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GLOBALIZATION, RECESSION AND THE INTERNATIONALIZATION OF INDUSTRIAL DISTRICTS: EXPERIENCES FROM THE ITALIAN GOLD JEWELLERY

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Globalization, Recession and the Internationalization of Industrial Districts: Experiences from the Italian Gold Jewellery Industry

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Abstract

Globalization and the recent recession crisis are significantly challenging Italian industrial districts (IDs), driving deep transformations in their internationalization, innovation and organization strategies. With our empirical focus on a single industry (gold jewellery) and a specific country (Italy), the evidence in this paper sheds light on the differences in how three industrial districts within the gold jewellery sector (Valenza Po, Arezzo and Vicenza) compete in the global arena. Our comparative analysis reveals striking differences among these districts with regard to their economic performance, as well as their upstream and downstream internationalization strategies, in response to two industry shocks – increasing global competition in the early 2000s and the world economic recession of 2008-09. In addition, we find that these districts changed their internal strategies over time in order to tackle the two crises. How these industrial districts are integrated within global value chains is an important explanatory factor to be considered, in addition to internal factors such as structural characteristics and specific business opportunities.

Keywords: industrial districts; globalization; recession; internationalization; the jewellery industry; global value chains.

1. Introduction

Globalization and the recent recession crisis are significantly challenging Italy's industrial districts (IDs), which have long been considered the engine of Italian economic growth, especially in the so-called "Made in Italy" sectors. They are also spurring a lively debate about the relevance of the industrial district model in a globalized economy. Sceptics who argue for the decline of the model suggest that their main traditional features – the small size of firms, the specialization in traditional industries, and the local system of relationships – represent constraints in the face of the challenges posed by globalization (Nardozzi, 2004; Alberti, 2006; Ramazzotti, 2010). Other scholars, however, claim that IDs firms are still performing better or at least no worse than non-IDs firms in global markets (Becattini & Dei Ottati, 2006, Chiarvesio & Di Maria, 2009). Beyond these opposing views, a rich empirical literature highlights the transformation of IDs, including deep changes in their structural characteristics and innovation and internationalization strategies (Rabellotti *et al.*, 2009; Chiarvesio *et al.*, 2010). Yet, the evidence from the literature is inconclusive in terms of whether such transformations are occurring homogenously or differently across districts, and the extent to which factors external to IDs, including their role in global value chains (GVCs), may contribute to the transformations.

Empirical studies in the Italian setting thus far have mainly analyzed single districts (see Camuffo & Grandinetti, 2011 for a review) or compared the strategies of districts that represent a wide range of sectors (Rabellotti *et al.*, 2009). However, internationalization and upgrading trajectories of districts can vary by industry, and both the impact of external economies of districts and the governance of the GVCs in which ID firms are located are significantly affected by industry specificities (see Giuliani *et al*, 2005). Furthermore, little is known about how, compared to the earlier globalization crisis, districts are facing and responding to the recent recession crisis, which is responsible for a sharp decline in the world's trade and gross domestic product.

To address this lacunae in the ID literature, this paper sets out to examine whether and how IDs facing similar competitive pressures and business opportunities may vary in their internationalization and innovation strategies, and how their performance may diverge in the face of two crises: the "globalization crisis" spurred by the entrance of large emerging economies in global markets in the early 2000s, and the "recession crisis" of 2008-09, which led to the sudden reduction of global production and trade. We aim to answer these questions by examining three Italian IDs of a single industry, gold jewellery, in the period of 2001 – 2010 by means of trade data, documentary information and interviews with leading experts. The jewellery industry is particularly suited for addressing these questions for several reasons. First, from an ID perspective, gold jewellery production in Italy is highly concentrated: the three districts analyzed in this paper, Arezzo, Vicenza and Valenza Po, are responsible for the 72% of Italian exports, making Italy the largest exporter worldwide. Second, from a GVC perspective, this industry is interesting because it is characterized by a relatively short value chain and has been heavily affected by international competition since the 2000s, which allows a thorough analysis of the factors affecting the gold jewellery GVC. Finally, the focus on gold jewellery in Italy allows also learning more about an industry on which few studies have been conducted so far, notwithstanding its long tradition and its importance for Italian exports, with a few notable exceptions (Gaggio 2006, 2007; Simoni *et al.* 2010).

A major analytical contribution of this study is that it compares Italy's industrial districts adopting the global value chain (GVC) framework. Distinctive from the traditional district perspective, which analyzes ID transformations from an internal standpoint, a GVC approach allows unique insights by highlighting how international markets and the organization of the global division of labour affect the development trajectories of firms and clusters (Gereffi and Bair, 2001; Gereffi, 2005). It also brings to the fore the effect of global trade and lead firms on the growth opportunities for IDs. Finally, the GVC approach examines ID internationalization in terms of both linkages to demand-side dynamics (the downstream part of the chain) and supply-side changes (the upstream part of the chain).

2. Literature review and background

For many years, IDs have been a major pillar for the success of the Italian economy, especially in the so-called "Made in Italy" craft sectors, including household goods, textiles and apparel, leather and footwear, and jewellery. According to the traditional view of districts (Pyke *et al.*, 1990; Piore & Sabel, 1984), they represented a successful alternative to the Fordist production model thanks to their embeddedness in the local socio-cultural context and close spatial ties. Within districts, production processes are divided among many proximate small firms that coordinate production activities through trust and face-to-face interactions and take advantage of a flexible and high-skilled local workforce.

However, the ID model, whose competitive advantage is based on the local dimension, is facing challenges posed by globalization, specifically the disintegration of production and the integration of trade at the global level and the development of global production networks (Feenstra, 1998). A recent literature review on Italian IDs by Rabellotti *et al.* (2009) suggests that IDs are heavily affected by current changes in the global economy and, as a result, their structural characteristics (size and specialization) and innovation and internationalization strategies are changing. While there is clear, converging evidence that districts are more internationalized, "the intensity, the strategies and the impact on local systems vary widely" (Rabellotti *et al.*, 2009, p. 29).

In the past, the majority of districts internationalized through exports. Now, a growing number of ID firms are outsourcing parts of their manufacturing and, in fewer cases, distributional and branding activities (Nassimbeni & Sartor, 2005; Belussi & Sammarra, 2010). Lower value-added activities are more often relocated abroad (Sammarra

& Belussi, 2006; Grandinetti *et al.*, 2009), both by means of foreign direct investment and non-equity and relational forms of internationalization (Corò *et al.*, 2005). In some districts, firms have been subject to forms of "passive internationalization", which is characterized by the development of ethnic firms within the districts, like in Prato (Dei Ottati 2009), or the investments by foreign multinational enterprises, as in the Montebelluna sports district (Sammarra & Belussi, 2006). In terms of the impact of such internationalization processes, evidence is mixed. In some IDs, internationalization has led to economic (process or functional) upgrading of firms and social upgrading of local employment skills, whereas in other districts, it has been rather destructive, resulting in downgrading (Belussi & Sammarra, 2010).

In explaining these differences in ID strategies and performance in the face of globalization, the GVC perspective offers a useful framework to understand the relationship of global systems of production and consumption and the transformations of IDs and their heterogeneous performance (see Bair, 2009). It also sheds light on which factors may contribute to the heterogeneity of district responses and performance, on which ID literature is still scant. The GVC approach suggests that participation to GVCs shapes ID growth trajectories and significantly impacts on their outcomes in employment, market development and innovation (e.g., Bair & Gereffi, 2001; Humphrey & Schmitz, 2002). It claims that the upgrading trajectories and competitive advantage of firms in global markets are affected not only by firm and district-specific characteristics, but also by GVC attributes (Giuliani *et al.*, 2005), particularly the type of linkage that connects local cluster firms to GVCs (Bair & Gereffi, 2001; Humphrey & Schmitz, 2002).

Recent evidence on Italian IDs corroborates the diverse effects of district insertion into global value chains. On the one hand, the form and intensity of internationalization strategies depends on the type of GVC they are embedded in. IDs serving low-end market segments are the most challenged by international competition and they are more likely to outsource a high percentages of their production abroad, whereas high-quality districts favour local internal manufacturing and tend to delocalize only low-value added activities (Nassimbeni & Sartor, 2005; Amighini & Rabellotti, 2006; Belso-Martinez, 2008). On the other hand, evidence suggests that the ability of district firms to complement their internal knowledge and learning with knowledge flowing within GVCs enhances their international competitiveness (Oliver *et al.*, 2008). The presence within the district of lead firms or institutions that provide knowledge-intensive business services (KIBS) enhances the ability of the ID to enter GVCs successfully and access knowledge developed worldwide. They work as "knowledge gatekeepers" between the local and the global dimensions, unless they opt for a predatory attitude (Chiarvesio *et al.*, 2010; Camuffo & Grandinetti, 2011; Grandinetti, 2011).

The GVC approach has become more relevant to explaining globalized economic dynamics in the post-recession era. Analysing the impact of the recession on global value chains, Cattaneo *et al.* (2010, p. 6) suggest that "GVCs have become crucial and enduring structural features of the world economy". While international production and consumption remain global, the recession has accelerated pre-existing trends and driven important shifts. On the demand side, it spurred the diversification of end markets as emerging economies like China and India are becoming more attractive to foreign and domestic producers as consumption centers rather than export platforms. This entails changes in terms of governance, social and economic upgrading and innovation trajectories for small and medium enterprises (SMEs) as well as larger companies in GVCs (Kaplinsky *et al.*, 2011). On the supply side, geographical and organizational consolidations are taking place both at country and firm levels (Cattaneo *et al.*, 2010), challenging the ability of ID firms, mainly SMEs, to successfully enter and compete in GVCs.

The report by Intesa San Paolo (2010) suggests that similar dynamics are affecting Italian districts. IDs have been hardly hit by the reduction of global demand, but at the same time, they are increasingly entering emerging markets, such as China, Middle East and North Africa, investing in innovation, quality and standards. The recession also spurred some consolidation in Italian IDs, with an increasing divergence in their performance *between* and *within* districts. The difference in growth and profitability has significantly increased between the best in class and the worst performing firms.

3. Globalization and the gold jewellery GVC: recent trends

The global gold jewellery industry has undergone significant changes over the last decade. Distributors and retailers are traditionally the actors that capture the highest share of value produced along the chain, and their role has increased in recent years as consolidations of jewellery chains and the vertical integration of suppliers and retailers took place in the global jewellery industry. Moreover, retail channels have become more diversified and non-jewellery discount chains and non-store retailers (e.g., TV home-shopping and online jewellers) have gained importance in key markets such as the United States, forcing producers to adjust their strategies (Gereffi & Lee, 2008).

Traditionally the most important segment of Italy's jewellery industry, gold jewellery lost its preeminent position during the last decade: the global demand for gold jewellery was reduced by -45.5% in 2000-2009 (Thomson Reuters GFMS data). This slide was caused by the rising prices of gold, a general reduction in consumption, and a change in the consumers' habits and taste, such as the growing popularity of gold jewellery mixing elements of very different quality levels (Corò, 2006; Gereffi & Lee, 2008).

Meanwhile, global trade of gold jewellery increased dramatically, from $16 billion in 2001 to $44 billion in 2010, according to UN Comtrade data. As shown in Table 1, the geography and the concentration of global production and consumption of jewellery changed dramatically; the hegemony of the United States and Italy on the consumption and production sides, respectively, has been replaced by an oligopoly of both Western and

Eastern countries. On the demand side, the main change is the declining importance of the U.S. market (passing from 33.6% of the world's total imports in 2001 to 14.6% in 2010), which was offset by advanced economies such as Switzerland, the United Arab Emirates (UAE) and Hong Kong. On the supply side, Italy's dominant position with a 22.3% of market share in 2001 has been sharply eroded, to the advantage of developing countries, notably India and China, which accounted for 20.5% of exports in 2010, compared to 13.0% in 2001.

Table 1: The world's leading jewellery exporters and importers and their market shares, 2001 and 2010

Top 5 exporters				Top 5 importers			
2001		2010		2001		2010	
Italy	22.3%	Italy	10.4%	USA	33.6%	Switzerland	15.4%
Thailand	7.8%	China	10.3%	UK	11.0%	USA	14.6%
USA	7.7%	India	10.2%	UAE	8.9%	UAE	13.8%
India	7.3%	USA	8.2%	Japan	7.2%	Hong Kong	13.6%
Honk Kong	5.9%	France	7.5%	Hong Kong	6.4%	UK	7.0%

Source: Our elaboration from UN Comtrade data. Data refers to Harmonized System code 7113, including jewellery of gold, silver and platinum and other base metal products.

Having been the world's leading exporter of jewellery for years, Italy was deeply affected by the impacts of globalization and then of the recession on its jewellery production and competitiveness in foreign markets. According to ISTAT (Istituto nazionale di statistica) data, jewellery production dropped severely in two periods: the first between 2002 and 2003, with an annual decrease by 18.7%, and the second starting in 2007, following an intervening period of stable production levels. After hitting the bottom in 2009, when raw production levels were 53.8% lower than in 2001, Italy's jewellery industry recovered in 2010 even if output levels were still much lower than in pre-crisis times (25.8% lower than in 2007). Italian jewellery exports followed a similar path, feeling the first shock in 2003 and then the second in 2008. To a great extent, Italy's struggle in exports relates to the growing competition with China, India and Turkey in the shrinking U.S. market, once the biggest export market for Italian jewellery (32.1% in 2001) and now just the third largest export destination (10.2% in 2010), behind Switzerland and the UAE (UN Comtrade data). The growing popularity of low-end, mass-market jewellery and the shrinking of the middle market have favoured lower-end suppliers from emerging countries (Assicor-Aaster, 2008; Gereffi and Lee, 2008), undermining Italy's competitiveness on global markets. The low capacity of Italian jewellery firms to preside over commercial functions, such as marketing, and the lack of qualified workforce further weakened Italy's international competitiveness (Assicor-Aaster, 2008). Given the evidence emerging from the trade and production data and confirmed by qualitative data, the "globalization crisis" refers to the period 2002-2003, and the "recession crisis" to the period 2008-2009. Despite a similar impact on export and production figures, the two crises are different in nature and affect opposite sides of the jewellery GVC. The first is about a supply-side shift brought by the entry of new exporters, while the second is a demand-side shift involving a reduction of consumption in export markets.

4. The Italian gold jewellery districts: main characteristics and history

In Italy, gold jewellery is one of the most important "Made in Italy" industries in terms of international trade, with an export propensity as high as 70% in the early 2000s. Production is mainly concentrated within three IDs – Valenza Po, Arezzo and Vicenza – which alone are responsible for 72.5% of Italy's jewellery exports in value (2010 ISTAT data). As discussed below, these IDs traditionally address distinct market niches and are specialized in different types of production.

The history of gold jewellery production in Valenza Po, located in the North-West of Italy, is relatively recent compared to the other two districts. It was in the 1890s that jewellery production became the most important revenue source of the area (Gaggio, 2006; Assicor-Aaster, 2008). The traditional specialization of Valenza Po is the production of gold jewellery and the processing of precious stones for high-end markets. Its jewel-makers are artisans, world famous for their manual and creative skills and their high quality productions (Assicor-Aaster, 2008; Gereffi & Lee, 2008). The majority of Valenza Po's firms are very small, they do not have their own brands but rather work for the few big well-known branded jewellery firms in the district, and they lack managerial and marketing skills (Federazione distretti Italiani, 2010).

The genesis of this form of local production organization was based on small enterprises and the rise of strong collective institutions to facilitate the internationalization of SMEs. Starting in the 1920s, the most successful firms shifted their focus from production to trade, which fostered subcontracting to smaller firms and the fragmentation of production (the average firm's size decreased by one third from 1911 to 1927) (Gaggio, 2006, 2007). Also the political and institutional setting of the district supported the development of jewellery specialization, entrepreneurial ventures and inter-firm cooperation, which still characterize the district today (Unicredit & Federazione Distretti Italiani, 2011). In this soil, collective institutions played a key role in the entry of Valenza Po's firms, including small artisans, into foreign markets starting in the 1950s, and they shaped the competition and coordination among firms. During the 1970s-1980s, private companies played a more prominent role in local production dynamics; local lead firms like Damiani and Bulgari, which developed close ties with foreign wholesalers as well as their own branded chains, are still major players in shaping the district's dynamics (Federazione Distretti Italiani & Unicredit, 2010).

Unlike the artisan-based jewellery production in Valenza Po, in Arezzo firms traditionally specialized in the production of chains, bracelets, and rings for low-end sales.

Their success in foreign and domestic markets is attributed to their ability to keep prices low, assisted by the mechanization of production and the use of silver and other materials to lessen the impact of rising gold prices, and product and process innovations (Lazzeretti, 2003; Assicor-Aaster, 2008). The average size of Arezzo's firms is small, but almost half of the firms own a brand and a distribution network. In contrast to Valenza Po, where the entrepreneurial activities of multiple local firms and collective institutions played a key role, the Arezzo district spun-off from one lead firm: Gori&Zucchi (now Uno-a-Erre).

While jewellery production in the area, located in the centre of Italy, dates back to the 14th century (Lazzeretti, 2003), it was in the early 20th century that the district took on the industrial structure for which it became internationally famous, mainly thanks to the development of Uno-a-Erre (Gaggio, 2006, 2007). Founded in 1926 and specialized in low-quality products, it grew tenfold in less than a decade thanks to the mechanization of several production phases, and in the 1960s became the largest gold jewellery exporter in Europe and the largest producer in the world. At that time, societal and political pressures forced the company to decentralize, favouring the development of small businesses and a splintering of production (Gaggio, 2006; Assicor-Aaster, 2008). The decision-making role of collective institutions in Arezzo was concentrated in one firm, Uno-a-Erre. Arezzo's institutions emerged after the district developed, as an initiative of a few lead firms and the public authorities to regulate activities within the district and to support the entrance of smaller firms in international markets.

The Vicenza district's evolution assumes characteristics of both of these previous districts: its long tradition in jewellery manufacturing originates from the entrepreneurial venues of several firms, like in Valenza Po, but its more recent development through industrialization is similar to Arezzo. Jewellery production in the Vicenza province in the North-East of Italy has two main centres: one is the city of Vicenza, where the industry was born, and the other is the area of Bassano and Trissino, located 40 kilometers northeast of the provincial capital. Firms in the capital area are more artisan-like, whereas firms in the Bassano and Trissino area are specialized mainly in chains production. These are bigger and their competitive advantage lies in economies of scale rather than product differentiation.

Historically, gold jewellery manufacturing in the Vicenza district flourished in the Renaissance, and the industry expanded in the mid-1800s and boomed in the 1960s, thanks to the diversification of its product range and investment in high-performing machinery, which allowed the district to enter international markets (Assicor-Aaster, 2008). Vicenza is embedded in a very dense and lively industrial area, where several districts specializing in other fashion industries and mechanics are located, and important institutions, like the Vicenza Fair – the most prestigious jewellery fair in Italy and among the most important in the world – have promoted the development of local firms and attracted foreign buyers (Assicor-Aaster, 2008). Traditionally, chains, watchstraps and components for watches were among the most common products made in the Vicenza district, but in recent years its product range significantly expanded to higher quality production and silver jewels (Federazione distretti Italiani, 2010).

5. District patterns of GVC integration and the globalization and recession challenges

Having entered international markets in the 1950s and 1960s, Italian districts became one of the most important centres for jewellery production worldwide and continued to grow throughout the 1990s. Starting in the 2000s, however, global markets presented Italian jewellery districts with new challenges, undermining their global competitiveness. The rise of competition in the global arena, spurred by the entry of producers from emerging economies like China and India, and recent changes characterizing the jewellery industry, caused a significant downturn in Italy's IDs, but they impacted the three jewellery districts in different ways.

Table 2: Recent transformations of the Italian jewellery districts

	Valenza Po	Arezzo	Vicenza
Number of firms (2010)	879	1,220	713
Variation, 2002-2010	-24.0%	-22.5%	-38.6%
Number of employees (2010)	6,767	9,077	6,547
Variation, 2002-2010	-25.8%	-35.5%	-43.9%

Source: Our elaboration on Chamber of Commerce and Movimprese data.

According to ISTAT and Chamber of Commerce data, in 2002-2010 the number of firms decreased in all three districts: the declines were 22.5% and 24.0% in Arezzo and Valenza Po, respectively, and the largest drop of 38.6% occurred in Vicenza (see Table 2). The reduction of employment has been even sharper. Especially in Vicenza, the number of employees was almost halved, and it has become the district with the fewest firms and workers. While the average size of the firms in Valenza Po remained almost the same, in Arezzo and Vicenza the number of employees fell faster than the number of firms, indicating a process of downsizing. Despite the overall downsizing across the three IDs, their export performance and internationalization strategies diverged significantly. Below we discuss how these three IDs diverged in terms of downstream and upstream internationalization in the face of the twin globalization and recession crises. "Downstream internationalization" refers to the export of final goods, while "upstream internalization" involves importing jewellery parts and components for further processing in Italy.

5.1 Downstream internationalization

Data suggest that Vicenza was the worst performer in jewellery exports[1]. Its share of Italian jewellery exports dropped sharply, from 35.5% in 2001 to 26.7% in 2010. Vicenza's exports fell in value by 27.2% in 2001-2004, and by 20.3% in 2007-2010 (see Table 3). According to the report by CREI (2007), firms that based their competitive advantage on economies of scale rather than product differentiation have suffered the most. Valenza Po was the first in class during the globalization crisis, registering the lowest reduction in exports with respect to pre-crisis levels (-13.9% in 2001-2004), but in the face of the recession crisis of 2008-09, it lost ground to Arezzo. Meanwhile, Arezzo was particularly hard hit by the globalization crisis. Uno-a-Erre, which was the district leader during recent decades, delocalized a considerable part of its manufacturing activities and its supply chain to Jordan and other developing countries (NOMISMA & Istituto S. Anna, 2006; Gaggio, 2006; Assicor-Aaster, 2008), and firms that did not own a brand were the most challenged by international competition (NOMISMA & Istituto S. Anna, 2006). However, in 2007-2010, while the other districts registered a decline in exports, Arezzo displayed an increase by 6.4%.

Table 3: Italian jewellery districts' export performance during the globalization and recession crises

	Valenza Po	Arezzo	Vicenza
2001	464,982	1,755,734	1,980,351
2010	562,484	1,531,541	1,220,070
2001/2004	-13.9%	-34.9%	-27.2%
2007/2010	-12.9%	6.4%	-20.3%

Data are in thousand euros.
Source: Our elaboration on ISTAT data on ATECO industry code 32.1.

The analysis of export destinations suggests the existence of both inter- and intra-district heterogeneity: the three IDs followed different export strategies and changed their international trading partners in the face of the recession crisis as compared to the globalization one. In the face of these two crises, all the jewellery districts have lessened their dependence on the United States, traditionally their main market: in 2010 Valenza Po's and Vicenza's exports to the United States were 59.7% and 78.9% lower, respectively,

[1] Export and import data are in values and refer to the ATECO industry code 32.1 that includes not only jewellery made of precious metals, but also precious stones, custom jewellery and mix-and-match jewellery that is currently very popular. Because of data limitations, we used the province as a proxy for districts; the fact that jewellery production is very concentrated in a restricted geographical area reduces considerably the possible bias emerging from the use of such a proxy.

than 10 years before. Arezzo firms faced a similar downsizing. The decrease in the US market, following the industry shock in the early 2000s, was offset by increasing exports to the UAE from Arezzo and Vicenza's companies. In terms of exporting to new markets, Valenza Po targeted advanced economies in Europe (Switzerland, the United Kingdom and France) and Asia (Hong Kong), whereas Arezzo and Vicenza firms steadily increased the share of exports in emerging economies (see Table 4). Markets that grew particularly for Arezzo are Turkey – which rose from its 21st largest export destination in 2000 to the fourth largest one in 2010 – and Tunisia, which became an increasingly important export market for the district starting in 2006 (see NOMISMA & Istituto S. Anna, 2006). Meanwhile, Jordan, China and Libya grew the most as Vicenza's export destinations in the mid-2000s.

Table 4: Italian jewellery districts' downstream internationalization strategies

	Valenza Po	Arezzo	Vicenza
Top Export markets			
2001	Switzerland (23.4%)	United States (32.2%)	United States (39.6%)
2004	Switzerland (35.8%)	United States (31.4%)	United States (26.8%)
2010	Switzerland (47.7%)	UAE (31.9%)	UAE (14.3%)
% of emerging economies among the top 10 export markets			
2001	0%	13.0% [Panama, French Antilles]	3.1% [China]
2004	0%	8.4% [Panama, Turkey]	12% [China, Jordan]
2010	0%	14.6% [Turkey, Panama, Tunisia]	19.4% [China, Libya, Jordan]
Faster growing export destinations			
2001-2004	Central-western Europe (+36.8%); Central Asia (+16%)	Central Asia (+333.5%); Central-western Europe (+46.7%)	Central Asia (+122.5%); Mediterranean Area (+102.3%)
2007-2010	Mercosur (+305.2%); Central Asia (+265.1%)	Central Asia (+251.2%); Mercosur (+236.2%)	Northern Africa (+153.3%); Mercosur (+133.1%)

Source: Our elaboration on ISTAT data for the ATECO industry code 32.1.

Firms in all IDs changed their strategies in the face of the global recession crisis of 2008-09, with emerging economies, mainly China, playing a growing role and becoming among the largest export destinations for Arezzo and Vicenza. It is notable that during the recession crisis, the Arezzo district's firms increased their exports toward more advanced markets (mainly European countries, but also Asian ones), whereas Vicenza's ones kept serving emerging economies (Central Asia, Latin America and Northern African), although different ones than those Vicenza's served in the face of the globalization crisis. The two crises also spurred an increasing fragmentation of the export market, mainly in Vicenza, where in 2001 the largest export destination (the United States) was responsible for 39.6% of the overall exports in value versus 14.3% (to the UAE) in 2010 (see Table 4). In contrast, a consolidation took place in Valenza Po, as shown in the increasing share of Switzerland, the largest export market for the district throughout the 2000s.

5.2 Upstream internationalization

Internationalization also took place in the upstream segment of the jewellery value chain, i.e., producing and importing parts for further processing. Table 5 reports, for each district, three kinds of import variables: the total imports of jewellery and their parts; the portion of these imports destined for further processing within Italy and not for final consumption (imports for production, or IfP); and finally, the ratio between imports for production and export[2]. In the period 2001-2010, IfP increased in all districts, indicating the rise of upstream internationalization. The increase was the highest in Arezzo (by more than fourfold), suggesting the higher reliance of IDs firms on foreign suppliers.

Table 5: Italian jewellery districts import data

		Total import	Import for production (IfP)	IfP/export
2001	Valenza Po	297,562	283,837	61.0%
	Arezzo	33,822	17,859	1.0%
	Vicenza	105,775	65,651	3.3%
2010	Valenza Po	430,349	411,724	73.2%
	Arezzo	98,074	91,962	6.0%
	Vicenza	128,851	93,864	7.7%
2001/ 2004	*Valenza Po*	*-16.9%*	*-18.8%*	*-5.7%*
	Arezzo	*1.8%*	*21.3%*	*86.4%*
	Vicenza	*33.7%*	*59.8%*	*119.6%*
2007/ 2010	*Valenza Po*	*-3.9%*	*-2.8%*	*11.7%*
	Arezzo	*95.0%*	*156.0%*	*140.6%*
	Vicenza	*-46.8%*	*-55.0%*	*-43.6%*

Data in thousands of euros.
Source: Our elaboration on ISTAT data on ATECO industry code 32.1.

Import patterns are not monotonic, but vary from district to district. The import of jewellery from foreign producers by Valenza Po firms decreased during both crises, whereas Arezzo's increased, especially during the second shock (+156%). The pattern of

[2] The analysis reported uses the same industry code as the analysis of export dynamics, ATECO code 32.1, because "foreign outsourcing represents the transfer overseas of production activities that could have been done" by companies in Italy (Feenstra & Hanson, 1999). The industry code may also include imports of final products to be sold on the market. In the absence of data directly measuring how much of these imported goods are for final markets and how much are inputs for jewellery producers, we estimated the import for production (second column of Table 5) by subtracting the total provincial consumption of jewellery – estimated using data on the ISTAT consumption survey – from total imports at the provincial level (first column). The precise procedure is available upon request. While this proxy assumes that jewellery consumption is self-contained within the province and does not consider jewellery consumption by people from outside the province, such as tourists, these two effects have an opposite sign and may offset each other and we think this proxy may be reliable for longitudinal analyses.

Vicenza's IfP during the two crises is mixed; it increased during the globalization crisis, but decreased in the latest crisis, which may reflect also changes in the quality of imports.

The analysis of the import/export ratio (the far-right column of Table 5) also shows the growth of upstream internationalization; the share of imports for production in the district's exports generally increased in 2001-2010. Yet, the degree of relying on imported parts varied, particularly between Valenza Po firms, where imported precious stones are used for jewels production, and the other two IDs. Also, in each district, the ratio changed over time. In Arezzo and Vicenza during the first shock, and Arezzo and Valenza Po during the second one, import for production increased proportionally more than exports, indicating a possible increase in the division of labour at the global level or an increase in the unit value of the goods imported.

The analysis of the main exporters to Italy's jewellery districts indicates the highly dynamic nature in the internationalization of ID firms. As shown in Table 6, the districts' portfolio of importers and their relative importance varied dramatically during the past decade. Similar to export dynamics, emerging countries are playing an increasing role as suppliers to Italian districts. Their importance is particularly high for Vicenza. In 2010, emerging economies represented more than half of the imports from the top 10 overseas suppliers to the district. In contrast, Valenza Po continues to rely mainly on higher value-added import suppliers, such as Belgium and Switzerland.

The case of Arezzo is particularly interesting. In the face of the globalization crisis, the district increased its total imports and started to source mainly from low-cost countries, notably China. The trend was reversed for the period 2007-2010, similar to the pattern of its downstream internationalization. None of the countries that were in its top-4 exporters in 2004 – China, Turkey, Hong Kong and Jordan – had a similar role in 2010, while France, Austria, Spain and Tunisia became the most important suppliers during the recession for the district.

Table 6: Italian jewellery districts' upstream internationalization strategies

	Valenza Po	Arezzo	Vicenza
Top Import markets			
2001	Belgium (54.9%)	United States (21.0%)	Switzerland (23.6%)
2004	Belgium (49.5%)	China (15.4%)	Hong Kong (13.9%)
2010	Switzerland (45.5%)	France (28.6%)	Belgium (12.7%)
% of emerging economies among the top 10 import markets			
2001	9.0% [India, Thailand]	44.3% [Turkey, China, Thailand]	33.6% [Thailand, China, Turkey]
2004	8.5% [India, Thailand, China]	61.6% [China, Turkey, Jordan, Thailand, India, Romania]	33.8% [Thailand, China, Turkey]
2010	10.3% [India, Thailand, China]	33.3% [Tunisia, China, Jordan, Thailand, India, Romania]	58.8% [India, China, Philippines, Thailand, Turkey, Romania]

Faster growing import markets			
2001-2004	Africa (+22,989.7%); Oceania (+1,278.4%)	Central-western Europe (+296.5%); Central Asia (+232.3%)	Central-western Europe (+1,010.2%; Africa (+964.6%)
2007-2010	Mercosur (+147.1%); European non-EU (+65.5%)	Mercosur (+1,468.7%); Europe (+755.7%)	North-Africa (+4,841.9%); Central Asia (+335.4%)

Source: Our elaboration on ISTAT data.

6. Understanding the heterogeneity of internationalization strategies in Italy's Gold Jewellery Districts

Overall, our trade data analysis reveals great heterogeneity in the internationalization strategies of firms in Italy's IDs, even within the same industry and the same country, as summarized in Table 7. At the beginning of the 2000s, districts were rather homogeneous in the main market they served (the United States) and the countries they received their imports for production from (advanced economies) (see Tables 4 and 6), but over the two crises, districts firms diversified their export and sourcing destinations in different directions.

Table 7: A comparison of the jewellery districts responses to the two crises

	Globalization crisis (2001-2004)			Recession crisis (2007-2010)		
Internationalization	Valenza Po	Arezzo	Vicenza	Valenza Po	Arezzo	Vicenza
Downstream						
Export	1 (-)	3 (-)	2 (-)	2 (-)	1 (+)	3 (-)
Main export destination	Advanced	Advanced & Emerging	Advanced	Advanced	Emerging & advanced	Emergin g & advanced
Upstream						
Import for Production (IfP)	3 (-)	2 (+)	1 (+)	2 (-)	1 (+)	3 (-)
IfP/export	3 (-)	2 (+)	1 (+)	2 (+)	1 (+)	3 (-)
Main exporters	Advanced	Emerging	Advanced & Emerging	Advanced & Emerging	Advanced & Emerging	Emergin g & advanced

Numbers indicate the relative ranking of the districts (1= the best performer, 3= the worst performer); in parenthesis the sign of the trend
Source: our elaboration on ISTAT data.

In order to understand the reasons why such differences emerged, and what supported the dynamisms of IDs, we need to complement our analysis of the trade data with evidence from secondary data sources, including newspapers, industry publications, firms' websites, and interviews with industry experts. This qualitative analysis is organized along key dimensions of linking the GVC framework to ID studies, namely the role of dynamic firms and the types of upgrading strategies implemented by firms, plus the presence of active local institutions and the enforcement of collective action (Chiarvesio *et al.,* 2010).

Valenza Po is the only district where lead firms seem to be still playing an important role (Unicredit & Federazione distretti italiani, 2011), and where the local organizational structure and the internationalization strategies of firms have remained stable in the face of the crises. However, production and exports became increasingly concentrated in the hands of the two main lead firms, Damiani and Crova-Bulgari, which are among the biggest players in the Italian jewellery industry. However, during the crises, lead firms became more selective and started to rely on suppliers located outside the district. Lower-value activities, like the processing of gems, are increasingly outsourced to China and Turkey, while for higher-value activities, collaborations with designers and firms in the fashion-industry around Milan are spreading.

Overall, Valenza Po seems to be becoming a "two track" district, with a majority of firms performing badly – mainly those lacking marketing, managerial and commercial skills, offering poor service, and no retail function – and an elite set of firms, including Damiani, Bulgari and Crivelli, still competing on international markets, which have invested in innovation and, more importantly, in retail in the years preceding the recession crisis. While in the past the focus was mainly on process upgrading, in recent years firms have improved their products through design. Furthermore, some have functionally upgraded by investing in own brands and retail channels, while others became "quality suppliers" working for international or local brands (Federazione distretti Italiani, 2010; Unicredit & Federazione distretti italiani, 2011). Moreover, there is evidence that lead firms are investing in developing the capabilities of their supply base within the district. In general, entrepreneurs are still embedded in the district and enjoy the presence of strong local institutions.

Arezzo has been facing a tough leadership transition during the 2000s, since Uno-a-Erre, the most important and almost unique lead firm in the district until the 1990s, faced a strong competitiveness challenge linked to the rise of new global exporters and the shrinking middle-market, which had a significant impact on the district's firms (see NOMISMA & Istituto S. Anna, 2006). Subsequently, the district underwent a restructuring. While many firms, especially the smallest ones and those that have not invested in innovation and branding, are still in economic decline (see Simoni *et al.,* 2010), a dynamic group of SMEs that invested in innovation has emerged and accounts for the positive performance of the district in international markets. The characterization of the strategies adopted by the relatively successful firms suggests that Arezzo confronted transformations similar to those in other districts (Rabellotti *et al.,* 2009), namely quality upgrading and the move toward "lateral" specializations. In fact, part of the most successful firms, like Graziella Group, have invested in product innovation and in brand and retailing to target higher-end markets; another part specialized in the production of components like spring rings, clasps and beads, or in services (e.g., the treatment and recovery of precious metals and precious metals bank), serving firms both internal and external to the district (see also NOMISMA and Istituto S. Anna, 2006; Simoni *et al.,* 2010). In addition, local institutions have been empowered during the crises and pursued collective actions to support the insertion of Arezzo's firms into higher-value GVCs. Such dynamism in the district's upgrading strategies may well explain both its good performance in international markets and the deep changes in the portfolio of countries the companies traded with during the recession crisis. Furthermore, upgrading dynamics may explain the increasing levels of total imports that characterized the district in the recession crisis.

In Vicenza, the majority of firms are still unbranded subcontractors, which are very hard hit by the crisis (see Unicredit & Federazione distretti italiani, 2011). A handful of dynamic firms emerged in the last decade – even if they are less numerous than Arezzo's – and they have invested in product and process innovations, mainly targeting low-end products. In the district, there are big firms – but much smaller than Valenza Po's Damiani and Bulgari – with strong brands, like Cielo Venezia 1270, Chimento, Roberto Coin and Muraro, but they have little connection to local producers. Thus, they don't contribute to the district's overall development nor are they working to upgrade the lower tiers of suppliers, as happened in Valenza Po.

Very few firms have gained ground during the recession crisis. Moreover, there is evidence that during the recession, some firms reacted by "downgrading" their production – e.g., substituting silver for gold (not always successfully because this shift that requires new and different competences than the use of gold) – while others engaged in partial upgrading, improving their products and processes but not performing higher value-added activities like design, marketing and retail (see Unicredit & Federazione distretti italiani, 2011). According to industry experts, among the internal causes of the crisis are the small scale of the firms, which prevents investments, and their traditional attitudes, which inhibits longer term thinking (Unicredit & Federazione distretti italiani, 2011). Contrary to Arezzo, there are few effective cooperative actions within the district, both among firms and with other institutions, despite the presence in the district of strong local institutions like the Vicenza Fair. The weak role of lead firms, the limited upgrading effort of artisans, and the ineffective role of local institutions all contributed to the poor performance of Vicenza district firms.

Our qualitative analysis, in sum, has shown growing internal heterogeneity within the districts between firms that can compete globally and firms that cannot. It has also found that the presence (or absence) of a few dynamic firms that upgrade in product design, retailing and branding for international markets played a critical role in the district's performance in internationalization.

7. Discussion and conclusions

After years of dominance on the international scene, Italian jewellery districts have entered a deep crisis since the early 2000s. The surge of developing country producers eroded the competitiveness of Italian firms in major export markets such as the United States. After a period of slow recovery in the mid-2000s, they were hit again by the recent economic recession and thrown into a tougher challenge. In this paper, we have analyzed how ID firms reacted to these two shocks, first the "globalization crisis" in 2002-2003 and then the "recession crisis" in 2008-2009, contributing to the literature on the transformation of districts at the opening up of international markets (Rabellotti *et al.*, 2009). With an empirical focus on a single industry (jewellery) and a specific country (Italy), this paper has highlighted the differences in how several IDs compete in the global market, controlling for industry and country.

Overall, our findings reveal considerable heterogeneity in the response of district firms to external shocks, in terms of their export destinations and performance as well as the international composition of their input suppliers. The jewellery districts diverged in terms of their engagement in high-end versus low-end markets as well as their export propensities to advanced economies as compared to emerging ones. As a result, the portfolio of each district's export and import partners has changed in 2001-2011 as significantly as its internal structural characteristics and export performance has. Thus, our analysis suggests that how firms integrate within GVCs is an important explanatory factor of such heterogeneity, along with internal factors such as structural characteristics and specific business opportunities.

The comparison between Arezzo and Vicenza is emblematic in this sense. Firms in both districts are addressing similar markets, traditionally specializing in chains and bracelets for low-end sales, even though in more recent times they both tried to move toward higher value-added niches, thanks to product and process upgrading. In addition, they both are renowned for their ability to compete on price and quality, due to process and product innovations. Despite such similarities, firms located in those two districts were opposites in their ability to compete in international markets during the two main shocks that affected the jewellery industry. While a group of dynamic firms in Arezzo upgraded via production, branding and retailing innovations that allowed them to compete in international markets, Vicenza had weak lead firms and limited upgrading of its largely unbranded small suppliers.

The analysis of trade data and secondary information suggests that part of this contrast is explained by their different levels of participation global value chains. The ability of firms to engage in functional upgrading (investments in product design, brand and retail) is a key factor in explaining such heterogeneity. In the fast-changing global jewellery market and with the vanishing of the "middle-market," distribution channels are diverging with the rise of new types of retailers and the growing segmentation of the market to meet the demand of diverse consumer groups in advanced and emerging markets. Suppliers must have greater control over marketing and retail segments of the chain and a tighter coordination with foreign buyers. Italian producers are generally not as fast as their international competitors in embracing these changes, relying on existing importer-distributors and their extended distributional channels with little effort devoted to brand and product differentiation (Simoni *et al.,* 2010).

A key contribution of this paper is demonstrating that Italian industrial districts did not react in the same way to the globalization and recession crises, using as evidence both downstream and upstream internationalization strategies. Not only did each district react differently (e.g., Arezzo's firms increased exports, when Valenza Po and Vicenza's ones decreased theirs during the recession crisis; and Vicenza increasingly imported from emerging economies, whereas Valenza Po and Arezzo focused on advanced countries), but the same district also changed its strategy over time to tackle the two crises that were different in nature. For example, while in 2004 the fast growing export destinations for Arezzo firms were low-cost, emerging economies, in 2010 the firms targeted advanced economies, mainly European countries. Similarly, while Vicenza increased its imports significantly in the face of the globalization crisis, during the recession it decreased them at a similar rate. The new export destinations chosen by districts to face the loss of competitiveness during the globalization crisis differed from those chosen in the face of the recession crisis[3]. This evidence is supported by the results of the recent analysis by Cutrini (2011) on an Italian footwear district, where a similar delocalization patterns was found during the 1990s.

Finally, the analysis of qualitative data suggests an increasing difference *within* the districts, with some firms getting ahead in international markets and others falling behind in the face of the dual crises. Moreover, while in the past the major Italian firms specialized in the industry were located inside the districts, now dynamic players are also emerging outside the districts, such as Morellato (located in the Padova province) and Asolo Gold (located in the Treviso province), suggesting that IDs are not essential for successful business. The blurring of the boundary between the districts challenges the notion of industrial districts as a "unique entity". Rather than discussing whether the industrial district still represents a valid production model in the global economy, we should reflect on which industrial districts are still able to compete in such contexts and why they have been successful.

Our evidence challenges researchers to develop a fine-grained analysis of IDs, generating taxonomies like the ones suggested in De Marchi & Grandinetti (2012) or

[3] It may still be too early to assess the full effects of the recession on IDs, or whether and how it has changed the structure of IDs and the way ID firms operate, since the recession is not yet at an end.

Chiarvesio *et al.* (2010). Such tools can provide a conceptual framework to gauge the divergent and evolving trajectories of ID development in the face of globalized production. At the same time, our study prompts researchers to use the downstream and upstream dynamics associated with global value chains to identify the factors that enable IDs to maintain their international competitiveness. More sophisticated analysis of the value chain networks inside and outside the district, and the degree to which embedded relationship within the district versus the impact of external actors, affect economic performance are critical issues to evaluate the structural changes of contemporary IDs and their relevance in a globalized economy.

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