

Is there a new elephant in the room?

Summary Research on the Cannabis Ecosystem

September 2022

About Glowside

Glowside Management (“Glowside”) is a strategy and corporate finance boutique based in Portugal. Glowside was founded in 2017 by its 2 partners, Ricardo Sousa Valles and Paula Oliveira Marto, bringing together more than 30 years of experience in Big 4 consulting companies.

Glowside is a business and financial advisor of CEOs and shareholders, operating mostly in the Pharma & Biotech, Real Estate & Construction, Energy and Sustainability sectors.

With nearly Eur 200 M of mostly cross border transactions, Glowside team together with its network of international partners, is able to deliver Strategy and M&A as an integrated approach to any deal, investment or business decision support.

Our core values are Excellence, Reliability & Trust, and our mission is to establish long lasting relationships with our clients and to develop the best advisors to deliver the highest value on everything we get involved in.

Disclaimer

For the purpose of this document, Glowside has conducted an extensive and detailed research between June 2022 and July 2022 based on sources considered reliable and has also interviewed several Subject Matter Experts (SME). Quotations from SME’s have been duly authorized and reflect their own personal opinions.

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Author's Note



A few months ago, we were approached by one of our clients with an investment opportunity in the cannabis sector. Until then we have been looking to this market from a distance.

Our strong involvement in the pharma sector brought cannabis to the table several times but most of them as a wait and see approach. However, this investment opportunity led us to look deeper into that market.

After attending several international conferences and discussing with several subject matter experts, we decided to conduct our own research and to develop an educated opinion on this market, as we do every year with our Pharma Research series.

Unquestionably, several opportunities exist in this sector. But, as in any market, cash is key to sustain investment through the period the market matures, and rules and boundaries get defined.

Many investments took place in Portugal attracted by the friendliness of the regulatory framework, low labor costs and availability of arable land. Naturally, the cultivation market has been the most developed and particularly populated with outdoor and greenhouse plantations.

If recreational adult-use cannabis will not move forward in Germany, followed by the rest of Europe, many of these players will not thrive, as many of them did not secure financing for developing a sustainable business model to supply the medical use cannabis.

Portugal is in a privileged position in what regards supplying the European market, but it needs to take a step further and move into science, leveraging on its excellent skills on CDMO for the pharma industry, as well as on the newly developed capabilities in the biotech and analytical areas.

To be successful we need to become a hub of knowledge and R&D in this field, filling up a gap that still exists in the market.

We would like to thank all Subject Matter Experts for their contributions and insights, without which we would not have reached this far.

A final word to personally thank Sara Soares, Mariana Pinto da Silva, Teresa Santos and Manuel Silva, from Glowside, for all the work carried out to develop this study.

Ricardo Sousa Valles
Glowside Managing Partner

Foreword

The Pharmaceutical Industry's Mission is to foster innovation and the development of therapies that respond to the treatment and prevention needs of new pathologies, as well as to provide medicines that improve the health and quality of life of populations.

The medical use of cannabis has been in discussion for many years, and many countries, as Portugal, have already regulated their use. However, much is yet to be defined and implemented. The number of products in the market is still very limited, doctors awareness is still low and consumers still struggle to have access to medicines.

There is no question that cannabis shows a good therapeutic potential regarding several illnesses. The pharmaceutical industry has been very attentive to that. Several global players have been investing in cannabis in the past few years and Portugal, at its own size, has also been following this global movement.

Though this study reflects Glowside's opinions and that of the interviewed subject matter experts, APIFARMA believes that more of these initiatives should be taken. Both for knowledge sharing and also for enhancing the grounds for factual and more sustained discussions.

APIFARMA, as the industry representative, has been following market movements closely but it comes to Companies and Governments to define the market space and the rules of the game.

We congratulate Glowside for this initiative and hope that more are to come, as innovation and new therapies that may improve patients health and quality of life are always required.

João Almeida Lopes
President of Apifarma*

**Apifarma is the national association for the Portuguese pharma industry*

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The European market for medical cannabis is expected to grow at a rate of 24% p.a. between 2020 and 2025, mainly driven by Germany, Italy, the UK and probably Poland. This growth will be even more significant if more countries legalize the recreational adult-use cannabis.

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Although some degree of vertical integration is necessary in the early stages of the market, the value chain will be forced to deconstruct as the market matures and becomes more complex.

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The Portuguese market is still in its early days. However, it currently presents great characteristics to become the main European supplier, with a friendly regulatory framework and a significant cultivation area.

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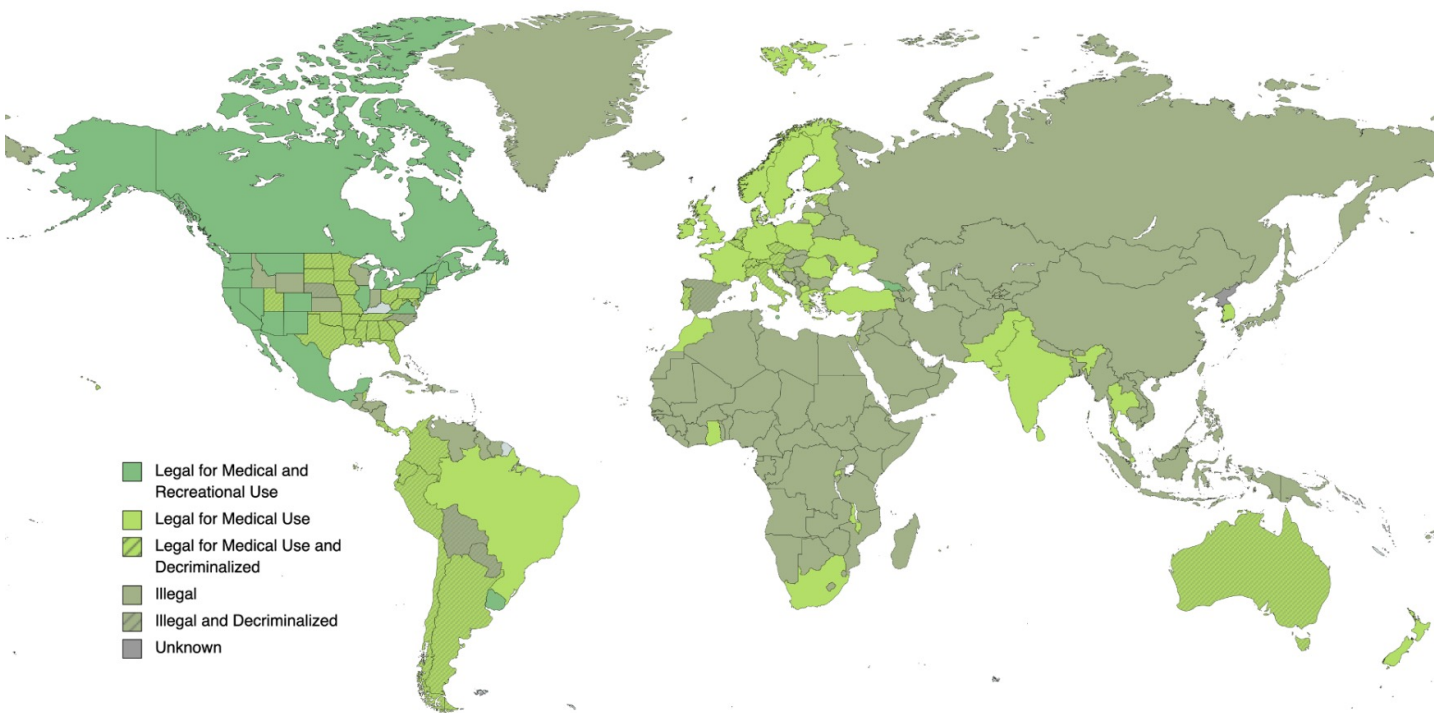
The cannabis global market is heating up

North America will continue growing through recreational adult-use cannabis, while Europe will be one of the fastest growing regions in the medical-use segment, increasing its market share from 2% to 4%.

1 The cannabis global market is heating up

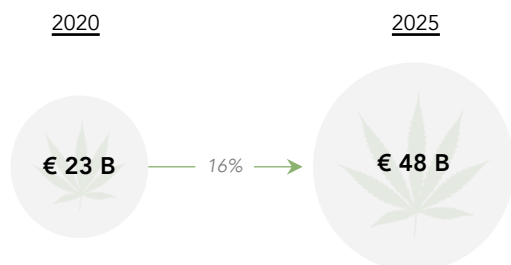
Fast growth is expected over the next few years, reaching Eur 48 B in sales by 2025

Once an imaginary industry, the world cannabis industry is now spreading all over the western world. After the decriminalization of cannabis in most western countries, and the legalization of cannabis for medical purposes in some others, many countries are now discussing the possibility of legalizing recreational adult-use of cannabis, especially in Europe.



Source: Visual Capitalist (2022)

Exhibit 02: Legal Cannabis Global Sales (2020 – 2025)



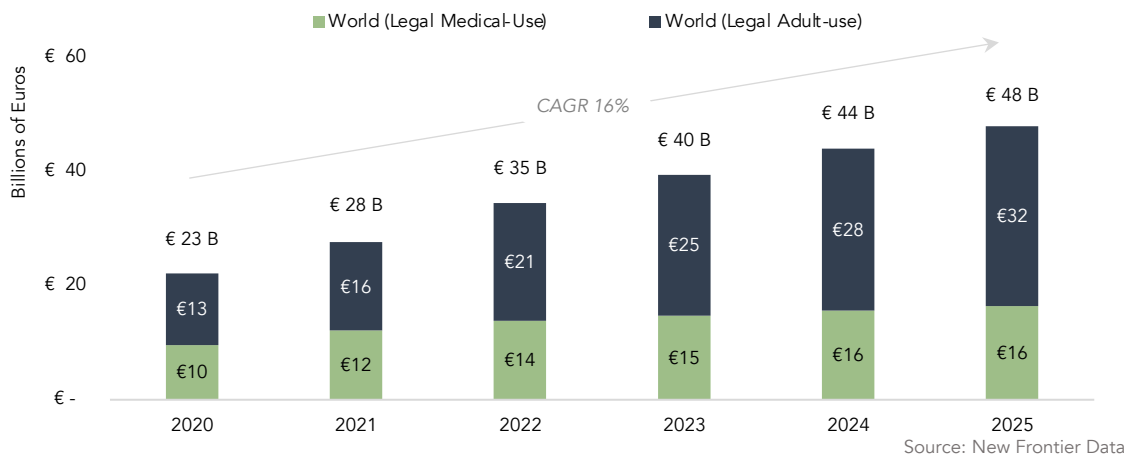
Source: New Frontier Data (2021)

Even though regulations, scientific discoveries and support movements are constantly changing, there are big expectations for the growth of the market.

These expectations are far from unrealistic, as the market has been, and is expected to continue, growing at high speed, reaching Eur 48 B in sales by 2025.

The cannabis market is divided into two main segments, for recreational adult-use and for medical-use, which are expected to grow at different rates over the next few years.

Exhibit 03: Legal Cannabis Global Sales (2020 – 2025)



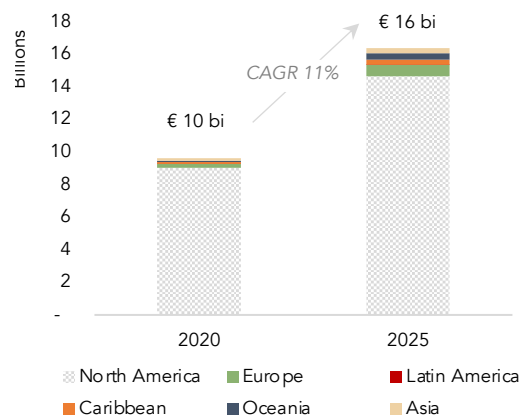
Cannabis for medical purposes still has a long way ahead

The cannabis market for medical purposes will be the main driver of growth of the European market, while many nations still struggle with the decision whether to regulate or not cannabis for recreational adult-use.

Although North America will continue to be the main market for this segment, Europe is expected to be one of the fastest growing regions, doubling its market share from 2% to 4%, from Eur 233 M to Eur 679 M.

The opening up of the European mentality towards medical-use cannabis may lead to great changes in what concerns the European cannabis market.

Exhibit 04: Medical-Use Cannabis Market Sales by Region Forecast [2020 - 2025]



As more patients are interested in using cannabis and cannabinoids to treat various conditions, more research should be forthcoming so that medical evidence becomes stronger in a wider set of medical conditions.

On the other hand, education among the medical community must be reinforced as the members of this community will be the number 1 influencers on the cannabis market for medical purposes.

"In our first contact with the medical community we found interest in the developments of the cannabis industry, as they feel the need to have a product in which they can trust and easily prescribe to their patients."

Pedro Ferraz da Costa, Iberfar / Agrovete

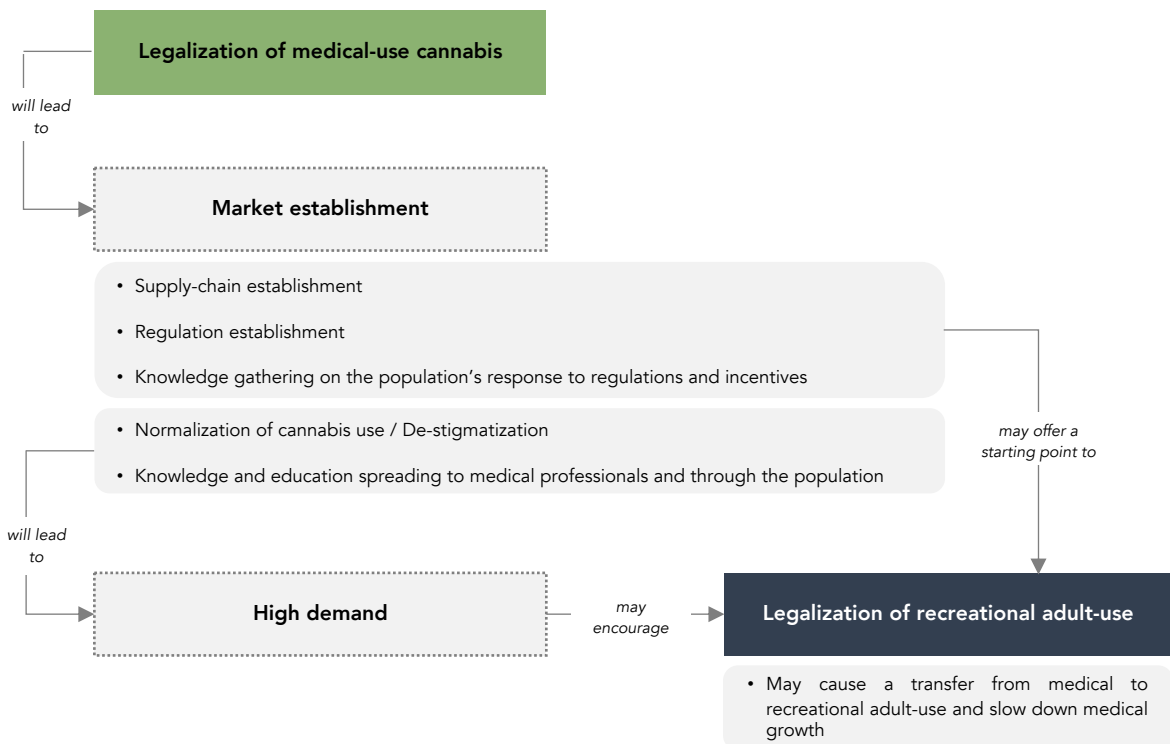


Cannabis for recreational adult-use will be the main driver of the global market

Growth is expected to mainly come from North-American markets, as the European market has not yet come to unique and sound conclusion regarding legalization of cannabis for recreational adult-use. A still fragmented and stigmatized society brings several challenges to the governments regarding the decision to take off regulated recreational adult-use cannabis.

European countries are considering opening up this market segment. Notwithstanding this, an European consensus is required as the success of the recreational adult-use (and medical-use) cannabis markets will still be constricted to the effectiveness of the regulations drawn by the various European countries, which may hinder, or promote, the cannabis supply chain.

Exhibit 05: Despite differences between market segments, recreational adult-use may both leverage and cannibalize the medical-use segment



“Although the establishment of the recreational adult-use segment will likely take some share away from the medical-cannabis segment at first, it will force the medical-cannabis segment to evolve towards more developed and value added products, helping sales take off in this segment.”

Mike Kindrat, Eurox Group

2

Big hopes for the European market

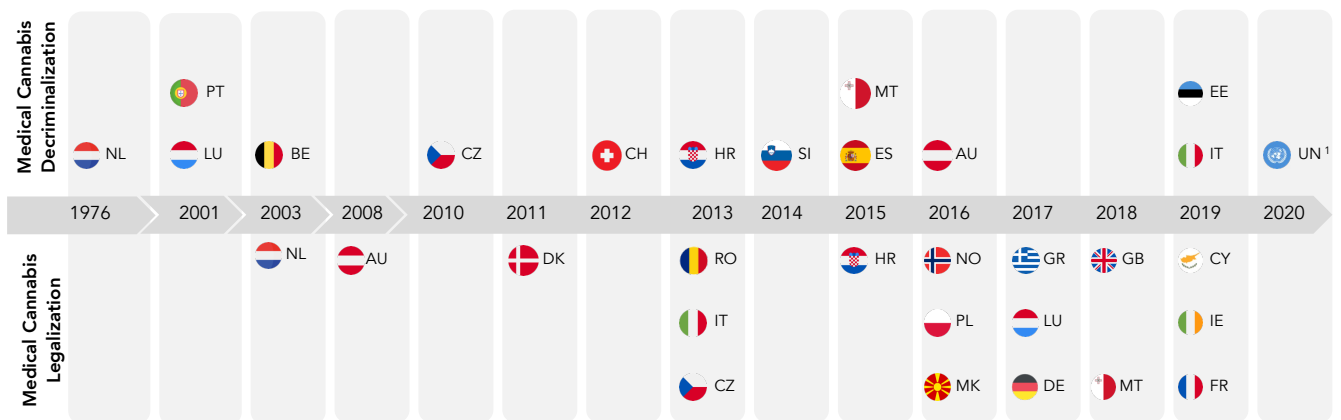
The European market for medical cannabis is expected to grow at a rate of 24% p.a. between 2020 and 2025, mainly driven by Germany, Italy, the UK and probably Poland. This growth will be even more significant if more countries legalize recreational adult-use cannabis.

2 Big hopes for the European Market

Germany, Italy, the UK and probably Poland will most likely be the drivers for growth

The European market has recently been under the spotlights, as more and more countries decide to legalize cannabis for medical-use, and some others move towards the legalization of recreational adult-use cannabis as well.

Exhibit 06: Decriminalization and legalization of medical-use cannabis in Europe



Countries due to legalize recreational adult-use in the near future: MT², CH, NL, DE

¹ United Nations commission voted to remove marijuana for medical use from a list of the most risky narcotics

² Legalization in 2021

Source: Akanda (2022), adapted by Glowside

It is undeniable that the European market for cannabis is growing. Population acceptance and support and the surge of cannabis-related companies with increasing sales are a proof of that.

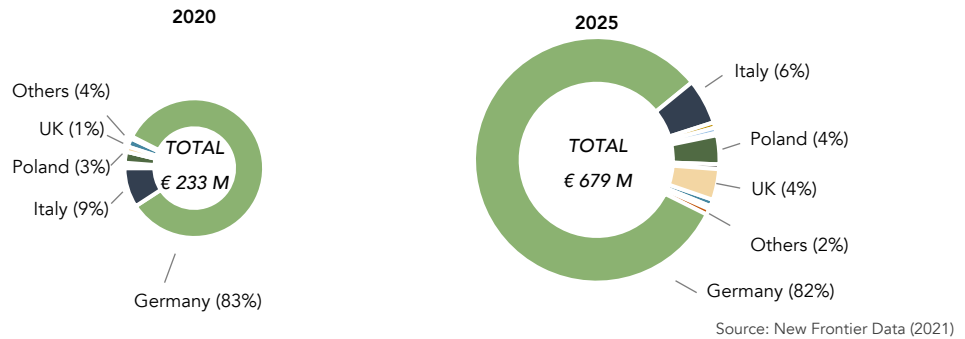
The main driver for growth has been, and is expected to continue to be, the medical-use segment, as the recreational adult-use segment's development is still unclear due to the regulatory framework.

In this segment there are four countries that stand out as main potential drivers for growth: Germany, Italy, the UK and Poland.

“Many patients in Portugal end up sourcing their cannabis-based medicines from the illicit market, as it is hard, if not sometimes impossible, for them to source them in a legal way”

Carla Dias, Observatório Português de Canábis Medicinal

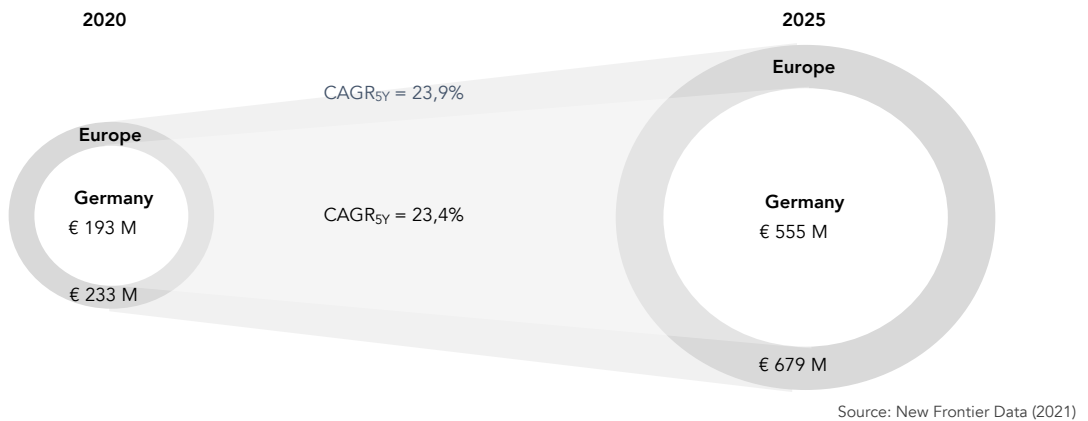
Exhibit 07: European medical-cannabis country shares (2020-2025)




 **Germany, the main medical-cannabis market in Europe**

In 2025, Germany is expected to reach Eur 555 M of market volume, accounting for 82% of the European medical-cannabis market. Besides being the biggest medical-cannabis market in Europe, Germany is due to legalize cannabis for recreational adult-use any time now, which will likely influence other countries to do so as well.

Exhibit 08: Medical-cannabis market share and growth in Germany and Europe (2020-2025)



As the German government still has to define the regulatory framework, the impact on recreational cannabis' demand is difficult to predict. Nonetheless, there will most likely be a steep growth in cannabis demand, for which the local supply structure may not be able to answer, forcing the country to increase its cannabis imports.

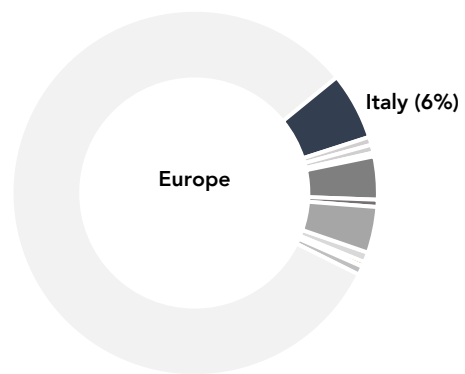
 **Italy, a market on the rise, despite its rough start**

In 2025, Italy is expected to represent 6% of the European medical-cannabis market sales (approximately € 40 M out of € 679M).

Despite Italy’s early legalization of medical cannabis, the market has been off to a hard start, as the regulatory framework adopted, as well as the supply limitations, have made it very difficult for the Italian demand to be satisfied.

Although supply limitations are still a pressing issue in Italy, the patient’s population is deemed to increase, driving the market to grow at an expected yearly rate of 13,6%, from 2020 to 2025.

Exhibit 09: Medical-cannabis Market in Italy and Europe (2025)



Source: New Frontier Data (2021)

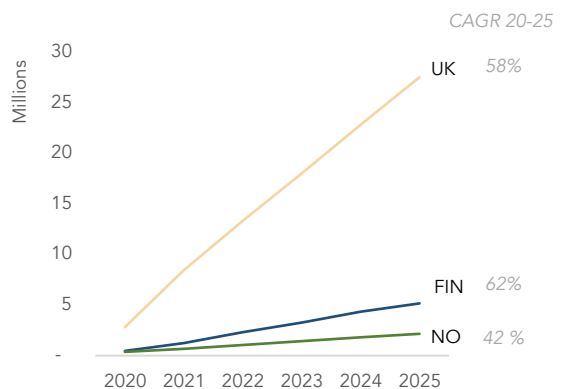
 **United Kingdom, one of the fastest-growing medical-cannabis markets in Europe**

Despite its current difficulties in providing patients with access to high-THC products, the UK is under the spotlights due to both its expected growth and its important CBD market.

The UK is expected to grow at an yearly rate of 57,7% from 2020 to 2025, becoming the third biggest medical-cannabis market in Europe, with a market share of 4% of European sales (approximately Eur 27 M).

As for the CBD market, being the only legal cannabis recreational adult-use option, it has been growing in the UK, becoming the second largest global market, accounting for Eur 502 M in 2020, with an expected yearly growth of 16% until 2025, reaching Eur 1 B by then.

Exhibit 10: Fastest Growing Medical-Cannabis Markets in Europe (2020-2025)



Source: UK Government (2019), Institute of economic affairs (IEA) (2018), New Frontier Data (2021)



Poland, a wildcard

When legalizing the medical-cannabis market, the Polish government defined no set of conditions for which medical cannabis should be used as a therapeutic. Thus, doctors are free to prescribe cannabis-based medicine to any patient they see fit.

However, contrary to what may be expected, physician’s participation has been low, which has caused the patient participation to be low as well. This, allied with the high prices charged to cannabis-based medicine, the inexistence of a reimbursement system and the inconsistency of supply channels, the medical-cannabis has been, so far, underdeveloped.

Nonetheless, the demand has been rising in Poland, and many consumers may be reaching out to illicit sources. In 2020, legal medical-cannabis sales represented around 0,3% of the Polish total estimated spending in cannabis.

Exhibit 11: Total Polish Cannabis Spending VS Polish legal medical-cannabis spending (2020)



3

Recreational adult-use cannabis still faces several hurdles

The success of the recreational adult-use segment is still uncertain and is mostly dependent on the regulatory framework put in place by each country. Several key success factors ought to be put in place for a sustainable market development.

3 Recreational adult-use cannabis still faces several hurdles

The success of the market depends highly on regulations and policies

Many expectations rely on the opening of the recreational adult-use cannabis market in Europe. However, there are still several challenges to overcome, and the wrong steps may drive users back towards the already established illicit market.

With more and more countries and states considering the legalization of recreational adult-use cannabis, many questions remain unanswered. The way regulations are tailored to answer these questions will determine the fate of both market segments, be it the recreational adult-use market or the medical-use market.

Exhibit 12: Unanswered questions on European cannabis market regulations for recreational adult-use

1. Distribution channel

- a. Will it be pharmacies or para-pharmacies exclusive?
- b. Will there be specialized retailers?
- c. Will the online and direct-to-consumer be a potential channel?
- d. Will there be "social clubs" and/or "coffee shops"?
- e. What kind of expertise must "budtenders" have?

2. Consumption Control

- a. Will there be limits on purchase?
- b. Will consumers need a special license to buy recreational cannabis?

3. Regulatory framework

- a. What will be the regulatory requirements on production?
- b. Will GMP be required as it is for medical cannabis?
- c. Will there be an import ban? Or can cannabis be imported from other EU countries, following the free trade principle?

4. Pricing

- a. What will be the impact of (most certain) potential taxation on prices?
- b. Will prices be regulated?

To ensure the success of the legal market, countries considering the legalization of recreational adult-use cannabis should learn from the Canadian market rough start.

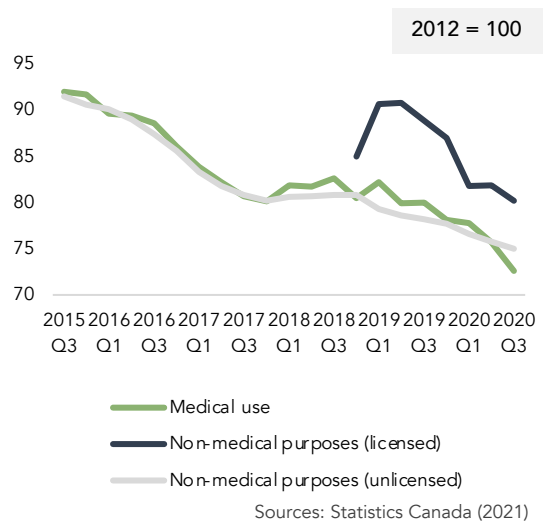
1 Legalization for non-medical purposes causes prices to decrease, challenging the growth of the regulated market

In Canada, after the legalization of cannabis for non-medical purposes in 2018, despite the initial price increase, all market segments have lowered their prices in order to stay competitive.

The pattern observed in Canada is expected to be mimicked in other countries where the recreational adult-use cannabis market segment becomes regulated. As the market prices for legal options decrease in an attempt to eliminate the illicit market, illicit markets prices decrease further.

As legal and illegal cannabis have positive cross price elasticities (higher prices for legal cannabis will motivate the leakage to illegal cannabis), regulators must be careful when deciding if and how to regulate prices. If the balance is not found, regulation may backfire to feed-up the illicit markets.

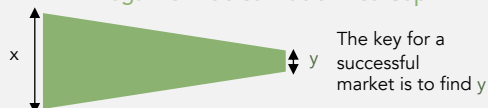
Exhibit 13: Cannabis Price Index in Canada (2015 – 2020)



Information Box

Finding the right price gap

Legal VS Illicit Cannabis Price Gap



If the price gap is x , there will be a leakage to the illicit market. However, as the price gap decreases, the leakage decreases as well, until it reaches y , where consumers prefer the legal market, despite its slightly higher price.

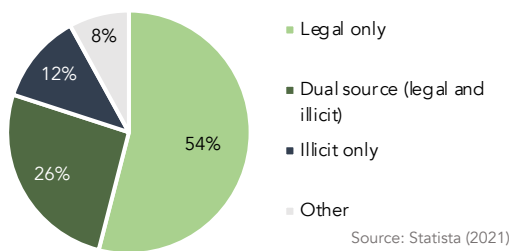
However, it has also been shown that if the price gap between legal and illicit cannabis is marginal, consumers will be willing to pay more for the legal alternative (see information box).

In a nutshell, the growth of the legal market is highly dependent on the regulators, who must be careful when deciding if and how to regulate prices.

2 Excessive taxation encourages illegal purchases

The price decrease of dried cannabis flower in the illicit market, together with the high taxation in the legal market is not promoting consumers to use legal sources, particularly when a reliable supply already exists in the illicit market, un Canada.

Exhibit 14: Cannabis sources in Canada (2021)



Information Box

Canada Taxes on Cannabis

Federal excise duty: Highest between 10% of gram value and 1 CAD¹/gram], applied to sales of producers/packagegers. With decrease in prices, the minimum taxation threshold is now much above 10% of a producer's revenues

Consumption taxes: [5% and 15%] depending on the state

3 More stores mean more legal sales, not necessarily more users

While some Canadian provinces restricted the number of cannabis stores to discourage user growth, others licensed many to encourage users to buy legally. The latter seems to be the correct approach, as store growth is strongly related to legal sales growth, but barely contributes to user growth. On the other hand, limiting stores may prevent accessibility to cannabis and promote illicit consumption.

Exhibit 15: Legal & illegal cannabis price per gram¹



¹ 1 CAD ~ € 0,73 (XE Currency Converter, 26/06/2022)

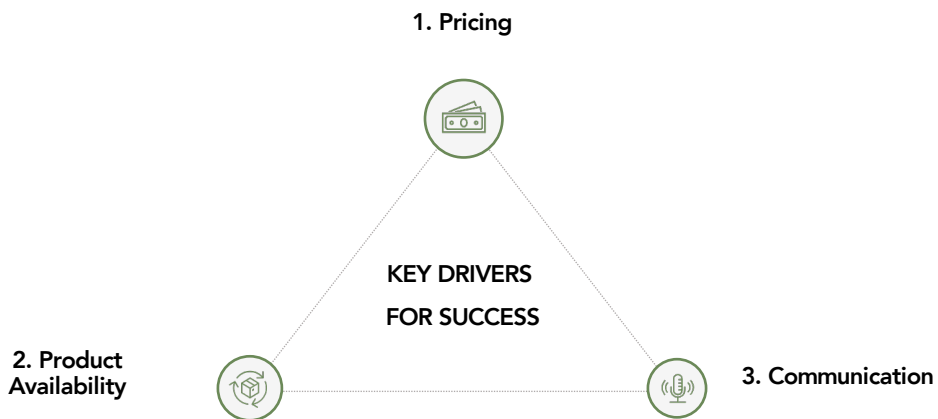
Source: Statista (2021)

4 Excessive marketing restrictions may not attract consumers from the illicit market

Regulations on advertising and packaging determine that the product itself must be wrapped in an opaque or translucent (not see-through) container. Some consumers have stated to prefer illicit sources as they consider to be more informed regarding the product, showcasing the product engagement is an important aspect.

Key success factors for sustainable market development

Glowside identifies 3 key success factors for sustainable market development: 1. Pricing, 2. Product Availability and 3. Communication.



1. Pricing: Price competitiveness will be key to reduce the illicit market

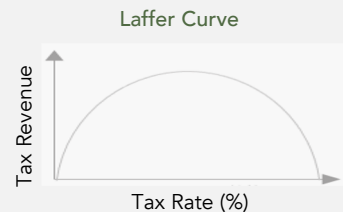
- Focus on production costs, by achieving economies of scale, knowing the essentials of GACP/GMP and how it can work on favouring productivity
- Cultivate where land is cheaper and available and qualified personnel is available
- Balance taxation, as extensive taxation may create imbalances in the market and regulated products may become overpriced when compared to those of the illicit market, capturing little share of this market or no market at all (See information box).

Information Box

Laffer Curve Theory

The Laffer Curve Theory explains the tradeoff between tax rates and the tax revenue that the state is able to collect.

If tax rates are too high, it pays off the risk for consumers to reach out to illicit alternatives. In time tax revenues will end up to be lower as tax rates increase above certain level.



2. Product Availability: The product must be accessible and safely available

- Implement a logistics chain in which customers can easily access the product. If the proper logistic chain is not in place and product is not available safely and easily, the illicit market will continue to remain king.



3. Communication: Education is a must

- Educate the medical community towards the scientific advances on the use of cannabis in the treatment of patients. This community plays a fundamental role in the success of the cannabis market and, regardless of the legalization, if this community is not up to par with scientific discoveries, medical cannabis will not be available to patients through prescription, possibly driving patients to illicit markets.
- Educate the population towards the medical benefits of cannabis. Society acceptance is key to expand the medical-cannabis market through the increase of medical-cannabis patients.
- Educate consumers regarding who, when, how and where people can access legal cannabis.

4

After vertical integration, the value chain will deconstruct

Although some degree of vertical integration is necessary in the early stages of the market, the value chain will be forced to deconstruct as the market matures and becomes more complex.

4 After vertical integration, value chain will deconstruct

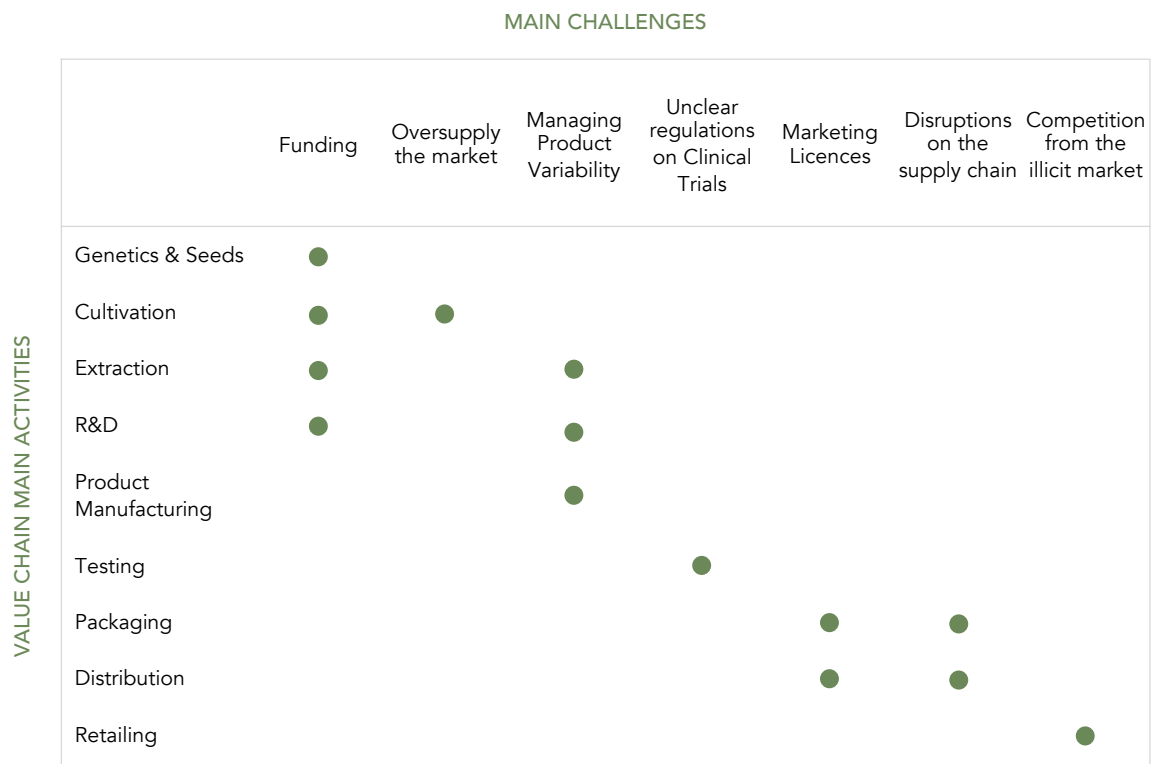
Each activity in the value chain presents unique features and challenges

Given the cannabis market rather recent take-off, it is not a surprise that the global value chain is still developing.

The existing first “big” movers adopted a strategy of vertical integration in order to develop the market faster.

However, as the market matures and becomes more complex, vertical integration will bring greater difficulties, as players must manage different challenges from each layer of the value chain, while coordinating and integrating the value chain itself.

Exhibit 16: Cannabis Supply Chain Challenges



The adoption of the vertical strategy has also been observed in the early days of the pharmaceutical industry.

Lessons learnt from the pharma industry

Before the establishment of the first pharmaceutical companies (19th century), local pharmacists concentrated all stages of the supply chain (which included planting the herbs, transforming them into powder, assembling the final drug and selling them to the final consumer).

Exhibit 17: The early days of the pharmaceutical industry

> Before the 19th century

- The first known drugstore opened in the year 754
- Pharmacists planted herbs and assembled the medicines
- Pharmacists also diagnosed the patients, prescribed and delivered the medicines

> During the 19th century

- Drugstores in Europe and North America developed into pharmaceutical companies
- Physicians diagnosed and prescribe the medicines
- Pharmacists manipulated and delivered the medicines

Source: Medisca (2022)

The evolution of the market led to further need of specialization, incentivising R&D activities to reach more effective medicines, optimizing the production process to become more efficient and to meet safety standards required by regulatory bodies. Furthermore, availability and convenience are key to the market (all types of drugs available in the same place – pharmacy).

Exhibit 18: Simplified pharmaceutical industry's value chain



Some degree of vertical integration seems to be inevitable in the early stages of the industry, specially in the medical segment, where the quality and stability of strains is crucial.

However, the market's development will require more and more specialized skills for each activity of the value chain. This is particularly true in what regards to medical-use cannabis. As this segment is further developed, there will be an increase in complexity and specification of raw materials, products and medicines, to be tailored to specific medical conditions.

All this will make it difficult for single integrated companies to perform several activities efficiently (few economies of scale, low specialization), causing the value chain to deconstruct, and each and every player to specialise in their own areas.

In the future, we will certainly see the unbundling of cultivation, manufacturing and commercialization activities, with specialized R&D companies supporting across the value chain.

The maturing of the market will also lead to the definition of tighter regulations and quality standards, probably resulting in a more fragmented but connected supply chain and also driving firms to become champions and to specialize in each activity.

Exhibit 19: Pros and cons of vertical integration in the cannabis sector

Pros	Cons
<ul style="list-style-type: none"> • Risk diversification • Lower overhead costs (shared) • Easier to match supply and demand eventually • Supply chain control 	<ul style="list-style-type: none"> • Higher complexity of managing several players of the supply chain • Decrease of specialization in each business area • Scalability limitations reduces efficiency • Compliance issues (mainly in the medical cannabis segment)

5

The finance sector will be increasingly involved

Investment is booming in the European cannabis industry, and is expected to continue increasing. M&A drivers have been changing over time, requiring solid business models when funding needs to be in place.

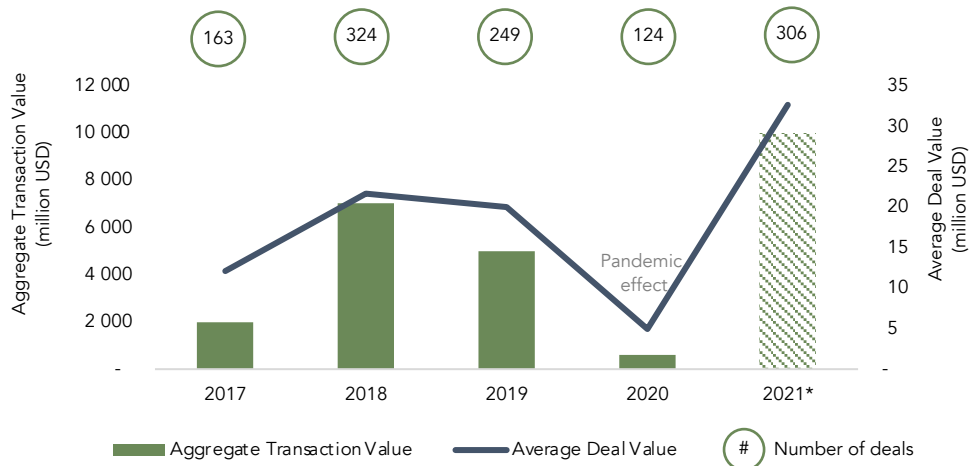
5 The finance sector will be increasingly involved

M&A activity is expected to grow in the following years

M&A activity has been hot in the cannabis industry and is expected to continue in the following years.

In 2021, there were 306 deals just in the USA, topping up to around USD 10 B deal volume. The number of deals was almost as much as the global number registered in 2018 (324), and clearly above the number of deals in 2019 (249). Also interesting to notice is the average deal value in 2021 (USA) increased to the highest value (USD 33 M) in the analysed period.

Exhibit 20: Number, Aggregate and Average Value of M&A Deals in the Cannabis Industry (2017 – 2020 Global; 2021 USA)



*only considering USA (data not available for other geographical areas)

Source: Viridian Capital Advisors (2021)

Although M&A activity and strong valuations indicate future growth, there is still high volatility driven by overall newness of the sector and different regulatory frameworks across geographies. Furthermore, the most recent global events, particularly the COVID-19 pandemic, have been affecting the way investors look at cannabis-related companies.

Exhibit 21: Main M&A activity drivers in the cannabis market

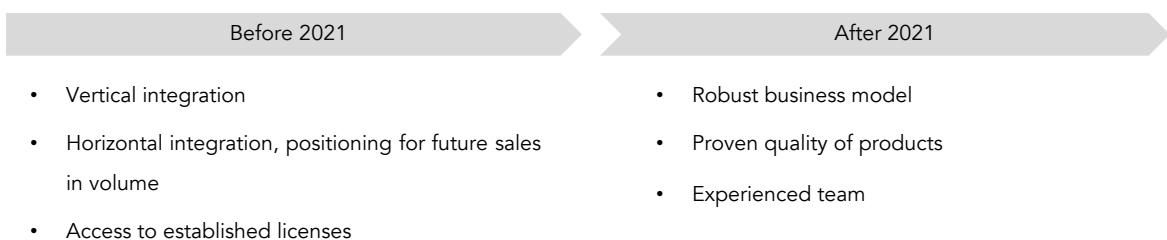
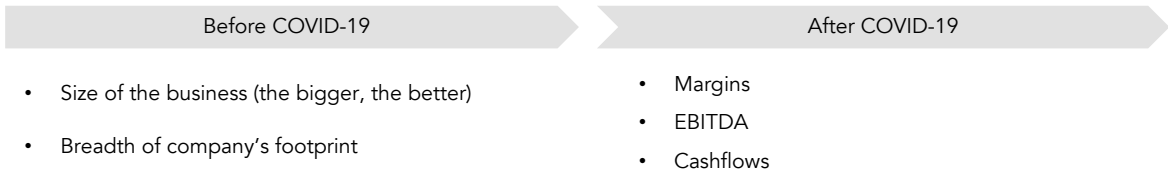
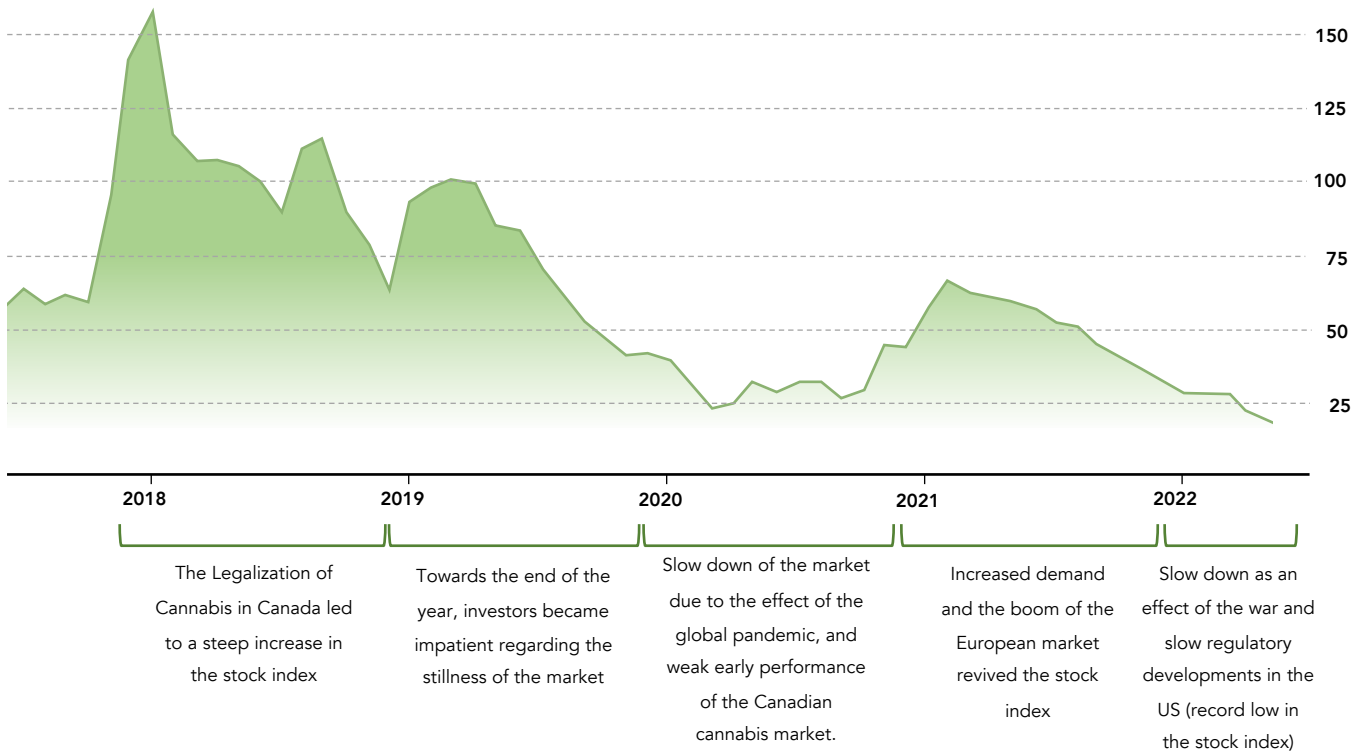


Exhibit 22: What are investors looking for?



The deal-mania caused by the legalization of recreational adult-use cannabis in Canada in 2018, led to a steep increase in the stock price index for cannabis related companies. However, after the initial excitement about the market, investors started to get nervous regarding its slow evolution.

Exhibit 23: Global Cannabis Stock Index Fluctuations



Source: New Cannabis Ventures (2022)

After the slight revival caused by the blossoming of the European market in 2021, the global cannabis stock index is now falling again due to the instability caused by the war in Ukraine adding up to the slow regulatory developments in the US.

Being a high-risk market, cannabis investors are very impatient and count on high and early profitability levels. However most companies are not achieving expected results.

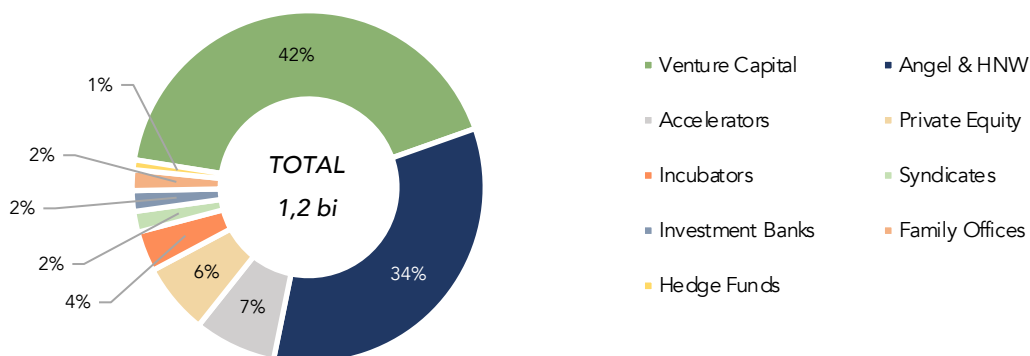
In Europe, given the market’s early stage, and although there is already some degree of M&A activity, the focus is mostly set on financing companies for their development, as many small and medium-sized companies are popping up around the continent without adequate fund.

Who is investing in the European cannabis market?

Following the influx of North American Investors (such as Arteis and Altitude) that started investing in the European cannabis market in 2017, several European funds focused in the cannabis market were launched.

Venture Capitalists entry into the cannabis investment landscape shows that the seduction of an expanding new sector can gradually overcome doubts that investors may have about the industry. Also, venture capital funds are able to invest higher amounts than Angels and HNW, providing great leverage to the growth of companies.⁽¹⁾

Exhibit 24: Activity by Investment Type in Europe (2021)



Source: First Wednesdays (2021)

(1) Sources: First Wednesdays; Cunchbase; mjbizdaily; Curaleaf; Trulieve; Eyewire; Cannabis Business Times; New Cannabis Ventures

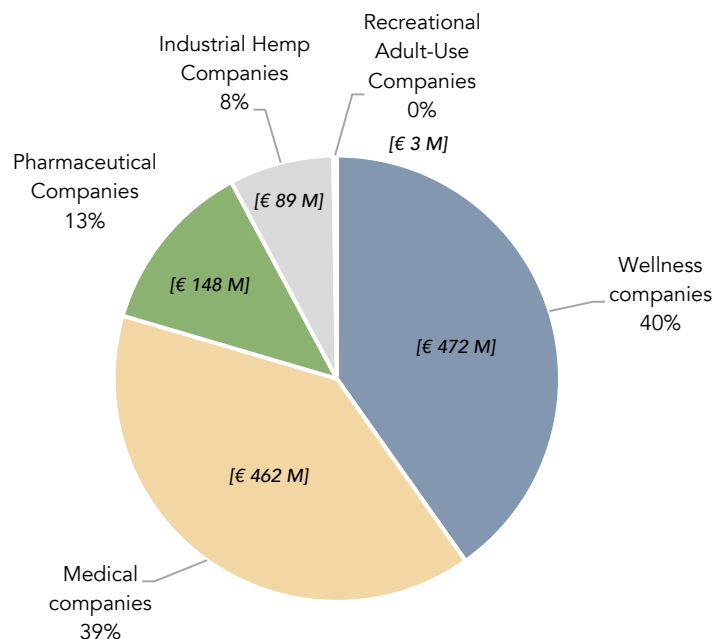
Where is the investment in Europe going to?

Contrary to what was observed in North America, where most of the investment was poured into the recreational adult-use segment, most investment in Europe is still being allocated to CBD wellness (as recreational adult-use is not legal in most European countries).

However, medical cannabis will be the next big thing as growth expectations are higher than 20% p.a. in the coming years.

The investment from and in the pharma sector is also expected to grow further, bringing more cannabis-based medicines to the market. This is the case for Pfizer, which acquired Arena Pharmaceuticals (dedicated to cannabinoid-type therapeutics) for USD 6,7 B in the end of 2021, Jazz Pharmaceutical with the acquisition of GW Pharmaceuticals, and Novartis AG through the closing of an agreement with Canadian Tilray to develop and distribute medical cannabis products in legal jurisdictions worldwide. ⁽²⁾

Exhibit 25: Investment allocation by subsector in Europe (2021)



Sources: First Wednesdays (2021)

(2) Sources: Forbes (2021)

Proven Business Models are key to secure financing

The European cannabis market has been facing some difficulties in securing financing. This is not surprising as investors became more reluctant to invest into the cannabis market, after the Canadian market debacle in 2020. Furthermore, the uncertainty about the future increases even more the market risk.

Thus, in order to guarantee investment, companies need to focus on profitability and governments need to adapt regulations in order to support the market's growth.

Nonetheless, given the forecasted growth of the market, it is expected that the finance sector will become more and more active.

With new cannabis companies popping up across Europe, M&A activity is expected to increase. It is likely that most M&A deals will be made by companies with the intent of gaining market share. On the other hand, as the market becomes increasingly complex, it is expected that M&A intensifies in specialised activities, driving the value chain to deconstruct.

Key drivers to get funded:



A Strong Team: A reliable team is one key factor to account for getting funded.



Network Partnerships: The maturing of market and the deconstruction of the value chain will render competitive advantages to commercial partnerships and agreements. Supply agreements with the best quality suppliers will be crucial to guarantee the success of the final product.



Business Model: A proven and successful sustainable business model that delivers the products consistently to the market (quantity, quality, service level and delivery time) is key.



Financials: Profitability and return on capital are essential in the investment decision.

6

Portugal will play an important role in the European supply

The Portuguese market is still in its early days. However, it currently presents great characteristics to become the main European supplier, with a friendly regulatory framework and a significant cultivation area.

6 Portugal will play an important role in the European supply

Investment in science will be key

In the midst of the European cannabis boom, the race for European supply is open. However, it's leadership will be dictated by several factors that determine the country's ability to supply at a large scale and low cost.

Firstly, regulations which are crucial to develop the market and to allow for large-scale supply of cannabis. Secondly, climate and labour costs. The price and availability of arable land are also important factors.

Portugal has been ahead of most European countries when it comes to cannabis regulations.

The emergence of companies supplying the market from Portugal has been a result of this favourable context.

As a matter of fact, when addressing players established in Portugal, the most relevant aspects pointed out as reasons to invest in the Cannabis business in Portugal were the friendliness of the regulatory framework, climate and land availability. The latter two clearly demonstrate that many of the cultivation investments are being addressed to outdoor or greenhouses, other than indoor where we identified only 4 players.

Exhibit 26: Relevant aspects to develop the cannabis business in Portugal



Note: Based on 13 interviews to players operating in Portugal.

“Historically, Portugal has been a follower rather than a leader. This time, however, the country became the leader in the Iberian cannabis-regulation. Hopefully it will leverage on this early start to become a scientific leader in this field.”

Vera Broder Koshet, MHI Cultivo Medicinal

Given the aforementioned Portuguese competitive advantage, many leading players turned their attention to Portugal.

Since 2018, when the usage of products, preparations and substances based on the cannabis plant was allowed for medical purposes, many projects have been put in place.

Although the players in the Portuguese market are mainly focusing on cultivation, the value chain is much more complex, with a set of companies also positioning for manufacturing, commercialization and distribution. Besides those companies, several service providers, information distributors and investors are supporting the core players.

Exhibit 27: Licensed companies for growing cannabis for medical purposes in Portugal* (July 2022)



*Locations by fiscal address

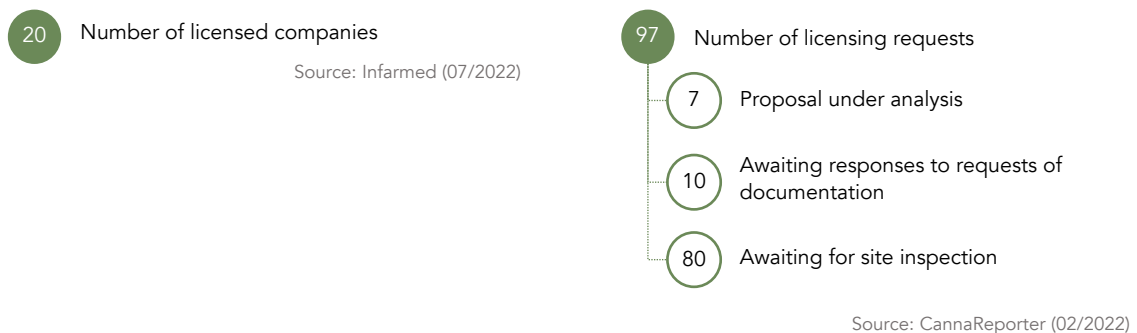
Sources: CannaReporter (2022)

The Portuguese cannabis ecosystem

The cannabis ecosystem is being developed step by step in Portugal, with 20 companies licensed to cultivate and very few with GMP recognition to manufacture (6) and only 2 for technical services and R&D (as of July 2022).

There are still roughly around 100 licensing pending requests in the regulator (Infarmed) which, if are to be granted, will populate even more this ecosystem.

Exhibit 28: Key Figures on licensing for growing cannabis for medical purposes



Financial investment in the Portuguese cannabis ecosystem

The investment in cannabis-related companies in Portugal has been growing considerably over the years.

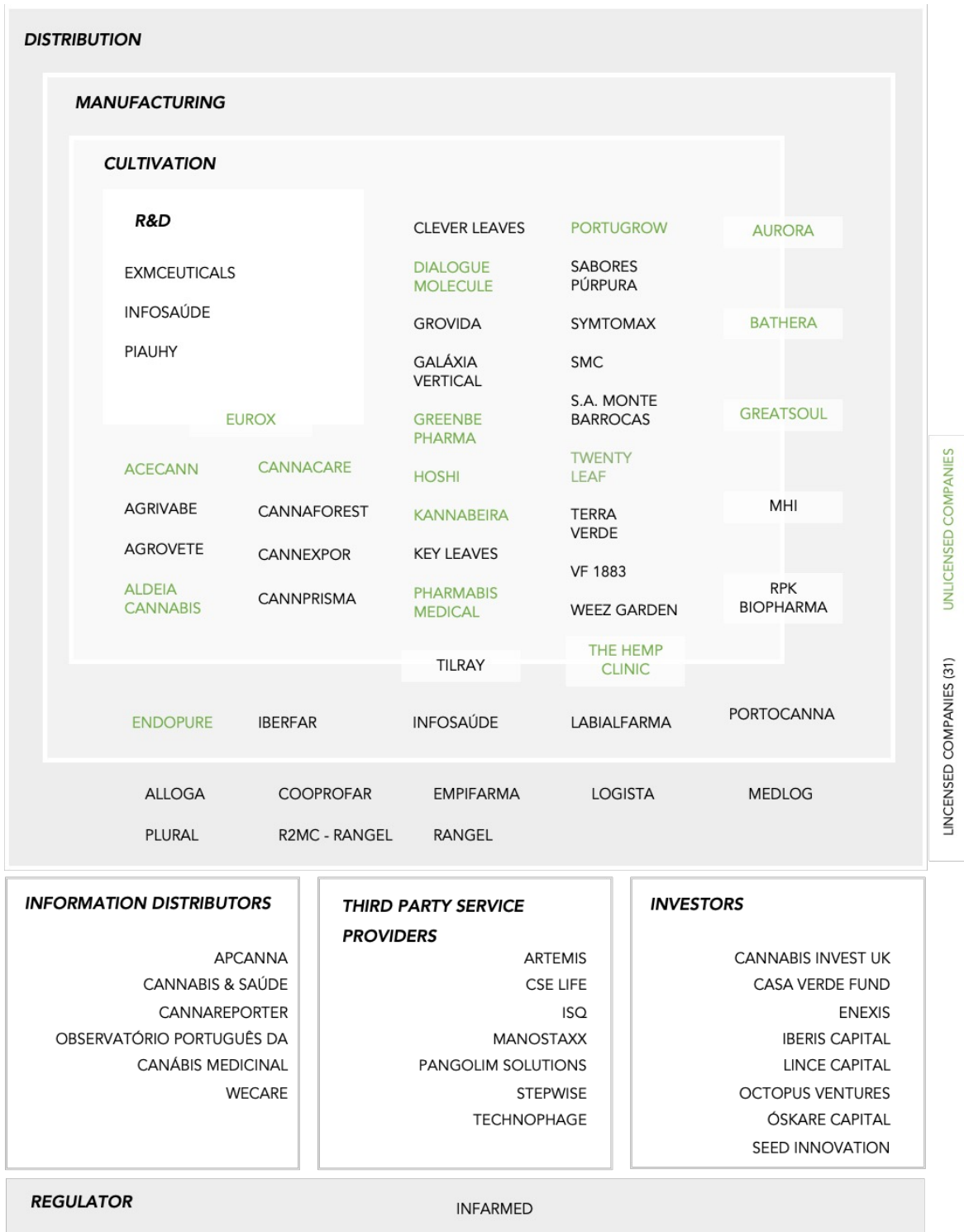
Analysing 22 companies that exclusively work on cannabis-related activities (R&D, cultivation and manufacturing), the investment made on the Portuguese ecosystem exceeds Eur 105 M over the period 2017-2021⁽³⁾, with the most common investment size for cultivation and manufacturing ranging from Eur 10 M to Eur 20 M.

The already announced planned investments for the next few years sum up to an additional Eur 60 M, for which companies will necessarily seek for third party's capital.

With 97 companies with ongoing licensing requests, it is most likely that the real values of investment made and to be made will be much higher than the ones presented.

(3) 2021: 5 out of the 22 companies analysed did not have their 2021 financials undisclosed, so this number is certainly higher.

Exhibit 29: Non-exhaustive Portuguese cannabis ecosystem



1. The Portuguese ecosystem is highly populated in the cultivation segment

The Portuguese market has been populated with many companies obtaining / filing for licenses to cultivate and manufacture cannabis for medical purposes, and many more are on the Informed's waiting list, under analysis/approval. This has been particularly motivated by three main competitive factors: friendly regulation, climate and availability of land.

Undoubtedly, Portugal has the conditions to lead in outdoor/greenhouse cultivation. However, this is a type of cultivation that is much more suited for adult-use recreational cannabis than medical cannabis.

2. Investment is required for increasing manufacturing capabilities

Portugal has the competitive advantage of highly qualified personnel at competitive costs with many years of experience in the CDMO business (contract development and manufacturing) that can easily support the development of cannabis related products and manufacturing investments.

When we analyse the answers presented on Exhibit 26, it is quite obvious that most investors in Portugal have up to now overlooked this competitive advantage, with a few exceptions made to pharma companies that are entering the market to expand their portfolios.

3. Manufacturing is a capital-intensive industry

Many companies entered the market without securing the necessary investment for their project or business plan. As such, we will probably see some new entrants failing to deliver unless they are able to bring to the financing meeting table solid business plans and strong teams.

4. Science will be at the core of the ecosystem

Portuguese players are mainly focusing on the cultivation of cannabis. There has been low investment in R&D to turn the strains more stable, to develop further medicines or to test for the effects of cannabis on more medical conditions.

Companies must invest in science as competitive advantage in the medical-use market segment will be ensured by the creation of value-added products, which are only possible to achieve if companies start investing in R&D.

"To take your product into the market, you need science. Portugal needs to get into science, because if you don't have science, you don't have a real product"

Minette Coetzee, Syntomax

4. Science will be at the core of the ecosystem (cont.)

The greater specialization of the Portuguese companies, together with the increasing adoption of science around cannabis-related products will make companies more innovative from end-to-end: developing more efficient processes of cultivation and extraction, utilizing more consistent strains, and coming-up with different pharmaceutical forms and higher quality products.

5. Robust business models will be key for survival and to attract new capital

Many companies have been able to secure pre-licensing for cannabis-related activities. However, they have not been able to develop their business further due to lack of financial investment.

Companies will be able to attract new capital if they rely their business on a robust business model, which must include:

- a clear and strategic vision for the business;
- an experienced team;
- a strong supply chain (access to good raw materials, established contracts both on demand and supply sides);
- optimized processes of production, manufacturing and distribution to develop innovative, high quality and science-based products;
- a clear focus on R&D.

“Some companies have managed to secure pre-licensing by INFARMED, but then fail to secure financing to invest in their facilities. Thus, many end up trying to sell their pre-licenses”

Manager of a cannabis-related R&D company



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