

NORGES BANK PAPERS

Costs in the Norwegian
payment system

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Summary

We estimate the social costs of payments in Norway at NOK 14.5 billion in 2013, equivalent to 0.48 percent of GDP or 0.63 percent of mainland GDP. Social costs are the sum of the private costs for the various participants in the payment chain less the fees paid between them.

In the previous survey in 2007, costs amounted to NOK 11.2 billion or 0.49 percent of GDP. In 2013, using the same survey design as in 2007, costs came to 0.42 percent of GDP. Costs have therefore fallen. Comparisons with other countries show that the costs involved in the Norwegian payment system are low.

The number of payments increased from 1.8 billion in 2007 to 2.5 billion in 2013. The number of payments rose more sharply than costs, contributing to a decrease in unit costs (costs per payment). The average social unit cost across all types of payment was NOK 5.75 in 2013, against NOK 6.90 in 2007 (in 2013 NOK). Unit costs fell for most types of payment.

Card payments had an overall unit cost of NOK 4.14, but with considerable variations across card types: the average cost per payment was NOK 2.93 using the national debit card scheme BankAxept and NOK 12.60 for payments using international cards.

Banks and card acquirers accounted for 40 percent of the social costs, while households, merchants and subcontractors each accounted for around 20 percent.

Payment costs for banks and acquirers totalled NOK 8.5 billion in 2013, equivalent to 0.28 percent of GDP, down from 0.32 percent in 2007. Banks produced payment services more efficiently in 2013 than in 2007, with costs per payment falling from NOK 5.41 to NOK 3.52.

Overall, banks are still making a loss on payment services. Banks' cost recovery (income as a share of costs) was 76 percent in 2013, against 71 percent in 2007. Cost recovery was lowest for cash. Banks made a profit on international cards.

Payment costs for households totalled NOK 6.2 billion in 2013, equivalent to 0.20 percent of GDP, down from 0.22 percent in 2007. Most of these costs stem from time consumption in the execution of payments and from fees. Each payment at point of sale (card or cash) cost households an average of NOK 1.67, down from NOK 3.28 in 2007 (in 2013 NOK).

Payment costs for merchants totalled NOK 4.3 billion in 2013, equivalent to 0.14 percent of GDP, up from 0.12 percent in 2007. The bulk of merchants' costs are related to card payments. The merchants taking part in the survey paid an average merchant service fee for payments with international cards of between 0.97 and 1.85 percent of the transaction value, depending on card scheme. In the 2007 survey, merchant service fees varied between 1.78 and 2.89 percent. Each payment (card or cash) cost merchants an average of NOK 1.91 in 2013, against NOK 1.90 in 2007 (in 2013 NOK).

We would stress that the data and methodology underlying the estimates in the survey are associated with uncertainty.

1.1 Scope of the survey

Section 1 of the Norges Bank Act requires the Bank to “promote an efficient payment system domestically as well as vis-à-vis other countries.” An efficient payment system ensures that payments are made quickly and securely, at low cost and in a way that meets users’ needs. The present survey maps the cost-effectiveness of the Norwegian payment system. Similar surveys were carried out in 1988, 1994, 2001 and 2007.

This paper presents estimates of:

- total social costs
- the various participants’ (private) costs
- costs for different types of payment¹
- banks’ cost recovery

Social costs are calculated as the sum of the private costs² for the individual participants in the payment system less the fees³ paid between them. Social costs are therefore an expression of the cost of payments to Norway as a nation.⁴ Cost-effectiveness is assessed in the light of the previous surveys and similar surveys in other countries.

The survey covers costs for the most widely used domestic payment instruments: cards, cash and giros. We also break down costs further:

- Costs for card payments are subdivided into costs relating to the BankAxept scheme and costs relating to international payment cards.
- Costs for cash payments are subdivided into costs relating to the actual payment and to cash infrastructure costs (such as various types of withdrawal and deposit).
- Costs for giro payments are subdivided into electronic and paper-based payments.

The analysis does not include person-to-person payments, bank-to-bank payments, cross-border payments or payments using cheques, fuel cards or e-money. Nor does the survey cover all of payees’ costs for issuing bills and accepting payments. Norwegians’ use of payment services abroad is not included.

We would stress that the data and methodology underlying the estimates in the survey are associated with uncertainty. The results should therefore be considered as uncertain point estimates.

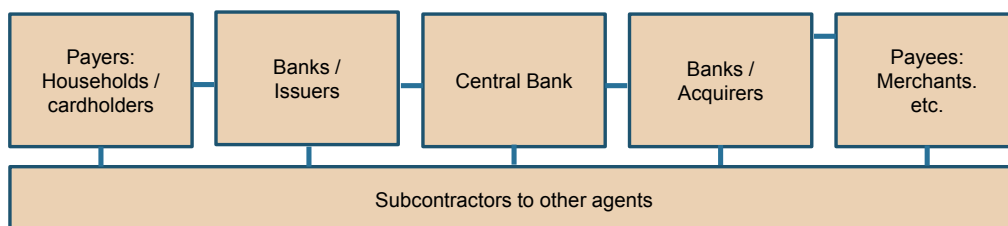
This paper presents the results of the survey. Norges Bank’s analyses based on data from the survey and views on policy issues will be presented in other publications, such as the annual *Financial Infrastructure Report*.

1 “Payments” is used here for both ordinary payments and cash services such as deposits, withdrawals and currency exchange.
2 Private costs are defined as each participant’s total costs, either generated as part of its own operations or incurred in the form of fees or bought-in services.
3 “Fees” is used here for both traditional fees and other payments to subcontractors.
4 See Chapter 2 of Gresvik and Haare (2009) for detailed descriptions of the calculation methods.

1.2 The participants in a payment

Ordinary payments involve six types of participant: payers (households/card holders), payees (merchants), payers' banks, payees' banks (acquirers⁵), the central bank and subcontractors (see Chart 1.1).

Chart 1.1 The payment chain



With card and giro payments, all of these players are involved in the transaction. With cash payments, the money goes straight from payer to payee without any intermediary. However, cash will also be transferred between the other participants when withdrawals and deposits are made, with the result that all of the participants will be involved in cash payments in these cases.

The survey estimates the private costs for each type of participant.

- *Banks* supplied complete cost data for the various payment services through a separate bank survey. The information from the banks made it possible to distinguish between banks' own production costs and the costs/fees paid to subcontractors.
- *Households'* costs (other than fees) were estimated on the basis of time consumption for various types of payment and payment service and the number of transactions they made. The time cost was calculated on the basis of data from Statistics Norway on average wages in Norway (after tax).⁶ The estimates for time consumption are presented in Box 4 in Section 4 below. The number of transactions using deposit money was obtained from Norges Bank's payment statistics⁷, while data on households' use of cash were collected in a separate household survey. Information from these two sources was combined to compute the total number of cash and card transactions in Norway. Fees paid by households and merchants to banks were taken from Statistics Norway's ORBOF⁸ database.
- *Merchants'* own costs were partly based on the time cost of different payments. Time consumption was assigned a value on the basis of Statistics Norway's index of total labour costs in the retail trade sector. A separate merchant survey covered other internal costs and costs/fees paid to subcontractors.

The calculation of social costs is presented in Section 2 below. The three surveys of banks, households and merchants respectively are detailed in Sections 3-5.

⁵ The acquirer pays the settlement to the payee's account.

⁶ This can be considered the lowest value of leisure time, given that the individual is free to allocate his time between work and leisure (see Ministry of Finance (2014).

⁷ See Norges Bank (2014).

⁸ ORBOF is a database of financial information from banks and finance companies.

2. Social costs in 2013

The social cost of payments in Norway was NOK 14.5 billion in 2013, equivalent to 0.48 percent of GDP or 0.63 percent of mainland GDP (see Table 2.1).

Table 2.1 Social costs by service⁹

Service	NOK bn 2013	Share of GDP 2013	NOK bn 2007	Share of GDP 2007	Share of GDP 2013 (2007 survey design)
Cash	3.0	0.10%	3.5	0.15%	0.10%
Card payments	6.2	0.21%	5.4	0.24%	0.21%
Giro payments	5.3	0.18%	2.3	0.10%	0.12%
Total	14.5		11.2		
Share of GDP		0.48%		0.49%	0.42%
Share of mainland GDP		0.63%		0.65%	0.55%

In 2007, social costs amounted to 0.49 percent of GDP. Using the same survey design as in 2007, costs in 2013 came to 0.42 percent of GDP. Costs have therefore fallen.

The social cost of cash, card and giro payments amounted to 0.10, 0.21 and 0.18 percent of GDP respectively.

Costs related to card payments and cash fell from 2007 to 2013 as a share of both GDP and total costs. The equivalent shares for giro payments were higher than in the 2007 survey. Some of the increase reflects the estimated value of merchants¹⁰ time consumption for making their own giro payments, which was included in the 2013 survey. We also extended the bank survey to include more giro-related services. While the 2007 survey mainly covered giro services for payers, the 2013 survey also included a number of giro services for payees. This contributed to both higher total costs and higher unit costs for giro payments.

Comparisons with other countries show that costs in the Norwegian payment system are low (see Box 1).

⁹ Amounts in tables may not sum due to rounding.

¹⁰ Includes other firms and public enterprises in the following unless otherwise stated. A separate survey for these participants has not been carried out. Instead we have estimated their costs for paying their own bills. Costs in the form of fees paid by these participants to banks are also included. Fees paid to banks from the corporate sector have been evenly divided between merchants and other firms/public enterprises.

Box 1: Cost surveys in other countries

Table 2.2 presents the main results of several similar cost surveys carried out in recent years. Two of the surveys in the table cover a narrower range of costs than the Norwegian survey: the Swedish survey does not include households' costs, and the Portuguese survey covers only banks' costs. The figures for costs as a share of GDP are therefore not directly comparable across all of the countries.

Table 2.2 Comparison with cost surveys in other countries

	Hungary 2009 (national survey)	Portugal 2009 (European survey)	Sweden 2009 (European survey)	Denmark 2009 (national survey)	Norway 2013 (national survey)
Participants in survey	Banks, households, merchants, sub- contractors, central bank	Banks	Banks, merchants, sub- contractors, central bank	Banks, households, merchants, sub- contractors, central bank	Banks, households, merchants, sub- contractors, central bank
Costs as a share of GDP	1.49%	0.73%	0.68%	1.00%	0.48%
Unit costs, cash ¹	€0.26	€0.15	€0.78	€0.99	€0.82
Unit costs, debit cards ¹	€0.72	€1.54	€0.42	€0.49	€0.37
Unit costs, credit cards ¹	€2.84	€1.58	€1.15	€2.85	€1.61

1 NOK converted to EUR using the average exchange rate for the year.

Sources: Turján et al. (2011), Schmiedel et al. (2012), Segendorf and Jansson (2012) and Danmarks Nationalbank (2011).

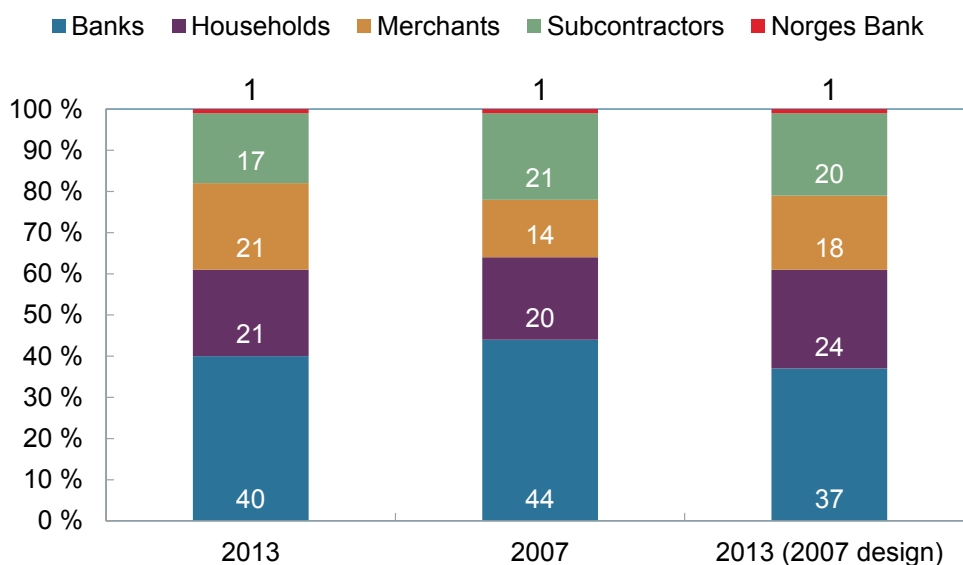
2.1 Participants' contributions to social costs

Banks¹¹ accounted for 40 percent of the social costs, while subcontractors¹², households and merchants each accounted for around 20 percent (see Chart 2.1). Banks' share of costs has fallen since 2007. The processing of payments at banks has largely been automated, and banks have been able to exploit economies of scale, with the result that the rise in costs has been smaller than the rise in the number of payments. The payment process at point of sale has not undergone the same increase in efficiency. Although time per payment has fallen, the total time cost per payment has been sustained by wage growth. Wage costs account for a larger share of households' and merchants' costs than of banks' costs.

11 Including card acquirers.

12 Some examples of subcontractors are Nokas, Loomis, VISA, MasterCard, Nets and Evry.

Chart 2.1 Social costs by participant. Share of total costs



2.2 Estimates of social costs of different services

Tables 2.3-2.5 present cost estimates for the various main groups of payment services. The social cost of a service is the sum of the participants' production costs. The production cost for each participant is the private cost less fees paid *to* other participants. The net private cost for each participant is the private cost less fees *from* other participants. A negative net private cost means that a participant made a profit on the production of the service. The sum of the production costs for all of the participants is equal to the sum of the net private costs for all participants, as fees paid will be offset by fees received.

Table 2.3 Cash (cash payments and cash services).¹³ In millions of NOK

	Private costs	Fees paid	Production costs	Fees received	Net private costs
Banks	1 816.7	882.3	934.3	578.0	1 238.7
Households	1 376.6	578.0	798.6	0.0	1 376.6
Merchants	347.5	3.0	344.5	0.0	347.5
Subcontractors	865.4	0.0	865.4	901.4	-36.1
Norges Bank	122.5	24.4	98.0	8.3	114.1
Total	4 528.7	1 487.8	3 040.9	1 487.8	3 040.9
Social costs			3 040.9		

13 The income foregone by banks, household and merchants by holding cash rather than deposit money is not included in the calculations. For Norges Bank, the other participants' foregone interest income represents a source of income. This loss/income would have impacted on private costs but not on social costs.

Table 2.4 Card payments. In millions of NOK

	Private costs	Fees paid	Production costs	Fees received	Net private costs
Banks	3 070.0	889.5	2 180.5	3 328.7	-258.7
Households	2 342.7	1 083.8	1 258.9	0.0	2 342.7
Merchants	4 145.8	2 244.9	1 900.8	0.0	4 145.8
Subcontractors	817.5	0.0	817.5	870.9	-53.4
Norges Bank	57.8	19.4	38.5	37.9	19.9
Total	10 433.9	4 237.6	6 196.3	4 237.6	6 196.3
Social costs			6 196.3		

Table 2.5 Giro payments. In millions of NOK

	Private costs	Fees paid	Production costs	Fees received	Net private costs
Banks	3 585.6	843.2	2 742.4	2 523.2	1 062.4
Households	2 435.8	1 444.7	991.0	0.0	2 435.8
Merchants	1 826.5	1 078.5	748.0	0.0	1 826.5
Subcontractors	791.2	0.0	791.2	833.9	-42.7
Norges Bank	48.2	9.7	38.5	19.0	29.2
Total	8 687.3	3 376.1	5 311.2	3 376.1	5 311.2
Social costs			5 311.2		

The sum of all the private costs in the tables above is NOK 23.6 billion. Broken down by payment instrument, card payments accounted for 44 percent of costs, giro payments for 37 percent and cash for 19 percent. Broken down by participant, banks accounted for 36 percent of total private costs, merchants for 27 percent, households for 26 percent, subcontractors¹⁴ for 10 percent and Norges Bank¹⁵ for 1 percent.

Fees paid totalled NOK 9.1 billion, or around 38 percent of total private costs. Fees accounted for 41 percent of total costs for card payments, 39 percent for giro payments and 33 percent for cash and cash services.

Fees can also be broken down by payer:

- *Households* paid a total of NOK 3.1 billion in fees, all of which were fees paid to banks for using ATMs, payment cards (annual fee etc.) and electronic and manual giro services. Further information on the breakdown of fees can be found in Box 2 below.
- *Merchants* paid a total of NOK 3.3 billion in fees and other payments to subcontractors. The bulk of these were service fees paid to acquirers for payments using international cards. Fees paid to banks for paying merchants' own bills and issuing bills to customers accounted for a smaller share.
- *Banks* paid a total of NOK 2.6 billion to other participants. This consisted of fees to international card companies and payments to other subcontractors for the processing of transactions and for traditional banking services that have been outsourced.

14 Fees received by subcontractors are the sum of the fees paid to them by banks, merchants and Norges Bank. Subcontractors' private costs (and consumption of resources) have been set at fees received less an assumed profit margin of 4 percent.

15 Norges Bank's private costs for payments totalled NOK 229 million. Fees accounted for NOK 54 million of this and included costs for operating the settlement system, developing and producing notes and coins, and purchases of cash handling services (outsourced services). Production costs included internal costs for work on notes and coins, running/monitoring the settlement systems, and the Bank's shared services. Income from payment operations came from banks and amounted to NOK 65 million.

Of the total fees paid, banks received NOK 6.4 billion and subcontractors NOK 2.6 billion. Around half of banks' fee income derived from card payments.

The difference between total private costs of NOK 23.6 billion and total fees paid of NOK 9.1 billion gives total social costs of NOK 14.5 billion.

Box 2 Breakdown of banks' fee income from payment services

According to Statistics Norway's ORBOF database, banks received total fees from customers of NOK 6.4 billion in 2013 (see Table 2.6). In these statistics, the total is broken down into five different items: giro electronic, giro paper-based, standing orders, card payments and other payment services. The information in ORBOF is not subdivided by type of card or participant. We have therefore further broken down the fees on the basis of various assumptions.

Fees from *giro payments*, *standing orders* and *other payments* have been allocated to households and merchants/other firms on the basis of the distribution of on-line banking payments between these participants in Norges Bank's payment statistics. Fees from *standing orders* and *other payments* have been allocated to electronic and paper-based giro payments on the basis of the distribution between these giro types for the sectors in Norges Bank's payment statistics.

Merchant service fees for *card payments* are based on merchant service fees in the merchant survey. The remaining card fees have been assigned to households¹⁶ and allocated in thirds to ATMs, BankAxept and international cards. Some card fees can, however, be attributed to the use of cards abroad: 20 percent of all ATM withdrawals and 50 percent of payments using international cards take place abroad. Total card fees for ATMs and international cards have been adjusted accordingly. BankAxept is not used abroad.¹⁷

Table 2.6 Banks' fee income. In millions of NOK

	Merchants	Households	Total
Total payment services	3 323	3 107	6 430
ATMs	-	578	578
Card payments	2 245	1 084	3 329
<i>BankAxept</i>	173	723	895
<i>International cards</i>	2 072	361	2 433
Electronic giros	808	1 084	1 891
Paper-based giros	271	361	632

¹⁶ Annual fees for payment cards have been allocated entirely to households. Information from a number of the banks participating in the survey indicates that less than 10 percent of the total number of cards issued are business cards.

¹⁷ Except for cross-border shopping in Sweden.

2.3 Number of payments

The total number of payments in Norway grew by 38 percent from 2007 to 2013.

The greatest increase was in the number of card payments, which rose by 66 percent. The number of cash payments fell by 8 percent during the period.¹⁸ Withdrawals of cash from ATMs and when making purchases of goods (cashback) both decreased by around 35 percent. Giro payments as a whole increased in number during the period, but the number of paper-based giro payments fell by more than half.

Table 2.7 Number of payments in 2013 and 2007

	Number of payments 2013	Number of payments 2007	Change, 2007-2013
	In millions	In millions	Percent
Total cash	465.9	494.7	-6%
ATMs	64.2	98.5	-35%
Other cash services ¹	87.1	33.5	160%
Cashback	51.1	77.7	-34%
Cash payments at point of sale	263.5	285.0	-8%
Total card payments	1 497.6	902.4	66%
BankAxept	1 310.1	805.3	63%
International cards	187.5	97.1	93%
Total giro payments	615.6	510.7	21%
Electronic giros	596.0	462.3	29%
Paper-based giros	19.6	48.4	-60%
Total Norway	2 528.0	1 830.1	38%

¹ Such as deposits and withdrawals over the counter, use of nightsafes and exchange of notes and coins. The 2013 survey covers more services than the 2007 survey.

2.4 Social unit costs

The overall social unit cost¹⁹ was NOK 5.75 in 2013 (see Table 2.8 and Chart 2.2).

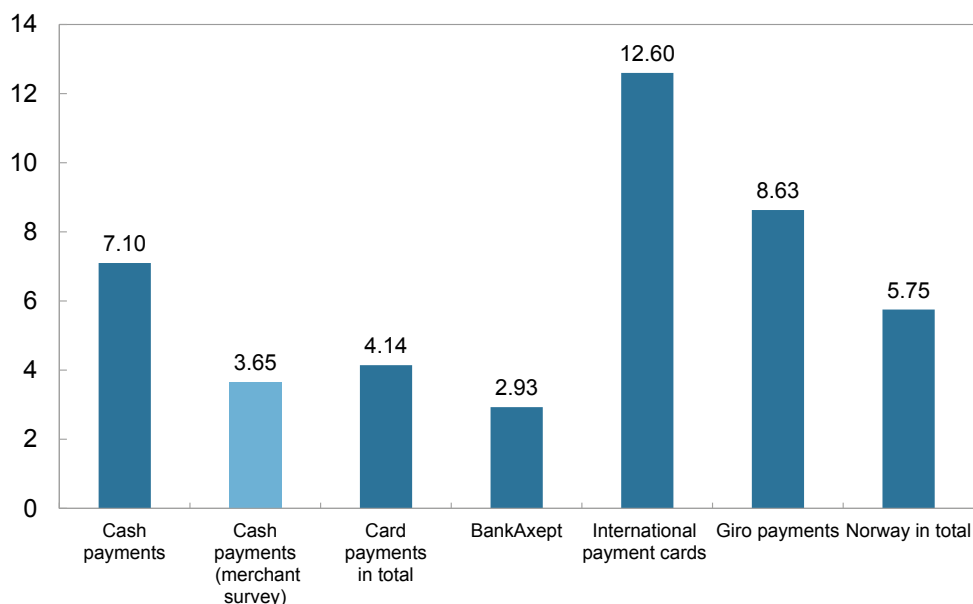
¹⁸ Estimates for the use of cash based on the household survey. See Box 3 for further information.

¹⁹ This is the average unit cost for all types of payments and all groups of participants. It is therefore different from the marginal cost (the cost of an additional payment), both overall and for the individual participant.

Table 2.8 Social unit costs

	Social costs In millions of NOK	Number of payments In millions	Social costs per payment In NOK	Transaction value In billions of NOK	Social costs as a share of transaction value Percent	Average transaction value In NOK
Total cash	3 040.9	465.9	6.53	161.9	1.88	347
ATMs	902.2	64.2	14.05	99.1	0.91	1 544
Other cash services	1 589.7	87.1	18.25			
Cashback		51.1		21.7		425
Cash payments at point of sale	549.0	263.5	2.08	41.1	1.34	156
Cash payments at point of sale (including infrastructure costs)	1 871.1	263.5	7.10	41.1	4.55	
Total card payments	6 196.3	1 497.6	4.14	547.7	1.13	366
BankAxept	3 833.9	1 310.1	2.93	444.5	0.86	339
International cards	2 362.4	187.5	12.60	103.2	2.29	550
Total giro payments	5 311.2	615.6	8.63	14 112.8	0.04	22 925
Electronic giros	4 802.0	596.0	8.06	13 974.3	0.03	23 447
Paper-based giros	509.2	19.6	25.98	138.5	0.37	7 066
Total Norway	14 548.3	2 528.0	5.75	14 800.7	0.10	5 855

Chart 2.2 Social unit costs. In NOK



The actual cash payment operation had a unit cost of NOK 2.08 (see Table 2.8). However, cash payments are also associated with other costs, including costs of withdrawing cash and cash infrastructure costs, which should also be part of the costs of cash

payments at point of sale.²⁰ The unit cost for cash payments then rises to NOK 7.10 (see Table 2.8 and Chart 2.2).²¹

Each ATM withdrawal had an estimated social cost of NOK 14.05, while the unit cost of other cash services (including deposits and withdrawals over the counter) was NOK 18.25. Cashback transactions in shops probably add some time to the purchase of goods, but since this also reduces merchants' time consumption for subsequent cash handling, these withdrawals have not been assigned any social cost. On average, cash payments and cash services had a social unit cost of NOK 6.53.

Card payments had an average social unit cost of NOK 4.14 (see Chart 2.2). The vast majority of card payments in Norway use the national scheme BankAxept. Card payments of this type had by far the lowest unit cost of NOK 2.93, while payments with international cards had a unit cost of NOK 12.60. The difference can be explained partly by economies of scale for BankAxept payments and the fact that, on average, payments with international cards²² take longer than BankAxept payments (see Box 4). Payments with international cards also consume more resources internally at banks and subcontractors²³ than BankAxept payments. For example, payments must be authorised and processed through the international card companies' systems. Payments with international credit cards also entail costs for credit checks, borrowing and billing.

The unit cost of giro payments was NOK 8.63 (see Chart 2.2). Electronic giro payments had a unit cost of NOK 8.06, while paper-based giro payments had a unit cost of NOK 25.98. Online banking payments (including mobile banking) account for the largest share by far of electronic giro payments. The second-largest category is direct debits, where the payee submits payment orders to the payer's bank once the payer has accepted such an arrangement. These payments require less input from households and merchants than standard online banking payments. For banks, the resources needed per payment for direct debits and online banking payments are approximately the same. Paper-based giro payments require considerable manual processing and are therefore far more costly than electronic giro payments.²⁴

Both the overall social unit cost and the unit costs for most payment services fell from 2007 to 2013 (see Chart 2.3).

20 We have included all costs for depositing cash in the calculation of unit costs for cash payments. For banks, this would seem to be the natural approach. For merchants, it is more debatable whether costs for deposits should be classified on the basis of where the cash comes from (cash payments) or what the cash is used for (card or giro payments). For households, it would probably be most appropriate to ignore costs for deposits when calculating unit costs for cash payments. Households' costs for cash deposits came to NOK 69 million. Households' costs for withdrawing cash have been adjusted for the cost of withdrawals for purposes other than payments at point of sale, such as person-to-person payments and storing value.

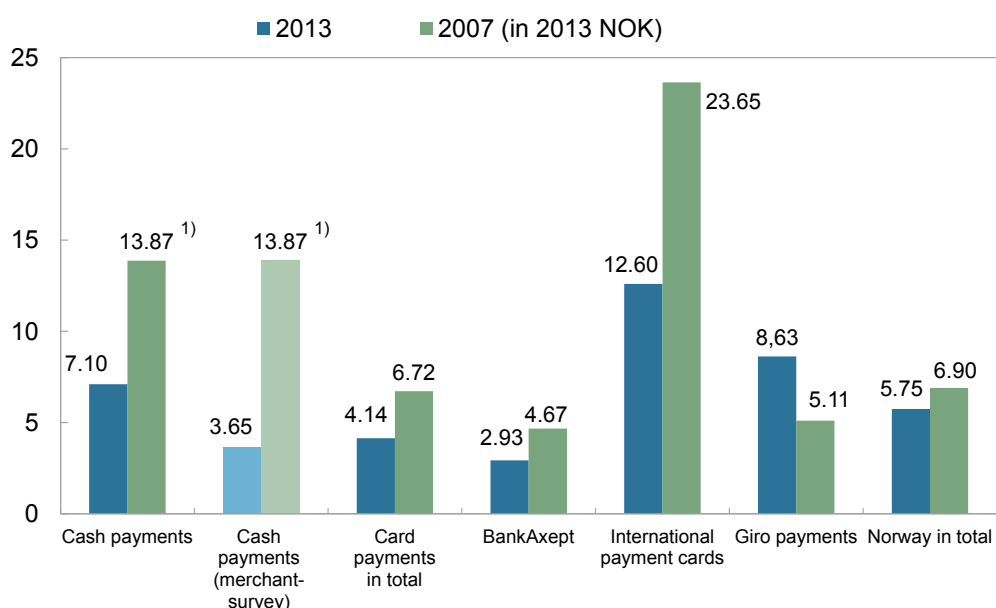
21 We estimate total costs for cash payments at point of sale at NOK 1 871.1 million. This is the sum of costs for cash payments at point of sale (NOK 549 million) plus the share of infrastructure costs that can be attributed to cash payments at point of sale (NOK 306.9 million of total ATM costs and NOK 1 015.2 million of costs for other cash services).

22 Includes both international debit cards and international credit cards.

23 Subcontractors' (card companies') consumption of resources/costs has been set at fees received less an assumed profit margin of 4 percent.

24 Merchants' costs for giro payments have not been fully mapped in this survey (see Section 5).

Chart 2.3 Social unit costs in 2013 and 2007. In NOK



¹⁾ The share of cash estimated from the surveys of the merchants and the households in 2007 was quite similar.

One important explanation for the decrease in unit costs is that payments now take less time to complete than they did in 2007 (see Box 4), especially payments with international cards.²⁵ There also seems to have been an increase in efficiency in the payments area at both banks and subcontractors. These developments are considered in more detail in the subsequent sections.

Box 3 The use of cash

There are no reliable data on the use of cash at point of sale in Norway, but there are various ways of estimating it. The pros and cons of different methods are discussed in Gresvig and Haare (2008).

The household survey indicated that cash payments made up 15 percent of the total number of payments at point of sale and 7 percent of the value of payments. The equivalent results from the household survey in 2007 were 24 and 14 percent respectively.

The results of the merchant survey show that cash payments accounted for 36 percent of payments at point of sale and 20 percent of sales. Only a limited number of retailers provided information on the use of cash, and the sample is not completely representative. However, the sample did include several major retail chains, and the spread in the results from the two surveys illustrates the uncertainty associated with estimates of this kind. The merchant survey is presented in more detail in Section 5.

²⁵ Most of the decrease in unit costs for cash payments was due to changes in the calculation method. Infrastructure costs for person-to-person payments etc. were included in 2007 but have not been included in unit costs for cash payments this time.

As in 2007, our estimates are based on the results from the household survey. If the results from the merchant survey are used instead, the number of cash payments at point of sale rises from 264 million to 842 million, and the unit cost for cash payments falls from NOK 7.10 to NOK 3.65 (see Charts 2.2 and 2.3) and the overall unit cost for all payments from NOK 5.75 to NOK 5.07. Total social costs then rise from NOK 14 548 billion to NOK 15 754 billion and from 0.48 to 0.52 percent of GDP. The household survey is presented in more detail in Section 4 below.

3. Banks' private costs and income

3.1 About the survey

A total of 17 banks and two acquirers²⁶ responded to the survey of costs for payment services. The sample included large, medium-sized and small Norwegian commercial and savings banks. The information reported provided a basis for estimating the total costs for 44 different products and services: 19 relating to giro payments, eight to card payments and 17 to cash.

In the survey, banks were asked to distinguish between direct and indirect costs so that the ABC²⁷ method could be used. In brief, this method means that *direct* costs are allocated directly to the service generating the cost. These are costs that vary with the number of units of the service that are produced. *Indirect* costs are those that cannot be attributed directly to the service but have to be allocated using a distribution key. Indirect costs were first divided among three main categories (cash, card and giro) according to work years per category, and then subdivided by service in each main category using one or more *cost drivers*.^{28, 29} A cost driver is a factor that determines the proportion of indirect costs that should be allocated to each individual service.

To obtain the total costs for giro payments and cash services excluding ATMs, costs from the sample were scaled up to 100 percent based on the sample's share (82.4 percent) of Norwegian banks' total deposits in payment accounts in 2013. Banks' costs for card payments and ATM services were obtained by multiplying their unit costs for these products by the number of payments recorded in Norges Bank's payment statistics.³⁰

3.2 Banks' costs

Banks' total costs for payments amounted to NOK 8.5 billion in 2013 (see Table 3.1). This is the sum of the fees paid by banks (NOK 2.6 billion) and their own production costs (NOK 5.9 billion). Banks received fees of NOK 6.4 billion from other participants, resulting in net private costs for the banks of NOK 2.0 billion.

26 Some of the banks are also acquirers.

27 Activity-based costing. See Chapter 4 of Gresvik and Haare (2009) for a more extensive description.

28 Indirect costs were first distributed by activity on the basis of work years. Costs for the individual activities were then allocated to services using a cost driver for each activity. For example, it can be argued that costs for an activity such as *providing advice* are best distributed evenly among the services in each main category, while costs for an activity such as *clearing and accounting* are best distributed on the basis of the individual service's share of transactions in the category.

29 Some banks used only one cost driver (number of payments), while others used several (number of payments, number of products, number of accounts). In cases where only one cost driver was used, costs for the most resource-intensive services were underestimated, while costs for less resource-intensive services were overestimated.

30 The payment statistics do not contain enough information for this method to be applied to giro payments and other cash services.

Table 3.1 Banks' costs and income. In millions of NOK

	Private costs	Fees paid	Production costs	Fees received	Net private costs
Cash	1 816.7	882.3	934.3	578.0	1 238.7
Cash payments	0.0	0.0	0.0	0.0	0.0
ATMs	402.6	81.1	321.5	578.0	-175.5
Other cash services	1 414.1	801.3	612.8	0.0	1 414.1
Card payments	3 070.0	889.5	2 180.5	3 328.7	-258.7
BankAxept	1 331.9	404.3	927.5	895.4	436.5
International cards	1 738.2	485.2	1 253.0	2 433.4	-695.2
Giro payments	3 585.6	843.2	2 742.4	2 523.2	1 062.4
Electronic giros	3 152.0	651.7	2 500.3	1 891.5	1 260.5
Paper-based giros	433.6	191.5	242.1	631.8	-198.1
Total	8 472.3	2 615.0	5 857.3	6 430.0	2 042.3
Social costs			5 857.3		

Cash-related services accounted for NOK 1.8 billion of banks' total costs.

- NOK 403 million of this was related to *ATMs*, mostly costs for replenishing with cash and for operation and maintenance. Some banks have subcontracted ATM operations and paid a total of NOK 81 million for such services.
- *Other cash services* include manual deposits and withdrawals over the counter, nightsafes, automatic deposit/withdrawal machines, and currency exchange. Banks' costs for such services totalled NOK 1.4 billion in 2013, of which NOK 0.8 billion was paid to subcontractors for the operation of safes and deposit/withdrawal machines and for subcontracted counter services (e.g. in-store banking). Other production costs came to just over NOK 0.6 billion. The most expensive services for banks were deposits and withdrawals over the counter and nightsafes. These are largely manual services, and the bulk of these costs consisted of staff costs.

Costs for card payments totalled NOK 3.1 billion.

- NOK 1.3 billion of this was related to *BankAxept* transactions. Of this, fees and other payments to subcontractors totalled NOK 0.4 billion. The largest cost items were payments to data centres for authorising and processing transactions, clearing costs and purchasing physical payment cards. Internal production costs amounted to NOK 0.9 billion, mostly related to sales and providing advice to customers and operation of the banks' computer systems.
- Costs relating to *international cards* totalled NOK 1.7 billion, of which fees and other payments to subcontractors made up NOK 0.5 billion. Fees to international card companies (such as Visa and MasterCard) accounted for almost two-thirds of payments to subcontractors. Internal production costs came to NOK 1.3 billion. Banks' credit costs amounted to NOK 0.2 billion. Internal processes referred to in the survey as *card administration*³¹ and *maintenance of payment cards*³² were also major cost items.

Giro payments cost banks NOK 3.6 billion in 2013.

- The largest portion of these costs was related to the processing of *electronic giros*. Out of a total of NOK 3.2 billion, fees and other payments to subcontractors accounted for NOK 0.7 billion, largely in the form of payments to data centres for authorising, processing and clearing transactions. Internal production costs came to

31 The payment statistics do not contain enough information for this method to be applied to giro payments and other cash services.

32 Blocking and activating cards, setting up and renewing contracts, ordering cards.

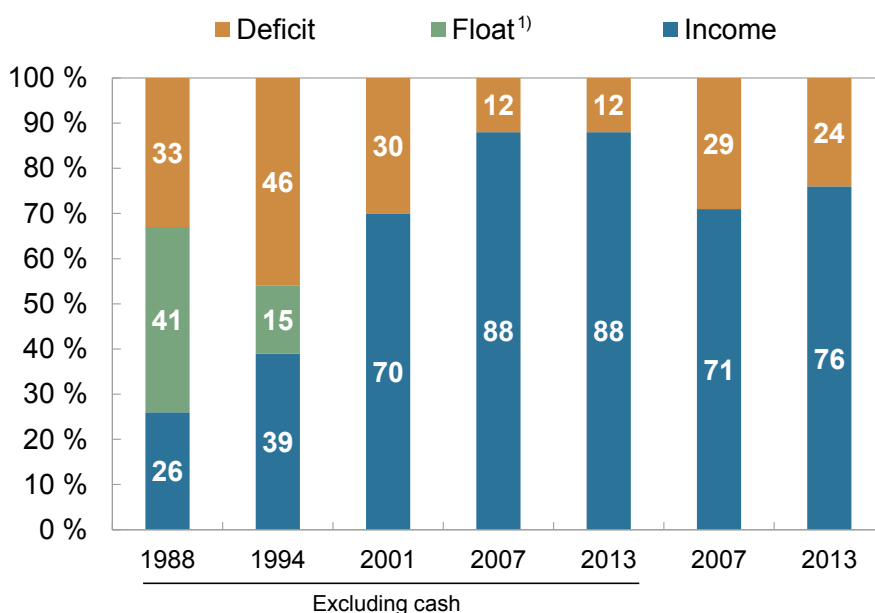
NOK 2.5 billion. The processes *maintenance of payment products*³³, *providing advice* and *other fixed costs*³⁴ were the largest cost items, and banks also reported some unspecified direct costs for giro products.

- *Paper-based giros* cost banks NOK 0.4 billion. Fees and other payments to subcontractors and internal production costs each accounted for half of total costs.

3.3 Cost recovery

Banks' cost recovery climbed from 71 percent in 2007 to 76 percent in 2013 (see Chart 3.1), defined as payment-related income as a percentage of payment-related costs. Pricing that does not fully cover costs may be a conscious choice by banks, with the shortfall covered by income from other parts of their operations (cross-subsidisation).

Chart 3.1 Banks' cost recovery in payment services



1) Float: Calculated income from funds during transfer from payer to payee.

Source: Statistics Norway and Norges Bank

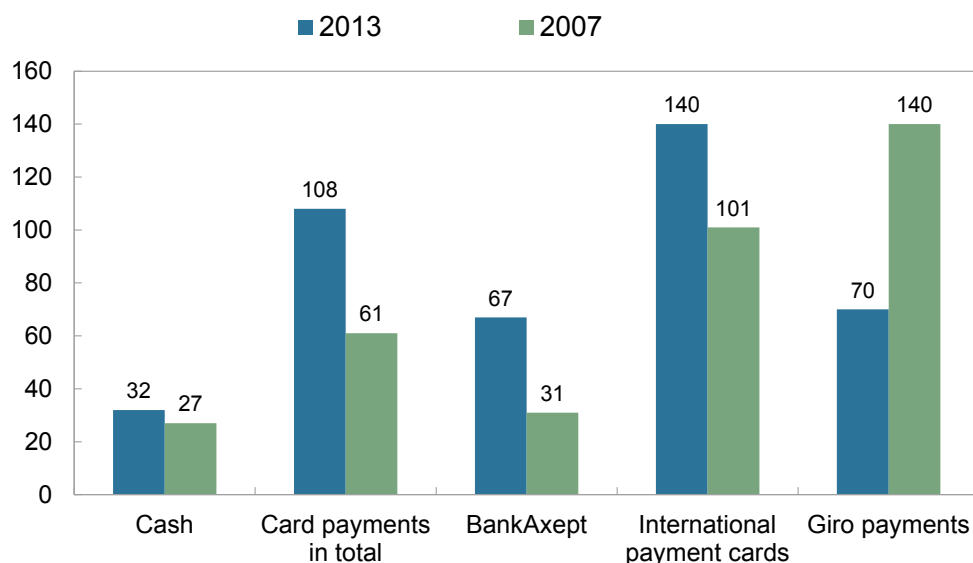
The surveys in 1988, 1994 and 2001 did not include cash. If we only consider cost recovery for card and giro products, we can compare cost recovery in the most recent surveys with the results from these earlier surveys. Cost recovery excluding cash was 88 percent in 2013, which is the same level as in 2007 and higher than in the previous surveys.

Cash-related cost recovery increased from 2007 to 2013 (see Chart 3.2), but is still the area where banks have the lowest level of cost recovery.

33 Registering and amending contracts, direct debits and other sporadic changes.

34 Fixed costs other than administration.

Chart 3.2 Banks' cost recovery in 2013 and 2007. Income as a percentage of costs



Source: Statistics Norway and Norges Bank

Cost recovery for BankAxept payments also rose, from 31 percent in 2007 to 67 percent in 2013 (see Chart 3.2). There have not been any major changes on the income side,³⁵ but BankAxept payments are now being processed far more cost effectively than in 2007. Although the number of payments rose by more than 60 percent during the period, total costs fell sharply.

When it comes to payments with international cards, recovery climbed from 101 percent in 2007 to 140 percent in 2013, with both income and costs falling.

For giro payments, cost recovery fell by half between 2007 and 2013, mainly because a wider range of costs were included in 2013.

Banks' costs for payment services amounted to 25 percent of their total costs in 2013, compared with 20 percent in 2007 (see Table 3.2). Costs for cash-related services accounted for approximately the same share of banks' total costs as in 2007, but costs for both card and giro payments accounted for a larger share of total costs than in 2007. Direct and indirect costs each accounted for around half of banks' costs for payment services in both 2013 and 2007.

35 The low interest rates on current accounts can also be said to represent a form of income for banks, but we have not included this in banks' income.

Table 3.2 Banks' costs for payment services as a share of banks' total costs³⁶

	2013			2007		
	Direct costs	Indirect costs	Direct and indirect costs	Direct costs	Indirect costs	Direct and indirect costs
Cash	3%	2%	4%	3%	3%	5%
Card payments	8%	5%	12%	3%	6%	9%
Giro payments	3%	5%	8%	3%	2%	5%
Total	13%	12%	25%	9%	10%	20%

3.4 Productivity/efficiency

Banks' total payment costs amounted to NOK 8.5 billion or 0.28 percent of GDP in 2013, down from 0.33 percent of GDP in 2007 (see Table 3.3).

Table 3.3 Bank productivity indicators. In 2013 NOK

	1988	1994	2001	2007	2013
Private costs (In billions of NOK)	6.8	8.0	7.5	8.4	8.5
Private costs as a share of GDP (%)	0.59%	0.61%	0.38%	0.33%	0.28%
Private unit costs (NOK)	17.88	13.58	6.68	5.41	3.52
Number of payments (in millions)	381	481	968	1545	2405
Number of branches ¹	2 200	1 600	1 429	1 260	1 061
Number of employees (in thousands of work years) ²	33	23	23	20	20

¹ Source: Finance Norway

² Source: Finance Norway (to end-2007)

Banks produced payment services more efficiently in 2013 than in 2007 (see Table 3.4). The overall unit cost dropped from NOK 5.41 in 2007 to NOK 3.52 in 2013. The biggest decrease was in unit costs for card payments, which fell by 63 percent for BankAxept and 46 percent for international cards.

Table 3.4 Banks' unit costs

	2013			2007	
	Private costs (in millions of NOK)	Number of payments (in millions)	Private unit costs (NOK)	Private unit costs (2007 NOK)	Percentage change 2007-2013
Cash	1 816.7	151.4	12.00	18.77	-36%
Cards	3 070.0	1 497.6	2.05	4.25	-52%
BankAxept	1 331.9	1 310.1	1.02	2.72	-63%
International cards	1 738.2	187.5	9.27	17.02	-46%
Giros	3 585.6	755.7	4.74	4.01	18%
Total	8 472.3	2 404.7	3.52	5.41	-35%

Unit costs for giro payments increased by 18 percent because in 2013 we included costs on both the payer's side and the payee's side of the payments to a greater degree than in 2007.³⁷

³⁶ These estimates are based on raw data from banks and may differ from the estimates in the other tables. For example, these figures include costs associated with card payments abroad.

³⁷ In 2007, payee services were limited to OCR returns. In 2013, payee services also included printed and electronic notification of credit transactions, Cremul/e-giro payments and payee services for direct debits.

Table 3.5 shows the estimated unit costs for a selection of payment services offered by banks. Over-the-counter giro payments and over-the-counter deposits/withdrawals are by far the most expensive services. There are major cost differences between the different types of cards. Processing payments by international credit cards is especially costly for banks.

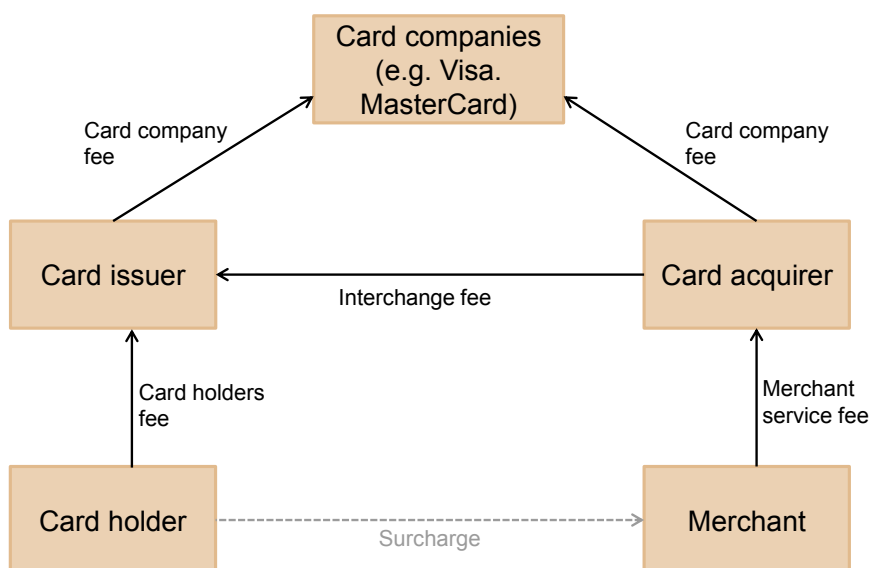
Table 3.5 Unit costs for various payment services

	2013	2007 (in 2013 NOK)
Online and mobile banking, retail	2.89	2.26
Online banking, corporate	2.31	2.26
Over-the-counter giro (cash/account)	29.90	34.51
Credit notification (printed, e-mail, online banking)	3.13	-
Direct debits	2.72	2.83
Card payments, acquirer		
BankAxept	0.39	1.70
International debit cards	1.82	-
International credit cards	8.69	-
Card payments, issuer		
BankAxept	0.63	1.13
International debit cards	2.08	-
International credit cards	14.66	-
Own ATMs, own customers	6.55	7.92
Own ATMs, other customers	5.88	6.79
Own ATMs, international cards	6.09	13.01
Other banks' ATMs, own customers	5.62	9.62
Cash deposits/withdrawals over the counter	46.86	49.22

Unit costs for online banking and direct debits were approximately the same as in 2007. Unit costs decreased for manual services, such as over-the-counter giro payments and over-the-counter deposits/withdrawals. Unit costs also fell for ATM services and BankAxept payments.

3.5 Fees for payments using international cards

Every time a merchant's customer uses an international card to pay for goods, the merchant must pay a *merchant service fee* to the acquirer (see Chart 3.3). The acquirer must then pay an *interchange fee* to the card-issuing bank. Both the issuer and the acquirer pay a *card company fee* to the card company. The fees paid to the card company cover membership of the card scheme, and the size of these fees depends partly on the number of cards issued (only for issuers), the card type and how many payments are made. The rates for merchant service fees are, in principle, determined jointly by the participants, but they can also use standard rates set by the card companies. The rates for interchange fees are set by the card companies.



A merchant has the option of adding a *surcharge* to the price the card holder pays for goods to cover the additional cost to the merchant of receiving payments using international cards, but such surcharges are rarely used in Norway.

The card holder pays a *card holder fee* to the card issuer to obtain and use a payment card. This usually takes the form of an annual fee, while use of the card for payments and withdrawals during the year is free of charge.

Table 3.6 provides an overview of the interchange fees paid by acquirers in the survey. These fees are higher for credit cards than for debit cards, partly because debit cards cannot be used unless there are sufficient funds in the payer's account and thus do not entail any credit risk or interest costs for the card issuer.

Table 3.6 Average interchange fees for transactions with international cards

	Percentage of transaction value	Per payment (in NOK)
International debit cards	0.39%	1.12
International credit cards	0.84%	6.83
Total	0.74%	4.30

4. Households' private costs

4.1 About the survey

Households' payment habits were mapped in a telephone survey conducted by the market research company Norstat on behalf of Norges Bank in March 2013. Of the 2,858 people responding to the survey, 1,400 stated that they had made payments the previous day. A total of 2,535 payments had been made.

Along with Norges Bank statistics on the use of payment cards, the survey provided a basis for estimating the *number of cash payments* in Norway in 2013. Households' *costs* were estimated on the basis of information from the survey combined with statistics on wages and time consumption (see Box 4).

Box 4 Estimates of time consumption for payments and cash services

The time it takes to make a payment accounts for a large part of its cost for households and firms. The total time cost for each payment type is the product of the time consumption for one payment in seconds, the total number of payments, and wages per second.

Table 4.1 Time estimates

Time estimates in seconds for 2013 (2007)					
ATM withdrawals	Withdrawals/ deposits over the counter	Giro payments	Cash payments	BankAxept	International cards
100 (110)	180 (180)	60 (60)	14 (16)	14 (17)	25 (57)

In the 2007 survey, time consumption for withdrawals/deposits was taken from a time survey carried out by the central bank of Sweden. Time consumption for giro payments was estimated by Norges Bank. For point-of-sale payments, a separate time survey was carried out on behalf of Norges Bank. Some of the values used in 2007 have been retained, while others have been revised down slightly.

There is reason to believe that point-of-sale payments are faster today than in 2007. For example, the use of automatic cash handling systems (CashGuard) has probably increased. Spot checks of cash payments carried out by Norges Bank produced an estimate of 14 seconds per cash payment. In 2007, the estimate was 16 seconds. Spot checks of card payments using BankAxept revealed average time consumption per payment of 14 seconds, compared with 17 seconds in 2007. The biggest downward revision of estimated time consumption was for payments with international payment cards. In 2007, most of these payments were confirmed by personal signature, whereas payments are now almost exclusively made using a PIN. For payments using traditional point-of-sale payment terminals, time consumption will therefore be close to that of BankAxept cards. At the same time, international cards are increasingly being used in a number of other payment situations. For example, purchases of goods online take much longer than payments using traditional point-of-sale card terminals. We estimated that payments using international payment cards took an average of 25 seconds per transaction, against 57 seconds in 2007.

The estimate for over-the-counter deposits/withdrawals was unchanged at 180 seconds: 60 seconds queuing and 120 seconds for the operation itself. Based on spot checks, time consumption for cash withdrawals from ATMs was revised down from 110 to 100 seconds: 60 seconds queuing and 40 seconds for the actual withdrawal.

In 2007, it was estimated that giro payments took an average of 60 seconds. This estimate covered only the time for the actual payment, and not, for example, the time taken to log into an online bank. This time, we included all of the time consumption related to giro payments. The estimate for 2007 was retained, however, because direct debits (which do not require any input of time from the payer) and e-invoicing (which reduces the time taken to fill in giro information) accounted for a larger share of total giro payments than in 2007.

4.2 Households' costs

Households' total costs for payment services were an estimated NOK 6.2 billion in 2013 (see Table 4.2). This is the sum of fees paid of NOK 3.1 billion and households' own production costs of NOK 3.0 billion. These costs were equivalent to 0.20 percent of GDP, compared with 0.22 percent in 2007.

Table 4.2 Households' costs. In millions of NOK

Households	Private costs	Fees paid	Production costs
Cash	1 376.6	578.0	798.6
Cash payments	201.7	0.0	201.7
ATMs	1 024.1	578.0	446.1
Other cash services	150.8	0.0	150.8
Card payments	2 342.7	1 083.8	1 258.9
BankAxept	1 725.2	722.5	1 002.7
International cards	617.5	361.3	256.3
Giro payments	2 435.8	1 444.7	991.0
Electronic giros	2 038.2	1 083.7	954.5
Paper-based giros	397.6	361.0	36.5
Total	6 155.1	3 106.6	3 048.5
Social costs			3 048.5

Households' total costs for cash payments were NOK 1.4 billion in 2013. Only NOK 0.2 billion of this related to the actual *payment operation*, being the value of the time taken by households to carry out the cash payment itself. The cost of withdrawing cash from *ATMs* was estimated at NOK 1.0 billion, roughly half of which was fees to banks and half was the time cost. The remaining costs of NOK 0.2 billion related to *other cash services*, namely the time cost of over-the-counter deposits and withdrawals at bank branches.

Households' total costs for card payments were an estimated NOK 2.3 billion. *BankAxept* payments accounted for NOK 1.7 billion of this, breaking down into NOK 0.7 billion in fees to banks and estimated time consumption of NOK 1.0 billion. Costs for payments with *international cards* totalled NOK 0.6 billion, of which NOK 0.4 billion was fees to banks and the remainder was the time cost.

Costs for giro payments were an estimated NOK 2.4 billion, of which NOK 2.0 billion related to *electronic giros*. Of these, NOK 1.1 billion went to pay fees for services such as online banking and direct debits. Time consumption for these services is estimated at NOK 1.0 billion. Payments of *paper-based giros* cost households a total of NOK 0.4 billion, consisting mostly of fees paid to banks for services such as postal giros and giros presented to branches for payment.

BankAxept payments are the cheapest payment solution for households at point of sale (see Table 4.3). Households' overall average unit cost fell from NOK 3.28 in 2007 to NOK 1.67 in 2013. The decrease in unit costs for card payments can be attributed to both a lower time cost per payment and lower fees per payment. Most of the decrease in unit costs for cash payments was due to changes in the calculation method.³⁸

Table 4.3 Households' unit costs at point of sale

	2013			2007	
	Private costs (in millions of NOK)	Number of payments (in millions)	Private unit costs (in NOK)	Private unit costs (in 2013 NOK)	Percentage change 2007- 2013
Cash	601.2	263.5	2.28	5.72	-60%
BankAxept	1 725.2	1 310.1	1.32	1.64	-20%
International cards	617.5	187.5	3.29	9.69	-66%
Total	2 943.9	1 761.1	1.67	3.28	-49%

38 Infrastructure costs for person-to-person payments etc. were included in 2007 but have not been included in unit costs for cash payments this time.

5. Merchants' private costs³⁹

5.1 About the survey

The merchant survey was carried out by Norges Bank in the winter of 2013/14 and spanned a sample of 16 large retail and service companies covering the most important sectors. The questionnaires focused mainly on costs and procedures for card and cash payments.

The information from the survey was then used to estimate merchants' unit costs for card and cash payments. Together with the estimates for the use of cash and cards based on calculations from the household survey and Norges Bank's payment statistics on the use of cards and cash, this gave merchants' total private costs. To calculate costs for giro payments, estimates were used for the time cost (time consumption⁴⁰ multiplied by labour costs), information on the number of payments from Norges Bank's payment statistics, and information on fee payments from ORBOF.

5.2 Merchants' costs

Merchants' total costs for payments were an estimated NOK 4.3 billion in 2013 (see Table 5.1). This is the sum of fees paid of NOK 1.7 billion and merchants' own production costs of NOK 2.6 billion. These costs were equivalent to 0.14 percent of GDP, compared with 0.12 percent in 2007.

Table 5.1 Merchants' costs. In millions of NOK

	Private costs	Fees paid	Production costs
Cash	347.5	3.0	344.5
Cash payments	347.5	3.0	344.5
ATMs	0.0	0.0	0.0
Other cash services	0.0	0.0	0.0
Card payments	3 023.3	1 122.5	1 900.8
BankAxept	1 600.9	86.4	1 514.5
International cards	1 422.4	1 036.1	386.3
Giro payments	913.3	539.3	374.0
Electronic giros	764.2	403.9	360.3
Paper-based giros	149.1	135.4	13.7
Total	4 284.1	1 664.7	2 619.3
Social costs			2 619.3

Merchants' costs for receiving *cash payments* amounted to NOK 348 million. The time cost accounted for most of this.⁴¹ There were also some costs related to readying and reconciling cash registers, handling/transporting cash and making deposits/withdrawals at banks.

³⁹ Does not include other firms and public enterprises.

⁴⁰ We have assumed that merchants and households have the same time consumption per giro payment.

⁴¹ The reason why the same number of cash payments leads to higher costs for merchants than for households is that we based merchants' costs on total labour costs and households' costs on average wages after tax.

The bulk of merchants' costs were related to the receipt of card payments. Of the total costs for card payments of NOK 3.0 billion, NOK 1.6 billion can be attributed to *BankAxept* transactions. BankAxept fees amounted to NOK 86 million, while merchants' own production costs came to just over NOK 1.5 billion. The time cost for making payments made up the bulk of these production costs, but there were also some time costs for readying and reconciling payment terminals. Costs for accepting payments with *international cards* totalled NOK 1.4 billion, with fees accounting for just over NOK 1.0 billion of this. Own production costs accounted for the rest and consisted of time consumption and activities relating to payment terminals.

Merchants' costs for giro payments came to NOK 0.9 billion. Costs for *electronic giros* accounted for the bulk of this. Half consisted of fees to banks, while the other half was the cost of merchants' time consumption for paying their own bills.

Additional fees and costs to subcontractors for issuing bills have not been included. Nor have time costs for issuing bills and reminders to customers been included. More detailed estimates of total costs and savings from switching to electronic giros in Norway can be found in Haare (2014).

The overall private unit costs for cash and card payments are shown in Table 5.2. For merchants, the least costly solution is for customers to use BankAxept. Cash payments have a slightly higher unit cost than BankAxept payments. Costs to the merchant for payments using an international card are approximately six times higher than for payments using BankAxept and cash (see the column for private unit costs).

Table 5.2 Merchants' unit costs at point of sale

	2013		2007		
	Private costs (in millions of NOK)	Number of payments (in millions)	Private unit costs (in NOK)	Private unit costs (in 2013 NOK)	Percentage change 2007- 2013
Cash	347.5	263.5	1.32	1.28	3%
BankAxept	1 600.9	1 310.1	1.22	1.22	0%
International cards	1 422.4	187.5	7.59	9.32	-19%
Total	3 370.8	1 761.1	1.91	1.90	1%

Both the overall unit cost and unit costs for cash and BankAxept payments were at approximately the same level in 2013 as in 2007, while unit costs for payments with international cards fell from NOK 9.32 in 2007 to NOK 7.59 in 2013.⁴²

42 The time cost for payments with international cards fell from NOK 3.66 in 2007 to NOK 2.06 in 2013. Fees and other payments to subcontractors increased, however, from NOK 4.57 per payment in 2007 to NOK 5.53 in 2013. The reason why fees increased despite a drop in the average service fee (see Table 5.3) is that the average value of payments with international cards to the merchants in the sample more than doubled from 2007 to 2013. Norges Bank's payment statistics show that the average transaction value was largely unchanged during the period, however, and that the estimated value from the 2007 survey was too low. This means that unit costs for payments with international payment cards were underestimated in the 2007 survey.

5.3 Merchant service fees for card payments

Merchants pay a service fee to the acquirer when customers pay by card. With international cards, this is calculated as a percentage of the transaction value plus, in some cases, a small fixed amount per payment.

The merchants taking part in the survey paid a service fee varying from 0.97 to 1.85 percent of the transaction value, depending on card scheme (see Table 5.3). The general level of fees is probably somewhat higher than this, because the survey only covered large retail and service companies, which probably have more bargaining power when fees are set.

For each payment with BankAxept, participants in the survey paid a fixed fee averaging NOK 0.06, equivalent to less than 0.01 percent of the transaction value.

Table 5.3 Merchant service fees for card payments

Card scheme	Average fee per payment 2013	Average fee as a share of transaction value 2013	Average fee as a share of transaction value 2007
BankAxept	NOK 0.06	(0.01%)	
VISA		0.97%	1.78%
MasterCard		1.01%	1.86%
Diners Club		1.67%	2.51%
American Express		1.85%	2.89%

References

Danmarks Nationalbank (2011): Costs of payments in Denmark.

Norwegian Ministry of Finance (2014): Prinsipper og krav ved utarbeidelse av samfunnsøkonomiske analyser mv. [Principles and requirements for the preparation of economic analyses etc.], *Circular R-109/14*.

Haare, H. (2014): Samfunnets besparelse ved overgang til elektronisk faktura [The savings to society from switching to electronic billing], *Norges Bank Staff Memo 7/2014*.

Gresvik, O. and H. Haare (2008): Payment habits at point of sale, *Norges Bank Staff Memo 6/2008*.

Gresvik, O. and H. Haare (2009): Costs in the Norwegian payment system, *Norges Bank Staff Memo 4/2009*.

Norges Bank (2014): Developments in retail payment services, *Norges Bank Papers 1/2014*.

Schmiedel, H., G. Kostova and W. Ruttenberg (2012): The social and private costs of retail payment instruments: a European perspective, *ECB Occasional Paper 137/2012*.

Segendorf, B. and T. Jansson (2012): The cost of consumer payments in Sweden, *Sveriges Riksbank Working Paper Series No. 262*.

Turján, A., E. Divéki, É. Kessy-Harmath, G. Kóczán and K. Takács, K. (2011): Nothing is free: A survey of the social costs of the main payment instruments in Hungary, *MNG Occasional Papers 93*.



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