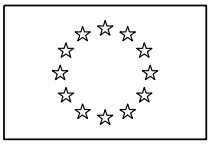

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COMMISSION STAFF WORKING DOCUMENT

IMPACT ASSESSMENT

accompanying document to the

Proposal for a Regulation (EU) of the European Parliament and of the Council No xx/yy on the professional cross-border transportation of euro cash by road between euro-area Member States

and the

Proposal for a Council Regulation (EU) No zz/yy concerning the extension of the scope of Regulation (EU) of the European Parliament and of the Council No xx/yy concerning the professional cross-border transportation of euro cash by road between euro-area Member States

{COM(2010)377 final}
{SEC(2010) 877final}

ANNEX 1 – SUMMARY OF REPLIES TO THE WHITE PAPER

The Commission has received 19 replies to the White Paper, 14 of which are available on the Commission website[1]:

For the sake of clarity, the different categories of stakeholders have been distinguished in the summary below. Five groups of stakeholders have been identified: the cash-in-transit sector, the banking sector, IBNS manufacturers, trade unions and public authorities of Member States.

All stakeholders acknowledge that the cash-in transit market is currently organised along national lines, due to the differences of legislation. Generally speaking a distinction should be made between the supply side (i.e. the CIT Companies) who has expressed reservations on the necessity to open national markets and the demand side (i.e. banks) which is extremely supportive and calls for an ambitious approach. The CIT sector welcomes the initiative to the extent that it does not envisage a full-scale harmonisation for the transport of cash and is furthermore in favour of limiting the scope of common cross-border rules to point-to-point transports only. They deem the current situation, characterised by a fragmented market, as satisfactory as CIT-companies have organised themselves accordingly. The banking sector is fully supportive of the initiative, which should lead to shorter and more efficient transport routes, meaning less risk, less costs involved and more competition in the sector. The trade unions welcome the initiative as well as long as this does not lead to any 'social dumping' but rather sets into motion a movement towards a levelling up of wages and other working conditions. IBNS-manufacturers are supportive and would like the use of intelligent banknote neutralisation devices to benefit from the initiative. It is worth noting that the replies received from public authorities of Member States –all of them supportive- came from non-participating Member States, showing an interest from countries outside the euro area for the initiative.

- **The cash-in-transit sector**

The CIT industry acknowledges that there is practically no cross-border transports taking place today and that the market is organised along national lines. They believe that the Commission proposal to facilitate the cross-border transport of cash is appropriate and proportionate in the sense that no full-scale harmonisation is suitable.

The replies from the CIT sector put a lot of emphasis on the security issue: security of CIT staff and the general public is a key issue. CIT Companies favour a cross-border regime limited to point-to-point transport, without including 'retail' transports (i.e. multi-stop transports, directly servicing the clients). The CIT companies insist very much on the principle of return to the country of origin within the same day and on the

[1] http://ec.europa.eu/economy_finance/articles/euro/article15105_en.htm

social aspects. Applicable social rules and working conditions should be very clear, as this is a very sensitive area.

The CIT sector welcomes the fact that several transport modalities are foreseen by the Commission and that use of IBNS would not be compulsory. Finally, they consider random checks by the home and host countries of primary importance in order to monitor compliance with the new rules.

- **The banking sector**

The banking sector very much supports the Commission initiative. Being able to cross the border will lead to shorter routes, which is more efficient and better for security.

According to the banks, the changeover to the euro is not really completed yet: 8 years after the introduction of the euro as a physical currency, it is still impossible in most instances for professional cash transports to cross a border. For banks, the Commission initiative is the logical complement to SEPA[2] for cash payments.

In the view of the banks, the argument that cross-border transports would only be a small fraction of the overall cash transports and that, consequently, there is no case for action, is a weak argument. As professional cash transport cross border is not possible today, the actual opportunities are difficult to quantify. The important security dimension should not be misused. It has been demonstrated that there is no relationship between the type of security measures for cash transportation implemented by a given Member State and the number of attacks registered in the same Member State. Hence any differential in cash transportation security measures between two Member States may not be used as an argument that services that would be rendered by an out-of-country transporter would increase security risks.

The banks favour an ambitious approach: the long term objective should be the creation of a true internal market for professional cash transports. They suggest a two-step approach. In the short term (5 years), the market would be limited to borders corridors, spanning e.g. 100 km on each side of a border in a first step. In the long term, there would be no limitation anymore (e.g. no obligation to be back to your home country in the same day). Some of them even call for no limitations from the start.

The banks would prefer a scheme based on mutual recognition, on the basis of a minimum harmonization of national rules. The new regime should cover point-to-point transports and retail transports as well. They acknowledge that the focus should be on the euro but would like a scope as wide as possible (other currencies as well as valuables could be included). They favour a broad geographical scope as well (not limited to the euro area).

As regards the transports modalities, according to the banks, the legislation should be technologically neutral but should acknowledge the constant progress facilitated by the application of notably IBNS technology. They consider that a staining requirement of 20 % of the surface of the banknote for IBNS is too high.

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[2] Single Euro Payments Area.

Banks suggest an additional 'light' transport modality to be possible, involving only one security guard. They are favourable to a compulsory bullet proof vest for the staff when using armoured vehicles.

- **IBNS[3] manufacturers**

IBNS manufacturers support the initiative and believe that Intelligent Banknotes Neutralisation Systems could be very useful to facilitate the circulation of the euro. They are rather opposed to the possibility given to Member States to exclude the use of IBNS on their territory ('opt-out' clause). They recommend the use of a pictogram for marking the vehicles in order to indicate that the banknotes transported are protected by IBNS. They support a staining requirement of 20 % of the surface of the banknotes for IBNS. They underline the fact that the use of IBNS allows the use of non-armoured 'lighter' vehicles, which reduces fuel consumption and is better for the environment.

- **Trade Unions**

Trade Unions support the initiative while insisting on the fact that it should not lead to any 'social dumping' in the CIT sector and that the highest working conditions should apply. The initiative should set into motion a movement towards a levelling up of wages and other working conditions such as health and safety standards, training, working hours, compulsory rest periods, holidays, paid leave.

They also put a lot of emphasis on security and safety and underline the fact that the new rules should not be used to circumvent national provisions. They insist on the importance of training requirements for the CIT staff and very much favour the principle of a CIT cross-border licence for the company. They welcome the principle of intraday and daytime transport. They also insist on the necessity of random checks and penalties to ensure compliance with the regulation.

As regards the transport modalities, they are opposed to non-armoured ('soft skin') vehicles. The principle should be that the parts of the vehicle where the crew is, should be armoured. They are also in favour of clearly marked vehicles and bullet-proof vests for the staff in all circumstances. They are opposed to transports involving just one security guard: the crew should always be composed of at least 2 people. If IBNS is not used, the crew should be a minimum of three.

- **Public authorities of Member States**

All the replies received came from non euro-area Member States. They all support the initiative and are very keen on the possibility to opt in. Some of them are reluctant to put conditions on the duration of the transport and would not limit it to one day.

[3] Intelligent Banknotes Neutralisation Systems

ANNEX 2 – LIST OF PUBLISHED REPLIES TO THE WHITE PAPER

Public authorities

Danish Parliament

Hungarian Ministry of Finance

Swedish Parliament

Social partners

Belgian Trade unions – ABBV and ACLVB

UNI Europa and ETF Joint Trade Union

Professional associations

BDGW Bundesvereinigung Deutscher Geld- und Wertdienste e.V.

European Banking Federation (EBF)– aisbl

EURICPA European Intelligent Cash Protection Association

European Payments Council (EPC)

ESBG European Savings Banks Group

ESTA European Security Transport Association

FEBELFIN Belgian Financial Sector Federation

Fédération Bancaire Française

OCP Oberthur Cash Protection

* The replies are available at: http://ec.europa.eu/economy_finance/articles/euro/article15105_en.htm

ANNEX 3 – ESTIMATION OF THE POTENTIAL MARKET FOR PROFESSIONAL CROSS-BORDER TRANSPORT OF EURO CASH BY ROAD

(The below estimation has been carried out by the external consultant Ramböll management. The full study is available at: http://ec.europa.eu/economy_finance/articles/euro/2010-02-26-cross-border-cash_en.htm)

1.1 Introduction

The estimate of the potential cross-border market for professional money transport will be carried out on the basis of a traffic based approach, cf. section 1.2 below. This means that the cross-border market size will be determined on the basis of the assumption that in an open and free market, where current regulatory obstacles to cross-border transport have been lifted, the amount of professional money transport on roads - both national and cross-border - will be proportional to the amount of total transport.

According to this approach the size of the potential cross-border market is determined by the share of CIT transport out of total transport in each of the targeted countries.

In the long-term this implies that if a CIT transport on average makes up 1 out of every 10 000 vehicles on the road network of certain country the same CIT transport intensity is assumed for the outgoing transport on the cross-border roads of this country. The long-term estimate is considered the potential market size if there are no obstacles whatsoever for professional cross-border money transport. This is naturally a strong assumption that will require substantial market adaptation.

However, even though the long-term estimate is based on strong assumptions regarding market adaptation, it is also conservative in the sense that it is based on the current short-term traffic level and does not take into account that there are current obstacles to total traffic. An example of such obstacles may be linguistic and other barriers that prevent people in border regions from taking a job as easily across the border as in their own country leading to less cross-border commuting and traffic. Since total traffic volumes may increase in the future and more EU Member States are likely to adopt the euro in the coming years the long-term potential for cross-border transport of euro cash is likely to increase. In this sense the absolute long-term potential would therefore normally be higher than this traffic-based potential. To estimate possible future traffic increases or the impact of obstacles to cross-border traffic in general in order to calculate a long-term potential base for the estimation of CIT cross-border traffic is, however, out of the scope of this study.

In the short-term different factors will prevent the long term-estimate from materialising. Even if the current regulatory obstacles are lifted, the long-term assumption of an open and free market will be challenged by the current structure of the money transport market and will require reallocation of, or building of, new cash centres, changes of current contract management, regulation and cash cycles, etc. Thus, in the short-term at least the following factors will prevent the long-term market from materialising:

1. The location and operational radius of cash centres and central bank branches.

2. The cross-border settlement and density of commercial bank branches and large retailers.
3. Any other criteria raised by either the demand (commercial banks and retailers) or supply side (CIT companies) when relevant. These include differences in price levels and crime patterns.

The short-term estimate therefore consists of the long-term estimate as corrected to take into account the limiting impacts of the above factors.

Following this introduction, the traffic approach is described in section 1.2 outlining the basic logic, data requirements and results of the approach. In section 1.3 the data for the traffic approach is described and presented. In section 1.4 data on bank branches, retailers, operational radiuses of cash centres are identified in order to prepare for an estimate of the short-term potential market. Section 1.5 provides an overview of the examined border regions. The targeted border regions consist of 19 different areas between both the primarily and secondary targeted countries. Finally, in section 1.6, a summary of the results of the potential market is presented.

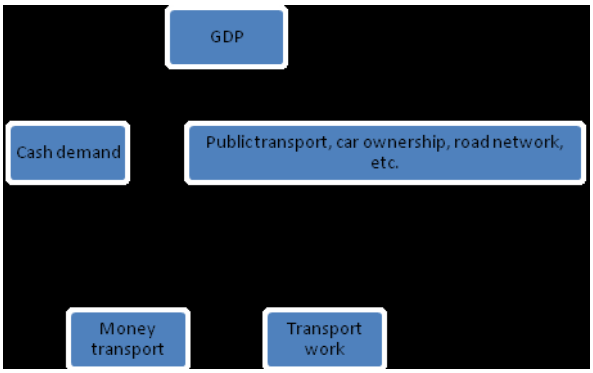
1.2 A traffic approach to estimate the market size

Due to the security and competition concerns of CIT companies the originally outlined approaches for the estimation of potential cross-border market size are not feasible and alternative analytical approaches are necessary. A traffic based approach for estimating the size of the potential market for professional cross-border transport of euro-cash by road was then proposed as the best possible methodological answer to this challenge.

1.2.1 Purpose and working assumption

The purpose is to estimate the size of the potential market for professional cross-border transport on the basis of traffic data. The underlying assumption is that in an open and free market, where current obstacles to cross-border transport have been lifted, the amount of money transport on roads - both national and cross-border - will be proportional to the amount of total transport work, where transport work is defined as the number of vehicles multiplied by the average vehicle kilometres.

The approach is based on the relationship between total transport work and money transport. That there should be a relationship between these two factors is intuitive and logical. GDP is a strong determinant for both factors so when one goes up or down the other should follow.



However, due to the abovementioned concerns of the CIT companies and the resulting lack of detailed information on CIT transport work, it is not possible to empirically validate a direct relationship between transport work and money transport.

Instead their mutual dependence on GDP can be used to support the approach.

In regard to *GDP=>[public transport, car ownership, road network, etc.]=>Transport work*, this relationship has been investigated and documented in many studies. For example in an EC study from 2002, where the relationship between different levels of GDP per capita and car ownership was estimated by means of an econometric model based on data for EU 15. Transport work was subsequently estimated on the basis of the estimated car demand elasticities and information on vehicle kilometre for ownership of the first and second car[1].

In regard to *GDP=>Cash demand=>Money transport*, the first part of the chain given by the relationship between GDP and cash demand can be illustrated by looking at the country-specific correlation between GDP and cash withdrawal from ATMs in the period 2000-2007, c.f. Table 1 below.

TABLE 1 CORRELATION BETWEEN CASH WITHDRAWAL AND GDP, 2000-2007

Austria	Belgium	Germany	Spain	France	Italy	Luxembourg	Netherlands	Portugal
0.97	0.96	0.61	0.99	0.99	0.52	0.86	0.87	0.99

Source: Eurostat and own calculation

Due to different levels of alternative cash sources and means of payments such as over the counter at a bank and the use of electronic means of payments, the correlation between GDP and cash withdrawals from ATM's varies between the countries. Since the lowest correlation is around 0.50 and since cash received over the counter at a bank in some countries like e.g. Germany is widespread and will add to the total cash demanded, the relationship between GDP and cash demand must be considered substantial and thereby supporting the underlying assumption of the traffic approach.

According to 2006 World Payment Report the value of ATM cash withdrawals relative to GDP across 17 European countries is close to an average of 9.5 percent and has changed little from the average of 9.9 percent in 2000.[2].

1.2.2 The traffic approach step 1-2

The traffic approach is simple and basically consists of two steps in order to estimate the potential market for cross-border money transport when it is measured in terms of the number of border-crossings of CIT vehicles and thereby the number of cross-border CIT transports.

[1] Strategic Plan for Road Infrastructure Maintenance and Development, Montenegro, Project EAR/02/MTG01/03/001,2002.

[2] World Payment Report, Capgemini, ABN AMRO and the European Financial Management & Marketing Association (EFMA)

In the approach the following abbreviations are used:

CIT(KM_country)	=	Total annual km of CIT transport/country
AADT(country)	=	Annual Average Daily Traffic/vehicle type/country (number of vehicles)
VEHICLE(KM_country)	=	Kilometres/vehicle type/country
AADT (road)	=	Annual Average Daily Traffic/road
VEHICLE KM (road)	=	Kilometres/road

Step 1: Ratio of CIT transport work / total transport work (pr country):

$$\pi = [CIT(KM\_country)]/[AADT\ (country) \cdot VEHICLE(KM\_country)]$$

In Step 1 the frequency of CIT vehicles on the roads compared to total transport work is assessed. In order to correct for national differences in the cash cycle and transport patterns, the CIT frequency is assessed for each of the targeted countries.

Step 2: Cross-border CIT transports (pr cross-border road):

$$Cross\ border\ CIT\ trips\ (number) = \pi \cdot [AADT\ (road)]$$

$$Cross\ border\ CIT\ transports\ (number) = Cross\ border\ CIT\ trips\ (number)/2$$

In Step 2, the CIT frequency is multiplied with the annual average daily traffic (AADT) on each of the cross-border roads in the targeted countries in order to estimate the number of potential cross-border CIT transports. These estimates pr road can straightforward be summed to estimates pr border regions and pr country, and also into an estimate for the entire euro area as well as some secondary countries.

As mentioned in the introduction, these numbers of potential cross-border money transports are the long-term estimates under the assumption that there are no obstacles whatsoever for professional cross-border money transport. In order to carry out short-term estimates a correction of the long-term estimates for a number of limiting factors that will prevent the long-term market from materialising is necessary.

1.2.3 The traffic approach step 3

In addition to step 1-2, the traffic approach also includes a third step, where an estimation of euro transported in the potential cross-border market is carried out.

Thus, in addition to an estimation of the frequency of cross-border money transports, the terms of reference also require an estimate of values and volumes of the transported cash. Also in connection with the description of the main characteristics of the current market the terms of reference requires information on “the typical values and volumes transported by a CIT-vehicle as well as the aggregate values and volumes by country and at euro-area level”.

In regard to volumes, CIT companies concurrently stated that volumes is not used in their business model and therefore not considered relevant a parameter. Weight is sometimes taken into consideration, but only in order not to go beyond the capacity of

vehicles. Consequently the CIT companies hardly collect information on volumes carried.

In regard to values, the mentioned security concerns have made it impossible to obtain any information of this kind from the CIT companies. Consequently, the possibility of assessing the total value of cash transported using aggregated information at national level on the cash issued, processed, recycled and returned to the national central bank in each country has been investigated.

This requires a thorough analysis of the cash cycle in each country in order to estimate the number of times one euro is transported in order to accomplish a cycle, i.e. the length of the cash cycle, including e.g. the possibility of direct transport from the central bank to customers or from customers to the central bank. This assessment has been carried out but, due to detained, lacking or imprecise information, the result is not satisfying and suitable for use.

It is the general impression from conducting the study that it is not possible to obtain sufficient information in order to properly take into account the impact of all logistic structures in the cash cycle such as: many clients are being serviced during a single transport, the service frequency of one client can vary depending on the clients' capacity or willingness to store cash, cash delivery and collection is always executed simultaneously whenever a CIT vehicle stops, etc.

In summary, it is not possible to assess the number of km one euro travels before delivery, which in turn means that it is not possible to estimate the value of cash a CIT vehicle carries whenever it is on the road.

Alternatively, in order to be able to give some kind of euro estimate regarding the size of the current national markets and the potential market for professional cross-border transport of euro-cash, it is proposed to use an estimate of the cash ordered to CIT companies as the unit of measurement. This is a simple unit, which enables a useable and comparable estimate of the CIT markets size. It actually encompasses the whole CIT market, regardless the complexity and length of the cash cycle and transportation.

Thus, using cash ordered instead of cash transported simplifies the assessment through enabling the exclusion of many country specific structural characteristics of the national CIT markets. These characteristics imply that the number of CIT kilometres travelled in order for one euro to be delivered to a customer in a specific country varies substantially and depends on that country's specific cash cycle. E.g.:

- Usually, transport services constitute a small part of a contract with CIT companies. Together with transport services, CIT contracts include other CIT services such as: processing, framework-checking, lodgement, ATMs maintenance etc. The provision of other CIT services depends on the organisation of the cash cycles and national markets. The degree to which Central Banks have delegated cash recycling and to which credit institutions have outsourced their cash processing activities varies across the euro area. CIT services are the same in all countries. The difference lies in the division of work between the central banks, the credit institutions and the CIT companies. Therefore, in one country, one euro ordered to CIT companies "generates" a

proportional "volume" of other CIT services that has an impact on the euro transported and the kilometres travelled.

- Transport services to final customers include both cash delivery and collection. The two operations are normally executed simultaneously when a CIT vehicle stops: while the volume of cash delivered and collected might differ, the service is combined. In addition to this, the ratio of EUR delivered/EUR collected depends on the cash cycle and is deemed to be stable. Therefore, in one country, one euro ordered to CIT companies "generates" a proportional number of cash delivery and collection.

Using cash ordered renders these considerations unnecessary and simplifies the analysis. At the same time multiplying total cash ordered by the total number of kilometres of CIT transport provides a good indication of the efficiency of the cash transport services in a specific country measured in terms of the number of kilometres a euro need to travel in order to meet cash demand given the country's topography, population density, etc.

The value of euro cash ordered to CIT companies in a specific country can be estimated as follows:

$$CIT(EURO\ ORDERED\_country) = cash\ issued\ by\ NCB + cash\ recycled\ by\ CIT\ companies$$

- *Cash issued by NCB*:

  This is the cash physically issued by a national central bank (NCB) to satisfy the demand. The cash is collected by CIT vehicles at the NCB location (or at CIT cash centres/bank cash centres if the 'notes held to order scheme' applies) and then delivered to the customers.

- *Cash recycled by CIT companies:*

  This is the cash reissued directly to their customers by CIT companies. In countries where commercial parties recycle cash, the cash collected by CIT companies from their customers is processed and framework-checked in CIT cash centres. The money that fits to the standard requirements is then delivered to customers by CIT vehicles. Only unfit money and surplus is sent back to the NCB through point-to-point transport operations. The amount of cash recycled by credit institutions in front office is not taken into account in assessing the demand for professional CIT transport. Indeed, it usually concerns cash that is collected by the credit institutions at the cashiers' desk or ATMs (deposit by small retailers or individual clients), and that is processed and recycled in front office at the commercial branch or ATM levels. In this case, CIT companies are not involved.

Depending on data availability, the use of cash ordered requires a minimum of calculations, which fully relies on the data provided by the National Central Banks. The result should be treated as an estimate.

Step 3: Total euro demand serviced by cross-border CIT transports:

$$Cross\ border\ CIT\ transports\ (euro\ ordered) =$$

$$\left[CIT(EURO\ ORDERED\_year\_country\ A)\right.$$
$$\left.\cdot\left[\frac{(Cross\ border\ transports\ (number\_year)/2\cdot(length\ of\ CIT\ transports\ (km\_day\_country\ A)))}{CIT(km\_year\_country\ A)}\right]\right]$$

$$+\left[CIT(EURO\ ORDERED\_year\_country\ B)\right.$$
$$\left.\cdot\left[\frac{(Cross\ border\ transports\ (number\_year)/2\cdot(length\ of\ CIT\ transports\ (km\_day\_country\ B)))}{CIT(km\_year\_country\ B)}\right]\right]$$

Where:

$$Length\ of\ CIT\ transports\ (km\_day\_country) = \frac{CIT(km\_year\_country)}{Total\ CIT\ vehicles(number\_country)}/working\ days\ per\ year$$

In Step 3, the diversion of the euro ordered to CIT companies in country A to CIT companies in country B from customers in country A and vice versa is estimated. Since Trans-tool does not allow an origin-destination distinction of traffic on the road network it is not possible for a certain border-road to determine how much of the total traffic, that comes from country A and country B, respectively. It is therefore assumed that country A and B equally split the estimated cross-border money transport from step 2. An equal split is a working assumption assessed on the basis of the fact that there are no clear cases where the potential cross-border transport only goes one way, i.e. only from country A to country B. Usually the potential cross-border transports goes both ways.

1.3 Data for the traffic approach

Step 1-2 of the traffic approach requires the following data measured for each of the targeted countries:

- Total transport work
- Road-specific information on traffic and transport work.
- CIT transport work

Step 3 of the traffic approach requires the following data measured for each of the targeted countries:

- Estimated number of cross-border money transports (step 2 of the traffic approach)
- Total euro ordered pr country
- Total number of CIT vehicles and estimation of the length of CIT transports

Each of these data are described and presented below.

Total transport work

Total transport work is calculated by multiplying the total number of motor vehicles by the average distances they travel throughout the year. Motor vehicles include passenger cars, buses, lorries, and vans, but not motorcycles or mopeds. This information has been provided by the World Resources Institute as well as National Road Directorates, cf. Table 2 below[3].

TABLE 2 TOTAL TRANSPORT WORK (MILLION VEHICLE KILOMETRES)

Country	2008[1]	2007[1]	2006	2005	2004	2003
The Netherlands	145 109	132 292	120 608	118 445	117 995	114 555
Belgium	123 207	111 142	100 258	97 405	93 500	92 030
Luxembourg	5 583	5 000	4 477	4 337	4 201	4 069
France	568 584	557 994	547 600	547 500	552 500	548 900
Germany	693 810	671 893	650 667	639 000	652 100	639 100
Austria	83 380	77 250	71 570	70 296	70 171	69 167
Slovakia	14 831	13 521	12 327	12 106	12 060	11 708
Italy	94 707	86 342	78 716	77 304	77 010	74 766
Slovenia	15 966	13 522	11 452	11 047	10 864	10 307
Spain	296 105	269 951	246 108	241 694	240 776	233 757
Portugal	69 838	63 670	58 046	57 005	56 789	55 133

Note: [1] Extrapolated values based on the period 2006-2001

Source: World Resources Institute and National Road Directorates.

Road-specific traffic and transport work

Road-specific information on traffic and transport work has been provided by the EC in terms of a comprehensive data set from the EC digital map Trans-Tool covering all of Europe. Trans-Tool is administered by the EC research institute in Sevilla and is developed by the Department of Transport at the Technical University of Denmark and Rapidis a transport consultancy. The map contains the overall road network and is rather rough digitalised. In return it contains quite a number of traffic counts and also model estimations implying counts or modelled traffic for all edges (roads). The traffic is measured in terms of cars and trucks and handles different time periods like rush hour, holidays, etc. On the basis of the Trans-Tool data it is relatively straight forward to convert traffic to vehicle km (transport work), which is needed for the approach.

[3] Some data may not consist of all the motor vehicle classifications.

CIT transport work (and the CIT frequency - π)

CIT transport work is the total number of kilometres that CIT vehicles travel pr year in each of the targeted countries. This information has been provided by large CIT companies and coordinated and processed by ESTA, cf. Table 3 below.

TABLE 3 CIT TRANSPORT WORK AND MARKET SHARE OF REPORTING CIT COMPANIES, 2008

Country	Transport work (million km)	Reporting CIT companies	Market share (%)
Netherlands	14.2	Brinks, G4S	90%
Belgium	8.3	Brinks, G4S	100%
Luxembourg	1.6	Brinks, G4S	95%
France	53.0	Loomis, Brinks	85%
Germany	133.3	BDGW (CIT assoc.)	90%
Austria	7.5	Loomis	80%
Slovakia	6.7	Loomis, G4S	80%
Italy	45.0	Assovalori (CIT assoc.)	80%
Slovenia	0.4	Loomis	-
Spain	32.0	Loomis, Prosegur	90%
Portugal	10.0	Loomis, Prosegur	40%

Source: ESTA and CIT companies.

Apart from Belgium, the reporting CIT companies do not have full market dominance, i.e. their market share is not 100 percent but varies from 40-95 percent. Consequently, in order to assess the total CIT transport work, it is assumed that the transport work of the reporting companies is representative for the transport work of the CIT companies that have the remaining market shares. Since the CIT markets are heavily regulated and the services of CIT companies therefore harmonised and since the remaining markets shares are small, this correction is assessed to introduce only a small imprecision in the overall assessment, c.f. Table 4 below.

TABLE 4 CIT TRANSPORT WORK AND THE CIT FREQUENCY, 2008

Country	CIT transport work (million km)	Total transport work[1] (million km)	CIT ratio (% CIT km)	Market share of reporting CIT companies	CIT transport work (corrected for market share) (% CIT km)	CIT ratio (corrected for market share) (EURO)
	(I)	(II)	(I)/(II) =(III)	(IV)	(1-(IV))+1) *(I) =(V)	(V)/(II) =(VI)
Netherlands	14.2	145 109	0.010%	90%	15.6	0.011%
Belgium	8.3	123 207	0.007%	100%	8.3	0.007%
Luxembourg	1.6	5 583	0.029%	95%	1.7	0.030%
France	53.0	568 584	0.009%	85%	61.0	0.011%
Germany	133.3	693 810	0.019%	90%	146.6	0.021%
Austria	7.5	83 380	0.009%	80%	9.0	0.011%
Slovakia	6.7	14 831	0.045%	80%	8.0	0.054%
Italy	45.0	94 707	0.048%	80%	54.0	0.057%
Slovenia	0.4	15 966	0.002%	-	-	-
Spain	32.0	296 105	0.011%	90%	35.2	0.012%
Portugal	10.0	69 838	0.014%	40%	16.0	0.023%

Note: [1] Extrapolated values based on the period 2006-2001

Source: ESTA, National Central Banks and World Resource Institute.

The above national CIT frequency is the basis for estimating the expected frequency of CIT transports on cross-border roads. Thus, the frequency of CIT transports on cross-border roads is calculated by multiplying the national CIT frequency by the average annual daily traffic (AADT) on the cross-border roads.

Total number of CIT vehicles and estimation of the length of CIT transports

Due to safety and security considerations, it has not been possible to collect any information from the CIT companies regarding the characteristics of the CIT transports hereunder the length of the typical CIT transport[4]. It has therefore been necessary to use alternative ways of assessing this information.

In addition to the total transport work of CIT vehicles, ESTA has provided information on the total number of CIT vehicles in 2007. On the basis of this information it follows that a straightforward estimation of the total annual transport length pr CIT vehicle can

[4] Some indications were collected from EPC members

be carried out by dividing the transport work with the total number of vehicles, cf. column IV in Table 5 below.

TABLE 5 CIT TRANSPORT WORK AND ESTIMATE OF EURO ORDERED, 2008

Country	Euro ordered (million EUR)	CIT transport work (million km)	CIT vehicles (number)	CIT transport length (km/vehicle/ year)	CIT transport length (km/day)
	(I)	(II)	(III)	IV=(II)/(III)	V=IV/265
The Netherlands	65 022	15.6	325	48 062	181
Belgium	45 234	8.3	352	23 580	89
Luxembourg	-	1.7	55	30 545	115
France	178 366	61.0	2 096	29 079	110
Germany	515 900	146.6	2 778	52 783	176
Austria	67 648	9.0	200	45 000	170
Slovakia	8 313	8.0	-	-	
Italy	174 238	54.0	1 500	36 000	136
Slovenia	4 035	-	-	-	
Spain	114 058	35.2	1 150	30 609	116
Portugal	23 630	16.0	450	35 556	134
Total	**1.196.444**	**355**	**8.906**	**-**	**-**
Average	**-**	**-**	**-**	**36.801**	**136**

Source: ECB, NCBs, ESTA and Ramboll[5]

On average and roughly speaking, a CIT employee works 8 hours a day. Assuming four hours is used on deliveries/pick-ups (20 stops pr. transport and 12 minutes pr. stop[6]), that leaves four hours on the road. This approximately corresponds to 23-55 km/h (89-221 km/day/vehicle, cf. column V in Table 5 above). This is not unreasonable considering that most transports are carried out in high population density areas.

While the assessment of CIT annual transport length is purely based on information provided by ESTA, the corresponding assessment measured pr. day has an additional moment of uncertainty in terms of the number of assumed working days, i.e. the 265 working days[7]. Thus, it has not been possible to obtain information on the actual number of working days for CIT companies.

[5] Rough general estimate from ESTA.
[6] Assessed by EPC and Ramboll on the basis of interviews.
[7] This is valid except for Germany, where the German Bundesbank has informed the consultant that CIT-vehicles generally operate around 300 days per year.

In order to avoid this additional moment of insecurity, step 3 of the traffic approach can be rewritten in order to use the total annual transport length of CIT vehicles as opposed to the daily transport length pr CIT vehicles. The above estimation of transport length pr. day is however still useful as a point of reference for the assumption of operational radiuses of cash centres in the next section.

Rewritten Step 3 of the traffic approach:

$$Cross\ border\ CIT\ transports\ (euro\ ordered) =$$

$$\left[CIT\,(EURO\ ORDERED\_year\_country\ A) \cdot \left[\frac{(Cross\ border\ transports\ (number\_day)/2)}{Total\ CIT\ vehicles\,(number\_country\ A)}\right]\right]$$

$$+\left[CIT\,(EURO\ ORDERED\_year\_country\ B) \cdot \left[\frac{(Cross\ border\ transports\ (number\_day)/2)}{Total\ CIT\ vehicles\,(number\_country\ B)}\right]\right]$$

1.4 Data for the short-term estimation of the potential market for cross-border transport

As described in the introduction to this chapter, the short-term estimation of the potential market for cross-border money transport equals the long-term estimation corrected - as far as possible - with the following factors:

1. The location and operational radius of cash centres and central bank branches
2. The cross-border location and density of commercial bank branches and large retailers
3. Any other criteria raised by either the demand (commercial banks and retailers) or supply side (CIT companies) when relevant. These include differences in price levels and crime patterns

The location and operational radius of cash centres and central bank branches

In terms of cash centres, the estimation of the short-term market focuses on areas where a cash centre on one side of the border is able to provide services to banks and retailers on the opposite side of the border. The assessment of whether and to what extent this is possible depends on the operational radius of the cash centre.

In section 1.3 the average length of a CIT transport was assessed to around 136 km pr. day. This assessed transport length is a useful first point of reference in order to estimate the approximate operational radius of a given cash centre in the targeted countries. On the basis of the perceptions of the demand side players (it was not possible to obtain any precise figures from the supply side) and given the uncertainty and variation across and within countries, not the least between urban and rural areas, the assessed 136 km. pr. day is turned into a working assumption that a CIT vehicle can potentially operate in an area that is approximately 100 km crow flies from its origin.

The aim of assessing the operational radius of the cash centres is to assess the importance of the location of these centres in term of the ability of diverting cash demand from the neighbouring country.

Cash centres can be owned either by CIT companies, commercial banks or national central banks. Some national central bank branches will also be excluded from the analysis due to the fact that in some countries, and according to the information provided by the central banks, direct delivery from the central bank to the final customers is not possible: money has to be counted and packaged first by the CIT companies in the cash centre.

Most national central bank branches can support point-to-point services to CIT cash centres in another country, but in the short term this is assumed less relevant compared to retail transport and is therefore only included in the long term assessment.

The cross-border location and density of commercial bank branches and large retailers

All things being equal, the higher the customer demand for cross-border money transport the higher the likelihood that the long-term market will also materialise in the short-term. As a part of the short-term estimation, it has therefore been investigated whether there are banks and large retailers that operate on both sides of the border area.

The underlying logic of this assessment is that there will be large-scale effects and more efficient contract management in border regions if CIT customers with business activities on both sides of a border can be serviced by a single CIT company instead of having separate CIT contracts on each side of the border. Thus, by looking at the individual border regions and locating commercial banks and retailer on each side of the border it is possible to assess whether or not a specific CIT company will be able to support and supply a specific bank or retailer in that region.

For this assessment large commercial bank and retailers with activities on both sides of the border have been identified and used as determinants for the short-term estimates.

Any other criteria raised by either the demand or supply side when relevant. These include differences in price levels and crime patterns

Both demand and supply side of the market has been interviewed for the study. On the demand side the interviews primarily focused on assessing the expected behaviour of credit institutions and retailers if obstacles to CIT cross border transport are lifted. On the supply side the interviews focused on any side information on the functioning of the CIT market that the ESTA or the CIT companies could provide.

The information collected is used when relevant to the estimate of the potential market size for cross-border transport. It is further supported by data on:

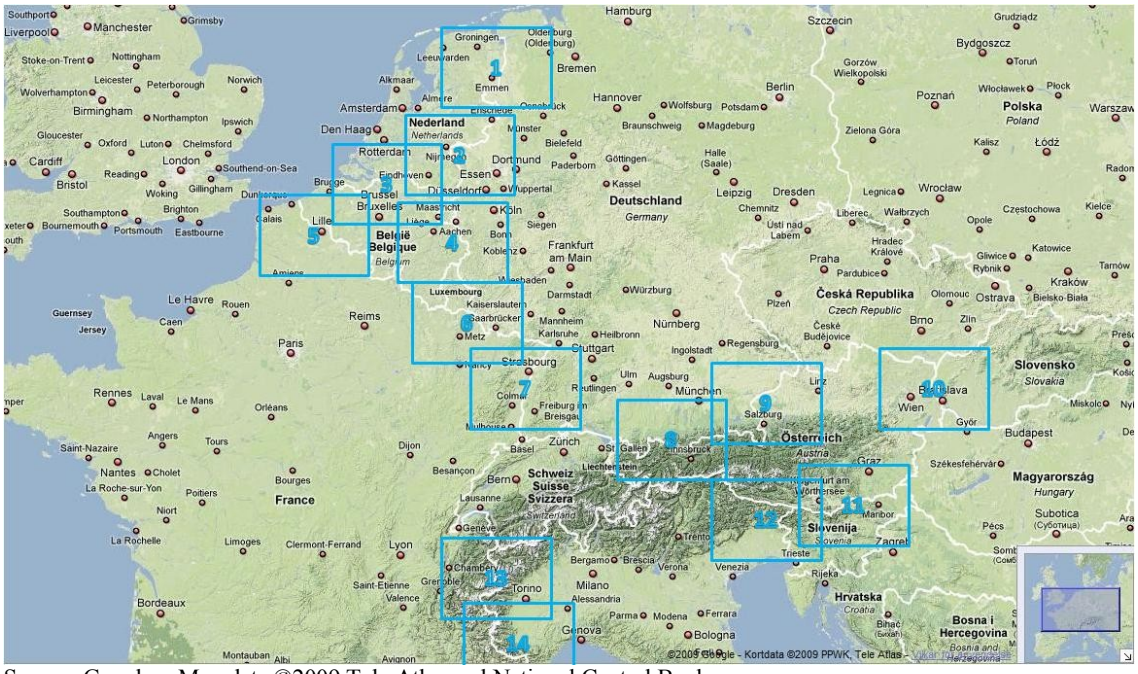
- Level of competition (number of operating CIT companies) and salaries as an indication for relative prices
- Crime data (confidential)

1.5 Analysis of potential markets for cross-border transport of euro cash

The long-term and short-term potential cross-border markets for professional money transport have been examined in all of the targeted border regions. The targeted border regions has been divided into 19 different areas between both the primarily and secondary targeted countries, cf.

Map **1** and Map 2 below.

Map 1 Overview of the analysis of potential markets for cross-border transport of euro cash



Source: Google – Map data ©2009 Tele Atlas and National Central Banks

For each of these 19 areas a long-term and short-term estimate is presented. The long-term estimate is carried out on the basis of the traffic approach's step 1-2, cf. section 1.2.2, while the short-term equals the long-term estimate corrected for the locations and operational radiuses of cash centres and national central bank branches, the cross-border location and density of commercial bank branches and large retailers and other limiting factors such as differences in price levels and crime patterns, cf. section 1.4.

MAP 2 OVERVIEW OF THE ANALYSIS OF POTENTIAL MARKETS FOR CROSS-BORDER TRANSPORT OF EURO CASH

Source: Google – Map data ©2009 Tele Atlas and National Central Banks.

1.6 Summary of estimates of the potential market for professional money transport

On the basis of the estimates of the number of long-term and short-term CIT cross-border transports in the 19 border regions, the total results for all the considered countries are presented in this section. In addition estimates of the share of total euro ordered that will be diverted from domestic to cross-border CIT transport is presented as well as estimates of the total savings in travel distance.

1.6.1 Number of cross-border CIT transports

The estimates of the long-term and short-term potential market for professional cross-border money transport measured in terms of the number of cross-border CIT transport is presented in Table 6 at the next page.

TABLE 6 ESTIMATE OF THE NUMBER OF LONG-TERM AND SHORT-TERM CIT CROSS-BORDER TRANSPORTS

Border region		Long-term Transports	Banks	Retails	Cash Centres	Likelihood	Short-term Transports
		(pr day)					(pr day)
Map 1: Netherlands/Germany-A		9	D	B	B	54%	5
Map 2: Netherlands/Germany-B		12	C	A	A	76%	9
Map 3: Belgium/Netherlands		12	A	A	A	91%	11
Map 4: BE/DE/NL	DE - NL	6	A	A	A	91%	6
	BE - NL	4					3
	BE - DE	6					6
Map 5: Belgium/France		9	A	A	A	91%	8
Map 6: LU/FR/DE/BE	BE - FR	1	A	A	A	91%	1
	LU - DE	17					15
	LU - BE	9					8
	LU - FR	8					7
	DE - FR	16					15
Map 7: France/Germany		17	D	B	A	61%	10
Map 8: Austria/Germany-A		16	A	A	B	84%	13
Map 9: Austria/Germany-B		10	A	A	A	91%	9
Map 10: Austria/Slovakia		4	B	C	A	69%	2
Map 11: Austria/Slovenia		4	C	D	B	46%	2
Map 12: Austria/Slovenia/Italy	AT - SI	2	C	D	B	46%	1
	SI - IT	8					4
	IT - AT	2					1
Map 13: Italy/France-A		9	E	E	D	9%	1
Map 14: Italy/France-B		11	D	C	C	39%	4
Map 15: France/Spain-A		4	D	C	C	39%	1
Map 16: France/Spain-B		5	C	C	B	54%	3
Map 17: Spain/Portugal-A		10	B	B	A	76%	8
Map 18: Spain/Portugal-B		2	B	D	B	54%	1
Map 19: Spain/Portugal-C		1	C	D	C	39%	0
Total pr day		212					155
Total pr year (365 days)		77 380					56 575

Source: Trans-Tool, ESTA, National Central Banks and Ramboll.

A CIT cross-border transport is defined as CIT vehicle crossing the border on its outbound journey and again on its homebound journey. In the long-term, it is evident that the highest number of CIT cross-border transports is concentrated on the borders between Germany, Austria, The Netherlands, Belgium, Luxembourg and France, while the number of transports is relatively smaller on the borders of Austria, Italy, Slovenia, Slovakia, France, Spain and Portugal. In the first group of countries there is an estimated 152 CIT cross-border transports pr day out of a total of 212, which corresponds to around 70 percent of all the estimated cross-border transports. In the second group of countries there is an estimated 60 CIT cross-border transport pr day, which corresponds to the remaining 30 percent of all the estimated cross-border transports. On the basis of 365 days pr. year, the estimated annual number of CIT cross-border transports is 77 380[8].

The short-term estimate equals the long-term corrected for the locations and operational radiuses of cash centres and national central bank branches, the cross-border location and density of commercial bank branches and large retailers. On the basis of the mapping exercise the reducing impact in the short-term of these factors have been assessed and given grades. The grades will limit the likelihood that the long-term estimate of the number of cross-border CIT transports also will prevail in the short-term, cf. Table 7 below.

TABLE 7 GRADES FOR BANKS, RETAILERS AND CASH CENTRES

A	B	C	D	E
3,0%	10,5%	18,0%	25,5%	33,0%

The factors are graded from A to E where A is the highest potential and E the lowest. This means that if a map is graded with three A's the combined likelihood will become 91% (100% - 3x3%) etc. The value of the grades are assign to the variables so that a map with only E's (3xE) have a likelihood of cross-border transportation that equals 0% and if only A's the likelihood will be 91%.

The short-term assessments are calculated by multiplying the long-term assessments with the likelihood for CIT cross-border transport in each individual map. It is assumed that if there is a high potential for cross-border transportation (3xA's) the amount of CIT transports will not equal the long-term potential as there might be some other adjustments in the short run not accounted for.

In the short-term, the main part of the cross-border CIT-transport is still concentrated on the borders between Germany, Austria, The Netherlands, Belgium, Luxembourg and France. Actually, in the short-term these countries constitute 80 percent of the total estimated CIT cross-border transports as opposed to 70 percent in the long-term. This corresponds to 126 transports out of a total of 155. For the second group of countries that consists of Austria, Italy, Slovenia, Slovakia, France, Spain and Portugal the estimated number of cross-border CIT-transports is 29, which corresponds to 20 percent

[8] Step 1 of the traffic approach, where the CIT transport frequency is estimated, is based on annual traffic and transport data. When the estimated number of daily CIT cross-border transports are summed into annual number of transports it should therefore be done on the basis of 365 days in contrast to e.g. 220 days, which is the standard number of working days per years.

of the total estimated transports. On an annual basis, the 155 daily CIT cross-border transports correspond to 56 575 pr. year.

1.6.2 Share of euro ordered transported by cross-border CIT transports

The diversion of the euro ordered to CIT companies in country A to CIT companies in country B from customers in country A and vice versa is estimated in step 3 of the traffic approach, cf. section 1.2.3 and 1.3. On the basis of this approach the long-term and short-term estimates of the euro transported by cross-border money transports can be carried out, cf. Table 8 below.

TABLE 8 ESTIMATE OF THE EURO ORDERED TRANSPORTED BY CIT CROSS-BORDER TRANSPORTS - LONG-TERM AND SHORT-TERM (MILLION EURO/PERCENT OF TOTAL EURO ORDERED)

Country	NL	BE	LU	FR	DE	AT	SK	IT	SI	ES	PT	**Total**
Long-term	4 231	2 618	-	3 356	11 172	6 334	-	1 687	-	1 123	357	**30 879**
	6.51%	5.79%	-	1.88%	2.17%	9.36%	-	0.97%	-	0.98%	1.51%	**2.61%**
Short-term	3 169	2 380	-	2 129	8 830	4 743	-	548	-	683	249	**22 732**
	4.87%	5.26%	-	1.19%	1.71%	7.01%	-	0.31%	-	0.60%	1.06%	**1.92%**
Total	65 022	45 234	-	178 366	515 900	67 648	-	174 238		114 058	23 630	**1 184 096**

Source: ECB, NCBs, ESTA and Ramboll

It has not been possible to collect sufficient information in order to estimate the share of euro transported by cross-border CIT transports for Luxembourg, Slovakia and Slovenia[9]. Apart from these countries the total amount of euro ordered that will be transported by cross-border CIT transports is estimated to around 30.9 billion euro in the long-term. This corresponds to around 2.6 percent of total euro ordered in the targeted countries. The highest shares of euro ordered that will be diverted to cross-border transport are estimated to be in The Netherlands, Belgium and Austria, where cross-border shares of euro ordered are 5.9 - 9.4 percent, while the lowest shares are in Italy, Spain and Portugal. In the short-term, the long-term pattern across countries remains the same, but the total share of euro transported by cross-border CIT transport is reduced from 2.6 to 1.9 percent.

[9] For Luxembourg information on euro ordered is missing, for Slovenia information on CIT transport work is missing and for Slovakia information on CIT vehicles are missing.