FLANDERS DC
INSPIRING CREATIVITY

Knowledge partner

Vlerick Leuven Gent
Management School

the Autonomous Management School of
Ghent University and Katholieke Universiteit Leuven

RESEARCH REPORT

GLOBALIZATION
AND ENTREPRENEURSHIP

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FLANDERS DISTRICT OF CREATIVITY

Flanders District of Creativity is the Flemish organization for **entrepreneurial creativity.** It was founded in 2004 by the Flemish Government as a non-profit organization and enjoys broad support. Flemish businesses, academia, and public institutions use Flanders DC as a platform for cooperation in the pursuit of a more creative Flanders region.

Creativity is the key ingredient in making companies more successful and in helping regional governments ensure a healthy economy with more jobs. Flanders DC inspires creativity and innovation:

1. by learning from the most **creative regions** in the world,
2. by igniting **creative sparks** in everyday life and business, and
3. by providing **research, practical business tools and business training,** in cooperation with the Flanders DC Knowledge Center.

1. Districts of Creativity: Inspiration from the most creative regions

Responses to global challenges are best found within an international network of excellence. With the single aim of learning from the very best, Flanders DC aims to unite the most dynamic regions in the world within the 'Districts of Creativity' network. Every two years, Flanders DC convenes the Creativity World Forum, bringing together government leaders, entrepreneurs, and knowledge institutions to exchange ideas about how to tackle pressing economic problems and make their regions hotbeds for innovation and creativity.

CREATIVITY WORLD FORUM

November 15-16, 2006 - Ghent, Belgium

Scotland
Quebec
Flanders
Baden-Württemberg
Rhône-Alpes
Nord-Pas-de-Calais
Qingdao
Oklahoma*
Kanagawa*
Shanghai
Karnataka
Catalonia
Queensland*
Lombardy

FLANDERS DC
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*: Candidate members

2. Raising awareness: The best way to predict the future is to invent it

Flanders DC encourages entrepreneurs and citizens to look ahead and find creative solutions today for tomorrow's problems. Flanders DC has developed an idea-generation tool to encourage people and organizations to take the first step toward innovation. In addition, Flanders DC runs a general awareness-raising campaign entitled "Flanders' Future".

3. The Flanders DC Knowledge Centre: Academic support

The **Flanders DC Knowledge Center** serves as a link between Flanders DC and Vlerick Leuven Gent Management School. Each year, the Flanders DC Knowledge Center publishes several reports and develops various tools, case studies and courses. All these projects focus on the role of creativity in a business environment and identify obstacles to, and accelerators of, competitive growth.

The **Creativity Talks** – brief monthly, interactive info sessions – update you on these research activities. See www.creativitytalks.be for a current calendar and subscription information.

Research reports:

➢ **De Vlaamse economie in 2015: Uitdagingen voor de toekomst,** Koen De Backer en Leo Sleuwaegen, September 2005, Published in Dutch

➢ **Ondernemingscreativiteit als motor van groei voor Vlaamse steden en Brussel,** Isabelle De Voldere, Eva Janssens en Jonas Onkelinx, November 2005, Published in Dutch

➢ **The Creative Economy: challenges and opportunities for the DC-regions,** Isabelle De Voldere, Eva Janssens, Jonas Onkelinx en Leo Sleuwaegen, April 2006, Published in English

➢ **Spelers uit de televisiesector getuigen: een verkennende studie in de creatieve industrie,** Marc Buelens en Mieke Van De Woestyne, Juni 2006, Published in Dutch

➢ **Mobiliseren, dynamiseren en enthousiasmeren van onze toekomstige zilvervloot,** Thomas Dewilde, Annick Vlaminckx, Ans De Vos en Dirk Buyens, Juni 2006, Published in Dutch

➢ **Development of a regional competitiveness index,** Harry Bowen, Wim Moesen and Leo Sleuwaegen, September 2006, Published in English

➢ **Innovation outside the lab: strategic innovation as the alternative,** Marion Debruyne and Marie Schoovaerts, November 2006, Published in English

➢ **De creatieve industrie in Vlaanderen,** Tine Maenhout, Isabelle De Voldere, Jonas Onkelinx en Leo Sleuwaegen, December 2006, Published in Dutch

➢ **Het innovatieproces in grote bedrijven en KMO's,** Geert Devos, Mieke Van De Woestyne en Herman Van den Broeck, Februari 2007, Published in Dutch

➢ **Creatief ondernemen in Vlaanderen**, Tine Maenhout, Jonas Onkelinx en Hans Crijns, Maart 2007, Published in Dutch

➢ **Hoe ondernemers in Vlaanderen opportuniteiten identificeren. Een rapport met tips en tools voor de ondernemer in de praktijk**, Eva Cools, Herman Van den Broeck, Sabine Vermeulen, Hans Crijns, Deva Rangarajan, Mei 2007, published in Dutch

➢ **Networking in multinational manufacturing companies**, Ann Vereecke, July 2007, published in English

➢ **How entrepreneurial are our Flemish students,** Hans Crijns and Sabine Vermeulen, November 2007, published in English

➢ **Fashionate about Creativity**, Isabelle De Voldere, Tine Maenhout en Marion Debruyne), December 2007, published in Dutch

➢ **Find the innovator. Identifying and understanding adopters of innovative consumer technologies in Flanders,** Marion De Bruyne and Bert Weijters, December 2007, published in English

➢ **De case Arteconomy**, Eva Cools, Herman Van den Broeck en Tine Maenhout, December 2007, published in Dutch

Published research reports can be downloaded via the Vlerick Leuven Gent Management School library catalogue or via www.flandersdc.be.

In addition to these research projects, the Flanders DC Knowledge Centre has also developed the following tools and training sessions:
➢ **Ondernemen.meerdan.ondernemen**, an online learning platform
➢ **Creativity Class** for young high-potentials
➢ **Flanders DC Fellows**, inspiring role models in business creativity

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During the last fifteen years the world has witnessed a major globalization process, characterised by increasing integration of products, capital and labour markets across countries. The European Union has been at the core of this process, with the development of its single market and successive enlargements. Belgium in particular stands as the most open EU country. Its trade openness index[1] has reached the level of 0.96 in 2006, and around 12% of the Belgian working age population is made up by immigrants. Moreover, Belgium displays a significant presence of foreign multinational subsidiaries, accounting for about 50% of employment in the manufacturing sector. In parallel with globalization, Western countries have been undergoing a transition from the managed to the entrepreneurial economy (Audretsch and Thurik, 2001). Entrepreneurship and small businesses have been acquiring a central role with respect to innovation, job creation and economic growth. Consequently, fostering entrepreneurship has become a priority for policy makers.

In a globalized context, an effective entrepreneurship policy needs to take the international dimension of business into account. Indeed, globalization changes the environment in which firms operate. Economic integration opens new business opportunities to expand into international markets and to spread the supply chain in the most optimal way, but it also implies tougher competitive pressure for domestic firms. And yet, this crucial issue has been often neglected in the economic debate. This report reviews the theoretical and analytical findings on the relation between globalization and entrepreneurship, and analyzes the policy implications in a systematic conceptual framework. In particular, we focus on three dimensions of globalization: trade integration, foreign direct investment and workers migration.

Three dimensions of globalisation

First, global trade integration is found to result in higher exit rates of manufacturing firms in Europe. Small firms in EU countries are mainly affected by deepening trade integration with respect to neighbouring countries and other wealthy trading partners. Larger companies are increasingly displaced by increasing import flows from low income countries such as India and China. In parallel, as competition forces the most efficient firms to consolidate and export an increasing share of their production to wider markets, barriers to entry increase for newcomers. This process results in lower creation rates of new business ventures. However, at the same time we also find support for the positive view of globalization as a source of new business opportunities. Indeed, an increase in intra-industry trade and international sourcing by firms is found to be associated to both lower exit and higher entry rates of firms. Entrepreneurial resources thus seem to be concentrating in those sectors where firms are able to develop niches for their differentiated products, which shield them from throat-cutting international competition; but also in those sectors where the level of trade complementarities with respect to the rest of the world is increasing. Those complementarities are often the result of offshoring routine-activities to low-wage countries and upgrading local production towards high-value added products, consistent with the shift of comparative advantages of European countries towards technologically advanced activities.

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1 Measured as the following ratio: (imports + exports)/(GDP + imports).

The second globalization dimension involves the effects of foreign direct investment (FDI) on domestic entrepreneurship. In the short run, foreign based multinationals establishing new subsidiaries in the host countries tend to outcompete domestic entrepreneurs, resulting in higher exit and lower entry rates of new firms. However, in a somewhat longer run perspective, the increased presence of foreign subsidiaries may turn out to be beneficial for domestic entrepreneurship through backward linkages and technology spill-overs to domestic firms. These benefits will occur more often in cases where foreign firms rely on domestic suppliers of intermediate goods and services.

An important implication of the latter findings is that, in order for the positive effects to be realized, entrepreneurs should adopt a "globally pro-active" approach. For instance, they need to recognize and capture the new business opportunities offered by firms spreading their supply chains. Entrepreneurs must be able to benefit from the presence of foreign multinationals by specializing and entering their supply networks.

The third dimension of globalization, international migration, has an impact on both the demand and supply side of entrepreneurship. On the supply side, immigration changes the size and composition of the labor force. On the demand side, the presence of growing communities of foreign-born people creates a demand for particular goods and services, opening new possibilities for business ventures. Moreover, the growing importance of transnational entrepreneurship, where immigrant entrepreneurs blend business practices rooted in the cultural social and economic context of the origin country with practices of the new destination country, often leads to new combinations and the development of new successful business models. Migration inflows are a precious source of entrepreneurial energies. Indeed, immigrants display high self-employment rates, turning out to be more entrepreneurial than the locals in countries like Belgium, France and the UK. This might be due to cultural and market factors, and also to the fact that only the most entrepreneurial people are likely to succeed in migrating to a new country. However, there is evidence that the business potential of immigrants is still underdeveloped. Indeed, their firms are often small, undercapitalized, and tend to concentrate in low entry threshold sectors, characterized by high failure rates and limited growth potential. Access to more complex and profitable sectors is made difficult by various factors. In particular, immigrants face problems with the host country's language and legal system, and have more difficulties in raising capital for start-up and growth investments.

Public policy: Some recommendations

The impact of the three globalization drivers calls for a revision or adaptation of traditional entrepreneurship policy. Most conceptual models linking entrepreneurship with policy consider entrepreneurship within the framework of a demand and supply system. Demand for entrepreneurship is determined by business opportunities, while the supply of entrepreneurs is related to the composition of the labor force, together with resource availability, cultural factors, abilities and risk attitudes. Entry and exit from entrepreneurship are a result of individual risk-reward evaluations, by which every agent compares the relative attractiveness of starting a new firm versus the outside options of wage-working and/or benefits from unemployment.

In this framework, several channels of policy intervention are identified. On the demand side, public institutions can enhance the creation of new business opportunities through income policy, public

procurement, liberalizing markets and by favoring technological innovation. Supply of entrepreneurs can be positively affected through education and assistance measures. Access to capital may be improved by appropriate financial regulation, and by fostering the development of venture capital markets. Product and labor market regulation, taxation policy and intellectual property protection laws have a profound influence on changing the relative attractiveness of entrepreneurship versus the alternatives. For instance, a recent analysis by the World Bank finds entrepreneurship across countries, measured as firm creation rates in the country, to be positively associated with simple entry bureaucratic requirements, flexible labor market rules, efficient financial markets and effective IPR protection.

Globalization amplifies the need for sound policy intervention in all these areas. More importantly, globalization leads to increased risk to start up a new business. In order not to discourage or constrain potential entrepreneurs it is therefore important to spread this risk in an efficient way. Specific programs and state guarantee schemes may be designed to help setting up effective mechanisms to diversify risk and support capital providers in financing high risk projects. Risk can also be reduced by providing better information about globalization opportunities, global supply networks, political and economic risk and cultural differences of doing business in foreign countries.

Equally important is the provision of educational training programs to develop specific competencies and managerial skills to expand and work in foreign environments. Successful transnational entrepreneurship and the forging of links between domestic and foreign entrepreneurs should also be stimulated within the context of the diverse knowledge centers, and within internationalized business schools, where effective networking may help in finding and developing new transnational business opportunities.

Initiatives to attract foreign investors in particular sectors should be assessed in relation to the creation of new links between existing and potential local entrepreneurship. This may be helped by forging new partnerships between private and public initiatives and by setting effective strategic development plans identifying strong and weak spots in the development of new economic networks around foreign and domestic firms. The provision of the right techno-economic infrastructures and helping domestic firms to build up the necessary absorptive capacity to link up with technologically advanced firms should become central themes in such an approach.

As a final recommendation there is a need for national and supranational policies that reduce 'the liability of foreignness' i.e: the extra legal, financial, and administrative cost and/or discrimination that foreign entrepreneurs face when doing business in a foreign country.

During the last fifteen years the world has witnessed a major globalization process. This has been characterized by increasing integration of products, capital and labour markets across countries. As recently reported in the OECD Economic Outlook (2007), the share of goods and services imports out of the world GDP has been increasing from 20% to almost 30% since the early nineties. This reflects higher exchange of final goods, but also a positive trend for trade in intermediates and the internationalization of production chains. For instance, today almost 30% of intermediate inputs employed in OECD manufacturing industries are sourced from abroad. In parallel with this, international capital flows have been dramatically increasing. In particular, the share of foreign direct investment (FDI) out of the world GDP has more than doubled between 1994 and 2004. Labour markets have become more integrated as well, with foreign workers making up increasing proportions of the labour force in most of the countries. At the same time, "high-growth" developing nations such as India and China have been emerging as key players of the world competitive scenario, accounting for growing shares of international trade and foreign direct investment (FDI). The European Union is at the core of the globalization process, with the development of its single market and the recent enlargement to twelve new members. Belgium in particular stands as the most open EU country. Its trade openness index[1] has reached the level of 0.96 in 2006, and around 12% of the Belgian working age population is made up by immigrants. Moreover, Belgium displays a significant presence of foreign multinational subsidiaries, accounting for about 50% of employment in the manufacturing sector[2] (Coucke and Sleuwaegen, forthcoming).

The progress of globalization has drastically changed the environment in which economic agents interact among themselves. In recent years, economic research has investigated the impact of increasing global integration on domestic economies from different perspectives. For instance, there is a growing literature about the effects of international trade on income inequality, inflation, labour market dynamics, firm and industry-level adjustments. However, limited attention has instead been paid to the relation between globalization and entrepreneurship. And yet, the latter represents a crucial issue from the policy point of view. High rates of entrepreneurial activities are in fact shown to foster innovation, economic growth and job creation (Verheul et al. 2001). Moreover, entrepreneurial resources are expected to be even more important in times of structural change, when industries and countries need to adjust to a new competitive scenario.

The first aim of this paper is that of reviewing the theoretical and empirical contributions to the understanding of how different aspects of economic openness affect the rate of entrepreneurial activity in the economy. Section 2 starts with a general theoretical overview, followed by a detailed analysis of the empirical evidence on the effects of international trade (section 3), foreign direct investment (section 4) and workers migration (section 5) on entrepreneurship. Finally, in section 6 we will discuss the policy implications for the promotion of entrepreneurship in a globalized competitive context.

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[1] Measured as the following ratio: (imports + exports)/(GDP + imports).
[2] See Annex 1 for detailed descriptive statistics on trade openness, FDI penetration and entrepreneurship in Belgium.

Intuitively, the impact of increasing economic openness on entrepreneurship is a priori ambiguous. On one side, globalization offers increased opportunities for new business, as firms have access to wider product and input markets. At the same time, however, economic integration across countries raises the intensity of competition, resulting in lower incentives and higher barriers to entry for potential entrepreneurs. Different authors have highlighted the two sources of impact at the theoretical level. In what follows we review the main contributions by Audretsch and Sanders (2007), Grossman (1984) and Markusen and Venables (1999).

In a recent paper: "Globalization and the Rise of the Entrepreneurial Economy", David Audretsch and Mark Sanders argue that globalization has promoted entrepreneurship by fostering the developed countries' shift from the "industrial" to the "entrepreneurial" model of production. This shift has been going on in Europe and North America over the last 30 years, and has been well documented by many studies (Verheul et al. 2001). It is characterized by a decline in manufacturing shares of employment and value added in favour of services, and by a drop in the relative importance of big industrial firms in terms of job levels and creation rates. Audretsch and Sanders put this structural change in relation with the globalization process, which is read as being triggered by two mutually reinforcing dynamics. The first is constituted by the political changes which have led the former USSR nations and other big countries such as China and India to join the global economic system. The second is the ICT revolution, which has lowered the perceived distances and changed companies' production and organizational practices. As a result of both processes, the developed ("North") countries have been faced up to a huge expansion in the cheap labour force available in the "South". At the same time, political risk was declining and technological changes were making it possible to split production chains across nations and shipping goods at declining costs. Emerging countries, fuelled by strong FDI inflows, have thus been taking over the North in traditional manufacturing productions, while a specular de-industrialization process has occurred in Europe and North-America. The comparative advantage of the North has shifted towards higher value-added, knowledge and creativity intensive products. Many start-ups have emerged in the ICT-related sectors. Moreover, room for new entrepreneurial ventures and smaller firms has been created by the outsourcing and off-shoring dynamics for intermediate goods and services. All these elements lead Audretsch and Sanders to the conclusion that globalization is ultimately beneficial for entrepreneurial rates in developed countries. At the theoretical level, their view is supported by a variety expansion model in which goods move over time through three stages of the product cycle: new, mature and off-shore production. Entrepreneurs serve as agents that move varieties over the different stages. When a new product is introduced by an entrepreneur in the North, it can only be produced there by skilled workers. Over time, process innovation leads to the standardization of production, and low skilled Northern workers can now make it. However, at this mature stage, production off-shoring to the South becomes possible, and it is driven by the cost advantage guaranteed by cheap unskilled labour. Eventually, a new entrepreneur from the North is assumed to take the risk of the latter step through foreign direct investment. Entrepreneurial talent in the North is thus allocated among product/process innovation and outsourcing. Audretsch and Sanders model globalization in this framework as an increase in the supply of unskilled labour in the South, together with better property rights enforcement and a positive technological shock. The predictions are consistent with the observed dynamics: FDI driven industrialization in the South and higher innovative entrepreneurship in the North.

While Audretsch and Sanders (2007) definitely emphasize the positive view of the relation between increased economic openness and domestic entrepreneurship, a different perspective on the same issue emerges instead from an article by Gene Grossman (1984): "International Trade, Foreign Investment, and the Formation of the Entrepreneurial Class". Grossman models a two sectors economy (agriculture vs. industry) characterized by the absence of risk sharing markets and by an endogenous supply of entrepreneurs. Individuals in this model make an "occupational choice" between working for wage and starting a new firm in the industrial sector. Being entrepreneur is a risky option. Those agents who choose to incur the fixed cost of setting up a firm face a profit risk that cannot be insured. Instead, wage workers receive a certain salary without bearing any risk. In equilibrium, with incomplete specialization, the expected utility from the two occupational choices must be the same.

In autarky, Grossman shows that the lack of perfect risk sharing markets generates under-supply of entrepreneurs with respect to a first best outcome. If trade is opened up, leading to a price decrease for the industrial traded goods, even fewer individuals will choose to become entrepreneurs. Indeed, opening to trade lowers the attractiveness of entrepreneurship relative to wage working, thus resulting in lower supply of entrepreneurs. Moreover, opening to foreign direct investment has also a negative impact on domestic entrepreneurship. In fact, as foreign affiliates enter the economy, domestic human resources must be released in order to provide them with the necessary labour force. Hence, in this framework, domestic entrepreneurship is crowded out by both international trade and FDI. Abstracting from the Grossman model, though, the impact of foreign direct investment is itself ambiguous. Indeed, it is true that foreign multinationals (MNEs) might outcompete domestic entrepreneurs on both product and factor markets. However, positive externalities might stem from the presence of multinationals as well, and the literature has identified different channels through which this might occur. For instance, high-quality managerial skills might spill over from multinationals through spin-offs and the turnover of workers (Caves, 1996). Moreover, domestic entrepreneurship could be fostered by MNEs through backward and forward linkages, to the extent that foreign firms rely on domestic suppliers of intermediates (Rodriguez-Clare, 1996). Both competition and linkage effects from FDI are formally analysed in a paper by Markusen and Venables: "Foreign direct investment as a catalyst for industrial development" (1999). In this article, the authors model an open economy with two monopolistically competitive industries, in which intermediate and final consumption goods are produced at increasing returns to scale. Intermediates are non-tradable, and can only be supplied by domestic firms. Final goods producers benefit from an increase in the number of intermediates' suppliers through a reduction in input prices. In this framework, the entry of multinationals in the final goods' sector has three different effects. First, MNEs generate a fall in the price of consumption goods, thus crowding out some domestic firms in the same sector (competition effect). Secondly, the entry of foreign firms raises the demand for intermediate inputs. In imperfect competition this results in decreasing average costs and increasing profits for the domestic producers of intermediates, which triggers entry of new firms in the upstream sector (backward linkages). Finally, as the increased supply of intermediates is beneficial for final goods producers, foreign direct investment may foster domestic entry also in the downstream industry (forward linkages). The net result on the number of domestic firms depends on the relative strength of the various effects. Markusen and Venables show that the entry of multinationals can be ultimately beneficial for domestic entrepreneurship, especially if MNEs export increasing shares of their output abroad (lower competition effect). FDI might even trigger industrial development in sectors which were absent in the host country, and the growth of indigenous firms might be so strong that multinationals are forced out of the domestic market in the

long run. However, negative effects might prevail if MNEs mostly rely on their international supply network, as limited linkages with respect to domestic producers of intermediates are created.

Overall, the reviewed literature provides a good assessment of potential positive and negative effects of globalization on entrepreneurship. In the Audretsch and Sanders paper, emphasis is placed on the new business opportunities that emerge in a global scenario. In Grossman's contribution, instead, the potential drawbacks of increased competitive pressure in open markets are highlighted. Finally, Markusen and Venables assess both competition and positive linkage effects from FDI. The just depicted theoretical heterogeneity of impacts makes the empirical investigation of these issues particularly interesting. In the next sections we will review the available evidence on the relation between international trade, foreign direct investment, migration and entrepreneurship.

The markets for inputs, services and final goods are getting increasingly integrated across countries. As reported in the introduction, the share of imports out of the world GDP has been growing by almost 10 percentage points in the last fifteen years, and it ranges today around 30%. This reflects the worldwide trade liberalization following the Uruguay Round, the completion of the European Single Market, and the increase in trade with China, India and other low-wage countries. Firms are getting access to bigger markets for their products, and to cheap sources of intermediate inputs. On the other hand, though, they are now faced up with tougher competition at the international level. What does this deep structural change imply for firm survival and entrepreneurship in European Countries? This is the research question that Italo Colantone and Leo Sleuwaegen address in their recent paper: "Entry and exit of firms in a global economy: a cross-country and industry analysis" (2007). The two authors focus on a set of EU-15 countries: Belgium, Denmark, Finland, Italy, Netherlands, Spain, Sweden and United Kingdom. The data cover firm entry and exit rates for twelve disaggregated manufacturing sectors, for the period: 1997-2003. The paper investigates econometrically the relation between changes in trade pressure, firm survival and entry. In particular, exit and entry rates are put in relation with previous years' changes in three different indexes of trade exposure: overall openness and its two components, which are referred to as import competition and export intensity. Overall trade openness is measured as the sum of import and export flows over the sum of domestic production and imports, at the sector/country level (see Annex 1 for detailed statistics on Belgium). Import competition and export intensity are then defined, respectively, as the ratio of import and export flows over the same denominator (domestic production plus imports). These indicators capture the evolution of trade flows relatively to the size of the domestic sector. They can thus be seen as volume-based indicators of trade intensity. Appropriately controlling for a set of other explanatory variables, Colantone and Sleuwaegen find, in the first place, that an increase in trade openness is associated to higher firm exit rates, and the latter effect is driven by the import competition component. Increasing import pressure thus seems to be responsible for higher failure rates of European firms in recent years. This result is consistent with other findings by Bernard et al. (2006a, 2006b) on the United States, and by Coucke and Sleuwaegen (forthcoming) on Belgium. This whole body of empirical evidence seems to confirm the theoretical intuition that trade liberalization triggers a market selection process. As trade is opened up, the least efficient domestic firms are crowded out of the market by increasing competition. Instead, the most productive companies benefit and grow by expanding in the foreign markets (Melitz, 2003; Bernard et al., 2003; Melitz and Ottaviano, 2005).

Colantone and Sleuwaegen also analyse separately the exit dynamics of small firms (under 20 employees), which are found to be displaced by increasing import pressure to the same extent as the rest of the population. However, in a related paper by Colantone, Coucke and Sleuwaegen (2007), firms of different size are found to be sensitive to different sources of import competition. In particular, big companies are displaced by increasing import flows from low income countries such as India and China. Small firms are instead affected by increasing trade integration with respect to neighbouring European countries and other wealthier trading partners[3]. This difference is interpreted

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[3] This result is obtained by splitting the import competition index in two components, according to the country of origin of the imports. In particular, an index of import competition from low-income countries is obtained by leaving at the numerator only those imports which are sourced by a set of 52 nations with a level of GDP per capita lower than 5% of the US figure. All the other imports are instead taken into account in the index of import competition from wealthier trading partners.

as signalling the fact that firms of different size are competing in separate strategic groups within the same industry. Big companies, active in larger scale/standardized productions, are more sensitive to import pressure from low-wage countries. On the contrary, small firms are more likely to be competing "at the margin" in niche/localized markets. This makes them rather responsive to deepening trade integration within the EU, for instance.

Overall, lower firm exit rates are associated with increasing levels of intra-industry trade (IIT), which is measured through the standard Grubel-Lloyd index[4]. This means that relatively less firms exit from an industry if trade complementarities with respect to the trading partners are increasing. Colantone and Sleuwaegen interpret an increase in IIT as an industry adjustment to global competition. Indeed, it has been shown that firms react to increasing import pressure by changing their product-mix and specializing in high-value added products (Bernard et. al 2006b). The latter are increasingly exported, while lower-value added goods are progressively more imported. At the same time, outward processing trade and international sourcing of intermediates are also gaining importance as a way to take advantage of globalization in terms of lower production costs (Coucke and Sleuwaegen, forthcoming). All the latter dynamics generate a higher correlation of import and export flows at the industry level, which results in increasing measured levels of intra-industry trade. The authors thus conclude that firms have better chances of survival if they react to the intensified import pressure by exploiting comparative advantages on the global markets for both intermediate and final goods. In particular, international sourcing is found to be an effective strategy resulting in lower failure rates.

In the second part of their analysis, Colantone and Sleuwaegen explore the relation between increasing trade pressure and firm entry rates. To the best of our knowledge, despite the huge literature on international trade, technology spillovers and growth, this is the first paper that focuses on trade and entry in a multi-country framework. They find that an increase in overall trade openness is associated with lower entry rates through both channels of import competition and export intensity. First, import penetration has an indirect impact on firm birth rates through the replacement entry, i.e. the component of entry which is directly related to previous exit. In fact, relatively less replacement entry is detected with respect to exit which is due to import displacement. Second, export intensity has a direct negative impact on firm entry. This means that an increase in the exporting engagement of incumbent companies leads to lower entry rates of new firms. This finding reflects an "export driven" increase in barriers to entry. In fact, as already mentioned before, all the new models of international trade with heterogeneous firms (Melitz, 2003; Bernard et al., 2003; Melitz and Ottaviano, 2005) predict that opening to trade generates a market selection process, which is supported by a growing body of empirical evidence. The least productive firms are outcompeted and exit, while the most efficient companies grow in scale by increasing their level of exports (Bernard et al., 2006a, 2006b; Coucke and Sleuwaegen, forthcoming). Hence, as the market selects the best firms, barriers to entry for new entrepreneurs increase. The minimum scale and efficiency level which are now needed for a new firm to enter the market successfully are higher, thus resulting in lower entry rates.

Finally, relatively higher entry is associated with positive changes in intra-industry trade (measured as before through the Grubel-Lloyd index). Thus, it seems that more entrepreneurs are attracted by those sectors in which new opportunities from globalization are better exploited. Indeed, relatively more firms enter those industries in which the level of trade complementarities with respect to the rest of the world is increasing, especially through higher international sourcing of intermediates.

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[4] The index is defined as: IITijt = 2*min (Mijt, Xijt)/(Mijt + Xijt), where M equals total imports and X stands for total exports of sector i, in country j, at time t.

Hence, entrepreneurial resources and efforts seem to be concentrating in sectors which are moving to high-value added products, thus getting more fit to the global competitive scenario, consistent with the comparative advantages of European countries.

Summing up, global trade integration is leading to higher exit and lower entry of manufacturing firms in Europe. Different sources of import pressure are crowding out both small and bigger companies, which are replaced by new entrants only to a limited extent. Moreover, as the most efficient exporting firms are consolidating in the markets, barriers to entry increase and result in lower creation of new business ventures. Going back to our theoretical digression, these results seem to support the "Grossman type" negative view of the relation between trade and entrepreneurship. In particular, globalization seems to lead to lower entry due to intensified competition on the open markets. However, Colantone and Sleuwaegen also find some support for the positive view of globalization as a source of new business opportunities. Indeed, an increase in intra-industry trade, especially if driven by international sourcing of intermediates, is found to be associated to both lower exit and higher entry of firms. Being successful in globalizing industries requires a pro-active strategic shift in business organization and product lines aimed at making the most out of the international market opportunities.

Foreign Direct Investment is an important phenomenon of globalization. As reported by UNCTAD, today about 64,000 multinational corporations (MNEs) provide some 53 million jobs in the world. The generated intra-firm trade accounts for about one-third of total global trade. FDI flows have been booming in the nineties, reaching the peak level of $1.4 trillion in 2000. According to the World Investment Report (2006), after a slow-down between 2001 and 2003, they are now on a positive trend again. Indeed, foreign direct investment inflows grew by 27% in 2004, and 29% in 2005. The European Union stands as the largest recipient of FDI, accounting for about 50% of the world total inflows in 2005 ($422 out of $916 billion).

What is the impact of foreign direct investment on domestic entrepreneurship? As discussed in section 2, the economic theory does not provide a clear-cut answer. On one hand, affiliates of MNEs might crowd-out domestic entrepreneurship on the product and labour markets (Grossman, 1984; Markusen and Venables, 1999). At the same time, the creation of indigenous business ventures could be fostered through backward and forward linkages (Rodriguez-Clare, 1996; Markusen and Venables, 1999). Multinational firms might in fact rely on domestic suppliers of intermediate goods and services. Moreover, managerial skills could spill over from MNEs through the turnover of employees and domestic spin-offs (Caves, 1996). Despite the relevancy of this issue, we are aware of only three papers investigating the relation between FDI inflows and domestic entrepreneurship at the empirical level. We start our review with an article by Koen De Backer and Leo Sleuwaegen (2003): "Does Foreign Direct Investment Crowd Out Domestic Entrepreneurship?".

In the first part of their paper, the authors provide a further theoretical contribution to the issue, by extending Jovanovic's (1994) model of firm creation in order to allow for the entry of foreign companies. In Jovanovic's occupational choice setting, agents differ in both entrepreneurial and working ability, with the latter resulting in wage differentials on the job market. As in the reviewed Grossman (1984) model of entrepreneurship, agents compare their expected income from wage working versus setting up their own firm. The payoffs from both occupational choices depend upon their skills. Jovanovic shows that, with positively correlated entrepreneurial and working abilities, the best agents will choose to become entrepreneurs. De Backer and Sleuwaegen argue, in turn, that the latter conclusion might change when allowing for the entry of multinational firms. In their extension of the model, MNEs are more productive and pay higher wages than domestic firms, consistent with the empirical evidence (Dunning, 1993; De Backer, 2002). Thus, when foreign firms enter the economy, this generates not only a reduction in the number of domestic entrepreneurs (as in Grossman, 1984), but also a change in their skills' distribution. Indeed, the best potential domestic entrepreneurs might actually end up as wage workers for the MNEs affiliates.

The empirical relation between FDI and the creation of new domestic business ventures is investigated in the second part of the article by De Backer and Sleuwaegen. The authors focus on Belgium, and analyse firm entry and exit dynamics in 129 manufacturing industries, for the time span: 1990-1995. Belgium constitutes indeed a very interesting case study, due to the widespread presence of foreign multinationals in the country (see Annex 1 for detailed statistics). For instance, as already mentioned in the introduction, MNEs account for about 50% of employment and 60% of value added in manufacturing activities (Coucke and Sleuwaegen, forthcoming). In particular, De Backer and Sleuwagen study the relation between death and birth rates of domestic firms and the past

entry of multinational companies in the same industry. They find that MNEs inflows immediately result in higher exit and lower entry of domestic firms. Thus, foreign direct investment seems to be harmful for domestic entrepreneurship in the short run, which confirms the theoretical predictions of the Grossman (1984) and extended Jovanovic models. However, De Backer and Sleuwaegen also test for the existence of positive long-run effects from the presence of foreign firms. They do so by controlling for the relative presence of multinationals (stock) both in the same and in related industries, to account for potential backward/forward linkage effects. The results actually point to a positive structural impact: ceteris paribus less domestic firms exit and more of them are born in those industries which are characterized by higher relative presence of multinationals. This finding confirms the importance of foreign firms in fostering domestic entrepreneurship through their production network and spillover effects (Rodriguez-Clare, 1996; Markusen and Venables, 1999). The authors conclude by observing that, in the long run, this positive structural impact might dominate the initial crowding out effect, especially in those industries characterized by limited potential supply of domestic entrepreneurs. This idea is further analysed in a second paper by Barrios, Görg and Strobl (2005): "Foreign direct investment, competition and industrial development in the host country". In this article, the authors develop a model in the spirit of Markusen and Venables (1999), where an inflow of FDI generates both a negative competition effect and a positive impact on domestic entrepreneurship, through backward and forward linkages. Barrios et al. show that, as multinationals keep entering the market, the number of domestic firms follows a u-shaped evolution. The negative competition impact first dominates, but is then progressively outweighed by linkage effects, leading to a positive net final outcome. This prediction is then tested using plant level data on the Irish manufacturing sector, for the time span: 1972-2000. Evidence from semi-parametric regressions seems to confirm the theoretical result: the net entry of domestic firms displays a u-shaped pattern with respect to increasing penetration levels of foreign multinationals. Moreover, in a simple linear specification, the positive effect from FDI seems to prevail over the whole time span. The latter result is consistent with what Görg and Strobl also find in a previous paper on Irish manufacturing: "Multinational companies and indigenous development: An empirical analysis" (2002). In this case, working on the time span 1974-1995, the authors provide robust evidence of a positive effect stemming from the presence of foreign multinationals on domestic entry rates. In particular, the linkage channels seem to be at work both between related industries and within each of the 68 sectors analysed, suggesting that positive input-related effects might be already relevant for upstream and downstream firms within a single industry. In the case of Ireland, though, negative competition effects might have been particularly small given the low initial level of domestic activity in those sectors which have received most of the FDI inflows (e.g. electronics and pharmaceuticals).

Overall, the available empirical evidence confirms that multinationals crowd out domestic entrepreneurs in the first place. However, in the long run this negative impact may be outweighed by positive linkage effects, thus finally resulting in enhanced domestic entrepreneurship. The strength of the positive impact is expected to be higher if MNEs rely to a larger extent on domestically produced intermediate inputs and services. Finally, efficiency and adaptability of domestic entrepreneurs are crucial in determining an economy's reaction to FDI penetration.

Global migration flows have been growing constantly since the end of the Second World War. This positive trend has witnessed a strong acceleration since the beginning of the nineties. For instance, net migration within OECD countries has averaged 2.65 million people per year between 1990 and 2003, compared to 1.24 and 0.8 million for the periods 1977-1990 and 1956-1976 respectively (OECD International Migration Outlook, 2007). Inflows of people have increased, on a yearly basis, by 16% in 2004, and 11% in 2005, confirming the robustness of the trend. In particular, EU-15 nations, following the last enlargements to twelve new members, are facing growing immigration from Eastern EU countries (especially Poland, and Romania). Morocco, Ukraine, Turkey and the Russian Federation also constitute a big source of immigration flows for the European Union, where Italy, Spain and Greece are emerging as new destination countries. Immigration is a fundamental resource for the EU-15 members, given the ageing population trend. Indeed, immigrants are making up increasing proportions of the labor force almost everywhere. In 2005, for instance, foreign-born people accounted for 15% of total labor force in Germany, 13% in Spain and Sweden, 12% in Belgium and Ireland. Moreover, the number of foreign workers has increased by more than 20% in all the EU-15 countries between 2000 and 2005, with the only exceptions of the Netherlands and France.

What do these dynamics imply in terms of entrepreneurship? According to the last OECD Migration Outlook (2007), immigrants display high and increasing levels of self-employment in all countries for which data are available (EU-15, USA, Australia and Switzerland). On average, about 12% of the foreign-born workers were self-employed in 2005. In many countries, like Belgium, France and UK, the contribution of immigrants to total self-employment (13%) even exceeded their share in the national labor force, suggesting that foreign-born people tend to be even more entrepreneurial than the locals. The economic literature has indeed identified different "pull" factors which might explain a high propensity for entrepreneurship by ethnic minorities, as reviewed by Simon Parker (2004). For instance, religious and cultural values might play a role in the first place (Rafiq, 1992). Self-sufficiency and hard work are in fact fundamental in many Asian cultures. Some Hindu castes tend to focus on business activities, and many important figures of Islam and the Sikh religion were entrepreneurs, thus providing primary role models for many immigrants. Secondly, minorities' entrepreneurship might be favored by the creation of ethnic geographic enclaves, characterized by high concentrations of residents sharing the same origins. These areas may provide the social network and financial support which are needed in order to start an activity in a new country. Moreover, entrepreneurs in enclaves can rely on a good customer base, especially as far as ethnic retail activities are concerned, even when they still do not perfectly manage the local language. Finally, if the business grows, the ethnic network can also be a good source of employees, often belonging to the same enlarged family of the entrepreneur (Light and Bonacich, 1988).

Under a less optimistic view, high self-employment rates among immigrants might also reflect negative discrimination factors, which make the choice of entrepreneurship a sort of fall-back option. In particular, foreign-born people might have difficulties in finding a job on the formal labor market, due to language problems, real discrimination, lack of social capital and non recognition of qualifications from the country of origin. Besides this, immigrants might also face discrimination on the capital

markets (Bates, 1997; Blanchflower and Oswald, 1998). In 2000, the European Commission has financed a study on ethnic minorities' entrepreneurship, based on case studies and surveys among business support organizations in Europe[5]. The results have highlighted problems in access to "start-up finance" and "finance for growth" as the major obstacles for immigrants. While lack of capital is often a problem for indigenous entrepreneurs too, foreign-born people seem to be affected to a greater extent. This does not necessarily imply a negative discrimination by banks, as structural factors might be in play. For instance, immigrants are more likely to have insufficient collateral, and often cannot rely on property to be used as a security. Anyway, the final result is that foreign-born people firms are usually small and undercapitalized. Moreover, immigrant entrepreneurs tend to concentrate in "low entry threshold" sectors like ethnic retailing, characterized by high competition, low survival probabilities and limited growth potential. Access to more complex and profitable business fields is also made problematic by language difficulties, lack of managerial skills and poor knowledge of the host country's institutional context.

Overall, inflows of immigrants are in principle a precious source of entrepreneurial energies. Indeed, foreign-born people seem to display a high propensity for self-employment and the creation of business activities. This is very important not only from an economic but also from a social point of view, as entrepreneurship might favor the integration of foreign-born people in the new environment. However, immigrants' entrepreneurial potential seems to be still underdeveloped and needs institutional attention in order to be fully displayed.

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[5] "Young Entrepreneurs, Women Entepreneurs, Co-Entrepreneurs and Ethnic Minority Entrepreneurs in the European Union and Central and Eastern Europe". Final report to the European Commission, DG Enterprise.

Entrepreneurship is widely recognized as being a fundamental driver of innovation, economic growth and job creation. Policy makers around the world are increasingly concerned about creating the appropriate institutional conditions for entrepreneurial energies to develop. In particular, in 2004 the European Commission has launched an Entrepreneurship Action Plan, with a series of policy measures organized in five strategic areas: fuelling entrepreneurial mindsets, encouraging more people to start-up companies, gearing entrepreneurs for growth and competitiveness, improving the flow of finance and creating a more SME-friendly regulatory framework. Fostering Entrepreneurship is indeed at the core of the Lisbon Strategy, which aims at making the European Union the most competitive and dynamic knowledge-based economy of the world.

Entrepreneurship policy is being informed by a growing body of economic research, whose latest developments are presented in the "Handbook of Research on Entrepreneurship Policy", edited by Audretsch, Grilo and Thurik (2007). The main message emerging from this book is the need for a general re-thinking of the policy approach to entrepreneurship. In fact, as developed countries are completing the transition from the "managed" to the "entrepreneurial" economy, economic growth is increasingly determined by the creativity and innovation performance of entrepreneurs, especially in the emerging areas of services and ICT. In this new context, a traditional SMEs support policy, with the introduction of specific institutions, is no longer a sufficient strategy. Rather, an "up-to date" entrepreneurship policy must involve a pervasive re-thinking of most existing areas of public intervention: from education to labor and product markets regulation, from finance to the social security system. Broadly speaking, public policy needs to adopt a new entrepreneurship-centered focus. This argument is extensively motivated in a general conceptual framework for entrepreneurship formation and the role of public intervention, presented by Audretsch et al. (2007). In what follows, the latter framework is first described in detail, and then extended in order to analyze the entrepreneurship policy implications of globalization, based on the empirical evidence surveyed in the previous sections.

As can be seen in Figure 1, entrepreneurship in a region is the result of demand and supply factors. Demand for entrepreneurship is constituted by new business opportunities, which are determined on the product markets by technological developments, demand shifts and resource availability. The business opportunities can be captured both by incumbents and new entrepreneurs, depending on the level of market accessibility (which determines the graphical partition of the "opportunities" box). Demographic and cultural factors feed in the "capabilities" box, which represents the supply side of entrepreneurship. The number of potential entrepreneurs depends on the skills of the labor force and the access to capital and other resources which are needed to set up a firm. Given the latter factors, preferences and risk attitude are also crucial in determining the entrepreneurial propensity of the population. Individual choices are then modeled in the "choice filter" box, where the agents compare the relative attractiveness of entrepreneurship versus the outside options of wage-working and unemployment. As a result of the risk-reward evaluations, entry and exit from entrepreneurship are finally observed.

Within this framework, different channels of policy intervention can be identified, which are represented by the circles and corresponding arrows in Figure 1. First of all, public policy can influence the creation of new market opportunities (G1), for instance through income policy, public procurement,

Figure 1:
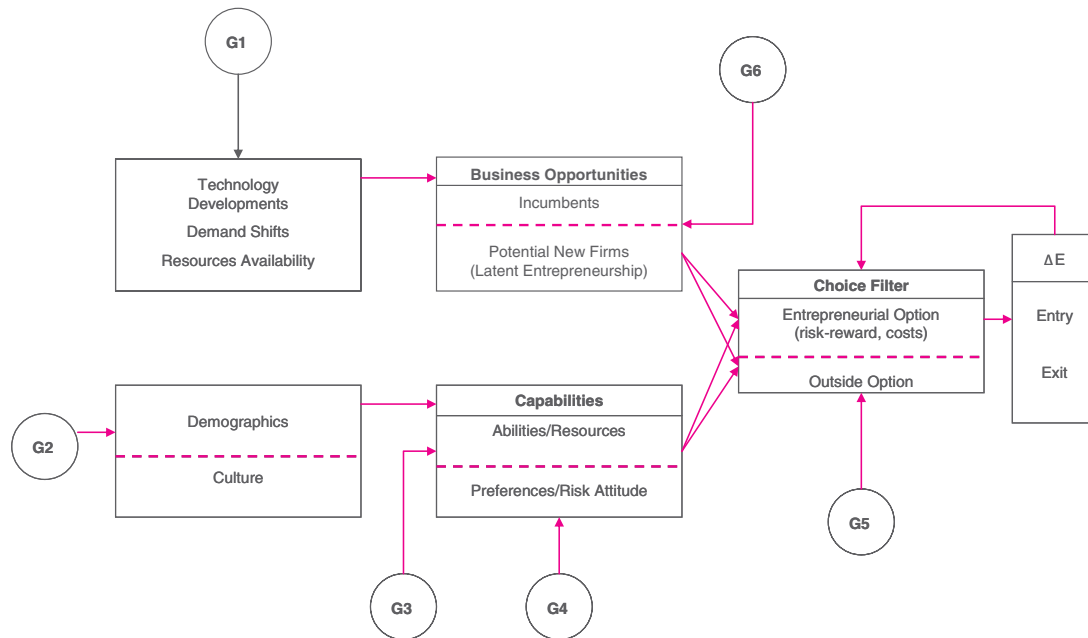
Source: adapted from Audretsch, Grilo and Thurik (2007).

and by favoring technological innovation. Secondly, room for new entrepreneurs can be increased by enhancing market access through regulation and competition policy (G6). On the supply side, other than affecting demographic factors through family and regional policies (G2), public intervention can have a crucial impact on the "capabilities". First of all, entrepreneurial skills can be improved through the education system, and by providing business information in an efficient way. Secondly, access to capital may be enhanced through appropriate financial regulation, and by fostering the development of venture capital markets (G3). Public policy can also affect to a certain extent the preferences towards entrepreneurship, by promoting the development of an entrepreneurial culture through educational programs and communication in the media (G4). Finally, given opportunities and capabilities, the government can still influence individual choices by affecting the relative attractiveness of entrepreneurship through taxation, labor markets, bankruptcy and intellectual property rights legislation (G5). For instance, a recent study by the World Bank has shown that firm creation rates across countries are positively associated with simple entry bureaucratic requirements, flexible labor market rules, efficient financial markets and effective IPR protection.

In Figure 2 we extend the Audretsch et al. (2007) conceptual framework by introducing the role of globalization. Consistent with our analysis, we model international integration under three different dimensions: increasing trade, foreign direct investment and migration flows. We start by assessing the effects of trade and FDI, while migration is discussed at the end of this section.
An increase in trade openness and FDI inflows has first of all an impact on the business opportunities. As reviewed in sections 4 and 5, this impact is rather complex. On one side, both higher trade exposure and FDI inflows imply a competitive displacement of domestic entrepreneurs, resulting in higher exit and lower entry of new firms in the short run. However, new business opportunities are also opened up by the same international dynamics over time, and may result in increasing entrepreneurial activity. Indeed, more openness to trade implies not only intensified import competition, but also access to
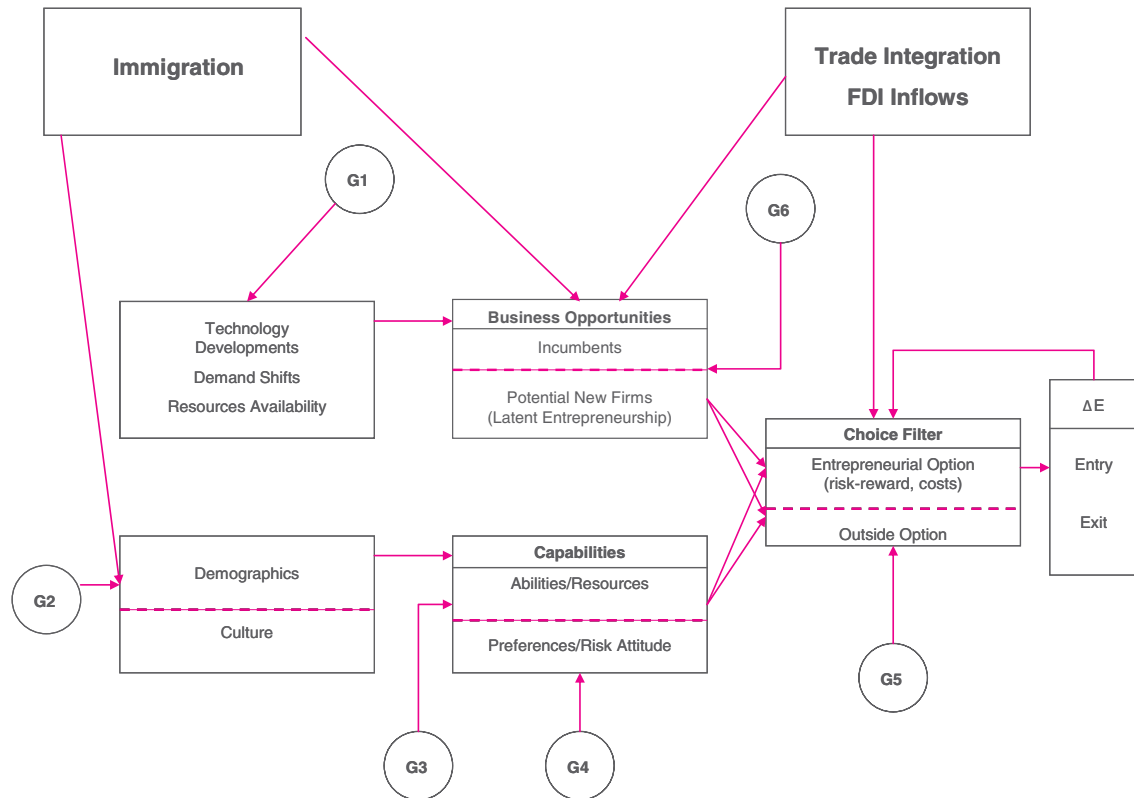
cheaper intermediate goods and wider final product markets. Likewise, the entry of foreign based multinationals may be ultimately beneficial for domestic activity through the creation of backward linkages in the host country. For the latter positive effects to be realized, though, entrepreneurs should adopt a "globally pro-active" approach. First, they need to recognize and capture the new business opportunities offered by international trade through the exploitation of comparative advantages on the inputs and final goods' markets. Secondly, they must be able to benefit from the presence of foreign multinationals by specializing and entering their supply networks. Other than having an impact on the business opportunities, trade integration and FDI inflows also affect the "choice filter" box. In fact, the risk-reward profile of entrepreneurship changes as industries globalize: higher potential returns are associated with increased risks from international activities. At the same time, outside options are also affected. For instance, as in De Backer and Sleuwaegen (2003), the most capable individuals might be driven away from entrepreneurship by highly rewarding job offers within multinational firms.

In a globalizing context, entrepreneurship policy needs to deal with the international dimension of business in order to be effective. In particular, the analysis of trade integration and foreign direct investment highlights precise policy implications on the "G1" and "G3" channels of public intervention: the ones affecting opportunities and abilities/resources of potential entrepreneurs. Policy makers can affect the creation of market opportunities in an open economic context in several ways. For instance, trade negotiations must be conducted in an efficient and mutually beneficial way. As domestic markets are opened up, local entrepreneurs should be guaranteed equal access to foreign markets

to compensate for the increased import competition. Moreover, the inflow of foreign direct investment should be managed in such a way that potential domestic linkages are maximized. However, other than just creating abstract opportunities, policy makers should then favor their exploitation by helping domestic entrepreneurs to be "globally pro-active". This might involve many different actions in various areas of intervention, which are described in what follows. First of all, public institutions have a crucial role in the provision of information. Local entrepreneurs should be as much as possible informed about business opportunities abroad, for example by leveraging on the role of trade and investment supporting agencies, including the services provided by the embassies abroad. Public institutions can also act as network builders between foreign multinationals and domestic entrepreneurs, thus fostering the creation of local production linkages. At this purpose, partnerships between private and public entities could be created, in the context of strategic plans aimed at targeting crucial areas of business development around foreign firms. Providing the right techno-economic infrastructures and helping domestic firms in building up the necessary absorptive capacity to link with technologically advanced multinationals should also be central themes in such an approach, for instance through specific knowledge centers (as in the reviewed Irish case).

More generally speaking, an effective entrepreneurship policy must focus heavily on the creation of knowledge. As reported in section 2, with globalization the comparative advantage of rich countries has been shifting towards high-value added products, characterized by increasing creativity and technology intensity. In this context, successful entrepreneurship is closely linked to the innovative potential of a country. Hence, investing in education and research should be a priority for every government. In particular, business creation from university laboratories and company spin-offs should be encouraged. For given knowledge and innovative abilities, international managerial skills are then crucial for the development of successful firms. Consequently, international management should be paid more attention in the educational programs. This should be the case not only within business courses but also for other scientific degrees and in particular at the undergraduate level, given the increasing importance of "born-global" firms. Internationalized business schools and knowledge centers should also be regarded as key contexts for stimulating effective networking and transnational entrepreneurship. Finally, even more emphasis should now be placed on improving access to finance. Indeed, empirical evidence suggests that the minimum efficient scale and associated level of "capital commitment" increase with the international integration of markets. Therefore, the presence of an efficient financial system becomes increasingly important for potential entrepreneurs, and turns out to be a fundamental success factor at the country level. In particular, as globalization raises the level of risk associated to starting a new business, there is an increased need for optimal risk spreading through appropriate pooling and diversification of projects within specific capital funds. State guarantee schemes could also be set up to support such funds in financing high risk ventures. As a last general recommendation, governments should also work on reducing the "liability of foreignness", i.e. the extra legal, financial and administrative costs and/or discrimination that entrepreneurs face when doing business in a foreign country.

International migration enters the entrepreneurship formation framework in two ways (see Figure 2). First, and most importantly, immigration changes the size and composition of the labor force (supply side). Secondly, expanding foreign communities create a relevant demand for new services and ethnic-specific products, which might enhance the creation of new firms (demand side). As discussed in section 5, immigration is in principle beneficial for entrepreneurship in a country. In fact, immigrants in developed nations tend to display higher self-employment rates than the local

population. This might be due to cultural and market factors, and also to the fact that only the most entrepreneurial people are likely to succeed in migrating to a new country. However, there is evidence that the business potential of immigrants is still underdeveloped. Indeed, foreign-born entrepreneurs tend to concentrate in small retail activities, with low growth potential and survival probabilities. This tendency reflects difficulties in access to finance, poor managerial skills and problems in dealing with the host country's legal and administrative framework. Given these premises, there is a huge room for public intervention aimed at fostering minorities' entrepreneurship. Efforts should primarily focus on improving immigrants' access to finance and providing special assistance and training on doing business in the host country.

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The following tables display selected descriptive statistics on economic openness and entrepreneurship in Belgium, at the sector-level (see Annex 2 for a description of the employed industry classification: NACE rev 1.1).

In Table 1 manufacturing sectors (nace 3-digit) are ranked according to their level of trade openness in 2003. For each industry, firm entry and exit rates are shown, on average over the years 2002-2003. The index of trade openness is computed for each sector as the following ratio: sum of import and export flows over the sum of domestic production and imports. Annual firm entry and exit rates are computed as the ratio of the number of entries and exits in a year over the number of active firms in the previous year.

In Tables 2a and 2b the ranking of sectors is based on the variation in trade openness between 1998 and 2003. Industries in which the level of openness is decreasing (increasing) are grouped in Table 2a (2b). Average entry and exit rates over the same time span are reported, together with the initial and final levels of openness. Finally, cross-sector averages of entry and exit rates are computed for the two groups of industries.

In Table 3, the focus is on 2-digit manufacturing sectors, which are ranked according to the variation in FDI penetration between 1998 and 2003. The latter penetration is measured as the share of total sectoral employment accounted for by foreign based multinationals[6]. For each industry, the average domestic entry and exit rates are also shown, with respect to the same time span. Domestic firm turnover rates are computed as explained above; however, in this case only entries and exits of Belgian firms are taken into account.

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[6] A firm is identified as a foreign multinational if at least 10% of its capital is foreign owned.

Table 1

nace3	Trade Openness (2003)	Average Entry Rate (2002-2003)	Average Exit Rate (2002-2003)	nace3	Trade Openness (2003)	Average Entry Rate (2002-2003)	Average Exit Rate (2002-2003)
335	1.860	0.000	0.000	274	1.144	0.037	0.056
364	1.824	0.026	0.048	287	1.143	0.016	0.024
331	1.805	0.052	0.022	292	1.133	0.064	0.043
354	1.759	0.031	0.030	261	1.132	0.016	0.022
155	1.744	0.034	0.007	153	1.119	0.040	0.023
300	1.728	0.052	0.041	243	1.115	0.016	0.027
244	1.724	0.044	0.024	252	1.107	0.031	0.024
365	1.613	0.051	0.050	353	1.093	0.058	0.038
294	1.604	0.044	0.018	311	1.075	0.004	0.037
177	1.592	0.011	0.073	201	1.062	0.041	0.015
334	1.587	0.131	0.025	268	1.061	0.026	0.080
181	1.484	0.050	0.000	160	1.032	0.000	0.035
341	1.478	0.058	0.015	312	1.028	0.087	0.042
321	1.467	0.063	0.040	316	1.018	0.021	0.033
295	1.451	0.048	0.024	313	0.991	0.029	0.000
205	1.445	0.038	0.033	202	0.948	0.036	0.028
251	1.429	0.006	0.006	342	0.942	0.027	0.027
291	1.425	0.049	0.035	273	0.942	0.000	0.026
272	1.377	0.042	0.021	361	0.927	0.040	0.025
241	1.370	0.037	0.024	154	0.912	0.018	0.000
245	1.351	0.012	0.027	212	0.891	0.037	0.032
246	1.317	0.034	0.028	151	0.882	0.052	0.032
315	1.297	0.038	0.025	158	0.847	0.053	0.025
286	1.296	0.037	0.024	156	0.819	0.013	0.000
293	1.286	0.078	0.017	267	0.726	0.037	0.017
172	1.282	0.010	0.052	159	0.702	0.042	0.026
297	1.260	0.051	0.040	204	0.634	0.034	0.055
332	1.253	0.085	0.042	282	0.558	0.025	0.016
171	1.242	0.017	0.017	264	0.556	0.018	0.027
211	1.192	0.049	0.024	203	0.535	0.060	0.034
343	1.174	0.011	0.033	281	0.528	0.038	0.026
176	1.173	0.014	0.055	265	0.526	0.000	0.033
174	1.164	0.046	0.021	157	0.450	0.025	0.015
247	1.161	0.030	0.030	222	0.349	0.043	0.029
152	1.159	0.017	0.017	266	0.322	0.028	0.010
175	1.153	0.016	0.020	283	0.276	0.375	0.042

nace3	Variation in Trade Openness (2003-1998)	Trade Openness (1998)	Trade Openness (2003)	Average Entry Rate (1998-2003)	Average Exit Rate (1998-2003)
273	-0.198	1.140	0.942	0.008	0.021
176	-0.107	1.280	1.173	0.032	0.036
151	-0.096	0.978	0.882	0.031	0.038
316	-0.091	1.109	1.018	0.044	0.024
203	-0.079	0.614	0.535	0.066	0.044
282	-0.074	0.632	0.558	0.017	0.027
155	-0.056	1.800	1.744	0.029	0.021
283	-0.048	0.324	0.276	0.242	0.130
172	-0.033	1.315	1.282	0.016	0.040
292	-0.027	1.160	1.133	0.046	0.038
334	-0.020	1.607	1.587	0.066	0.054
281	-0.010	0.538	0.528	0.043	0.032
159	-0.010	0.712	0.702	0.027	0.024
274	-0.007	1.151	1.144	0.072	0.029
158	-0.007	0.854	0.847	0.043	0.038
175	-0.001	1.153	1.153	0.014	0.042
			Average	**0.050**	**0.040**

Table 2b

nace3	Variation in Trade Openness (2003-1998)	Trade Openness (1998)	Trade Openness (2003)	Average Entry Rate (1998-2003)	Average Exit Rate (1998-2003)
157	0.001	0.449	0.450	0.019	0.022
268	0.002	1.059	1.061	0.036	0.044
343	0.005	1.169	1.174	0.027	0.030
247	0.006	1.155	1.161	0.051	0.016
266	0.015	0.307	0.322	0.032	0.020
202	0.018	0.930	0.948	0.043	0.030
204	0.020	0.614	0.634	0.030	0.027
212	0.022	0.869	0.891	0.027	0.027
313	0.023	0.967	0.991	0.031	0.010
353	0.026	1.068	1.093	0.039	0.025
361	0.041	0.886	0.927	0.029	0.033
287	0.046	1.096	1.143	0.023	0.025
154	0.047	0.865	0.912	0.018	0.006
261	0.048	1.083	1.132	0.028	0.038
252	0.050	1.057	1.107	0.033	0.028
312	0.051	0.977	1.028	0.061	0.090
201	0.055	1.007	1.062	0.027	0.020
211	0.063	1.129	1.192	0.033	0.018
152	0.077	1.082	1.159	0.040	0.039
153	0.082	1.037	1.119	0.046	0.037
291	0.086	1.339	1.425	0.045	0.039
342	0.088	0.854	0.942	0.038	0.026
222	0.089	0.261	0.349	0.033	0.040
293	0.089	1.197	1.286	0.055	0.023
286	0.101	1.196	1.296	0.031	0.024
321	0.101	1.366	1.467	0.070	0.047
264	0.103	0.453	0.556	0.017	0.042
272	0.107	1.270	1.377	0.050	0.036
243	0.112	1.003	1.115	0.016	0.030
364	0.122	1.702	1.824	0.024	0.053
297	0.122	1.138	1.260	0.030	0.033
174	0.125	1.039	1.164	0.038	0.033
241	0.125	1.244	1.370	0.033	0.024
171	0.128	1.113	1.242	0.021	0.029
300	0.134	1.594	1.728	0.065	0.034
315	0.141	1.157	1.297	0.033	0.034
365	0.142	1.471	1.613	0.050	0.057
205	0.143	1.302	1.445	0.019	0.030
267	0.154	0.573	0.726	0.030	0.021
181	0.154	1.329	1.484	0.050	0.030
156	0.160	0.659	0.819	0.019	0.011
311	0.162	0.912	1.075	0.008	0.032
332	0.163	1.089	1.253	0.052	0.029
177	0.165	1.427	1.592	0.008	0.077
246	0.178	1.139	1.317	0.034	0.034
294	0.178	1.425	1.604	0.040	0.019
251	0.185	1.244	1.429	0.015	0.016
245	0.185	1.166	1.351	0.027	0.037
265	0.206	0.321	0.526	0.000	0.011
244	0.224	1.499	1.724	0.033	0.033
295	0.246	1.205	1.451	0.040	0.031
335	0.255	1.605	1.860	0.028	0.024
341	0.256	1.222	1.478	0.085	0.023
331	0.266	1.538	1.805	0.051	0.023
160	0.311	0.721	1.032	0.012	0.012
354	0.347	1.412	1.759	0.025	0.025
			Average	0.034	0.030

Table 3

Industry Description	nace2	Variation FDI Penetration (2003-1998)	FDI Penetration (1998)	FDI Penetration (2003)	Average Domestic Entry Rate (1998-2003)	Average Domestic Exit Rate (1998-2003)
Manufacture of other transport equipment	35	-0.127	0.726	0.599	0.041	0.033
Manufacture of basic metals	27	-0.072	0.810	0.737	0.025	0.022
Manufacture of electrical machinery and apparatus n.e.c.	31	-0.034	0.661	0.626	0.029	0.030
Manufacture of rubber and plastic products	25	-0.027	0.585	0.558	0.027	0.025
Manufacture of chemicals, chemical products and man-made fibres	24	-0.011	0.765	0.754	0.025	0.026
Manufacture of motor vehicles, trailers and semi-trailers	34	-0.009	0.800	0.791	0.033	0.025
Manufacture of wood and wood products	20	-0.009	0.081	0.072	0.040	0.032
Manufacture of wearing apparel; dressing and dyeing of fur	18	0.000	0.162	0.163	0.023	0.055
				Average	0.030	0.031
Manufacture of pulp, paper and paper products	21	0.001	0.542	0.544	0.027	0.023
Manufacture of furniture; manufacturing n.e.c.	36	0.003	0.087	0.090	0.029	0.034
Manufacture of medical, precision and optical instruments, watches and clocks	33	0.004	0.420	0.424	0.051	0.026
Manufacture of other non-metallic mineral products	26	0.011	0.463	0.474	0.028	0.025
Publishing, printing and reproduction of recorded media	22	0.013	0.157	0.170	0.037	0.041
Manufacture of fabricated metal products, except machinery and equipment	28	0.018	0.290	0.308	0.041	0.028
Manufacture of machinery and equipment n.e.c.	29	0.022	0.553	0.575	0.041	0.030
Manufacture of radio, television and communication equipment and apparatus	32	0.030	0.816	0.845	0.032	0.039
Manufacture of food products and beverages	15	0.064	0.335	0.399	0.037	0.034
Manufacture of coke, refined petroleum products and nuclear fuel	23	0.069	0.831	0.900	0.026	0.000
Manufacture of textiles	17	0.125	0.150	0.274	0.021	0.040
Manufacture of office machinery and computers	30	0.127	0.517	0.644	0.054	0.033
Manufacture of leather and leather products	19	0.159	0.470	0.628	0.019	0.048
Manufacture of tobacco products	16	0.343	0.424	0.768	0.012	0.012
				Average	0.033	0.030

DA Manufacture of food products, beverages and tobacco

15	Manufacture of food products and beverages
15.1	Production, processing and preserving of meat and meat products
15.11	Production and preserving of meat
15.12	Production and preserving of poultry meat
15.13	Production of meat and poultry meat products
15.2	Processing and preserving of fish and fish products
15.20	Processing and preserving of fish and fish products
15.3	Processing and preserving of fruit and vegetables
15.31	Processing and preserving of potatoes
15.32	Manufacture of fruit and vegetable juice
15.33	Processing and preserving of fruit and vegetables n.e.c.
15.4	Manufacture of vegetable and animal oils and fats
15.41	Manufacture of crude oils and fats
15.42	Manufacture of refined oils and fats
15.43	Manufacture of margarine and similar edible fats
15.5	Manufacture of dairy products
15.51	Operation of dairies and cheese making
15.52	Manufacture of ice cream
15.6	Manufacture of grain mill products, starches and starch products
15.61	Manufacture of grain mill products
15.62	Manufacture of starches and starch products
15.7	Manufacture of prepared animal feeds
15.71	Manufacture of prepared feeds for farm animals
15.72	Manufacture of prepared pet foods
15.8	Manufacture of other food products
15.81	Manufacture of bread; manufacture of fresh pastry goods and cakes
15.82	Manufacture of rusks and biscuits; manufacture of preserved pastry goods and cakes
15.83	Manufacture of sugar
15.84	Manufacture of cocoa; chocolate and sugar confectionery
15.85	Manufacture of macaroni, noodles, couscous and similar farinaceous products
15.86	Processing of tea and coffee
15.87	Manufacture of condiments and seasonings
15.88	Manufacture of homogenized food preparations and dietetic food
15.89	Manufacture of other food products n.e.c.
15.9	Manufacture of beverages
15.91	Manufacture of distilled potable alcoholic beverages
15.92	Production of ethyl alcohol from fermented materials
15.93	Manufacture of wines
15.94	Manufacture of cider and other fruit wines
15.95	Manufacture of other non-distilled fermented beverages
15.96	Manufacture of beer
15.97	Manufacture of malt

15.98 Production of mineral waters and soft drinks
16   Manufacture of tobacco products
16.0   Manufacture of tobacco products
16.00 Manufacture of tobacco products

DB Manufacture of textiles and textile products

17   Manufacture of textiles
17.1   Preparation and spinning of textile fibres
17.11 Preparation and spinning of cotton-type fibres
17.12 Preparation and spinning of woollen-type fibres
17.13 Preparation and spinning of worsted-type fibres
17.14 Preparation and spinning of flax-type fibres
17.15 Throwing and preparation of silk, including from noils, and throwing and texturing of synthetic
       or artificial filament yarns
17.16 Manufacture of sewing threads
17.17 Preparation and spinning of other textile fibres
17.2   Textile weaving
17.21 Cotton-type weaving
17.22 Woollen-type weaving
17.23 Worsted-type weaving
17.24 Silk-type weaving
17.25 Other textile weaving
17.3   Finishing of textiles
17.30 Finishing of textiles
17.4   Manufacture of made-up textile articles, except apparel
17.40 Manufacture of made-up textile articles, except apparel
17.5   Manufacture of other textiles
17.51 Manufacture of carpets and rugs
17.52 Manufacture of cordage, rope, twine and netting
17.53 Manufacture of non-wovens and articles made from non-wovens, except apparel
17.54 Manufacture of other textiles n.e.c.
17.6   Manufacture of knitted and crocheted fabrics
17.60 Manufacture of knitted and crocheted fabrics
17.7   Manufacture of knitted and crocheted articles
17.71 Manufacture of knitted and crocheted hosiery
17.72 Manufacture of knitted and crocheted pullovers, cardigans and similar articles
18   Manufacture of wearing apparel; dressing and dyeing of fur
18.1   Manufacture of leather clothes
18.10 Manufacture of leather clothes
18.2   Manufacture of other wearing apparel and accessories
18.21 Manufacture of workwear
18.22 Manufacture of other outerwear
18.23 Manufacture of underwear
18.24 Manufacture of other wearing apparel and accessories n.e.c.

18.3   Dressing and dyeing of fur; manufacture of articles of fur
18.30 Dressing and dyeing of fur; manufacture of articles of fur

DC Manufacture of leather and leather products

19   Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear
19.1   Tanning and dressing of leather
19.10 Tanning and dressing of leather
19.2   Manufacture of luggage, handbags and the like, saddlery and harness
19.20 Manufacture of luggage, handbags and the like, saddlery and harness
19.3   Manufacture of footwear
19.30 Manufacture of footwear

DD Manufacture of wood and wood products

20   Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
20.1   Sawmilling and planing of wood; impregnation of wood
20.10 Sawmilling and planing of wood; impregnation of wood
20.2   Manufacture of veneer sheets; manufacture of plywood, laminboard, particle board, fibre board and other panels and boards
20.20 Manufacture of veneer sheets; manufacture of plywood, laminboard, particle board, fibre board and other panels and boards
20.3   Manufacture of builders carpentry and joinery
20.30 Manufacture of builders carpentry and joinery
20.4   Manufacture of wooden containers
20.40 Manufacture of wooden containers
20.5   Manufacture of other products of wood; manufacture of articles of cork, straw and plaiting materials
20.51 Manufacture of other products of wood
20.52 Manufacture of articles of cork, straw and plaiting materials

DE Manufacture of pulp, paper and paper products; publishing and printing

21   Manufacture of pulp, paper and paper products
21.1   Manufacture of pulp, paper and paperboard
21.11 Manufacture of pulp
21.12 Manufacture of paper and paperboard
21.2   Manufacture of articles of paper and paperboard
21.21 Manufacture of corrugated paper and paperboard and of containers of paper and paperboard

DF Manufacture of coke, refined petroleum products and nuclear fuel

DG Manufacture of chemicals, chemical products and man-made fibres

24.20 Manufacture of pesticides and other agro-chemical products
24.3   Manufacture of paints, varnishes and similar coatings, printing ink and mastics
24.30 Manufacture of paints, varnishes and similar coatings, printing ink and mastics
24.4   Manufacture of pharmaceuticals, medicinal chemicals and botanical products
24.41 Manufacture of basic pharmaceutical products
24.42 Manufacture of pharmaceutical preparations
24.5   Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations
24.51 Manufacture of soap and detergents, cleaning and polishing preparations
24.52 Manufacture of perfumes and toilet preparations
24.6   Manufacture of other chemical products
24.61 Manufacture of explosives
24.62 Manufacture of glues and gelatines
24.63 Manufacture of essential oils
24.64 Manufacture of photographic chemical material
24.65 Manufacture of prepared unrecorded media
24.66 Manufacture of other chemical products n.e.c.
24.7   Manufacture of man-made fibres
24.70 Manufacture of man-made fibres

DH Manufacture of rubber and plastic products

25   Manufacture of rubber and plastic products
25.1   Manufacture of rubber products
25.11 Manufacture of rubber tyres and tubes
25.12 Retreading and rebuilding of rubber tyres
25.13 Manufacture of other rubber products
25.2   Manufacture of plastic products
25.21 Manufacture of plastic plates, sheets, tubes and profiles
25.22 Manufacture of plastic packing goods
25.23 Manufacture of builders ware of plastic
25.24 Manufacture of other plastic products

DI Manufacture of other non-metallic mineral products

26   Manufacture of other non-metallic mineral products
26.1   Manufacture of glass and glass products
26.11 Manufacture of flat glass
26.12 Shaping and processing of flat glass
26.13 Manufacture of hollow glass
26.14 Manufacture of glass fibres
26.15 Manufacture and processing of other glass, including technical glassware
26.2   Manufacture of non-refractory ceramic goods other than for construction purposes; manufacture of refractory ceramic products
26.21 Manufacture of ceramic household and ornamental articles

DJ Manufacture of basic metals and fabricated metal products

27.5   Casting of metals
27.51 Casting of iron
27.52 Casting of steel
27.53 Casting of light metals
27.54 Casting of other non-ferrous metals
28   Manufacture of fabricated metal products, except machinery and equipment
28.1   Manufacture of structural metal products
28.11 Manufacture of metal structures and parts of structures
28.12 Manufacture of builders carpentry and joinery of metal
28.2   Manufacture of tanks, reservoirs and containers of metal; manufacture of central heating radiators and boilers
28.21 Manufacture of tanks, reservoirs and containers of metal
28.22 Manufacture of central heating radiators and boilers
28.3   Manufacture of steam generators, except central heating hot water boilers
28.30 Manufacture of steam generators, except central heating hot water boilers
28.4   Forging, pressing, stamping and roll forming of metal; powder metallurgy
28.40 Forging, pressing, stamping and roll forming of metal; powder metallurgy
28.5   Treatment and coating of metals; general mechanical engineering
28.51 Treatment and coating of metals
28.52 General mechanical engineering
28.6   Manufacture of cutlery, tools and general hardware
28.61 Manufacture of cutlery
28.62 Manufacture of tools
28.63 Manufacture of locks and hinges
28.7   Manufacture of other fabricated metal products
28.71 Manufacture of steel drums and similar containers
28.72 Manufacture of light metal packaging
28.73 Manufacture of wire products
28.74 Manufacture of fasteners, screw machine products, chain and springs
28.75 Manufacture of other fabricated metal products n.e.c.

DK Manufacture of machinery and equipment n.e.c.

29   Manufacture of machinery and equipment n.e.c.
29.1   Manufacture of machinery for the production and use of mechanical power, except aircraft, vehicle and cycle engines
29.11 Manufacture of engines and turbines, except aircraft, vehicle and cycle engines
29.12 Manufacture of pumps and compressors
29.13 Manufacture of taps and valves
29.14 Manufacture of bearings, gears, gearing and driving elements
29.2   Manufacture of other general purpose machinery
29.21 Manufacture of furnaces and furnace burners
29.22 Manufacture of lifting and handling equipment
29.23 Manufacture of non-domestic cooling and ventilation equipment
29.24 Manufacture of other general purpose machinery n.e.c.

29.3   Manufacture of agricultural and forestry machinery
29.31   Manufacture of agricultural tractors
29.32   Manufacture of other agricultural and forestry machinery
29.4   Manufacture of machinetools
29.41   Manufacture of portable hand held power tools
29.42   Manufacture of other metalworking machine tools
29.43   Manufacture of other machine tools n.e.c.
29.5   Manufacture of other special purpose machinery
29.51   Manufacture of machinery for metallurgy
29.52   Manufacture of machinery for mining, quarrying and construction
29.53   Manufacture of machinery for food, beverage and tobacco processing
29.54   Manufacture of machinery for textile, apparel and leather production
29.55   Manufacture of machinery for paper and paperboard production
29.56 Manufacture of other special purpose machinery n.e.c.
29.6   Manufacture of weapons and ammunition
29.60   Manufacture of weapons and ammunition
29.7   Manufacture of domestic appliances n.e.c.
29.71   Manufacture of electric domestic appliances
29.72   Manufacture of non-electric domestic appliances

DL Manufacture of electrical and optical equipment

30   Manufacture of office machinery and computers
30.0   Manufacture of office machinery and computers
30.01   Manufacture of office machinery
30.02   Manufacture of computers and other information processing equipment
31   Manufacture of electrical machinery and apparatus n.e.c.
31.1   Manufacture of electric motors, generators and transformers
31.10   Manufacture of electric motors, generators and transformers
31.2   Manufacture of electricity distribution and control apparatus
31.20   Manufacture of electricity distribution and control apparatus
31.3   Manufacture of insulated wire and cable
31.30   Manufacture of insulated wire and cable
31.4   Manufacture of accumulators, primary cells and primary batteries
31.40   Manufacture of accumulators, primary cells and primary batteries
31.5   Manufacture of lighting equipment and electric lamps
31.50   Manufacture of lighting equipment and electric lamps
31.6   Manufacture of electrical equipment n.e.c.
31.61   Manufacture of electrical equipment for engines and vehicles n.e.c.
31.62   Manufacture of other electrical equipment n.e.c.
32   Manufacture of radio, television and communication equipment and apparatus
32.1   Manufacture of electronic valves and tubes and other electronic components
32.10   Manufacture of electronic valves and tubes and other electronic components
32.2   Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy

32.20 Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy
32.3 Manufacture of television and radio receivers, sound or video recording or reproducing apparatus and associated goods
32.30 Manufacture of television and radio receivers, sound or video recording or reproducing apparatus and associated goods
33 Manufacture of medical, precision and optical instruments, watches and clocks
33.1 Manufacture of medical and surgical equipment and orthopaedic appliances
33.10 Manufacture of medical and surgical equipment and orthopaedic appliances
33.2 Manufacture of instruments and appliances for measuring, checking, testing, navigating and other purposes, except industrial process control equipment
33.20 Manufacture of instruments and appliances for measuring, checking, testing, navigating and other purposes, except industrial process control equipment
33.3 Manufacture of industrial process control equipment
33.30 Manufacture of industrial process control equipment
33.4 Manufacture of optical instruments and photographic equipment
33.40 Manufacture of optical instruments and photographic equipment
33.5 Manufacture of watches and clocks
33.50 Manufacture of watches and clocks

DM Manufacture of transport equipment

34 Manufacture of motor vehicles, trailers and semi-trailers
34.1 Manufacture of motor vehicles
34.10 Manufacture of motor vehicles
34.2 Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers
34.20 Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers
34.3 Manufacture of parts and accessories for motor vehicles and their engines
34.30 Manufacture of parts and accessories for motor vehicles and their engines
35 Manufacture of other transport equipment
35.1 Building and repairing of ships and boats
35.11 Building and repairing of ships
35.12 Building and repairing of pleasure and sporting boats
35.2 Manufacture of railway and tramway locomotives and rolling stock
35.20 Manufacture of railway and tramway locomotives and rolling stock
35.3 Manufacture of aircraft and spacecraft
35.30 Manufacture of aircraft and spacecraft
35.4 Manufacture of motorcycles and bicycles
35.41 Manufacture of motorcycles
35.42 Manufacture of bicycles
35.43 Manufacture of invalid carriages
35.5 Manufacture of other transport equipment n.e.c.
35.50 Manufacture of other transport equipment n.e.c.

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