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# Evolving Patterns of Payment Methods in Turkish Foreign Trade<sup>†</sup>

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**Abstract:** Serving the global marketplace brings many risks to the firm that they may not have on the domestic side. Apart from financing, trade finance mechanisms assist exporters and importers to mitigate or reduce their risks associated with doing business internationally. The present paper sheds lights on the structure and evaluation of payment methods in international trade as well as their changing composition due to 2008-2009 global financial crisis using a unique bilateral trade finance data from Turkey with 206 countries over the period 2002-2012 at the 2-digit level of ISIC Revision 3. Three key results emerge. First, Turkey's exports are mainly financed via open account method while the majority of its imports were executed via cash-in advance method. Second, the shares of inter-firm trade finance (open account and cash-in advance) in Turkey's foreign trade dramatically increased over the period 2002-2012, while the shares of the intermediate trade finance (cash against documents and letter of credit) decreased substantially. Finally, the evidence show that both exporters and importers started to use cash-in advance method, the safest method of payment, more intensively than other methods shortly after the global recession in 2008. Overall, the patterns presented in this paper highlight the fact that Turkish traders are not able to set payment terms that are highly favorable to themselves and bear all risks associated with international trade transactions.

**Keywords:** Method of payments; Trade finance; Trade credit; Financial crisis; Turkey

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## 1.Introduction

As a result of trade liberalization measures and market-economic reforms in the mid-1980s, Turkey's economy grew significantly over the past three decades-one of the best-performing emerging economies in the world (Gros and Selçuki, 2013). From 2002 to 2008, in particular, Turkey's economy grew by an average of 5.91% per year. The same period witnessed substantial increase in trade as well. Between 2002 and 2008, total merchandise trade volumes rose by 24.5% annually-well above the world average.<sup>1</sup> Many factors contribute to economic growth, and although some factors are more important than others, there is an extensive body of theoretical and empirical research concluded that trade has been major factor responsible for economic growth in developing and transition economies, including Turkey. The steady growth of international trade has also enabled Turkey to become fully integrated into the global economy (Kaminski and Ng, 2006).

After a period of steady growth from 2002 to 2008, Turkish economy contracted by 4.82% in 2009 as a result of the global financial crisis that started in the United States in the late 2008 and quickly spread to Europe and other economies around the world.<sup>2</sup> Triggered by a collapse of import demand in major developed countries and the meltdown in trade credit, trade flows of Turkey fell dramatically by 27.2% in 2009.<sup>3</sup>

However, Turkish economy recovered fairly rapidly from the recent financial crisis thanks to the strong domestic demand (Kalkan and Cünedioğlu, 2010). After a sharp contraction in 2009, the economy rebounded quickly with an annual average growth rate of 6.7% over the period 2010-2012, well above the pre-crisis average rate of 5.9% (2002-2008). On the other hand, Turkish trade flows, particularly exports, recovered slowly from the

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<sup>1</sup> Annual growth rates of Gross Domestic Product (GDP) and merchandise trade flows are derived from the World Bank's World Development Indicators database (WDI): <http://data.worldbank.org/indicator>.

<sup>2</sup> Malueche (2009a) suggest that the impact of the decline has been relatively severe in countries including Turkey, that are integrated and dependent on trade with developed countries.

<sup>3</sup> Malueche (2009a) find that value of letters of credit issued by the Turkish banking sector declined by 25% between September and December 2008 while export credits provided by the Turkish banking sector decreased by 13% during the same period.

adverse effects of the financial crisis and achieved a growth rate below its pre-crisis average (17.4%) in the next three years. Despite the gradual post-crisis recovery, it is striking that Turkish trade flows are still below potential mainly due to the sluggish demand in the traditional markets, particularly in Europe<sup>4</sup>, as well as the increase in the cost of trade finance (Acar, 2009 and Malouche, 2009a).

Trade finance is a critical component of the global economy. More than 90% of cross border transactions are facilitated by some form of trade finance, including every kind of loan, insurance policy or guarantee, especially short-term (Auboin, 2007).<sup>5</sup> Trade finance is essential to keep international trade running smoothly, as was clearly demonstrated when the global credit crunch magnified the slowdown in exports following the financial crisis in 2008-2009.<sup>6</sup> In the wake of the global financial crisis, many researchers have drawn attention to the structure and recent evolution of the global trade finance market, and the link between financial conditions and international trade especially during the 2008-2009 financial crisis (including, but not limited to Malouche, 2009a; Asmundson et al., 2011; Mora and Powers, 2011; Amiti and Weinstein, 2011; Chor and Manova, 2012; Manova, 2013; Felbermayr and Yalcin, 2013; and Love, 2013).

Trade finance is broadly defined as the methods and instruments designed to support exporters and importers throughout the trade cycle (Menichini, 2009). Firms serving the international market may use a wide array of trade finance instruments depending on the degree of trust between the trading partners. Traditionally, commercial banks, private insurers, export credit agencies, multilateral development banks, suppliers and buyers provide trade finance. Trade finance generally involves short-term financing to facilitate export and import transactions. Typical trade-related finance methods and instruments available include

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<sup>4</sup> Türkcan (2014).

<sup>5</sup> However, as pointed by Love (2013), this estimate was based on a questionable data, especially bank-level surveys.

<sup>6</sup> The number of SWIFT (Society for Worldwide Interbank Financial Telecommunication) messages dropped from 46 million 2008 to 42 million in 2009 as world trade has been fell in volume terms by around 12%, according to the World Trade Organization (WTO) (ICC, 2010).

working capital credit, pre-export finance, letter of credit, supplier credit, buyer credit, countertrade, factoring and forfeiting, advance payment guarantees, hedging, export credit insurance and export credit guarantees, etc.<sup>7</sup> Regardless of the term involved, trade finance performs four basic functions in facilitating international transactions: financing, risk mitigation, payment facilitation, and the provision of information about the status of payments or shipment (ITC, 2009).

Trade finance mechanisms provide the necessary capital and liquidity to exporters before sending shipment (pre-shipment financing) and after the shipment (post-shipment financing). The pre-shipment financing is designed to support pre-export activities (such as wages, the purchase of inventory, raw materials or the manufacture of a product) and while the post-shipment financing is designed to support post-export activities (such as collection of the international receivables generated from open account transactions).<sup>8</sup> Trade finance mechanisms also provide the capital to buyers or importers to finance their imports of commodities, capital goods and manufactured goods.

Apart from financing, trade finance mechanisms assist help exporters and importers to mitigate or reduce their risks associated with doing business internationally. Serving the global marketplace brings many risks to the firm that they may not have on the domestic side. The risks associated with international transactions are exchange rate fluctuations, conflict and political unrests, default risk or payment delay risk, asymmetric information risk, supply chain risk, financial intermediary risk, liquidity risk, among others (Love, 2013).

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<sup>7</sup> For detailed lists of all available trade finance methods and instruments, see Chauffour and Farole (2009).

<sup>8</sup> In addition to the aforementioned activities, exporters carry out numerous export activities when selling across international borders, which in turn force firms to seek external funds. These activities include learning about the profitability of new export markets, making market-specific investments in capacity, product customization, and regulatory compliance, setting up and maintaining foreign distribution networks. Moreover, exporters tend to be more reliant on external financing than domestic producers because of additional variable costs, such as transportation costs, duties, and insurance (Contessi and Nicola, 2012).

Finally, trade finance offers a range of payment mechanisms that enable exporters to obtain secure and timely payment from importers while enabling the importers to obtain the shipment of goods as stated in the contract. Since getting paid in full and on time for the exporter and receiving the goods as stated for the importer is the most important point in any form of trade, an acceptable method of payment must be agreed between exporter and importer to minimize the default and non-delivery risks. Generally, there are four common methods of payment for international transactions: open account (OA), cash-in advance (CIA), letter of credit (L/C) and cash against documents (CAD). As discussed in more detail below, each of the four payment methods have different risk levels and provides a different level of protection to exporters and importers. For example, CIA is considered to the most secure and the least risky method of international trading from the exporter's point of view as the exporters receive the payment before the delivery. For importers, however, CIA is the most risky payment system. In contrast, OA is the most attractive to the importer because in an OA sale, the shipment takes place before the payment is due. Between these two extremes, banks offer L/C or CAD to prevent the risk of default and non-delivery between the exporter and importer, provided that all terms and conditions as specified in the L/C or CAD have been fully met (Love, 2013).

Although trade finance performs a wide range of functions in facilitating international transactions, this paper primarily focuses on the payment aspect of trade finance, with particular emphasis on the evaluations of payment choice during the global financial crisis. As emphasized by Auboin and Engemann (2013), the focus on the payment contract choice in international trade is a novel approach to understanding the structure and functioning of the trade finance market because that understanding can help policy-makers to take appropriate policy actions and measures in a timely fashion to mitigate the impact of the financial crisis on the trade finance markets.

While the literature convincingly points out the importance of the essential linkages between trade finance and trade flows, the research on the choice of the payment method in trade flows, especially based on actual country-level trade finance data, remains limited. Previous analyses are either based on firm-level data (such as Hoefele et al., 2013, Antras and Foley, 2013) or bank-level data (Asmundson et al., 2011 and BIS, 2014) or both (Malouche, 2009b). The firm-level data and bank-level data, mainly collected through firm-level and bank-level surveys, provide extremely valuable information for understanding the structure and functioning of the trade finance market around the world. However, these surveys, particularly bank-level surveys, should be treated with great caution due to the insufficient coverage of inter-firm transactions and lack of uniformity in coverage across different surveys (Love, 2013). Moreover, these surveys do not provide detailed information on the usage of different types of payment methods on a bilateral basis, which in turn hampers the investigation of the structure and evaluation of trade financing by trading partners. Very few countries (e.g. Turkey, Brazil, India, Italy and Korea) provide sufficient country-level trade finance data on a bilateral basis covering the whole economy (inter-firm transactions plus intermediated trade finance) (Malouche, 2009b and BIS, 2014).

Turkey, especially considering the post-2000 period, is particularly useful starting point for our investigation. First, Turkey is one the few countries publishing detailed actual trade data on payment methods in trade transactions, making it easier to analyze the use of financing terms in Turkey's trade across income groups, regions and industry groups. Second, Turkey's foreign trade, in respect of both exports and imports, has grown remarkably from 2002 to 2012 and notable changes in the structure of exports have been observed (See Figure 1). With respect to the extensive margin, the Exporter Dynamics Database of the World Bank shows that the number of exporting firms increased from 30,000 to 48,000 and the number of

exporters per export destination increased from 500 to 1000 between 2002 and 2010.<sup>9</sup> The number of export markets with an export volume over 1 billion USD increased from 5 in 2000 to more than 30 in 2010.<sup>10</sup> In addition to all these points, share of top 10 markets in Turkey's total exports decreased from 62% in 2000 to 48% in 2010. Overall, Turkey is a suitable country for the analysis on types of trade finance not only because of the disaggregated data on types of trade finance but also because of the increase in its ties with global production networks and the pattern of diversification in its exports over the period of our sample.<sup>11</sup>

Hence, given the growing role of trade financing in trade flows and a lack of good quantitative evidence<sup>12</sup>, this paper aims to fill this gap in the literature by investigating the structure and evaluation of trade financing across income groups, regions as well as industry groups using a unique bilateral trade finance data from Turkey with 206 countries over the period 2002-2012 at the 2-digit level of ISIC Revision 3. Further, for the purposes of this paper, the present paper attempts to document the changes in shares of methods of payments due to the 2008-2009 crisis.

The rest of the paper is organized as follows. Section 2 starts out by briefly defining and classifying trade finance instruments or methods used in international transactions. Section 3 reviews the theoretical and empirical work related to trade finance, followed by a structural description of the dataset employed in the analysis (Section 4). Section 5 presents key findings and trends on the usage of different types of payment methods in Turkey across

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<sup>9</sup> For instance, Aldan and Çulha (2013) and Türkcan (2014) provided evidence that Turkey has successfully diversified its exports by products and destination markets during recent years.

<sup>10</sup> These are approximate numbers.

<sup>11</sup> Turkey's spectacular export performance over the years is mainly driven by the increasing participation of Turkish companies into the global value chains in recent years (Kaminski and Ng, 2006; Saygılı and Saygılı, 2011; and Gros and Selçuki, 2013).

<sup>12</sup> Notable exceptions are Acar (2009), Malouche (2009b), Kalkan (2010), Demir and Javorcik (2014) and Demir (2014), which provide brief information about trade financing in Turkey by types of payments. Compared to these papers, the present paper provide a more detailed description on the usage of different types of payment methods in Turkey across income groups, regions as well as industry groups. The present paper, unlike the papers just cited, also provides additional evidence on the use of financing terms in Turkey's trade before and after the financial crisis.



income groups, regions as well as product groups while Section 6 evaluates the impact of the 2008-2009 financial crisis on trade finance usage in Turkey. A final section gives concluding remarks as well as policy recommendations.

## **2. Trade Finance Methods and Instruments: An Overview**

Trade finance is broadly defined as the methods and instruments designed to support exporters and importers throughout the trade cycle (Menichini, 2009).<sup>13</sup> Firms serving the international market use a wide array of trade finance methods and instruments and selecting the appropriate method and instrument depends on the degree of trust between the exporter and importer and the degree to which one or both parties dependent on bank financing. Traditionally, commercial banks, private insurers, export credit agencies, multilateral development banks, suppliers and buyers provide trade finance. In addition, trade finance generally involves short-term financing to facilitate export and import transactions. Typical trade-related finance methods and instruments available includes working capital credit, pre-export finance, letter of credit, supplier credit, buyer credit, countertrade, factoring and forfeiting, advance payment guarantees, hedging, export credit insurance and export credit guarantees, etc. As stated above, trade finance performs four basic functions in facilitating international transactions: financing, risk mitigation, payment facilitation, and the provision of information about the status of payments or shipment. Each of these functions is fulfilled by various trade finance methods and instruments, either alone and/or in combination with other instruments. These methods and instruments can be grouped into two broad categories: inter-firm trade finance and intermediated trade finance (Chauffour and Farole, 2009 and Love, 2013).

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<sup>13</sup> The narrow definition of trade finance, on the other hand, involves the funding of international trade transactions through financial intermediaries (Ellingsen and Vlachos, 2009).

Inter-firm trade finance, commonly known as trade credit, is the finance provided to importer from exporter to buy goods now and pay later, typically 30 to 90 days.<sup>14</sup> In addition, this can provide the finance to exporters to enable them to produce or purchase the material and labor necessary to fulfill export orders and also allow them to finance their extensions of credit to foreign buyers. With this type of trade financing arrangements, there would be no need for financial intermediates in the process. Inter-firm trade finance is generally less expensive and more flexible than the intermediated trade finance but it is considered to be least secure and most risky method of trade financing for both exporters and importers.

Inter-firm trade finance can be conducted either on an OA basis or on a CIA basis.<sup>15</sup> In an OA transaction, the most widely used trade finance method in international trade, goods are shipped and delivered with the necessary documents before payment is due, which is usually in 30, 60 or 90 days. Offering OA terms helps exporters to gain competitiveness in the global market and establish and maintain strong long-term trade relationship. In addition, comparing to other payment methods, the OA method is relatively cheaper since the transaction between seller and buyer is carried out without commercial bank involvement. While OA payment method is the most secure for the importer, it poses some risks and challenges to the exporter. First, this payment method brings substantial default risk for the exporter because it is often difficult and expensive to pursue and prove a claim against the importer in the event of non-payment. Hence, exporters may employ other trade finance techniques, such as, export credit insurance, export credit guarantees, etc. to mitigate the risk of non-payment. Second, exporter may seek working capital financing solutions such as working capital credit or pre-export finance that would smooth out the payments and make cash available for other uses until payment is received. However, these risk mitigation

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<sup>14</sup> Inter-firm trade finance is the primary tool of international trade finance. Around 60% of global trade was facilitated by inter-firm credit finance (See BIS, 2014).

<sup>15</sup> For more detailed information on the methods of payment in international trade see ITC (2009) and ITA (2012).

measures and financial solutions may generate additional trade costs, which in turn potentially undermine the low-cost advantage of the OA method. As a result, given these risks and costs, an OA method should be preferred by firms that are in global production networks, and/or have a very stable trade relationships and/ or in countries that have a transparent and reliable legal framework for debt collection (BIS, 2014).

In a CIA transaction, the exporter ships out the goods to the importer after receiving the payment from the importer, usually via check (the least attractive option for the exporter), bank draft, credit card, or wire transfer (such as SWIFT). The CIA payment method is the safest and most attractive payment method for the exporter. First, this payment method eliminates the risk of non-payment by the importers. Second, it provides working capital to the exporters to enable them to purchase raw materials and other inputs to fulfill specific export orders. While this payment method provides security to the exporter and improves the exporter's working capital position, it is not a competitive option for the exporter since the importer may purchase products from another supplier who offers more attractive payment terms. A CIA method is typically used by an exporter when the importer's creditworthiness is doubtful, unsatisfactory or unverifiable, or the importing country does not have a transparent and reliable legal framework for debt collection. CIA may also be appropriate when the ordered goods are manufactured and delivered in accordance with a particular importer's specifications, as such custom made products cannot be returned or sold to another importer.

Exporters and importers also use intermediated trade finance to facilitate the trade of goods.<sup>16</sup> While a commercial bank is a typical financial intermediary in facilitating international trade, this type of trade finance arrangements also involves other financial institutions such as private insurers, export credit agencies and multilateral development banks (Chauffour and Farole, 2009). There are two common methods of intermediated trade

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<sup>16</sup> BIS (2014) reports that around one third of global merchandise trade in 2011 benefits from some kind of bank-intermediated trade finance.

finance instruments available to firms engaged in international trade: letter of credit (L/C) and cash against documents (CAD) (Love, 2013).<sup>17</sup>

L/C is one of the most widely used<sup>18</sup>, versatile and secure method of payment for goods in international transactions. An L/C is a financial instrument issued by a bank at the request of its customer (the Importer) that payment will be made to the exporter, provided that all shipping documents stated in the L/C are submitted to the issuing bank (importer's bank) by the confirming bank (exporter's bank) and the terms and conditions set out in the L/C are fully met. Other than CIA payment, an L/C, also commonly referred to as a Documentary Credit, provides the highest level of security to exporter, because the issuing bank promises to make payment, mainly via the SWIFT network, to the exporter against the presentation of shipping documents specified in the L/C. With an L/C, the exporter thus relies upon the creditworthiness of the issuing bank, not that of the importer. Exporter can further reduce the issuing bank's commercial credit risk or the importing country's economic and political risks by requesting a confirmation of L/C by a second bank (confirming bank), usually the exporter's own bank.<sup>19</sup> On the other hand, L/C has several disadvantages for the exporter. The major disadvantage of this method for the exporter is that some importers, especially in poorer countries where the banking system is not developed yet, may not be able to apply for an L/C, which in turn hinders entry into these markets. Second, preparing documents for L/C is costly. In addition, goods shipped without properly adhering to the strict documentation requirements specified in the L/C can often result in significant delays in receiving payment and costly banking and freight fees.

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<sup>17</sup> Intermediated trade finance also includes other financial instruments such as export credit insurances and credit guarantees.

<sup>18</sup> Some estimates report that about 15% of global trade in 2011 is facilitated by the L/C (BIS, 2014).

<sup>19</sup> There are several different types of letters of credit available to the exporters and importers, depending on the circumstances of each international transaction, including: revocable L/C, irrevocable L/C, confirmed L/C, unconfirmed L/C, sight L/C, time L/C, deferred payment L/C, revolving L/C, red clause L/C, transferable L/C, back-to back L/C, standby L/C, and etc. This flexibility in accommodating virtually any need of the international traders makes letters of credit as one of the main means of financing international trade (ITC, 2009).

The letter of credit also provides security for the importer since the payment will be made by the issuing bank upon receipt of the documents confirming shipment of the goods as agreed. This method also enables the importer to negotiate more favorable trade terms (such as longer credit terms, or a reduction in prices) with the exporter. An L/C, however, does not offer protection to the importer against the receipt of damaged, defective, inferior quality, or lesser quantity of goods from the exporter since the issuing bank checks the documents only, not the quality or conditions of the goods. In addition, L/C is relatively expensive method for the importers because they bear most of the costs, such as the issuing bank opening and payment fees. Moreover, it is more difficult for firms, especially SMEs in emerging markets, to obtain an L/C from banks in times of crisis, which can cause expensive delays for importers (Malouche, 2009 and BIS, 2014). Thus, an L/C is recommended only for use if both parties have new or less established relationships, and/or the importer's credit status is doubtful, unsatisfactory, and/or the importing country has less transparent and less reliable legal systems, but the creditworthiness of the issuing bank is high in international markets (BIS, 2014).

While an L/C is secure method of payment for goods in international transactions, it is the most expensive form of payment. A simple and cheaper alternative to the L/C is CAD, where the exporter presents the shipping documents to his bank (remitting bank), which in turn sends them to the importer's bank (collecting bank), along with instructions for payment. Payments are received from the importer and remitted to the exporter through the banks in exchange for those documents (ITA, 2012). The payment can be made using sight draft (documents against payment), which requires the importer to pay the face amount of the draft<sup>20</sup> (also called a bill of exchange) at sight or time draft (documents against acceptance), which requires the importer to pay on a specified future date. A CAD offers some protection

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<sup>20</sup> A bill of exchange or a draft is defined as a written order addressed by the exporter to the importer, asking the importer to pay a certain amount of money on a specified date.

to the exporter since the collecting bank will not turn over the related shipping documents to the importer until the payment (sight draft) or acceptance (time draft). With a sight draft, the collecting bank releases the documents to the importer only on payment for the goods, thereby removing the risk of non-payment faced by the exporter.<sup>21</sup> On the contrary, with a time draft, the collecting bank releases the documents to the importer on acceptance of time draft. This arrangement therefore poses the greater risk of non-payment for the exporter since the importer will gain physical custody of the goods and may not pay at due date. While the banks deal with documents in a documentary transaction, they are not responsible for their validity and accuracy. So CAD, especially in the case of term draft, provides less security for the exporter than L/C (ITA, 2012 and Love, 2013). CAD can offer some advantages as well as possible disadvantages to the importer too. With a CAD, the importer is not legally obliged to pay for goods prior to shipment, thereby reducing the risk of error and non-delivery. Moreover, CAD is relatively simple, inexpensive and quick payment procedure as compared to L/C. However, the importer, especially in the case of sight draft, faces the risk that the exporter has shipped inferior quality goods and/or a lesser quantity of goods, leading the importer to lengthy legal proceedings to get refunds from the exporter. In summary, this payment method is riskier for the exporter than for the importer. Hence, CAD should be used when both parties have a well-established trade relationship; the importing country is politically and economically stable and has a well-developed legal system; and when L/C becomes difficult and very expensive to obtain (BIS, 2014).

Overall, each of the four payment methods described above has its peculiar advantages and disadvantages for the trading partners. In negotiating payment terms, both importer and exporter should carefully identify the costs, obligations as well as the risks associated with the particular transaction in order to ensure an efficient exchange of goods. Table 1 presents a

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<sup>21</sup> With a sight draft, the exporter still faces a risk that the importer might reject documents if the wrong documentation is supplied, or documentation containing errors.

brief definition of each of the four payment methods, reviews their applicability on trade, briefly evaluates the extent of risk associated with each method for both exporter and importer, and discuss some of the pros and cons of employing each method. In addition, Table 1 also ranks each of the four payment methods in ascending order of risk to the exporter. For instance, from the perspective of the exporter, CIA is the least risky method of payment, followed by L/C, CAD and OA in that order. From the perspective of importer, OA is the most secure method of payment, while CIA is considered to be the most risky method of payment.

**Table 1: Methods of Payment in International Transactions and the Risk for Traders**

| <b>Method of Payment</b>      | <b>Definition</b>   | <b>Applicability</b>   | <b>Risk</b>  | <b>Pros</b>   | <b>Cons</b>   |
|-------------------------------|---|--|--|---|---|
| <b>Cash-in advance</b>        | Payment prior to the transfer of ownership of the goods   | Recommended for use in high-risk trade relationships or export markets, and appropriate for small export transactions  | Exporter is exposed to virtually no risk as the burden of risk is placed almost completely on the importer               | *Payment before shipment<br>*Eliminates risk of non-payment   | *May lose customers to competitors over payment terms<br>*No additional earnings through financing operations   |
| <b>Letter of credit</b>       | A commitment by a bank on the behalf of the importer that payment will be made to the beneficiary (exporter) provided that the terms and conditions stated in the L/C have been met | Recommended for use in higher-risk situations or new or less-established trade relationships when the exporter is satisfied with the creditworthiness of the importer's bank           | Risk is spread between exporter and importer, provided that all terms and conditions specified in the L/C are adhered to | *Payment made after shipment<br>*A variety of payment, financing and risk mitigation options available      | *Labor intensive process<br>*Relatively expensive method in terms of transaction costs                          |
| <b>Cash against documents</b> | Exporter entrusts the collection of payment to the exporter's bank, which sends documents to the importer's bank, along with instructions for payment.                              | Recommended for use in established trade relationships, in stable export markets and for transactions involving ocean shipments  | Riskier for the exporter, though CAD terms are more convenient and cheaper than an L/C to the importer                   | *Bank assistance in obtaining payment<br>*The process is simple, fast and less costly than L/C              | *Banks' role is limited and they do not guarantee payment<br>*Banks do not verify the accuracy of the documents |
| <b>Open account</b>           | The goods are shipped and delivered before payment is due, which is typically in 30, 60 or 90 days  | Recommended for use in (a) low-risk trading relationships or markets and (b) in competitive markets to win customers with the use of one or more appropriate trade finance techniques. | Substantial risk to the exporter because the buyer could default on payment obligation after shipment of the goods       | *Boost competitiveness in the global market<br>*Help establish and maintain a successful trade relationship | *Significant exposure to the risk of non-payment<br>*Additional costs associated with risk mitigation measures  |

Source: ITA, 2012



Banks also offer a set of financial products that finance the working capital needs of exporters and importers in their production and operations that are directly related to a specific trade transaction (exports and imports). These instruments usually have short-term maturities (on average 3.5 months), but some of them are characterized by longer-term maturities, especially for capital goods. Examples of trade finance instruments that banks offer in support of working capital needs of exporters and importers include pre-export finance, supplier credit, buyer credit, countertrade, factoring, forfeiting, import and export loans, supply chain finance and structured trade finance (Chauffour and Farole, 2009 and BIS, 2014).

Beside commercial banks, private insurance firms and public export credit agencies (ECAs) also play major role in facilitating international trade with insurance (typically for short-term financing) and credit guarantees (typically for export credit of two years or longer) in order to mitigate the risks faced by exporters trying to expand into emerging and frontier markets (BIS, 2014). Export credit insurance protects exporters from a range of risks including non-payment, political risk (such as wars, civil unrest or a payment moratorium imposed by a government), exchange rate fluctuations, etc. Export credit insurance is generally used in conjunction with OA terms (typically for shorter-term financing) because it enables exporters to offer competitive OA terms to importers while also minimizing the risk of non-payment (Love, 2013). Export credit insurances are usually offered by private insurance firms, but they are often provided by ECAs when the private market is unable to provide adequate insurance for all risks associated with exports.<sup>22</sup> Offered generally by a

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<sup>22</sup> For instance, Turk Eximbank, the official state export credit agency, supports Turkish exporters, contractors, investors through a variety of credit, insurance, and guarantee programs. The bank provides insurance and guarantees to Turkish commercial banks in order to encourage them to finance export transactions backed by sales made on deferred payment terms. Besides export credit insurance and guarantees, the bank, unlike most other ECAs, also engages in direct lending activities to support exporters, export-oriented manufacturers, overseas investors and companies engaged in foreign currency earning services with short-, medium- and long-term cash and non-cash credit programs. Moreover, export receivables are discounted in order to increase export volume and to ease access into new and target markets through the promotion of sales on deferred payment conditions. Finally, the bank has placed special importance on helping SMEs to sustain their shares in traditional

country's export promotion agency<sup>23</sup>, export credit guarantee, on the other hand, is designed to protect banks or financial institutions against the risks of non-payment for loans or advances granted to exporters or importers. The agency (guarantor) will only be liable only if the principal debtor whose obligations have been guaranteed has failed to perform its primary obligations (Love, 2013). By using export credit guarantees, ECAs help companies, particularly small and medium-sized enterprises (SMEs) that generally experience greater difficulties than larger businesses in accessing finance because of a combination of their higher credit risk profile and their insufficient export track records, to get access to new markets abroad (Chauffour and Farole, 2009).

### **3. A Review of the Theoretical and Empirical Literature on Trade Finance**

The 2008-2009 financial crisis prompted a renewed interest among economists to examine the links between financial conditions and trade flows. Many of these studies in this area have largely focused on the role of trade finance in the 2008-2009 great trade collapse.<sup>24</sup> Many studies suggested that contraction in trade finance was not main driver behind the 2008-2009 trade collapse; rather, the collapse of aggregate demand and the decline in commodity prices were the leading causes of the sharp decline in trade (See Bricongne et al., 2012 and Behrens et al., 2013). In contrast, a number of studies, including Amiti and Weinstein (2011) and Chor and Manova (2012), found that trade finance constraints played a contributing role in the collapse of trade. Despite the lack of evidential consensus on the role of the trade finance on trade collapse, there is a little doubt that trade finance plays a significant role in facilitation of global commerce.

Unfortunately, these studies, with few exceptions, neglect one of the most important aspects of the trade finance, namely the payment contract choice of firms and their

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markets as well as entering into new markets. For additional information regarding the financial services and products provided by Türk Eximbank: <http://www.eximbank.gov.tr>.

<sup>23</sup> A standby L/C that private banks offer is very similar to a guarantee and is employed in similar situations.

<sup>24</sup> See, for example, Iacovone and Zavacka (2009), Levchenko et al. (2010), Amiti and Weinstein (2011), Pravisini et al. (2011), Chor and Manova (2012), Bricongne et al. (2012), Behrens et al. (2013) and Ahn (2013).

implications for trade. Attempts to understand the choice between different payment methods may provide useful information to policymakers in formulating effective and timely measures in times of crisis. Emphasized by Auboin and Engemann (2013) and Love (2013), the scarcity of reliable and comprehensive database was the main reason for the shortage of theory based-empirical research on the choice of trade finance methods. A notable exception is Schmidt-Eisenlohr (2013) who derives a theoretical model to address the trade-off firms have between three different payment forms (open account, CIA and L/C) in international trade and the cross country differences in their use. In the model, firms conducting trade internationally face two important problems: one is the financing problem that stems from the time gap between the delivery and payment, the other is the commitment problem that arises when firms are unable to make the required payment or delivery and enforcement of contracts is imperfect. Under OA, the export financing has to be provided in the exporting country while the contract enforcement takes place in the importing country. Under CIA method, financing, however, is made in the importing country whereas the enforcement of contract should be carried out in the exporting country. The commitment problems are solved when the L/C method is chosen, but the burden of financing transaction and additional bank fees has to be shared by both exporters and importers. Firms should therefore consider both differences in financing costs and enforcement across countries when choosing a payment type. The model predicts that the firm in the country with the lower financing costs and the weaker contract enforcement should finance the trade transaction in order to minimize the interest costs and the commitment problem resulting from the failure of exporter or importer to meet their contractual obligations-including delivery and payment. Therefore, transaction should take place more frequently on OA terms when the contract enforcement in importing country is strong and the cost of financing trade in the exporting country is relatively cheap. In contrast, CIA method should be preferred if the financing costs in the exporting country are high and if the enforcement in the importing country is weak. When both firms locate in countries with

weak contract enforcement, trade transaction need to be made on L/C terms. Using data on bilateral trade flows of 150 countries over the period 1980-2004, Schmidt-Eisenlohr (2013) indirectly tests the predictions of the payment contract choice model by aggregate gravity regressions and found evidence that, as predicted, financial conditions and contract environments both in exporting and importing country matter for trade. In particular, the empirical results show that countries with higher financial costs trade less with each other and the size of this effect increases as the geographical distance between trading partners, a proxy for time to trade, increase.

Hoefele et al. (2013) takes a further step and directly test the predictions of the model utilizing the World Bank Enterprise Survey data for firms from 54 developing countries over the period between 2006 and 2009. Consistent with the model developed in Schmidt-Eisenlohr (2013), Hoefele et al. (2013) find that better enforcement and higher financing costs in the exporting country increases the use of pre-delivery payment (CIA). Their empirical results also show that the payment contract choice in industries that produce complex products tend to be influenced more by legal conditions while less complex industries is more influenced by financing costs.

The main problem of the aforementioned survey is that it does not break down the information on OA sales into domestic and international, even if it documents the share of exports in total sales. Antras and Foley (2013) are able to overcome this problem using detailed transaction-level data from a single large US exporter that exports frozen and refrigerated food products, mainly poultry. The data contain information on the financing terms used for each transaction between the US exporter and its customers located in more than 140 countries from 1996 to 2009. With the detailed actual data on financing terms, Antras and Foley (2013) investigate the effect of contract enforcement on the method of payment offered to importers, and find that exports to importers located in countries with weak contract enforcement and more distant from exporter's country is more likely to occur

on CIA terms or L/C terms. Their results further suggest that the use of post shipment method (OA) increases as the relationship between trading partners develops.

In addition to the aforementioned studies, some studies have explicitly dealt with only one method of payment in great detail, namely L/C (see Glady and Potin, 2011; Ahn, 2011, 2013; Olsen, 2013; and Niepmann and Schmidt-Eisenlohr, 2013). Glady and Potin (2011), for instance, presents a theoretical model to examine the effects of commercial default risk arising from adverse selection and two-sided moral hazard on the choice of traders between different payment methods (CIA, OA and L/C). The model predicts that a payment with bank intermediation (i.e. a L/C) shall be chosen by the exporter when commercial default risk in the trading economies is high and the fees charged by the banks for their L/C services are low because bank intermediation enables traders to mitigate adverse selection and moral hazard problems. Using the data on the exchange of L/Cs over the SWIFT financial messaging network in 2006 between 122 countries, the authors find, as predicted, that the use of L/C increases as the commercial default risk increases. The results also show that exports to countries with more developed financial sectors are more likely to occur on L/C terms, in line with the model's predictions.

Ahn (2011) presents a model that explains widespread use of L/C as a payment method for international transactions. In particular, he argues that risks involved in an international trade finance loan are larger than in a domestic trade finance loan because the banks have a more extensive set of information and better capacity for evaluating creditworthiness of domestic firms than foreign firms. This in turn makes the screening of foreign firms less accurate and more costly than domestic firms, which in turn motivates the use of L/C for international transactions. The model also indicates that during recessions the ambiguity regarding international trade finance loan is much higher than during booms, which increases the relative risk of international transactions compared to domestic transactions. The increased uncertainty will hence raise the costs of trade financing and the price of exported

goods relative to domestic goods. As a result, the model predicts that the international trade is expected to decline more sharply than domestic trade during recessions. Therefore, Ahn (2011) concludes that the widespread use of L/C for international transactions tend to amplify the negative effects of financial crisis on international trade. Using a detailed dataset on L/C transactions in Colombia during the 2008-2009 global financial crisis, Ahn (2013) confirms that adverse bank liquidity shocks led to a drastic decline in imports via L/C in Colombia.

Olsen (2013) develops a theoretical model to analyze the effects of repeated interaction on the choice of methods of payments and show that repeated interaction between trading partners may be sufficient to ensure efficient trade when international contract enforcement is weak. During times of crisis, however, the repeated interaction can no longer provide an efficient mechanism for ensuring trade flows between trading partners. Olsen (2013) suggests that the use of a L/C, particularly mutually confirmed L/C, offered by banks should be used to overcome weak international contract enforcement during the crisis. He argues that the risk of non-payment is smaller in the case of mutually confirmed L/C since it partially transforms international obligations into domestic obligations, which are more easily enforced. Another piece of evidence is found by Niepmann and Schmidt-Eisenlohr (2013) who extend the payment contract choice model developed by Schmidt-Eisenlohr (2013) to make use of very unique data on the trade finance claims of US banks to investigate the use of L/C in international trade from over the period 1997-2011. They found that the use of L/C increases when the default risk increases and when the financial costs (global interest rates) decline.<sup>25</sup>

Recently, several authors have explicitly focused on the use of inter-firm credit finance (trade credit) in international trade, (see Engemann et al., 2011; Eck et al., 2012; Eck, 2012;

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<sup>25</sup> Contrary to the assumption made in Schmidt-Eisenlohr's (2013), the L/C fee in Niepmann and Schmidt-Eisenlohr (2013) is no longer assumed to be fixed, in which a higher probability of default drive up the costs for L/C services.

Mateut, 2012; and Mateut and Zanchettin, 2013).<sup>26</sup> For instance, Eck et al. (2012) develop a model to examine the effect of trade credit (in the form of CIA payments and supplier credit), on international trade. They argue that firms can experience much greater uncertainty in international transactions than in domestic transactions due to asymmetry of information and trade credit provides a quality signal that lowers this uncertainty inherent in international trade, thereby expanding trade. In particular, Eck et al. (2012) argue that trade credit granted as supplier credit (OA) by the exporter serves as a signal of the exporter's quality type to the bank and the importer while trade credit granted as CIA payment provides a signal of the importer quality to the bank and the exporter. As a result, financially constrained firms that are not able to carry out the international transactions with pure bank credit financing tend to trade higher volumes with CIA financing and supplier credit. The empirical findings confirm the hypothesis that availability of trade credit fosters export and import volumes, using the data on the shares of CIA and OA payments in total sales from Business Environment and Enterprise Performance Survey (BEEPS) for 1,196 German firms in 2004. In a companion paper, applying a signaling game developed in Eck et al. (2012), Engemann et al. (2011) examine whether trade credit is a substitute and/ or complement to the bank credit. They argue that trade credit is usually more costly than bank intermediated finance, but, firms, particularly financially constrained firms, tend to use more trade credit because they are not able to obtain a bank credit and thus have to rely more on trade credit. They found evidence to support the substitution argument using the data from the Ifo Business Tendency Survey for 3,974 German manufacturing firms from 1994 to 2009.<sup>27</sup> For financially constrained firms, the results, however, point to a complementary relationship between the two. Using a

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<sup>26</sup> Inter-firm credit finance in international transactions can be conducted either on an OA basis or on a CIA basis. Both methods can be also used for domestic transactions. There exists an extensive literature on trade credit that explains the existence and the use of trade credits in domestic transactions (see for example Long et al. 1993; Biais and Gollier, 1997; Burkart and Ellingsen, 2004; and Cunat, 2007). Excellent surveys of this literature can be found in Klapper et al. (2012) and Love (2013).

<sup>27</sup> The substitution relationship between bank credit and trade credit has been also obtained by Bastos and Pindado (2013) for a sample of 147 firms from Argentina, Brazil, and Turkey from 1999 to 2003.

theoretical model developed in Eck et al. (2012), Eck (2012) first explores how the CIA financing is affected by the recent financial crisis for a sample of European and Central Asian firms and then investigates the impact of CIA financing on exporting during a financial crisis. Eck (2012) found evidence suggesting that firms significantly increase their use of CIA financing during the crisis. Further, the results indicate that the CIA financing promotes exporting during the crisis.

Mateut (2012) empirically investigates the determinants of prepayments by firms in both domestic and international transactions by employing detailed French firm-level data for the period 1997-2007. The study shows how default risk increases the use of prepayments in both domestic and international transactions. In particular, the results suggest that buyers will avoid prepayments until they trust their suppliers and new customers are required to make larger prepayments to the supplier before shipment. The findings further suggest that exporters are more likely to demand prepayments than non-exporters and the prepayments is most commonly used in differentiated manufacturing and in construction industries than in the standardized manufacturing industries. In a follow-up paper, Mateut and Zanchettin (2013) examines whether advance payments and credit sales are substitutes or complements. Utilizing the same dataset of Mateut (2012), they provide evidence of substitute relationship between advance payments and credit sales but this relationship is reversed for small producers of differentiated goods and exporters of homogenous goods.

In addition to the aforementioned payment methods (CIA, OA, L/C and CAD), exporters may also purchase the export credit insurance or obtain credit guarantees in order to reduce or eliminate the default risk. Several studies examine the relationship between trade and export credit insurance or export credit guarantee (Egger and Url, 2006; Moser et al., 2008; Felbermayr and Yalcin, 2013; Badinger and Url, 2013; Van der Veer, 2014; Auboin and Engemann, 2014). Using industry-level data on Austrian export and export guarantees from 1996 to 2002, Egger and Url (2006) find a positive impact of public credit guarantees on



trade in the long-run. A similar result was also obtained by Moser et al. (2008) in the study of the effects of public guarantees on exports utilizing country-level data on German public guarantees for the period 1991-2003, a compelling justification for ECAs intervention. Similarly, Auboin and Engemann (2014) find a significantly positive impact of insured trade credit, as a proxy for trade credits, on trade using quarterly country-level data of export credit insurers from the Berne Union for the period of 2005 to 2011. The empirical findings further point out that this effect does not vary between the crisis and non-crisis periods. Utilizing the same dataset from the Berne Union from 1992 to 2006, Van der Veer (2014) focuses on the role of private credit insurance on exports. The study consistently finds a positive and statistically significant effect of private credit insurance on exports. Moreover, it finds that, on average, every euro of privately insured exports generates more than one euro in total exports, implying that the impact of private trade credit insurance on exports is bigger than the value of exports insured. Felbermayr and Yalcin (2013) also assess the effect of export credit guarantees on exports using data on export credit guarantees issued by the German government, the so-called Hermes guarantees, over the period 2000-09. They find that guarantees have had a positive impact on sectoral exports and this impact was the largest during the recent financial crisis, particularly at its peak in 2008. This speaks to the effectiveness of export credit guarantees in terms of reducing adverse effects of financial market frictions on sectoral exports, particularly in sectors that are more reliant on external finance. Finally, they provide only weak evidence that guarantees are more important when the quality of legal institutions in the destination country is quite poor. Likewise, Badinger and Url (2013) first examine the determinants of firms' export guarantee usage, and their relative impact on (extra-firm) exports using data for 178 Austrian exporting firms for the year 2008. They find that the reliance on export credit guarantees is more likely among domestically owned large firms that have higher intensity of research and development and higher exposure to the risk. In sum, much of the empirical work suggest that export credit

insurance and export credit guarantees have a significant positive effect on trade and can be effective in alleviating the adverse effects of financial crisis on trade.

#### **4. Data**

TURKSTAT's database on methods of payments in Turkish trade, which contains the most detailed bilateral data in terms of trade finance instruments for over 270 countries (including the free-trade zones) classified according to the International Standard Industrial Classification of All Economic Activities (ISIC, Revision 3) at the 2-digit level, was used to evaluate the changing patterns of trade finance in Turkey over the period of 2002-2012. Data availability in TURKSTAT's database spans from 2002 to 2013. Beside free trade zones, we exclude some countries from our analysis, often due to the absence of trade or changes in political boundaries. Thus, bilateral trade finance data from Turkey with 206 countries over the period 2002-2012 at the 2-digit level of ISIC Revision 3 was used.

In addition, we classified countries into 4 groups representing low income, lower middle income, upper middle income and high income groups. Classification of countries is from the World Bank, on the basis of 2009 gross national income (GNI) per capita.<sup>28</sup> Countries are further divided into 6 regions based on the World Trade Organization's analytical regions (for a list of countries and information about regional and income group classifications, see Table A1).<sup>29</sup>

This unique database documents total amount of trade using a specific payment value in value (in thousands of US dollars at the current prices) and in quantities (where quantities are reported in different units of measure, such as kilograms, meters, liters, square meters, and such like) at the 2-digit level of ISIC Revision 3. Table A2 provides information about the structural characteristics of trade finance data as well as classification of each group from 2002 to 2012 on a yearly basis. Many different types of payment methods exist in the

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<sup>28</sup> Detailed information can be found at the World Bank's website: <http://data.worldbank.org>.

<sup>29</sup> Detailed information can be found at the World Trade Organization's website: <http://www.wto.org>.

database and the types vary greatly from year to year. In order to make a consistent analysis from year-to-year, types of payment methods are grouped into five main categories: open account (OA), cash-in advance (CIA), cash against documents (CAD), letter of credit (L/C) and other, as shown in Table A2.

In carrying out the study we restrict ourselves to focus on manufacturing industries belonging to ISIC divisions 15-37, but excluding recycling (ISIC 37). Furthermore, in order to examine the usage of payment methods across industry groups listed in Table A3, we have classified the manufacturing industries into four categories according to their technological intensity: low-technology (LT), medium-low-technology (MLT), medium-high-technology (MHT) and high-technology (HT), based on OECD's Technology classification of manufacturing industries.

## **5. Patterns of Payment Methods in Turkish Foreign Trade**

### **5.1 Payment Methods in Turkish Exports**

Table 1 documents the average use of each payment method-OA, CIA, CAD and L/C-between 2002 and 2012. Despite being highly risky for exporters, 58% of Turkish manufactured exports was executed by OA transactions (inter-firm trade finance).<sup>30</sup> At the same time, the use of CIA method, represent a much smaller share (6%). This finding is in line with the prediction of Schmidt-Eisenlohr's (2013) model that exports to importers located in countries with strong contract enforcement is more likely to occur on OA terms, given the fact that Turkey's exports are still heavily concentrated on European markets where contracts are more effectively enforced by courts, as compared to Turkey (Demir and Javorcik, 2014). As shown in Table 1, the average share of CAD-based exports is nearly 19% and L/C is about 15%, suggesting that the intermediated trade finance represents a relatively small fraction of

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<sup>30</sup> The calculated shares are very similar to those reported in Malouche (2009b), in which the average share of cash against goods, cash on delivery (OA) in manufactured exports is around 60% over the period between January 2008 and December 2009. The same pattern of findings also emerged in Demir (2014) and Demir and Javorcik (2014), in which the share of Turkish exports on OA terms (CAD is classified as OA) is around 80% over the period 2004-2011.

all export arrangements in Turkey. This result is not surprising due to the fact that the intermediated trade finance are generally expensive method in terms of transaction and financial costs, making inter-firm trade finance more attractive option compared to the intermediated trade finance (Love, 2013).

Figure 3a presents the evolution of the shares of each payment method from 2002 to 2012. The share of exports financed through OA terms has risen 10% over the period, reducing the role of intermediated trade finance. This was largely due to the intense competition in traditional export markets fuelled by the recent financial crisis, as Turkish exporters have no choice but to offer more competitive OA terms. On the other hand, Figure 2a and 3a show that the use of CIA method dramatically increased in the last decade. In terms of its share in all methods of payments, CIA method increased almost fourfold, as indicated in Table 2. As is evident in Figure 2a, in 2012, more than 20 billion dollars of Turkish exports were executed via CIA compared to 500 million dollars in 2002. The change in the share of CIA sales appears more remarkable when compared to the 10% increase in the share of OA sales for the same time period, as Table 2 shows. The growing share of CIA method in Turkish exports is likely due to the re-orientation of Turkey's exports towards faster growing non-traditional markets (such as the Middle East and Africa) where the financial system is under-developed and contract enforcement is weak (Türkcan, 2014).

While the shares of inter-firm trade finance in Turkish exports increased significantly over the period, the shares of the intermediate trade finance dropped considerably. Figure 3a points out that the share of Turkish exports financed through CAD decreased from 24% in 2002 to 15% in 2012, whereas the share of L/C dropped from 17% to 14%. These findings reflect with the fact that increased financial costs, and tightened credit conditions induced Turkish exporters rely increasingly on inter-firm trade finance over time (Malueche, 2009a). The shift away from the intermediated trade finance is also due to the recent global recession,

which has led to the intensified competition in export markets, placing importers in a stronger negotiating position over payment terms.<sup>31</sup>

### *Payment Methods in Turkish Exports by Income Levels*

We turn next to the comparison of payment methods for different income groups. As shown in Table 1, the share of OA method was observed as the highest in high income countries (60%), while it was lowest when trading with low income countries (46%).<sup>32</sup> On the other hand, the evidence suggests that the share of CIA method was the highest for low income countries (9%) whereas it was the lowest for high income countries (5%), suggesting that Turkish exporters prefer safer methods of payment when trading with risky countries. Furthermore, the highest share of usage of L/C was seen for low income countries (28%) while the lowest share was recorded for high income countries (13%), mainly because of the perceived risk in the target country. As seen in Table 1, the shares of CAD method tend to be higher for upper income countries (20%) and high income countries (19%). It seems that when the risk to the exporter of non-payment is reduced, Turkish companies tend to rely more on less costly methods, namely CAD. These patterns suggest that Turkish companies tend to pay more attention to the quality of contract enforcement when dealing with low income countries whereas to the financial costs when trading with high income countries.

Next to be analyzed is the evaluation of share of methods of payments in exports by income level. The statistics shown in Table 2 and Figure 4 reveals that the share of OA-based exports destined to lower middle income countries grew significantly at almost 33% over the period-from 43% in 2002 to 57% in 2012. The corresponding share for high income countries also increased substantially from 53% to 64% over the sample period, with an increase of 22%. By contrast, the share of OA-based exports declined considerably from 48% to 39% for

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<sup>31</sup> BIS (2014) documents that the share of L/C in Turkish total exports has dropped from around 26% in 1998 to 15% in 2012 and suggest that the expanding network of long-term trade relationships reduces the need for L/C in Turkey over time.

<sup>32</sup> Love (2013) also found that OA terms are most often used when trading partners are located in high income countries.

low income countries, with an decline of 20%, while its share have fell by 8%, from 48% to 44% over the period. The increase in the use of OA-based exports is attributed to several factors, including the increased competition in the target markets (especially in high income countries) and the improved trade relations with countries (particularly with lower middle income and high income countries).

On the other hand, the statistics in Table 2 points out that the change in the use of CIA method stands out as the largest change in the pattern of trade finance in terms of income level comparisons of all payment methods. The results show that the share of CIA method has grown significantly for all income groups since 2002, but the increase is the most pronounced for upper middle income countries (323%), followed by high income countries (300%), lower middle income countries (167%) and low income countries (154%). This pattern again underlines the fact that the recent growth in the usage of CIA-based exports across all income groups is mainly due to the rising cost of financial intermediation, the lack of financing for importers (particularly in developing countries) and a substantial rise in the perceived risk of trade since the global financial crisis in 2008. The results further imply that the redirection of Turkish exports towards more dynamic emerging markets in which the quality of legal institutions is weak has resulted in an increase in the use of CIA method in total manufactured exports.

Moreover, as evident from Table 2 and Figure 4, the intermediated trade finance is losing ground to inter-firm trade finance in facilitating export transactions in Turkey across all income groups over time, with the exception of low income countries for the CAD transactions. In particular, Figure 4 shows that the largest decline in the shares of CAD payment methods were recorded for high income countries, 46% decrease from 2002. Other income groups that experienced very large declines in the share of CAD transactions are lower middle income countries (40%) and upper middle income groups (14%). Similarly, all three income groups, with the exception of low income countries, experienced a significant

decline in the shares of L/C transactions in total manufactured exports over the sample period, but the decline is far more pronounced among upper middle income (44%) and lower middle income countries (42%), as shown in Table 2. The results at the income level once again confirm that fear of default, tightening credit conditions and raising costs of financial intermediation is causing Turkish exporters to switch to less-expensive payment methods, which are generally less complicated and involve less documentation requirements than intermediated trade finance. The results further suggest that establishing or strengthening trade relationships with foreign firms (especially in lower income and upper income countries) also have reduced the use of the bank intermediated trade finance as a share of exports over time.

#### *Payment Methods in Turkish Exports by Destination Regions*

Table 1 documents that OA is the most common financing method across all regions with the exception of Asia which has on average 36% of total manufacturing exports were executed by the method of L/C.<sup>33</sup> For the EU-zone countries as well as other developed countries, open account terms overwhelmingly dominate the transactions. Table 1 shows that on average 65% of total exports to Europe and 49% of total exports to America occurred under open account terms between 2002 and 2012.<sup>34</sup> The open account terms are also most often used while trading with CIS countries (73). Although it is not clear why Turkish exporters relied to a larger extent on open account while dealing with CIS countries, one possible explanation is that these countries have weak banking systems and low levels of intermediation. CIA method was mostly preferred when trading with Asian (9%), Middle Eastern (8.51%) and CIS (8.38%) countries, which is consistent with Love (2013) which

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<sup>33</sup> This finding is also observed in BIS (2014), which show that the Asia-Pacific region relies most heavily on L/C. The literature has identified several factors accountable for the higher usage of intermediated trade finance (L/C): longer distances between trading partners, newly formed trade relationships, weak enforcement of international contracts and under-developed banking sectors (Glady and Potin, 2011). In addition to these factors, in the context of Asia historical preferences, legal frameworks, regulatory differences as well as relatively cheap L/C fees are proposed (BIS, 2014).

<sup>34</sup> The similar patterns were also noted in Love (2013).

suggests that the CIA term are mostly used when trading with partners located in low-income countries. Looking across different regions, the use of cash against documents transactions seemed to be relatively more important among African countries (21) and Middle Eastern countries (19), presumably reflecting greater need for reducing the risk of counterparty defaults. Likewise, L/C account for relatively large shares of exports destined to Asia (36%), Africa (32%) and Middle East (32%). In addition to the aforementioned factors, the distance appears to have significant effect on the choice of financing terms when traders take part in long-distance trade (Demir, 2014). This is also in line with the prediction of Antras and Foley (2013) which predicts that CIA terms and L/C terms are preferred to the post-shipment terms (OA) when there is more distance between partners.

Table 2 and Figure 6 show the increasing importance of inter-firm trade finance in Turkish exports from 2002 to 2012. The shares of OA have increased considerably for all regions, except for Middle East, while the shares of CIA methods rose substantially across all regions, for the period 2002 to 2012. Perhaps, the most striking point in Table 3 is the large increase in CIA transactions for Middle Eastern countries since 2002. Turkish exporters preferred this method mostly because of the loss in confidence to the contract enforcement in these countries as this period coincides with political instability in the region. On the other hand, the increasing importance of OA transactions for Asian region is closely linked with the greater participation of Turkish exporters in the global value chains, which often involve repeated transactions and long term relationships between traders, consistent with the hypothesis of Cunat (2007) that repeated transactions will increase the amount of credit that suppliers are willing to provide. By contrast, the shares of cash against documents and L/C have declined noticeably across all regions over the same period, suggesting that Turkish exporters generally prefer inter-firm trade finance instruments rather than relatively expensive bank intermediated trade finance instruments to remain competitive internationally.



### Payment Methods in Turkish Exports by Industry Groups

We also reported the average share of each trade finance method for different technology intensity of the industries in Table 1. For each industry group, the most common form of trade finance in exports is OA transactions. However, it seems that high-tech industries represent the largest share in terms of OA terms (76%) among all industry groups. It is clear that importers in countries where the demand for high-tech products are relatively strong and the legal systems are well established generally have better negotiating power over payment terms, which in turn increase the share of OA in high-tech exports destined to those markets. At the same time, high-tech industries (2%) represent the smallest share in terms of CIA transactions. This evidence seems to be consistent with the explanation suggested by Menichini (2009) for the role of traded goods characteristics on the payment choice: firms producing vertically differentiated high quality goods may offer more open account (inter-firm trade credit) to their trading partners than firms producing standardized goods.<sup>35</sup> Menichini (2009) argues that the risk that foreign buyers default on their financial obligations will be quite low in the case of differentiated goods because of the long-term business relationships or a difficulty in replacing the supplier.

In addition, Table 1 reveals that the share of CAD is lower in the high-tech products exports (4%) compared to all other industry groups' exports, indicating that exporters are less concerned about credit risk when exporting high-tech products since buyer opportunism is less severe for firms in industries selling differentiated goods (See Menichini, 2009). In contrast, the industry data suggests that medium-low technology and medium-high technology industries rely more heavily on L/C than other industries, implying that firms exporting these products are less willing to offer trade credit since these products are mostly sold in developing countries where the quality of contract enforcement is weak. As seen in Table 4,

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<sup>35</sup> For additional discussion and empirical evidence on the inter-firm credit relationship, see Ng et al. (1999), Cunat (2007), Giannetti et al. (2011) and Love (2013).

the non-traditional markets, particularly Asian, African and Middle Eastern countries, have become increasingly important markets for medium quality Turkish products in recent years. Overall, the results show that the characteristics of exported goods play a direct role in favoring inter-firm trade finance in Turkey.

The changes in the shares of methods of payments in exports by technological intensity are shown in Table 2 and Figure 8. During the period of interest, the share of OA has substantially increased for all industry groups but the increase was even more pronounced for high-tech industries (34%). The share of CIA transactions also increased to an even greater extent than that of OA transactions since 2002. In contrast, the results at the industry level further show that both the shares of CAD and L/C transactions have declined uniformly across all industry groups over the period, but the decline was more severe for high-tech industries. This finding is consistent with the shift from intermediated trade finance instruments to inter-firm trade finance instruments in facilitating exports.

## **5.2 Payment Methods in Turkish Imports**

We next examine average share of methods of payments in Turkish imports between 2002 and 2012 in Table 1. As opposed to exports, the majority of import transactions take place under CIA terms (49%), which can be considered the most risky term for the importers. It is followed by OA (23%), L/C (11%) and CAD(11%). The results suggest that Turkish importers have low bargaining power against foreign suppliers. This is because of their higher default risk due to the difficulties of enforcing contracts in Turkey compared to firms located in advanced countries with well established legal systems. As a consequence, CIA payment method is the most preferred financing method in Turkish imports. This finding is in line with the findings of Antras and Foley (2013) that exporters demand CIA payment from their high default risk importers. In addition, it is also evident from Table 1 that the share of inter-firm trade finance (OA plus CIA) in imports (72%) is much larger than in exports (63%), indicating that Turkish importers relied more on inter-firm trade finance compared to exports.

The relatively smaller share of the intermediated finance in imports can be explained mainly by the lack of strong banking sectors in Turkey which affects the cost and availability of bank intermediated trade finance. This forces Turkish importers to use the riskiest methods of payment in financing imports, namely CIA method.

Despite being highly risky for importer, the share of CIA methods has increased even more over the years, making Turkish importers even more vulnerable to payment risks: the share of CIA payment reached 55% in 2012, up from 39% in 2002, as seen in Figure 3. Meanwhile, the share of OA in imports has declined slightly from 23.8% in 2002 to 23% in 2012. This is in contrast with the previous literature which finds increasing share of OA in international trade (See ICC, 2009). The shift from OA transactions to CIA terms shows that the level of perceived risk of defaults rose suddenly in global markets after the 2008-2009 financial crisis but recedes only gradually after the crisis, which still forces importers to look for more security in the transaction. Table 2 also documents a declining trend for both CAD and L/C over the time where the decline is more pronounced in the case of CAD. As seen in Table 2, the share of CAD declined by nearly 45%, while the share of L/C fell by just below 7% during the 2002-2012 period, reducing the role of bank intermediated finance in imports. This finding suggests that inter-firm trade finance, especially CIA term, is relatively more prevalent in countries with weaker contractual enforcement, less financial development and higher political risk (See BIS, 2014; Love, 2013).

#### *Payment Methods in Turkish Imports by Income Levels*

Looking at the average shares of methods of payments at the income level reported in Table 1, we observe that OA method is less preferred when Turkish firms import from countries which has an income level lower than Turkey. OA terms represents only 10% of Turkish imports originated from low income countries whereas it represented a 25% share of Turkish imports from high income countries. In terms of CIA payment transactions, there is again a systematic difference across income groups: the share of CIA terms is consistently

higher for upper income (56%) and high income countries (49%) compared to low income (40%) and lower middle income countries (39%). The evidence thus suggest that Turkish importers have a better bargaining power when negotiating payment terms with firms located in developing countries. In contrast, Turkish importers have weak negotiating power over payment terms when dealing with firms located in advanced countries, forcing them to accept the risky method of payment, i.e. CIA payment terms. The results are in line with the theoretical predictions developed in Schmidt-Eisenlohr (2013) and Antras and Foley (2013).

When looking at the average shares of intermediated trade finance in Turkey's imports in Table 1, we observe that the shares of CAD and L/C are consistently higher for low and lower middle income countries. The shares of CAD and L/C terms, however, are considerably lower when Turkish importers trade with advanced countries. The shares of CAD and L/C is smallest in high income group (10% and 9%) and largest in low income group (23% and 23%, respectively). This pattern underlines the fact Turkish importers rely mostly on banks to facilitate imports from less-developed countries because both CAD and L/C terms protects them by ensuring that goods have been shipped as agreed.

When comparing 2012 to 2002 in Table 2 and Figure 5, the shares of OA transactions declined in all but one income group. The largest decline in shares of OA transactions were registered for the low income group, down from 40% in 2002 to 7% in 2012. The exception in this category is the high income group, where it shows a slight increase from 24% to 26%. On the other hand, Table 2 and Figure 5 point out an increasing share of CIA transactions in imports across all regions over the period. The increase in the share of CIA transactions was the largest in low income countries (from 14% in 2002 to 47% in 2012). In the meantime, the share of CAD has declined uniformly across all income groups. However, when looking at the shares of L/C, we observe that the share of L/C has increased substantially for low income and lower income groups while it declined marginally for upper middle and high income groups over the same period. These patterns show that Turkish firms prefer CIA transactions

or L/C in importing when dealing with trading partners located in less-developed countries. This outcome is quite plausible because a significant portion of the increase in Turkish imports in recent years originated from developing countries where the suppliers do not have an established relationship with Turkish buyers (See Table 4). As stated above, both CIA and L/C terms are typically used in newly formed trade relationships.

#### *Payment Methods in Turkish Imports by Destination Regions*

Table 1 displays the average usage of payment methods in Turkish imports by destination region. As expected, the large fraction of imports originated from non-traditional markets is financed through the method of OA while imports from traditional markets are mainly financed through CIA method. In particular, the highest share of OA in imports is observed for Africa (49%). Other source destinations with relatively higher shares of OA are the CIS (35%) and the Middle East (30%). By contrast, the CIA terms has been extensively used when Turkish importers deal with trading partners from Europe (53%), Asia (53%) and America (45%). This finding also supports the previous finding that Turkish companies have low bargaining power in dealing with the sellers from advanced countries.

The results in Table 1 further show that the Middle East (12.40%) has the highest share of CAD in imports, but there are other regions with rather high shares of CAD, such as America (12.05%) and Asia (11.86%). In addition, it was found that the CIS (19%) has the highest share of L/C in imports, followed by Africa (18%) and Asia (16%). From figures in Table 2, we conclude that Turkish companies are more concerned with the risk of non-delivery than with the cost of the intermediated trade finance when they import products from the sellers located in developing countries and also located at a long distance.

Table 2 and Figure 7 present the evolution of trade finance patterns in imports by region. As evident from Table 2, there is a significant change in the composition of payment methods of imports across all regions. In the concerned period, the share of OA terms in Turkish imports has declined significantly across all regions, with the exception of Middle

East and CIS. In contrast, there is a significant increase in CIA transactions in imports across all regions over the sample period. At the same time, there is a significant decline in the popularity of CAD across all regions. In addition, sharp declines in the share of L/C were registered across all regions, except Asia and CIS. This pattern again underlines the fact that there is significant move towards the CIA methods in imports over the period. The regional results suggest that importers in Turkey still suffer from the financial constraints (the high cost and lack of finance to support import) caused by the financial crisis of 2008-2009. The results further indicate that foreign exporters have become more risk averse when dealing with Turkish importers in recent years, especially since the 2008-2009 global financial crisis.

#### *Payment Methods in Turkish Imports by Industry Groups*

We next provide the average shares of payment methods by industry groups in Table 1. It is evident that the CIA terms are the most common forms of international trade payment in imports across all industry groups, but their relative importance has increased towards high-tech products. The intensive use of CIA terms in imports of high-tech products is quite plausible because high-tech products are mainly imported from firms in advanced countries, which has generally more bargaining power relative to the firms located in Turkey. These patterns reveal that the exporter's trust in Turkish importers is quite low, probably because of highly uncertain environment and weak contract enforcement in Turkey, making CIA payment use a more attractive choice for the exporters. On the other hand, the average share of CAD and L/C in high-tech product imports is quite low compared to other industry groups, suggesting that Turkish importers have difficulty getting export financing from financial institutions. The finding thus supports the hypothesis that inter-firm trade financing is especially relevant in importing countries with a less financial development.

In a next step, we document changes in shares of methods of payments in imports by industry groups. As seen in Table 2, the share of CIA payments rises across all industry groups, but more so for high-tech (61%) and medium-high-tech (56%) industries, reflecting

that the perceived trust between the exporters (mainly from advanced nations) and Turkish importers has been in steady decline over the period. In all industry groups except medium-low-tech, the share of OA, CAD and L/C terms, however, has declined over the period, but the decline is more pronounced in the high-tech industries.

## **6. Changing Patterns of Payment Methods in Turkish Foreign Trade during the 2008-2009 Global Financial Crisis**

The 2008-2009 global financial crisis- the worst since the Great Depression-had led to a sharp reduction in Turkish trade. As shown in Table 5, Turkey's exports of manufactured goods fell by 23% in 2009 to 90.3 billion US\$ from 117.5 billion US\$ in 2008. The fall in the value of imports was even sharper. Turkey's imports decreased by 26% to 107.8 billion US\$ in 2009 from 145.8 billion US\$ in 2008. Not surprisingly, as shown in Figure 1, overall Turkish exports experience a sharp decline in 2008-2009 period, but recovers in 3 years following the crisis. The international financial crisis had also dramatic effects on the trade financing in Turkey.

Table 3 documents the changes in shares of methods of payments due to 2008-2009 crises. While Turkey's manufacturing exports fell drastically by 23.15% during the crisis, the share of the CIA was surprisingly increased by around 24%.<sup>36</sup> This means that Turkish exporters started to accept more CIA transactions, the safest method of payment, during the crisis. Perhaps, the most striking point in Table 3 is the large increase in CIA transactions for Middle Eastern countries after the crises. Turkish exporters preferred this method mostly because of the loss in confidence to the contract enforcement in these countries as this period coincides with political instability in the region. This shift towards the CIA method when trading with the Middle Eastern countries also had a large negative impact on the volume of

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<sup>36</sup> This finding is broadly consistent with the findings reported in Eck (2012) who documents a rising importance of CIA payment method relative to the pure bank financing for a sample of European and Central Asian firms during the crisis.

trade.<sup>37</sup> Table 5 shows that Turkey's total exports to the Middle Eastern countries was decreased by 27.5% after the global recession. This point can also partially explain the deflection of trade to the African countries after the crisis.<sup>38</sup> A similar trend emerges for the share of the OA in Turkish exports over the same period, but in a much lower scale. The amount of increase in the shares of OA transactions has been around 6% from 2008 to 2009. These figures reflect the fact that Turkish firms still offer competitive OA terms in order to gain customers and not lose any, following the onset of the financial crisis (Acar, 2009).

Another interesting fact observed from the industry data is that the use of L/C in Turkish exports decreased in the post-crises era.<sup>39</sup> This finding is not surprising given the fact that the L/C fees increased substantially because of the worldwide financial meltdown (Asmundson, 2011). In fact, the share of the use of L/C in Turkish exports was decreased by around 30% shortly after the global recession in 2008 (Table 3). A sharper decrease (48%) is observed in L/C transactions for the exports to the developed countries. The largest decline in the growth rate of exports after the global recession was also observed for the exports to the developed countries (Table 5). This finding is consistent with the anecdotal evidence that banks in developed countries, particularly in Europe, retreated from the trade-finance market during the crisis period (BIS, 2014). This implies that the drastic decline in Turkish exports in times of crisis was the result not only for lower imports from Europe, but also of the contraction in trade financing in some developed countries, in particular in Europe (Kalkan et al., 2010). However, at the same time, the usage of CAD has been increased slightly by around 5% during the crisis period, indicating that trading partners are forced to use a less expensive method of payments, namely CAD comparing to L/C transactions in times of crisis.

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<sup>37</sup> It is important to bear in mind that several empirical studies including Bricongne et al. (2012) and Behrens et al. (2013) suggest that contraction in trade finance was not main driver behind the 2008-2009 trade collapse; rather, the collapse of aggregate demand and the decline in commodity prices were the leading causes of the sharp decline in trade.

<sup>38</sup> Table 5 shows a large increase in the share of exports to the African countries.

<sup>39</sup> Malouche (2009a) also found that the value of L/C issued by the Turkish banking sector declined by 25% between September and December 2008.



However, during the crisis period no such significant change has been observed regarding the usage of OA method in import transactions, as Table 3 illustrates. The share of OA in Turkish imports has declined by nearly 1% between 2008 and 2009. Conversely, the share of CIA rose by around 1% during the crisis. Interestingly, evidence from Table 3 suggests that the usage of intermediated trade finance in imports have been more affected by the financial crisis. The share of the CAD has dropped dramatically by around 14% whereas the share of L/C has increased by around 7% during the crisis era. The findings confirmed that exporters, particularly in Europe and America, shifted away from risky OA transactions towards lower-risk bank-intermediated financing, namely L/C, because of heightened uncertainty and increased counterparty risk during the crisis period.<sup>40</sup> As it pointed before, L/C is considered the most secure method of payment for the exporter but the most expensive for the importer when compared with the cash against goods terms. The results thus suggest that the global financial crisis has put further financial pressure on Turkish firms to fund their import transactions. In sum, an assessment of the impact of 2008-2009 global financial crisis on Turkey's foreign trade revealed that many of the Turkish exporters began relying more heavily on inter-firm credit finance whereas importers have increased the use of bank intermediate finance.

## **7. Conclusion**

Trade finance is a vital element of global trade and more than 90% of international transactions are underpinned by some form of trade finance, mainly short-term (Auboin, 2007). Following the financial crisis in 2008-2009, survey reports show that this credit has become more expensive and the global trade experienced a substantial decline in consequence.<sup>41</sup> Consequently, many researchers made strenuous efforts to understand the

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<sup>40</sup> This finding is line with Chauffour and Farole (2009) who claim that trading partners have resorted to more formal, bank intermediated instruments to finance trade since the outbreak of the financial crisis in order to reduce the high probability of default in OA financing.

<sup>41</sup> See IMF-BAFT (2009) and Baldwin (2009).

structure and functioning of the trade finance market, and their role and impact on trade flows in times of financial crisis. While the literature convincingly points out the importance of the essential linkages between trade finance and trade flows, the research on the choice of the payment method in trade flows and its evaluations during the financial crisis period, especially based on actual bilateral country-level trade finance data, remains limited. The main challenge for the scholars is the availability of reliable and comprehensive dataset on the usage of different payment methods. Attempts to understand the structure and recent evolution of the trade finance market, and the relationship between changes in trade finance and international trade during the financial crisis period may provide useful information to policy makers in formulating effective and timely measures in times of crisis (ICC, 2010). In this regard, the present paper attempted to investigate the structure and evaluation of trade financing across income groups, regions as well as industry groups using a unique bilateral trade finance data from Turkey with 206 countries over the period 2002-2012 at the 2-digit level of ISIC Revision 3. Further, for the purposes of this paper, the present paper attempted to document the changes in shares of methods of payments due to the 2008-2009 crisis.

Using actual data on the method of payments in Turkey's foreign trade, we first observed that OA terms (inter-firm trade finance) dominate the cross border transactions in terms of exports. Second, OA terms were mostly used when trading with the EU-zone countries as well as other more developed countries or trading with nearby countries. In contrast, the CIA terms and L/C terms are preferred to the OA and CAD when trading partners are located in low-income countries or distant locations such as Asia, Africa and Middle East. Third, OA terms account for the largest share of Turkish exports across all industry groups. The industry level data also suggests that medium-low technology and medium-high technology industries rely more heavily on pre-payment terms (CIA and L/C) than other industries, implying that firms exporting those products are less willing to offer trade credit since those products are mostly sold in developing countries where the quality of

contract enforcement is weak. Fourth, the shares of inter-firm trade finance (particularly CIA) in Turkish exports dramatically increased over the period 2002-2012, while the shares of the intermediate trade finance (CAD and L/C) decreased substantially. These findings suggest that increased financial costs and tightened credit conditions induce Turkish exporters rely increasingly on inter-firm trade finance over time. Finally, the evidence show that Turkish exporters started to use CIA, the safest method of payment, more intensively than other methods during the crisis. This finding is not surprising given the fact that L/C fees increased substantially because of the worldwide financial meltdown of 2008-2009.

Examining the use of financing terms in Turkey's imports, we first observe that the majority of import transactions take place under CIA terms, quite contrary to the results obtained with the export data. This finding supports the notion that Turkish importers have low bargaining power in dealing with foreign suppliers. Second, the results reveal that the share of inter-firm trade finance (OA and CIA) in imports is much larger than in exports, indicating that Turkish importers relied to larger extent on inter-firm trade finance compared to exports. Third, the results show that the CIA terms has been extensively used when Turkish importers deal with trading partners from high income countries or regions, suggesting that Turkish companies have low bargaining power in dealing with the sellers from advanced countries. Fourth, CIA terms are found to be the most common forms of international trade payment in imports across all industry groups, but their relative importance has increased towards high-tech products. Finally, despite being highly risky for importer, the share of CIA terms has increased even more over the years, making Turkish exporters even more vulnerable to payment risks. These patterns, taken together, suggest a shift away from bank intermediated trade finance (CAD and L/C) in imports to inter-firm trade finance, especially CIA. These findings show that importers in Turkey still suffer from the financial constraints (the high cost and lack of finance to support import) caused by the financial crisis of 2008-2009. Overall, the patterns presented in this paper highlight the fact that Turkish traders have

low bargaining power with their foreign partners in the selection of payment terms. Both exporters and importers are not able to set payment terms that are highly favorable to themselves and bear all risks associated with international trade transactions.

Though Turkey has achieved remarkable export growth over the past decade, it is still far from its full potential in terms of export values and export diversification (Türkcan, 2014). Beside lack of new orders and/or cancelled orders, a majority of firms in Turkey have cited lack of affordable trade finance as a major obstacle to export growth and this problem was made worse by the 2008-2009 financial crisis which forced banks offer fewer trade credits at higher costs (Acar, 2009; Malouche, 2009a). The findings from this study and some others (Acar, 2009; Malouche, 2009a; Demir, 2014) thus clearly demonstrate the importance of a well-functioning financial markets and financial intermediaries in Turkey, because to operate in foreign markets, Turkish firms need better access to trade finance. Accordingly, Turkey should take appropriate policy actions and measures to develop and maintain an effective financial system in order to broaden the range of trade finance instruments and risk mitigation tools at lower costs for new and small exporters who might have the potential to develop new export lines. Such developments would help Turkish firms not only access the finance they need to export more and diversify its exports in terms of products and destinations, but eliminate the risk of a trade transaction. Meanwhile, Turkey should aim to use Turk Eximbank, the official state export credit agency, more effectively in order to enable Turkish firms to penetrate in a wide range of markets. By supporting Turkish exporters through a variety of credit, insurance and guarantee programs, Turk Eximbank may help companies, particularly new and small exporters, to enter new markets and mitigate the losses. Finally, Turkey should establish institutional structures to ensure the efficient regulation and enforcement of contracts between exporters and importers, because stricter enforcement of contracts enhances Turkish firms' ability to increase their exports or enter markets and improve the survival of newly established bilateral trade relationship. Overall, a combination

of these policies would help Turkey to diversify its product range and geographic scope, improve the quality of its exports, foster export growth, stabilize its export earnings, and thereby leading to sustainable long-run economic growth.

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## Appendix

**Table A1: List of countries and geographical composition of each region**

|                                  |   |                                       |                                |                              |
|----------------------------------|---|---------------------------------------|--------------------------------|------------------------------|
| <b>Africa</b>                    | Tunisia <sup>C</sup>                    | Saint Lucia <sup>C</sup>              | Niue <sup>C</sup>              | Malta <sup>D</sup>           |
| Algeria <sup>C</sup>             | Uganda <sup>A</sup>                     | St. Pierre & Miquelon <sup>C</sup>    | No. Mariana Isds. <sup>D</sup> | Netherlands <sup>D</sup>     |
| Angola <sup>C</sup>              | Egypt <sup>B</sup>                      | St. Vincent & Grenadines <sup>C</sup> | Marshall Isds <sup>C</sup>     | Norway <sup>D</sup>          |
| Burundi <sup>A</sup>             | Tanzania <sup>A</sup>                   | Suriname <sup>C</sup>                 | Palau <sup>C</sup>             | Poland <sup>D</sup>          |
| Cameroon <sup>B</sup>            | Burkina Faso <sup>A</sup>               | Trinidad and Tobago <sup>D</sup>      | Pakistan <sup>B</sup>          | Portugal <sup>D</sup>        |
| Cape Verde <sup>B</sup>          | Zambia <sup>B</sup>                     | Turks & Caicos Isds. <sup>D</sup>     | Papua N. Guinea <sup>B</sup>   | Romania <sup>C</sup>         |
| Central Afr. Rep. <sup>A</sup>   | <b>America</b>                          | USA <sup>D</sup>                      | Philippines <sup>B</sup>       | San Marino <sup>D</sup>      |
| Chad <sup>A</sup>                | Antigua & Barbuda <sup>D</sup>          | Uruguay <sup>D</sup>                  | Pitcairn <sup>D</sup>          | Slovak Rep. <sup>D</sup>     |
| Comoros <sup>A</sup>             | Argentina <sup>C</sup>                  | Venezuela <sup>C</sup>                | Timor-Leste <sup>B</sup>       | Slovenia <sup>D</sup>        |
| Congo <sup>B</sup>               | Bahamas <sup>D</sup>                    | Br. Virgin Isds. <sup>D</sup>         | India <sup>B</sup>             | Spain <sup>D</sup>           |
| Congo Dem. Rep. <sup>A</sup>     | Barbados <sup>D</sup>                   | <b>Asia</b>                           | Singapore <sup>D</sup>         | Sweden <sup>D</sup>          |
| Benin <sup>A</sup>               | Bermuda <sup>D</sup>                    | Afghanistan <sup>A</sup>              | Viet Nam <sup>B</sup>          | Switzerland <sup>D</sup>     |
| Equatorial Guinea <sup>D</sup>   | Bolivia <sup>A</sup>                    | American Samoa <sup>D</sup>           | Thailand <sup>C</sup>          | UK <sup>D</sup>              |
| Ethiopia <sup>A</sup>            | Brazil <sup>C</sup>                     | Australia <sup>D</sup>                | Tokelau <sup>B</sup>           | <b>Middle East</b>           |
| Eritrea <sup>A</sup>             | Belize <sup>C</sup>                     | Bangladesh <sup>A</sup>               | Tonga <sup>B</sup>             | Bahrain <sup>D</sup>         |
| Djibouti <sup>B</sup>            | Canada <sup>D</sup>                     | Bhutan <sup>A</sup>                   | Tuvalu <sup>B</sup>            | Palestine <sup>B</sup>       |
| Gabon <sup>C</sup>               | Cayman Isds. <sup>D</sup>               | Solomon Isds. <sup>B</sup>            | Wallis & Futuna <sup>B</sup>   | Iran <sup>C</sup>            |
| Gambia <sup>A</sup>              | Chile <sup>D</sup>                      | Brunei <sup>D</sup>                   | Samoa <sup>B</sup>             | Iraq <sup>C</sup>            |
| Ghana <sup>B</sup>               | Colombia <sup>C</sup>                   | Myanmar <sup>A</sup>                  | <b>Europe</b>                  | Israel <sup>D</sup>          |
| Guinea <sup>A</sup>              | Costa Rica <sup>C</sup>                 | Cambodia <sup>A</sup>                 | Albania <sup>C</sup>           | Jordan <sup>C</sup>          |
| Côte d'Ivoire <sup>B</sup>       | Cuba <sup>C</sup>                       | Sri Lanka <sup>B</sup>                | Andorra <sup>D</sup>           | Kuwait <sup>D</sup>          |
| Kenya <sup>A</sup>               | Dominica <sup>C</sup>                   | China <sup>C</sup>                    | Austria <sup>D</sup>           | Lebanon <sup>C</sup>         |
| Liberia <sup>A</sup>             | Dominican Republic <sup>C</sup>         | Christmas Isds.                       | Belgium <sup>D</sup>           | Oman <sup>D</sup>            |
| Libya <sup>C</sup>               | Ecuador <sup>C</sup>                    | Cook Isds. <sup>D</sup>               | Bosnia & Herzeg. <sup>C</sup>  | Qatar <sup>D</sup>           |
| Madagascar <sup>A</sup>          | El Salvador <sup>B</sup>                | Fiji <sup>C</sup>                     | Bulgaria <sup>C</sup>          | Saudi Arabia <sup>D</sup>    |
| Malawi <sup>A</sup>              | Falkland Isds. <sup>D</sup>             | French Polynesia <sup>D</sup>         | Croatia <sup>D</sup>           | Syria <sup>B</sup>           |
| Mali <sup>A</sup>                | So. Geo. & So. Sand. Isds. <sup>D</sup> | Kiribati <sup>B</sup>                 | Cyprus <sup>D</sup>            | YAE <sup>D</sup>             |
| Mauritania <sup>B</sup>          | Grenada <sup>C</sup>                    | Guam <sup>D</sup>                     | Czech Rep. <sup>D</sup>        | Yemen <sup>B</sup>           |
| Mauritius <sup>C</sup>           | Guatemala <sup>B</sup>                  | Hong Kong <sup>D</sup>                | Denmark <sup>D</sup>           | <b>CIS</b>                   |
| Morocco <sup>B</sup>             | Guyana <sup>B</sup>                     | Indonesia <sup>B</sup>                | Estonia <sup>D</sup>           | Azerbaijan <sup>C</sup>      |
| Mozambique <sup>A</sup>          | Haiti <sup>A</sup>                      | Japan <sup>D</sup>                    | Finland <sup>D</sup>           | Armenia <sup>B</sup>         |
| Niger <sup>A</sup>               | Honduras <sup>B</sup>                   | North Korea <sup>B</sup>              | France <sup>D</sup>            | Belarus <sup>C</sup>         |
| Nigeria <sup>B</sup>             | Jamaica <sup>C</sup>                    | South Korea <sup>D</sup>              | Germany <sup>D</sup>           | Georgia <sup>B</sup>         |
| Guinea-Bissau <sup>A</sup>       | Mexico <sup>C</sup>                     | Laos <sup>B</sup>                     | Gibraltar <sup>D</sup>         | Kazakhstan <sup>C</sup>      |
| Rwanda <sup>A</sup>              | Montserrat <sup>B</sup>                 | Macao <sup>D</sup>                    | Greece <sup>D</sup>            | Kyrgyz Republic <sup>A</sup> |
| Saint Helena <sup>B</sup>        | Neth. Antilles <sup>D</sup>             | Malaysia <sup>C</sup>                 | Greenland <sup>D</sup>         | Moldova <sup>B</sup>         |
| Sao Tome & Principe <sup>B</sup> | Aruba <sup>D</sup>                      | Maldives <sup>C</sup>                 | Hungary <sup>C</sup>           | Russia <sup>D</sup>          |
| Senegal <sup>B</sup>             | Nicaragua <sup>B</sup>                  | Mongolia <sup>B</sup>                 | Iceland <sup>D</sup>           | Tajikistan <sup>A</sup>      |
| Seychelles <sup>C</sup>          | Panama <sup>C</sup>                     | Nauru <sup>C</sup>                    | Ireland <sup>D</sup>           | Turkmenistan <sup>C</sup>    |
| Sierra Leone <sup>A</sup>        | Paraguay <sup>B</sup>                   | Nepal <sup>A</sup>                    | Italy <sup>D</sup>             | Ukraine <sup>B</sup>         |
| Somalia <sup>A</sup>             | Peru <sup>C</sup>                       | New Caledonia <sup>D</sup>            | Latvia <sup>D</sup>            | Uzbekistan <sup>B</sup>      |
| Zimbabwe <sup>A</sup>            | Saint Kitts & Nevis <sup>D</sup>        | Vanuatu <sup>B</sup>                  | Lithuania <sup>D</sup>         |                              |
| Togo <sup>A</sup>                | Anguilla <sup>C</sup>                   | New Zealand <sup>D</sup>              | Luxembourg <sup>D</sup>        |                              |

*Notes:* The country composition of regions is based on the World Trade Organization's analytical regions. CIS stands for Commonwealth of Independent States. Using the World Bank classification system, 206 countries are also categorized into four different groups: LI=Low Income (A); LMI=Lower Middle Income (B); UMI=Upper Middle Income (C); HI=High Income (D).

**Table A2: Structure and classification of Turkey's trade finance data by methods of payments, 2002-2012**

| Methods of Payments                                 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|------|------|------|------|------|------|------|------|------|------|------|
| Cash against Goods, Cash on Delivery                | ✓1   | ✓1   | ✓1   | ✓1   | ✓1   | ✓1   | ✓1   | ✓1   | ✓1   | ✓1   | ✓1   |
| Advanced Payment                                    | ✓2   | ✓2   | ✓2   | ✓2   | ✓2   | ✓2   | ✓2   | ✓2   | ✓2   | ✓2   | ✓2   |
| Cash Against Documents                              | ✓3   | ✓3   | ✓3   | ✓3   | ✓3   | ✓3   | ✓3   | ✓3   | ✓3   | ✓3   | ✓3   |
| By Acceptance Credit                                | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   |      |      |      |      |      |
| Advanced Letter of Credit                           | ✓4   | ✓4   | ✓4   | ✓4   | ✓4   | ✓4   | ✓4   | ✓4   |      |      |      |
| Letter of Credit Payable at a Specified Future Date | ✓4   | ✓4   | ✓4   | ✓4   | ✓4   | ✓4   | ✓4   | ✓4   | ✓4   | ✓4   | ✓4   |
| Without Waiver                                      | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   |
| Payment Type Uncertain                              | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   |      |      |      |
| Type of Payment with Abroad Credit(Public)          | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   |      |      |      |      |      |
| Account of Barter                                   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   |      |      |      |      |      |
| Private Barter                                      | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   |
| Letter of Credit                                    |      |      | ✓4   | ✓4   | ✓4   | ✓4   | ✓4   | ✓4   | ✓4   | ✓4   | ✓4   |
| Counter purchase                                    |      |      | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   |
| Letter of Credit with Acceptance Credit             |      |      | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   |
| Documents with Acceptance Credit                    |      |      | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   |
| Goods with Acceptance Credit                        |      |      | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   |
| Private Account                                     |      |      |      |      |      | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   | ✓5   |

*Notes:* Many different types of payment methods exist in the database and types vary greatly from year to year. A check mark (✓) means that international transactions recorded under this type of payment are available in that year. In order to make consistent analysis from year to year, these are grouped into five main categories: open account (1), cash-in advance (2), cash against documents (3), letter of credit (4) and other (5).

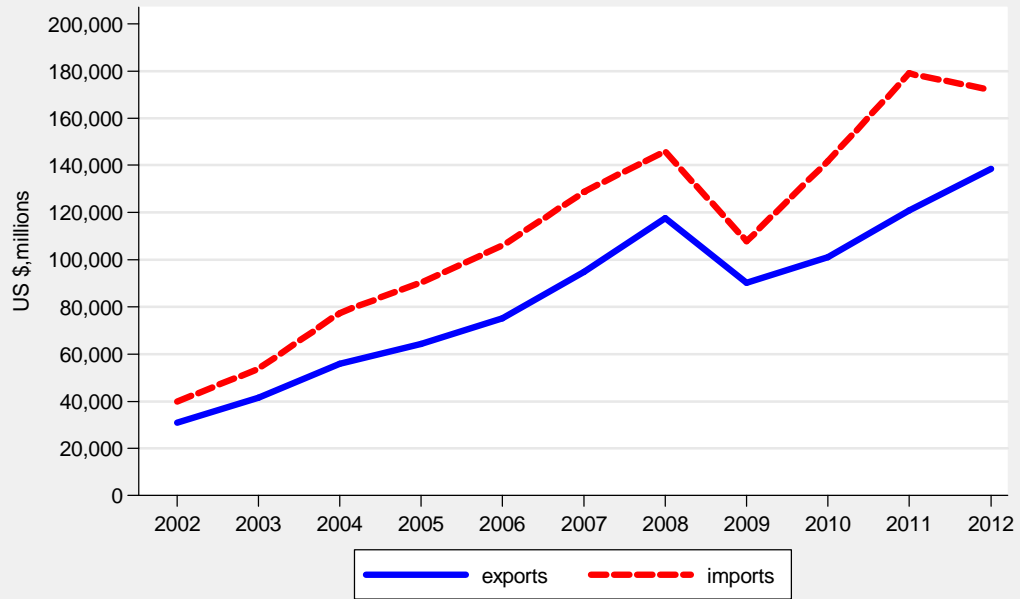
*Source:* TURKSTAT

**Table A3: Classification of manufacturing industries based on technology**

| <b>Industries</b>                                   | <b>ISIC Rev. 3</b> |
|---|--------------------|
| <b>High-technology industries (HT)</b>              |                    |
| Aircraft and spacecraft                             | 353                |
| Pharmaceuticals                                     | 2423               |
| Office, accounting and computing machinery          | 30                 |
| Radio, TV and communications equipment              | 32                 |
| Medical, precision and optical instruments          | 33                 |
| <b>Medium-high-technology industries (MHT)</b>      |                    |
| Electrical machinery and apparatus, n.e.c           | 31                 |
| Motor vehicles, trailers and semi-trailers          | 34                 |
| Chemicals excluding pharmaceuticals                 | 24 excl. 2423      |
| Railroad equipment and transport equipment, n.e.c   | 352+359            |
| Machinery and equipment, n.e.c                      | 29                 |
| <b>Medium-low-technology industries (MLT)</b>       |                    |
| Building and repairing of ships and boats           | 351                |
| Rubber and plastic products                         | 25                 |
| Coke, refined petroleum products and nuclear fuel   | 23                 |
| Other non-metallic mineral products                 | 26                 |
| Basic metals and fabricated metal products          | 27-28              |
| <b>Low-technology industries (LT)</b>               |                    |
| Manufacturing, n.e.c., Recycling                    | 36-37              |
| Wood, pulp, paper products, printing and publishing | 20-22              |
| Food products, beverages and tobacco                | 15-16              |
| Textiles, textile products, leather and footwear    | 17-19              |

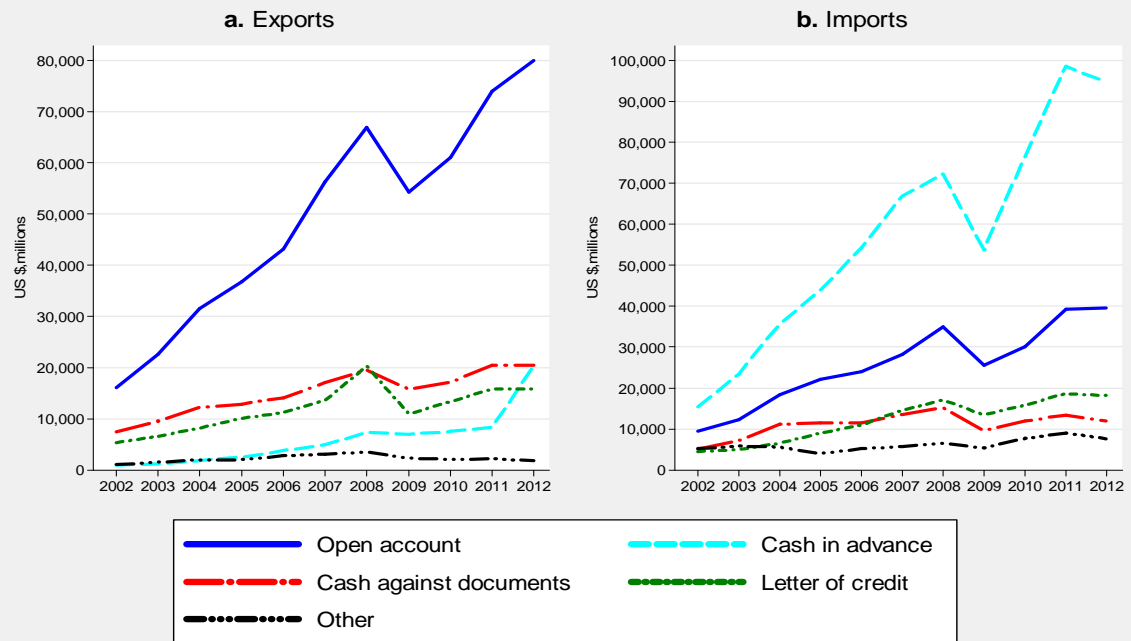
*Source:* OECD: ANBERD and STAN databases, May 2003

**Figure 1** Trade in manufactured goods (in million of US dollars, 2002-2012)



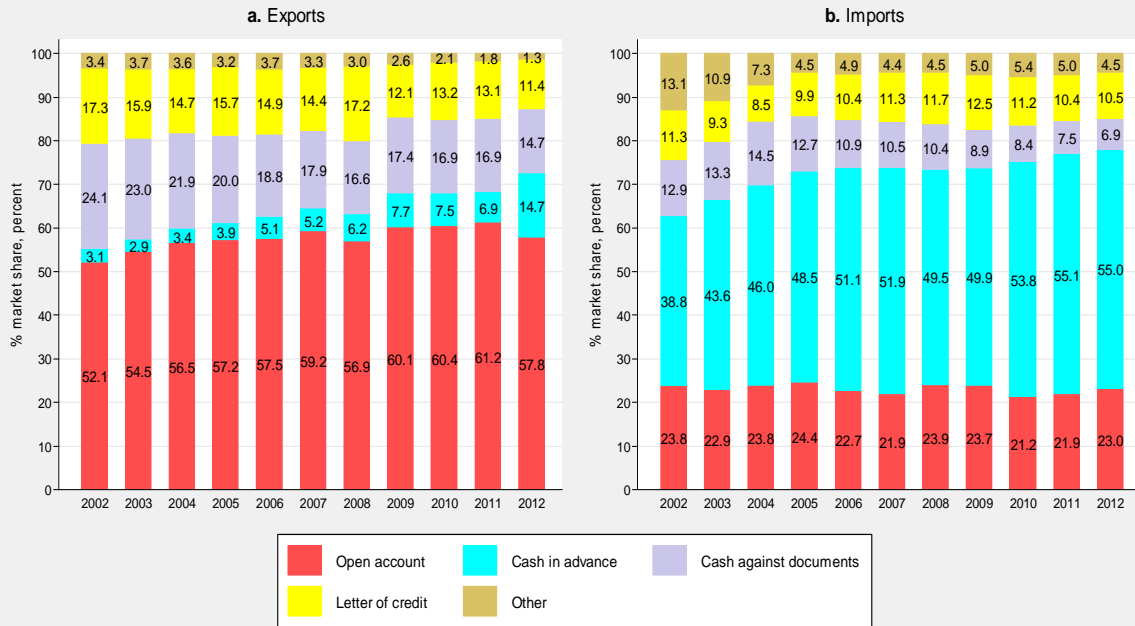
Source: TURKSTAT

**Figure 2** Trade by methods of payments (in million of US dollars, 2002-2012)



Source: TURKSTAT

**Figure 3** Share of trade by methods of payments (in percent, 2002-2012)



Source: TURKSTAT

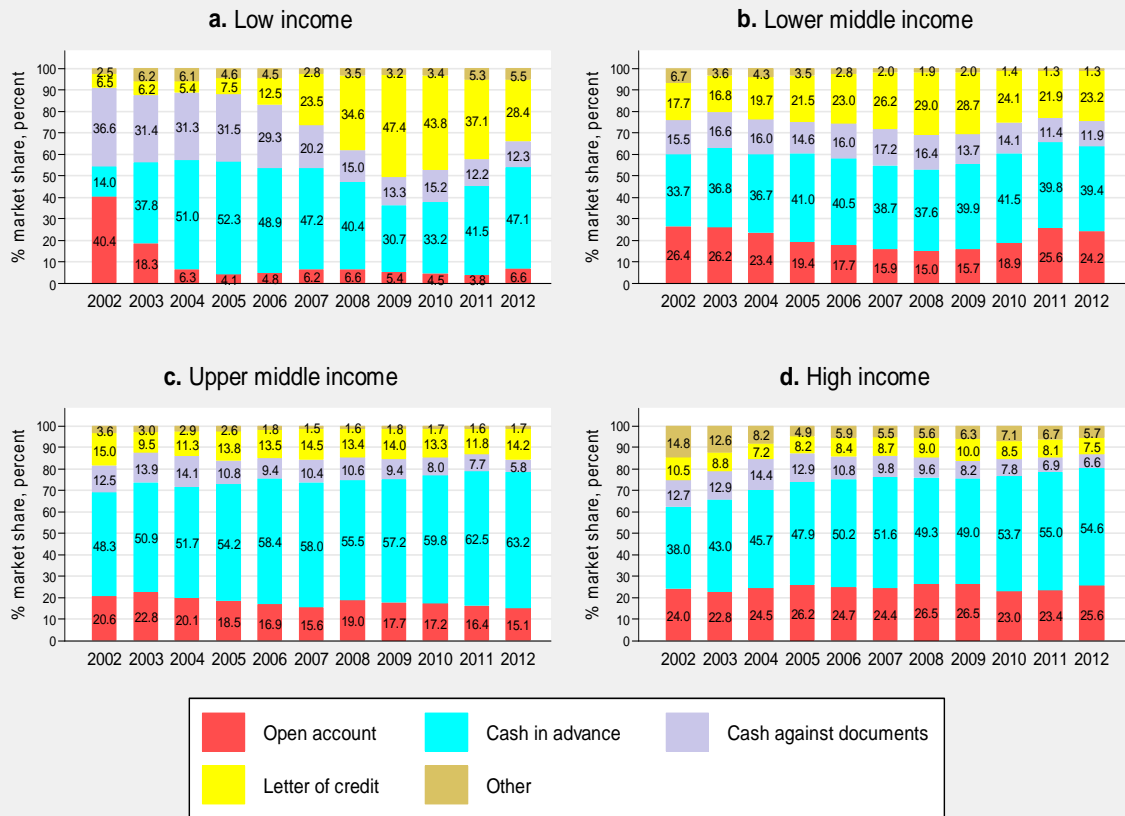


**Figure 4** Share of methods of payments in exports by income level (in percent, 2002-2012)



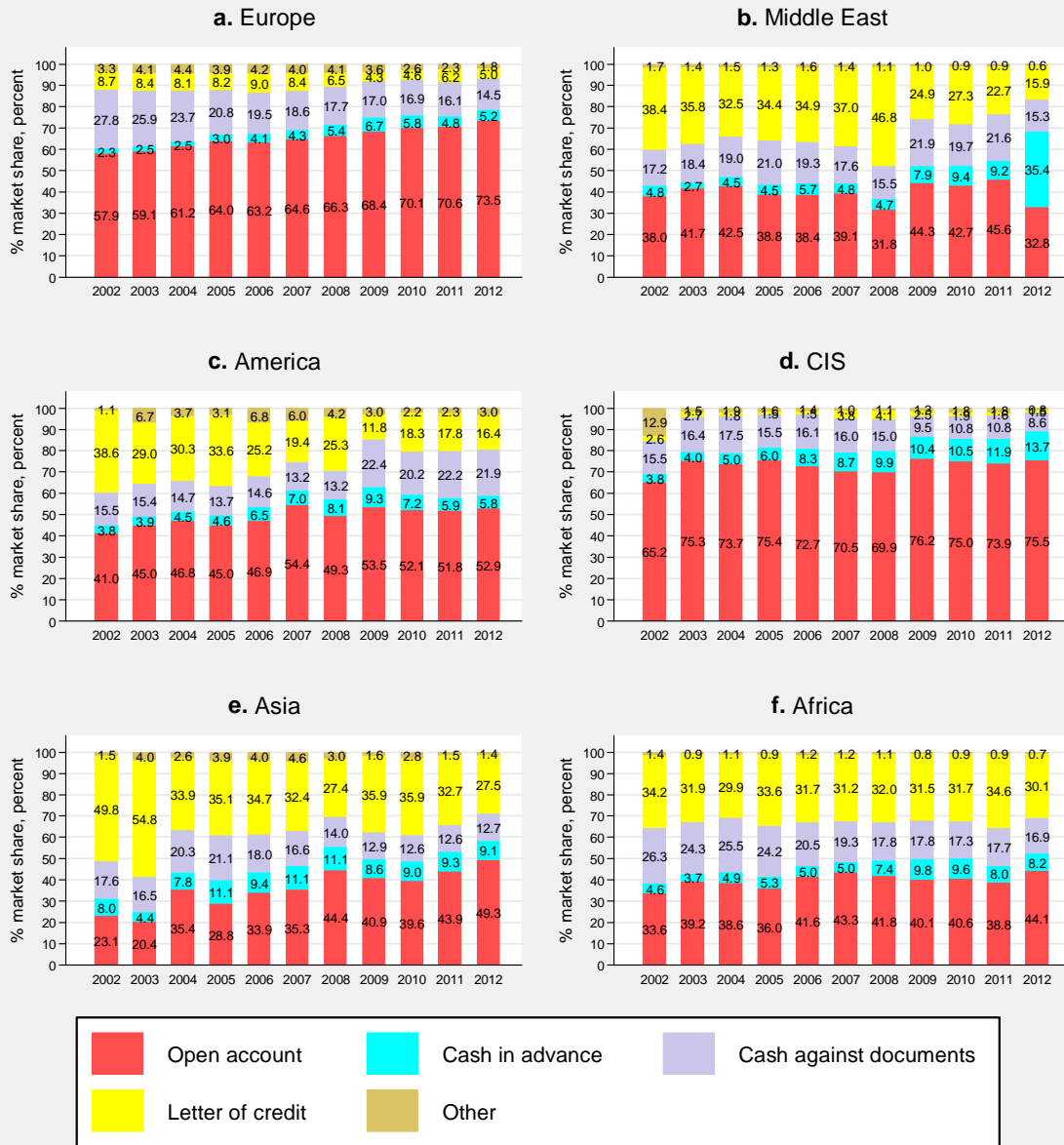
Source: TURKSTAT

**Figure 5** Share of methods of payments in imports by income level (in percent, 2002-2012)



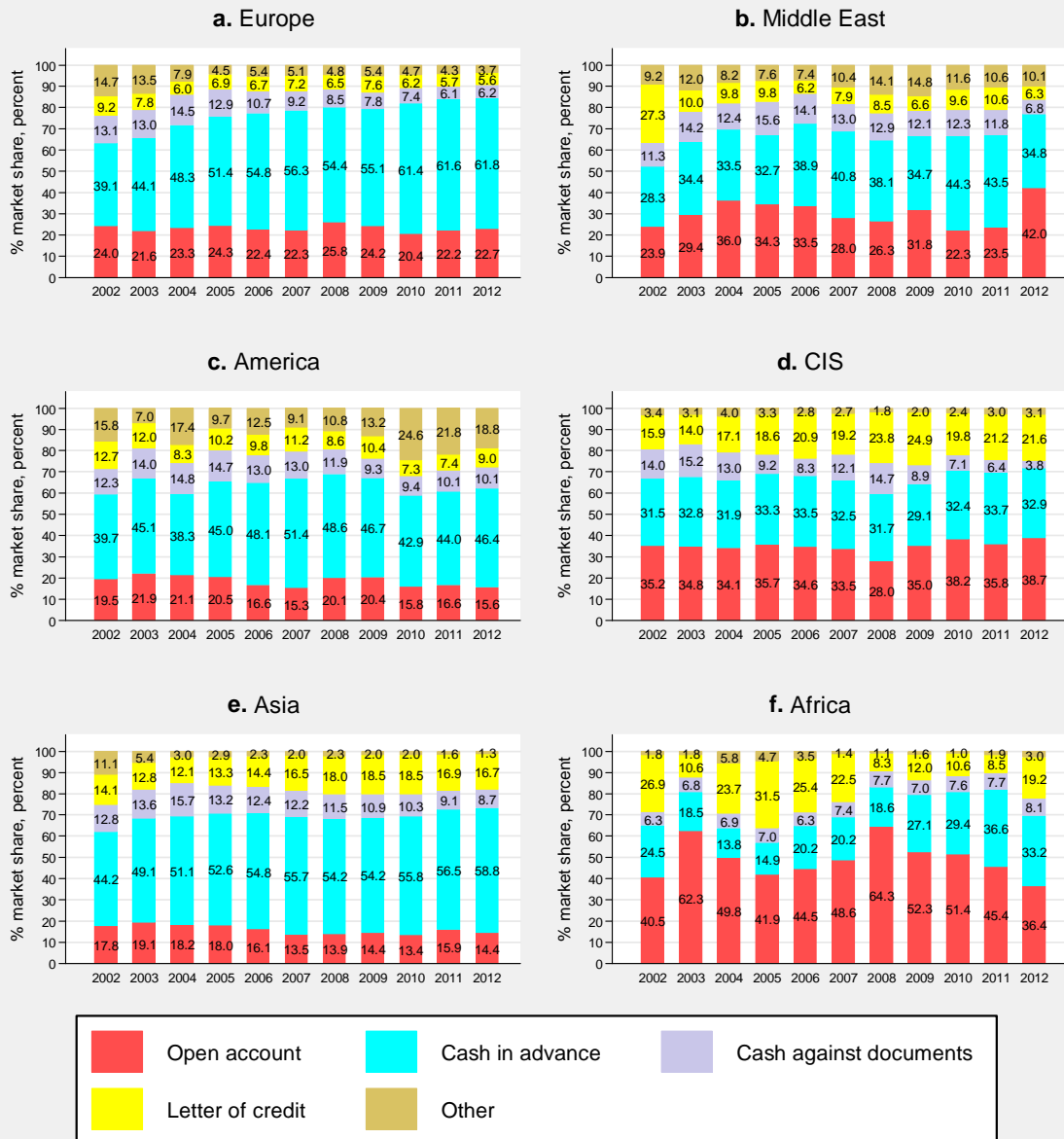
Source: TURKSTAT

**Figure 6** Share of methods of payments in exports by region (in percent, 2002-2012)



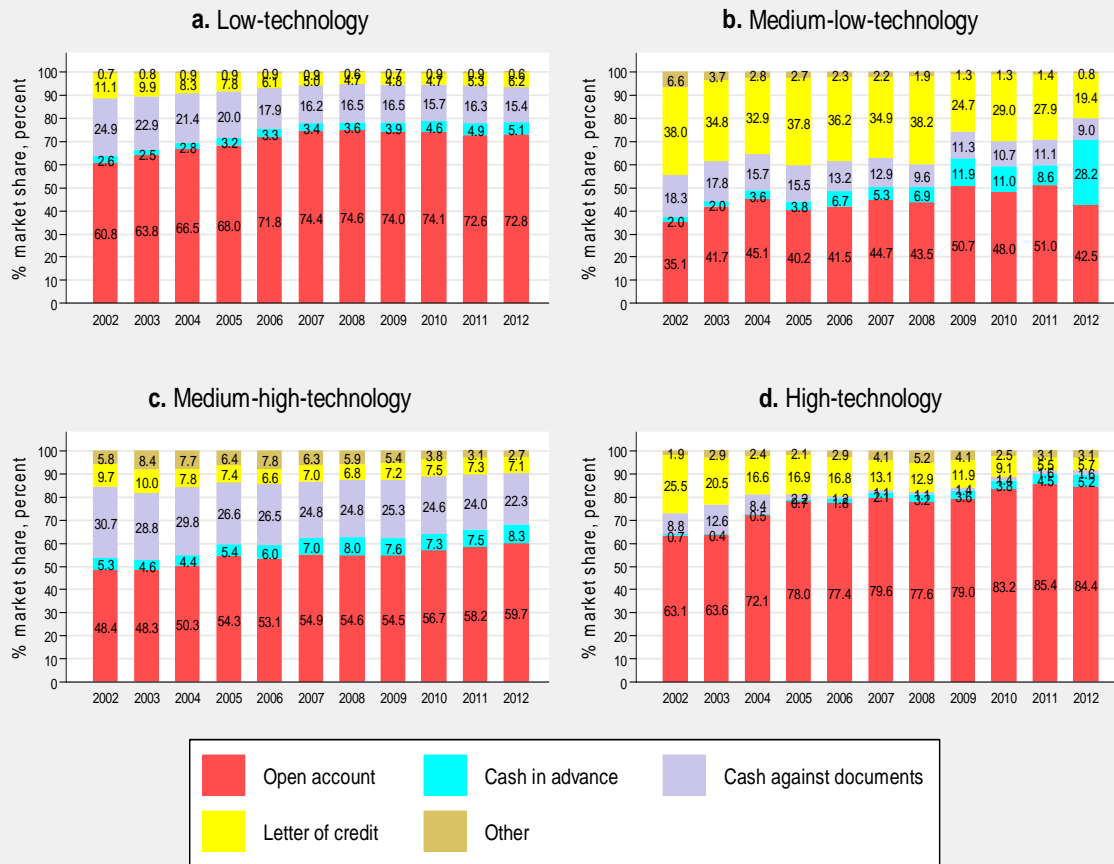
Source: TURKSTAT

**Figure 7** Share of methods of payments in imports by region (in percent, 2002-2012)



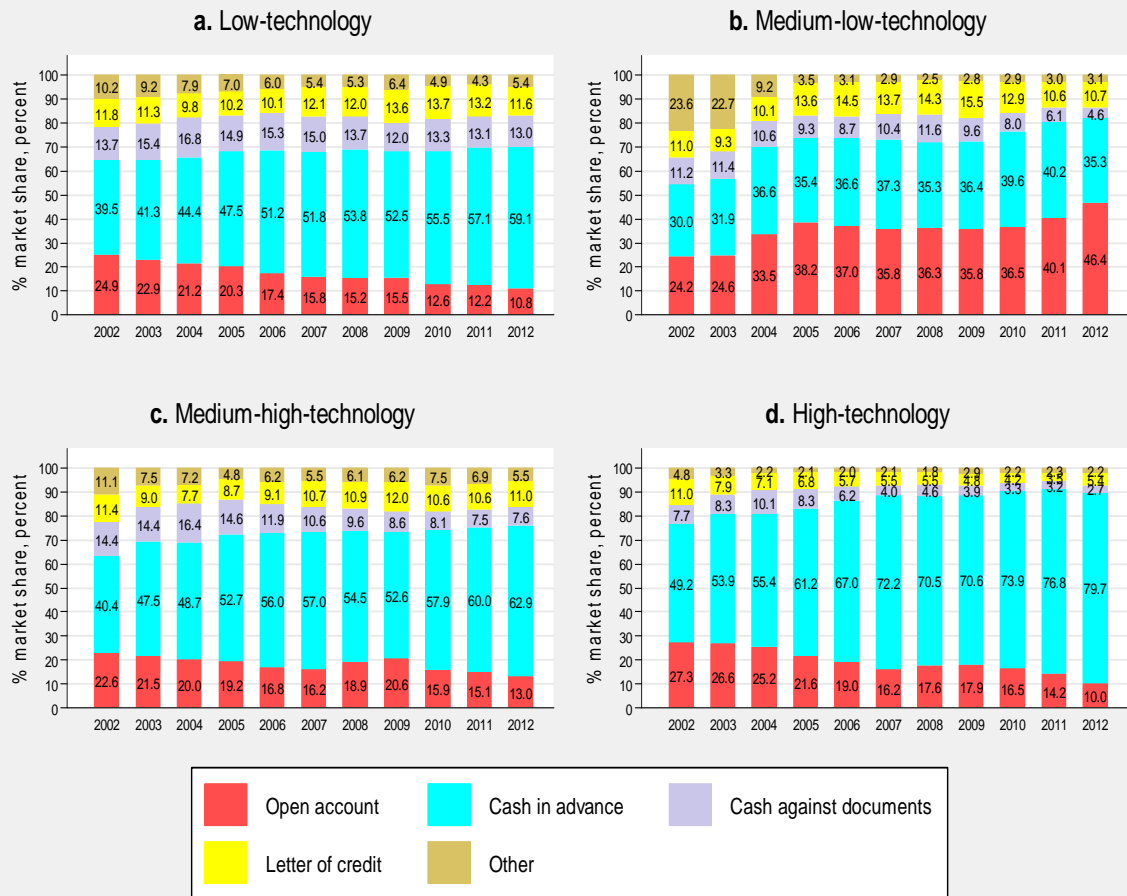
Source: TURKSTAT

**Figure 8** Share of methods of payments in exports by technological intensity (in percent, 2002-2012)



Source: TURKSTAT

**Figure 9** Share of methods of payments in imports by technological intensity (in percent, 2002-2012)



Source: TURKSTAT

**Table 1: Average usage of methods of payments in trade by income, region and industry group, (in percent, 2002-2012)**

| Sample    | Open account |       | Cash in advance |       | Cash against documents |       | Letter of credit |       | Other |       |
|-----------|--------------|-------|-----------------|-------|------------------------|-------|------------------|-------|-------|-------|
|           | Exp          | Imp   | Exp             | Imp   | Exp                    | Imp   | Exp              | Imp   | Exp   | Imp   |
| LI        | 45.91        | 9.72  | 8.92            | 40.37 | 15.69                  | 22.57 | 28.49            | 22.99 | 0.99  | 4.34  |
| LMI       | 48.00        | 20.75 | 8.85            | 38.70 | 17.32                  | 14.86 | 24.11            | 22.90 | 1.72  | 2.78  |
| UMI       | 52.99        | 18.16 | 8.68            | 56.33 | 20.14                  | 10.22 | 16.34            | 13.13 | 1.85  | 2.16  |
| HI        | 60.37        | 24.68 | 4.83            | 48.90 | 18.61                  | 10.22 | 12.90            | 8.62  | 3.28  | 7.58  |
| Europe    | 65.36        | 23.01 | 4.23            | 53.49 | 19.88                  | 9.94  | 7.04             | 6.85  | 3.48  | 6.71  |
| America   | 48.98        | 18.50 | 6.05            | 45.11 | 17.01                  | 12.05 | 24.15            | 9.73  | 3.81  | 14.60 |
| Asia      | 35.92        | 15.88 | 8.99            | 53.37 | 15.90                  | 11.86 | 36.39            | 15.63 | 2.81  | 3.26  |
| Middle E. | 39.60        | 30.07 | 8.51            | 36.74 | 18.78                  | 12.40 | 31.88            | 10.23 | 1.23  | 10.55 |
| CIS       | 73.03        | 34.88 | 8.38            | 32.29 | 13.80                  | 10.24 | 2.32             | 19.72 | 2.46  | 2.87  |
| Africa    | 39.78        | 48.85 | 6.49            | 23.36 | 20.69                  | 7.16  | 32.03            | 18.11 | 1.00  | 2.52  |
| LT        | 70.31        | 17.15 | 3.65            | 50.33 | 18.52                  | 14.20 | 6.72             | 11.76 | 0.79  | 6.56  |
| MLT       | 44.02        | 35.29 | 8.18            | 35.87 | 13.18                  | 9.25  | 32.16            | 12.38 | 2.46  | 7.20  |
| MHT       | 53.90        | 18.15 | 6.48            | 53.66 | 26.20                  | 11.25 | 7.68             | 10.16 | 5.75  | 6.79  |
| HT        | 76.67        | 19.29 | 2.42            | 66.39 | 3.77                   | 5.67  | 14.04            | 6.13  | 3.11  | 2.53  |
| Overall   | 57.59        | 23.04 | 6.06            | 49.38 | 18.94                  | 10.62 | 14.54            | 10.64 | 2.87  | 6.32  |

*Notes:* Income classifications according to the World Bank classification: LI=Low Income; LMI=Lower Middle Income; UMI=Upper Middle Income; HI=High Income (See Table A1). Regional classifications according to the World Trade Organization classification (See Table A1). Industry classifications according to the OECD technology intensity classification: LT= Low-tech; MLT= Medium-low-tech; MHT= Medium-high-tech; HT= High-tech (See Table A3).

*Source:* TURKSTAT, author's own calculations.

**Table 2: Changes in shares of methods of payments in trade by income, region and industry group, (in percent, 2012 vs. 2002)**

| Sample    | Open account |        | Cash in advance |        | Cash against documents |        | Letter of credit |        | Other  |        |
|-----------|--------------|--------|-----------------|--------|------------------------|--------|------------------|--------|--------|--------|
|           | Exp          | Imp    | Exp             | Imp    | Exp                    | Imp    | Exp              | Imp    | Exp    | Imp    |
| LI        | -19.60       | -83.54 | 153.93          | 236.27 | 28.59                  | -66.43 | -2.56            | 339.81 | 56.38  | 117.13 |
| LMI       | 33.42        | -8.43  | 166.60          | 17.19  | -39.59                 | -23.67 | -42.26           | 31.28  | -28.67 | -80.60 |
| UMI       | -7.59        | -26.60 | 322.64          | 30.94  | -13.95                 | -53.51 | -44.10           | -5.48  | -70.18 | -54.46 |
| HI        | 21.90        | 6.39   | 299.62          | 43.53  | -45.72                 | -47.97 | -39.65           | -28.14 | -56.01 | -61.27 |
| Europe    | 26.81        | -5.41  | 128.92          | 58.11  | -47.85                 | -52.84 | -42.30           | -38.80 | -44.34 | -74.82 |
| America   | 29.15        | -19.88 | 51.90           | 17.05  | 40.80                  | -17.60 | -57.56           | -29.21 | 178.71 | 18.88  |
| Asia      | 113.80       | -18.83 | 13.98           | 33.02  | -27.75                 | -31.72 | -44.82           | 18.05  | -9.48  | -88.07 |
| Middle E. | -13.57       | 75.99  | 641.76          | 22.96  | -10.76                 | -39.87 | -58.64           | -76.96 | -65.25 | 9.62   |
| CIS       | 15.74        | 9.80   | 263.52          | 4.44   | -44.71                 | -73.11 | -44.31           | 35.76  | -94.12 | -8.75  |
| Africa    | 31.27        | -10.05 | 77.62           | 35.33  | -35.63                 | 28.69  | -11.85           | -28.41 | -49.63 | 67.41  |
| LT        | 19.83        | -56.54 | 92.25           | 49.75  | -38.18                 | -4.64  | -44.10           | -1.41  | -17.31 | -46.61 |
| MLT       | 21.23        | 91.90  | 1289.35         | 17.43  | -50.79                 | -59.08 | -48.87           | -2.59  | -87.71 | -87.04 |
| MHT       | 23.48        | -42.65 | 55.96           | 55.75  | -27.55                 | -47.68 | -27.25           | -3.42  | -54.52 | -50.35 |
| HT        | 33.81        | -63.29 | 615.34          | 61.92  | -81.97                 | -64.50 | -77.77           | -50.83 | 65.21  | -54.54 |
| Overall   | 10.94        | -3.30  | 374.02          | 41.66  | -38.91                 | -45.99 | -34.08           | -6.99  | -60.09 | -66.09 |

*Notes:* Income classifications according to the World Bank classification: LI=Low Income; LMI=Lower Middle Income; UMI=Upper Middle Income; HI=High Income (See Table A1). Regional classifications according to the World Trade Organization classification (See Table A1). Industry classifications according to the OECD technology intensity classification: LT= Low-tech; MLT= Medium-low-tech; MHT= Medium-high-tech; HT= High-tech (See Table A3).

*Source:* TURKSTAT, author's own calculations.



**Table 3: Changes in shares of methods of payments in trade due to 2008-2009 crisis by income, region and industry group, (in percent, 2009 vs. 2008)**

| Sample    | Open account |        | Cash in advance |        | Cash against documents |        | Letter of credit |        | Other  |        |
|-----------|--------------|--------|-----------------|--------|------------------------|--------|------------------|--------|--------|--------|
|           | Exp          | Imp    | Exp             | Imp    | Exp                    | Imp    | Exp              | Imp    | Exp    | Imp    |
| LI        | 6.29         | -17.67 | -22.58          | -24.05 | -3.01                  | -10.89 | 2.39             | 37.08  | -12.27 | -8.90  |
| LMI       | -11.29       | 4.67   | 47.88           | 6.02   | 9.12                   | -16.67 | 0.17             | -0.93  | -12.11 | 2.05   |
| UMI       | -0.75        | -6.92  | -14.27          | 3.09   | 8.63                   | -11.12 | 3.04             | 4.28   | -27.05 | 12.77  |
| HI        | 10.62        | -0.13  | 35.20           | -0.51  | 2.34                   | -14.36 | -48.85           | 11.58  | -7.14  | 11.01  |
| Europe    | 3.21         | -6.27  | 22.57           | 1.32   | -4.05                  | -8.58  | -33.58           | 16.47  | -10.91 | 11.66  |
| America   | 8.52         | 1.31   | 15.06           | -4.03  | 70.30                  | -21.94 | -53.37           | 21.52  | -28.05 | 22.91  |
| Asia      | -7.86        | 3.60   | -22.67          | -0.08  | -7.67                  | -4.86  | 30.92            | 2.69   | -46.11 | -16.38 |
| Middle E. | 39.01        | 20.72  | 67.94           | -8.92  | 41.72                  | -6.60  | -46.91           | -22.77 | -10.32 | 5.31   |
| CIS       | 9.12         | 25.19  | 4.88            | -7.96  | -36.49                 | -39.16 | -38.11           | 4.29   | 18.01  | 10.39  |
| Africa    | -4.00        | -18.70 | 33.37           | 45.64  | 0.20                   | -9.02  | -1.71            | 45.52  | -25.11 | 44.89  |
| LT        | -0.82        | 2.07   | 10.91           | -2.41  | 0.04                   | -12.42 | 1.66             | 13.16  | 24.20  | 20.77  |
| MLT       | 16.71        | -1.36  | 73.93           | 3.04   | 17.99                  | -17.27 | -35.40           | 8.00   | -27.96 | 11.51  |
| MHT       | -0.12        | 9.25   | -4.73           | -3.54  | 1.92                   | -11.08 | 7.15             | 10.30  | -8.73  | 2.09   |
| HT        | 1.81         | 1.54   | 13.07           | 0.09   | 19.91                  | -15.02 | -7.39            | -12.71 | -21.30 | 58.49  |
| Overall   | 5.63         | -0.75  | 23.72           | 0.74   | 4.80                   | -14.36 | -29.53           | 6.74   | -13.38 | 11.54  |

*Notes:* Income classifications according to the World Bank classification: LI=Low Income; LMI=Lower Middle Income; UMI=Upper Middle Income; HI=High Income (See Table A1). Regional classifications according to the World Trade Organization classification (See Table A1). Industry classifications according to the OECD technology intensity classification: LT= Low-tech; MLT= Medium-low-tech; MHT= Medium-high-tech; HT= High-tech (See Table A3).

*Source:* TURKSTAT, author's own calculations.

**Table 4: Changes in value and shares of Turkey's trade by income, region and industry group, (2012 vs. 2002)**

| Sample   | Value (\$ millions) |         |            |        |         |            | Share (%) |       |            |       |       |            |
|----------|---------------------|---------|------------|--------|---------|------------|-----------|-------|------------|-------|-------|------------|
|          | Exp                 |         |            | Imp    |         |            | Exp       |       |            | Imp   |       |            |
|          | 2002                | 2012    | Change (%) | 2002   | 2012    | Change (%) | 2002      | 2012  | Change (%) | 2002  | 2012  | Change (%) |
| LI       | 178                 | 2,551   | 1,334.40   | 86     | 1,472   | 1,603.06   | 0.57      | 1.84  | 220.47     | 0.22  | 0.86  | 293.93     |
| LMI      | 1,645               | 11,569  | 603.39     | 2,122  | 15,432  | 627.19     | 5.32      | 8.36  | 57.15      | 5.33  | 8.97  | 68.20      |
| UMI      | 3,690               | 40,480  | 996.96     | 4,234  | 36,834  | 769.89     | 11.93     | 29.24 | 145.08     | 10.64 | 21.41 | 101.21     |
| HI       | 25,415              | 83,830  | 229.85     | 33,350 | 118,297 | 254.71     | 82.18     | 60.56 | -26.31     | 83.81 | 68.76 | -17.95     |
| Europe   | 19,697              | 59,371  | 201.42     | 27,036 | 85,926  | 217.82     | 63.69     | 42.89 | -32.66     | 67.94 | 49.95 | -26.49     |
| America  | 3,706               | 9,184   | 147.82     | 2,988  | 12,224  | 309.08     | 11.98     | 6.63  | -44.63     | 7.51  | 7.11  | -5.38      |
| Asia     | 1,089               | 5,193   | 377.04     | 5,512  | 43,630  | 691.50     | 3.52      | 3.75  | 6.58       | 13.85 | 25.36 | 83.08      |
| Middle E | 2,905               | 37,295  | 1,183.60   | 938    | 9,852   | 950.63     | 9.39      | 26.94 | 186.78     | 2.36  | 5.73  | 143.02     |
| CIS      | 2,050               | 14,919  | 627.72     | 2,516  | 16,690  | 563.45     | 6.63      | 10.78 | 62.58      | 6.32  | 9.70  | 53.46      |
| Africa   | 1,480               | 12,467  | 742.39     | 803    | 3,713   | 362.29     | 4.79      | 9.01  | 88.20      | 2.02  | 2.16  | 6.93       |
| LT       | 14,630              | 42,030  | 187.29     | 6,213  | 22,795  | 266.86     | 47.30     | 30.36 | -35.82     | 15.61 | 13.25 | -15.14     |
| MLT      | 6,695               | 51,841  | 674.27     | 9,075  | 54,585  | 501.46     | 21.65     | 37.45 | 72.98      | 22.81 | 31.73 | 39.12      |
| MHT      | 8,003               | 41,438  | 417.81     | 20,224 | 80,558  | 298.33     | 25.88     | 29.93 | 15.69      | 50.82 | 46.83 | -7.86      |
| HT       | 1,599               | 3,120   | 95.07      | 4,280  | 14,098  | 229.36     | 5.17      | 2.25  | -56.42     | 10.76 | 8.19  | -23.82     |
| Overall  | 30,927              | 138,429 | 347.59     | 39,793 | 172,035 | 332.32     |           |       |            |       |       |            |

*Notes:* Income classifications according to the World Bank classification: LI=Low Income; LMI=Lower Middle Income; UMI=Upper Middle Income; HI=High Income (See Table A1). Regional classifications according to the World Trade Organization classification (See Table A1). Industry classifications according to the OECD technology intensity classification: LT= Low-tech; MLT= Medium-low-tech; MHT= Medium-high-tech; HT= High-tech (See Table A3).

*Source:* TURKSTAT, author's own calculations.

**Table 5: Changes in value and shares of Turkey's trade by income, region and industry group, (2009 vs. 2008)**

| Sample   | Value (\$ millions) |        |            |         |         |            | Share (%) |       |            |       |       |            |
|----------|---------------------|--------|------------|---------|---------|------------|-----------|-------|------------|-------|-------|------------|
|          | Exp                 |        |            | Imp     |         |            | Exp       |       |            | Imp   |       |            |
|          | 2008                | 2009   | Change (%) | 2008    | 2009    | Change (%) | 2008      | 2009  | Change (%) | 2008  | 2009  | Change (%) |
| LI       | 1,432               | 1,421  | -0.77      | 678     | 722     | 6.58       | 1.22      | 1.57  | 29.12      | 0.46  | 0.67  | 44.15      |
| LMI      | 9,023               | 8,353  | -7.43      | 12,335  | 8,111   | -34.24     | 7.68      | 9.25  | 20.46      | 8.46  | 7.52  | -11.06     |
| UMI      | 23,145              | 21,100 | -8.84      | 30,102  | 22,203  | -26.24     | 19.69     | 23.36 | 18.63      | 20.64 | 20.59 | -0.24      |
| HI       | 83,941              | 59,456 | -29.17     | 102,763 | 76,818  | -25.25     | 71.41     | 65.82 | -7.83      | 70.44 | 71.22 | 1.11       |
| Europe   | 64,798              | 49,495 | -23.62     | 75,508  | 55,815  | -26.08     | 55.13     | 54.79 | -0.61      | 51.76 | 51.75 | -0.02      |
| America  | 6,255               | 4,567  | -26.98     | 10,281  | 8,077   | -21.44     | 5.32      | 5.06  | -4.98      | 7.05  | 7.49  | 6.25       |
| Asia     | 4,062               | 3,594  | -11.53     | 32,189  | 25,188  | -21.75     | 3.46      | 3.98  | 15.13      | 22.07 | 23.35 | 5.84       |
| Middle E | 22,193              | 16,081 | -27.54     | 4,331   | 3,438   | -20.62     | 18.88     | 17.80 | -5.71      | 2.97  | 3.19  | 7.36       |
| CIS      | 12,754              | 7,720  | -39.47     | 20,393  | 13,116  | -35.68     | 10.85     | 8.55  | -21.24     | 13.98 | 12.16 | -13.01     |
| Africa   | 7,480               | 8,874  | 18.63      | 3,176   | 2,220   | -30.10     | 6.36      | 9.82  | 54.36      | 2.18  | 2.06  | -5.46      |
| LT       | 33,251              | 28,727 | -13.61     | 18,785  | 15,405  | -17.99     | 28.29     | 31.80 | 12.42      | 12.88 | 14.28 | 10.92      |
| MLT      | 40,681              | 28,707 | -29.43     | 47,148  | 29,240  | -37.98     | 34.61     | 31.78 | -8.17      | 32.32 | 27.11 | -16.12     |
| MHT      | 40,901              | 30,589 | -25.21     | 68,210  | 53,088  | -22.17     | 34.80     | 33.86 | -2.68      | 46.76 | 49.22 | 5.27       |
| HT       | 2,709               | 2,307  | -14.84     | 11,734  | 10,120  | -13.75     | 2.30      | 2.55  | 10.81      | 8.04  | 9.38  | 16.65      |
| Overall  | 117,542             | 90,330 | -23.15     | 145,878 | 107,854 | -26.07     |           |       |            |       |       |            |

*Notes:* Income classifications according to the World Bank classification: LI=Low Income; LMI=Lower Middle Income; UMI=Upper Middle Income; HI=High Income (See Table A1). Regional classifications according to the World Trade Organization classification (See Table A1). Industry classifications according to the OECD technology intensity classification: LT= Low-tech; MLT= Medium-low-tech; MHT= Medium-high-tech; HT= High-tech (See Table A3).

*Source:* TURKSTAT, author's own calculations.