

A Work Project, presented as part of the requirements for the Award of a Master's Degree
in Management from the Nova School of Business and Economics

Consulting Project for CUF and Health Cluster Portugal with the topic:

CLOSING THE PORTUGUESE TRADE BALANCE GAP OF MEDICAL PRODUCTS By Creating a Suppliers' Club and Attracting Foreign Direct Investment

João Mourão de Carvalho Cáceres Monteiro | 29251

Work project carried out under the supervision of:
Professor Constança Monteiro Casquinho

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The global political, economic and legal outlook interacts with the social, technological, and environmental trends to create a reality that generates the conditions for the medical industry and global trade disruption



DIAGNOSIS | Non-Medical Related Environment | Global

Trends

	Trends
Political	<ul style="list-style-type: none"> • Sino-American tensions are not expected to erode • Populism is escalating in many eastern countries • Brexit
Economic	<ul style="list-style-type: none"> • Eastern Economies will keep winning relevance • Global Economy, Trade and FDI are contracting • Covid-19 has disrupted supply chains
Social	<ul style="list-style-type: none"> • Bigger, older, more urban and literate population • Working abroad or remotely is becoming common • Clients are paying for value-consciousness
Tech.	<ul style="list-style-type: none"> • R&D and innovation is on the rise, globally • Cognitive technologies usage is increasing • 3D printing and automation is becoming affordable
Environ.	<ul style="list-style-type: none"> • More clean power and carbon reduction concerns • The population is concerned about plastic and recycling • Global warming effects and risks are already rising
Legal	<ul style="list-style-type: none"> • New regulations on price, quality and data usage standards and transparency are being approved

Implications

<ul style="list-style-type: none"> • Trade tensions are shifting the focus to bilateral trade and local supply chains • Political risk may inhibit investors' confidence • New target markets and ways to trade with the UK are available for companies
<ul style="list-style-type: none"> • Scale-focused economies will start to compete in quality niches • Clients' price sensitivity will increase, and investment will be harder to attract • Opportunity to enhance the focus on local suppliers and attract foreign production
<ul style="list-style-type: none"> • Demand for medical products and for efficient medical devices will increase • Literacy and work preferences developments increase the available pool of talent • Health and value consciousness shift the customer focus away from price
<ul style="list-style-type: none"> • New technologies reduce the cost of medical research and product development • Automation and 3D printing reduce labor relevance and costs • Innovation is reducing the cost of distance which makes the lack of land borders less relevant
<ul style="list-style-type: none"> • Energy and waste efficient countries are expected to attract environmentally conscious companies • The environmental risks increase makes buffering and contingency planning increasingly necessary
<ul style="list-style-type: none"> • Transparency regulations benefit producers that comply with strict quality standards • Price transparency rules are a threat because clients will more easily compare prices

Table 9: PESTEL Global Trends

Sources: Team Analysis; ¹ American CFR, ² Bain; ³ BCG; ⁴ European Commission; ⁵ EY; ⁶ Forbes; ⁷ IMF; ⁸ Ipsos; ⁹ Mercer; ¹⁰ Statista; ¹¹ UK Government; ¹² UN; ¹³ World Bank;

Check Appendix C2 for further details regarding PESTEL analysis

Table 10: PESTEL Global Implications

Portugal has specific political, economic and social characteristics, that interact with its technological, environmental, and legal framework to set the urgency for medical trade balance adjustments



DIAGNOSIS | Non-Medical Related Environment | Portugal

	Trends	Implications
Political	<ul style="list-style-type: none"> Strong diplomatic network Political situation is stable and non-violent The government is investing in healthcare facilities 	<ul style="list-style-type: none"> The Portuguese diplomatic history and strength opens bilateral trade and export opportunities Despite the high corruption indexes, the Portuguese stable government, and intentions to invest in healthcare attract FDI in the health and technologic core
Economic	<ul style="list-style-type: none"> Attractive destination for FDI and for doing business High government debt prevents public investment The pandemic made industries adapting production 	<ul style="list-style-type: none"> FDI and ease of doing business attractiveness encourage companies to come to Portugal The government debt contributes to the public sector's focus on price The reinvention of some sectors opens possibilities for national productive force reorganization
Social	<ul style="list-style-type: none"> The Portuguese population is ageing Families available income and propensity to consume are expected to increase 	<ul style="list-style-type: none"> National demand for healthcare is expected to increase The population's increased capacity to consume is expected to stimulate the productive sector, in general
Tech.	<ul style="list-style-type: none"> Portugal is on the frontline in terms of innovation Events to promote technology are being planned The country has implemented the 5G technology 	<ul style="list-style-type: none"> The technologies implemented increase productivity and innovative capacity The Portuguese government is developing events to promote technology and innovation
Environ.	<ul style="list-style-type: none"> Portugal is in a privileged geo-strategic position The country is highly energy efficient The country owns high-qualified road infrastructure 	<ul style="list-style-type: none"> The Portuguese geographic position simplifies distribution and logistics Energy efficiency attracts environmentally conscious companies to Portugal The road and rail national network facilitates and reduces transportation costs
Legal	<ul style="list-style-type: none"> High income and corporate taxes Portugal complies with the European law 	<ul style="list-style-type: none"> Facing high taxes, young talents have incentives to emigrate and may inhibit FDI Compliance with EU laws guarantees high-quality standards for investors

Table 11: PESTEL Portuguese Trends

Sources: Team Analysis; ¹ República Portuguesa; ² World Bank; ³ Pordata; ⁴ EY; ⁵ United Nations Population Division; ⁶ Agência Nacional de Inovação; ⁷ Yale; ⁸ World Economic Forum;

Check Appendix C3 for further details regarding PESTEL analysis

Table 12: PESTEL Portuguese Implications



KEY TAKEAWAYS

A4

Increase the Quantity
Exported by Entering in
New Markets



The optimal solution
does not lie in entering
new markets, since
Portugal already exports
to several countries
whose economic power
is high

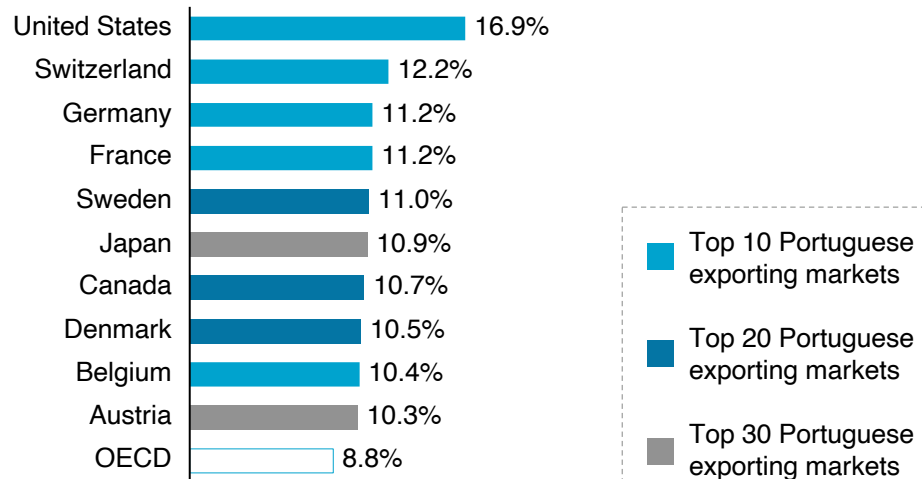
Portugal already exports to a significant amount of countries whose economic power and health expenditures are considerably high, so, the optimal solution does not lie in entering new markets

ANALYSIS | Exports Hypothesis

PORTUGUESE PRICES ARE HIGH

- The medical products' price charged by Portuguese suppliers is **higher than the average**, due to the lack of competitiveness in the Portuguese industry
- It is easier for Portugal to focus on countries whose **economic power** and **health care expenditures** are above the average

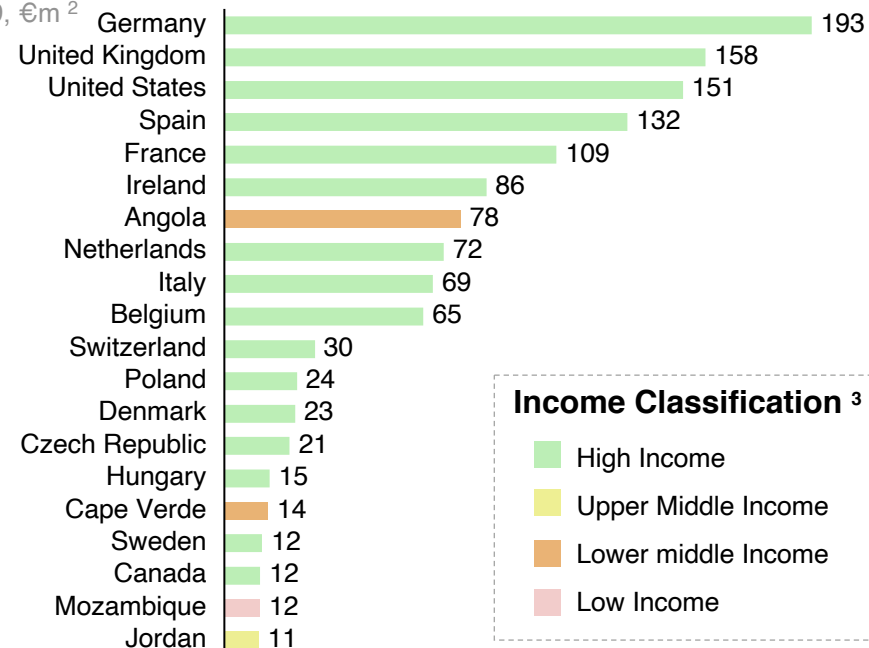
Graph 28: Health Expenditures as % of GDP

2018 ⁴

WHERE DOES PORTUGAL EXPORTS MEDICAL PRODUCTS?

- Markets:** Portugal exports to **164 (out of 195)** countries ⁴
- 87%** of the total Portuguese **medical exports** are concentrated in 20 countries, whose **income is predominantly** classified as **high** and whose **health expenditure** as % of GDP is **significant**

Graph 29: Top 20 Portuguese Exporting Markets

2019, €m ²



KEY TAKEAWAYS

A5

Increase the Quantity
Offered by Increasing the
Number of Suppliers

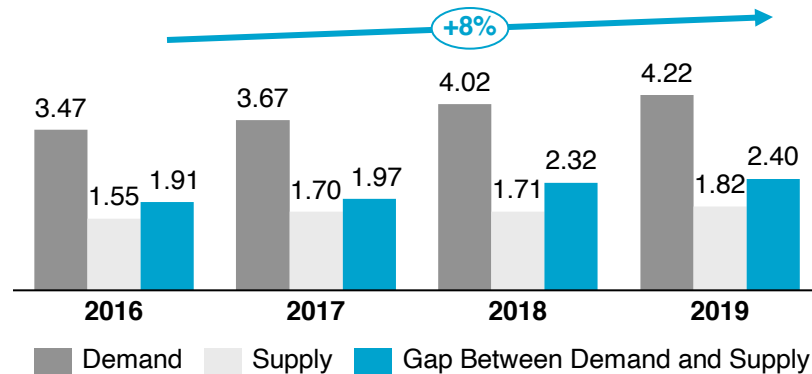


Increasing the number of
suppliers would increase
the production capacity
of the industry, reducing
the gap between supply
and demand

Increasing the number of suppliers in the medical products' industry would allow Portugal to increase its production capacity, reducing the gap between supply and demand

ANALYSIS | Exports Hypothesis





Graph 30: Portuguese Demand and Supply for Medical Products

€bn^{1,2}

- Even though the quantity produced by Portuguese suppliers has been increasing over the years, **the gap between demand and supply is growing, at 8% CAGR (2016-2019)**
- The evolution in the number of Portuguese medical products' suppliers reflect an **increasing trend** over the last 4 years, **contributing to the increase in the quantity produced** in Portugal
- The highest number of Portuguese suppliers of medical products was **1268, reached in 2019, being 99.5% SME's**^{1,2}

Table 17: Best Practices

2018

				
Trade Balance 2019 ³	Deficit €-2.4bn	Surplus €53bn	Surplus €20.4bn	Surplus €9.2bn
Population ⁴	10.2m	8.7m	17.2m	11.4m
#Suppliers ^{4,5}	1 268	2 615	2 358	1 253
#Employees ⁴	12.9k	285.2k	29.6k	34.2k

Countries with a similar **area, population, and favourable trade balance of medical supplies:**

- **Switzerland:** leading hub of **pharmaceutical** and **MedTech** industries in Europe, contributing to ~30% of Swiss total exports⁴
- **Netherlands:** strong medical devices industry, where technology plays a crucial role, leading to the **entrance of new players**
- **Belgium:** important player in the **pharmaceutical sector**, accounting for ~78% of the total exports of medical products

To foster competitiveness and to increase exports, Portugal will benefit from a government body focused on managing foreign investors and enhancing Portuguese attractiveness for health-related FDI



RECOMMENDATION 4 | Attract Health-Specific Foreign Direct Investment (1/5)


RATIONALE

FDI creates **scale, innovation, and R&D** (50% of national R&D). Portugal attracts foreign investment for other industries and the health sector needs it, so, the country should have an **FDI strategy** focused on health

OBJECTIVE

Attracting health FDI, to **increase exports**:

- **Increase attractiveness** for health-related investments
- **Manage investors and communicate** the Portuguese potential for investment

HEALTH SPECIFIC FDI DIFFERENCES	SOLUTION	DESCRIPTION	
Portugal is attractive for FDI	Health Investments Portugal	HEALTH INVESTMENTS PORTUGAL	
The country performs worse in health-specific FDI (vs other national players and foreign players)	↓ Government supported body		Portugal can benefit from a government-supported body focused on health-related FDI . This organization will conduct research on the health investment environment and will
The aftermath of Covid-19 creates opportunities for health FDI	↓ focused on health related FDI	Figure 13: HIP logo	help institutions to manage foreign investors , as if they were clients
		3 CORE VALUES	3 MISSIONS
		Experience	1 Help the government and other health stakeholders in the creation of conditions to receive foreign investment
		Reliability	2 Communicate , in partnership with other organizations, the factors that contribute to the Portuguese investment attractiveness
		Collaboration	3 Identify and support potential investors as if they were clients, through communication and customization of the benefits offered
		Table 49: Recommendation 4 Health Investments Values	Table 50: Recommendation 4 Health Investments Missions

In its mission to increase FDI attractiveness, Health Investments Portugal will help incumbent companies to create and reach clear objectives, will support innovative SMEs and will conduct research



RECOMMENDATION 4 | Attract Health-Specific Foreign Direct Investment (2/5)

1 | Increase FDI Attractiveness

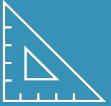









WHAT?	HOW?	HUMAN CAPITAL
 <p>Help incumbent companies reaching objectives</p>	<ul style="list-style-type: none"> • Manage the annual report* that includes (1) KPIs measures and (2) survey to buyers, to quantify Portuguese products' innovation and quality and how these are precepted by buyers • Collaborate with companies to set targets for survey indicators • Establish networks of business relationships that help companies reaching the targets set • Together with companies, periodically evaluate progress on the KPIs created 	<p>Business Support Team</p> <ul style="list-style-type: none">  Business Analyst  Health Expert  Ex-Entrepreneur  Ex-VC Investor  Event Planner
 <p>Support disruptive and innovative SMEs</p>	<ul style="list-style-type: none"> • Host conferences and other events to meet startups and promote networking • Provide business and strategy consulting, and put SMEs in contact with valuable players with whom government agencies usually have contact, such as universities or possible funders • Create a startup incubator and promote pitch sessions, connecting innovative startups and investors 	<p>Research Team</p> <ul style="list-style-type: none">  Economist  Public Policy Expert
 <p>Conduct research for health stakeholders</p>	<ul style="list-style-type: none"> • Conduct research on major investment trends and opportunities to attract FDI (e.g. research on attractiveness of being environmentally friendly or research on the global supply chains' changes) • Conduct research for the government, to increase bureaucratic agility and support policy development 	

Table 51: Recommendation 4 – HIP Mission 1

To communicate the Portuguese FDI attractiveness, the organization will focus on increasing Portuguese visibility, as well as promoting the current and future benefits of investing in the country



RECOMMENDATION 4 | Attract Health-Specific Foreign Direct Investment (3/5)

2 | Communicate FDI Attractiveness




WHAT?	HOW?	HUMAN CAPITAL
 <p>Collaborate and contribute to the already existing promotion efforts</p>	<ul style="list-style-type: none"> Establish regular meetings with associations already communicating Portuguese health-specific FDI attractiveness, highlighting Health Cluster Portugal, Portugal IN or AICEP Contribute and leverage on the existing communication strategies, such as the “Health Portugal” initiative 	<p>Communication and Diplomacy Team</p> <ul style="list-style-type: none"> Marketing and Communication Specialist Diplomat
 <p>Create New Communication Initiatives</p>	<ul style="list-style-type: none"> Co-create, with incumbent organizations, initiatives promoting the current Portuguese attractive characteristics, such as transport infrastructure, political stability, or skilled workforce Collaborate with existing organizations to create strategies to efficiently promote the new attractive and health-specific characteristics that Portugal will develop 	
 <p>Put Portuguese health on investment showcase</p>	<ul style="list-style-type: none"> Work together with Health Cluster Portugal and broader FDI attraction initiatives to ensure that Portuguese companies seeking funds and Portuguese projects are in the most important health and non-health funding events Develop efforts to put Portuguese companies and projects on main investors’ radar 	

Table 52: Recommendation 4 – HIP Mission 2

In its mission to treat investors as clients, Health Investments Portugal will identify potential investors, analyse them and create tailored proposals for the valuable investors, who will then be carefully managed



RECOMMENDATION 4 | Attract Health-Specific Foreign Direct Investment (4/5)

3 | Treat Investors as Clients




WHAT?	HOW?	HUMAN CAPITAL
 <p>Identify potential investors</p>	<ul style="list-style-type: none"> • Search for possible investment partners, such as big incumbents finding new locations or new companies entering the health market, and analyse them extensively • Compare investors' motivations and characteristics to assess if the investor is a “Go” or a “No Go” 	<p>Investor Relations Team</p> <p>Ex-Financial Analyst at a big health player</p>
 <p>Create tailored benefits and experiences for investors</p>	<ul style="list-style-type: none"> • Work together with the government to develop a tailored offer to each investor • Carefully prepare investment meetings, in which Portuguese qualities are clearly presented and the investment incentives are clearly communicated in numbers. The objective is for the investor to leave the room sure that investing in Portugal is the best solution 	<p>Investor Relations Specialists</p>
 <p>Manage current investors satisfaction and promote further investment</p>	<ul style="list-style-type: none"> • Contact investors monthly and semesterly evaluate their satisfaction • Show availability to improve the investment experience (help in the setup phase, find possible partners, help to find a skilled workforce, be the bridge for government contacts) • Work together with the government to develop new customized offers for investors who want to increase their investments in Portugal 	<p>Event Planner*</p>

Table 53: Recommendation 4 – HIP Mission 3

After the government authorization to found the organization, the right people should be hired, the office should be set and, in 2022, teams will start operations



RECOMMENDATION 4 | Attract Health-Specific Foreign Direct Investment (5/5)

ACTION PLAN

Nr	Tasks	Start Date	Costs	2021				2022			
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	Found Health Investments Portugal	Q1'21	NA								
1.1	Decide two founders for this initiative	Q1'21	NA								
1.2	Develop a proposal stating Health Investments' organization and culture	Q1'21	NA								
1.3	Set what government personnel and organizations will be involved	Q2'21	NA								
1.4	Find private sponsors and other stakeholders for the project	Q2'21	NA								
2	Find the right people and setup the office	Q4'21	275 140€								
2.1.	Sign the necessary human capital ¹	Q4'21	259 940€*								
2.2.	Prepare the facilities ²	Q4'21	15 000€**								
2.3.	Create the Website ³	Q1'22	200€								
3	Start Operations	Q2'22	NFE								
3.1.	All teams start operations	Q2'22	NA								
3.2.	Create innovation and quality KPIs and set targets	Q2'22	NA								
3.3.	Start delivering policy proposals	Q2'22	NA								
3.4.	Launch communication initiatives from scratch	Q2'22	NFE								
3.5.	First proposals for the targeted investors	Q4'22	NA								

Table 54: Recommendation 4 Action Plan

* Assumption: cost of signing = 1 year personnel costs; ** Assumption: no additional office costs, as an existing public property will be used; NA: not applicable; NFE: needs further estimation



APPENDIX C

Diagnosis

With political phenomena occurring, such as the R&D race and the rising populism, economic trends are shaping the world, as emerging economies prosper, supply is reorganized and the economy is expected to contract



APPENDIX C2 | Non-Medical Related Environment | Global (1/4)

Political Trends

- Rising Political Risks:** The sino-american trade tensions, the escalating populismo, and the declining influence of WTO are symptoms of an increasingly risky world. In fact, **72% of the largest companies' executives say the political risk in 2020 was higher** than in 2018. This feeling converts into uncertainties about supply chain resilience, market access and operating costs. In Europe, 78% of people agree we live in an increasingly dangerous world and **52% expect a global conflict to erupt in the next 25 years** ⁵
- Brexit Disruption:** With the United Kingdom leaving the EU, the union's budget is expected to decrease, together with trade flows, both due to the UK's reorganization of trade and to the country's expected economic contraction. Brexit opens the **possibility for bilateral relationships** and for filling the trade gaps left by the UK

Economic Trends

- Emerging Economies:** Led by China and India, emerging economies have accounted for almost two-thirds of the global GDP growth in the past 15 years. **In 2030, India and China are expected to represent, respectively, 15% and 20% of world GDP (PPP), while EU27 and US will represent 9% and 16%, respectively.** Even though these projections were made before the pandemic, the Chinese economic recovery is being faster than the rest of the World, so, this trend is not expected to erode ^{8,9,11}
- Economic Contraction:** **Global growth is projected at -4.9% in 2020 and 5.4%, in 2021. Euro area** operated at 25 to 30% below its capacity and the economy is **forecasted to contract by about 10% in 2020, before recovering at an annual growth rate of 6%, next year.** Also, IMF (2020) estimates that the **volume of goods and services will drop by 12%, in 2020. Global FDI flows are forecasted to decrease by up to 40% in 2020, with further deterioration expected for 2021** ⁷
- Supply Reorganization: COVID-19 has Highlighted Supply Chain Risks.** Only 9% of the shipping and freight professionals, in a study, say that their shipping and supply chain partners were prepared for the pandemic. Also, **42.1% say that they will change their shipping and supply chain strategies** ¹⁰

In an older, urban, literate, and populous society, a new workforce is disrupting the market, and consumers are increasingly health and value-conscious



APPENDIX C2 | Non-Medical Related Environment | Global (2/4)

Social and Demographic Trends

- 1. Ageing Population:** UN expects that, **in 2050, 1 in every 6 people in the World will be elderly** (aged over 65), evolving from a value of 1 in every 11 people, in 2019. **In Europe and North America, 25% of the population will be elderly**, by 2050. In the same year, the Chinese over 65 population is expected to be composed of 330 million people. This will have an impact on the **working population** that, for example, **in Europe, will decrease from 65%, in 2019, to 57%, in 2045** ¹²
- 2. Urban, Literate and Populous World:** By 2030, the **global population is expected to rise by 1 billion**, bringing the total to around 8 billion. This growth will be heterogeneous across continents, with, for example, the **African population set to double by 2050, while the European population is expected to shrink. Also, by 2050, the World population living in towns and cities is expected to rise to 68%**, with **90% of the registered evolution expected to unfold in Africa and Asia. Urbanization is expected to mean higher literacy, with** literacy rates for those aged 15 and over being expected to continue to improve and reach values around **95%, in 2050** ^{8,14}
- 3. New Workforce Disruption:** The new workforce is more likely to live abroad. It is expected that in 2030, **66% of the workforce will be composed of Millennials and Gen Zers. These generations are more likely to live abroad.** For instance, 93% of the African and 70% of the Western European state that they would like to work outside their home country, at some point in their careers. Also, the remote work revolution is starting. In 2018, **80% of the business leaders surveyed stated that their organizations would be affected by remote work**, in the following 10 years. The **pandemic has increased the strength** of this already existing trend ^{8,14,15,16}
- 4. Value-Conscious Shopping:** **Customers are increasingly willing to pay for products that represent their values.** Led by Gen Zers and Millennials, consumers across generations are willing to pay a premium for products that highlight their individuality. According to Ipsos (2020), almost **6 in every 10 people (aged 16 to 74) say they tend to buy products from brands that reflect their personal values** ⁵
- 5. Health Consciousness:** Nearly nine in ten people want to be fitter, but, **surprisingly, Baby Boomers are only 3% more likely to want to be fitter than Gen Zers.** Also, **78% globally want more control of their healthcare** and, even though 73% of the population believes in all recommended vaccines, **19% disagree that all vaccines are beneficial** ⁵

Technological and digital advancements in data, genetics, automation, and transportation will disrupt most research and transportation-based industries, as the cost of distance and data processing, will decrease



APPENDIX C2 | Non-Medical Related Environment | Global (3/4)

Technological Trends

- Cognitive Technologies Increasing Usage:** Cognitive technologies (e.g. machine learning, neural networks, natural language processing, a broader domain of AI) are **transforming nearly every industry**, with their **demand skyrocketing** to reach US\$77.6 billion, in 2022 ¹⁴
- Digital Twins:** A digital twin is a **digital copy of a physical object, product, process, or ecosystem**. It **allows experiments** that would be too expensive to try out on the real physical object. Worth US\$3.8 billion in 2019, the **market for this technology is expected to grow 842%**, reaching US\$35.8 billion, by 2025 ⁶
- 3D and 4D Printing:** Already used for printing prosthesis that can be individually tailored, this market is expected to boom. For example, the **global 3D products and services' market size is expected to increase 155%**, from US\$16 billion, in 2020, to US\$40.8 billion, in 2024 ⁶
- Genomics and Gene Editing:** Advances in computing and analytics have increased the understanding of the human genome, which is progressively allowing the **alteration of living organisms' genetic structure of living organisms** (e.g. correcting DNA mutations that can lead to cancer) ⁶
- Reduced "Cost of Distance":** Multibillion-dollar investments are giving rise to **new products and services that are eroding the cost of moving people, goods and information**. For example, drone delivery of a package already costs 75% to 80% less than human delivery ³

Regulation on the transparency and quality of products is arising in a world in which carbon reduction and recycling management concerns are increasing among customers



APPENDIX C2 | Non-Medical Related Environment | Global (4/4)

Environmental Trends

- 1. Carbon Reduction is on The Rise:** Green energy is the future, but already the present. In fact, **clean-power stocks are up by 43%, this year, and** The Economist (2019) estimates that, with bold action, **renewable electricity**, such as solar and wind power **could rise from 5% of supply today to 25% in 2035, and nearly 50% by 2050** ¹⁴
- 2. Gap between Expectations and Reality:** More than half of the companies are already focused on reducing carbon emissions. Nevertheless, when we look at the production, on average, there is a gap of **51 p.p between the percentage of companies planning to implement carbon-reduction applications and the ones successfully doing it** ³
- 3. Continuously Rising Plastic and Recyclability Concerns:** After some major findings and astonishing images of plastic on the oceans, the public's concern about plastic waste and recyclability are on the rise. In a study made in the UK, **85% of the respondents share they are "fairly concerned" or "very concerned" about plastics** ⁴

Legal Trends

- 1. Shifting Regulatory Environment:** Under new regulations in the US and new directives in the EU, the medical supplies production and trade is being subject to **higher transparency (namely, on prices), quality and standardization demands** ⁴

Although the public debt that prevents public investment, Portugal is an attractive destiny for FDI, it has political stability and strong diplomatic which together represent opportunities to attenuate the current trade deficit



APPENDIX C3 | Non-Medical Related Environment | Portugal (1/3)

Political Trends

- 1. Strong diplomatic network opens exporting possibilities:** Portugal is part of international organizations (e.g ONU, OCDE, and OSCE) and has strong bilateral relationships with several countries, which creates trade and cooperation opportunities ¹
- 2. Political stability and absence of violence:** From a study made by the World Bank, in 2019, Portugal was reported at 90.95% in the percentile rank regarding political stability and absence of violence, which encourages inward FDI ²
- 3. Government is investing in healthcare:** The government health expenditure as % of GDP has been increasing since 2016, according to PORDATA (2020)³

Economic Trends

- 1. Portugal is an attractive destination for doing business:** According to the World Bank, Portugal ranks 39th out of 190 countries in “Ease of Doing Business”. Also, Portugal occupies the 1st position (out of 190) regarding “Trading Across Borders”, which facilitates export logistics, and the 15th position (15/190) for “Insolvency Resolutions”, which encourages companies to establish themselves in Portugal ²
- 2. Portugal is highly regarded for Foreign Direct Investment among European countries:** According to EY (2020) study, Portugal is the 8th more attractive country for FDI in Europe, which might represent an opportunity to invest in the health industry ⁴
- 3. Government debt prevents public investment:** Portuguese government debt represent 117% as a percent of GDP, which is a hurdle for public investment in healthcare ⁵
- 4. The pandemic situation motivated industries to adapt their production:** According to the news Covid-19 is forcing companies to adapt and produce medical products namely alcohol gel, medical visors, and protection equipment which contributes to an increased competitiveness in this industry ⁵

The Portuguese ageing population, increasing propensity to consume, and government investments in innovation and technology creates opportunities to change



APPENDIX C3 | Non-Medical Related Environment | Portugal (2/3)

Social and Demographic Trends

- 1. Portuguese population is ageing:** A study in 2020 by Population Reference Bureau reveals that Portugal is the 4th oldest country in the world (21,8% of the total population is over 65 years old), so, demand for healthcare will tend to increase ¹
- 2. Families available income and propensity to consume in health is increasing:** According to Pordata (2020), the household consumption in health and average household income is rising since 2014 and it is expected to keep such trend ²

Technological Trends

- 1. Portugal is on the frontline in terms of innovation:** The country has the skills to invest in R&D and create innovative products, according to Global Innovation Index (2019), that ranked Portugal in 31st out of 129 countries ³
- 2. Events to promote technology are being planned:** Portugal created “TechPortugal” to promote technology and innovation in its soil, using European funding. The event aggregates Portuguese collaborative laboratories and 100 innovative companies, which creates opportunities to develop innovative medical products ⁴
- 3. The country has implemented the 5G technology:** To ensure Portuguese economic competitiveness, the country is implementing the 5G, which will impact health technologies and MedTech

Portugal occupies geo-strategic position and a high-qualified infrastructure which facilitates trade, also the environment trend awareness and compliance with EU law are changing consumption patterns



APPENDIX C3 | Non-Medical Related Environment | Portugal (3/3)

Environmental Trends

- 1. Portugal occupies a privileged geo-strategic position between Europe and United States:** The Portuguese geographical position allows lower distribution costs and simpler logistic processes, when trading with other countries
- 2. There is a growing trend towards environmental awareness:** According to Yale Environmental Center (2020), Portugal was ranked 27th in the Environmental Performance Index, which might stimulate the production of eco-friendly/non-plastic medical products ¹
- 3. Portugal has high qualified infrastructure:** Portugal ranks 2nd in 28 European countries regarding the quality of roads, which facilitates transportation's logistics and reduces costs ²

Legal Trends

- 1. High taxes are an impediment in terms of attracting talent:** The tax burden in Portugal is 48% (higher than the OECD average of 41.7%), according to the Trading Economics (2020), which forces emigration of young professionals seeking better opportunities ³
- 2. Portugal complies with the European law:** Since Portugal is part of the European Union, the medical products developed have to comply with quality standards



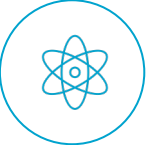




APPENDIX E

Recommendations

Portugal can take its attractiveness and the arising opportunities to focus on health-specific FDI and increase the country competitiveness, which will reduce the gap in the trade balance of medical products



APPENDIX E9 | Recommendation 4 | Portuguese Health Specific FDI Positioning

PORTUGAL IS ATTRACTIVE FOR FDI	AND COLLECTS FOREIGN INVESTMENT	2021 OPPORTUNITIES
 <p>Innovation and Digitalization: ranked 32nd (out of 126) on Global Innovation Index² and 8th (out of 30) on Digitalization Index³</p>	<p>Portugal is the 11th country that attracts more FDI projects, in Europe ¹ and, in 2019, FDI inward flows totaled US\$7.8 bn</p>	<p>Possibilities for health-specific FDI in Portugal arise</p> <ul style="list-style-type: none"> • After the pandemic, companies are seeking more resilient medical supply chains and are expected to move to locations closer to Europe • The Portuguese economic recovery plan has as objective “making Portugal a health International hub”⁹
 <p>Qualified Workforce: ranked 28th (out of 125) in the Global Talent Competitiveness Index⁴ and 12th (out of 100) in the English Proficiency Index⁵</p>	<p>Nevertheless, the Portuguese health-specific FDI performance is poor:</p> <ul style="list-style-type: none"> • Health-specific industries perform worse than other Portuguese industries: the Pharmaceutical sector, in 2019, had 4 projects and created 100 jobs, while sectors such as Agri-food or Business Services had over 10 projects and created over 1000 jobs ¹ • Portugal performs worse than European peers, in health-specific FDI: from 2014 to 2019, Western Europe won over one third of global pharmaceutical investments and Portugal only won 4 (e.g. only GlaxoSmithKline had 34 projects in this period) 	<p>Portugal should leverage on its attractiveness and on the opportunities that are arising to focus on health-specific FDI, in an effort that will increase country competitiveness and reduce the gap in the trade balance of medical products</p>
 <p>Cheap Workforce: Portugal has a estimated hourly labour cost⁶ of 14.6€, less than half of the European Area average</p>		
 <p>Business Conditions: Portugal ranked 21st (out of 140) in the Infrastructure Rank ⁷ and 39th (out of 190) in the Doing Business Rankings ⁸</p>		
 <p>Geostrategic Characteristics: Portugal has socio-political stability, is in the same time zone as UK, is part of EU and has privileged relations with African and American countries</p>		

Portugal can study the Irish success and take the basis of what has been made in the Portugal IN initiative to have a focused approach to health-specific FDI



APPENDIX E10 | Recommendation 4 | Best Practices

Portugal IN shows that focused FDI initiatives are possible and Ireland shows that it is possible to raise medical FDI in countries with a small national market

CASE 1: IRELAND HEALTH FDI COLLECTION

Ireland is a world-class pharmaceutical production hub and has **presence of all the top 10 global pharmaceutical corporations**, despite its small market. **Pharmaceutical products account for one third of the country's exports** ¹



ATTRACTIVE CHARACTERISTICS

- Foreign drug makers choose Ireland due to its transparent and **stable low-tax system, educated labour force, pro-business environment, experience in working with international investors, strong government support for R&D, and highly developed infrastructure** ²
- Through the *Health Products Regulatory Authority*, **Ireland promotes a strong regulatory framework** that adds to the compliance with EU requirements **to assure world-class standards to investors** and attract investors wanting to enter in Europe

IMPORTANT ACTIONS CONDUCTED TO DEVELOP QUALITY AND INNOVATION ¹

- 1996** – Creation of an **independent regulator** of health products
- 2007** – **Government committed to investing in the industry's** infrastructure, R&D and human capital
- 2009** – A focused **plan to prioritize health research** was created
- 2015** – Creation of an **independent integrated national clinical research network**

CASE 2: PORTUGAL IN

Portugal IN ³ is an example of how Portugal is experienced on having an organization focused in FDI



Created after the Brexit to promote British foreign investment, the organization has the following **purposes**:

- Working with national industries on **how to attract FDI**
- **Identifying FDI opportunities** together with different bodies already operating in Portugal, in this core
- **Identifying the constraints faced by FDI projects**, in Portugal
- **Presenting** to the Government the **necessary legislation** or procedures to overcome the identified constraints
- Building **solutions for foreign investors who wished to remain in the EU after Brexit**

Since Portugal IN creation, **Google** or **Mercedes Benz** have increased their investments in Portugal, generating **over 800 jobs**

Portugal can study the Irish success and take the basis of what has been made in the Portugal IN initiative to create a platform for health-specific FDI



APPENDIX E11 | Recommendation 4 | Cost Estimation

Team	Role	# Hours/Week	Monthly Wage	Yearly Wage (x14)	# Employees	Yearly Total
Business Support Team	Business Analyst	20	1 250 €	17 500 €	1	17 500 €
	Health Expert	20	1 250 €	17 500 €	1	17 500 €
	Ex-Entrepreneur	20	1 250 €	17 500 €	1	17 500 €
	Ex-VC Investor	20	1 500 €	21 000 €	1	21 000 €
	Event Planner	20	960 €	13 440 €	1	13 440 €
Research Team	Economist	40	2 857 €	40 000 €	1	40 000 €
	Public Policy Expert	40	2 857 €	40 000 €	1	40 000 €
Communications and Diplomacy	Marketing Specialist	40	2 643 €	37 000 €	1	37 000 €
	Diplomat	20	NA*1	NA*1	1	NA*1
Investor Relations Team	Ex-Financial Analyst at Big Health Player	20	1 500 €	21 000 €	1	21 000 €
	Investor Relations Specialist	40	1 250 €	17 500 €	2	35 000 €
Total Personnel Costs Per Year						259 940 €

Table 66: Recommendation 4 Cost Estimation

Total Yearly Costs: Yearly Personnel Costs (259 940) + Office Current Costs** (15 600) + Website Maintenance Costs ² (600)+ initiatives and communication costs** (20 000 ⁴) = 296 140