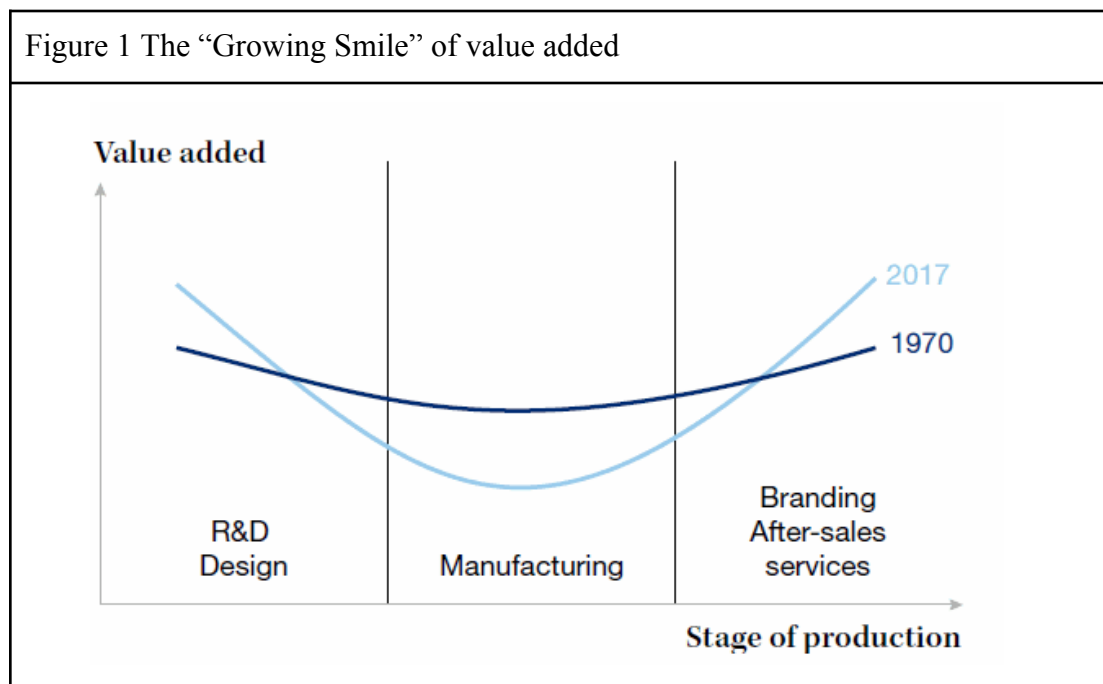


A Growing Smile and a growing demise: the diminishing value of Damietta furniture making

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As a result of global economic developments of recent decades, manufacturing now adds and captures less value compared to pre- and post-manufacturing stages (e.g. design, marketing, etc.). The graph that depicts this phenomenon resembles a growing smile (see figure 1), which is itself based on Stan Shih's smiling curve model where he argued that in the personal computer industry, more value was added at the two ends of the value chain (conception and marketing) than at the middle stage of the value chain, that is, manufacturing.² Unlike Shih's model, the World Intellectual Property Organization (WIPO) demonstrated that this model is applicable to almost all industries, and that it also exacerbates with time.³ It shows that value added by the manufacturing process, which is increasingly relocating to the Global South, has dropped significantly from 1970 to the present day, compared to the growing share of pre- and post-manufacturing, which are predominantly located in the Global North.



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² Acer (2003) Acer's Stan Shih: Empowering Technology - Making Your Life Easier. Available at, <https://web.archive.org/web/20061018060052/http://global.acer.com/about/news.asp?id=6388>, accessed March 4, 2023.

³ World Intellectual Property Organization (2017) World Intellectual Property Report 2017 – Intangible Capital in Global Value Chains. Available at <https://www.wipo.int/publications/en/details.jsp?id=4225>, accessed March 4, 2023.

Source: World Intellectual Report 2017 – Intangible Capital in Global Value Chains

This approach, however, only sees value as exchange value. Lauesen and Cope argue that prices are not usually a good explanation of value and they themselves need to be explained, especially as a mechanism of value transfer.⁴ They argue that if we employ human labor instead of prices to measure value—which alongside prices, is the only characteristic common to all commodities—we get the exact opposite of a growing smile, that is, a ‘sour smiley’ (see figure 2). In short, the less valued economic activities require a larger amount of labor.

Figure 2 The labour-based depiction of value capture

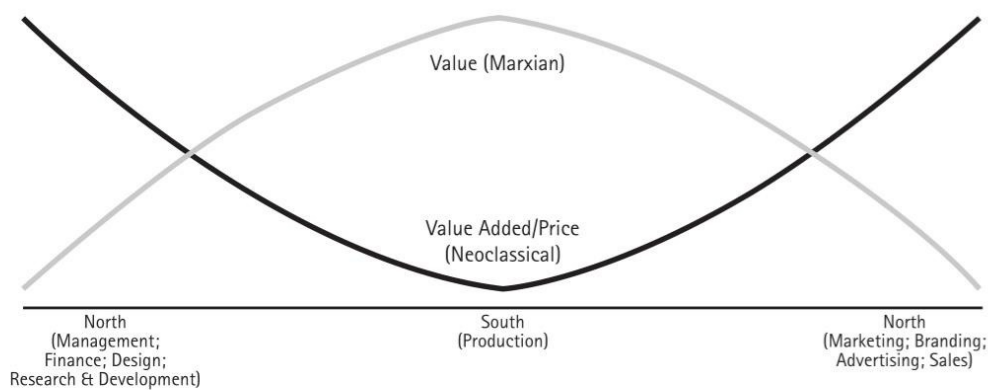


FIGURE 12.1 Wages, value, and price formation along the global production chain.

Source: From Lauesen and Cope (2015).

The ‘sour smiley’ hypothesis, which implies that exchange value does not consider labor expended and resources exploited was tested and confirmed by Hickel et al.⁵ They show that in

⁴ Torkil Lauesen & Zak Cope (2015) Imperialism and the Transformation of Values into Prices. Monthly Review. Available at <https://monthlyreview.org/2015/07/01/imperialism-and-the-transformation-of-values-into-prices>, accessed March 4, 2023.

⁵ Jason Hickel, Christian Dorninger, Hanspeter Wieland & Intan Suwandi (2022) Imperialist Appropriation in the World Economy: Drain from the Global South through Unequal Exchange, 1990–2015, *Global Environmental Change*, 73, <https://doi.org/10.1016/j.gloenvcha.2022.102467>.

2015 the Global North's net appropriation from the Global South totaled 12 billion tons of raw materials, 822 million hectares of land, the equivalent of 3.4 billion barrels of oil, and 188 million person-years equivalent of labor (equivalent to 392 billion hours of work). This appropriation comprises about a quarter of the North's total consumption. Despite this, exchange value far from expressed this appropriation, and trade deficits hovered around 1 percent of global trade revenues and fluctuated between the Global North and South.

Hans Singer argues that in competitive primary commodities markets and 'simple' manufacturing processes, productivity gains resulting from technological progress are likely to be passed on to the consumer (often located in the Global North or in the 'centers' of Global South countries) in the form of cheaper prices due to intense competition.⁶ On the other hand, the cost-plus pricing characteristic of high-technology manufacturing ensures gains from technological progress accrue more to the producers, which are typically domiciled in the Global North.

In this article, we use these observations to hypothesize whether the struggle of the furniture industry in Damietta, a process of highly competitive, increasingly automated and 'simple' manufacturing, could be at least partially attributed to its focus on the manufacturing stage of the production process. This focus could not be only attributed to a internalized failure to innovate and market, but also to global conditions where a strict International Division of Labour (IDL) exists between mental value production (such as design, branding, marketing) that is mostly assigned to the Global North, and manual value production mostly assigned to the Global South.

The Growing Smile is somewhat reminiscent of the Prebisch-Singer hypothesis, where Raul Prebisch and Hans Singer both argued that the Global South is at a long-term disadvantage because primary commodities decline in exchange value relative to manufactured commodities.⁷ At the time the hypothesis was formulated in 1950, the North and South were clearly divided along primary-secondary commodities lines. However, Singer in a more recent paper published in 1999 argued that the growing industrialization of the South and the growing deindustrialization of the North does not invalidate their hypothesis.

On the contrary, he argued that as the share of manufactured exports from 'developing' countries increases, it becomes necessary to break with 'the identification of the terms of trade between primary commodities and manufactures [...]' and to undertake separate studies of the

⁶ Hans Wolfgang Singer (1999) Beyond Terms of Trade-Convergence and Divergence, *Journal of International Development*, 11(6), pp. 911–916, [https://doi.org/10.1002/\(SICI\)1099-1328\(199909/10\)11:6<911::AID-JID635>3.0.CO;2-X](https://doi.org/10.1002/(SICI)1099-1328(199909/10)11:6<911::AID-JID635>3.0.CO;2-X).

⁷ Singer (1950) The Distribution of Gains. Raul Prebisch (1950) The Economic Development of Latin America and Its Principal Problems. Economic Commission for Latin America. Available at <https://archivo.cepal.org/pdfs/cdPrebisch/002.pdf>, accessed March 4, 2023.

manufacture–manufacture terms of trade’.⁸ Singer in his later years came to the realization that industrialization was not in itself an escape from deteriorating barter terms of trade.

Despite adopting many of its tenets, we have, nevertheless, identified two gaps in the conceptual framework governing critical studies of value transfer; the first is the almost exclusive focus on transnational exchanges, with very little focus on value transfers within national borders. The wood furniture industry of Damietta is a case in point in that it demonstrates that a Growing Smile dynamic also takes place between national ‘center’ and ‘periphery’. Second, value chain analysis often disregards the informal aspect of industries due to the lack of reliable data falling prey to a streetlight effect fallacy. According to official data, 65.4 percent of enterprises in the furniture industry in Egypt were unregistered in 2018.⁹ Qualitative, interview-based value chain analysis can account for the informal component and compensate for the lack of reliable data.

Although Damietta produces most of the furniture made in Egypt, its size as a center for furniture manufacturing is quite small compared to other global centers of furniture making. However, we argue that many aspects of the Damietta experience, such as automation, the drive towards mass-production, deskilling, extraction of value from the manufacturing processes to design and marketing, are global structural phenomena, and is therefore a case study of how specific small-scale, workshop-based, and locally oriented industrial clusters in the Global South could be impacted even if their market is largely domestic.

In order to test our research hypothesis about whether a Growing Smile could be blamed for the struggles of the furniture industry in Egypt, we relied on in-depth interviews with several actors in the furniture industry in Damietta including manufacturers, workshop owners, and furniture traders in order to construct a qualitative value chain analysis and assess its evolution over time.

As mentioned above, our reliance on interviews was partly motivated by the lack of high-quality statistical data that accurately captures value added in the different stages of the entire value chain across time. The lack of good statistics is foremost caused by the strong informality of the sector. Moreover, interviews enabled us to assess the socioeconomic effects of the changes in the distribution of value across the value chain (i.e., automation, deskilling, etc.), which would have not been the case had we relied on raw statistics and quantitative models.

The paper will start with providing a quick overview of the theories of value relevant to this article, before moving in the following section to a historical background on the rise of the furniture industry in Damietta. We will then present our value chain analysis with three sections,

⁸ Hans Wolfgang Singer (1999) Beyond Terms of Trade–Convergence and Divergence, *Journal of International Development*, 11(6), pp. 911–916, [https://doi.org/10.1002/\(SICI\)1099-1328\(199909/10\)11:6<911::AID-JID635>3.0.CO;2-X](https://doi.org/10.1002/(SICI)1099-1328(199909/10)11:6<911::AID-JID635>3.0.CO;2-X).

⁹ Central Agency for Public Mobilization and Statistics (2020a) *Economic Census 2018* (Cairo: Central Agency for Public Mobilization and Statistics).

where every section will correspond with one of the main three stages in the value chain (design, manufacturing, marketing), and how each stage has evolved in the last two decades in Damietta. Finally, the concluding section will discuss the theoretical and developmental implications for Global South industrialization.

Whose value?

A typical—and perhaps Eurocentric—history of value theories trace back its modern form to classical political economy. According to such history, Adam Smith distinguished between 'value in exchange' and 'value in use' and highlighted how they are often inversely related; he also viewed labor as the source of all value in 'primitive' societies. David Ricardo, on the other hand, argued that labor is still the source of all value even in an advanced market and capitalist economy.¹⁰

Marx both harshly criticized and greatly expanded the classical view of value by criticizing its ahistoricism and adding a social dimension to the behavior of both workers and capitalists through concepts such as 'socially necessary labor time', 'social production' and 'coercive laws of competition', which emphasize the class and group nature of both workers and capitalists.¹¹ This was followed by the neoclassical view which rejected any linkages between labor and value, and insisted instead that marginal utility and the marginal cost of production are the determinants of exchange value.

For the purpose of this article, we adopt less of an ontological approach to the question of exchange value. Instead, we adopt a more concrete approach closer to the structural view pioneered by Prebisch and Singer. The structural view is less concerned with the ontology of value and instead highlights its evolution by looking at how exchange values *actually* develop over time. It also endeavors to identify the dynamics behind value change, as well as the winners and losers of such evolution. Such temporality then interplays with the spatial dimension, as winners of this temporal evolution succeed in spatially appropriating more value through the exchange of commodities.

This spatial approach to value was expanded by dependency and world-system theorists. They, for example, argued that spatially-determined wage differential in different economies is the root cause of transfer of value through space, namely from the periphery of the world economy to its center. Samir Amin argued that unequal exchange occurs whenever labor of the same productivity is rewarded at a lower rate in the periphery.¹² Arghiri Emmanuel argued that the

¹⁰ David Ricardo (2008) *Principles of Political Economy and Taxation* (New Delhi, India: Global Vision Pub. House).

¹¹ Geoffrey Pilling (1980) *Marx's 'Capital': Philosophy and Political Economy* (Oxon: Routledge).

¹² Samir Amin & Brian Pearce (1976) *Unequal Development: An Essay on the Social Formations of Peripheral Capitalism* (Hassocks: Harvester Press).

terms of trade are directly related to the level of national wages, thus involving value transfers from low to high wage countries through unequal exchange.¹³ For Immanuel Wallerstein, unequal exchange is the continuous flow of surplus value from the producers of periphery-like competitive products to producers of core-like [quasi-]monopolized products.¹⁴ ‘When exchange occurs, competitive products are in a weak position and quasi-monopolised products are in a strong position. As a result, there is a continuous flow of surplus value from the producers of periphery-like products to producers of core-like products. This is called unequal exchange’.¹⁵

Utilizing this approach, the article focuses on neoliberal forms of value capture including within national economies by assessing the example of the Damietta furniture industry and focusing on the evolution of value capture by different types of labor, businesses, and spaces. This neoliberal form of value transfer is best represented by the 'Growing Smile' model. We show that the drop in manufacturing added/captured value cannot be divorced from the rise of informality, deskilling and degradation of labor,¹⁶ which deteriorate the social positionality of manual workers, small and medium businesses, and national and global peripheries.

This deskilling is rooted in the dissociation of conceptualization (intellectual labor) and execution (manual labor) as set out by Braverman. According to Braverman, the means to prevent workers from gaining control of the labor process is the dissociation between conception and execution, or between intellectual and manual labor.¹⁷ The replacement of the Damietta woodcarvers by the new CNC carving machines discussed below is a perfect case in point of this dynamic.

On the level of manual work, deregulatory reform caused informality deunionization of manual workers.¹⁸ The removal of trade barriers and the deepening of value chains also meant that manual workers have become more indispensable and vulnerable to automation.¹⁹ This is aggravated by technology transfer and the continuous outsourcing of production processes to geographies where production inputs (including labor) are cheaper.²⁰

¹³ Andrea Ricci (2021) *Value and Unequal Exchange in International Trade: The Geography of Global Capitalist Exploitation* (Oxon: Routledge).

¹⁴ Immanuel Wallerstein (2004) *World System Analysis: An Introduction* (Durham: Duke University Press).

¹⁵ *Ibid.*, p. 28.

¹⁶ Harry Braverman (1998) *Labour and Monopoly Capital: The Degradation of Work in the Twentieth Century* (New York: Monthly Review Press).

¹⁷ *Ibid.*

¹⁸ Fabiane Santana Previtali & Cílon César Fagiani (2015) Deskilling and Degradation of Labour in Contemporary Capitalism: The Continuing Relevance of Braverman.” *Work Organisation, Labour & Globalisation*, 9(1), pp. 76–91, <https://doi.org/10.13169/workorgalaboglob.9.1.0076>.

¹⁹ Cédric Durand & William Milberg (2020) Intellectual monopoly in global value chains, *Review of International Political Economy*, 27(2), pp. 404-429, DOI: 10.1080/09692290.2019.1660703.

²⁰ Previtali & Fagiani (2015) Deskilling and Degradation of Labour.

Supply-side neoliberal economic policies also enhanced the ability of large businesses to vertically integrate sophisticated design and marketing dimensions, and to adopt a technologically-facilitated economies of scale that put them at a significant competitive advantage *vis a vis* smaller enterprises.

Finally, on the spatial dimension, the international intellectual property (IP) regime causes the transfer of exchange value to developers of technology in the form of 'information rents'.^{21 22} Additionally, the increased importance of big retail and distribution companies enhanced the transfer of value to distributors in dense urban centers at the expense of small manufacturers in provincial cities and towns.

Background: Damietta as a Furniture Cluster

Damietta is located in the north of Egypt, where the Nile pours into the Mediterranean. This created a natural port that connects Africa through the Nile to the Mediterranean. With a few historical interruptions, the city remains a strategic port for international trade until today. Damietta's position as an industrial cluster for furniture making could be traced back to the early Muslim empires. The Abbasids (750–1258) were the first to heavily fortify the city and introduce the shipbuilding industry.²³ Throughout the centuries, the city supplied wooden ships to navies and fishing fleets of the successive Muslim empires. Folk history has it that the wood furniture industry emerged from these shipbuilding activities due to the prevalence of woodworking skills in the city.

More recently, the devastating impact of World War I on international trade has been a blessing for Damietta's economy, which seized the opportunity to fill in part of the shortage in commodity supplies to the rest of Egypt. Several manufacturing and commercial sectors were set to grow. Hence, this was the first economic boom in Damietta's contemporary history.²⁴ A similar boom was associated with World War II. Parallely, the city's summer resort of Ras al-Bar was becoming an elite destination, replacing Alexandria which was affected as a tourist destination by being part of the World War II Middle East Theatre.²⁵ From World War I on, the city became known as Egypt's furniture manufacturing cluster. Damietta's furniture industry prides itself with its handmade production, and especially its highly skilled wood carvers (*'uymagis*).

²¹ Durand & Milberg (2020) Intellectual monopoly in global value chains.

²² Christian Zeller (2007) From the Gene to the Globe: Extracting Rents Based on Intellectual Property Monopolies, *Review of International Political Economy*, 15(1), pp. 86–115.

²³ Mahmoud Ahmed Darwish (2017) *Mawsū' at Rašid (Al-Joz' al-Awal): At-Tarīh Wa-Listeḥkamāt al-Harbeyah* (Tala: The Arab Nation), p. 52.

²⁴ CELL (2018) Herfa First Station: 50 Years of O'Yma in AbdulRahman Street in Damietta. Available at <https://cell-edu.wixsite.com/hdcell/almhth-alawla-dmyat>, accessed March 4, 2023.

²⁵ Salah Montaser (2020) Min Ra's al-Bar Bada't. Al-Ahram. Available at <https://gate.ahram.org.eg/News/2453564.aspx>, March 4, 2023.

As mentioned earlier, there is a severe lack of reliable data about Damietta's furniture industry. One of the biggest research challenges is finding coherent and consistent statistical data; we discovered that there are great inconsistencies in official data. For example, the Egyptian Economic Census, which is carried out by the Central Agency for Public Mobilization and Statistics (CAPMAS), shows that the number of enterprises in the furniture industry has increased by over 30 percent between 2013 and 2018.²⁶ During the same period, economic census statistics show that the number of employed people in the furniture industry has also increased by over 30 percent. On the other hand, another CAPMAS report on the furniture industry between 2008 and 2019, shows that the number of both enterprises and employed people has considerably declined during this period.²⁷

The bulk of Egyptian furniture is produced in Damietta. The governorate hosts 35 percent of the total number of furniture production units in Egypt, mostly hiring five workers or less, while producing 82 percent of Egypt's national output of furniture.²⁸ Official statistics show that the industry is extremely SME-driven, where only 39 out of a total of 136,431 enterprises employ more than 100 workers and 128,22, or 94 percent, employ less than five workers.

This article is particularly focused on this SME-driven character of the industry, and whether it is under threat by a drive to automation, intense competition and changes in tastes, which we hypothesize that it introduced a significant redistribution of value in the Damietta furniture industry from its manual labor and small-scale manufacturing process to its design, marketing and large-scale manufacturing processes.

Pre-Manufacturing

As is shown by the Growing Smile, a growing share of value is captured by the design stage. In the spirit of Stan Shih's smiling curve, a great deal of attention has been given to design/conception in the technology manufacturing industry as the capturer of the greatest share of value.²⁹ However, design and conception in more traditional industries, such as the furniture and textile industries, is of growing importance as a mechanism for the increasingly uneven distribution of value globally.

²⁶ Nourhan Heysham, Hisham Elkadi & Sara Biscaya (2021) Exploring Social Capital within Damietta's Furniture Industry Value Chain as Mode of Community Currency, *International Journal of Community Currency Research*, 25(1), pp. 52–67, <http://dx.doi.org/10.15133/j.ijccr.2021.004>. Central Agency for Public Mobilization and Statistics (2020a) *Economic Census 2018* (Cairo: Central Agency for Public Mobilization and Statistics).

²⁷ Central Agency for Public Mobilization and Statistics (2020b) *Dirasit Sina'it al-'Athar Fi Misr Khilaf Alfatra (2008-2019)* (Cairo: Central Agency for Public Mobilization and Statistics).

²⁸ Yomna al-Gohr, Hatem Idris & Ahmed Awaad (2021) The Role of Management Science in Solving Some of the Problems of Industrial Facilities Specialized in the Furniture Industry in Damietta: Case Study of One of the Furniture Factories in Damietta, *Journal of Applied Arts and Sciences* 8(1), pp. 1-19, p. 2.

²⁹ World Intellectual Property Organization (2017).

In fact, Damietta has been infamous for the lack of innovation in design, and that it prioritizes manual craftsmanship and highly ornate traditional designs over modern innovative design.³⁰ Damietta's folk history, as well as the interests of wood carvers, provides a probable explanation for such insistence on such ornate designs. First was the presence of French residents in the city when WWI broke out. Some were descendants of the remnants of the failed French campaign on Egypt (1798-1801), who had decided to stay and blended with the local community. Second, a few French and/or French style hotels were built in the city's sea resort of Ras el-Barr by French migrants before and after the war. The best known of them is the high-end Hotel Courtelle that used to house members of the Egyptian royal family.³¹

There is a growing realization, however, among some large-scale producers, of the growing importance of investing in the design process. For example, Amr Orensa,³² the design and marketing manager of a large furniture production company in Damietta, says that the cost of design in his company has increased about 50-fold in the last 20 years, reaching about 5 percent of total expenses. He explains that 20 years ago the cost of the design was just the small cost of operating a scanner and prototyping. Subsequently, they started paying for a license-per-user furniture design software. Currently, Orensa's company invests more in research and development (R&D) testing different materials, doing more prototypes, and outsourcing design to specialized design firms. Orensa also confirms that a Growing Smile is in place by asserting that the relative investments his company allocated to design and sales has increased, while the share of actual production of the total cost has decreased.

Orensa argues, however, that this shift in focus on design and sales is limited to a handful of companies in Damietta whose management has been transferred to a younger, second generation of owners, and that the former big names who did not make this shift are failing to keep up and are even disappearing. Orensa says that more producers are investing in sales than in design now because they feel they can save on design by copying existing models, whereas spending on marketing is an inevitable cost.

A Damietta manufacturer who chose to not disclose his identity said that they are even thinking of outsourcing the manufacturing process altogether due to its shrinking added value, and only keep minimal production capacity that would allow them to produce designs that require a special know-how, conduct after-sales maintenance and some prototyping.

³⁰ Tamer el-Meehy (2002) Furniture Industry in Damietta: An Overview. Entrust. Available at <https://www.entrust-dmc.com/pdfs/p3.pdf>, accessed March 4, 2023.

³¹ Mahmoud al-Zelaky (2009) Ra's al-Bar al-Qadima Hikayat La Tamoot." Al-Masry al-Youm. Available at <https://www.almasryalyoum.com/news/details/1897490>, accessed March 4, 2023.

³² Interview with authors on 31 January 2022

Amr Hesn,³³ vice president of another large furniture factory in Damietta, explained to us that they invest more in research and development before the design stage to identify current and fast-changing tastes. This, for him, comes at the expense of investment in manufacturing because the shift to a more modern taste is served by modern technology and deems the skilled craftsman obsolete. Hesn studied marketing at the elite American University in Cairo; he says that starting 2007, he started applying what he learned at university in his family business, with the support of the EU-funded Industry Modernization Center (IMC), an institution which aims to develop and modernize industry through the provision of technical advice. The IMC was active in supporting Damietta-based companies who wanted to develop their business model.

In the last decade, due to slower demand, Hesn's factory hired a marketing consultancy firm that advised them to make a switch to mass-produced modern designs, because if they stop producing for one day under the former more labor-intensive model, they will immediately lose out since they cannot lay off workers, stop paying the utility bills, etc. Now with the persistence of slow demand exacerbated by the coronavirus pandemic, they had to resort to government contracts, explained Hesn.

Hesn also stressed out the rising importance of branding and marketing compared to 20 years ago when marketing used to depend on word of mouth more than anything else. He also explained how in the past the cost of design was next to nothing, but now an average designer will charge EGP 25,000 (\$1330³⁴) for the design of one unit.

Sameh al-Husseiny,³⁵ a furniture trader and small-scale producer, says that the cost of design is very minimal for him and will not exceed 2-3 percent of total cost because most small producers get existing designs, especially for 'flat, modern' designs. Also, small-scale producers will use the service of a traditional sketcher that will only charge EGP 3-5K (\$160-\$270) per print, a fraction of the cost of a designer as set out above by Hesn.

In short, although larger companies are starting to invest increasing amounts in the research and design process, it seems that the overall investment in the design process is still limited, based on the belief that this industry is 'open-source', and one can use existing designs, even if with minor alterations. This confirms Damietta's status as a 'copier' rather than an 'innovator', even if what they copy is increasingly changing from highly ornate French-style furniture, to more 'modern, flat' type of furniture that is in demand now, especially among the younger middle-class of the larger metropolises such as Cairo and Alexandria.

Manufacturing

³³ Interview with authors on 20 February 2022

³⁴ We used the exchange rate of the time of the interview, which significantly changed since following a few waves of EGP devaluation.

³⁵ Interview with authors on 05 March 2022

Despite the expansion of Damietta's furniture market for most of the past decades, the share of expenditure on manufacturing within the value chain has been eroding overtime in favor of the earlier phase of design and the later of marketing and sales. Orensa confirms this tendency in his company, despite the increase in their investment in machinery in order to meet the increasing demand for cutting-edge designs by their clients in Cairo.

CAPMAS statistics shows that between 2008 and 2019, labor productivity in the furniture industry has more than tripled as a result of such automation.³⁶ Hesn gives the example of their own company, which 20 years ago depended on the exclusive work of about 20 to 30 small workshops, which employed together an average of 200 workers. At the present time, the company has its own factory, which employs about 100 workers producing about the same volume of output.

According to Hesn, this reduction in the number of workers due to automation was facilitated by the growing demand for 'modern' designs as opposed to the ornate handmade ones, as well as due to improved production management. However, Orensa gives a different account of this mechanization trend in their factory. He says that the number of workers has slightly increased over the past 20 years and has been almost fixed for 10 years. He adds that the financial value of their production has however increased, as it is now more complex in design.

On the level of small workshops in Damietta, we have already established that they are mostly manufacturing-focused, leaving design and marketing to the larger enterprises. This makes them vulnerable to structural transformations. Al-Husseiny says that since he started his business in the early 2000s until 2016 (around the time of EGP devaluation) all his budget was spent on materials and manufacturing. He added that anything that he manufactured in that period was always bound to be sold without the need for significant marketing efforts. Coinciding with the slowdown in consumer demand that has taken place in Egypt since 2016 due to erosion of purchasing power caused by high inflation,³⁷ rapid automation started taking place in the wood carving business. This was due to the spread of the Computer Numerical Control (CNC) wood carving machines. These CNC machines are mostly small and cheaply imported from China, and can cost as little as a few hundred dollars, depending on model and capacity. According to al-Husseiny, these machines reduced the cost of production by replacing the highly skilled and costly human carvers.

During our research, we have also observed the 'deskilling' of labor on the levels of both the factory and small workshop. On the factory level, the more automated it is, the less craftsmanship is needed as the roles of workers become simpler. Orensa, however, makes two

³⁶ CAPMAS (2020b) *Dirasit Sina'it al-'Athat Fi Misr*.

³⁷ Osama Diab & Salma Ihab Hindy (2021) IMF's Social Protection between Rhetoric and Action: The Case of Egypt, *Middle East Critique*, 30(4), pp. 391–409, DOI:10.1080/19436149.2021.1989551.

distinctive remarks about this process. The first is that their company prefers to hire workers without previous furniture experience, as they are easier to train from scratch, instead of employing experienced workers and trying to deprive them of their traditional skills. The second remark, which is an exception to their company's earlier preference, is to employ highly skilled workers only in upholstery, which is still highly manual, and in operating high-risk machinery to minimize the likelihood of factory floor injuries.

As for deskilling on the workshop level, it mostly occurs in manual wood carving (*'uyma* in local dialect). The spread of CNC machines in the workshops—as well as changes in taste—is also dealing a severe blow to this traditional craft. According to Yasser al-Nady,³⁸ a small-scale furniture producer and merchant, the carvers of Damietta are very talented and losing them is the biggest loss in comparison to other specialized workers who lost their work as well. As for their impression about CNC carving in comparison to the work of traditional carvers, both al-Husseiny and al-Nady were bitter in their responses and described the new machine carvings as 'soulless'.

The numbers of *'uymagis* have reportedly gone down from about 100,000 to 30,000 in Damietta as a result of the CNC machine earthquake; many of those who lost their jobs resorted to working as waiters in street cafes, vegetable sellers, grocers, etc.³⁹

The 2016 slowdown in consumer demand, and the COVID-19 pandemic did not affect both levels of furniture manufacturing in Damietta equally. We learned from our interviewees that the large enterprises managed to absorb these shocks by winning government contracts, most notably for furnishing the new administrative capital. As for the small workshops, this was not an option. Al-Nady refers to these trends as a structural decline of the industry, not a slowdown that is part of a business cycle.

This has forced him to recently quit the business that he started in 2000, which was once lucrative for him, since he was even able to export his furniture to several Arab countries in addition to his domestic sales. He explains this decision by the change he observed in Abdelrahman Street, an iconic bustling street lined up with small-scale workshops who sell their semi-finished products there. He says a few years ago it was too busy that one would struggle to walk on foot, while now you can speed there with your car without a problem. He also adds that many of the highly skilled workers, especially carvers, are now working in other non-furniture-related factories as low skilled labor. As for those who did not shut down their workshops, they are now suffering with debts, while the delayed payments owed to them by showrooms are derogatorily given to them as a weekly *masroof* (pocket money); this is now a

³⁸ Interview with authors on 05 March 2022

³⁹ Sohad al-Khodari (2017) Al-'Uyma Fi Khatar Bi Sabab al-Hitan' Wal-Hirafiyoun Yatahawaloun Li Qahwajiya Wa Sa'iqin. El-Watan. Available at <https://www.elwatannews.com/news/details/1790705>, accessed March 4, 2023.

widespread practice in Damietta for paying workshop owners reflecting a severe shift in power balance in favor of the showrooms.

Post-manufacturing

In the furniture industry, post-manufacturing is without doubt the stage that captures the largest share of value. In Indonesia, a major global furniture export hub, wholesalers and retailers capture 68.6 percent of the total net value added from the processes that start with teak production to the sale of the finished furniture product.⁴⁰ For exported Damietta furniture, there is no reason to believe that the figures will vary largely from that of Indonesia, except for differences in value distributions stemming from the fact that Indonesia is a teak producing country whereas Egypt imports almost all of the required wood.

Although the share captured by the post-manufacturing stage might not be as extreme in the case of Damietta furniture produced for the domestic market, given the limited purchasing power of the average Egyptian consumer compared to the average Gulf or European consumer (main export destinations for Indonesian furniture), large Cairo-based retail still seem to be among the largest winners across Damietta's national value chain.

Al-Nady argues that in Damietta, it has always been the case that the profit of the small-scale manufacturers who have no access to the market is negligible compared to that of the showroom. He says that the profit margin of the different stages of manufacturing (carpentry, carving, painting, upholstery, etc.) would range between 10 and 20 percent; in very rare cases of super-skilled and prominent artisans, it could reach 30 percent. As discussed in the previous section, the power dynamics is decisively in favor of the showrooms creating tense relationships between the small-scale manufacturers and the showrooms. Al-Nady explains that it is commonplace to witness that showroom owners open several branches in Damietta and Cairo, and even abroad, whereas the workshop rarely expands in the same manner, if at all.

The manual laborer has no other choices, because the relationship networks of the dealer are not the same as that of the laborer. The extent of the laborer's network is two or three showrooms which he supplies with goods, and maybe a relative who knows someone in Cairo who needs furniture. However, ongoing and increasing profitability is limited to the showrooms.

At the same time, al-Nady explains that concurrent with this general power of the showrooms, many in Damietta have permanently shut down and 'turned into coffee shops'. However, this was not really the case in Cairo, because, according to al-Nady, customers stopped coming to

⁴⁰ Herry Purnomo, Philippe Guizol & Dwi R. Muhtaman (2009) Governing the Teak Furniture Business: A Global Value Chain System Dynamic Modelling Approach, *Environmental Modelling & Software*, 24(12), pp. 1391–1401, <https://doi.org/10.1016/j.envsoft.2008.04.012>.

Damietta because of the high degree of informality and irregular pricing, which gives customers the feeling that they are being ripped off. Additionally, according to al-Nady, Cairo has a lot much on offer now, especially as production is becoming more mechanized, a lot of the production moved there. Needless to say, most of the demand has always come from Cairo, where about a quarter of Egypt's population live, and where its inhabitants have, on average, stronger purchasing power than in the rest of Egypt.

Orensa, whose company is vertically integrated and therefore controls much of the value chain, says that his company's post-manufacturing budget, which includes retail and advertising, has increased significantly over the last 20 years, echoing al-Husseiny's assertion that whatever used to be produced in the past was bound to be sold with minimal marketing efforts. Orensa explained that 20 years ago, the only showroom they had was annexed to their factory employing only one person, and that he designed the company's website himself with amateur photographs taken by the owners; every few years, they might print some brochures, he told us.

In the meantime, they still have the factory showroom, but added to it two rented showrooms in Cairo each employing six people. They also pay for Facebook advertisements, professional photo sessions and furniture stylists. This all amounts to about 25 percent of the company's total costs. 'If we close down the showrooms, and stop spending on advertising, we could sell the furniture 25 percent cheaper', Orensa explained to us.

The increasing amount of output/overproduction combined with weak demand resulting from successive waves of economic crisis intensifies marketing expenditure and gives a competitive advantage to those who can spend generously on these activities, namely the larger enterprises, and shifts the balance of power even more to the showrooms and large vertically integrated factory producers. These trends have also been facilitated by the change of taste towards modern furniture that requires significantly less manual labor, especially skilled labor such as woodcarvers.

Implications for the Global South

The creeping impact of the Growing Smile dynamic can be felt across the Global South where workshop and factory labor is now mostly concentrated. Unlike previous literature of unequal exchange and value distribution, the Growing Smile dynamic does not only highlight the unevenness of value distribution, but also shows that the asymmetry of value distribution is more likely than not to exacerbate with time, which means it should constitute a top priority for development-related discussions in the Global South. This temporal factor can be contrasted with Shih's static smiling curve, in which time was not considered.

Table 1 Employment by sector (% of total employment)						
	Low- & Middle-Income Countries			High-Income Countries		
	Agriculture	Industry	Service	Agriculture	Industry	Service
1991	53	20	27	6	31	63
2019	32	23	45	3	23	74

Sources:
Employment in Agriculture (The World Bank Data 2022a)
Employment in Industry (The World Bank Data 2022b)
Employment in Services (The World Bank Data 2022c)

While the Prebisch-Singer hypothesis revolves around temporality (relative prices of commodities over time), they typically offer income elasticity of demand as the main explanation behind diverging prices of primary-secondary commodities. However, unlike the Growing Smile, this does not explain the disparity between different values assigned to the different production stages and focuses instead on the prices of finished commodities. The Prebisch-Singer hypothesis also does not consider the role of monopolies and IP protection in deciding exchange value.

Although the label ‘industrialized countries’ persists as a description of the richer countries of the North, manufacturing currently accounts for about 20 percent of the GDP in low- and middle-income countries, compared to only 13 percent of the GDP of high-income countries.⁴¹ On the other hand, services represent more than 70 percent of the high-income countries’ GDP, compared to 54 percent of low-income countries (see Table 2).

Table 2 Employment to population ratio, 15+, total (%) in low-, middle- and high-income countries		
	Low- & Middle-Income Countries	High-Income Countries

⁴¹ World Bank (2022e) Manufacturing, Value Added (% of GDP) - Low & Middle Income, High Income. Available at <https://data.worldbank.org/indicator/NV.IND.MANF.ZS?locations=XO-XD>, accessed March 4, 2023.

1991	64	57
2019	57	58
Source: (The World Bank, 2022d)		

The Growing Smile therefore threatens to widen the gap of value distribution between manufacturing and service activities both within and between countries. In Global South countries, a growing share of value is expected to be captured by the service centers and service-oriented working population within Global South countries, and by IP-heavy manufacturing in the Global North. WIPO’s Growing Smile model also does not capture the larger value captured by financial services, which again are highly concentrated in the Global North and in centers of financial and service economies in the Global South.⁴²

In terms of implication for labor, despite the sizable increase in the share of workers in the service sector between 1991 and 2019 in the Global South, it was still unable to employ enough workers to prevent the employment-to-population ratio from declining (see Table 3); this is mainly due to a large drop in employment in agriculture and a modest increase in employment in industry. In the GN on the other hand, since workers in agriculture constituted a meager portion to start with, the service sector seemed more capable of covering for the declining agriculture and industry sectors.

Table 3 Changes in three levels of value distribution in the Egyptian furniture industry			
	More value captured	Unclear	Less value captured
Business	IP-heavy machinery producers; large vertically integrated mass-producers of furniture; online advertising platforms	Showrooms; large non-vertically integrated factories	Small and medium-sized workshops
Labour	Designers; stylists; photographers; marketers; advertisers; salespersons		Manual labourers
Geography	Large metropolises; Industrial zones		Industrial SME clusters

⁴² Bruno Bonizzi, Annina Kaltenbrunner & Jeff Powell (2019) Subordinate Financialization in Emerging Capitalist Economies, *Core*, no., GPERC69, <https://core.ac.uk/download/pdf/189394133.pdf>.

Conclusion

Based on the Growing Smile model, manufacturing is the stage that is progressively capturing and adding the least value, while requiring a larger amount of labor hours and physical resources in comparison to the earlier stage of design and the later of marketing. In this light, this paper examined the case of Damietta's furniture manufacturing cluster in the Global South. We hypothesized that the struggles of the increasingly automated furniture manufacturing in Damietta could be partially attributed to its focus on the middle stage of the value chain, that is the manufacturing stage. Our interview-based research found that Damietta, as a manufacturing cluster, had undergone automation, a drive towards mass-production, a deskilling process, extraction of value from the manufacturing processes to design and marketing. We highlighted how SME-driven and locally oriented industrial clusters in the Global South could lose a growing share of added value even if their market is largely domestic.

We demonstrate that although a handful of large companies have started to increase their investment in conception and marketing, it is still relatively limited as the vast majority of Damietta small-scale producers adhere to more traditional highly ornate designs. This indicates that the industry is missing out on capturing a part of the growing slices of the value pie.

On the other hand, automation, especially of wood carving, was adopted by enterprises of all sizes, threatening the livelihoods of tens of thousands of highly skilled wood carvers. Concerning the third and last segment of the value chain, our research found that the increasing amount of output combined with weak demand resulting from successive waves of economic crises, intensified marketing expenditure in recent years giving a competitive advantage to the larger companies and showrooms. This competitive advantage was strengthened by government contracts which helped in counterweighting declining consumer demand. This shift is also partially explained by the change in consumers' taste towards modern 'flat' furniture that require significantly less manual labor.

Overall, we found out that the redistribution of value in the furniture industry of Damietta occurs on different levels (see Table 3). On the business level, those who are capable of vertical integration and operate along the entire value chain are naturally less affected by whatever redistribution happens across the chain. The movement towards fewer larger players accounts for heavier reliance on machinery, which entails an effective transfer of value from the manual craftsmanship to international IP-heavy industries. Companies also increasingly rely on online advertisement making multinational internet companies new actors in value chain distribution.

On the level of labor, our interviews demonstrated a transfer of value from the traditional artisan to professions that are linked to the design and marketing processes, such as furniture designers, stylists, photographers, and salespersons. This form of ‘modernisation’ is causing a rapid process of de-skilling of the large and historically skilled Damietta furniture labor force. In this sense, the Damietta case warns of how the Growing Smile is set to widen the gap of value distribution between manufacturing and service activities both within and between countries, with the most serious implication suffered by the Global South in general and by the national peripheries of Global South countries in particular, even those who have managed to industrialize and are oriented towards domestic markets.

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