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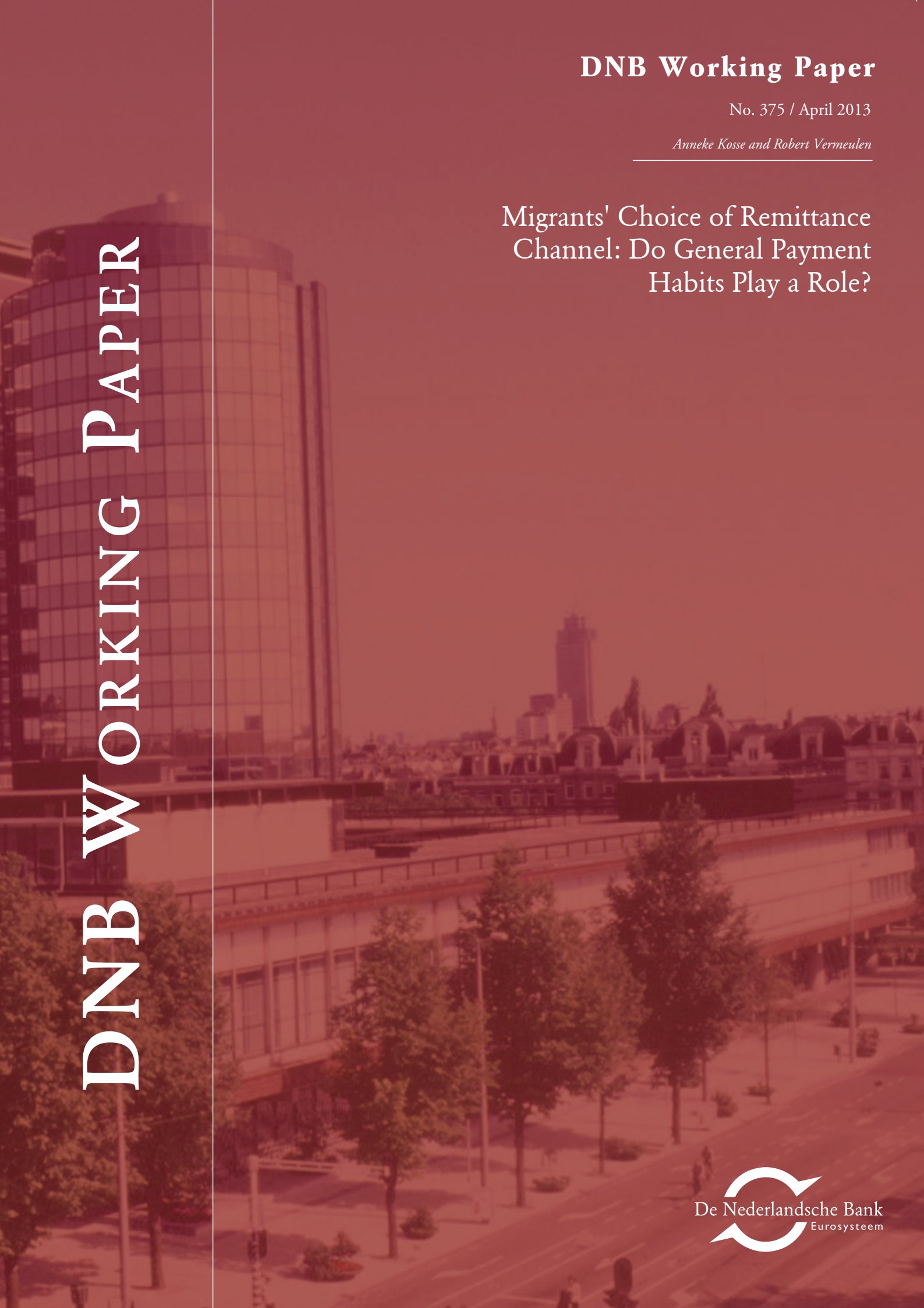

De Nederlandsche Bank
Eurosysteem

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* Views expressed are those of the authors and do not necessarily reflect official positions of De Nederlandsche Bank.

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MIGRANTS' CHOICE OF REMITTANCE CHANNEL: DO GENERAL PAYMENT HABITS PLAY A ROLE?[*]

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Abstract

This paper investigates the determinants in migrants' choice of payment channel when transferring money to relatives abroad. We surveyed 1,680 migrants in the Netherlands, identifying five remittance channels: bank services, money transfer operator (MTO) services, in-cash transfers via informal intermediaries, ATM cash withdrawals abroad and carrying cash when travelling back home. To the best of our knowledge, we are the first to present evidence of the role played by general payment habits: migrants who regularly use internet banking for other purposes are more likely to use bank services for remittances as well. However, we also demonstrate that other important drivers exist in determining the choice of payment channels, such as personal characteristics and country-specific factors, (perceived) costs, ease of use and the availability of remittance options. Based on our findings, we suggest that financial education, cost reduction and new (mobile) remittance solutions may serve a valuable role.

Keywords: Remittances; payment instruments; qualitative choice models

JEL-codes: F24; E42; C25

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1. Introduction

In 2012, globally-recorded remittance flows to developing countries surpassed USD 400 billion, which is nearly three times the size of global official aid and almost as large as total foreign direct investments (World Bank, 2012). Many studies point to the positive effects of remittances on the local economy of the recipient countries, at both a micro level (Adams and Cuecuecha, 2009) and a macro level (Giuliano and Ruiz-Arranz, 2009). With respect to financial markets, recent studies show that remittances may promote domestic financial development (Demirgüç-Kunt et al., 2011) and financial liberalisation (Beine et al., 2012). However, other studies show that remittances may also have negative effects. For example, Acosta et al. (2009) show that remittances can lead to a decline in labour supply and a shift in consumption demand towards non-tradables, which can induce the economic phenomenon known as the Dutch disease.

A large body of research documents the reasons for migrants to remit (see Rapoport and Docquier (2006) and Carling (2008) for a synopsis) and the determinants of the amounts remitted (see Bollard et al. (2011) for a recent contribution). Additionally, awareness of the choice that migrants' make when selecting a remittance channel has increased in recent years. This awareness has been partly triggered by the use of informal channels. In fact, the actual value of remittance flows is probably significantly higher than the USD 400 billion mentioned earlier because a large but unknown amount finds its way through unrecorded informal channels. These include savings brought home on return and transfers through unregistered intermediaries.[1]

Despite the potential advantages of informal remittance channels in terms of cost, speed, accessibility and anonymity (e.g. Kapur, 2004; Pieke et al., 2005; Siegel et al., 2010), informal channels have increasingly been debated due to concerns about potential misuse for criminal ends, including money laundering, the financing of terrorism and smuggling.[2] Moreover, with regard to safety and security, informal channels are generally perceived to be more risky because they often rely on informal contracts and entail a higher risk of theft or loss. This is why many authorities try to

[1] Studies on the share of informal remittances show large country differences, ranging from 5% in Guatemala to 80% in Uganda (See Freund and Spatafora (2008) for an overview).

[2] In response to the terrorist attacks of September 11th, regulations have become stricter to meet the new Financial Action Task Force (FATF) recommendations.

channel remittances through the formal sector. Moreover, remittances channelled through the formal sector have more potential for promoting economic development by improving the earnings of the domestic financial sector and by increasing resources to finance economic activities. In addition, using formal institutions for remittances may bring individuals and households into contact with other formal financial services, such as savings, loans, mortgages and insurances, which may foster economy-wide financial development (e.g. Demirgüç-Kunt et al., 2011).

This paper contributes to the existing literature by empirically examining the factors explaining migrants' choice of remittance channel by creating a link to their daily payment behaviour. The literature broadly agrees that a migrant's choice of remittance method is influenced by i) characteristics of the transaction, ii) characteristics of the different payment options, iii) characteristics of the migrant, and iv) the economic and institutional environment in both the home and host country.[3] Although Barendse et al. (2006) and De Luna Martínez et al. (2006) argue that a widespread use of cash may negatively affect the use of formal bank channels, empirical evidence supporting this argument is lacking. In contrast, we are able to empirically assess whether migrants' remittance choices correlate with their experiences and attitudes regarding payment methods used for daily purchases and bills. For example, are migrants who are less familiar with online banking and who mainly use cash for their regular shopping more likely to use cash-based remittance channels?

Our research approach is as follows: we assessed the decision to select a remittance channel by making a distinction between i) remittance services offered by banks, ii) services offered by money transfer operators (MTOs), iii) in-cash transfers via informal intermediaries, iv) ATM cash withdrawals abroad, and v) carrying cash when travelling back home. To this end, we used a unique dataset collected by surveying more than 1,600 migrants residing in the Netherlands. The relevance of this work is to shed light on the role of the various formal and informal remittance channels and on the drivers and possible barriers of using particular channels. Moreover, this paper aims to provide policy suggestions on how to increase the use of formal remittance channels that are monitored by

[3] See, among others, Puri and Ritzema (1999), Meyers (2002), Amuedo-Dorantes and Pozo (2005), NCDO (2005), Pieke et al. (2005), De Haas and Plug (2006), De Luna Martínez et al. (2006), Freund and Spatafora (2008), Karafolas and Konteos (2010), Siegel (forthcoming) and Siegel and Lücke (forthcoming).

supervisors in order to further stimulate the safety, efficiency and integrity of international remittance transfers.

Regarding the choice of remittance method, we find some interesting similarities with migrants' general payment habits. We find a significant correlation between the use of bank services for remittances and the frequency of internet banking for other purposes. Yet the role of payment habits is relatively small compared to other factors, such as the remittance amount, personal characteristics, country-specific factors, (perceived) costs and the availability of remittance services. Overall, we find that higher educated migrants are less likely to use informal cash transfers or to carry cash themselves. This may suggest a potential role for financial education when attempting to increase the use of formal channels. We also show that bank transfers are generally preferred for larger remittance amounts, whereas other channels tend to be used for smaller amounts. In fact, we demonstrate that the use of informal channels is driven strongly by cost considerations. This underlines the fact that cost reduction may encourage the use of formal services, especially for small transactions. Moreover, informal channels are seldom used for the reason that they are the only option available. This further suggests that cost considerations are likely to be an important factor. Finally, we see how important the availability of appropriate remittance options is. People living in urbanised areas are more likely to go to an MTO than people living in rural environments. In addition, we find that informal channels are often used because the recipient does not have a bank account. These results suggest that demand for formal services would increase if formal financial intermediaries in both the sending and receiving country broadened their geographical presence and enlarged their product range to better accommodate the needs of the payer and the payee. For instance, they could simplify the requirements for opening a basic bank account or introduce new mobile remittance solutions.

This paper proceeds as follows: Section 2 presents a selective review of literature relevant to the characteristics and use of remittance channels, while Section 3 provides background information on the Dutch remittances market and the major recipient countries. Section 4 describes the data and empirical methodology, and Section 5 presents the results illustrating the factors determining migrants' decision choice of remittance channel. Section 6 presents the conclusion and discusses policy implications.

2. Characteristics of and reasons to use particular remittance channels

There are several options available for transferring remittances. The literature makes a broad distinction between formal and informal channels. Formal channels constitute services offered by officially registered or exempted entities, such as banks, post offices and money transfer operators. Any other remittance services are defined as informal channels. These may be legal, such as physically carrying cash to the country of destination, or illegal, such as services offered by unregistered, unlicensed or unofficially-exempted entities.

In addition to distinguishing between formal and informal channels, a further distinction can be made between the particular transfer channels used. First, money can be sent formally using a bank transfer between a bank in the sending country and a bank in the receiving country. Bank transfers often require both the migrant and the recipient to have a bank account and can be initiated by using paper-based forms or cheques, the migrant's online banking environment or the phone. Second, remittances can find their way via registered MTOs, which have a wide network of local branches where migrants can collect and send money. Most common are Western Union and Money Gram. Recently, credit unions have also begun to offer remittance services. Other formal channels include SMS, traveller's cheques, money and postal orders, preloaded gift cards, and credit and debit cards that allow money to be withdrawn at an ATM or bank branch abroad.

Among the informal channels, there are several unregistered MTOs active in the market, especially for payments to countries characterised by low levels of financial development. They are often referred to as "Hawala" or "Hundi" operators. There is evidence of these systems transferring more than tens of billions of dollars globally (Kapur, 2004). The services are typically based on low cost technologies, such as a fax or a telephone call, and offered in mobile phone shops, travel agencies and groceries. Compared to bank and official MTO transfers, these unregistered transfers are relatively anonymous, fast and inexpensive (Siegel et al., 2010). Migrants may also send remittances abroad by physically hand-carrying the money. This may be done by either the migrants themselves, for example when visiting or returning to the recipient country, or by a third person, such as a friend, a family member or a trusted agent. Alternatively, migrants may send cash by regular mail. In addition,

migrants' associations, churches, mosques and other religious organisations play a role in fundraising and remittance transfers (Pieke et al., 2005).

Several studies show that the above mentioned remittance channels differ significantly in terms of cost, accessibility and speed. Whereas costs differ across countries and remittance corridors,[4] remittance services offered by formal MTOs and banks are generally more expensive than informal remittances (e.g. De Luna Martínez et al., 2006; Langhan and Kilfoil, 2011; Siegel and Lücke (forthcoming)). The total cost of official channels, comprising the fees and exchange rates paid by the sender as well as the fees paid by the receiver, range between 5% and 15% of the remittance value, while the costs of informal channels are estimated to range between 2% - 5% (Orozco, 2003; Sander, 2004; Freund and Spatafora, 2008). In 2010, the G20 agreed to try to reduce the average costs of formal channels from 10% to 5% of the amount transferred by 2014. This would provide an additional USD 15 billion for recipient families.[5] Moreover, lower costs may also stimulate the use of official channels.

Regarding the accessibility of remittance channels, it is argued that language, cultural and institutional barriers hinder the use of bank services (e.g. Sander, 2004; Pieke et al., 2005). Banks often require clients to have a bank account, whereas MTOs only require official identification. What is more, recipients can find it difficult to access banks due to their limited coverage, especially in poor, remote or destroyed areas (e.g. Puri and Ritzema, 1999). In terms of speed, MTOs and informal channels also have an advantage over bank channels because banks do not always have direct links to every country and thus involve intermediate banks. As a result, bank transfers may take a couple of days, whereas money sent through an MTO may be collected by the recipient within a few minutes. In terms of anonymity, informal channels differ from services offered by banks and official MTOs due to the absence of formal transaction records.

The majority of studies investigating how migrants remit are based on consumer surveys. These show that migrants' choice of remittance channel is influenced by i) characteristics of the different remittance options, ii) characteristics of the transaction, iii) characteristics of the migrants,

[4] See for instance the World Bank's remittance prices database: http://remittanceprices.worldbank.org.
[5] See final declaration of the 2011 G20 Summit, available at: http://www.g20.utoronto.ca/2011/2011-cannes-declaration-111104-en.html.

and iv) the economic and institutional environment in both the home and host country. First, migrants' choices for channelling remittances are influenced by the characteristics of different payment options. This is in line with the general findings of payments literature, which state that payment choices depend on the net benefits received from the different payment instruments' attributes.[6] However, when it comes to remittances, the choice depends not only on the benefits offered to the payer but also on the preferences of and possibilities for the recipient. In terms of accessibility, several studies show that a number of factors affect the use of formal remittance channels: availability of and distance from services, language and cultural barriers, banking policies on minimum account balances, the degree of information transparency, financial literacy, and familiarity and trust (Sander, 2004; De Luna Martínez et al., 2006). In addition, transfer costs, speed, convenience and security are important parameters (e.g. Siegel and Lücke, forthcoming). Overall, low transfer cost is one of the key reasons for using informal instead of formal channels. On the other hand, formal transfers are often preferred because of their speed, convenience and security.

Second, transaction characteristics, such as the transfer amount and the remittance frequency, are important when deciding how to remit. Migrants who remit more often seem to prefer formal channels, particularly MTOs, over carrying cash (e.g. Orozco, 2002; Freund and Spatafora, 2008). Moreover, higher amounts are channelled more often through banks, whereas smaller transfers are more likely to be sent informally. The explanation for this can be found in the relatively large fee that banks and MTO often charge for remitting small amounts.

Third, characteristics of the migrant, such as knowledge of the host country's financial system and his/her financial possibilities, are important determinants. In general, male, higher educated, skilled and salaried migrants appear more likely to use bank and other formal channels instead of informal services. Moreover, the use of bank services increases with the presence of networks of friends and family in the host country (Amuedo-Dorantes and Pozo, 2005; Siegel and Lücke, forthcoming). The length and nature of the migrant's stay also play an important role. There are several indications that legal and permanent migrants prefer formal over informal channels compared to undocumented and temporary migrants (e.g. De Haas and Plug, 2006; Karafolas and Konteos,

[6] See, for example, Bolt and Chakravorti (2012) and references therein.

2010). This may reflect the fact that illegal and non-permanent immigrants have limited or no access to banking services or that legal and permanent immigrants have more confidence in or knowledge of the host country's financial system. For instance, NCDO (2005) argues that being accustomed to a certain bank for other services increases the likelihood of using it for remittances.

Fourth, factors related to the institutional and economic environment in the host and home country affect remittance channel usage. Various institutional factors are shown to discourage migrants from using formal channels, such as limited trust and competition in the host country's banking and remittances sector, low levels of bank penetration in the home country, as well as limited supply of financial services for both sending and receiving remittances (e.g. De Luna Martínez et al., 2006; Beck and Martinez Peria, 2011). By contrast, the availability of native banks in the host country and policies introduced by governments or corporates to channel remittances, such as foreign currency accounts and special exchange or interest rates, favour the use of banking services (Russell, 1986; Karafolas and Sariannidis, 2009; Siegel (forthcoming)). In addition to institutional factors, evidence suggests that the use of formal channels decreases in line with the differences between official exchange rates and black market rates (e.g. Elbadawi and Rocha, 1992; Kapur, 2004). Moreover, domestic interest rates appear to have a positive effect on the use of official channels (Wahba, 1991).

Summarising, the existing literature examining why migrants choose one channel over another for sending money home highlights the importance of various personal, transactional, economical and institutional factors. However, the extent to which these choices correlate with regular daily payment patterns remains unclear. De Luna Martínez et al. (2006) argue that widespread use of cash may contribute to the use of informal systems as it maintains the anonymity of people sending and receiving the money. Similarly, Barendse et al. (2006) claim that a strong preference for cash negatively affects the use of bank channels. They also expect the share of informal channels to decrease when electronic payment systems become more prevalent. Although these conclusions hint at the link between remittance behaviour and regular payment behaviour, empirical evidence is lacking. Therefore, our paper contributes to existing literature by empirically examining whether migrants' remittance choices correlate with the payment instruments used for their daily purchases and bills, after controlling for relevant explanatory variables found in the existing literature.

3. The Dutch remittance market and characteristics of major recipient countries

3.1. The Dutch remittance market

Due to its large share of immigrants, the Netherlands is listed among the world's largest remittance-sending countries. In 2010, total official remittances sent from the Netherlands amounted to USD 11 billion (World Bank, 2011).[7] The Netherlands hosts around 2.8 million immigrants, representing 20% of its total population. The majority of immigrants originate from Turkey, Suriname, Morocco, the Netherlands Antilles[8], Indonesia and Germany (see Table 1).

[Table 1]

Migrants in the Netherlands have full access to the financial system[9] and have various options for sending money to their home countries. First, they can send remittances using standard international money transfers offered by banks, although none of the Dutch banks offers dedicated remittance services. However, there are various foreign banks active in the Netherlands that provide a much wider range of remittance services. Second, remittances may be sent through MTOs that are officially registered under the Financial Supervision Act (*Wet op het Financieel Toezicht*, Wft) and subject to monitoring by De Nederlandsche Bank. Most common in the Netherlands are Western Union and Money Gram, but in addition to these two large players, some 15 other officially-registered MTOs were active in the market at the beginning of 2013. Third, there are several informal organisations offering remittance services. Similar to formal MTOs, these do not require the migrant or the recipient

[7] The World Bank defines remittances as the sum of workers' remittances, employees' compensation and migrants' transfers.

[8] Since 2010, the Netherlands Antilles is no longer an autonomous country within the Kingdom of the Netherlands. When using the term Netherlands Antilles in this study, we refer to the islands of Aruba, Bonaire, Curacao, Saba, Sint Eustatius and Sint Maarten.

[9] In the Netherlands, every person aged 18 years and older is entitled to open a bank account. To open an account, the customer is requested to provide a valid identification. Moreover, the person needs to have a permanent home or address, or be registered with a recognised aid or governmental organisation. Hence, homeless people as well as fugitives can also open an account. This policy and the fact that a bank account is needed to receive social welfare benefits and salaries and to pay taxes means virtually all adults in the Netherlands have a bank account.

to have a bank account and they can transfer money within a day. Finally, remittances find their way abroad through regular mail, through ATM withdrawals abroad and through personal conveyance on visits and returns[10] by either the migrants themselves or their family and friends.

Costs paid in the Netherlands for either a bank or an official MTO transfer depend on various factors, such as the share of the costs covered by the recipient, the speed of the transfer and whether a confirmation of receipt is obtained. Moreover, costs vary by recipient country, amount and method used. World Bank data for the first quarter of 2012 shows that costs for remitting EUR 140 (USD 200) range from 3% to 14% of the total amount (see Table 2). MTOs are generally cheaper than banks for smaller transfers. For larger amounts, such as transfers of EUR 345 (USD 500), services offered by banks are less expensive. They do, in general, take a few more days. When making an urgent payment, the speed of a bank transfer equals that of an MTO transfer, but the costs substantially exceed those of an MTO. Note that bank transfers within the euro area are in principle free for both sender and recipient due to EU regulations.

[Table 2]

3.2. Characteristics of major home-countries

The literature attaches importance to home country factors, so we collected several indicators to shed light on the institutional and financial situation of the countries of the six major migrant groups living in the Netherlands (see Table 3). Unfortunately, a large number of indictors are not available for the Netherlands Antilles, despite efforts to obtain further data for this group from other sources or using statistics from Aruba as being representative. Overall, there are large country differences in terms of availability of banking and remittance networks, as well as financial participation. The overall level of financial access as measured by the number and value of deposit and loan accounts is lowest in Morocco and the Netherlands Antilles. Turkey, on the contrary, is characterised by a relatively high rate of financial participation, with the majority of the population having a deposit account and access

[10] Migrants residing in the Netherlands are free to travel to Germany, Morocco, Turkey, the Netherlands Antilles and Suriname. A visa is required for Indonesia.

to a relatively high number of bank branches. Turkey also differs in that it has a substantial number of local bank branches in the Netherlands. Finally, the level of officially recorded remittance inflows differs considerably, ranging from 0.1% of GDP in Suriname and Turkey to almost 7% of GDP in Morocco.

[Table 3]

Table 3 also displays substantial differences regarding the payments infrastructure and the use of payment instruments. This may have an effect on migrants' payment habits in the Netherlands (see Kosse and Jansen, 2013) as well as on their remittance behaviour. Several indicators suggest that the use of electronic payment instruments is lowest in Morocco, followed by Indonesia and Turkey. Regarding the availability of electronic payment infrastructures and ATM networks, indicators show that the Moroccan and Indonesian population rely heavily on cash rather than on payment cards or other non-cash instruments.

The six countries also differ in terms of policies and arrangements for stimulating and channelling remittances. The Turkish government particularly encourages remittances by providing preferential exchange rates and a programme permitting nationals living abroad to shorten their compulsory military service by paying a fee in foreign currency (Aydas et al., 2005). Likewise, the Turkish central bank allows Turkish residents with a work or residence permit abroad to hold foreign deposit accounts with the central bank, which can be opened at various Turkish banks located in the Netherlands (Köksal and Liebig, 2005). Morocco also has special policies to channel remittances through official channels, such as formulating favourable fiscal policies for migrants and lifting the restriction on repatriating money. Moreover, the Moroccan government has encouraged the creation of a network of consulates, Moroccan bank branches and post offices to facilitate remittance flows. In addition, Moroccan migrants can open foreign exchange accounts with Moroccan banks established abroad, and state-run banks offer Moroccans living abroad as well as their remittance receivers the option to open joint current accounts and to use relatively cheap bank transfers (De Haas and Plug, 2006).

4. Data description and methodology

4.1. Data description

To thoroughly examine the determinants of migrants' choice of remittance channel, we used a unique dataset. This was collected between March and July 2009 when surveying migrants legally residing in the Netherlands. The survey was commissioned by De Nederlandsche Bank to discover their overall payment behaviour and perceptions. Although the survey focused on people of Turkish, Moroccan, Surinam and Antillean origin, the sample also included migrants from other regions. The survey consisted of two parts. In part one, respondents documented all their point-of-sale (POS) expenses during one day in a transaction diary.[11] For each transaction, they were asked to register the location, the method of payment used and its transaction amount. In part two, respondents answered detailed questions on socio-demographics, ethnic background, perceptions and attitudes regarding different modes of payment and remittances.

For the purpose of this study, we defined remittances as money sent and/or given to family or friends abroad.[12] We made a distinction between two different types of channels: i) channels that allow the payer to transfer money from the Netherlands while physically staying in the Netherlands, and ii) channels where the payer hands over money to the beneficiary at the beneficiary´s destination. We subdivided these two groups into method used. For transferring money from the Netherlands we distinguished between i) remittance services offered by banks, ii) services offered by MTOs, and iii) in-cash transfers via informal intermediaries, such as sending cash by regular mail or handing it over to friends, family, or others travelling back home. Regarding on-site remittances, we distinguished between i) ATM withdrawals by the payer in the country of origin, and ii) physically taking the cash to the destination. The respondents were asked whether they had used any of the various channels, during the 12 months prior to the survey.

[11] Jonker and Kosse (2013) demonstrate that one-day transaction diaries are the preferred methodology for assessing payment behaviour. One-week registration methods and retrospective interviews are shown to lead to a significant increase of incomplete recall and zero observations due to diary fatigue and diary exhaustion.

[12] This definition of remittances does not include migrant transfers that aim to accumulate assets in the home country. See Amuedo-Dorantes and Pozo (2013) for a recent contribution on this topic.

Since ethnic minorities are relatively difficult to approach compared to the native Dutch population, we used a combination of sampling techniques. Migrants from Europe, North America, Oceania, Japan and Indonesia were mainly selected from an internet panel, whereas people with a Turkish, Moroccan, Surinam and Antillean background were selected using a quota procedure. In the latter, interviewers used their own networks and visited specific places with a high probability of encountering the targeted persons. Regardless of the sampling method, the Turkish, Moroccan, Surinam and Antillean respondents were selected in such a way as to fairly represent their population group in terms of age, education and the urbanisation degree of living environment. We also used various survey techniques, such as online surveys and face-to-face or paper-based interviews, to minimise non-response. For a detailed description of the sampling process and the survey methods used, see Kosse and Jansen (2013).

The final sample includes 1,680 respondents with a foreign background.[13] Table 4 presents an overview of their personal characteristics. Column 1 summarises the consumer characteristics of all 1,680 individuals, whereas the other columns present a breakdown based on country of origin. Since the survey was designed to gather sufficient data on at least the Turkish, Moroccan, Surinam and Antillean population, German and Indonesian respondents are slightly underrepresented. Therefore, in the empirical analyses we pool these groups together within the 'other' category, which comprises all other nationalities. Overall, 35% of our sample had remitted money back home during the 12 months prior to the survey (Table 4, last row). However, that proportion varies between population groups, from 14% for Indonesian respondents to 46% for Moroccan respondents. There is also considerable variation between the subsamples in terms of generation, age, education, strength of ties and frequency of visits to the home country. This information is used in our empirical analyses below.

[Table 4]

[13] We used the official definition of Statistics Netherlands, which classifies someone as a first generation migrant if either one of the parents and they themselves are not born in the Netherlands. If the migrant was born in the Netherlands, he or she is defined as a second-generation migrant, even if only one of the parents was born abroad.

Table 5 presents an overview of the general payment habits and remittance behaviour of the respondents who had made at least one remittance transfer during the 12 months prior to the survey. Almost 60% of respondents stated their preference for paying daily POS purchases in cash, assuming that all payment instruments would be accepted by the merchant. Preferences, however, vary greatly across the population groups. The majority of people originating from Indonesia, Suriname, the Netherlands Antilles and Germany prefer to pay by debit card, whereas Turks and Moroccans have a distinct preference for cash. This is also reflected in the relatively high share of actual cash transactions recorded in the transaction diaries of the last two groups. With respect to the payment of fixed expenses, habits are fairly equal across the various groups, with two clear exceptions. Compared to the others, respondents with a Turkish and Moroccan background are less likely to pay fixed expenses electronically, i.e. online transfer or direct debit. Additionally, the general use of internet banking is relatively low among these two groups.

[Table 5]

Regarding remittance behaviour, Table 5 shows that carrying cash oneself to the recipient's country is the most frequently used channel for remitting money. Likewise, a vast majority of respondents remit by withdrawing cash from an ATM when abroad. For those originating from the Netherlands Antilles, this is actually the most popular means of remitting. In third and fourth place are transfers made through a bank or an MTO; respondents from Turkey, Morocco and Suriname use MTO services more often, while Antilleans, Indonesians and Germans seem to prefer banks. Turks, Moroccans, Indonesians and Surinamese also use other intermediaries more frequently to send cash. Considerable national differences can be observed in the amounts remitted as well. The largest amounts are sent by Turks, Moroccans, Indonesians and Germans. The survey did not ask for the exact amounts. Rather, it used a categorical variable ranging from 1 (< EUR 250) to 8 (> EUR 5000). The other categories are: EUR 250 - EUR 500 (2), EUR 500 - EUR 750 (3), EUR 750 - EUR 1000 (4), EUR 1000 - EUR 1500 (5), EUR 1500 - EUR 2000 (6) and EUR 2000 - EUR 5000 (7). For ease of exposition, we have pooled amounts larger than EUR 750 into one category in Table 5.

Overall, the descriptive statistics presented in Table 5 are in line with the findings of earlier studies on the remittance patterns of migrants living in the Netherlands.[14] Moreover, the data hints at some parallels between remittance behaviour and general payment patterns: migrants that prefer cash and other paper-based instruments seem to prefer handing over cash instead of using a bank or an MTO. However, a more profound analysis is needed to formally assess the real drivers underlying the observed remittance behaviour.

4.2. Empirical methodology

We investigated the determinants of the migrants' choice of remittance channel using an approach similar to Amuedo-Dorantes and Pozo (2005). Based on the description presented in Section 4.1., we singled out five different remittance channels (j), with j=1 for bank transfers, j=2 for MTO transfers, j=3 for in-cash transfers via informal intermediaries, j=4 for ATM withdrawals in the country of origin, and j=5 when bringing cash oneself. Since the respondents were asked about all the channels used during the 12 months prior to the survey, j may take on different values for each individual migrant (i). When deciding how to remit, the migrant (i) can be assumed to derive a certain utility U_{ij} from each of the five channels j (j=[1,…,5]). This utility may depend on several factors, Z_{ij}, such as personal, transactional and channel characteristics, as well as country-specific factors. Formally,

$$U_{ij} = \Psi_j * Z_{ij} + \varepsilon^U_i,$$

where the error terms are assumed to be independent and Ψ_j is a coefficient vector varying across channels. The migrant is assumed to use those channels that provide the highest utility. Hence, the probability that a migrant chooses channel (j) is given by:

$$P(C_i = j) = exp(\Psi_j , Z_{ij}) / \Sigma^5_{k=1} exp(\Psi_k , Z_{ij}), \quad (1)$$

[14] See, for example, Köksal and Liebig (2005), NCDO (2005), Pieke et al. (2005), Barendse et al. (2006), De Haas and Plug (2006), Siegel (forthcoming).

with C_i indexing the channel chosen. For ease of exposition, we report the results as odds ratios reflecting the likelihood of a migrant choosing a particular channel (*j*) relative to the base channel, which in our case is a bank transfer. This results in the following odds ratios for the other four channels:

$$P_{ij} / P_{i,bank} = exp(\Psi_j , Z_{ij}).$$

A coefficient larger than 1 indicates that a migrant is more likely to select channel (*j*) instead of a bank transfer. By contrast, a coefficient smaller than 1 indicates that a migrant is less likely to use channel (*j*) instead of a bank transfer. Under the Independence of Irrelevant Alternatives assumption (IIA)[15], the model boils down to a multinomial logit model. Therefore, we estimate the model using a discrete choice model (McFadden's, 1974).

4.3. Explanatory variables

For estimating *Equation (1)*, we followed the existing literature and used a rich set of explanatory variables. First, the matrix Z_{ij} contains the total amount remitted.[16] In addition, we added various personal characteristics, such as gender, age, education, marital status, having children, being a first- or second-generation migrant, and whether a person lives in an urban area. We also included a set of dummy variables capturing the migrants' attachment to their home countries, such as the frequency of returning home and respondents' views about the strength of their home country ties. Given the observed country differences in Table 3, we accounted for possible country-specific characteristics by

[15] The IIA assumption is an important assumption, which implies that the relative odds of using a bank transfer instead of, for example, an MTO transfer, is independent from the probability of using one of the other channels. We tested for the validity of this assumption, which is satisfied in all the regressions. Results are available upon request.

[16] The decision of migrants of how to remit may not always be taken only after deciding the amount. As Amuedo-Dorantes and Pozo (2005) correctly claim, the decision of how much to remit may also depend on the channel used. That is, each channel has its own cost structure, which may in the end affect the decision of how much to remit. Neglecting this possible endogenous nature of the amount remitted may potentially lead to simultaneity biases. However, we asked our participants for the total amount remitted during the past 12 months. By contrast, Amuedo-Dorantes and Pozo (2005) only have data on the amounts sent over the past month. While it is reasonable for a migrant, in terms of costs, to remit EUR 200 every other month instead of EUR 100 on a monthly basis, this is probably less likely to happen on an annual level. Therefore, we believe that possible biases related to this simultaneity problem are limited in our case.

adding country dummies for the major migrant groups. Since country differences may arise due to many factors, such as cultural and social traditions, we used country dummies that allowed us to control for all potential observed and unobserved country differences. In order to examine the effect of migrants' general payment behaviour, we extended the model by using the information collected by the payments diary on the migrants' share of cash payments, as well as dummy variables indicating whether migrants indicated a preference for paying in cash, whether they frequently use internet banking and whether they prefer paying fixed expenses electronically by using online transfers or direct debits instead of paper-based instruments. Finally, to capture the possible effect of channel-related characteristics, we re-ran the model by including the migrant's self-reported reasons for choosing a particular channel, such as (perceived) costs, convenience, speed and safety.

5. Results

5.1. Benchmark results

To answer the paper's main question "What determines a migrant's choice of payment channel when remitting money abroad?", we first ran several benchmark regressions that include the annual amount remitted, personal characteristics, the migrants' attachment to their home countries and country dummies. The results are presented in Table 6. The base category is a first generation female of Turkish descent, living without partner and children in a non-urban area, aged between 35 and 44, having less than secondary education and indicating no ties with the country of origin.

[Table 6]

First, it becomes clear that the remittance amount is an important factor. The odds ratios are significantly smaller than 1 for informal channels, bringing money oneself or making a cash withdrawal abroad. This indicates that the probability of remitting through one of these channels significantly decreases as the amount of the transfer increases. This corresponds to earlier research which shows that bank transfers are used less often for small remittances because of relatively high

fixed fees (e.g. Pieke et al., 2005). Second, personal characteristics are also influential as we find that education has a significant effect, especially when excluding all other insignificant variables from the model, such as gender, having children, age and generation. Overall, higher educated people are less inclined to send cash via informal intermediaries or to bring cash on visits. Instead, they are more likely to use a bank or an MTO transfer.

In addition, the results indicate a strong effect of a person's living environment. In general, people living in urban areas are more likely to use MTO services or one of the other non-bank remittance options. This most probably reflects the fact that most MTO agents and informal intermediaries are located in the more urbanised regions of the Netherlands. Conversely, the availability of bank branches is more equally spread over the country. We find no significant effect regarding home country ties. It seems that people visiting their country of origin regularly do not remit differently than those going home less often.

Finally, having accounted for all the factors mentioned above, we find that country differences have a significant effect. Ceteris paribus, individuals from Morocco prefer to bring cash in person, to use an MTO or to withdraw cash abroad rather than use a bank transfer, unlike those from Turkey. Respondents from Suriname also prefer MTOs compared to Turks. The explanation for these findings may be found in the relatively high number of Turkish banks located in the Netherlands. Yet, the results also suggest that Turks are more likely than Antilleans to use an informal intermediary or to bring cash back home. This may be because it is easier and cheaper to travel to Turkey than to the Netherlands Antilles. Overall, the significant country differences show that migrants' choice of remittance is strongly affected by unobserved country-specific factors. In order to flesh out the role of these factors, detailed data would be needed on all the countries represented in our sample. Unfortunately, we have not been able to examine this issue in more detail due to data unavailability.

5.2. The role of general payment habits

We extended the benchmark model by accounting for the migrants' general payment habits. We took as our basis the variables that were significant in the benchmark regression, i.e. remittance amount, urbanisation degree, education and country dummies, and supplemented this with the migrants'

general preferences for cash, and its usage, as well as with two dummies indicating whether they frequently use internet banking and whether they pay their fixed expenses electronically by means of online transfers or direct debits. The results are presented in Table 7.

[Table 7]

First, our findings confirm the marked effect of the remittance amount, the migrants' education level and their living environment. In addition, the country dummies indicate a strong and significant role of unobserved country-specific characteristics. Turning to the payment variables, we find a few indications that remittance channel choices are somehow related to a person's general payment behaviour. People who have a strong preference for cash and pay a large share of their purchases in cash seem more likely to carry cash on visits or to use MTO services instead of bank transfers. However, the effects are not significantly different from zero. The results also show that people with a strong cash preference are less inclined to hand over cash after withdrawing it at the country of destination. Instead, they would rather send it by bank transfer. Although this effect is significant at the 5%, it is not immediately clear what drives this behaviour.

Turning to remote payment habits, the results are more intuitive. Those who frequently use internet banking seem more likely to use bank services for remittances as well. The results show that heavy internet banking users are significantly less likely to remit through informal channels. Similarly, but not significantly, the results suggest that they are less likely to carry cash themselves or to go to an MTO. By the same token, migrants who mainly pay fixed expenses electronically tend to bring cash on visits less often. Again, the results are not significant. To summarise, the results suggest some degree of correlation between migrants' remittance behaviour and their general payment habits. The effects, however, are rather weak and relatively small compared to the other factors, such as the remittance amount, personal characteristics and country dummies.

5.3. Self-reported motivations

Since the literature highlights the important role of channel-specific factors, such as speed, cost and safety, we finally assessed the importance of the migrant's self-reported reasons for choosing a specific payment channel. This question was only asked for remittances sent from the Netherlands, which restricts our analysis to the following remittance channels: i) services offered by banks, ii) services offered by MTOs, and iii) in-cash transfers via informal intermediaries. The results are presented in Table 8.

[Table 8]

On the whole, our findings confirm the importance of remittance size, education, living area and country heterogeneity. We do not find a strong correlation with regular payment habits. However, we do find a strong and significant effect of (perceived) remittance channel attributes. These results are in line with the conclusions found in earlier papers (e.g. Karafolas and Konteos, 2010; Siegel and Lücke, forthcoming). They show that the choice of remittance channel is strongly affected by migrants' perceptions of the costs, ease of use and the availability and usability of various remittance options. At this stage, we would like to remind the reader that an odds ratio larger than 1 implies the variable has a positive effect on the likelihood of a migrant preferring a particular channel over a bank transfer, while a ratio below 1 indicates the variable has a discouraging effect on the use of the particular option. First, the significant and high odds ratio for 'low costs' clearly shows that it is mainly costs that drive migrants towards informal cash transfers instead of bank transfers.[17] In addition, informal channels are often used when the recipient has no bank account. This also holds for MTO transfers. On the other hand, migrants would rather use a bank transfer instead of a service offered by an MTO or informal services for reasons of convenience and speed. In addition, transparency of costs is a significant reason for migrants using a bank transfer instead of informal intermediaries. Finally, the low odds ratio for

[17] Ideally, we would like to include the actual costs of each particular remittance transfer decomposed by country corridor and amount sent. Unfortunately, this detailed information is only available for a few remittance corridors, exclusively for the formal channels and only as an average amount, which precludes its inclusion in the regressions.

'only possibility' suggests that informal channels are – as opposed to bank transfers – seldom used because they are the only option available.

6. Conclusions and policy implications

This paper examines a detailed dataset collected from more than 1,600 migrants residing in the Netherlands. It contributes to existing literature by empirically examining the determinants of migrants' choice of remittance channel and, in particular, by creating a link to their regular daily payment behaviour. In general, after correcting for remittance amounts, personal characteristics and country heterogeneity, we find a few indications that suggest the choice of remittance channel is somehow related to a person's general payment behaviour. People who frequently use internet banking for other purposes seem more likely to use bank services for remittances. In particular, the results show that heavy internet banking users are significantly less likely to remit through informal channels.

The effects of general payment habits, however, are relatively weak and economically small. Instead, we find the role of the remittance amount, personal characteristics and (perceived) costs, convenience and availability of remittance options to be stronger and more significant. First, we show that higher educated migrants are less likely to use informal transfers or to bring cash themselves to the recipient. Second, we find that bank transfers are generally preferred for larger amounts due to the level of remittance fees, whereas other channels are preferred for small remittances. In fact, we demonstrate that the use of informal channels is strongly driven by cost considerations. Finally, our results suggest that the availability of appropriate remittance options is important. People living in urbanised areas are more likely to go to an MTO or use informal channels than people living in rural environments, where bank services are often used simply because no other options are available. Additionally, informal channels are often used because the recipient does not have a bank account.

Turning to policy implications, an important question is how to increase the use of formal remittance channels that are monitored by supervisors. Informal remittance channels may have a significant advantage in terms of cost, but they are potentially more risky because they often rely on informal contracts and they do not guarantee the arrival of the cash (theft, loss). Moreover, informal remittances may have a weaker potential for promoting economic development in the recipient

countries. Therefore, and not least because of their potential for criminal misuse, it would be worthwhile to attract remittances from the informal to the formal sector. Higher educated people are generally less inclined to send cash via informal intermediaries or take cash on visits. These results may indicate a higher awareness of the potential risks of informal channels and may suggest a potential role for financial education. For instance, the use of informal channels could be discouraged by informing the public more effectively of the potential risks involved.

Second, the conclusion that the use of informal channels is strongly driven by cost considerations suggests that demand for formal services would be encouraged by reducing fees, especially those for small transactions. This fully supports the G20's ambition to reduce the cost of remittances by 2014. Finally, the important role of the availability of appropriate remittance options raises several interesting points. It suggests that the demand for formal services would increase if formal financial intermediaries such as banks and MTOs broadened their geographical presence in both the home and host country. It also suggests that the use of formal services could be encouraged if these intermediaries enlarged their product range to better accommodate the needs and situation of both the payer and the payee.

One interesting area for product and service innovation may be mobile technology. Innovations in retail payment instruments using modern technologies could foster financial inclusion, especially in countries where banks and other financial service providers have been unable to provide payment services to certain segments of the population (Beck et al., 2009). Their major added value is that they give the unbanked and under-banked population access to basic banking services without the need for having a bank account. A famous example is M-PESA, a mobile payment solution launched in Kenya for making and receiving payments both within and from outside Kenya (see e.g. CPSS, 2012). Alternatively, the use of formal remittance channels could be encouraged by promoting the use of bank accounts. In Mexico, for instance, banks are required to offer basic service accounts without fees or minimum balance requirements. Moreover, regulations were issued in 2011 to simplify the requirements for opening and using basic bank accounts to foster financial inclusion and to support a wide range of payment services based on mobile phones and cards.

Having said that, since the results show an important effect of unobserved country characteristics, it would be worthwhile analysing in more detail the role of economic, social and institutional home country characteristics. This may provide further insights into the cross-country dimension of payment preferences, thereby providing new ways of stimulating the safety, efficiency and integrity of the international remittance market.

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Table 1: Overview of Dutch population (15 years and older)

Background	Total population	%
Turkey	299,753	2%
Morocco	251,588	2%
Suriname	283,544	2%
Netherlands Antilles	110,453	1%
Indonesia	362,708	3%
Germany	343,236	2%
Eastern Europe	213,040	2%
Other	944,275	7%
Total immigrants	2,808,597	20%
Total native population	11,025,092	80%
Total Dutch population	13,833,689	100%

Source: Statistics Netherlands, 2012

Table 2: Cost of sending money from the Netherlands

	Turkey		Morocco		Suriname		Antilles		Indonesia	
	EUR 140	EUR 345	EUR 140	EUR 345	EUR 140	EUR 345	EUR 140	EUR 345	EUR 140	EUR 345
Bank average	13.57%	5.51%	7.38%	3.00%	8.57%	3.48%	6.31%	2.56%	11.52%	4.68%
MTO average	9.77%	6.30%	7.06%	5.00%	8.54%	5.69%	4.74%	3.03%	10.19%	6.75%
Total average	11.20%	6.00%	7.18%	4.25%	8.55%	5.06%	5.53%	2.79%	10.76%	5.86%

Notes: This table summarises the average costs of sending money from the Netherlands to the major remittance receiving countries as a percentage of the amount remitted (i.e. EUR 140 (USD 200) and EUR 345 (USD 500)). Total costs include transaction fees and the exchange rate margin. Data refers to the first quarter of 2012. Source: http://remittanceprices.worldbank.org/Country-Corridors/.

Table 3: Key characteristics of major remittance receiving countries (2010)

	Turkey	Morocco	Suriname	Antilles	Indonesia	Germany
Financial access						
Financial access indicator	4	3	0	3	4	4
Deposit accounts	1,661	265	n.a.	n.a.	505	n.a.
Bank branches	17.8	9.9	n.a.	n.a.	7.7	15.9
Foreign bank branches in NL	7	2	0	0	0	10
Remittances market						
Remittance inflows (% GDP)	0.1%	6.8%	0.1%	n.a.	1.0%	0.3%
Western Union agents	197	241	8	0	686	183
Money Gram agents	81	537	3	8	240	287
Payment habits and infrastructure						
Use of non-cash instruments	3	1	n.a.	n.a.	2	4
Payment card transactions	18.2	0.2	n.a.	n.a.	1.2	28.8
Electronic infrastructure	3	2	n.a.	2	3	4
ATM terminals	44.3	18.6	n.a.	100.1	14.4	112.2

Notes: Overall financial access indicators, deposit accounts, bank branches and ATM terminals are taken from World Bank and CGAP (2010). The overall financial access indicator takes on a value from 0 (low) to 4 (high). Number of deposit accounts refers to accounts held at commercial banks only, as measured per 1,000 adults. Number of bank branches refers to commercial bank branches only, as measured per 100,000 adults. Foreign bank branches in NL as measured as the number of home country's bank branches established in the Netherlands as registered at the Nederlandsche Bank in August 2012. Remittance inflows (% GDP) are taken from the World Bank (2011) for the year 2010. Western Union agents and Money Gram agents as measured as the number of cities with agents according to http://www.payment-solutions.com/agent.asp and https://www.moneygram.com/wps/portal/moneygramonline/home/locations. Use of non-cash instruments and electronic infrastructure is reported in Cirasino and Garcia (2008), with the use of non-cash instruments reflecting the level of retail payment system development from 1 (low) to 4 (high) and electronic infrastructure capturing from 1 (low) to 4 (high) the availability of infrastructures to process retail payments and the degree to which the payment system oversight function covers retail payment systems. Payment card transactions reflect the number of debit and credit card transactions per capita in 2006, as published in World Bank (2008). ATM terminals as measured as the number of automated teller machines per 100,000 adults. Due to limited information about the Netherlands Antilles, Aruba in used as a reference for Western Union agents and number of ATM terminals.

Table 4: Key characteristics of survey participants

	Full sample	Turkey	Morocco	Suriname	Antilles	Indonesia	Germany	Other
Male	47%	49%	52%	42%	42%	49%	43%	46%
Spouse	63%	67%	50%	57%	51%	78%	82%	80%
Children	59%	61%	46%	60%	57%	68%	75%	70%
Second generation	48%	40%	43%	45%	39%	75%	77%	58%
Age								
- Age between 15 and 24	22%	25%	36%	22%	19%	4%	4%	7%
- Age between 25 and 34	21%	26%	27%	17%	22%	19%	9%	15%
- Age between 35 and 44	23%	29%	15%	25%	26%	23%	20%	21%
- Age between 45 and 54	17%	16%	12%	18%	18%	25%	23%	18%
- Age above 55	17%	4%	9%	19%	15%	30%	44%	40%
Resides in urban area	72%	79%	78%	76%	61%	62%	51%	65%
Education								
- Less than secondary education	20%	30%	27%	10%	14%	5%	16%	16%
- Secondary education	21%	19%	19%	20%	21%	26%	32%	20%
- Vocational education	31%	31%	31%	32%	31%	26%	24%	33%
- College education	21%	15%	19%	28%	23%	29%	20%	18%
- University education	8%	5%	4%	10%	12%	14%	8%	13%
Ties to the home country								
- No ties	16%	5%	5%	20%	14%	46%	33%	28%
- Some ties	29%	16%	24%	34%	34%	36%	46%	39%
- Strong ties	38%	47%	49%	34%	36%	14%	20%	26%
- Very strong ties	18%	32%	22%	11%	16%	4%	1%	6%
Visit home county								
- Never visit	18%	5%	4%	40%	29%	44%	21%	22%
- Once per year	50%	52%	51%	50%	60%	46%	44%	40%
- More than once a year	32%	43%	45%	11%	11%	10%	36%	39%
Dutch bank account	97%	96%	94%	99%	100%	100%	99%	100%
Remits to family abroad	35%	40%	46%	31%	30%	14%	23%	31%
# Respondents	1680	400	421	291	160	118	106	184

Notes: This table summarises the various characteristics of the respondents to the survey. Column 1 describes the full sample of individuals having a foreign background, while columns 2 to 8 show summaries for the different population groups. The data shown are unweighted.

Table 5: Key payment and remittance characteristics of remitters

	Full sample	Turkey	Morocco	Suriname	Antilles	Indonesia	Germany	Other
Payment habits								
- Cash preferred POS instrument	58%	66%	71%	48%	44%	31%	50%	39%
- Fraction of actual payments in cash	70%	74%	72%	67%	64%	49%	72%	66%
- Pay fixed expenses electronically	54%	43%	39%	65%	81%	69%	68%	80%
- Use internet banking often	35%	23%	28%	43%	53%	56%	50%	46%
Remittance channel used from the Netherlands								
- Bank account	13%	12%	5%	11%	28%	25%	27%	24%
- MTO	18%	17%	21%	30%	23%	6%	0%	6%
- Cash other	13%	16%	14%	13%	5%	13%	5%	13%
Remittance channel used at destination								
- Carry cash	62%	66%	78%	51%	21%	75%	64%	41%
- ATM	47%	41%	38%	48%	72%	63%	50%	61%
Amount remitted								
- Less than EUR 250	54%	42%	55%	58%	63%	44%	64%	65%
- EUR 250 - EUR 500	23%	31%	20%	23%	23%	25%	9%	19%
- EUR 500 - EUR 750	10%	8%	12%	6%	5%	19%	14%	9%
- More than EUR 750	14%	20%	13%	13%	9%	13%	15%	8%
# Respondents	589	160	194	89	48	17	24	57

Notes: This table presents information about the general payment and remittance habits of the respondents who had made at least one remittance transfer during the 12 months prior to the survey, by population group. Column 1 describes the full sample, while columns 2 to 8 show summaries for the major population groups. Percentages represent unweighted data. The fraction of actual cash payments is taken from the migrants' actual transaction diaries, whereas the other general payment habit variables are based on the respondents' subjective answers. Pay fixed expenses electronically refers to the usage of both internet banking and direct debits. The percentages for remittance channel usage represent shares of migrants having used a particular channel during the past 12 months prior to the survey. The percentages may add up to more than 100% as respondents were asked for all the channels used and thus were able to mention more than one option. Amounts remitted are migrants' own assessment of the total amount remitted over the past 12 months prior to the survey.

Table 6: Benchmark regression on migrants' remittance channel choice

	Remittance channel				Remittance channel			
	MTO	Informal	ATM	Bring cash	MTO	Informal	ATM	Bring cash
Annual amount remitted	0.833	0.591***	0.629***	0.567***	0.817*	0.598***	0.636***	0.575***
	(0.097)	(0.075)	(0.063)	(0.061)	(0.092)	(0.070)	(0.061)	(0.059)
Personal characteristics								
Male	0.608	0.541	0.999	0.886				
	(0.256)	(0.225)	(0.354)	(0.328)				
Spouse	1.168	1.401	0.919	0.849				
	(0.621)	(0.787)	(0.432)	(0.415)				
Children	0.875	1.192	0.519	1.261				
	(0.502)	(0.732)	(0.260)	(0.662)				
Second generation	0.914	1.357	0.709	1.020				
	(0.509)	(0.707)	(0.340)	(0.517)				
Age between 15 and 24	0.779	0.575	0.519	1.317				
	(0.743)	(0.550)	(0.436)	(1.217)				
Age between 25 and 34	1.314	1.163	1.622	1.140				
	(0.797)	(0.687)	(0.811)	(0.640)				
Age between 45 and 54	1.254	0.766	1.087	1.526				
	(0.801)	(0.469)	(0.568)	(0.814)				
Age above 55	1.819	1.051	2.239	1.305				
	(1.175)	(0.653)	(1.309)	(0.729)				
Resides in urban area	4.278***	2.606**	1.796	1.894*	4.535***	2.916**	1.839*	1.843*
	(2.057)	(1.169)	(0.678)	(0.722)	(2.119)	(1.270)	(0.678)	(0.681)
Secondary education	0.568	0.609	1.261	0.627	0.582	0.493	1.225	0.680
	(0.449)	(0.432)	(0.851)	(0.421)	(0.411)	(0.305)	(0.727)	(0.402)
Vocational education	1.034	0.282*	0.768	0.506	0.987	0.242***	0.698	0.512
	(0.760)	(0.183)	(0.477)	(0.325)	(0.610)	(0.131)	(0.373)	(0.276)
College education	0.887	0.241*	0.900	0.668	0.802	0.189***	0.784	0.604
	(0.672)	(0.175)	(0.567)	(0.460)	(0.529)	(0.121)	(0.437)	(0.359)
University education	0.515	0.135**	0.360	0.217*	0.378	0.080***	0.354	0.200**
	(0.480)	(0.117)	(0.262)	(0.171)	(0.331)	(0.068)	(0.234)	(0.146)
Self-reported attachment to country of origin								
Some ties	5.158	2.146	2.178	0.906				
	(5.338)	(2.246)	(1.655)	(0.674)				
Strong ties	1.348	0.946	1.075	0.448				
	(1.334)	(0.965)	(0.773)	(0.312)				
Very strong ties	4.182	4.451	1.268	0.906				
	(4.435)	(4.774)	(1.043)	(0.728)				
Visit more than once per year	1.203	0.995	1.256	1.205				
	(0.554)	(0.407)	(0.455)	(0.476)				
Country heterogeneity								
Morocco	2.657	2.112	1.745	3.803**	3.142*	1.963	2.345*	3.807**
	(1.704)	(1.233)	(0.937)	(2.304)	(1.867)	(1.072)	(1.157)	(2.095)
Suriname	2.475	1.693	1.594	0.855	2.759*	1.504	1.663	0.823
	(1.750)	(1.157)	(0.989)	(0.589)	(1.609)	(0.857)	(0.890)	(0.461)
Netherlands Antilles	0.562	0.089**	0.779	0.052***	0.545	0.097***	0.712	0.047***
	(0.433)	(0.091)	(0.501)	(0.039)	(0.379)	(0.087)	(0.428)	(0.031)
Other	0.059***	0.344	0.481	0.223**	0.108***	0.410	0.748	0.263***
	(0.052)	(0.267)	(0.284)	(0.137)	(0.085)	(0.238)	(0.357)	(0.129)
Observations		2480				2535		
# Migrants		496				507		
Log-likelihood		-613.4				-653.8		

Notes: This table presents the estimation results of two variations of *Equation (1),* with bank transfers being used as the reference channel. Informal includes different ways of sending in-cash remittances from the Netherlands via informal ways, such as via regular mail or giving it to friends or family when they travel abroad. The base category is a first generation female of Turkish descent, living in a non-urban area, without partner and children, aged between 35 and 44, having less than secondary education and no ties with their country of origin. The model is estimated using McFadden's (1974) choice model and the standard errors (between brackets) are heteroskedasticity robust. The numbers represent odds ratios relative to choosing a bank transfer. *, ** and *** denote significance at the 10%, 5% and 1% level respectively.

Table 7: The role of daily payment habits

	Remittance channel				Remittance channel			
	MTO	Informal	ATM	Bring cash	MTO	Informal	ATM	Bring cash
Annual amount remitted	0.818*	0.603***	0.647***	0.574***	0.805*	0.617***	0.670***	0.601***
	(0.094)	(0.072)	(0.064)	(0.060)	(0.102)	(0.078)	(0.072)	(0.068)
Personal characteristics								
Resides in urban area	4.579***	2.914**	1.732	1.916*	4.445***	2.376*	1.761	1.894
	(2.166)	(1.266)	(0.654)	(0.721)	(2.248)	(1.105)	(0.740)	(0.782)
Secondary education	0.600	0.510	1.120	0.714	0.647	0.522	1.078	0.809
	(0.429)	(0.319)	(0.680)	(0.424)	(0.499)	(0.359)	(0.744)	(0.541)
Vocational education	1.032	0.270**	0.601	0.569	1.036	0.246**	0.536	0.612
	(0.655)	(0.151)	(0.335)	(0.318)	(0.693)	(0.153)	(0.323)	(0.359)
College education	0.813	0.201**	0.597	0.742	0.638	0.172**	0.499	0.915
	(0.561)	(0.134)	(0.355)	(0.469)	(0.486)	(0.128)	(0.340)	(0.664)
University education	0.394	0.101***	0.235**	0.268*	0.486	0.086***	0.205**	0.279
	(0.350)	(0.085)	(0.162)	(0.201)	(0.477)	(0.082)	(0.161)	(0.239)
Country heterogeneity								
Morocco	3.206*	2.048	2.523*	3.969**	3.448**	2.252	3.092**	5.729***
	(1.933)	(1.141)	(1.288)	(2.244)	(2.139)	(1.331)	(1.613)	(3.411)
Suriname	2.779*	1.606	1.521	0.894	2.383	1.592	1.155	0.937
	(1.646)	(0.931)	(0.828)	(0.512)	(1.472)	(0.979)	(0.654)	(0.558)
Netherlands Antilles	0.542	0.118**	0.694	0.052***	0.474	0.121**	0.629	0.064***
	(0.379)	(0.106)	(0.442)	(0.035)	(0.351)	(0.113)	(0.420)	(0.045)
Other	0.108***	0.447	0.650	0.290**	0.143**	0.776	1.058	0.545
	(0.084)	(0.266)	(0.315)	(0.143)	(0.123)	(0.522)	(0.630)	(0.321)
Payment behaviour in the Netherlands								
Cash is preferred	0.897	0.844	0.393**	1.370	0.759	0.872	0.382**	1.127
	(0.406)	(0.356)	(0.158)	(0.569)	(0.369)	(0.416)	(0.168)	(0.527)
Internet banking	0.839	0.442*	1.086	0.710	0.802	0.354**	1.272	0.782
	(0.359)	(0.193)	(0.423)	(0.281)	(0.402)	(0.181)	(0.556)	(0.354)
Fraction cash payments					1.911	0.680	0.897	1.996
					(1.230)	(0.434)	(0.511)	(1.175)
Pay fixed expenses electronically					1.574	1.438	1.055	0.557
					(0.822)	(0.717)	(0.484)	(0.259)
Observations	2535				2140			
# Migrants	507				428			
Log likelihood	-636.6				-541.2			

Notes: This table presents the estimation results of two variations of *Equation (1)*, with bank transfers being used as the reference channel. Informal includes different ways of sending in-cash remittances from the Netherlands via informal ways, such as via regular mail or giving it to friends or family when they travel abroad. The base category is a first generation female of Turkish descent, living in a non-urban area and having less than secondary education. The model is estimated using McFadden's (1974) choice model and the standard errors (between brackets) are heteroskedasticity robust. The numbers represent odds ratios relative to choosing a bank transfer. *, ** and *** denote significance at the 10%, 5% and 1% level, respectively.

Table 8: The role of self-reported reasons in remittance channel choices

	Payment channel			Payment channel	
	MTO	Informal		MTO	Informal
Annual amount remitted	0.764*	0.538***	*Payment behaviour in the Netherlands*		
	(0.123)	(0.091)	Cash is preferred payment channel	0.838	0.819
				(0.543)	(0.492)
Personal characteristics			Internet banking	1.378	0.564
Resides in urban area	7.606***	1.584		(0.789)	(0.341)
	(5.628)	(0.960)	Fraction cash payments	1.191	0.519
Secondary education	0.332	0.234		(0.851)	(0.402)
	(0.337)	(0.216)	Pay fixed expenses electronically	1.572	1.517
Vocational education	0.504	0.060***		(0.924)	(0.989)
	(0.456)	(0.056)			
College education	0.219	0.018***	*Self-reported reason for choosing a payment channel*		
	(0.218)	(0.020)	Low costs	0.365	14.478**
University education	0.166	0.010***		(0.440)	(18.925)
	(0.244)	(0.014)	Speed	0.454	0.190**
				(0.252)	(0.134)
Country heterogeneity			Only possibility	0.527	0.066***
Morocco	2.383	3.284		(0.407)	(0.066)
	(1.668)	(2.436)	Safety	1.136	2.149
Suriname	4.562*	7.114**		(0.836)	(1.711)
	(3.626)	(6.249)	Know exactly the costs	0.171	0.054**
Netherlands Antilles	0.571	0.397		(0.213)	(0.078)
	(0.511)	(0.431)	Ease of sender	0.186***	0.216**
Other	0.138	1.906		(0.113)	(0.141)
	(0.168)	(1.690)	Favourable exchange rate	1.951	1.185
				(2.071)	(1.637)
			Receiver has no bank account	15.626**	15.397**
				(20.086)	(18.932)
			Ease of receiver	0.787	0.637
				(0.601)	(0.470)
Observations			546		
# Migrants			182		
Log likelihood			-124.4		

Notes: This table presents the estimation results of two variations of *Equation (1)*, with bank transfers being used as the reference channel. Informal includes different ways of sending in-cash remittances from the Netherlands via informal ways, such as via regular mail or giving it to friends or family when they travel abroad. The base category is a first generation female of Turkish descent, living in a non-urban area and having less than secondary education. The model is estimated using McFadden's (1974) choice model and the standard errors (between brackets) are heteroskedasticity robust. The numbers represent odds ratios relative to choosing a bank transfer. *, ** and *** denote significance at the 10%, 5% and 1% level, respectively.

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