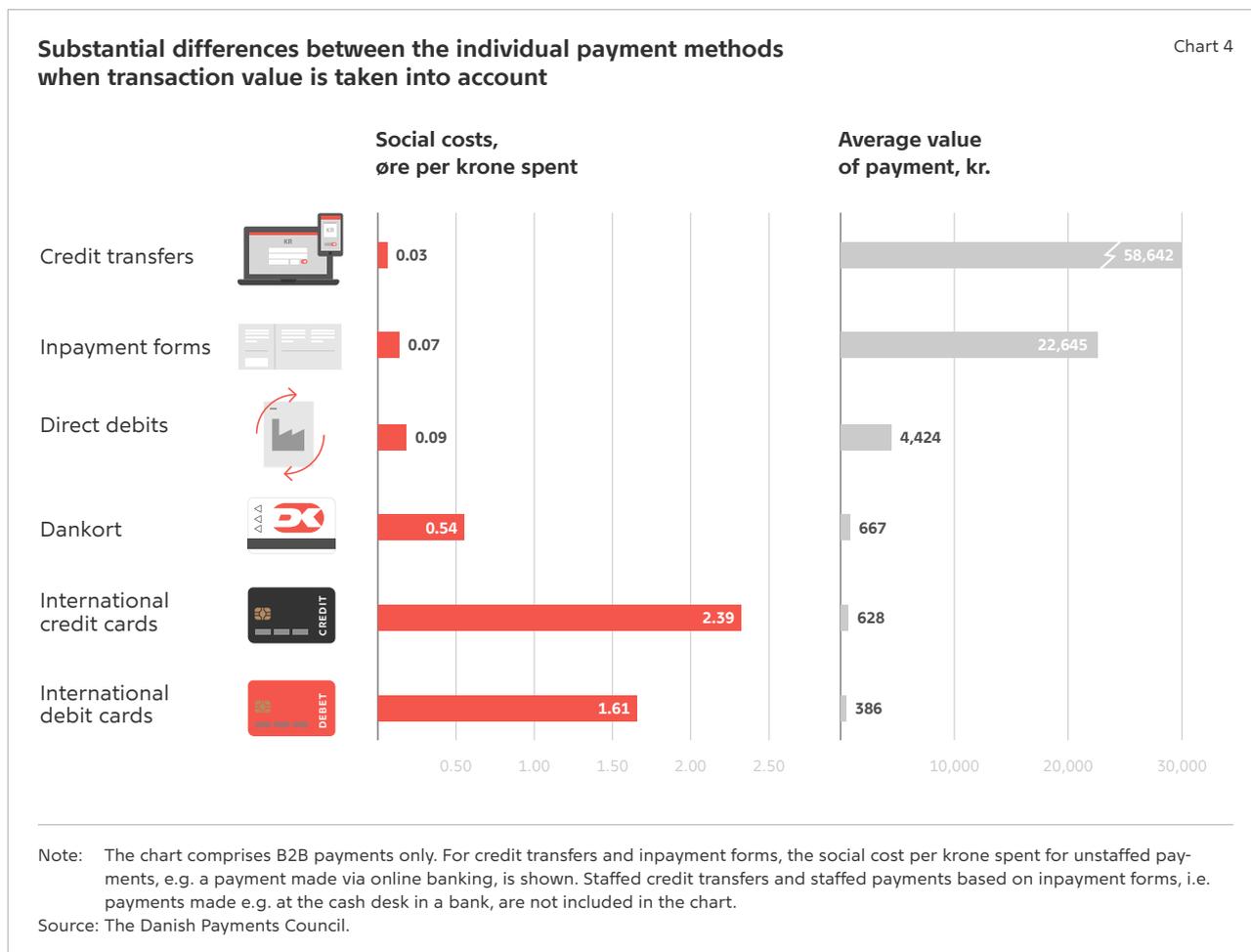
Turnover is of major significance to the social costs

The payment methods in the analysis differ and are also used in different situations. This means that the size of an average B2B payment differs considerably,

depending on the method of payment. So when assessing the social costs of the payment methods, it is also important to consider the social cost per krone spent.

When the amount spent is taken into account for the various payment methods, direct debits, credit transfers and payments using inpayment forms all entail very low social costs, cf. Chart 4. In 2016, credit transfers entailed social costs of 0.03 øre per krone spent, followed by inpayment forms and direct debits at 0.07 and 0.09 øre, respectively, per krone spent.

The reason for the lower social costs is that credit transfers and inpayment forms are often used for large B2B payments. The approximate average values of these two payment methods were kr. 59,000 and kr. 23,000, respectively, i.e. much higher than the average of just over kr. 4,000 for direct debits in 2016, cf. Chart 4.



When a business chose to use one of the three types of payment card, the social costs were higher, as payment by Dankort, international debit card and credit card cost 0.54, 1.61 and 2.39 øre, respectively, per krone spent, cf. Chart 4. The reason is that payment cards are generally not used for large B2B payments, but for smaller purchases, as described above. In fact, the average value of a card payment is less than kr. 1,000, which is well below the average values for direct debits, credit transfers and payments using inpayment forms.

Manual procedures for processing payments are resource-intensive

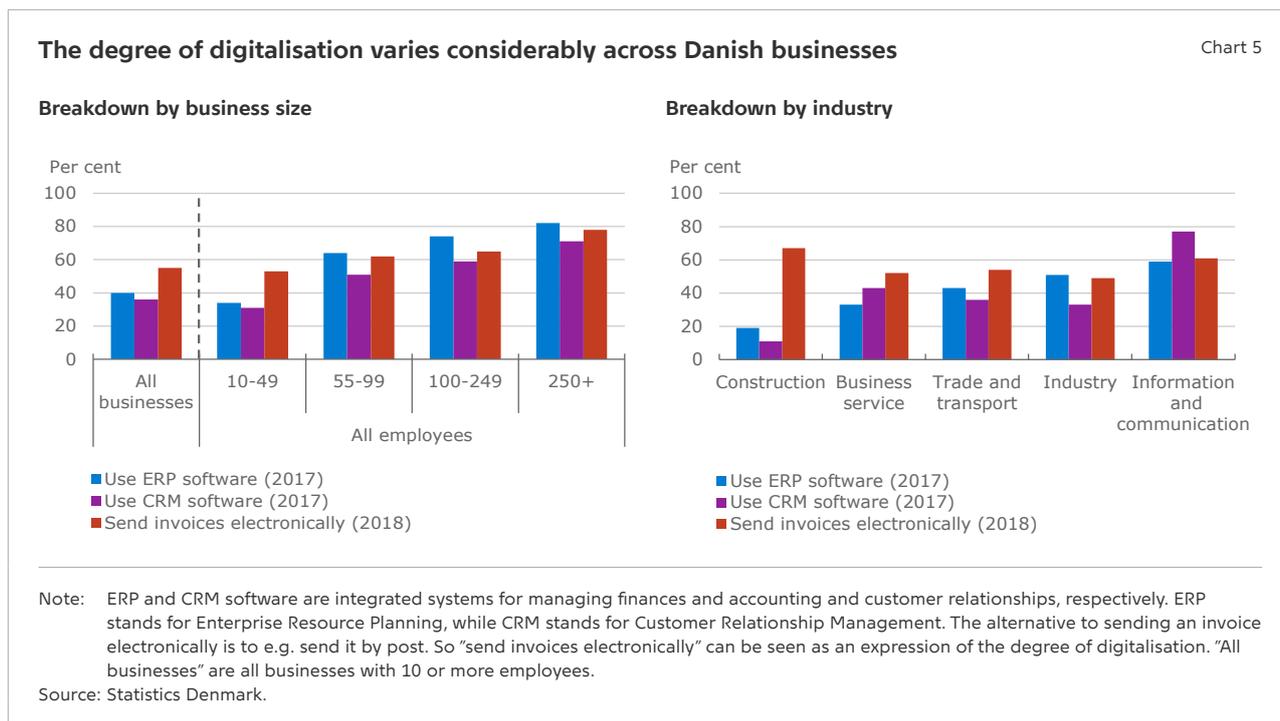
Danish businesses receive and make many payments every year. According to the Danish Payments

Council’s survey, Danish businesses in 2016 made approximately 370 million payments to other Danish businesses and received some 2 billion payments from Danish consumers.

The degree of digitalisation in the businesses’ processing of payments has a large impact on the social costs. Although businesses are included en bloc in the Danish Payments Council’s analyses, there is considerable variation across businesses in terms of how digitalised and efficient their payment processes are.

In its annual survey of businesses’ use of IT, Statistics Denmark calculates indicators of Danish businesses’ degree of digitalisation, including for payment-linked activities.⁷

⁷ Statistics Denmark, *It-anvendelse i virksomheder 2017* (use of IT by Danish businesses 2017 – in Danish only), January 2018. The survey comprises businesses with 10 or more employees.



The survey confirms that the degree of digitalisation varies considerably, both in relation to business size and industry, cf. Chart 5. Among small businesses, around 30 per cent used ERP and CRM systems in 2017, i.e. IT systems for managing finances, accounts and customer relationships, compared with 70-80 per cent of large businesses. Broken down by industry, only 10-20 per cent of businesses in construction used such IT systems, which is in contrast to the extensive digitalisation of businesses in the information and communication industry.

The degree of digitalisation has an impact on the social costs as manual procedures for processing payments are resource-intensive. All else equal, manual procedures contribute to increasing the social costs of executing payments in Denmark.

Digitalisation can reduce the social costs of payments for small businesses

Small businesses make up a large share of the Danish business sector. In 2015, small businesses, i.e. businesses with fewer than 50 employees, made up around 98 per cent of all Danish businesses and accounted for approximately 28 per cent of total turnover in Danish businesses, cf. Chart 6. At the same time, the small businesses have the lowest degree of digitalisation and can thus be assumed to have more manual procedures for day-to-day processing of pay-

ments. This means that the social cost per payment can be expected to be higher for a small than for a large business.

However, the gain from investing in digital solutions will presumably depend on the size of the business and the nature of its work. For example, the cost of investing in relevant IT solutions would be relatively high for a business with only one employee compared with a business with more employees and hence more tasks.

Digitalisation of businesses has continued since 2016

Over the last decade, the Danish society has become increasingly digitalised and there is strong focus on digitalisation of the business sector – both in terms of solving specific financial and payments-related tasks and in terms of digitalisation in general.

The Danish Payments Council’s survey is based on data from 2016, and the businesses included can be expected to have increased their degree of digitalisation since then. So there is reason to believe that their internal costs for invoicing, payment and reconciliation and book entry have decreased since 2016. This could be a result of e.g. more widespread use of ERP systems that are integrated with the business’s online banking system and its accounting sys-

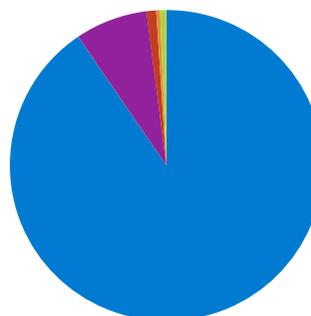
tem. In recent years there has been increased focus on developing ERP systems with facilities targeted at the needs of small businesses, e.g. among fintechs, which may have contributed to increased automation of procedures among small businesses compared with the situation in 2016.

Overall, increased digitalisation of Danish businesses since 2016 can be expected to have made a positive contribution to reducing the social costs of B2B payments for businesses. But the size of this positive impact is not known.

Small businesses make up a considerable share of the Danish business sector

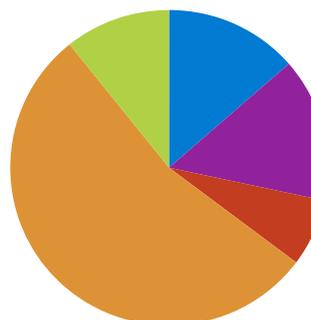
Figur 6

Number of businesses by size



■ 0-9 employees
■ 10-49 employees
■ 50-99 employees
■ 100-249 employees
■ 250 or more employees

Turnover by business size



■ 0-9 employees
■ 10-49 employees
■ 50-99 employees
■ 100-249 employees
■ 250 or more employees

Note: The chart shows Danish businesses broken down by number of employees in 2015. Special extract from Statistics Denmark provided to SMVdanmark. "Small businesses" are businesses with fewer than 50 employees.

Source: SMVdanmark.



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