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The Euro: An International Invoicing Currency?

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The Euro

An International Invoicing Currency?

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Abstract: This article deals with the use of the euro in international trade, particularly as a unit of account. It seeks to analyze the evolution of the single currency in its essential facet of international currency, especially in the academic sphere, by examining the ideas and assumptions made by economists prior to the launch of the euro, right up to today's crisis. Although data regarding international trade invoicing are scarce, stylized facts reveal that the euro is a high and stable invoicing currency regionally, but not internationally. Indeed, the euro has failed to reach the status of vehicle currency: the euro is used only on specific markets where exporters are able to choose the currency of denomination. Moreover, since the euro was conceived in a neoclassical way, it is subject to institutional concerns, especially a lack of political support to foster a dynamics of internationalization.

Keywords invoicing currency; currency internationalization; euro; international trade

The euro was officially launched in 1999. Given the uniqueness of the European project, many analysts had commented on the single currency even before its start. The bulk of standard analysis predicted the advent of a currency of international scope. Yet, as of now, the euro is in crisis, and looks very unlikely to displace the U.S. dollar in the various functions that characterize an international currency.

We will focus on international trade invoicing—the unit of account function of a currency for private actors (Bekx 1998; Pollard 2001)—by which we mean the currency in which international transaction prices are expressed, especially the exchanges of goods and services. This facet of money appears to be central in the functioning of any currency and comes close to what Keynes called the “money of account” (Keynes 1930: 3–4; see also Desmedt and Piegay 2007). Moreover, “before any monetary instruments exist, there must be a unit of account” (Tymoigne

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2006: 4). Usually considered as one of a currency's functions, it is "the language which gives meaning to the other two functions" (Alary 2006: 449),¹ namely, its reserve and payment functions. Indeed, the store of value function is only meaningful in relation to the ability of money to maintain socially validated wealth, that is, private wealth accepted by all. The polarization of agents on a unit of account accepted by all is therefore essential. The study of the invoicing function seems all the more crucial because a currency cannot be defined as an international vehicle without a dominant role in international trade invoicing. The purpose of this article is to study the role of the euro in international trade invoicing and to determine the extent to which the euro is internationalized.

Many academic works published in the 1990s and at the beginning of the 2000s argued that the euro could become an international currency with credentials to challenge the U.S. dollar, or even ultimately supplant it. The academic literature on trade invoicing supported this optimistic view, emphasizing some economic determinants and criteria that the single currency seemed to fulfill.

THE STANDARD LITERATURE OF THE 1990s AND 2000s

The launch of the euro provoked a craze among many analysts, who wrote excessively optimistic pieces on the euro's alleged prospects for becoming an international currency. The huge size of the Eurozone economy and its integration in international trade justified these hopes, thereby identifying the single currency as a serious challenger to the U.S. dollar.

The Launch of the Euro

The single currency was originally perceived as the ultimate accomplishment of European unification (Committee for the Study of Economic and Monetary Union 1989). The single currency simultaneously raised the hopes of the emergence of an international currency. It was motivated by two goals: (1) to insulate Europe from the vagaries of the dollar, and (2) to address the problems faced by the European Monetary System (EMS), that is, speculative attacks on the currencies of peripheral Europe and regional hegemony of a sovereign currency, the deutsche mark (DM). Although official statements do not refer to a goal of internationalization of the single currency, an international ambition had been associated with the euro, which its proponents promoted in official circles (Moss 2009). The media widely enthused about the event of the euro, publicizing European Union (EU) statements and celebrating the success of the operation.

This media coverage was supported by a plethora of academic papers on the euro. The single currency, it was assumed, would bring several benefits: (1) it would eliminate transaction costs, which would generate gains in traded volume; (2) it would put an end to the destabilizing effects of capital flows caused by speculation among the Eurozone members; (3) whereas a fixed exchange rate system does not eliminate the risk that a member country will alter the parity, the single currency eliminates the risk of any change in par values (Gandolfo 2004: 166). The credibility of European countries would be enhanced as a result, at the time when the "corner solutions" of exchange rate regimes were in vogue. These arguments were directly inspired by the crisis of the EMS during the 1990s; (4) the achievement of European integration; and (5) the coming of a currency with worldwide scope. We will focus on this last perspective in order to determine the extent to which the euro can be defined as an international currency.

The majority of economic studies that preceded the launch of the euro expected that the single currency would be able to compete in the long run with the dollar, or even supplant it, not only as a reserve currency but also as an invoicing currency (Arjona and Steinherr 1999; Bekx 1998; Chinn and Frankel 2008; Ilzkovitz 1996; Pollard 2001; Portes and Rey 1998). The foreign exchange market should have undergone a euro surge, following agents' increased acceptance of the single currency for their foreign trade and in their financial transactions due to the further liberalization of capital markets (Bekx 1998). Given that the last international financial crisis originated in the United States, such an outcome was envisioned at least in its early stages. In addition, it was rendered more credible by the alleged decline of the United States because of its continuous current account deficits and the doubts that the dollar inspired (Chinn and Frankel 2008). Be that as it may, the launch of the euro at least had the beneficial effect of raising academic interest in currency used for the denomination of international trade (Auboin 2012).

The Academic Literature on International Trade Invoicing

These optimistic views on the future of the euro were in line with a strand of theoretical and empirical studies that had developed a theory of the choice of invoicing currency in international trade, some of which used econometric models. Most authoritative analyses, coming especially from macroeconomics, study international trade invoicing for its macroeconomic as well as microeconomic implications (Bacchetta and van Wincoop 2005; Goldberg and Tille 2006, 2013). These analyses purport to show that the choice of the currency for international trade depends on several criteria that the issuing economy must meet.

The size of the country is one of those criteria (Bacchetta and van Wincoop 2005). The larger the country in terms of gross domestic product (GDP), the more potentially important its market. Foreign exporters tend to invoice in the currency of this market, especially because they will find easier outlets by taking into account local competitors. The *hedging effect* encourages players to fall in line with a common unit of account often linked to a large economy. Consequently, the hedging effect fosters the inertia of the currency initially selected. Thus, size plays a decisive role in invoicing practices. Firms also tend to invoice all their exports (globally) in one currency only, usually that of their largest market (Benguria and Wagner 2012). In the case of the Eurozone, the authors who studied the invoicing of international trade expected a strong adhesion of international private actors to the single currency shared by eleven countries (nineteen countries in 2015 with the entries of Latvia on January 1, 2014, and Lithuania on January 1, 2015) and more than 320 million people.² Such views were echoed by some European officials, such as Otmar Issing (at the time a member of the Directorate of the Bundesbank): "In the longer term, however, it is quite possible to foresee the euro assuming growing importance, since it will be backed by a large economic area—particularly as it is precisely in the case of invoicing currencies that market size is obviously a major factor" (Issing 1997: 5). Considering the Eurozone as a huge and attractive market with only one currency ("one money, one market"), it seemed reasonable to raise the question of whether the euro might eventually supplant the U.S. dollar.

In these analyses, currency is seen mainly as a means of reducing transaction costs arising from exchanges between agents. At the international level, the coexistence of many currencies within a single economic area implies as many transaction costs related to the connections between agents who speak different monetary languages. The fact that twelve currencies were

replaced by only one at the time of the launch of the euro was thought of as a fall of transaction costs (Pollard 2001), and was supposed to help encourage euro usage.

In addition, monetary stability is decisive and influences the choice of invoicing currency (Kamps 2006). Private actors will invoice their exchanges in a currency that is relatively stable and safe from monetary fluctuations. In the Eurozone, the stability of the single currency is continually emphasized, even in the symbol representing it.³ Besides, the inflation rate is remarkably low in the Eurozone (between 1996 and 2013, inflation in the countries of the Eurozone was on average 1.95 percent⁴), with the chief task of monetary authorities being to maintain price stability (with an annual inflation target of 2 percent). Thus, the criterion of price stability is met. The monetary policy of the Eurozone is conservative.⁵ Price stability is usually viewed as a prerequisite to accessing international monetary leadership (Walter 2006). Finally, given that the Eurozone is made up of countries that have completed their financial liberalization, there are no institutional or financial barriers preventing agents from acquiring the currency *a priori*. On that basis, the euro was seen as a serious competitor for the dollar.

THE EVOLUTION OF EURO INVOICING

We examine the evolution of euro invoicing from the beginning of the twenty-first century to the most recent public data. A regrettable hindrance to this work is the scarcity of data on international trade invoicing. This study is based on reports from Eurostat, the European Central Bank, and academic works that reference privileged sources of data.

From the Deutsche Mark to the Euro

European currencies were merged into a single currency, the euro. Transactions recorded between different European countries became some sort of “domestic” transactions (Moss 2011). In the 1990s the dominance of the DM was clearly beyond doubt in the EU, especially in the currency denomination of international trade. Eurostat now published aggregated data on the international trade invoicing of the European Union members by country. Such data do not permit us to infer a potential followership of some European economies behind one major economy in the area. This “one size fits all” implies that key indicators of heterogeneity and asymmetries in the area get lost in translation as the ability of a member country to expand its own means of payment to the neighboring countries—which are also members countries. The likely monetary leadership within the Eurozone is thus concealed by what is known as the “sharing” of the currency. A historical approach also gives little credence to the notion of currency “sharing” insofar as throughout history the sovereign states have routinely sought monetary leadership *vis-à-vis* their neighbors (as opposed to currency sharing). In Europe, the members of the Eurozone opted for what Cohen (2002) called the “deterritorialization” of their currencies, which was achieved through monetary union.

The monetary authority in charge of the management of the euro has no official ties with the governments of member states. Such a split between a currency and a sovereign nation is unparalleled in monetary history (Goodhart 1998). The euro countries experimented with a monetary construct meant to be “depoliticized” and sheltered from the fiat of a political sovereign. Yet,

political differences do not disappear and can constitute an obstacle to the internationalization of the currency (Frieden 2000). The choice of level of the exchange rate and even the decisions relative to the internationalization of the euro are subject to conflicts among various interest groups within the area. Macroeconomic indicators such as growth, the unemployment rate, or external balance have been studied in order to determine the divergent consequences of the European Central Bank (ECB) monetary policy on the various member states in the area. These indicators suggest a dominant position of the German economy, with some empirical studies evoking the “German dominance hypothesis” within the European Monetary System and then the European Monetary Union (EMU), although this hypothesis has not reached a consensus among economists (Bajo-Rubio and Montávez-Garcés 2002). Finally, the design of monetary policy in the EMU was obviously inspired by the Bundesbank (Guttman 2003: 153; Bibow 2013).

In the pre-euro period, each European country provided data that reflected, as far as Europe was concerned, the domination of the DM in invoicing practices (Page 1977; Tavlas 1991). In the 1990s, Germany was the only country whose share of currency use was higher than that of its international trade, with the obvious exception of the United States. The internationalization ratio (the share of the national currency in international trade invoicing over the weight of the country in international trade) was 1.4 for the deutsche mark in 1992 and 3.6 for the U.S. dollar (Ilzkovitz 1994). Other European countries in the sphere of influence of the DM consequently use the German currency (see Tables 1, 2, and 3 for the case of France). The importance of the DM was even greater for Italy and for the Netherlands than for France, as noted by later studies (e.g., Bekx 1998). In Europe, the use of the dollar has always been weak relative to the rest of the world. The use of European national currencies was well established, but combined with an important share of the DM in European trade. For example, in the 1980s, almost 60 percent of French exports to the European Economic Community were invoiced in French francs (Table 2), and approximately 15 percent were in DM, which was much more than the share of the dollar (barely 4 percent). Thus, the success of the European currency at the regional level can be viewed as the continuance of the European invoicing practices, considering the formerly dominant role of the mark in Europe.

As a matter of fact, Germany was the European country that had the highest degree of monetary autonomy in the framework of the EMS. Despite the fact that other countries

TABLE 1
Share of currencies in trade between France and its main partners in 1989

	<i>Imports</i>			<i>Exports</i>		
	<i>FRF</i>	<i>LCP</i>	<i>USD</i>	<i>FRF</i>	<i>LCP</i>	<i>USD</i>
BLEU	66	27	2	65	28	3
Netherlands	61	24	6	57	32	6
Federal Republic of Germany	38	59	1	40	56	3
Italy	61	34	1	62	33	3
United Kingdom	48	40	9	47	46	5
United States	24	71	—	37	62	—
Japan	49	29	7	64	29	6

Source: Ministry of Economy, Finance and Budget (1990).

Notes: BLEU—Belgium Luxembourg Economic Union; LCP—local currency pricing; FRF—French franc; USD—U.S. dollar.

TABLE 2
Distribution of French exports by currencies and areas, 1986–1989

Area		FRF	BEF	NXG	DEM	ITL	GBP	CHF	USD	JPV	Others	Total
EEC	1986	60	3,8	2,9	15,9	6,1	5,7	0,1	3,8	0	1,7	100
	1987	59,2	3,9	2,8	15,6	6,5	5,9	0,1	4,1	0	1,9	100
	1988	57,1	4,2	2,9	14,9	6,7	7,8	0,1	3,8	0	2,6	100
	1989	56,3	4,1	3	15,1	6,9	7,6	0,1	3,6	0,1	3,2	100
OECD (non EEC countries)	1986	55,2	0,1	0,1	1,8	0	0,1	7,3	26,9	1,8	6,7	100
	1987	53,8	0	0,1	1,7	0	0,2	7,3	27,3	2,2	7,4	100
	1988	51,5	0,1	0,1	1,7	0	0,3	7,5	28,6	2,9	7,4	100
	1989	51,9	0	0,1	2,1	0	0,1	7	27,5	3,3	7,8	100
Socialist countries	1986	72,2	0,2	0,2	6,7	0,1	0,4	0,8	15,5	0,5	3,4	100
	1987	73,8	0,2	0,2	5,6	0,2	0,2	0,8	14,7	0,2	4,3	100
	1988	68,1	0,2	0,2	6,4	0,2	0,1	1,4	15,9	0,1	7,4	100
	1989	65,7	0,2	0,2	9,2	0,1	0,1	1,1	21,1	0	2,4	100
Oil exporting countries	1986	72,4	0,1	0,2	6,3	0	0,2	1,3	18,1	0	1,4	100
	1987	68,5	0,1	0,1	2,3	0	0,2	1,2	26,3	0	1,4	100
	1988	70,7	0,2	0,2	1,6	0,1	0,4	0,4	24,6	0,1	1,8	100
	1989	68,1	0,1	0,1	1,8	0,1	0,2	0,2	28	0	1,4	100
Other countries	1986	76,4	0,1	0,1	1,6	0	0,2	1,2	19,4	0,1	0,9	100
	1987	76,7	0,1	0,1	1,5	0	0,2	0,7	19,4	0,3	1	100
	1988	73,1	0,1	0,2	1,7	0,2	0,3	0,4	21,8	0,7	1,7	100
	1989	74,9	0,1	0,1	1,7	0,2	0,2	0,3	20,7	0,3	1,4	100
Total	1986	62,9	2,2	1,7	10,3	3,5	3,3	1,6	11,7	0,4	2,4	100
	1987	61,6	2,4	1,7	10,2	4	3,6	1,5	11,8	0,5	2,8	100
	1988	58,8	2,7	1,9	10,1	4,3	5	1,5	11,6	0,7	3,4	100
	1989	58,6	2,8	1,9	10,3	4,3	4,8	1,4	11,7	0,7	3,7	100

Source: Ministry of Economy, Finance and Budget (1990).

Notes: FRF—French franc; BEF—Belgian franc; NLG—Dutch guilder; ITL—Italian lira, GBP—British pound; CHF—Swiss franc; USD—U.S. dollar; JPY—Japanese yen.

had retained some semblance of fiscal and monetary independence, their currencies were aligned on the German mark. Germany's surrender of its sovereignty was carried out with the conditions that it desired (Bibow 2013). Therefore, for some countries in the European periphery (the Southern countries, in particular), the euro can be viewed as a currency board (Théret 2013).

On these grounds, the euro is seen as the successor to the deutsche mark (Cohen 2003). However, it agglomerates many European invoicing currencies. After its launch, the euro rapidly became the established currency for Europe's trade invoicing.

A Currency with Firm Regional Roots

Europe is the most integrated continent in the world in commercial terms, particularly the European Union. The degree of integration—unprecedented in history—led European economies to develop a single currency for trade, giving birth to the Eurozone. The single currency is now also used by neighboring economies that are tied to Eurozone members.

Table 4 presents the share of euro-invoiced trade of the EU countries—not exclusively Eurozone countries—with the rest of the world. Data are heterogeneous across countries, due

TABLE 3
Distribution of French imports by currencies and areas, 1986–1989

Area		FRF	BEF	NLG	DEM	ITL	GBP	CHF	USD	JPY	Others	Total
<i>EEC</i>	1986	51,2	4,4	2,6	21,9	7,1	3,7	0,3	4,6	0	4,2	100
	1987	50,7	4,4	2,6	22,3	7,1	4,1	0,3	5,1	0	3,3	100
	1988	52,6	4,2	2,5	21,7	7	4,5	0,3	3,8	0	3,4	100
	1989	54	4,2	2,3	20,4	6,8	4,7	0,3	3,1	0	4,1	100
<i>OECD (non EEC countries)</i>	1986	41,4	0,7	0,9	5,1	0,3	0,9	6,7	31,3	6	6,7	100
	1987	41,5	0,6	0,9	4,5	0,4	1,2	6,9	31,3	6,3	6,5	100
	1988	41,7	0,5	0,8	3,5	0,2	0,7	6,6	32,9	6,9	6,2	100
	1989	42,1	0,5	0,9	3,7	0,3	0,7	6,2	33,3	6,2	6,1	100
<i>Socialist countries</i>	1986	47,2	0,3	0,6	4,2	0,1	0,5	0,1	45,2	0	1,8	100
	1987	45,5	0,7	0,8	3,7	0,1	0,7	0,1	45,9	0	2,5	100
	1988	47,4	0,5	0,9	3,7	0,2	0,9	0,1	43,1	0,1	3,1	100
	1989	58,4	0,6	0,8	4,3	0,3	1	0,2	30,4	0,1	4	100
<i>Oil exporting countries</i>	1986	6	0	0	0,1	0	0,1	0	93,6	0	0,2	100
	1987	7,4	0,1	0	0,3	0	0,2	0	92	0	0,1	100
	1988	9	0,1	0	0,6	0	0,2	0	90	0	0,1	100
	1989	17,9	0,1	0,2	1,1	0	0,2	0,1	80,1	0	0,2	100
<i>Other countries</i>	1986	47,2	1,2	1	2,4	0,4	2,7	0,3	39,5	0,3	5	100
	1987	45,3	1,2	0,9	3,4	0,4	2,9	0,3	40,1	0,4	5,1	100
	1988	42,3	1,4	1	2,9	1,8	2,7	0,5	42	0,4	5,1	100
	1989	43,9	1,6	0,7	3,6	0,6	2,2	0,5	41,5	0,3	5	100
<i>Total</i>	1986	46,5	3	1,9	14,9	4,4	2,8	1,5	19,3	1,2	4,5	100
	1987	46,5	3	1,9	15,3	4,6	3,1	1,6	18,7	1,3	4	100
	1988	48	2,9	1,9	14,8	4,7	3,3	1,6	17,2	1,5	4,1	100
	1989	50,1	2,9	1,8	14,3	4,5	3,4	1,6	15,4	1,4	4,6	100

Source: Ministry of Economy, Finance and Budget (1990).

to different export structures within the region, given that the type of industries can influence invoicing practices (Goldberg and Tille 2005). However, the data that are available to us show an aspiration phenomenon of the euro vis-à-vis European neighbors, who are led to invoice a considerable part of their trade in euros.

This is particularly the case for the economies of Central and Eastern Europe, of whom some have only recently joined the monetary union, or are contemplating doing so. Empirically, the prospect of a country's accession to the Eurozone is analyzed as a variable that fosters invoicing in euros (Kamps 2006). In 2007, Croatia invoiced 74 percent of its exports in euros (accounting for 74 percent of its imports), whereas that figure was 69 percent for Romania (72 percent of its imports). The same year, 50 percent of the exports of Turkey—an applicant for EU membership—were invoiced in euros (36 percent of imports, according to ECB 2009). The top two countries in terms of euro-export invoicing are Slovenia and Slovakia, which are not founding members of the Eurozone. Slovenia joined the Eurozone in 2007, followed only two years later by Slovakia. Respectively, 83.6 percent and 88.1 percent of their exports are denominated in euros. The integration of these countries into the strategies of large industrial groups located in the core countries of the Eurozone (Germany most of all) has arguably solidified their use of the single currency in international trade. It appears consistent with the empirical work of Benguria and Wagner (2012), according to whom transactions within the same transnational company are

TABLE 4
Invoicing of Extra-EU Trade, by Member States, Share of Euro (%)

Country	Imports		Exports	
	2010	2012	2010	2012
Austria	58.6	62.4	74.4	73.6
Belgium	53	NA	52.3	NA
Bulgaria	26.4	23.9	43.2	36.7
Cyprus	25.8	22.2	63.5	57.2
Czech Republic	23.7	26.5	50.5	50.5
Denmark	24	22.1	22.8	22.3
Estonia	35.9	37.8	44.1	53.8
Finland	42	27	48	50.2
France	38.9	39.6	52	52.7
Germany	49.1	50.9	66.6	64.6
Greece	23.5	16.1	44.8	36.6
Hungary	29.5	22.7	48.6	44.4
Ireland	19.2	17.6	10.4	11.3
Italia	50.1	47.6	73	72.6
Latvia	49.8	57.3	66.5	60.4
Lithuania	24.9	27	48.5	56.8
Luxembourg	40.3	36.7	70.1	74.2
Malta	29.2	31.3	27.4	19.2
Nederland	32.8	27.9	56	56.4
Poland	20	18.4	0.3	0
Portugal	30	22.6	69.3	65.6
Romania	35.2	37.2	52.1	52
Slovakia	46.2	45.6	81.3	88.1
Slovenia	61.8	60.7	85.5	83.6
Spain	46.7	43.9	68.3	61.2
Sweden	10.4	17.3	23.9	23.3
United Kingdom	5.2	4.1	3.6	3.5

Source: Eurostat. "NA" means non-available.

denominated in only one currency, namely, the currency of the parent company. The logic is the same for Eastern subcontractors integrated into German industries, which make extensive use of the euro in their international trade.

With regard to the work of Hartmann (1998: 102–3), recent data show that the euro has so far been a disappointment. Hartmann sketched four scenarios of invoicing development in the Eurozone. If the Eurozone exporters had adopted the euro unit of account at the level of the dollar for U.S. exporters, 92 percent of their exports outside the Eurozone would have been invoiced in euros. The second scenario envisioned that the euro's share would match the total share of national European currencies before the euro launch, that is, 82 percent. A third scenario considered that the euro share of euro exports invoicing would be in line with the share of the DM in German exports in the 1990s (77 percent). Finally, Hartmann envisioned a worst-case scenario in which the euro would settle at the level of invoicing share of the French franc in French exports, that is, 55 percent. Given that the current level of Eurozone exports is at 60 percent, the euro cannot be said to be a real success in European trade invoicing.

Furthermore, two facts need to be underlined: on the one hand, the international development of the euro has stopped; on the other hand, its expansion has been geographically limited.

The Stagnation of the Euro's Expansion

Shortly after its launch, the euro experienced a phase of expansion that lasted a few years. Then its development slowed down and settled at quite a low level. Its use is now widespread in exchanges within non-Eurozone European countries and Central and East European countries, but the euro remains scarcely used in the rest of the world. The enlargement of the Eurozone did not lead to a larger share of international trade being invoiced in euros, as predicted by Cohen (2007).⁶ Despite the integration of neighboring economies in the Eurozone, the Baltic countries are the most recent examples; the attraction of the euro remains small on international markets. As Moss (2011) shows, the progress of the euro in the various functions of an international currency occurred primarily in the first five years of the single currency's existence. The euro's stagnation has been noticeable since 2005. Moreover, the euro cannot be analyzed as an instrument that has increased the share of trade invoiced in European currencies, thereby restraining U.S. dollar hegemony. For example, looking at France's trade invoicing reveals an increase in the share of the dollar. In 1989, 11.7 percent of French exports were invoiced in dollars (Table 2) and 18.6 percent in 1995 (Bekx 1998). This figure rose to 38.5 percent in 2012 (according to the Eurostat database).

We can notice that some areas of the world, such as Africa, are using the euro as a unit of account. According to Tavlas (1991), "developing" countries tend to use the currency of the "developed" country in their trade with developed countries.⁷ For historical reasons, some Sub-Saharan Africa countries have inherited this connection with the currency of the former mother country. Although they maintained ties with the franc zone, the question of the transition to the euro arose for them too. The monetary authorities of the countries of West Africa and Central Africa, for example, received logistical support from the Bank of France (Neveu 2002). The French monetary authorities based in Paris assumed the responsibility of staging meetings and conferences to manage the transition of these countries, a powerful reminder of the importance of historical factors in currency practices and the interest of the "developed" countries in retaining their monetary influence internationally. Therefore, in Africa, the euro has replaced the French franc, including in its unit of account function,⁸ which is how the arrangement safeguarded France's privileged relations with a number of African countries.

With the exception of this bilateral relationship between France and its former colonies, which somehow survived the changeover to the euro, the European currency remains a second-rank currency if one goes beyond the European continent. In the rest of the world, most countries use the euro very little or not at all.

In Canada, the proximity with the United States is reflected in the country's trade and currency used for invoicing. The U.S. dollar predominates in the country's international trade. The share of the euro is low, amounting to 6 percent over the 2002–9 period (Goldberg and Tille 2013). In 2011, the euro amounted to 3.8 percent of Brazilian exports, whereas the dollar amounted to 94.5 percent (Reiss 2014). If we turn to Oceania we can see that the euro is far from posing a threat to the dollar: in 2009 less than 1 percent of Australia's exports were invoiced in euros, against 77.9 percent in U.S. dollars. Also in 2009, 8 percent of imports from Australia

were invoiced in euros, mainly machinery and other manufactured goods, which the incorporated differentiation allowed European exporters to invoice in their own currency. In New Zealand, 6.9 percent of 2009 exports were invoiced in euros (Fabling and Sanderson 2013), against 56.9 percent in dollars (although the United States is the destination of only 12.1 percent of total exports).

In Asia, the U.S. dollar is still the dominant currency. Data on export and import invoicing from Japan show that the European currency in trade, which does not involve the European Union, is almost nonexistent, that is, less than 1 percent of trade (Papaioannou and Portes 2008). In Thailand, the share of exports invoiced in euros stood at 3 percent of total exports, whereas the share of imports was at 4 percent in 2008 (Barrett et al. 2010). In Singapore, where firms seem to consider invoicing in euros only when the EU is involved, the U.S. dollar is again largely dominant (Barrett et al. 2010). In Indonesia, the share of the euro in exports for 2007 is 2 percent (and 4 percent for imports) (ECB 2009).

Let us now focus on the evolution of the key currencies on the foreign exchange markets (Figure 1). The foreign exchange market is a very unique market that connects national currencies together. International trade motives are far from being the real cause of the huge movements of currencies in the forex. The share of currency traded for the international exchange of goods and services is negligible (given that the forex represents 5.3 trillion per day in 2013). Yet, the actors of international trade interact on this market, which records the main trends on international currency developments. The forex is consequently an indicator of the mindset of the global actors vis-à-vis the world's currencies and offers a glimpse of the world economy.

Without a vehicle currency, a foreign exchange market is subject to the constraints of a barter economy and currencies are exchanged as goods. In these conditions, every exchange is characterized and conditioned by the double coincidence of wants, and requires an interbank market for all bilateral markets between currencies (Hartmann 1998: 17). A vehicle currency is necessary to facilitate the circulation of currencies: as in every exchange, divergent interests between the two partners involved in a deal are solved by the use of a currency (Aglietta and Orléan 2002). On the forex market, data indicate that it is the dollar. In the years that followed the 2008 crisis, it appeared impossible to draw conclusions on the extent to which the use of the international currencies had been impacted (Moss 2011). However, the latest available data highlight important changes.

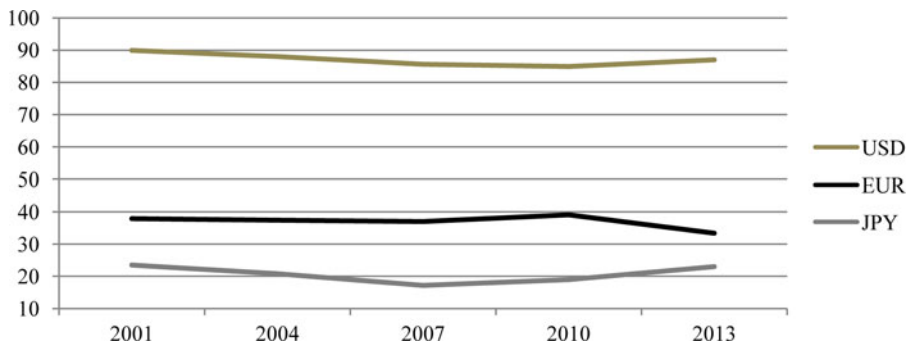


FIGURE 1. Currency distribution of global foreign exchange market turnover.
Source: Bank for International Settlements (BIS) (2013).

The triennial survey of the Bank for International Settlements (BIS 2013), published in September 2013, reveals a dip in the amount of foreign exchange transactions involving the euro. The survey concerns the turnover on the foreign exchange markets of fifty-three countries and covers the whole month of April 2013. Between 2010 and 2013, the euro's market share plummeted from 39.1 percent to 33.4 percent, its lowest on record. This loss was counter-balanced by the rise of two currencies: the dollar share increased from 84.9 percent to 87 percent,⁹ and the yen share grew from 19 percent to 23 percent. It is worth noting that these currencies are managed very differently from the euro: monetary easing was quite usual in Japan for more than twenty years and was exacerbated with the crisis, whereas large quantitative easing programs in the United States sustained monetary and financial markets. Several rounds of quantitative easing reassured the financial world about the Fed's willingness to support the U.S. economy.

In comparison, the European monetary authorities were reluctant to do the same. In addition, the euro seems to bear the brunt of the so-called sovereign debt crisis, which affected the economies of the Eurozone periphery. This crisis and the difficulties of managing it have generated defiance toward the single currency. Indeed, the euro suffers from a confidence crisis due, for the most part, to the vulnerability of the periphery economies of the area, some of them being on the cusp of a likely default payment (Théret 2013). The timing of the survey also matters: in April 2013, financial actors were in constant turmoil over the Eurozone. On the one hand, the euro crisis seemed far from over, and on the other hand, substantial growth of the EU budget and its redistribution within the fiscal union, namely, the most commonly accepted solution to save the single currency, was dismissed by the previous European Council.¹⁰ No plan had been forthcoming to end the "monetary mercantilism" that exacerbated the internal imbalances of the Eurozone (Cesaratto and Stirati 2013). The sustainability of the euro seems therefore to be increasingly questioned. These speculations have led to a decreasing share of the euro on the forex as witnessed not only by the triennial survey of foreign exchange markets conducted by the BIS (2013) but also by the scheduled reports of the Society for Worldwide Interbank Financial Telecommunication (SWIFT). In December 2014, after a dramatic dip, the euro was the second international payments currency (intra-Eurozone transfers included) behind the dollar, and it still occupied the first rank in January 2013.¹¹

On the forex market, the dollar is used as a medium of exchange in international transactions more than twice as often as the second international currency, the euro. This observation is extended in the following section of this article.

SOME EVIDENCE THAT THE EURO IS NOT A VEHICLE CURRENCY

If in a transaction between two partners from different countries, the currency used is neither the currency of the exporter nor that of the importer, the third currency used is known as "vehicle currency," according to the narrow definition offered by Devereux and Shi (2008). The previous section has demonstrated that today the euro is largely used at the European regional level, which includes countries that are not Eurozone members. However, at the international level, euro invoicing remains unusual in most countries of the world, all the more so if no European countries are involved in the deal. That is why the euro cannot be viewed as a vehicle currency. This section seeks to examine two relevant qualitative observations supporting this view.

A Currency Left to Its Own Devices

Clearly the failure of the euro internationally should not have been a disappointment with regard to the institutions that managed it and the principles on which it rests. The Eurozone was designed, one might say, with the utmost disregard for the essential properties of money. This can be explained by the theories on which the euro was built.

An analysis of the euro's international role illustrates the shortcomings of the string of authors influenced by Mundell, and more generally orthodox theories of money, according to which monetary unification would accelerate trade, generate growth, and finally boost the credentials of the currency in the eyes of international traders. Mainstream theories see money as a medium of exchange, whose only virtue is to decrease transaction costs within markets. It has been particularly well expounded by economists who assumed the endogeneity of the optimal currency area. From this point of view, the euro was supposed to generate large benefits (Rose 2000) due to the fact that separate monies are supposed to constitute an impediment to trade. According to this view, "the introduction of a single currency eliminates exchange-rate risk (and, therefore, the cost of hedging), lowers information costs, and raises price transparency, reducing market segmentation and encouraging competition" (Dellas and Tavlas 2009: 31). Not only did this view neglect the fact that conditions for production would be changed by the launch of the euro via economies of scale "in areas where there has been a clustering of economic activity" (Gibson, Palivos, and Tavlas 2013: 14), but that it would also cause the disappearance of "the room for manoeuvre" that national currencies offer to any domestic policymaker (Rossi 2006: 135).

The failure of the euro therefore shows that money cannot be devised as a lubricant for real activities rooted in a barter economy and benefiting from lower transaction costs through the medium of exchange, but conversely must be conceived as a paramount *institution* of our monetary economies of production, since each real economic activity takes shape in a monetary order. Money rests on a set of technical, social, and political institutions. With poorly designed institutions, currency internationalization is highly unlikely, as opposed to economic crises that are inevitable.

Whether it is "a creature of the state" or not, a currency relies heavily on the state and on the behavior of the monetary authorities with regard to its internationalization. Durable use of a currency between foreign economies cannot be realized without the agreement and even the voluntary support of the issuing monetary authorities. The yen or the DM suffered from the political choice of their monetary authorities not to support them. This can be explained by the central role of commercial surpluses in Japanese and German growth (Minsky 1986),¹² and also because currency internationalization could have been a problem for conducting the monetary policy of the country (Moss 2011): ownership of a large share of a currency by foreigners makes it more vulnerable to external shocks, for example, a run on the currency.¹³ In the case of the euro, monetary authorities refrained from intervening in the internationalization, but still kept a close look on its international developments (ECB 2008).¹⁴ Non-residents are not encouraged to own euros. They are in fact discouraged by the dominant political coalition in the Eurozone which claims that "an EU-wide global trade surplus as a necessary and desirable outcome" (Germain and Schwartz 2014: 1107).

When the euro was launched, the governments of the CFA franc area countries in Sub-Saharan Africa decided to peg their currency to the euro. Yet, they expressed some reluctance to move away from the French franc to the euro anchor. To maintain the CFA franc zone in their

area of monetary influence, French leaders had to negotiate harshly with their European partners, given that this influence involves a form of monetary support that African officials appreciated for its stabilizing effects on their economies. Indeed, European treaties prohibit such assistance from the ECB. Through an arrangement between France and the rest of the EU, France was tasked with guaranteeing monetary and financial assistance, whose oversight would be conducted by the French Treasury, a national not a community institution. The compromise saved the monetary links between France and its former colonies (De Raulin 2000).

The European treaties and hitherto European officials' attitude betray the ECB's lack of political will to internationalize the euro, whereas the involvement of public authority turns out to be decisive in the process of currency internationalization. Logically, the current U.S. deficits and the accommodating monetary policies foster the use of the dollar by providing risk-free assets and dollar-denominated credits to the rest of the world. Although invoicing of international trade is perceived mostly as a market-driven process, many factors related to the state seem essential in order to reach the status of vehicle currency.

The state plays an indirect role in a currency's development, by allowing or even promoting the outflow of large amounts of domestic currency, for example, through an international debt instrument, and encouraging large, deep, and liquid financial markets to thrive. Agents will store deposits in a currency that offers multiple outlets for their management—notably a supply of risk-free assets such as federal Treasury bonds, which are alien to the EU (Fields and Vernengo 2013; Rhee and Sumulong 2013). As Hyman Minsky (1986) noted almost thirty years ago, financial deregulation increases the need for central bank interventions to act as the lender of last resort. Yet in the Eurozone, the lender of last resort function is *de facto* denied, especially to public actors. On the one hand, there is no fiscal federalism and therefore no prospect of Eurobonds; on the other hand, member states' sovereign debts are not guaranteed as risk-free by the ECB. It follows that government debt issued by Eurozone countries "is forced to compete with other forms of debt (for example commercial paper, bonds issued by private firms, the debt of other member states)" (Bell 2003: 176). With the benefits of hindsight, we now know how much harm this system has caused to Southern European economies. It appears reasonable to believe that the system in question must also have had negative effects on the adoption of the euro worldwide. There must be sure signs that an economy is running smoothly for actors to have faith in the vehicle currency economy. The political and institutional running of this economy needs to show signs of consistency. In this respect, the euro is an "incomplete" currency (Ponsot 2013).

This lack of sharing and pooling within the Eurozone can also be seen in the lack of a unified European banking system (Germain and Schwartz 2014: 1107). Each member state remains in charge of its own banks, and bears their financial risks. The assessment of banking developments is conducted nationally, which can be a factor of significant divergence within the area, as exemplified by the 2012 Cypriot crisis. Yet, a unified and consistent banking system—overseen by a single monetary authority—seems crucial for the internationalization of a currency (see, e.g., Broz 1999).

The Eurozone provided another example of incomplete monetary building when the last so-called European quantitative easing program was implemented. Government bonds of any Eurozone country will be eligible for the ECB's assets purchase program (Draghi 2015). But the purchase will be carried out according to each country's share in the ECB. In sum, the program reflects the weight of each member rather than the financial needs of each. That decision indicates the lack of pooling and sharing of the oversight task, which is, however, a cornerstone

of any monetary edifice. The program rules out the possibility of federalism or risk-sharing in the Eurozone. The Eurozone reminds each country of its responsibilities, while increasingly exposing them to more dangers.

It has been shown that the state plays an indirect role in the building of the framework within which private and decentralized actors could then think about the invoicing strategies of their transactions. In some cases, it is even directly involved through agreements on the terms of invoicing. One famous example is the deal struck between Henry Kissinger and the House of Saud (the King of Saudi Arabia) in 1974, making provision for the exclusive use of the U.S. dollar for Saudi oil exports invoicing. The American diplomats were enthusiastic in their support of tremendous amounts of dollars corresponding to oil bills. By contrast, the euro does not receive such global promotion. It was de facto accommodated within the dollar-centered international monetary system (Cohen 2014: 37). The euro was devised according to a “metallist” conception of money (Goodhart 1998). The currency is viewed as a veil, a medium of exchanges outside the influence of politics and must therefore be kept out of the reach of European governments. In view of the lack of political will on the subject of the internationalization of the euro and the resulting institutional framework, the single currency appears consigned to second place.

The Euro's Dependency on Market Conditions

Invoicing behavior varies considerably from one European country to another. Scrutinizing the countries of the Eurozone helps shed some light on the existing gaps between Eurozone countries, for instance, the gap that separates Austria and Germany from Ireland and Greece. The differences in terms of euro use for the most part reflect differences in the export structures of these countries. They also reflect the fact that the situation prior to the introduction of the euro has remained relevant.

The invoicing of exports in euros highlights the industrial might of some countries of the area—prime among them, Germany, followed by its industrial satellites, which are well integrated to the German economy, such as Austria, Slovenia, or Slovakia (IMF 2013). The euro is used much more frequently in this group of countries than in the rest of the area. This fact supports the works emphasizing the importance of the exporter's bargaining power, market power, and product differentiation on the choice of invoicing currency (Goldberg and Tille 2005, 2013). It is also consistent with the hypothesis that the single currency is not an international currency.

Countries whose exports are largely concentrated in niches, such as Germany's specialized machinery for industries and upmarket vehicles, and to a lesser extent Italy (particularly its industrialized North), are able to invoice a significant part of their exports in euros (respectively, 65 percent and 73 percent in 2012). A direct consequence of the performance of German industries and their efforts in terms of differentiation in the 1980s, the DM gained market shares in international trade invoicing, in particular vis-à-vis developing countries, while trade flows involving Germany declined: differentiation has been the first explanation for this (Tavlas 1991). The *Mittelstand* within the German economy is characterized by the presence of many midsize companies that are well-established in international markets for industrial goods, especially by means of an innovation strategy that made these companies world leaders (Storm and Naastepad 2014). These companies have also initiated a deep integration with the countries of Central and Eastern Europe, outsourcing parts of their production to countries with cheaper

workforces (IMF 2013; Pellegrin 1999). This coherent strategy has enabled Germany to keep its export-led industries afloat (Gaffard 2013). The share of the euro in trade invoicing vis-à-vis the rest of the world is much smaller for countries positioned on internationally competitive markets, where price competitiveness is essential, exemplified by France whose mere 53 percent of exports are denominated in euros.¹⁵

The use of the euro depends on the conditions of competition, on the exporter’s market power, and on the degree of differentiation incorporated in the goods (Kamps 2006). As a matter of fact, the euro is linked to the merchandise of the producer. The decision to choose (or reject) the euro to denominate (and settle) a transaction features as one of the elements under discussion at the negotiation table. Yet money is usually the frame within which strategies can be elaborated. It is above all what makes the coordination of the market possible. A vehicle currency is used not only when there is market power—related to product differentiation—but also for nondifferentiated goods. Such a currency should be accepted and even demanded by both parties of the exchange, who put their trust in it, for various types of goods.

Homogeneous goods are uniquely fitted to unveil the vehicle currency of international trade as they are usually subject to particularly strong competitive constraints (Tavlas 1991). On a relatively competitive market of homogeneous goods, traders will be encouraged to choose a vehicle currency for invoicing.

For this reason, oil is often referred to as the merchandise that best illustrates the dominance of the dollar in international trade invoicing. Economists confer key status on the oil market in their analyses of the invoicing currency of international trade and strive to show its ability to maintain the international currency at the top, thanks to a permanent demand for dollars to settle oil bills (Looney 2004). The oil market also confirms assumptions about the status of the U.S. dollar as a vehicle currency. Because oil is a homogeneous good (without incorporated differentiation) sold on a competitive market, exporters do not choose their own currencies. They opt for that of their competitors in order to hedge against exchange rate fluctuations that affect relative prices. It is useful to look at the oil invoicing in Europe (Figure 2). The U.S. dollar dominates by a strong

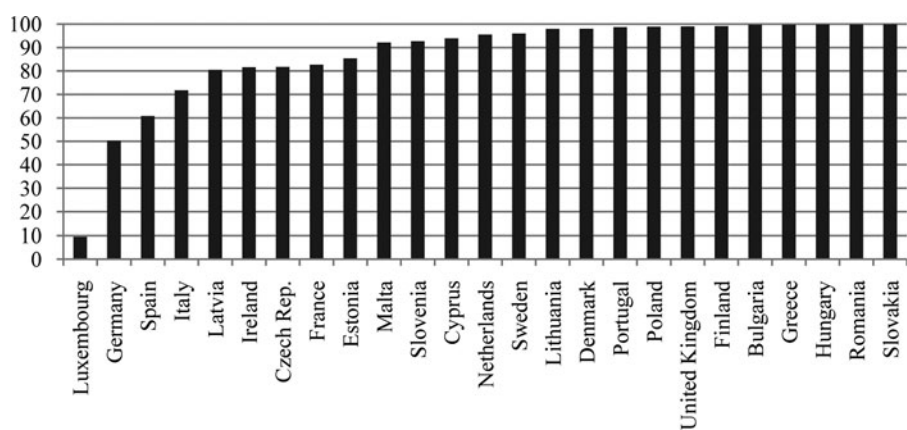


FIGURE 2. Share of dollar in EU imports of petroleum, petroleum products, and related materials from outside the EU in 2012 (%).
Source: Eurostat. Data for Austria, Belgium, and Croatia are not available.

margin, eclipsing the euro, although Europe imports massive amounts of oil, which makes it an important destination market from the point of view of oil exporters. Yet, attempts at oil invoicing in euros failed in Saddam Hussein's Iraq as the oil bourse failed in Iran (Cohen 2003; Looney 2007), as it did in Venezuela and Russia. This homogeneous product is traded almost exclusively in dollars.

Thus the euro appears to be a major currency but stops short of becoming a vehicle currency. When deals do not involve a European country, the euro is not used for billing, which is why it does not qualify as a vehicle currency.

CONCLUSION

Much of the academic literature on international trade invoicing has followed the general interest around the emergence of the single currency, raising hopes by some that it might prove solid competition for the U.S. dollar even before its launch in 1999. Yet, if the single currency is effectively strongly rooted in Europe, that is, at the regional level, its use is limited to the area of influence of the Eurozone countries. At the international level, the growth of euro usage in trade has decreased and now seems over: the euro somehow remains stable as a second-rank currency for international trade, but does not threaten the dollar, in spite of the ongoing process of Eurozone enlargement or the price stability so dear to the ECB. Along these lines, the recent article of Cohen and Benney (2014) shows that the international currency system is much more unipolar—understood as dollar-centered—than bipolar, by focusing on other functions of money.

This fact may find an explanation in heterodox approaches to money. The metallist view, which discards the political aspects of money, prevailed when the Eurozone was being conceived (Goodhart 1998). The orthodox “myths” that are associated with the single currency (Bibow 2013) constitute a drawback to the process of internationalization. The deterritorialization of currencies of European countries has created a gap between the political and monetary areas, whereas the overlap of these two areas appears to be an essential condition for a currency's emergence and survival (Orléan 2008; Théret 2013). The enlargement of the Eurozone has exacerbated the heterogeneity and management difficulties of the euro, and consequently cannot lead to an extension of its international use by private agents. They do not put their trust in a European Union that appears to be a flawed structure, and they have done so since 2010. In a cartalist perspective, the euro is hindered in its international development by the lack of both a lender of last resort and a risk-free asset that could be associated with the monetary authority (Fields and Vernengo 2013).

Finally, it must be acknowledged that the euro's rank as the second international unit of account does not solely result from its flawed architecture or from monetary policy decisions. The status of the dollar also matters. The efforts made by the U.S. authorities and its banking system to keep the U.S. dollar on a pedestal are effective. Moreover, invoicing practices are characterized by a strong inertia, which complicates the adoption of a new international currency by private actors engaged in international trade.

NOTES

1. The source text reads: “L'unité de compte constitue le langage, pour reprendre ce terme utilisé par ailleurs, qui donne un sens commun aux deux autres fonctions” (Alary 2006: 449).

2. For instance, Kamps (2006: 6) wrote, "There are some signs for the role of the euro as vehicle currency."
3. "E is of course the first letter of the word Europe. The two strong parallel horizontal lines are intended to symbolise the stability of the currency" (ECB 2007: 10).
4. Author's calculation, based on the Harmonized Consumer Price Index (HCPI) available on Eurostat.
5. This may strike one as conservative when compared to the monetary policies managing competing currencies: for example, those of the Federal Reserve System, the Bank of England, or the Bank of Japan.
6. According to Cohen (2007), the failure of the euro from the point of view of its international development can be attributed mainly to the institutional shortcomings of the single currency.
7. "Trade between developed and less-developed countries tends to be denominated in the currency of the developed country, although the US dollar is also used frequently. This pattern is known as Grassman's Law" (Tavlas 1991: 7).
8. "L'Euro sera, en lieu et place du FF, l'unité de compte en laquelle les questions sont comptabilisées, la monnaie de règlement dans laquelle les soldes sont périodiquement réglés et les avoirs de réserves des pays créditeurs sont conservés" (The euro will be, in place of the FF, the unit of account in which the questions will be accounted for, money in which balances will be settled periodically, and the reserve assets of creditor countries will be held) (N'Galadjo Bamba 1997: 336).
9. Because each transaction involves two currencies, the sum of the percentage shares of individual currencies totals 200 percent.
10. The European Council of February 7–8, 2013, decided on cuts in the EU budget bringing it to less than 1 percent of the EU GDP.
11. SWIFT is the monopolistic organization that provides financial messages for international funds transfers. "RMB breaks into the top five as a world payments currency," SWIFT, press release, January 28, 2015, <http://www.swift.com>. These statistics include transactions between euro member states. It explains the high level of the euro's share in world payments.
12. As noted by Minsky (1986), Germany and Japan did not adapt their economies to fit their status as major players in the international arena. Their balance of payment would have needed internal adjustments in order to spread the responsibilities of global leadership and favor the internationalization of their currencies.
13. "The rush into the Deutsche Mark thus poses considerable problems for Germany as a substitute reserve currency country.... A 'system' of several reserve currencies, such as would be the outcome of an unrestrained diversification process, would be a highly unstable structure, exposed to the risk of constant exchange rate unrest and uncontrolled development of international liquidity" (Deutsche Bundesbank 1979: 33).
14. "From a policy perspective, the Eurosystem has adopted a neutral stance on the international use of its currency. It does not pursue the internationalization of the euro as a policy goal and neither fosters nor discourages its use by non-residents of the euro area. The currency's use outside the euro area's borders is and should remain the outcome of economic and financial developments, based on free private (and sometimes public) decisions" (ECB 2008).
15. German exporters tend to pass through an appreciation of the euro on their selling prices, whereas the French exporters are compelled to adapt by squeezing their margins (Artus and Fontagné 2006). Following the same logic, French exporters will invoice their trade in the currency of competitors in greater proportion to comply with the competition rules of the destination market. This brings us to the notion of price elasticity of exports, to which French exporters look more sensitive.

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