CFA Institute Research Challenge

hosted by

CFA Society Brazil

Team 06

BUY

Investment Recommendation	
Total Upside 20E	25.6%
Upside 20E	24.6%
Dividend Yield	1.0%
Target Price 20E	BRL 129.17
Current Price 20E	BRL 102.88
Ticker, B3	RADL3
Closing Price Date	10/17/19

Trading Data	
Market Cap (BRL mn)	33,990.1
Lowest (LTM, per share)	BRL 55.3
Highest (LTM, per share)	BRL 103.2
Number of Shares	330 mn
Daily Trading Volume	BRL 131.4 mn

Shareholders Structure	
Free-Float	64.7%
Pires' Family	13.1%
Pipponzy's Family	10.9%
GL Participações	6.7%
Pragma	4.4%
Treasury stocks	0.2%

Key Consensus Comparisons		
PEG 20E	1.4*	1.8x**
P/E 20E	41.4x*	47.7x**
EV/EBITDA 20E	21.0x*	23.5x**

* Team estimates ** Bloomberg Consensus

CFA Research Challenge 2019	
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Prescribed to outperform

We are initiating coverage on Raia Drogasil S.A. (RADL) with a BUY recommendation and a YE20 target price of BRL 129.17 per share. Our investment thesis is based on a combination of four factors: (i) RaiaDrogasil being the best-in-class national drug retailer, caught in a virtuous cycle; (ii) the company's expansion potential in a consolidating sector; (iii) its digital transformation strategy; and (iv) long-term sustainability due to populational ageing and new growth optionality.

The secret is in the edge. RaiaDrogasil's operational superiority secures customers and makes the most out of them. Firstly, RD presents the best POS positioning. By analyzing all the 2,824 addresses of the 9 largest national players' POS on Google Maps, one by one, we have concluded that, in terms of corner presence, RD wins against its peers in 21 out of 22 capitals where it operates, guaranteeing more attractive stores. Besides, RD is a reference when it comes to training employees and optimizing customer experience. Lastly, it presents the greatest logistics capillarity. The interplay of all these factors leaves no doubt about why a mature RD store has 61% more sales than that of the average competitor, allowing it to invest in better POS's, technology and employee training, enabling a better customer experience and inserting RD in a virtuous cycle.

Step back to see the whole picture. A thorough expansion analysis grounds our expectation for 1,429[1] store openings in the next 10 years, which represents a 70% store base growth. By categorizing all 9,000 drugstores under Abrafarma, seeking to identify each city's addressable market, we have estimated the number of potential openings in those cities in which: (i) RD is the leader in store count; (ii) another player currently has a stronger presence and; (iii) RD is not present.

Ahead of its time. As suggested by the evidence, there is still plenty of room for physical growth – but there is no need to worry about saturation. In fact, we expect the omnichannel development to lead to a greater store impact radius, further customer captivity, more efficient inventory management, and a relevant inter-channel synergy.

Much to come. Demographic trends interplay with RD's operations and its optionality. Given the ageing of the Brazilian population, one should account for the fact that elderly people present health needs way more often, spending roughly 4.3x what the younger public spends in drugs. This affects RD not only through traditional drug sales, but through 4Bio – the company's specialty drug segment, which provides oncology medications, for instance – or through a greater demand of in-store health services, given that those should become further implemented.

Keep an eye open. RD's investors should remain aware of certain matters. More specifically, we have analyzed the risks associated to: (i) an intensified cannibalization; (ii) a new price war taking place; (iii) a failure to penetrate new desired markets; (iv) a low public adherence to the e-commerce; (v) Rappi distorting the digital landscape; (vi) a fiercer competition; (vii) the legalization of OTC sales in supermarkets; and (viii) a global economic slowdown.

Highlights		2017A	2018A	2019E	2020E	2021E	2022E	2023E	2024E
Gross Revenues	BRL mn	13,852	15,519	18,233	21,409	25,136	29,383	33,853	38,221
EBITDA	BRL mn	1,130	1,136	1,355	1,634	2,018	2,540	3,112	3,687
Net Income	BRL mn	609	561	639	821	1,059	1,400	1,784	2,176
EBITDA Margin	%	8.16%	7.32%	7.43%	7.63%	8.03%	8.64%	9.19%	9.65%
Net Margin	%	4.40%	3.62%	3.50%	3.83%	4.21%	4.77%	5.27%	5.69%
ROIC	%	12.99%	15.64%	14.62%	12.24%	13.96%	15.94%	18.35%	21.87%
ROE	%	15.25%	19.17%	18.74%	15.87%	16.28%	18.57%	21.15%	24.52%
EV/EBITDA	X	30.34x	30.43x	25.45x	21.02x	16.98x	13.40x	10.86x	9.05x
P/E	X	55.72x	60.50x	53.17x	41.38x	32.07x	24.24x	19.03x	15.60x
PEG	X	5.34x	2.57x	1.78x	1.40x	1.18x	1.02x	0.91x	0.80x
EPS	BRL	1.85	1.70	1.93	2.49	3.21	4.24	5.41	6.59
Dividends per Share	BRL	0.52	0.53	0.77	0.99	1.44	2.12	3.24	4.29

[1] Openings from 3Q19 on.

Exhibit 1: LTM Mix Composition – 2Q19

Source: Company's data

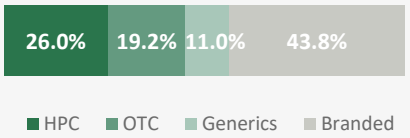


Exhibit 2: Private Label Performance

Source: Company's data

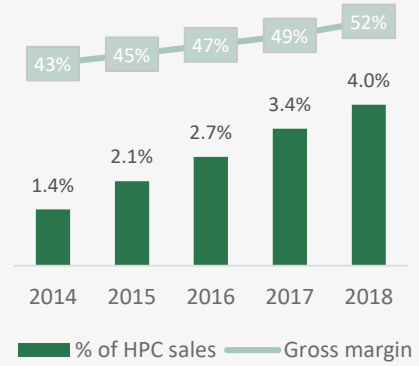


Exhibit 3: Organic Expansion

Source: Company's data

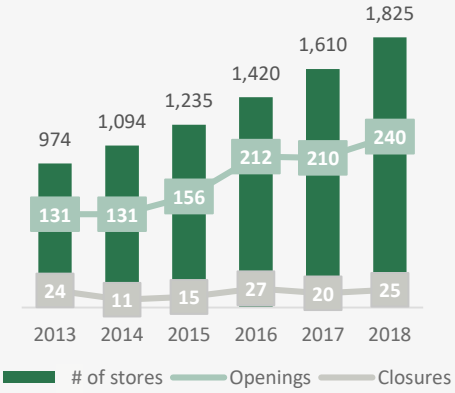


Exhibit 4: RD's Footprint – 2Q19

Source: Company's data

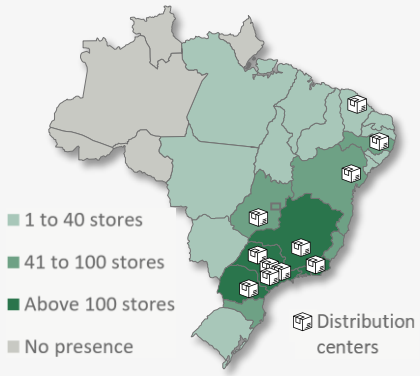
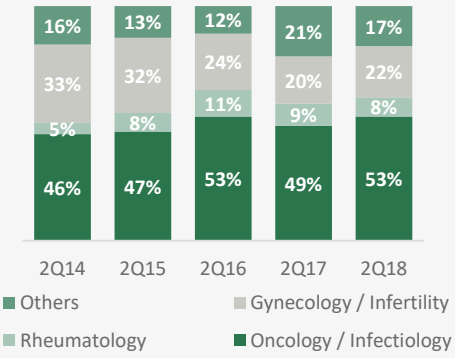


Exhibit 5: 4Bio Revenue per Drug Category

Source: Company's data



Business Description

Grupo RD was originated in 2011, through the merger between Raia S.A. and Drogasil S.A.. Being Brazil's largest drug retail chain, RD is the market leader in terms of both revenue and store base, with a LTM BRL 16.7 billion gross revenue, a 13.0% market share, and operating 1,917 stores across all Brazilian regions. With 198 years of combined history, the company stands out when it comes to competitive and operational matters. Evidence of that relates to the company's organic expansion and logistic expertise, both propelled by a highly qualified management.

How does RD make money?

Product portfolio. In 2Q19, RD's revenue was composed of 26.0% health & personal care items (HPCs), 19.2% over-the-counter drugs (OTCs), 11.0% generic drugs, and 43.8% branded drugs *(See Exhibit 1)*.

- **Branded Prescription.** Drugs marketed under a specific brand, with greater perceived value, being named by the company which manufactures them. Due to drug development high R&D costs, they usually are associated with a 30% gross margin. When patents expire, many generic versions of drugs tend to be marketed.
- **Generics.** Drugs sold without a trademark and identified only by their active ingredients. They undergo periodic bioequivalence tests aiming at ensuring their interchangeability with the reference medicines. Pharmaceuticals may dispense generics instead of their branded equivalent drugs, and the law determines the former must be sold at a 35% minimum discount on the latter. However, competitive dynamics make them trade at a ~60% discount, instead. Such category presents gross margins reaching up to ~50%.
- **OTC.** Drugs displayed within customers' reach, as opposed to prescription drugs. They can be divided into (i) Digestives & Intestinal Remedies, (ii) Analgesics, Cold & Cough and (iii) Vitamin & Minerals, the latter being associated with ~80% gross margins. The consolidated gross margin for OTCs is about 30%.
- **HPC.** Includes beauty cosmetics for the face and lips, skin care products, fragrances and personal care products such as hair care, deodorants, and shaving products. Non-private label HPCs are associated with ~30% margins, while RD's own brand product margins go as high as 50%. RD's private labels range from health equipment (CareTech) to nutrition goods (NutriGood) and grew by a 54% CAGR from 2014 to 2018, reaching up to 4% of HPC sales. According to Luciana Tortorelli, RD's Private Label Director, RD will continue to expand its Private Label portfolio, with a yearly average of 120 new products, expanding its self-service rentability *(See Exhibit 2)*.

Side to side positioning. RD's operations include purchases, distribution, and retail. Its wide control over this whole network and overall expertise protects its cost structure and captivates customers.

- **Purchasing strength.** Provider dependency appears to be pulverized among dozens of distinct players. The main ones are Santa Cruz Distribuidora, with 9.20% of total purchases in 2018, and Hypera S/A, with 7.09%. Besides, RD purchases a series of products through auction processes, at which the major manufacturers compete via pricing to guarantee a place in RD's shelves.
- **Appealing for the customer.** Many of the company's initiatives aim at enhancing customer experience and building loyalty. For instance, despite many items being affected by price control *(See Appendix 10)*, RD offers several many exclusive discount programs, as via its platform called Univers or the *Sua Raia [Your Raia]* and *Drogasil & Você [Drogasil & You]* programs. Moreover, by working along with Dunnhumby – a reference when it comes to customer data science – the company constantly improves its focus on individual shoppers through store layout refinements, clearer navigation communication, and other developments.

Dressed for success

Contains organic ingredients. RD has been expanding aggressively, while maintaining a forward guidance on that pattern. With 240 new stores in 2018, it grew its net openings by a 15.7% CAGR as of 2013, well beyond its peers. The company also presents the highest degree of assertiveness regarding venue selection and new stores maturation. Between 3Q18 and 2Q19, store closures corresponded to just 14% of gross openings *(See Exhibit 3)*.

- **Nationwide presence.** RD is present in 22 states, having its largest operation in the state of São Paulo. Regardless of many region-specific penetration challenges, as the need for air freight in Amazonas, it has been expanding widely. On the Northeast, for instance, it jumped from a 1.5% share in 2014 to 7.9% in 2019, benefiting from BR Pharma's bankruptcy *(See Appendix 12)*. RD also seeks expansion in the North, where it now represents 3.0% of the local market.

Logistic capillarity. In addition to 9 distribution centers the company currently owns, other two are currently being built in Guarulhos (SP) and Fortaleza (CE) *(See Exhibit 4)*.

- **Distribution and inventory management.** RD operates its own truck fleet, which flows from the distribution centers to supply each store daily according to its respective needs. Through an SAP integrated automated inventory management system, it guarantees there are no significant shortage of products due to logistics.
- **Operational leverage.** RD's extensive control over the supply chain yields its efficiency and cost dilution. This effect is intensified in accordance to the company's size and growth rate, in a way that it operates with a historically higher EBITDA margin than all its peers, having achieved 8.1% on that metric in 2018.

What is next

Super popular format. The knowledge obtained through RD's experience with Farmasil *(See Appendix 13)* will be powerful in its upcoming lower-income penetration attempt under Raia and Drogasil brands. This initiative aims at an adjusted store format, with 120-140m^2 (or 1292-1507ft^2) stores focused on generics, OTCs, and private label products. Along with traditional format stores[1], this is a cornerstone of the next steps for RD's organic growth.

Technology. Besides technological improvements developed with Dunnhumby, RD also focuses on developing a proper *omnichannel* to become closer to customers, build captivity, and gather valuable data.

- ***Omnichannel.*** RD's e-commerce and physical sales already interact through click-and-collect[2], which accounts for 60% of digital sales. Moreover, stores are being converted into mini-DCs to further support digital sales. RD has also recently introduced a subscription mechanism and product delivery through lockers.
- **Ahead of its time.** Targeting the future, RD already has a Digital Strategy Committee, which is focused on developing technological guidelines. This demonstrates a great disposition to invest in data science tools.

Services. RD sees in-store health services offering as a highly valuable revenue stream for the future, in line with an intent to transform drugstores into gateways to health care. Among the services gradually being implemented, the immunization initiative is a major one. RD believes in an upcoming revolution in the immunization market, for there are only a few more than 1,900 immunization POS in Brazil, against a similar number of RD stores, for instance.

Specialty drugs. In 2015, RD acquired 4Bio, the second largest Brazilian specialty drugs retail market player. This market, which nationally accounts for only a small part of the total drug revenue, corresponds to a significant share of the drugs total revenue in the U.S. Among the drug categories covered by 4Bio, oncology and infectiology correspond great share of the brand's revenue *(See Exhibit 5)*.

Corporate Governance

In the backstage of RaiaDrogasil's solid growth, there is a highly competent governance composed by a diverse group of both technical and passionate businesspeople with a high expertise level and aligned with the company's long-term interests. To understand RD's winning position management, we are going through the company's: (i) Corporate Management; and (ii) Corporate Governance.

[1] Traditional format stores include: Noble/Super Noble; Hybrid; and Popular stores. [2] Click and collect allows customers to purchase goods online and pick them up in a store

Exhibit 6: RaiaDrogasil's Directive Board

Source: Company's data

Name	Title
Marcílio D' Amico Pousada	CEO
Eugênio De Zagottis	Corp. Planning and IR Director
Antonio Carlos Coelho	CFO
Fernando Kozel Varela	Supply Chain, Omnichannel and TI Director
Marcello De Zagottis	Comercial and Marketing Director
Maria Susana de Souza	Human Resourses Director
Renato Cepollina Raduan	Retail Operation Director

Exhibit 7: Class Spending (BRL family/month)

Source: IPCA Maps 2018

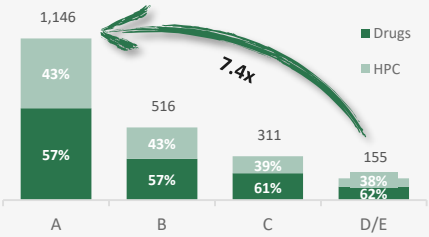


Exhibit 8: Pharma Sell Out vs Retail and GDP

Source: IBGE and Sindusfarma

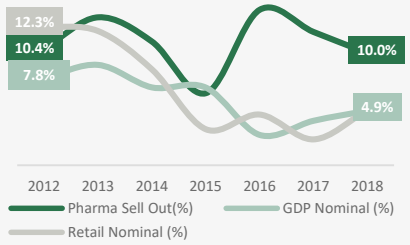


Exhibit 9: Age Pyramid Inversion

Source: IBGE

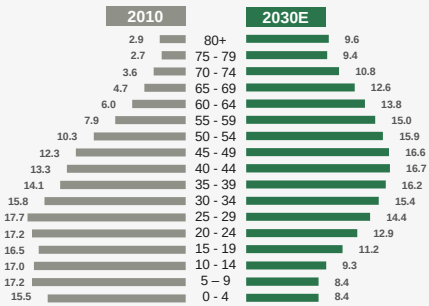
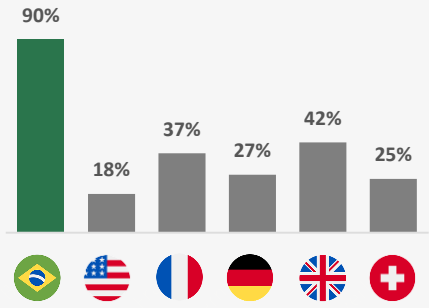


Exhibit 10: Out-of-Pocket Spending (%)

Source: Kaiser Foundation and World Bank



Corporate Management

Trust me, you can trust them. Along with its Corporate Governance, we find that RD's board of directors is a cornerstone which nourishes the company's self-sustained and solid growth. Amongst the current seven directors *(See Exhibit 6)*, however, two of them stand out.

The Poiser. Marcílio Pousada, RD's current CEO, carries a 13-year experience as CEO of big corporations like *Office Net* and *Livrarias Saraiva*. In the course of challenging market circumstances, he was named RD's CEO in 2013 with the mission of promoting the complete and fast integration between Droga Raia and Drogasil, an endeavor which has faced obstacles since their merger in 2011. This integration, under his management, was accomplished in 2014, the year following his entrance.

The Expansionist. Eugênio De Zagottis, member of the Pipponzi's family and former McKinsey consultant, he's the current RD's Corporate Planning and IR Director. In the company for 18 years, his main relevance comes from direct participation in all RaiaDrogasil's expansion plans, which are of such unique historical success that could be stamped as one of RD's competitive advantages. Besides, he is also the current CEO of the Directive Board of Abrafarma (Brazilian Association of Pharmacy and Drugstore Chains), which is responsible for defending the sector interests in the political sphere.

Corporate Governance

A chip of the old block. RaiaDrogasil's Corporate Governance *(See Appendix 14)* is composed by nine members, three of them independent. Such board is advised by six Committees: (i) Expansion; (ii) Strategy; (iii) People; (iv) Risk and Finance; (v) Digital Strategies; and (vi) Sustainability.

New kinds on the block. Amongst the non-independent there are family members of both Droga Raia and Drogasil's founders, or businessmen who either built their career in the company or have vast expertise on Corporate Governance. Regarding the independent members, it is worth mentioning the recruitment made by RD in 1Q19, when it named as a board member Marcelo José Ferreira e Silva, former CEO of Magazine Luiza *(See Appendix 15)*. Such movement translates the company's developments towards an omnichannel and technology transformation, this being part of its core strategy of improving costumer journey and loyalty.

My wish is your wish. Finally, the board compensation program is associated to fixed annual salaries, defined by the People Committee and by the company's HR area. It is also bonified by dividends/interest on equity, in a way to mitigate the risk of power abuse by the board members, keeping them in line with RD's long-term interests.

Industry Overview

As Brazil's current government is trying to follow a more liberal agenda, having already achieved important checkpoints such as the Social Security Reform, the retail industry is expected to benefit from a consumption expansion, which should include medicines and beauty & personal care products.

Back to the game. As Brazil is turning its economy engine back on *(See Appendix 16)*, we see a bright near future for industry players. National interest rates are at an all-time low level, along with a diminishing unemployment and a picking-up GDP. As socioeconomic mobility is positively correlated to higher medicine and HPC spending *(See Exhibit 7)*, untapped market potential may be unlocked, driving up industry returns.

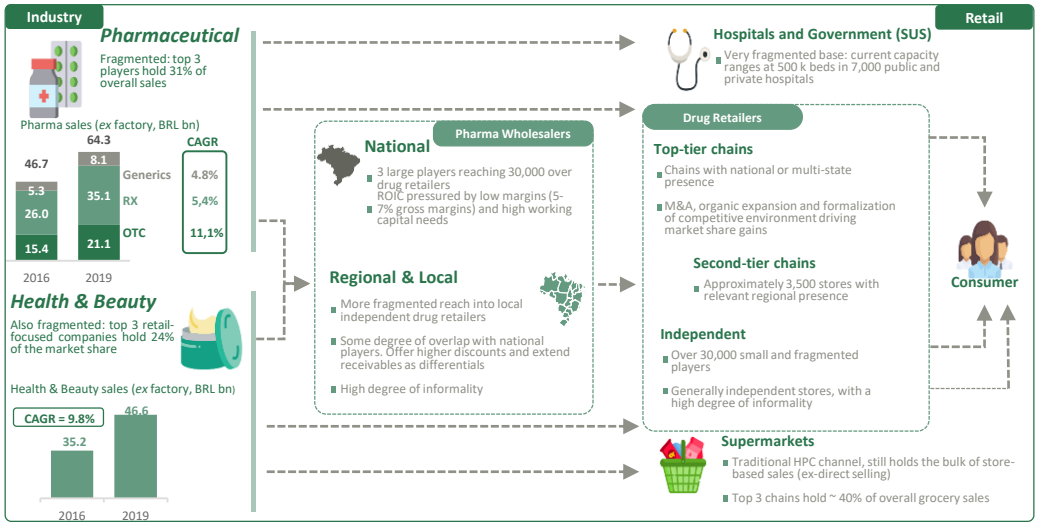
Almost too good to be true. Historically, drug retailing outperformed GDP growth, proving itself more resilient against economic drawback than other retail sectors *(See Exhibit 8)*. This got industry's big boys' confidence way too high about the untapped potential of the business. Such euphoria, combined with an all-time low interest rate of 6.5% in 2017, pushed many big pharma retailers into aggressive debt-funded expansion plans, seeking to capture value in a low-risk and high-return environment. This collective move significantly increased competition, pressuring margins and leading to a heavy slowdown in the store base growth of major players, except for RD.

But old is still gold. As elderly people spend roughly 4.3x more in medicines than the younger public, the age pyramid's inversion will push real terms growth in drug spending per capita *(See Exhibit 9)*. Today, the percentage of 65+ year-old in the Brazilian population is of 9% and expected to reach 14% in 2030. This phenomenon entered in motion due to an expressive improvement in life expectancy along with a drop on birth rates.

Just the tip of the iceberg. The pharma chain is a complex organism. For retailers to capture the sector's growth and survive, they need to see the whole picture and use its dynamics to their favor. In this sense, the supply chain is composed by three main players: (i) the Pharma Industry, (ii) Wholesalers and (iii) Drug Retailers *(See Exhibit 11)*.

Exhibit 11: Pharma Industry's Supply Chain

Source: Companies' data



The Watch Dog. Brazil's National Agency for Sanitary Surveillance (Anvisa) is responsible for overseeing the structural functioning of drugstores and pharmacies and regulating prices via the Brazilian Drugs Market Regulation Chamber (CMED), through which it determines annual price adjustments for drug groups, considering (i) LTM inflation, (ii) Productivity Factor, (iii) Price adjustment cross sector and (iv) Price adjustment Intra Sector *(See Appendix 10)*.

Where to look? Different spending dynamics among international pharma markets makes it a tricky task to determine a comparable country to Brazil, as out-of-pocket drug spending as share of wallet differs globally *(See Exhibit 10)*.

Exhibit 12: U.S. Pharma Market Evolution

Source: IQVIA

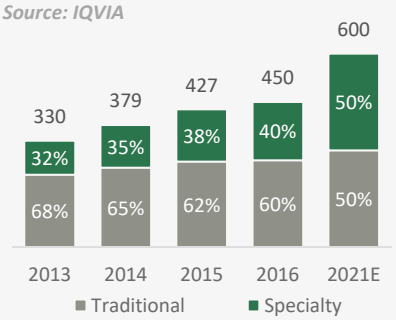


Exhibit 13: Number of Pharmacies in Brazil

Source: Febrafar

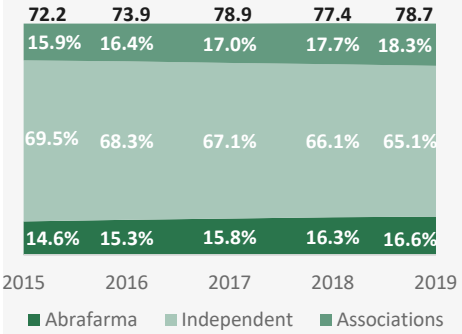


Exhibit 14: Revenue Market Share Comparison

Source: Companies' data

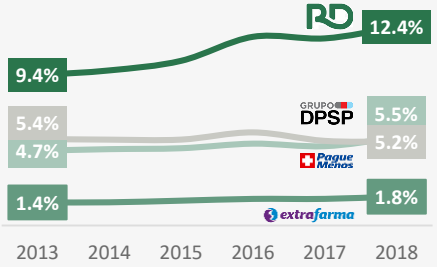


Exhibit 15: Net Openings Comparison

Source: Companies' data

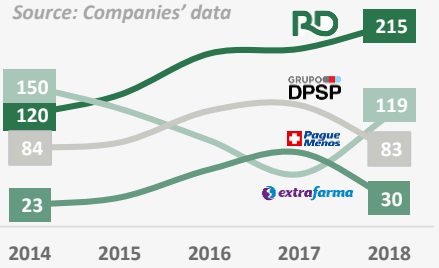


Exhibit 16: Revenue and EBITDA per Store

Source: Team Estimates, Company's Data

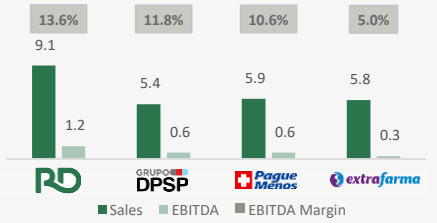


Exhibit 17: Comparative Logistic Chain

Source: Companies' data

Chain	States	DC´s	Daily Replenish
RD	22	11	✓
DPSP	9	6	✓
Pague Menos	26	5	✗
extrafarma	13	2	✗

- **U.S.** 80% of the employers in the U.S. use Pharmacy Benefit Management (PBM) which consists of intermediary companies negotiating pricing directly with drug manufacturers and wholesalers to acquire discounts and thus reduce drug spending for their customers.
- **Europe.** European pharma consumption is driven by medicine reimbursement policies which reduces the share of wallet destined to drug spending and directs it to governmental budget.
- **Brazil.** 90% of the drug spending in Brazil is out-of-pocket, which means that the customer is the actual payer. This explain why there is such an expressive gap in drug spending as percentage of GDP between Brazil and the aforementioned regions. Thus, comparing Brazil's total pharma consumption as it is with international economies may be unfair, if not properly done *(See Appendix 17)*.

Specialty drugs: the fastest growing segment. There is a growing market of drugs related to the treatment of much more severe diseases, such as cancer and rheumatism. In the U.S., this market is expected to reach 50% of total pharma market in 2021 *(See Exhibit 12)*. In Brazil, however, most of the demand is government funded, which makes the establishment of distribution players in this segment complicated *(See Appendix 18)*.

From bricks to clicks. The Brick & Mortar operations are still a strong trend in drug retailing, as the major players keep increasing their POS's across the country. However, just as in any other retail subsector, there is a lot of value to be unlocked through the development of omnichannel, by integrating ecommerce to physical operation and the use of data for demand prediction and even more tailor-made discounts for each specific customer. We believe this is a trend worth keeping an eye on, as there is room for a groundbreaking development of the segment dynamics.

Competitive Positioning

We have evaluated RaiaDrogasil's competitive positioning both in a national and a regional perspective. The former involves the competition among the four main players disputing for market share in Brazil, while the latter is based on understanding RD's competition dynamics against strong local players of each specific state (For SWOT Analysis and Porter's Five Forces, see Appendixes 19 and 20, respectively).

National Competition

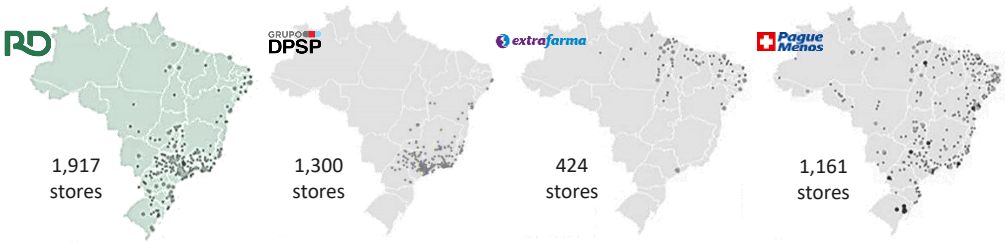
Networking creates growth. Historically, the number of drugstores has increased considerably in Brazil, having grown at a 6% CAGR from 1995 to 2019. Nowadays, there are 78.7k pharmacies in Brazil, of which 65.1% are independent, 18.3% are pharmacies linked to associations such as *Febrafar* (Brazilian Federation of Pharmacy Association Chains), and 16.6% are part of *Abrafarma* as large corporate chains. Both corporate and associated chains have gained market share against independent chains, which have lost 440bps of participation in the last 5 years, revealing a consolidation tendency *(See Exhibit 13)*.

The largest drugstore chain in Brazil. From the many existing retailers in the sector, only four are in fact nationally relevant, namely: (i) Raia Drogasil (RD), (ii) Drogaria Pacheco e São Paulo (DPSP), (iii) Pague Menos and (iv) Extrafarma. Combined, such players account for about 4,800 stores and BRL 30 billion in revenue, which represents 6% and 25% of the sector's market share in number of stores and sales, respectively. Along these lines, RD's leadership in this highly competitive industry becomes evident. In 2018, RD had 12.4% of market share, which is more than double than DPSP's – the second largest player –, of 5.5%. Since 2013, RD has gained 300bps of market share, while DPSP and Extrafarma have gained 80bps and 40bps, respectively. Pague Menos, however, has lost 20bps of share in the same period *(See Exhibit 14)*.

Winner's geographic footprint. RD's strength against national competitors is also revealed by each retailer's geographic presence *(See exhibit 18)*. While DPSP has 1,300 POS in 9 states and Extrafarma has 424 pharmacies in 13 states, Raia Drogasil has 1,917 stores in 22 states in Brazil, currently expanding to Amazonas. In this sense, despite still concentrating its stores in the state of São Paulo (52%), RD is diversifying to other regions, as 72.4% of its LTM store openings were outside São Paulo. On the other hand, DPSP has 80% of its store concentration in São Paulo and Rio de Janeiro, and 86% of Extrafarma's stores are within the Northern and Northeastern states. Pague Menos, however, continues to be the most diversified player, but its store concentration does not surpass 15% in any state. Despite RD's regional diversification, it manages to maintain its position where it is already consolidated as the local winner, in a way it does not seem to get distracted by expansion and to lose fundamental focus.

Exhibit 18: RD's Geographic Footprint and Regional Presence

Source: Companies' data



Resilience beyond the crisis. RaiaDrogasil has demonstrated great historical expertise regarding organic growth. Since 2014, it has been the only player not to decelerate its expansion process. RD has increased its yearly net store openings by 15.7%, on average, while DPSP and Pague Menos presented decreases of 5.6% and 0.3%, respectively, in that same period. RD's advantage in such metric reveals the company's strength and resilience vis-à-vis its competitors, even in times of crisis *(See Exhibit 15)*.

A RD's store sells more. A RaiaDrogasil´s store generates 61% more sales than its competitors' average *(See Exhibit 16)*. This superiority is due to 3 main reasons *(See Winners Gonna Win on pages 5 and 6)*.

- **You are what you open.** Most of the RD´s stores are located on corners, which brings more visibility to the stores and increases the flow of people and cars into them. By analyzing store by store, we have concluded that RaiaDrogasil beats its 3 mains competitors in all the 22 capitals in which it operates.
- **The client is always right.** RD's stores are client focused, offering personalized store formats, mixes and discounts based on the client profile. Also, by visiting peer's POS, we have identified that RD's costumer service is a benchmark in the sector, regarding both quality and reduced service time.
- **More than DC's.** RaiaDrogasil guarantees a daily replenishment of its stores, which is fundamental since 69%[1] of the consumers tend to stop visiting drugstores that do not present availability for some specific item they seek. Therefore, RD has 11 distribution centers in Brazil while its 3 main competitors together have 13 DCs *(See Exhibit 17)*. Since RD's DC's are closer to their stores, the odds of having products shortage is diminished.

Gaining efficiency on each new POS. A RD's mature store EBITDA is 97% higher than DPSP´s – the next best positioned. Also, regarding margins, a RaiaDrogasil's store has a 13.6% of EBITDA margin, while its competitors have 9.1% on average. *(See Exhibit 16)*. Finally, in addition to being the largest drugstore chain in Brazil, RD widens the gap against its competitors with each new store it opens, since its stores are more efficient in both sales and margins.

[1] According to Abrafarma.

Exhibit 19: RD Corners Footprint

Source: Team Estimates

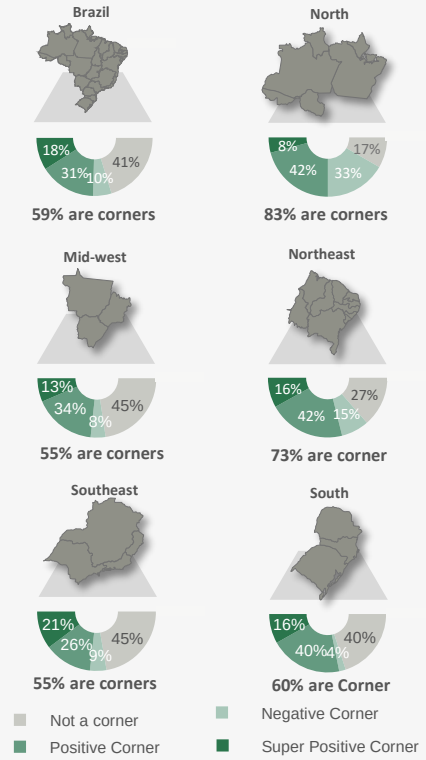
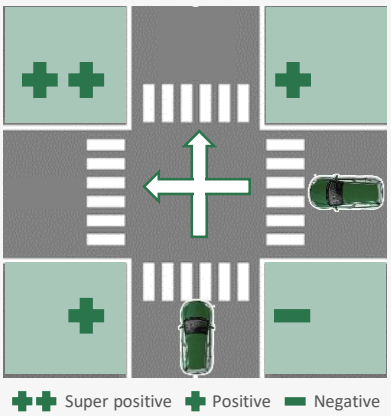


Exhibit 20: Super Positive Corner Example

Source: Google Maps

Exhibit 21: Types of Corners Explanation

Source: Team elaboration



Regional Competition

All regions are equal, but some are more equal than others. Drug retailing competition dynamics are similar across Brazil. Nevertheless, cultural, historical and market peculiarities create unique regional dynamics *(See Exhibit 22)*. There are (i) large nationwide chains which leverage economies of scale and more structured processes in order to quickly expand and pressure other players; (ii) traditional regional chains with strong local brands, efficient logistics and unique positionings, being extremely competitive in their regions but struggling to expand geographically; (iii) smaller local chains, with a strong presence in microregions still underexplored by larger groups; (iv) associations, which allow independent players to have stronger procurement operations and larger competitiveness; and (v) independent pharmacies, which still survive on smaller markets, focusing on niches or on smaller cost structures.

Exhibit 22: RD Is Well Positioned Across All Regions

Source: Companies' data

		Main players # of stores	DC's in the region	RD entry in the market	Selected highlights
S		São João 656 Farmácia Preço Popular 493 Panvel 421 Nissei 260 RD 188	RD: PR	2003 :PR 2008: RS 2011: SC	Strong regional players such as Panvel in RS, the nation's benchmark in private label, and Nissei, with a drugstore format in PR, face RD's fierce expansion.
SE		RD 1,276 DPSP 1,220 Araújo 218 Pague Menos 214 Drogal 160	RD: SP (4), RJ, MG DPSP: SP, RJ, ES, MG Pague Menos: MG	1935: SP 1945: MG 2000: RJ 2010: ES	Venâncio, Araújo and Drogal, traditional regional players, defend their home turf against a consolidating and broader RD, while DPSP tries to fight throughout the region.
MW		RD 185 dooo 91 Santa Marta 78 Pague Menos 63 DPSP 30	RD: GO Pague Menos: GO	2008: DF 2012: MT and MS 2013: GO	Despite a recent entry, RD has established itself as the clear leader in the Midwest, while other national chains have not gained traction.
NE		Pague Menos 609 extrafarma 244 RD 233 Farmácia Popular 101 DPSP 91	RD: BA, PE and CE Extrafarma: CE Pague Menos: CE, PE, BA DPSP: BA, PE	2012: BA 2014: AL, SE. RN, PE, PB 2017: CE, PI, MA	In a region dominated by Pague Menos, RD has expanded aggressively in the past 5 years, even taking over the lead in important capitals, such as Salvador and Recife.
N		extrafarma 141 Pague Menos 82 Tapajós 56 Farmácia Popular 56 RD 35	Extrafarma: PA	2016: TO 2018: PA 2019: AM	In a region with only one clear leader (Extrafarma in Pará), RD has expanded with ease so far and has plans to increase its reach to Amazonas.

Best-in-class national presence: RD has established itself in all the 22 states in which it operates as a major player that should be feared by the established players. In the Northeast it stole the lead from *Pague Menos* in some capitals and pressured it heavily in others, while in the South, with its local powerhouses *São João*, *Nissei* and *Panvel*, RD is the only national player to have a relevant presence *(See Appendix 21)*.

Investment Thesis

We reiterate our BUY recommendation and a YE20 target price of BRL 129.17 per share. Our investment thesis is based on a combination of four factors: (i) RaiaDrogasil being the best-in-class national drug retailer, caught in a virtuous cycle; (ii) the company's expansion potential in a consolidating sector; (iii) its digital transformation strategy; and (iv) long-term sustainability due to populational ageing and new growth optionality.

Winners Gonna Win

Corner is cornerstone. RaiaDrogasil has the best-in-class POS positioning in Brazil *(See Exhibit 19)*. By analyzing individually each main capital RD is present in, we have identified that RD store positioning beats its main competitors in 21 out of 22 cases *(See Exhibit 23)*. We have analyzed one by one the 2,824 pharmacies of 9 different drug retailer chains in all the 22 capitals that Raia Drogasil has stores. By checking 945 of RD's addresses individually on Google Maps' Street View *(See Exhibit 20)*, we have concluded that most of RD's stores are positioned on positive or super positive corners. This is important because if the POS is well positioned in those terms, at least one vehicle flow faces the store when crossing a street intersection, increasing store visibility and costumer flow into the store *(See Exhibit 21)*. In the North region, 83% of RD´s stores are on corners; in the Northeast 73%; Mid-West 55%; Southeast 55%; and South 60%.

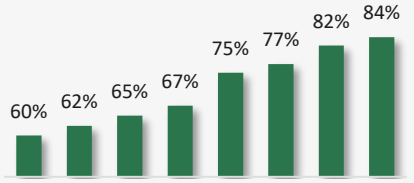
Exhibit 23: Drug Retailer Chain's Stores on Corners per City

Source: Team elaboration, Google Maps

Chain	Belém	Palmas	Aracaju	Fortaleza	João Pessoa	Maceió	Natal	Recife	Salvador	São Luís	Teresina	Brasília	Campo Grande	Cuiabá	Goiânia	Belo Horizonte	Rio de Janeiro	São Paulo	Vitória	Curitiba	Florianópolis	Porto Alegre
RD	84%	80%	57%	92%	82%	79%	82%	83%	48%	60%	100%	23%	82%	69%	84%	77%	32%	57%	86%	72%	22%	51%
Pague Menos	47%	57%	41%	46%	67%	52%	48%	46%	24%	38%	55%	18%	69%	33%	75%	27%	11%	29%	38%	58%	20%	40%
extrafarma	61%	50%	-	61%	50%	-	67%	58%	-	34%	38%	-	-	-	-	-	-	43%	50%	-	-	-
DPSP	-	-	-	-	-	-	-	-	34%	-	-	4%	-	-	-	41%	17%	44%	-	-	-	-
Panvel																				71%	35%	36%
Others	-	-	-	-	-	64%	-	-	-	-	-	-	-	-	70%	30%	-	-	-	63%		

Exhibit 24: Historical NPS Improvement

Source: Company's data



	2012	2013	2014	2015	2016	2017	2018	2019
Store Count	744	863	1,091	1,232	1,417	1,607	1,822	1,914
Answer Index (%)	8.3	7.9	7.2	7.4	8.5	9.5	12.5	13.9
Avg. HC/Store	18.8	18.1	18.0	17.8	17.0	16.7	16.5	16.3

Exhibit 25: Unit Economics per Drug Retailers

Source: Companies' data, team estimates

	RD	DPSP	Pague Menos	extrafarma
Sales	14,801	6,565	6,245	2,149
Matured Stores	1,619	1,221	1,059	373
Sales per store	**9.1**	**5.4**	**5.9**	**5.8**
% Gross Margin	30.0%	29.4%	32.3%	30.1%
Total SG&A per store	**(1.7)**	**(1.1)**	**(1.4)**	**(1.5)**
EBIT per store	**1.1**	**0.5**	**0.5**	**0.2**
% EBIT Margin	11.9%	9.0%	8.3%	3.3%
EBITDA per store	**1.2**	**0.6**	**0.6**	**0.3**
% EBITDA Margin	13.6%	11.8%	10.6%	5.0%
Tax rate	34.0%	34.0%	34.0%	34.0%
NOPAT per store	**0.7**	**0.3**	**0.3**	**0.1**
Capex per store	**1.6**	**1.5**	**1.3**	**1.0**
Working Capital	**1.5**	**1.2**	**0.9**	**1.3**
Receivables	0.7	0.6	0.3	0.5
Inventories	2.7	1.4	2.1	1.8
Suppliers	1.9	0.9	1.5	1.0
Invested Capital	**3.1**	**2.6**	**2.2**	**2.3**
ROIC per store	**22.8%**	**12.1%**	**14.6%**	**5.4%**

Exhibit 26: Projected Openings

Source: Team Estimates

RD Projected Openings	# of cities	# of stores
RD leads	43	398
Other leader	120	894
RD not present	64	137
Total	**227**	**1,429**

Exhibit 27: Cities expansion targeting

Source: IBGE, Companies' data, Team estimates

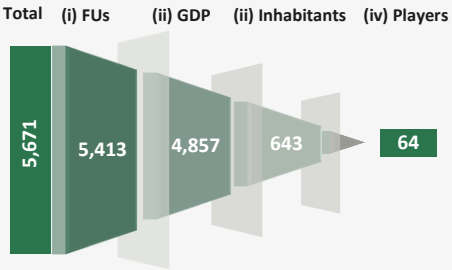
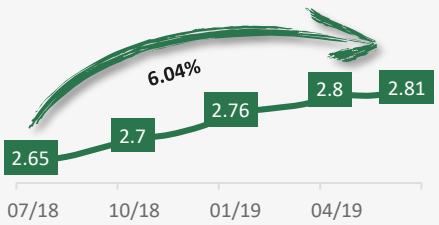


Exhibit 28: Average Treatment Time in Months

Source: Company's data



Client centered. RD's winning position is defined not only by being better positioned than its peers, but also by giving its customers the best and more personalized experience, which is reflected by the company's growing NPS in the past years, despite a decrease on the number of employees per store *(See Exhibit 24)* and an increase in its loyal clients share. RD cultivates an employee training culture, teaching employees to identify each clients journey, collect the necessary data and reduce service time. It also purchased and developed benchmark POS software, allowing faster processes through automatization and personalized discounts per person. Furthermore, as omnichannel experience keeps developing, such loyalty and client satisfaction are expected to grow further.

The true national player. Through the Traveling Salesman Model, we estimate RD to be the most cost-efficient in terms of logistics. Being logistics of great importance in this industry, any form of cost dilution should come along with a distribution effectiveness capable of promoting a crucial diminishment of item shortages risk. Along these lines, RD's supply chain management not only guarantees daily store replenishment, but a lower cost. By assuming all its main competitors chose to daily replenish their stores, we have estimated that RD's transportation network is 28% leaner than DPSP's, 36% than Extrafarma's, and 59% than Pague Menos'. We have concluded this by applying the referred model for each distribution center, simulating the minimal route between it and each city inside supported radius and divided the obtained distance by the total number of stores in that area, hence obtaining a metric of transportation cost per store *(See Appendix 22)*.

Ultimately, numbers tell the truth. As a result of its competitive advantages, a RD's store generates 61% more sales than its competitors' average, and originates an outstanding 21% ROIC, against its competitors' 10% average. Therefore, being the best-in-class national drug retailer leads to a virtuous cycle, in which RD has the best POS locations, catching the client's attention and generating outstanding sales level. This should allow RD to invest in even better store locations, which will attract more clients and boost its sales even higher. Furthermore, we believe this represents a clear competitive advantage, as RD is a step ahead of its competitors in order to consolidate the sector and capture its changes related to the digital transformation or new optionality *(See Exhibit 25)*.

Expansion Potential

Brace yourself, growth is coming. Our extensive analysis on potential expansion *(See Appendix 24)* has revealed an expectation of 1,429[1] store openings in the next 10 years as of 2Q19, a 70% store base projected growth *(See Exhibit 26)*. Being the company the sector's winner, we have estimated the number of potential openings in those cities in which: (i) RD is the leader in store count; (ii) another player currently has a stronger presence and; (iii) RD is not present. Our conclusion serves as evidence there is still plenty of room for physical growth.

- **Where RD leads.** In the cities where RD leads, we have found a potential of 398 openings, by observing areas in which one of the main national players were positioned and RD was not, as such players have similar cost structures and target audiences. Through Python coding, we have web-scraped all of RD stores and its main competitors' (Pague Menos, DPSP, and Extrafarma), converted them into geographical coordinates and calculated the distance between those. We have assumed RD would open stores next to those of competitors which had no RD store within a 1km (or 0.62mi) radius, in order to prevent cannibalization.
- **Where others lead.** For such locations, we have prospected 894 openings, assuming that in most cases RD will approach the city leader's number of stores. Such feat is feasible, since RD's superior execution provides it with a strong track record of successful market entries and expansions, as seen in Salvador and Recife. Those used to be Pague Menos strong hauls, where RD stole the lead since its entrance in 2013 and 2014, respectively.
- **New markets.** We have spotted 137 potential openings in markets yet unexplored by RD. To identify new cities which fitted RD's profile, we have listed all Abrafarma's 24 chains and *Preço Popular's* stores (totaling 9,000 POS's) and applied a series of filters *(See Exhibit 27)*. Ultimately, we have limited RD's expansion to: (i) states in which it is already present; (ii) municipal per capita GDP in line with RD's current cities; (iii) cities exceeding 50,000 inhabitants; and (iv) cities with at least two Abrafarma chains and one Top 5 market share chain present.

Digital Strategy

Despite RD's potential expansion for the near future, store openings should diminish in the long run. By then, what will drive penetration among consumers results of the company's digital transformation strategy, along with the development of an omnichannel. Such tendency will not only allow the company to reach costumers with greater ease, but to increase their loyalty and create value in many ways to be discussed in this section.

Store magnifier. RaiaDrogasil's digital platforms, at their full potential, will amplify any store's radius of impact. The integration of those channels allow sales to take form not only through traditional means, but also through delivery or a click-and-collect mechanism. Given RD's plan to transform points of sale into microcenters for e-commerce, customers' remote access to stores through website or mobile application interaction should be facilitated, thus making them more prone to buy from farther stores and boosting general same store sales.

Interchannel synergy. An interplay among physical and digital sales also benefits a mature omnichannel. Today, click-and-collect sales demonstrate their relevance by representing 60% of total e-commerce sales, having grown by 620% between February 18 and August 19, hitting 780,000 orders in this same period. Nevertheless, such modality generates further value: according to RD, 20% of click-and-collect sales are associated to in-store sales during pick-up, with an average extra-ticket of BRL 60,00.

Loyalty matters. According to RD, a loyal customer is worth around BRL 1,000 more per year than a regular one. Thus, the company aims not only at attracting new customers, but at building captivity among those already being reached. In line with that, a successful omnichannel strategy would unlock value coming from a closer relation with customers, a further personalization of shopping experience and a deeper interaction between physical and digital platforms. For instance, a customer may utilize the mobile app in order to obtain tailor-made discounts, compare prices, acquire a subscription for any product or even register the medicine schedule. Apart from that, shoppers are already reminded of buying and taking medications through SMS of app notification, a process which RD claims to have a 25.3% sale conversion rate and a historical impact of 6.04% over treatment adherence time *(See Exhibit 28)*.

It's all about data. Most of such features are only made possible by RD's great recognition of data value, along with the company's efforts on further improving the way available data is employed. Nevertheless, RD's digital transformation concerns not only data usage, but its creation. While customers become closer to the company's omnichannel, data gathering deeply improves, hence enhancing the system's ability to offer a more assertive custom experience for each customer. This is a virtuous cycle through which the establishment of a proper omnichannel may be closer than it appears.

Bridges to the future. RD does not seem satisfied, despite all existing features. First, it is launching e-commerce delivery through lockers in a way it becomes increasingly closer to shoppers. Secondly, as it deepens into the implementation of in-store clinical services, such proximity should evolve through an app section fully dedicated to display scheduled services, examination results, and overall health statistics. Such movement is in complete line with the sector's previously mentioned interest in transforming drugstores into gateways of health care *(for a case study on Walgreens Boots Alliance, an international e-commerce reference, see Appendix 25)*.

No lack of potential. Many other digital growth pathways should be unlocked as regulation should loose up. As soon as retailers become allowed to deliver prescription medicines, a myriad of value should come to surface. Such process, in fact, should be propelled by the popularization of electronic prescriptions, which is turning into reality, for instance, by Sibrafar's "ValidaRx", its electronic prescription platform announced during the 20th Pharmaceutical Congress of São Paulo, a three-day event which took place in October of 2019. Despite seeming clear that regulation is a major obstacle for the integration of physical and digital channels, RD demonstrates it is seeking to develop cutting-edge tools to get the most out of any legal scenario – and that is paying off.

Exhibit 29: Gross Margin & Mix (% Revenue)

Source: Company's data, team estimates

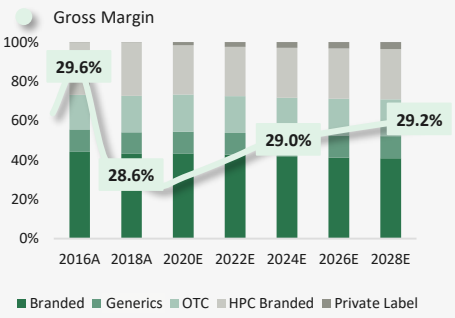


Exhibit 30: Sales/Employees - RaiaDrogasil

Source: Company's data, team estimates

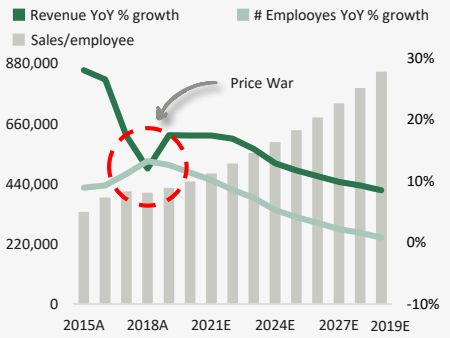


Exhibit 31: ROE Decomposition

Source: Company's data, team estimates

	2018A	2019E	2020E	2021E
ROE	**15.9%**	**16.3%**	**18.6%**	**21.2%**
ROA	***7.6%***	***7.5%***	***8.8%***	***10.2%***
Asset Turnover	2.1	2.2	2.3	2.4
Net Margin	*3.6%*	*3.5%*	*3.8%*	*4.2%*
Financial Leverage	**2.1**	**2.2**	**2.1**	**2.1**

Exhibit 32: Value Creator

Source: Company's data, team estimates data

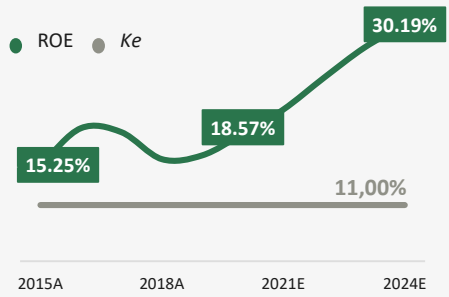
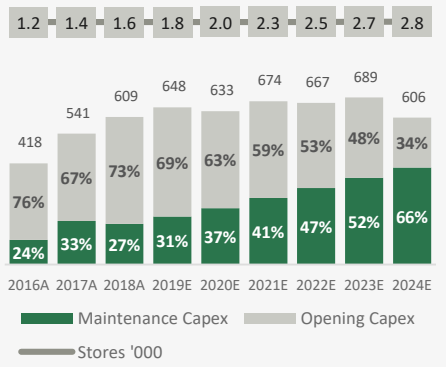


Exhibit 33: *CapEx* Breakdown & Store Evolution

Source: Team elaboration



Industry and optionality

Older and older. According to a World Bank study, it will take Brazil 21 years for the number of over-65-year-olds to represent 14% of the total population, in 2032 – from 7% in 2011 – a remarkable aging speed. Such group spends roughly 4.3x more in medication than the younger population, and today's elderly people account for 32% of total prescription medicine spending in Brazil. We believe these factors should sustain long-term growth for the sector, as disease incidence in older people is exponentially higher than in the younger population.

Specialty drugs. As population ages, the incidence of more severe diseases increases exponentially: 85% of cancer incidence is related to the 65+ year-old population. For now, 4Bio (RD's specialty drugs distribution segment) accounts for only 5% of its total revenue, but such segment represents a great exposure to potential growth.

The health hub. RD's superior operations and capillarity best position it to further integrate its current operation with service providing, which is a strong sector tendency. In the private segment, Health Plan Operators (HPOs) cannot keep up due to misalignment of interests with Healthcare Providers, resulting in negative net margins and bankruptcies of HPOs. Meanwhile, the public segment lacks necessary infrastructure for the population to utilize the SUS (Unified Health System) as a means of obtaining fast diagnosis for simple illnesses. As drugstores represent the most frequent point of interaction between customers and the healthcare system, there are huge synergies to be unlocked by developing in-store services, such as exams and immunizations *(See Appendix 26)*.

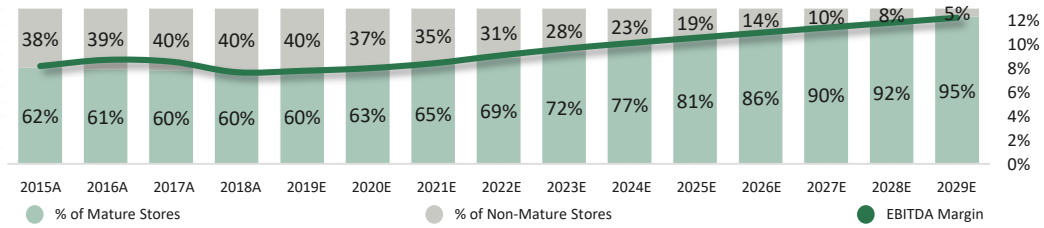
Financial Analysis

Every point counts. Historically, RD has been managing its margins better than any other national player, all of them being exposed to tight margins from P&L's top to bottom. This is especially due to (i) price regulation by ANVISA *(See Appendix 10);* (ii) an environment of intense competition; and (iii) stores' elevated percentage of fixed costs. We expect RD's margins to improve as part of the natural process of store maturation, as store openings should slow down. But how exactly do we see that coming?

- **It's all about mix**. We expect RD's gross margins to grow 0.50pp until 2029 *(See Exhibit 29)*. Such margin is perfectly correlated with the mix that it offers on its stores, in a way that it can generally be calculated by weighting categories' margins based on their mix participation. As prices are regulated throughout the entire pharmaceutical chain, most categories tend to present constant margins, except for the years of 2017-2018, where generics margins were punished by increased competition, jeopardizing gross margins. Besides, the aforesaid increase in RD's gross margin is due to its movement towards reaching lower-income clients, who tend to consume a higher percentage of generics and private label products, categories with higher margins.
- **Size does matter**. Personnel, rent, and energy: these are the three main expenses for any drugstore. Chains also need to bear for depreciation and amortization, third-party employees (e.g., security) and other expenses (e.g., freights and advertising). Being 90% of store expenses fixed, RD is highly exposed to operational leverage – with average consolidated SG&A accounting for 23.6% of total revenue from 2015 to 2018 –, hence suffering during bad business cycles. For instance, as competition started to tight up from 2016 on, an aggressive price war took place *(See Appendix 27)*, leading to an operational leverage diminishment *(See Exhibit 30)*. Finally, given RD's ongoing expansion plan, the company should initially lose part of its operational leverage as fixed costs keep increasing. Such process should be reverted and surpassed as we expect a sector consolidation, store maturation, and a digitalization process to occur in the coming years, so that RD shall benefit further from operational leverage.
- **We reap what we sow**. RD faces a high potential to consolidate and explore new markets. Nevertheless, the company's expansion plan shall diminish as markets become saturated. By then, the company's results may finally benefit from stores' maturation, implying: (i) higher revenue per store; (ii) greater operational leverage; and (iii) stronger EBITDA margin *(See Exhibit 34)*. As of LTM, only 65.3% of RD's stores were mature, a figure which we expect to grow considerably. Finally, as the company is practically unleveraged, such process should also be reflected on the EBT and net margins, which we expect to grow by 3.5pp from 2018 to 2019

Exhibit 34: RD EBITDA Margin Gains from Stores Maturation

Source: Company's data, team estimates



Value creator. Using *DuPont* to analyze the sources of value creation to the shareholder *(See Exhibit 31)*, it seems clear how important the store maturation process will become for the company and its shareholders in the long-run. As RD's conservative board of directors avoids leveraging the company at any cost, the growth of revenue per store and market-share gain shall be fundamental to increases on net margin and return on asset, which in turn will be the root for ROE growth in the long-run. Lastly, RD's 2020E ROE exceeds the 11% *Ke* by 7.57pp *(See Exhibit 32)*.

The best prescription is to grow unlevered. Unlike RD, DPSP and Pague Menos operate with reasonable leverage, raising new debt to finance expansion. Nevertheless, in an industry with squeezed margins, operating unleveraged is an advantage, especially during high interest scenarios. In the course of the 2015 crisis, for instance, both DPSP and Pague Menos presented a Net Debt/EBITDA of 1.4x and 2.8x, respectively, against RD's 0.0x. As interest rates rose, both chains' EBT margins were impacted, while RD's remained stable *(See Exhibit 35)*.

Exhibit 35: EBIT Margins *versus* Selic Rate

Source: Companies' data

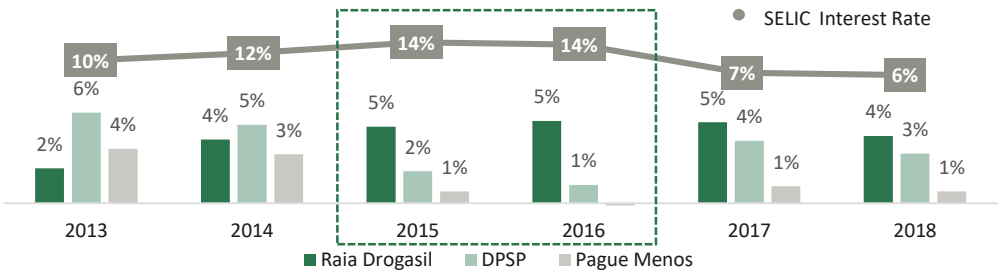


Exhibit 36: SSS Mature Stores

Source: Company's data, team estimates

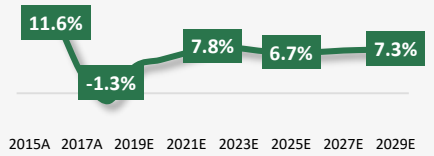


Exhibit 37: Projected Store Openings

Source: Team estimates

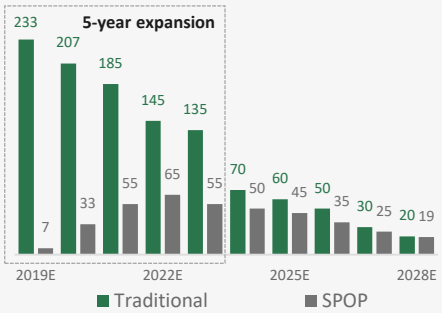


Exhibit 38: Valuation Breakdown

Source: Team estimates

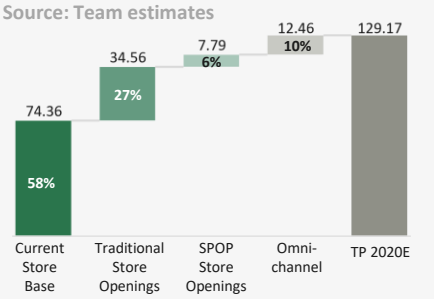


Exhibit 39: Consolidated Revenue Breakdown

Source: Team estimates

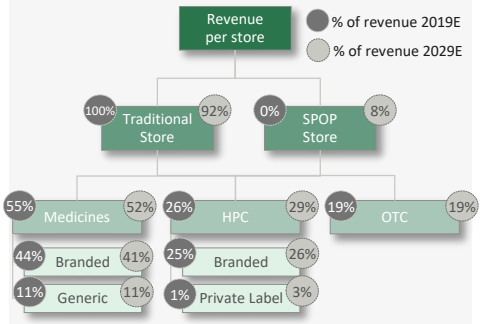


Exhibit 40: Margins Evolution

Source: Team Estimates

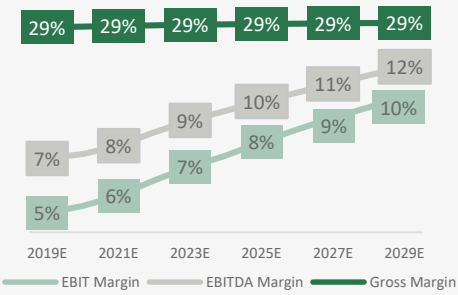
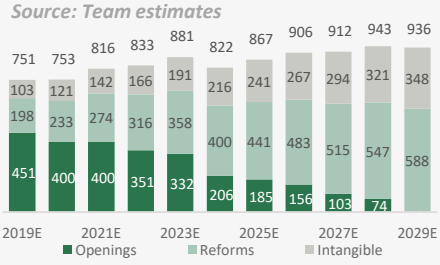


Exhibit 41: *CapEx* Breakdown Evolution

Source: Team estimates



Payback time. While its main competitors fall back from an unsuccessful expansion plan, RD's guidance for 2019 and 2020 is of 240 yearly openings, but we estimate such number to decrease over time. According to our expansion analysis *(See Expansion Potential on page 6)*, RD will open 1,429 stores up until 2029. As openings decelerate, reform CapEx should become more relevant in total fixed asset investments *(See Exhibit 33)*.

Net cash ahead. RD does not intend to take new debts and will keep deleveraging its capital structure and increasing its payout ratio. We modeled all RD's debt contracts considering monthly payments and, according to our estimates, RD will be net cash in 2023E, increasing its payout ratio gradually up to 80% in 2027, resulting in a cash position of BRL 1.65 bn in that same year.

Inventory optimization. In 2018, due to an aggressive increase in competition, RD sacrificed the inventory turnover to protect its gross margins, by agreeing on better buying terms with suppliers. As main players fell back and gave up on pressuring prices, RD reduced its inventory turnover in 11.4 days from 2018 to 2LTM19. With digital transformation in sight, extensive use of data should enhance demand forecasts, reducing turnover days and optimizing cash conversion. Thus, bargaining power coming from suppliers or customers seems unlikely

Brighter future. Mature stores' SSS varied during recent years *(See Exhibit 36)*. In 2015, its high value was due to the synergies the company was still collecting from its integration process completed in 2014. However, all retailers' SSS suffered badly from the war price scenario in the following years, reaching -1.3% in 2018. Now, 2019 is being a year of adjustments. As RD is managing to grow its SSS again, it should stabilize in the next 5 years. Ultimately, SSS should also increase due to the omnichannel development, with RD growing with a premium above market.

Valuation

We reiterate our BUY recommendation on Raia Drogasil, with a target price of BRL 129.17 for December 2020, representing an upside of 25.6% to the closing price of 10/17/19. Our view is based on a 10-year Discounted Cash Flow (DCF) model, which was corroborated by a multiple-based analysis. Also, we have built three scenarios, a sensitive analysis, and a Monte Carlo analysis as a sanity check. In this section we break down the main premises of our valuation and its methodology.

Revenue Assumptions

Store openings. We have projected an expansion cycle of 1,524[1] store openings up until 2029, and 1,120 stores up until 2024 *(See Expansion Potential on page 6)*. Regarding the next five years expansion, we expect 905 traditional format stores, focused on high income costumers, and 215 under the Super Popular format (SPOP), focused on lower income customers *(See Exhibit 37)*. Furthermore, we expect an expansion slowdown for the last five years of projections, with a total openings of 404 stores, being 230 in the traditional format and 174 in the SPOP format. Furthermore, expansion through traditional store openings represents 27% of our 2020E target price valuation, while through SPOP format is 6%. *(See Exhibit 38)*. We highlight that, according to the company's history, each new store has a maturity curve of five years in terms of revenue, 50% of them maturing in *Year 1* and 100% in *Year 5*.

Revenue per format. Our growth expectations per product category in each of the store formats suggest a gradual change in the consolidated sales mix *(See Exhibit 39)*.

- **Traditional format.** Firstly, we have projected medicine revenue growth based on IQVIA projections, which we adjusted by accounting for RD's historical matured SSS and by assuming that branded and generics will maintain their historical revenue proportion of 80%/20%. In addition, we have projected HPC sales based on Euromonitor's forecasts. Despite that, we believe private label products will go from a 4% share of total HPC sales in 2019E to 10% in 2023 – according to the company's guidance –, which is in line with the expanding participation of brands like Needs, for instance, in the HPC product mix. Lastly, we also expect OTC to grow in line with Euromonitor market projections.
- **Super popular format.** Private labels and generics shine under the super popular format, given their lower prices. Besides, it should correspond to 8% of total consolidated revenue in 2029 *(See Exhibit 39)*. To better understand such format, we have conducted a case study of the Ultra Popular drugstore chain (667 stores), one of Febrafar's associated chains *(See Appendix 13)*. This led us to project that generics and branded will account, respectively, for 35% and 65% of total medicines. In addition, we expect private labels to constitute 10% of total HPC sales by 2019, gradually growing up to 20% by 2029E.

The future is near. We reiterate that RD's omnichannel strategy is an important factor for its expansion maintenance after 2024, as store openings should diminish *(See Digital Strategy on page 6)*. We estimate that matured stores' SSS will grow by an average of 1.2% above the industry between 2024 and 2029, given RD's digital transformation and omnichannel head start. This represents 10% of our 2020E target price *(See Exhibit 38)*.

Margins Assumptions

COGS. Given the projected revenue and the assumption of constant gross margins per product category – in line with the company's historical – we have managed to forecast the cost of goods sold for each year. We have utilized a branded margin of ~20%; generics ~50%; OTC ~30%; HPC branded ~30%; and private label ~50%. The overall gross margin is be expected to grow, given RD's adoption of the super popular format and the prospected gradual mix adjustment towards higher margin categories. However, due to such store format's low representation in the consolidated revenue, gross margins should grow from 28.6% in 2018 to just 29.2% in 2029E *(See Exhibit 40)*.

SG&A. RD's top expenses vary according to store format, and could be divided into personnel, rental, energy, and other expenses. Regarding *(i) Personal expenses*, we have identified that the traditional format has 16 employees per store, against only 12 in the popular format. This is because the popular store remains opened for less daily hours. Besides, pharmacists tend to work as the managers of such stores, which represents an economy given those positions' elevated wages. *(ii) Rental expenses* were adjusted by the projected IGPM. While representing 3.8% of a traditional store's revenue, it represents 2.8% for super popular stores. We found this to be in line with the benchmarking done with *Ultra Popular*, apart from the fact that nobler stores tend to present higher rentals due to a locality premium. Regarding *(iii) energy expenses*, we have projected a 20% efficiency gain to take place in 1,700 traditional stores over the course of five years, due to the implementation of photovoltaic energy, in line with RD's guidance. For both formats, energy expenditure was adjusted by inflation. Finally, *(iv) Other expenses and third-parties* remained growing as a percentage of revenue for both formats, in line with the company's history.

Recovering operational margins. EBIT margin gains are to be derived from revenue gains added to cost efficiency, that being magnified by RD's operational leverage – as 90% of store costs are fixed and a cost structure reduction should emerge from the company's adoption of the popular formats. Therefore, we expect the EBIT margin to reach 6.4% by 2024 *(See Exhibit 40)*. This represents a recovery from the 2017 and 2018 operational decline caused by the price war and signals a comeback to historical margin levels. For instance, RD's EBIT margin was of 6.0% in 2016.

CapEx Assumptions

Expansion requires cash. There will be a significant amount of cash going towards *CapEx* in the following years due to RD's expansion plan *(See Exhibit 41)*. Analyzing its historical *CapEx*, we have identified that the amount required to open a traditional store in 2018 was BRL 1.63 million. Furthermore, case studies regarding Febrafar's and Abrafarma's chains provided us benchmarks which suggest a SPOP store should cost BRL 1.0 million to be opened. Additionally, we expect both formats' *CapEx* to grow by inflation. Since RD is going through an expansion cycle, we have projected an openings *CapEx* of roughly BRL 2 billions for the next 5 years. Nevertheless, such amount should decrease to approximately BRL 750 million for the 2024-2029 period. Moreover, intangible *CapEx* is expected to track its past record, being set as 0.6% of gross revenue. Lastly, maintenance *CapEx* for traditional and SPOP stores are set, respectively, at BRL 92,000 and BRL 62,000, both representing 6% of the its opening *CapEx*.

[1] 1,429 stores to be opened, plus 95 already opened during 1H19.

Exhibit 42: Working Capital Days

Source: Team elaboration

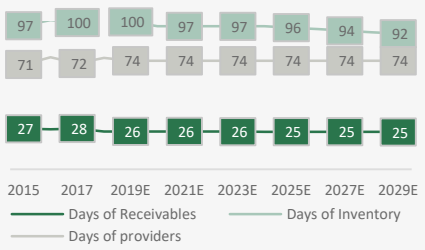


Exhibit 43: *Ke* Calculation

Source: Team estimates

Risk Free Rate	1.94%
Re-levered Beta	0.81
Equity Risk Premium	5.75%
Country Risk Premium	2.90%
Inflation Differential	1.50%
BRL – Cost of Equity (Ke)	**11.00%**

Exhibit 44: Sensitivity Analysis

Source: Team estimates

G / Ke	10.0%	10.5%	11.0%	11.5%	12.0%
5.0%	22.7%	15.4%	8.9%	-0.6%	-8.7%
5.5%	32.5%	24.0%	16.5%	5.6%	-3.6%
6.0%	44.6%	34.4%	25.6%	12.9%	2.4%
6.5%	59.7%	47.4%	36.7%	21.7%	9.5%
7.0%	79.4%	63.8%	50.5%	32.4%	18.0%

Exhibit 45: Bear, Base & Bull Scenarios

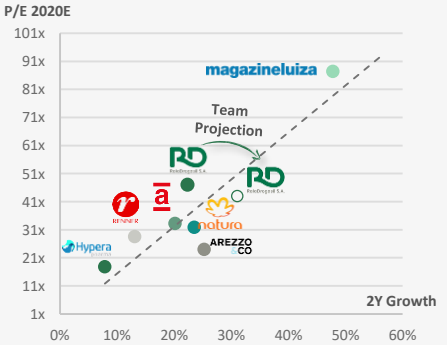
Source: Team estimates

	Bear	Base	Bull
Trad. Stores openings	907	1,135	1220
Trad. Capex openings	1.8	1.6	1.5
Power Efficiency	0%	100%	110%
% Private Label in 23E	6%	10%	12%
SPOP Stores openings	195	389	467
SPOP Capex openings	1.1	1.0	0.9
% Generics SPOP	25%	35%	45%
% Private Label in 19E	4%	10%	15%
Generics Margin	45%	50%	55%
HPC Margin	20%	25%	30%
Accounts Receivables	26	20	19
Inventory	97	95	92
Medicines Growth	5.2%	5.7%	6.0%
OTC Growth	5.6%	6.1%	6.3%
HPC Growth	6.0%	6.5%	6.8%
Revenue	14.0%	16.7%	17.7%
EBITDA	17.3%	23.1%	25.5%
Upside / Downside	**-11.4%**	**25.6%**	**46.5%**

Traditional Format · Both Formats · SPOP Format · Outputs

Exhibit 46: Relative Valuation

Source: Bloomberg, team estimates



Working Capital Assumptions

Efficiency coming from focusing on SPOP and Digital Transformation. We have projected RD's Working Capital as Accounts Receivables, Inventory, and Providers – the first as days of revenue and the last two as days of COGS. Firstly, we strongly believe that RD is going to reduce its days of receivables. This is due to an expected growth in the volume of cash payments driven by SPOP stores, given that the credit card penetration on the lower income class is lower than in high income. Secondly, we have projected RD's days of inventory returning to its historical level, since 2018 was an atypical year – in 2T19, RD already showed 97 days of inventory. Lastly, we believe RD's digital transformation will allow it to predict its required inventory, further diminishing such metric *(See Exhibit 42)*.

Debt Assumptions

Cash generation is enough for debt amortization. We have modelled all RD's debt contracts monthly in order to project interest expenses and debt amortization *(See Appendix 28)*. We have found out that RD can repay its debt, even with large sums to be payed in 2020 and 2021, with its cash generation, not requiring additional debt. Thus, with those premises and RD's guideline that it looks to deleverage in the future, even getting to a net cash position, we project that RD will not pickup additional debt in the future.

DCF Methodology

Cost of equity. Since we have used FCFE to capture changes in RD's capital structure, we have adopted the *Ke* as our discount rate based on the CAPM. We have obtained a *Ke* of 11.00%, considering (i) a risk-free rate of 1.94%; (ii) an re-levered beta of 0.81, based on national and international drug retail comparable *(See Appendix 06)*; (iii) an equity risk premium of 5.75% calculated using Ibbotson's series; (iv) a country risk equal to the Brazilian 10-year CDS of 2.90%; and (v) an inflation differential of 1.5%, considering long-term inflation projections for the U.S. and Brazil, which was used to convert our *Ke* from USD to BRL *(See Exhibit 43)*.

Terminal value. RD's cashflow is projected to grow 6% in perpetuity, based on (i) BRL long-term inflation of 3.5% and (ii) BRL long-term GDP of 2.5%. However, given our valuation's sensibility to the *Ke* and perpetuity growth, we have conducted a sensitivity analysis, in which an upside is present among 72% of the simulations *(See Exhibit 44)*.

Bull or bear? We have recalculated the target price for two different scenarios, optimistic and pessimistic, stressing out our most important assumptions in the model *(See Exhibit 45)*

- **Bad, but not that bad.** Our bear case assumes RD would underperform our expectations, leading to a 11.4% downside, in which the stock would go to BRL 91.15 *(See Exhibit 48)*. We have projected RD's openings 422 stores below our base case, assuming just 50% of new SPOP stores would work out. As for revenue, we have projected medicines, OTC, and HPC sales to increase less than expected, reducing each category's growth in 500bps. Also, we have projected generics and HPC margins squeezing in the SPOP format, given its focus on lower-income. Besides, as we expect an efficiency gain in inventory days promoted by the omnichannel, the worst that could happen is RD keeping its historical 97 days of inventory. These and other assumptions generate a scenario of 14.0% and 17.3% $CAGR_{19E-24E}$ for revenue and EBITDA, respectively.
- **Bold, but possible.** Our bull scenario assumes RD would outperform our expectations, leading to a 46.5% upside, in which the stock would go to BRL 150.7 *(See Exhibit 48)*. We have projected RD's openings 163 stores above our base case. With such a tougher expansion place, we see it gaining power to grow margins in medicines, OTC and HPC. Also, RD would be even more successful on its omnichannel, becoming able to forecast its demand more easily, further reducing its days of inventory. Those and other assumptions generate a scenario of 17.7% and 25.5% $CAGR_{19E-24E}$ of revenue and EBITDA, respectively.
- **A sanity check.** We have executed a Monte Carlo analysis to understand how multiple different scenarios could impact our results. By testing 2,000 combinations of assumptions *(See Exhibit 45)*, we have concluded that a buy recommendation would be kept in 61.4% of the cases *(See Exhibit 47)*.

Exhibit 47: Monte Carlo Analysis

Source: Team estimates

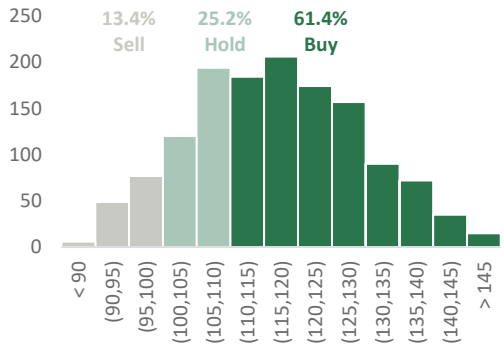
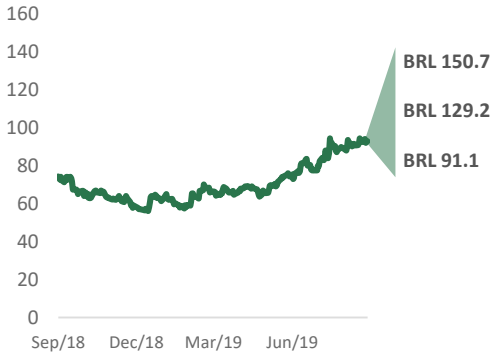


Exhibit 48: Stock Price - Bear, Base & Bull

Source: Team estimates



Multiples Analysis

It's about growth. RaiaDrogasil currently trades at 47.8x P/E for YE20, due to confidence over management execution and the success of its expansion plan, which is expected to result in an EPS growth of 66% from 2019 to 2021. One of the greatest characteristics of RD is its operational leverage and its potential of net margin expansion through store maturation, which is not fully captured in a static multiple, especially as only ~60% of RD's stores are fully maturated. To better address this particularity, we regressed the P/E with the projected CAGR from 2020 to 2022, by using a set of comparable that included peers in line with RD's growth profile, such as premium retailers (Renner, Lojas Americanas, Natura, Arezzo), Hypera (as it is the closest peers to its value chain) and Magazine Luiza (as a digital transformation benchmark). By incorporating our estimates into actual price, we see that although RaiaDrogasil trades at a demanding valuation, its growth potential sustains the call.

Investment Risks

Being traded at a demanding valuation, RD has little margin for mistakes or surprises. As made evident in 2018, small or temporary signs of potential underperformance can badly hit the company's stock price. Still, since the company's management is aware of that, mitigation strategies are held for most of the relevant risks.

Tragedy of the Commons

Follow like sheep. Competitors focus on two major challenges: providing good prices and amazing locations. Customers tend to pick the closest drugstores, and, more specifically, those *perceived to be* the cheapest. This happens because SKU's sold across near drugstores are pretty much the same, in a way retailers which impose the smallest prices end up conquering clients, as long as they are not too far away. This leads to a *Tragedy of The Commons* scenario *(See Appendix 29)* which may lead to (i) the operational risk of cannibalization and/or (ii) the industry risk of a price war.

Exhibit 49: Risk Matrix

Source: Team elaboration

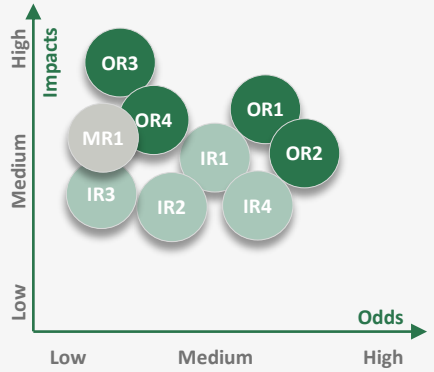


Exhibit 50: Cannibalization: Stores %

Source: Company's data, team elaboration

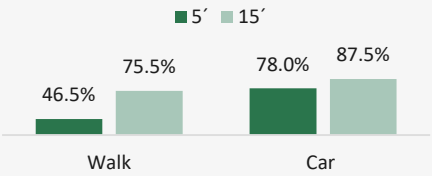


Exhibit 51: Generics Discount vs. Upside – 20

Source: IQVIA, group elaboration

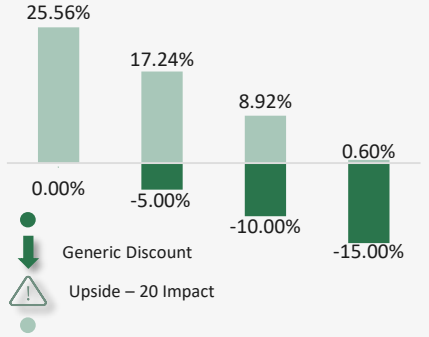


Exhibit 52: Downside of Super Popular Failure

Source: Team elaboration

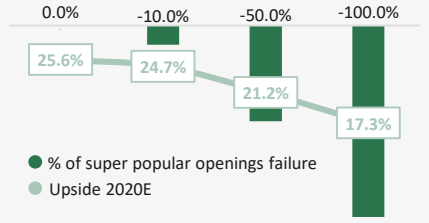


Exhibit 53: Fiercer Competition Impact

Source: Team estimates

Average	Median	Stand. Dev.
12.32%	12.48%	4.83%
CI(0.1232;0.95) = [21.9% ; 2,74%]		

Exhibit 54: US Yield Curve (2019) (*top*) & BRL/USD 1Y evolution (*bottom*)

Source: Bloomberg

- **Operational Risk 1 l Cannibalization**

A self-threat. Cannibalization takes place when an individual chain's store snatches revenue from another store of the same chain due to the small distance between them. Drugstores are naturally highly exposed to such effect *(See Appendix 31)*, that being a risk for our thesis, as it decreases revenue per store and impacts our valuation. To quantify RD's exposure levels, we have (i) mapped all its stores across Brazil[1], (ii) calculated the distance between each of them[2], and (iii) computed the % of vulnerable stores according to four scenarios: stores in a 5- *or* 15-minute drive *or* walk from each other. We assumed average speeds of 20km/h by car and 6km/h by foot.

As we see, cannibalization appears to be common amongst RD stores *(See Exhibit 50)*. If such percentage keeps increasing over time, RD's ROIC per store could be affected, punishing the company's valuation.

But how does RD mitigate this risk? The company has a strict openings policy: their per store IRR guidance is of 20% and the average observed IRR has never deviated from it. Thus, we evaluate there is no reason for this to change in the future, especially considering RD's cumulative openings know-how and the underdevelopment areas of data science and costumer analytics, which should allow it to progressively predict cannibalization with greater precision and, therefore, avoid it more accurately.

- **Industry Risk 1 l Price War**

A battle was won, but the war may not be over. If price competition tightens up, a decreased revenue could negatively impact RD's margins and ROIC, reducing its operational leverage and our 2020 upside. As to understand such scenario's impact on our valuation, we have reproduced the one observed during 2015-2018, stressing our model on a 5.0% to 15.0% perpetual discount in generics' margin starting at 2021, year in which a new expansion cycle is again plausible *(See Exhibit 51)*. Nevertheless, we ponder that such downside shall be avoided:

a) The recent price war scenario implicated on terrible results for RD competitors *(See Appendix 27)*, leading them to backup and cease their openings spree – or, even, to present negative net openings. Thus, we do not expect any similar movement to take place again any time soon.

b) Being generics' price elasticity of demand high, a price reduction is well compensated by an increase on volume sold, hence reducing the impact over the company's results *(See Appendix 32)*.

- **Operational Risk 2 l Unsuccessful Low-Income Market Expansion**

Different formats, same mistakes. Our valuation could be negatively affected by a scenario where RD's expansion to low-income markets fails, loosening the upside coming from the expansion plan as (i) the company would open less stores than expected or (ii) in order to keep expanding, it will need to expose itself to further cannibalization. To test such effect, we stressed our valuation in scenarios where 10%, 50% or 100% of the new super popular stores fail *(See Exhibit 52)*. Yet, we evaluate such risk to be of low probability, due to the lessons learned with Farmasil. As of today, with a completely redesigned popular store format, RD is already achieving amazing results, consolidating trust toward further expansion and strengthening our thesis. In fact, the 16 super popular stores in operation today present a revenue per store up to 48% higher than Farmasil's, even without reaching maturation.

- **Operational Risk 3 l Non-adherence to E-commerce**

Let's play traditional. An eventual resistance of RD's clients to migrate to digital platform would impact the third point of our thesis *(See Digital Strategy on page 6)*, badly compromising our valuation that would then register an upside of only 13.4%, which would be just 4.2pp above the company's estimated cost of equity of 11%. Nevertheless, that is not the story that numbers are telling us: In the LTM the company registered (i) 1 million new digital clients, (ii) an increase of 2.3x in its online audience, (iii) an over 12-million monthly access rate on its website and apps, and (iv) a 151% growth on its digital sales. In other words, this indicates a tendency that makes us judge this risk quite unlikely.

- **Industry Risk 2 l Rappi**

Dear frienemy. Rappi represents a risk for our valuation in two different ways: (i) by snatching RD clients that (a) before would walk or drive to the closest RD store to make a convenient purchase, but now just uses the app, reducing the company's revenue, as a percentage of it would stay with Rappi, and (ii) due to the ownership of client data, as purchases made through the app do not give RD any information about the customer, and this can hold back the company's path to the digital transformation. Yet, we reckon that (i) most of these clients who use Rappi are a different, practical type of clients, that otherwise would make no purchase at all. So, in that sense, we consider that in the long-run the app will end up adding to RD's net sales. Also, as just recently happened between *GPA* (Grupo Pão de Açúcar) and Rappi, (ii) our guess is that Rappi will settle a win-win agreement with other partner companies: in exchange for the partnership, Rappi would make client data available to RD. Ultimately, then, it should not represent a major risk for RD, eventually even becoming a partner in the long-run *(See Appendix 30)*.

- **Operational Risk 4 l The General Personal Data Protection Act (GDPA)**

You don't know me. The GDPA Act, which will go into effect in 2020, may harm our valuation as it compromises the third point or our thesis *(See Digital Strategy on page 6)*, what can make our 20E upside go from 25.56% to a 13.4% – if RD does not get any benefit at all from it (*See Appendix 23)*.

- **Industry Risk 3 l Fiercer Competition**

3, 2, 1, FIGHT! Should competition intensify and change market dynamics, RD – and, therefore, our valuation – could be negatively impacted by a decreased revenue per store. This could come through three different ways: (i) entrance of a big international player; (ii) national player capitalization, through an IPO or Private Equity firm investment, for instance; or (iii) a M&A between two of the main players *(See Appendix 33)*. Of course, this scenario's impact could come in a variety of ways. To analyze it, we have run 100 storyline combinations that impacted (i) openings and (ii) revenue per store on both Noble and Super Popular Formats *(See Exhibit 53)*. Still, we consider that, even if some of those scenarios materializes, there is no doubt that RD has the know-how and capitalization power to fight back. So, despite sufficiently possible, such scenarios impact should not be big.

- **Industry Risk 4 l OTC Sales by Supermarkets**

Who is the new player in town? A proposed bill (Nº 1774/19) is currently being debated in Congress regarding the possibility of OTC sales in supermarkets. In the case of its approval, drugstores could have a portion of its OTC sales plundered by supermarkets, hence increasing competition. Moreover, as supermarkets also commercialize HPCs, a fraction of such category's sales could also be threatened by cross-selling. Yet, as due to all the legal bureaucracy and the political noise that is observed in Brazil, we do not see this proposed bill being enacted later this year.

- **Macroeconomic Risk 1 l Global Economic Slowdown**

Should we all run to the hills? The possibility of a global recession starting to take place could negatively impact our valuation, as it could: (i) break the recovery momentum Brazil is finally building after four years of recession; (ii) harm emerging countries' financial markets as economic agents run towards safer assets – what may already be felt, as asset markets tend to adjust faster to shifting expectations than goods and services markets *(See Exhibit 54)*. This risk can affect RD in two different ways: (i) a real one, as GDP and local consumption could be negatively impacted by a decrease in national and global demand for domestic products; and (ii) one associated to a rising risk perception toward emergent economies due to their "naturally" volatile and unmatured markets, which could lead to: (a) international investments withdrawal, further diminishing GDP growth; and (b) a raise in the country's CDS, and therefore all Brazilian companies' cost of equity, RD's included.

[1] As of Sep-2019; [2] The distance was calculated in a straight-line base, which is a proxy for the real distance considering urban mobility.

- **Table of Contents**

• Appendix 01: Income Statement

BRL mn	2015A	2016A	2017A	2018A	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Gross Revenue	**9,296**	**11,828**	**13,852**	**15,519**	**18,233**	**21,409**	**25,136**	**29,383**	**33,853**	**38,221**	**42,706**	**47,326**	**51,993**	**56,814**	**61,643**
% of YOY growth		*27.2%*	*17.1%*	*12.0%*	*17.5%*	*17.4%*	*17.4%*	*16.9%*	*15.2%*	*12.9%*	*11.7%*	*10.8%*	*9.9%*	*9.3%*	*8.5%*
Deductions	(398)	(571)	(640)	(718)	(843)	(990)	(1,162)	(1,359)	(1,566)	(1,768)	(1,975)	(2,189)	(2,404)	(2,627)	(2,851)
Net Revenue	**8,898**	**11,257**	**13,213**	**14,801**	**17,390**	**20,419**	**23,973**	**28,024**	**32,287**	**36,454**	**40,731**	**45,138**	**49,589**	**54,187**	**58,792**
% of YOY growth		*26.5%*	*17.4%*	*12.0%*	*17.5%*	*17.4%*	*17.4%*	*16.9%*	*15.2%*	*12.9%*	*11.7%*	*10.8%*	*9.9%*	*9.3%*	*8.5%*
COGS	**(6,183)**	**(7,752)**	**(9,225)**	**(10,356)**	**(12,187)**	**(14,291)**	**(16,756)**	**(19,558)**	**(22,498)**	**(25,383)**	**(28,343)**	**(31,391)**	**(34,467)**	**(37,643)**	**(40,823)**
% of Gross Revenue	*66.5%*	*65.5%*	*66.6%*	*66.7%*	*66.8%*	*66.8%*	*66.7%*	*66.6%*	*66.5%*	*66.4%*	*66.4%*	*66.3%*	*66.3%*	*66.3%*	*66.2%*
Gross Income	**2,715**	**3,504**	**3,988**	**4,446**	**5,203**	**6,127**	**7,218**	**8,466**	**9,789**	**11,071**	**12,388**	**13,747**	**15,122**	**16,544**	**17,969**
% of YOY growth		*29.1%*	*13.8%*	*11.5%*	*17.0%*	*17.8%*	*17.8%*	*17.3%*	*15.6%*	*13.1%*	*11.9%*	*11.0%*	*10.0%*	*9.4%*	*8.6%*
% of Gross Margin	*29.2%*	*29.6%*	*28.8%*	*28.6%*	*28.5%*	*28.6%*	*28.7%*	*28.8%*	*28.9%*	*29.0%*	*29.0%*	*29.0%*	*29.1%*	*29.1%*	*29.2%*
SG&A	**(2,214)**	**(2,799)**	**(3,195)**	**(3,724)**	**(4,308)**	**(5,008)**	**(5,782)**	**(6,580)**	**(7,405)**	**(8,180)**	**(8,883)**	**(9,593)**	**(10,278)**	**(10,969)**	**(11,623)**
% of YOY growth		*26.4%*	*14.2%*	*16.5%*	*15.7%*	*16.3%*	*15.4%*	*13.8%*	*12.5%*	*10.5%*	*8.6%*	*8.0%*	*7.1%*	*6.7%*	*6.0%*
% of Gross Revenue	*23.8%*	*23.7%*	*23.1%*	*24.0%*	*23.6%*	*23.4%*	*23.0%*	*22.4%*	*21.9%*	*21.4%*	*20.8%*	*20.3%*	*19.8%*	*19.3%*	*18.9%*
Personal	(1,145)	(1,456)	(1,627)	(1,840)	(2,175)	(2,550)	(2,957)	(3,371)	(3,796)	(4,195)	(4,586)	(4,969)	(5,332)	(5,688)	(6,019)
Rent and Others	(344)	(441)	(506)	(591)	(694)	(794)	(898)	(994)	(1,091)	(1,168)	(1,244)	(1,318)	(1,386)	(1,451)	(1,506)
Energy	(65)	(83)	(97)	(109)	(123)	(137)	(151)	(164)	(176)	(193)	(210)	(226)	(240)	(255)	(268)
Third Parts	(102)	(125)	(150)	(162)	(197)	(238)	(284)	(335)	(390)	(445)	(503)	(562)	(622)	(684)	(746)
Others	(330)	(419)	(478)	(608)	(659)	(774)	(909)	(1,063)	(1,224)	(1,382)	(1,545)	(1,712)	(1,880)	(2,055)	(2,229)
EBITDA	**729**	**980**	**1,130**	**1,136**	**1,355**	**1,634**	**2,018**	**2,540**	**3,112**	**3,687**	**4,301**	**4,960**	**5,660**	**6,411**	**7,201**
% of YOY growth		*34.5%*	*15.4%*	*0.5%*	*19.3%*	*20.6%*	*23.5%*	*25.9%*	*22.5%*	*18.5%*	*16.6%*	*15.3%*	*14.1%*	*13.3%*	*12.3%*
% of EBITDA Margin	*7.8%*	*8.3%*	*8.2%*	*7.3%*	*7.4%*	*7.6%*	*8.0%*	*8.6%*	*9.2%*	*9.6%*	*10.1%*	*10.5%*	*10.9%*	*11.3%*	*11.7%*
Depreciation and Amortization	**(228)**	**(274)**	**(338)**	**(414)**	**(460)**	**(515)**	**(582)**	**(654)**	**(729)**	**(796)**	**(795)**	**(806)**	**(816)**	**(837)**	**(855)**
EBIT	**501**	**706**	**793**	**722**	**895**	**1,119**	**1,435**	**1,886**	**2,384**	**2,891**	**3,505**	**4,154**	**4,844**	**5,575**	**6,346**
% of YOY growth		*40.9%*	*12.3%*	*-9.0%*	*24.0%*	*25.1%*	*28.3%*	*31.4%*	*26.4%*	*21.3%*	*21.3%*	*18.5%*	*16.6%*	*15.1%*	*13.8%*
% of EBIT Margin	*5.4%*	*6.0%*	*5.7%*	*4.6%*	*4.9%*	*5.2%*	*5.7%*	*6.4%*	*7.0%*	*7.6%*	*8.2%*	*8.8%*	*9.3%*	*9.8%*	*10.3%*
Financial Result	**0**	**1**	**(9)**	**(31)**	**(44)**	**(25)**	**(24)**	**(19)**	**(5)**	**11**	**41**	**62**	**96**	**116**	**148**
Interest Incomes	30	23	27	13	11	30	30	23	27	38	66	85	101	116	148
Interest Expenses	(30)	(22)	(37)	(43)	(55)	(55)	(54)	(42)	(32)	(28)	(25)	(23)	(6)	-	-
EBT	**501**	**707**	**783**	**691**	**851**	**1,094**	**1,411**	**1,867**	**2,379**	**2,901**	**3,546**	**4,216**	**4,940**	**5,690**	**6,494**
% of YOY growth		*41.0%*	*10.8%*	*-11.8%*	*23.3%*	*28.5%*	*29.0%*	*32.3%*	*27.4%*	*22.0%*	*22.2%*	*18.9%*	*17.2%*	*15.2%*	*14.1%*
% of EBIT Margin	*5.4%*	*6.0%*	*5.7%*	*4.5%*	*4.7%*	*5.1%*	*5.6%*	*6.4%*	*7.0%*	*7.6%*	*8.3%*	*8.9%*	*9.5%*	*10.0%*	*10.5%*
Income Tax	**(96)**	**(144)**	**(174)**	**(130)**	**(213)**	**(274)**	**(353)**	**(467)**	**(595)**	**(725)**	**(887)**	**(1,054)**	**(1,235)**	**(1,423)**	**(2,208)**
% Tax Rate	*19.2%*	*20.4%*	*22.2%*	*18.8%*	*25.0%*	*25.0%*	*25.0%*	*25.0%*	*25.0%*	*25.0%*	*25.0%*	*25.0%*	*25.0%*	*25.0%*	*34.0%*
Net Income	**405**	**563**	**609**	**561**	**639**	**821**	**1,059**	**1,400**	**1,784**	**2,176**	**2,660**	**3,162**	**3,705**	**4,268**	**4,286**
% of YOY growth		*38.9%*	*8.3%*	*-7.9%*	*13.8%*	*28.5%*	*29.0%*	*32.3%*	*27.4%*	*22.0%*	*22.2%*	*18.9%*	*17.2%*	*15.2%*	*0.4%*
% of Net Margin	*4.4%*	*4.8%*	*4.4%*	*3.6%*	*3.5%*	*3.8%*	*4.2%*	*4.8%*	*5.3%*	*5.7%*	*6.2%*	*6.7%*	*7.1%*	*7.5%*	*7.0%*

• Appendix 02: Balance Sheet

BRL mn	2015A	2016A	2017A	2018A	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Cash and Equivalents	266	277	265	242	597	463	327	384	549	942	1,211	1,444	1,654	2,114	2,605
Accounts Receivable	700	877	1,049	1,094	1,285	1,507	1,766	2,060	2,368	2,667	2,974	3,290	3,610	3,941	4,273
Inventory	1,650	2,149	2,518	3,087	3,339	3,798	4,453	5,198	5,979	6,746	7,501	8,273	9,046	9,839	10,625
Other Current Assets	69	124	97	107	125	147	173	202	233	263	294	326	358	391	424
Current Assets	2,686	3,428	3,928	4,530	5,346	5,916	6,719	7,844	9,128	10,617	11,980	13,333	14,668	16,284	17,928
PP&E	802	1,007	1,276	1,547	1,845	2,081	2,304	2,463	2,584	2,572	2,601	2,655	2,702	2,759	2,793
Intangible	1,167	1,174	1,191	1,202	1,197	1,199	1,210	1,231	1,262	1,300	1,342	1,389	1,437	1,486	1,533
Other Non-Current Assets	44	51	69	73	86	100	118	138	159	179	200	222	244	267	289
Non-Current Assets	2,013	2,232	2,536	2,822	3,127	3,380	3,632	3,832	4,005	4,051	4,144	4,266	4,383	4,512	4,615
Total Assets	**4,699**	**5,659**	**6,464**	**7,352**	**8,473**	**9,296**	**10,351**	**11,676**	**13,133**	**14,668**	**16,124**	**17,599**	**19,052**	**20,796**	**22,543**
Social and Labor Obligations	165	199	203	238	275	319	369	420	472	522	567	612	656	700	741
Providers	1,203	1,616	1,816	2,141	2,458	2,882	3,379	3,944	4,537	5,119	5,716	6,330	6,950	7,591	8,232
Tax Obligations	56	97	130	93	109	128	151	176	203	229	256	283	311	340	369
Current Loans	108	133	196	273	360	276	205	153	126	115	103	49	0	-	-
Other Current Liabilities	102	119	137	144	169	198	232	271	313	353	395	438	482	528	573
Current Provisions	14	22	12	25	29	34	40	46	54	60	68	75	82	90	97
Current Liabilities	1,649	2,185	2,494	2,913	3,400	3,837	4,374	5,010	5,705	6,398	7,103	7,787	8,482	9,249	10,013
Non- Current Loans	188	281	415	570	760	582	432	322	266	242	217	103	1	-	-
Others Non-Current Liabilities	36	61	69	47	55	65	76	89	102	116	129	143	157	172	186
Defered Tax	166	193	229	238	279	328	385	450	519	586	654	725	797	870	944
Non- Current Provisions	3	3	8	49	57	67	79	93	107	120	135	149	164	179	194
Non-Current Liabilities	394	539	720	904	1,152	1,042	972	954	994	1,063	1,135	1,120	1,118	1,221	1,325
Total Liability	**2,042**	**2,723**	**3,214**	**3,817**	**4,552**	**4,879**	**5,346**	**5,963**	**6,698**	**7,461**	**8,238**	**8,907**	**9,600**	**10,470**	**11,338**
Common Stock	1,809	1,809	1,809	1,809	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
Capital Reserves	129	139	151	116	116	116	116	116	116	116	116	116	116	116	116
Profit Reserves	714	980	1,281	1,593	1,285	1,777	2,359	3,060	3,773	4,535	5,200	5,990	6,731	7,585	8,442
AAP	(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)
Non-Controling Interest	23	26	28	35	38	42	47	54	63	74	88	103	122	143	165
Equity	**2,657**	**2,936**	**3,250**	**3,535**	**3,921**	**4,417**	**5,005**	**5,712**	**6,435**	**7,207**	**7,886**	**8,692**	**9,451**	**10,326**	**11,205**
Total liability and shareholders equity	**4,699**	**5,659**	**6,464**	**7,352**	**8,473**	**9,296**	**10,351**	**11,676**	**13,133**	**14,668**	**16,124**	**17,599**	**19,052**	**20,796**	**22,543**

• Appendix 03: Cash Flow

BRL mn	2015A	2016A	2017A	2018A	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Net Income	-	563	609	561	639	821	1,059	1,400	1,784	2,176	2,660	3,162	3,705	4,268	4,286
Depreciation and Amortization	-	274	338	414	460	515	582	654	729	796	795	806	816	837	855
Change in the Net Working Capital	-	(264)	(340)	(289)	(126)	(257)	(417)	(473)	(496)	(484)	(466)	(474)	(472)	(482)	(478)
Change in Other Assets	-	(61)	10	(14)	(31)	(37)	(43)	(49)	(52)	(51)	(52)	(53)	(54)	(56)	(56)
Change in Other liabilities	-	151	93	46	141	167	192	214	224	217	217	223	223	229	227
Cash Flow from Operations	**-**	**663**	**711**	**717**	**1,082**	**1,208**	**1,373**	**1,746**	**2,189**	**2,655**	**3,154**	**3,664**	**4,217**	**4,795**	**4,835**
Capex	-	(486)	(625)	(696)	(751)	(753)	(816)	(833)	(881)	(822)	(867)	(906)	(912)	(943)	(936)
Cash Flow from Investing	**-**	**(486)**	**(625)**	**(696)**	**(751)**	**(753)**	**(816)**	**(833)**	**(881)**	**(822)**	**(867)**	**(906)**	**(912)**	**(943)**	**(936)**
Debt Issue / Paid	-	97	169	217	332	(209)	(168)	(120)	(50)	(9)	(11)	(145)	(144)	-	-
Interests Paid	-	(22)	(37)	(43)	(55)	(55)	(54)	(42)	(32)	(28)	(25)	(23)	(6)	-	-
Common Stock Issue / Paid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dividends Paid	-	(153)	(171)	(174)	(255)	(328)	(476)	(700)	(1,071)	(1,414)	(1,995)	(2,372)	(2,964)	(3,414)	(3,429)
Other activities	-	3	2	7	3	4	5	7	9	11	13	16	19	21	21
Cash Flow from Financing	**-**	**(75)**	**(37)**	**7**	**25**	**(588)**	**(693)**	**(855)**	**(1,144)**	**(1,440)**	**(2,018)**	**(2,524)**	**(3,095)**	**(3,393)**	**(3,407)**
Total Cash Inflow	**-**	**102**	**49**	**28**	**355**	**(133)**	**(136)**	**57**	**165**	**393**	**269**	**233**	**210**	**460**	**491**
Cash Position - BoP	-	266	277	265	242	597	463	327	384	549	942	1,211	1,444	1,654	2,114
Cash Position - EoP	**266**	**277**	**265**	**242**	**597**	**463**	**327**	**384**	**549**	**942**	**1,211**	**1,444**	**1,654**	**2,114**	**2,605**

Source: Company's data and Team Estimates.

Appendix 04: Free Cash Flow to Equity – FCFE

BRL mn	2016A	2017A	2018A	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Net Income	563	609	561	639	821	1,059	1,400	1,784	2,176	2,660	3,162	3,705	4,268	4,286
Interest Income	18	21	10	9	22	23	17	20	29	49	64	76	87	98
Adjusted Net Income	**544**	**588**	**551**	**630**	**798**	**1,036**	**1,383**	**1,764**	**2,147**	**2,610**	**3,098**	**3,629**	**4,181**	**4,188**
Depreciation & Amortization	274	338	414	460	515	582	654	729	796	795	806	816	837	855
Change in the Net Working Capital	(264)	(340)	(289)	(126)	(257)	(417)	(473)	(496)	(484)	(466)	(474)	(472)	(482)	(478)
Capex	(486)	(625)	(696)	(751)	(753)	(816)	(833)	(881)	(822)	(867)	(906)	(912)	(943)	(936)
Change in Debt	97	169	217	332	(209)	(168)	(120)	(50)	(9)	(11)	(145)	(144)	-	-
Free Cash Flow to Equity	**166**	**131**	**197**	**544**	**94**	**217**	**610**	**1,065**	**1,629**	**2,061**	**2,379**	**2,917**	**3,592**	**3,630**

Appendix 05: Equity Value & Upside Over Time

BRL mn		2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E
Equity Value		**38,242**	**42,349**	**46,777**	**51,278**	**55,795**	**60,216**	**64,666**	**69,271**	**73,817**	**78,150**
Shares Outstanding		330	330	330	330	330	330	330	330	330	330
Target Price		116	128	142	155	169	182	196	210	223	237
Dividends per share		1	1	1	2	3	4	6	7	9	10
Total Target Price	*Current Price*	117	129	143	157	172	187	202	217	232	247
% of Upside	102.9	**13.3%**	**25.6%**	**39.0%**	**52.9%**	**67.3%**	**81.3%**	**96.1%**	**110.8%**	**125.9%**	**140.0%**

Appendix 06: Cost of Equity (Ke) Calculation

Comparables	Beta	Country	Debt	Eqv. Value	Tax	Debt/Equity	Unl. Beta	Ajust. Beta
Walgreens Boots Alliance Inc	1.021	United States	17,610	49,980	21%	0.35	0.80	0.87
Cvs Health Corp	1.242	United States	91,923	82,491	21%	1.11	0.66	0.81
Clicks Group Ltd	0.352	South Africa	-	3,955	28%	-	0.35	0.57
Dimed Sa Distribuidora De Me	0.122	Brazil	117	490	34%	0.24	0.11	0.40
Corporativo Fragua Sab De Cv	-0.113	Mexico	157	1,121	30%	0.14	-0.10	0.26
Inretail Peru Corp	0.252	Peru	1,965	3,814	30%	0.52	0.18	0.46
Profarma Distribuidora	0.376	Brazil	235	121	34%	1.94	0.16	0.44
Mckesson Corp	1.12	United States	9,877	26,656	21%	0.37	0.87	0.91
Cardinal Health Inc	1.368	United States	8,031	14,582	21%	0.55	0.95	0.97
Diplomat Pharmacy Inc	1.473	United States	598	426	21%	1.40	0.70	0.81
AmerisourceBergen	1.341	United States	4,601	17,074	21%	0.27	1.11	1.07
						Median	0.66	0.81

Re-Leverage Beta	Country	Debt	Eqv. Value	Tax	Debt/Equity	Unl. Beta	Ajust. Beta
Raia Drogasil	Brazil	843	33,990	34%	-	0.66	0.81

Ke Builder	
Risk-Free Rate	1.94%
Equity Risk Premium	5.75%
Re-Leverage Beta	81.00%
Country Risk Premium	2.90%
Cost of Equity USD	**9.50%**
BRL Long Term Inflation	3.50%
USD Long Term Inflation	2.00%
Inflation Differential	1.50%
Cost of Equity BRL	**11.00%**

Appendix 07: Projected Revenue Breakdown per Mix & Store Format

BRL mn	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Medicines	**9,979**	**11,663**	**13,610**	**15,792**	**18,022**	**20,218**	**22,471**	**24,792**	**27,142**	**29,583**	**32,045**
% of revenue	*54.7%*	*54.5%*	*54.1%*	*53.7%*	*53.2%*	*52.9%*	*52.6%*	*52.4%*	*52.2%*	*52.1%*	*52.0%*
Branded	7,947	9,280	10,812	12,520	14,260	15,969	17,719	19,523	21,352	23,253	25,178
% of revenue	*43.6%*	*43.3%*	*43.0%*	*42.6%*	*42.1%*	*41.8%*	*41.5%*	*41.3%*	*41.1%*	*40.9%*	*40.8%*
Generics	2,031	2,383	2,798	3,272	3,762	4,250	4,752	5,269	5,791	6,330	6,867
% of revenue	*11.1%*	*11.1%*	*11.1%*	*11.1%*	*11.1%*	*11.1%*	*11.1%*	*11.1%*	*11.1%*	*11.1%*	*11.1%*
OTC	**3,453**	**4,042**	**4,729**	**5,509**	**6,342**	**7,167**	**8,012**	**8,879**	**9,748**	**10,640**	**11,526**
% of revenue	*18.9%*	*18.9%*	*18.8%*	*18.7%*	*18.7%*	*18.8%*	*18.8%*	*18.8%*	*18.7%*	*18.7%*	*18.7%*
Total HPC	**4,801**	**5,705**	**6,796**	**8,081**	**9,488**	**10,836**	**12,223**	**13,655**	**15,103**	**16,591**	**18,072**
% of revenue	*26.3%*	*26.6%*	*27.0%*	*27.5%*	*28.0%*	*28.4%*	*28.6%*	*28.9%*	*29.0%*	*29.2%*	*29.3%*
HPC Branded	4,554	5,342	6,281	7,369	8,537	9,697	10,887	12,107	13,328	14,574	15,802
% of revenue	*25.0%*	*25.0%*	*25.0%*	*25.1%*	*25.2%*	*25.4%*	*25.5%*	*25.6%*	*25.6%*	*25.7%*	*25.6%*
Private Label	247	362	515	712	952	1,139	1,336	1,549	1,775	2,017	2,270
% of revenue	*1.4%*	*1.7%*	*2.0%*	*2.4%*	*2.8%*	*3.0%*	*3.1%*	*3.3%*	*3.4%*	*3.6%*	*3.7%*
Total Consolidated Revenue	**18,233**	**21,409**	**25,136**	**29,383**	**33,853**	**38,221**	**42,706**	**47,326**	**51,993**	**56,814**	**61,643**
Tradicional Stores	**18,213**	**21,276**	**24,760**	**28,625**	**32,631**	**36,458**	**40,348**	**44,363**	**48,432**	**52,653**	**56,970**
% of revenue	*99.9%*	*99.4%*	*98.5%*	*97.4%*	*96.4%*	*95.4%*	*94.5%*	*93.7%*	*93.1%*	*92.7%*	*92.4%*
Super Popular Stores	**20**	**133**	**376**	**757**	**1,222**	**1,764**	**2,358**	**2,964**	**3,562**	**4,161**	**4,673**
% of revenue	*0.1%*	*0.6%*	*1.5%*	*2.6%*	*3.6%*	*4.6%*	*5.5%*	*6.3%*	*6.9%*	*7.3%*	*7.6%*
SSS mature	**4.3%**	**5.5%**	**6.6%**	**7.8%**	**7.4%**	**6.9%**	**6.7%**	**6.8%**	**7.0%**	**7.2%**	**7.3%**

Appendix 08: DuPont Analysis

	2015A	2016A	2017A	2018A	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
ROE	**15.3%**	**19.2%**	**18.7%**	**15.9%**	**16.3%**	**18.6%**	**21.2%**	**24.5%**	**27.7%**	**30.2%**	**33.7%**	**36.4%**	**39.2%**	**41.3%**	**38.3%**
ROA	***8.6%***	***9.9%***	***9.4%***	***7.6%***	***7.5%***	***8.8%***	***10.2%***	***12.0%***	***13.6%***	***14.8%***	***16.5%***	***18.0%***	***19.5%***	***20.5%***	***19.0%***
Asset TurnOver	2.0	2.1	2.1	2.1	2.2	2.3	2.4	2.5	2.6	2.6	2.7	2.7	2.7	2.7	2.7
Net Margin	*4.4%*	*4.8%*	*4.4%*	*3.6%*	*3.5%*	*3.8%*	*4.2%*	*4.8%*	*5.3%*	*5.7%*	*6.2%*	*6.7%*	*7.1%*	*7.5%*	*7.0%*
Financial Leverage	**1.8**	**1.9**	**2.0**	**2.1**	**2.2**	**2.1**	**2.1**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**

Appendix 09: Turnover & Liquidity Ratios

	2015A	2016A	2017A	2018A	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Asset Turnover	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**3**	**3**	**3**	**3**	**3**
Inventory Turnover	4	4	4	3	4	4	4	4	4	4	4	4	4	4	4
Days of Inventory	*97*	*101*	*100*	*109*	*100*	*97*	*97*	*97*	*97*	*97*	*97*	*96*	*96*	*95*	*95*
Receivables Turnover	**13**	**13**	**13**	**14**	**14**	**14**	**14**	**14**	**14**	**14**	**14**	**14**	**14**	**14**	**14**
Days of Sales	*29*	*28*	*29*	*27*	*27*	*27*	*27*	*27*	*27*	*27*	*27*	*27*	*27*	*27*	*27*
Payables Turnover	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**
Days of Payable	*71*	*76*	*72*	*75*	*74*	*74*	*74*	*74*	*74*	*74*	*74*	*74*	*74*	*74*	*74*
Cash Cycle	**55**	**54**	**57**	**60**	**53**	**50**	**50**	**50**	**50**	**50**	**50**	**49**	**49**	**48**	**48**

	2015A	2016A	2017A	2018A	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Current Ratio	1.63	1.57	1.58	1.55	1.57	1.54	1.54	1.57	1.6	1.66	1.69	1.71	1.73	1.76	1.79
Debt Service Coverage Ratio	-	1.65	0.67	0.65	1.51	2.09	3.05	6.59	17.06	44.19	56.77	19.58	27.83	-	-
Net Debt/EBITDA	0.14	0.31	0.53	0.39	0.24	0.15	0.04	-0.05	-0.16	-0.21	-0.26	-0.29	-0.33	-0.36	-

Source: Company's data and Team Estimates.

• Appendix 10: Brazil's drug price regulation

Source: Brazilian Drugs Market Regulation Chamber (CMED)

The Brazilian Drugs Market Regulation Chamber (CMED), commanded by the National Agency for Sanitary Surveillance (ANVISA), is the regulatory body responsible for determining drug price adjustment limits, making a distinction between industries and retailers. Along these lines, it publishes a *Consumer Price Maximum* (PMC), a *Factory Price* (PF) and a *Public Sector Prices* (PMVG) every March 31. Besides, there is a *Price Adequacy Coefficient* (CAP), that when discounted from the PF generates the PMVG, which is the maximum price retailers can sell to public entities.

As in accordance to CMED's Resolution No. 1/2015, the *Factory Price* is obtained through the adjustment of the previous PF by the *Percent Price Variation* (VPP), which is established by the following formula:

$$VPP = IPCA - X + Y + Z,$$

Where:

- "IPCA" is Brazil's Extended National Consumer Price Index;
- "X" is a productivity factor (%), established under an estimation of prospected productivity gains by the pharmaceutical industry;
- "Y" is an inter-sector relative price factor (%), obtained based on the variation of input costs. It accounts for the costs not recovered by the IPCA inflation index, such as those attributed to imported goods affected by exchange rate volatility;
- "Z" is an intra-sector relative price factor (%), obtained based on market power, which is determined, for instance, by barriers to entry or existence of asymmetric information in the industry. It aims at promoting competition on the many drug-related markets.

The VPP, however, may vary in accordance to each therapeutic category. This is because the "Z" factor considers the degree of generics participation in each therapeutic category as a proxy for market concentration. Along these lines, three sub-categories were defined:

- Level I - Therapeutic categories showing no market concentration signs. In this case, the Z factor assumes 100% of the X factor's full value.
- Level II - Therapeutic categories showing moderate market concentration signs. In this case, the Z factor assumes 50% of the X factor's full value.
- Level III - Therapeutic categories showing strong market concentration signs. In this case, the Z factor assumes value zero.

Once the VPP is established for each therapeutic level, the adjusted *Factory Prices* can be calculated. It is worth mentioning that such prices already incorporate laboratory prices, selling expenses, freight, distribution discounts and taxes, those being PIS/COFINS and the ICMS.

Based on the obtained new *Factory Prices*, the *Consumer Price Maximum*, which is the maximum price at which drugs may be sold to consumers, can be calculated. In fact, the PMC is obtained by dividing the PF by a factor predetermined by ANVISA's CMED. Such denominator varies according to each state's tax burden and to the incidence of PIS/COFINS taxes on each specific drug. Based on these components, we have the following PF-to-PMC denominator table:

ICMS	Positive List	Negative List	Neutral List
0%	0.723358	0.745454	0.740214
12%	0.723358	0.748624	0.742604
17%	0.723358	0.750230	0.743812
17.5%	0.723358	0.750402	0.743942
18%	0.723358	0.750577	0.744072
20%	0.723358	0.751296	0.744613

where the Positive List includes those drugs exempt from PIS/COFINS taxes; the Negative List includes those drugs for which only the industry or distributors pay PIS/COFINS taxes; and the Neutral List includes those drugs for which PIS/COFINS taxes incidence is normal.

Besides, a series of specific regulations take place regarding a variety of topics. We highlight that, regarding new approved drugs entering the market, CMED also imposes an initial price regulation by dividing those into six categories, each of them subject to different rules. The most relevant of those categories is related to the market placement of new generic drugs, whose *Factory Price* shall not exceed 65% of their respective reference drug's *Factory Price*.

Source: Company's data and Team Estimates.

• Appendix 11: Brazil's "Popular Pharmacy Program"

Source: Ministry of Health

The Brazilian Ministry of Health lists all the drugs made available by the Unified Health System (SUS) in a document denominated Rename (National List of Essential Medicines). Along these lines, the public health system's drug supply is subdivided into three categories: a strategic, a specialized and a basic component. Usually, most public drug acquisitions are done through a public bidding for each active ingredient.

In general, the strategic component includes the acquisition of endemic-related drugs and inputs, which includes vaccines, for instance. The specialized component, in its turn, relates to diseases such as Alzheimer, Parkinson, epilepsy, and others whose treatments rely on expensive medicines. Lastly, the basic component includes primary health care drugs, such as ibuprofen, acetaminophen and amoxicillin. Such last-mentioned category includes the government's Popular Pharmacy Program ("Farmácia Popular", or PFPB), which aims at offering to the public all drugs considered to be essential, in partnership with accredited private drugstores, at a low cost for consumers.

Diving into such program's functioning, we should first acknowledge that it makes available over 100 products related to the most common diseases found in the country. For instance, if offers male preservatives, geriatric diapers and a wide range of drugs, covering diabetes, hypertension and many other conditions.

When it comes to pricing to the final consumer, it must be mentioned maximum prices are pre-established for such program. Besides, when it comes to hypertension, diabetes and/or asthma related drugs, the Ministry of Health bears with 100% of the products' cost. However, regarding the many other available items, it only covers up to 90% of the reference value, the rest being paid in-store by the consumer. The Ministry of Health will make the payment to the accredited drugstores on the subsequent month of the drug dispense.

The program's model becomes highly efficient in terms of public health policies, since it manages to guarantee the population's access to very important drugs, while taking away from the government the onus of dealing with acquisitions, inventory management and drug dispensing.

• Appendix 12: Case Study – BR Pharma

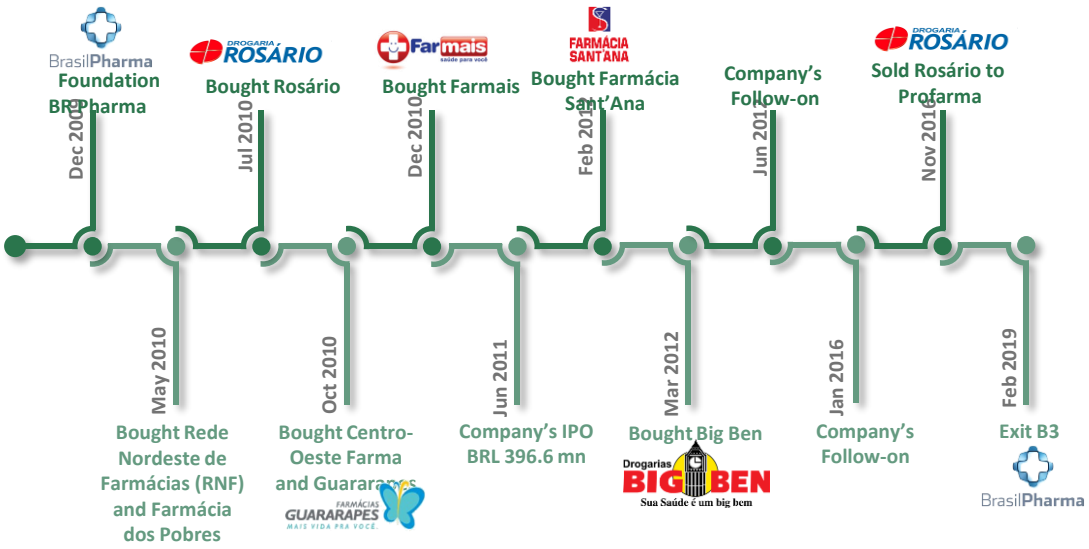
Exhibit 1: Share Price Evolution

Source: Bloomberg

Brasil Pharma was created by BTG Pactual with a clear mission: consolidate Brazil's drug retailing market. In a never seen before shopping spree, BR Pharma bought several chains: Guararapes (PE), Rosário Distrital (Midwest), Mais Econômica (RS), Sant'Anna (BA), Big Ben (PA) and Farmais (South, Southeast and Midwest). In its peak, the company reached 1.2k stores and BRL 3.5 bn. However, management couldn't integrate all acquisitions, in a period that important mergers happened (Raia with Drogasil and Drogaria São Paulo with Pacheco). Lack of execution lead to the company filing bankruptcy in january 2018, with a debt over BRL 1 bn. Share price entered in freefall since its peak in february 2013 when it reached BRL 770. The company exited B3 in a closing price of BRL 0.62. RaiaDrogasil saw this as opportunity to gain ground in Pará, by entering in POS that once belonged to Big Ben.

Exhibit 2: BR Pharma's Timeline

Source: Company Data



• Appendix 13: Low Income Format: Trick or Treat?

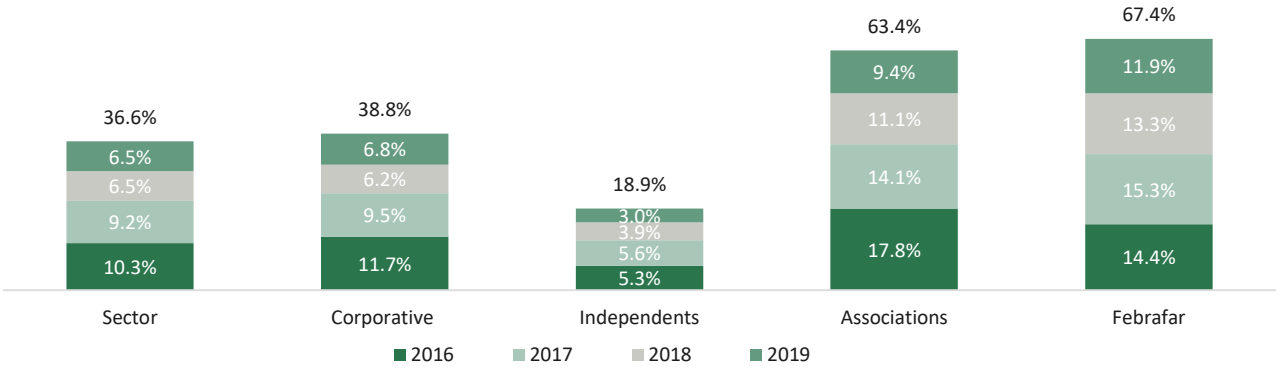
Having 1,917 stores in 22 states, Raia Drogasil is the bigger drug retailer in Brazil. However, its two brands (Droga Raia and Drogasil) are mostly established in mid-high/high-end neighborhoods. In order to create new revenue avenues RD started investing in a new format: Farmasil.

Farmasil at a Glance. Created in 2013, Farmasil was a RD's strategy to find revenues coming from new formats, since RD was in an accelerated expansion process, opening many stores mainly in São Paulo. Because RD was focused on A and B classes, it created a new brand, Farmasil, in order to gain share in peripherical regions. Thus, the first Farmasil store was opened in Santo André, a satellite city in São Paulo's metropolitan region. The store was a converted Droga Raia unit.

Competition generates pressure. The Brazilian popular market segment is highly competitive. Of the nearly 80,000 pharmacies in Brazil, about 17% are large chains. Thus, there are about 65,800 independent or associated pharmacies chains and because most of them are focused on classes C and D, a competition becomes quite high. As can be seen, independent chains have underperformed the market in recent years, while associated chains have grown almost the double of the market. These results show a strong migration from independent chains to associated chains, such as those that are reorganized according to a franchise or associative model in order to survive in a highly competitive market which is vital in an industry with squeezed margins.

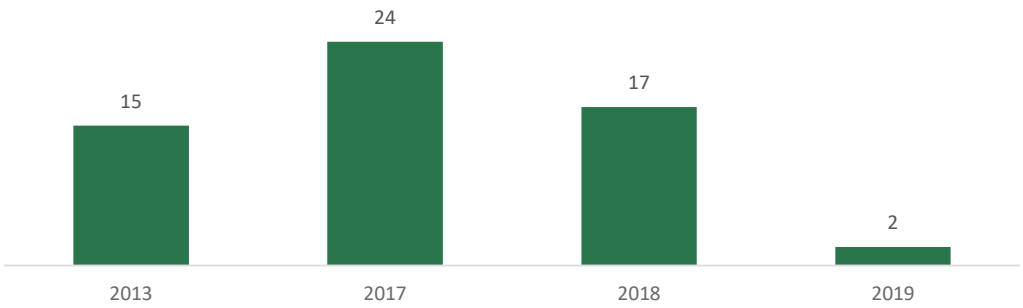
Growth Evolution for type of chain

Source: Febrafar



Evolution of Farmasil's number of stores

Source: Febrafar



Blocked Avenue ahead. The new popular model that RD was trying to implement have not worked out for several reasons, such as: (i) store size. While Farmasil was a small store of about 60-70 square meters, the other popular pharmacies had bigger stores of about 120 square meters on average, which made Farmasil not physically attractive to the customer, thus having a lower sale (ii) Lack of inventory. Due to the small size, Farmasil did not have a large amount of SKU, which caused the lack of products. Given that 69% of consumers who do not find what they want switch pharmacies, Farmasil has lost customers. (iii) Product mix not focused on costumer´s income range. While other regional players focused mostly on generics, Farmasil did not customize its product mix for the low-income regions in which it was operating, resulting in misalignment between supply and demand, (iv) lack of synergy between RD and Farmasil. While other players were reorganizing into associations to extract synergies, Farmasil seemed to be a separate branch of RD, which lacked expertise in the segment, since creating a brand from scratch is a big challenge. (V) Unassertive choice of points. Popular pharmacies should be located.

in easily accessible locations with great pedestrian movements. Several of the Farmasil stores were not well located, and because they were not attractive, they did not generate demand as high as its competitors. (vi) price as a secondary factor**.** 90% of low-income clients choose a pharmacy based on location and price[1]. In Farmasil's case, there were not only problems in store locations, but also in pricing strategy, sometimes being more expensive than its main competitors. Therefore, Farmacil's lack of operational efficiency has made it uncompetitive, as it has never had more than 25 stores in 5 years of project. Currently, only 2 of the 1917 RD stores are Farmasil

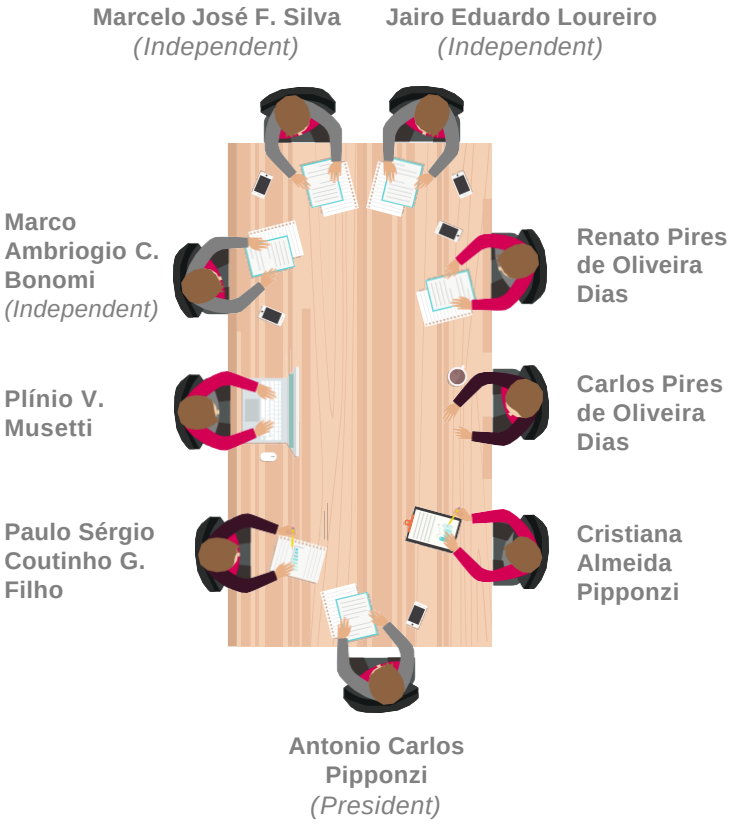
Recalculating route. Although Farmasil did not have the return the company was expecting, RD's management has shown to absorb great learning from the experience. Thus, RD has started a new strategy in order to gain share in the popular market: to continue opening stores focusing on classes C and D, but this time under the brands Droga Raia and Drogasil.

- **Simpler format than traditional but more elaborate than Farmasil**. RD's new popular store model is ideal for low-income audiences, for reasons such as: (i) Store size now ranges from 120m2 to 140m2, which is on average with other popular players, (ii) Stores with personalized settings, in line with the brand's identity, ensuring that the store will be attractive to the customer, (iii) CAPEX reduction compared to traditional format (format, branding and simpler materials) and (iv) Working capital remains more efficient than traditional format (more generic weight on sale and more spot sales
- **Assertiveness in product mix.** The operation of the new popular model will include: (i) Larger assortment of low-priced generics, (ii) Competitive pricing with major popular players (iii) Expanded self-service assortment, with focus on Private Label, (iv) Expansion of competitively priced OTC Generic offering to become a traffic generator - Greater promotion in core categories
- **Lean expenses.** Because it is a small structure, the new format will mean high cost savings. (i) Hours of operation aligned with reduced staff, (ii) Check-out at counter and cashier exclusively for front store and (iii) Manager and pharmacist (the two highest salaries) being the same person.

"Your destination is close" We believe that RD's new popular store format has the potential to be game changing for the company for several reasons, such as: (i) Expansion. The new strategy will allow the company to continue an aggressive store opening plan in the coming years, when most of its competitors (focused on high income) will slow down, (ii) Learnings. Despite past mistakes, RD has demonstrated that it has learned by creating a business plan that is fully in line with its local competitors. (iii) the new format will have popular pharmacy expenses with the expertise of the largest drug retailer in Brazil, so all RD excellence in pricing strategy, use of data, price investments, advanced logistics and customer loyalty will be incorporated into the new project. (iv) Maximum synergy. This time it is not a brand being created from zero, what makes us to believe that are many synergies in the coming years, as the brands will be Droga Raia and Drogasil.

Source: Company's data and Team Estimates.

• Appendix 14: Board of Director



Antonio Carlos Pipponzi **Cristiana Almeida Pipponzi**	The Pipponzi's are the heirs of Droga Raia, chain founded by João Batista Raia in 1905. When the latter passed away, he left his drugstore to his son in law, Arturo Pipponzi. Antonio Carlos Pipponzi was the CEO of Droga Raia when it merged with Drogasil.
Carlos Pires de Oliveira Dias **Renato Pires Oliveira Dias**	The Pires' were the family that took control of Drogasil S.A when of its constitution in 1935 (as part of the merger between Drogaria Bráulio and Drogaria Brasil).
Paulo Sérgio Coutinho G. Filho	RD's former CEO, before the seat was occupied by Marcílio Pousada. Thus, he's a professional with highly know-how about the sector and company's operations.
Plínio V. Musetti	Worked at Janos Holding, fund associated with Pragma Asset Management. They made a Private Equity investment in Droga Raia on 2008. Moreover, he work with Private Equity since 2002, what gives him a lot of expertise in directive boards.
Marco Ambrogio C. Bonomi	Nomination and Corporate Governance Committee's Member of Banco Itaú, one of the main banks in Brazil. He was responsible for covering the retail sector in the institution.
Marcelo José Ferreira e Silva	Former CEO of Magazine Luiza, the reference company in terms on omnichannel integration in the country. He was hired in the context of technological and digital development at RD.
Jairo Eduardo Loureiro	Also a board independent member at Hypera Pharma, pharmaceutical industry.

• Appendix 15: Case Study – Magazine Luiza

Magazine Luiza's Snapshot

Source: Company Data

BRL 14.3 bn Gross Revenue (2017)

10 mn of active clients
3 mn of Luiza Cards

858 Stores in 2017

30% Participation in e-commerce (2017) vs 24% in 2016

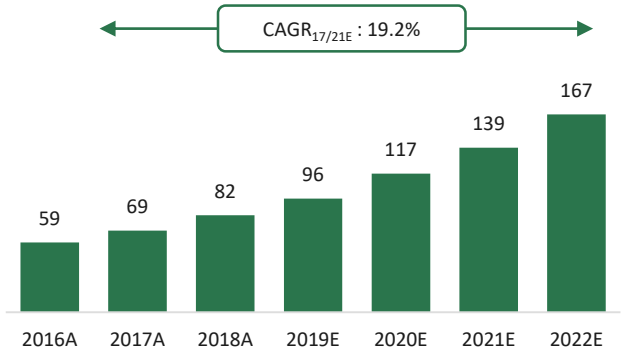
20 MM Unique visitors in digital channels

Focus in People & Innovation

Raia Drogasil is currently trying to evolve to a omnichannel player. We believe there is great value to be unlocked based on the effects of digital strategy in Magazin Luiza. The Digital Transformation's Benchmark in Brazil, Magazine Luiza evolved from a simple B&M consumer electronics and home appliance retail chain to a fully integrated omnichannel company. Magalu is perceived by the market as one of the potential winners in Brazillian ecommerce. Brazil e-commerce is in a virtous cycle. Progress in tech, logistics, payments and trust, plus growing internet and mobile access and consumer demand for convenience, have created a global online shopping arena where millions of consumers no longer "go" shopping but literally "are" shopping all the time and everywhere.

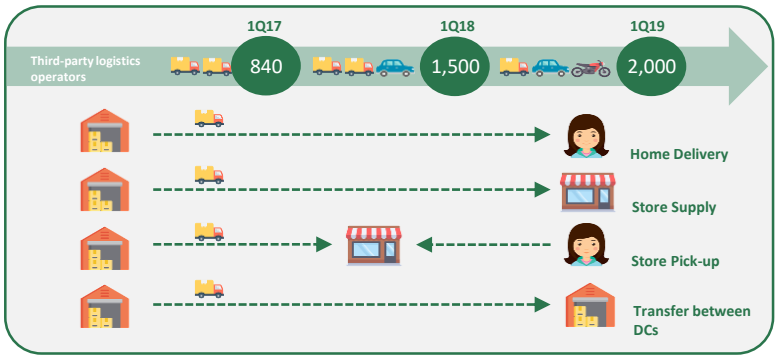
Ecommerce GMV Forecast

Source: Forrester, E-bit



Magazine Luiza's Value Chain

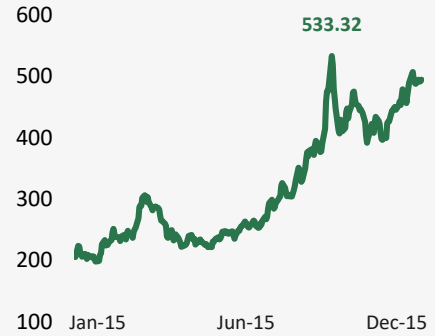
Source: Company Data



Source: Company's data and Team Estimates.

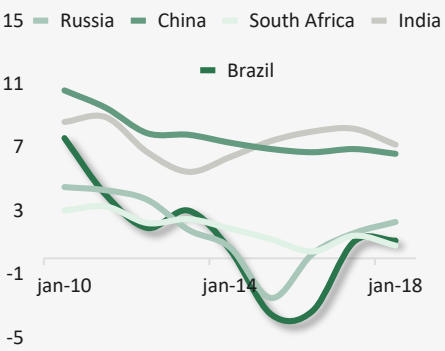
BRAZIL CDS US 5Y – 2015 (bps)

Source: Bloomberg



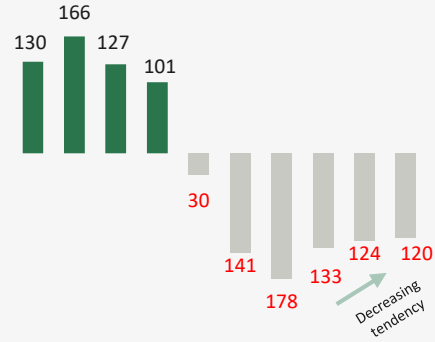
BRICS PIB Growth (%a.a)

Source: Bloomberg



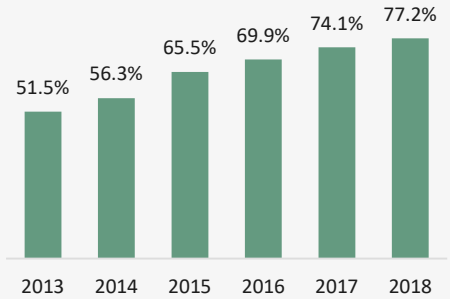
Brazil Primary Balance (BRL mm) - LTM

Source: National Treasury Secretary



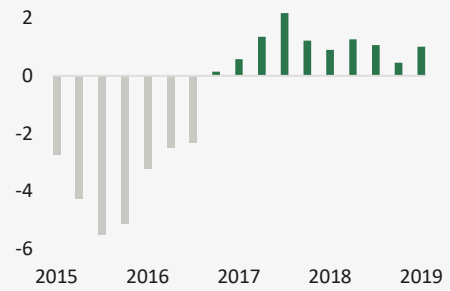
Government Debt as % of GDP

Source: BCB (Brazil's Central Bank)



Real GDP Growth (YOY%)

Source: BCB (Brazil's Central Bank)



APPENDIX 16: MACROECONOMIC ANALYSIS

Four years ago, Brazil lost its investment grade rating due, mainly, to bad political decision making. As a direct consequence of that, BRAZIL 5Y CDS skyrocketed, considerable increasing Brazilian companies cost of equity *(See BRAZIL 5 YEAR CDS – 2015 (bps))*. Ever since, we went through a lot of turbulent years, experiencing (i) an ex-president being accused and detained for corruption practices by (ii) one of the biggest police operations due to corruption in the world, the "Operação Lava-Jato"; (iii) his follower, Dilma Rouseff, suffering an impeachment and (iv) a troubled election which set people against each other. All of this events, as expected, have held back Brazil's development in recent years and when we compare it to it's peers, specifically with the BRICS[1], it can be seen how behind we were in terms of growth, specially toward India and China *(See BRICS PIB Growth (%a.a))*. However, 2018 elections featured a turning point in the country political and economic path, bringing up a team of professionals, like Paulo Guedes (PhD Economics by Chicago University), current Economy Minister, and Salim Mattar (Founder of Localiza (RENT.3)), Privatization Secretary, that have a pro-market ideology and that are, finally, looking at Brazil's biggest issues and trying to solve it. As a result, Brazil's CDS 5Y is in free fall, having drop 75.22% since it's peak in 2015, to 132.18 bps (as of Sep-23-2019) and, when compared to an Emerging Market's Sovereign CDS 5Y base of a year period (from Sep-2018 to Sep-2019), it has presented the second biggest decreased on it's CDS spread, of -127,04 bps *(See Top 10 Emerging Markets CDS US 5Y - 1 Year Δbps)*.

Top 10 Emerging Markets CDS US 5Y – 1 Year Δbps

Label	Country	1Y Average	1Y Low	1Y High	1Y Δbps	Rating (Moody's)
1	Greece	366,77	204,89	494,42	(190,24)	B1
2	**Brazil**	**176,55**	**120,44**	**270,87**	**(127,04)**	**Ba2**
3	Egypt	352,07	281,61	436,33	(84,14)	B2
4	Russia	130,69	74,26	173,88	(59,23)	Baa3
5	Indonesia	113,53	76,52	161,46	(42,56)	Baa2
6	Malaysia	76,76	43,12	120,04	(42,09)	A3
7	Philippines	68,01	40,85	100,99	(28,58)	Baa2
8	India	94,29	63,11	117,64	(28,52)	Baa2
9	Peru	70,38	44,38	98,36	(21,25)	A3
10	Colombia	114,29	80,46	162,60	(16,56)	Baa2

Because of the good perspectives for the country towards the future, a bigger CDS spread compression could lessen even more Brazilian companies cost of equity, leveraging our valuation.

But what, exactly, are agents doing to make expectations so high?

(i) Social Security Reform

For the sixth year in a row, Brazil has a primary deficit in its fiscal accounts (*See Brazil Primary Balance (R$mm) – LTM*), which can be mainly justify by it's huge and increasingly (as the county's age pyramid inverts) expenditures in Social Security. That said, when the new government took power in the beginning of 2019, the first of its goals was to make the Social Security Reform, with the venture of putting the country's economy at risk (by the need of increase public debt and the resulting upper pressure cause on prices and on the structural interest rate) if it didn't undertake it. As of today (Sep-23-2019), the new law's text in in voting process in the upper house and , with its approval, the proposed amendment could be enacted, with the new Social Security rules coming into force immediately.

(ii) Privatizations ↔ Reductions of the country's debt

The second biggest fiscal expenditure in Brazil is public debt interest payment. Also because of the forementioned problem, Brazil's government saw the need of increasing it's leverage in the last few years in order to cover its primary deficit (*See Government Debt as % of GDP*). But now, with the Social Security Reform on its way, government agents can think about deleveraging and readjust its balance sheet. To do so, they will proceed with a privatization, delegating to the private sector companies that don't make economic sense to the government anymore (In the list of firms, there are big name such as Eletrobras (ELET.3) and Caixa Econômica). By doing so, Brazil government will (i) raise funds and use them to pay off part of its debt, considerably reducing its balance sheet; and (ii) attract investments, stimulating the economic growth that society is urging for.

(iii) Resource decentralization

Nowadays, in Brazil, more than 95% of all government revenue is binding, which univariably leads to an inefficient allocation of resources throughout the economy. Therefore, another government agenda is to unbind and decentralize those tax revenues, passing it along to states and counties and giving this regions governors more freedom to allocate them in what, in fact, makes economic sense. This initiative is what Paulo Guedes, Brazil's Economy Minister, calls "Mais Brasil, menos Brasília" (free translated as "More Brazil, less Brasília").

(iv) Other Productivity Initiatives

In addition to promote the country's fiscal adjustment, this reforms and political decisions also intent to stimulate the country's economy and improve GDP growth, as, despite of all-time low interest rate levels, economic slack hasn't picked up yet *(See Real GDP Growth (YoY%))* and GDP only grew 0.4% in the 2Q19. That said, other government initiatives that aim to increase country's productivity are also in place, like: (i) Tax Reform, as it will (a) simplify Brazil's tax regime and, therefore, attract more domestic and foreign investments; and (b) make economic scenario more egalitarian and competitive as it will make specific firms loose their fiscal benefits advantage toward others; (ii) Economic Freedom Provisional Measure, that intent to extinguish entrepreneurship initiatives' red tape and stimulates the growth of small and medium business in a country that is known for it's monopolistic companies' scenario; (iii) Overall economic openness, as nowadays Brazil is still seen like a closed economy (which we all know is a bad long-run policy, as it doesn't maximize the utility of the Comparative Advantage Theory) ranked 150[2] out of the 180 countries analyzed by the Heritage Foundation on its *Economic Freedom Index*.

That said, the group analyzes that a big portion of these changes were already priced at Brazil's CDS 5Y, that has dropped 34,96% just this year (2019), from 205,73 to 132,18 bps[3] and that further relevant decreases are more probable in the case of: (i) these policies begin to translate into real and consistent GDP growth; or (ii) Brazil's credit rate improves, at least from its current Ba2 (Moody's) speculative grade to a Ba1, which will put the country in the frontier of getting an investment grade again.

So let's go trough this possibilities:

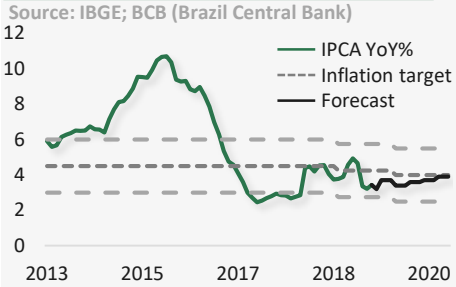
(i) Real and consistent GDP growth

To achieve this goal, the measures above described need to translate into consume and investment in real economy without pressuring prices up (above inflation target) in the long-run. And indeed, if we look at Focus Research[4], it can be seen that the median market expectations is that GDP growth will get back on track as of 2020, when it gets momentum to growth above 2,0% YoY with pressuring prices up *(See GDP & CPI: Market Expectations)*.

[1] BRICS: Brazil, Russia, India, China and South Africa; [2] As of Sep-23-2019; [3] Idem; [4] report published by Brazil's Central Bank every Monday with the market median expectations for the main economic statistics and indexes.

GDP & CPI: Market Expectations

Source: IBGE; BCB (Brazil Central Bank)

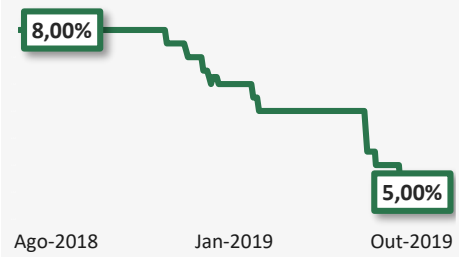


Focus Research (Sep-20-2019)

(Median)	2019	2020	2021	2022
PIB (*YoY%*)	0,87	2,00	2,50	2,50
IPCA (*YoY%*)	3,44	3,80	3,75	3,50

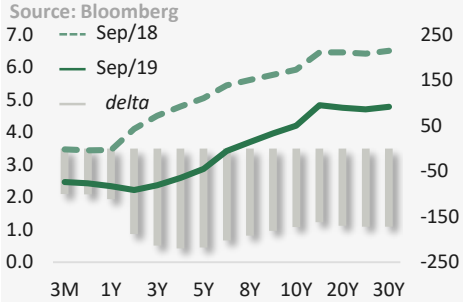
Focus Forecasted Selic - 2019

Source: BCB (Brazil Central Bank)



Brazil's Yield Curve (Sep/18 vs. Sep/19)

Source: Bloomberg



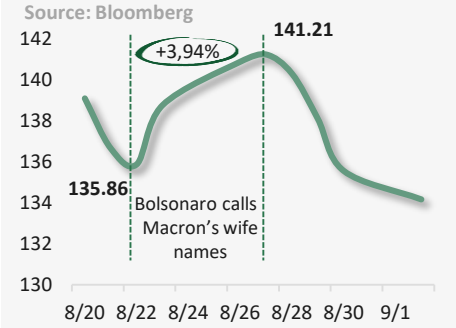
Countries rating vs. CDS analysis

Source: Moody's

Label	Country	Rating	CDS (Sep-19)
1	Portugal	Baa3	30,6
2	Kazakhstan	Baa3	66,77
3	Hungary	Baa3	79,85
4	Russia	Baa3	84,44
5	Romania	Baa3	86,88
6	Morocco	Ba1	100,08
7	Italy	Baa3	138,50
8	Guatemala	Ba1	176,3
9	South Africa	Baa3	192,85
10	Namibia	Ba1	306,43
11	Oman	Ba1	323,01
Median			**100,08**
Brazil		**Ba2**	**132,18**

Spike on Brazil's 5Y US CDS due to Amazon burns and its political follow ups.

Source: Bloomberg



This scenario is possible due to a set of factors that are perceived today in the national economy, of which we highlight two:

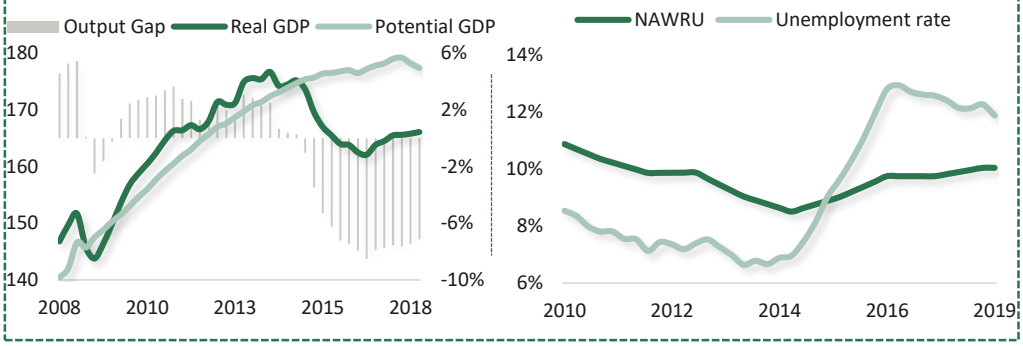
a. All-time low interest rates

Interest rates in Brazil are on it's all-time low measure, at 5,50%[1] and annalists are anticipating another 50bps cut till the and of the year (*See Focus Forecasted SELIC – 2019*). Moreover, if we compare Brazil's Yield Curve of Sep-2018 with the current one (Sep-2019), we can see that expectations are that interest rates are going to be kept low, specially interest up to five year from now, where it has surfer the bigger *delta* between the two curves. (*See Brazil's Yield Curve (Sep/18 vs. Sep/19)*). This scenario reduce the cost of money and therefore, the spread of overall credit in the economy, stimulating consume and investments, which positively affect GDP.

b. Productivity factor are not being fully employed

This framework above mentioned could preoccupy someone as it could pressure prices up, causing inflation and deteriorating the country's economy in the long-run. Yet, that's not the case as real GDP is well bellow potential GDP and current Unemployment rate is well above NAWRU *(See "Has Economy space to grow in a health long-run way?")* . That way, economy has plenty of space to grow before starting to case inflation rate to accelerate.

Has Economy space to grow in a health long-run way?



Thus, we support the thesis that Brazil has room for a real and consistent GDP growth in the long run, and it's already following this path.

(ii) Brazil's Credit Rating improvement

In 2015, Brazil lost it investment grade due to, mainly, its increasingly public leverage associated with its also increasingly government expenditures (causing CDS to skyrocket). Nevertheless, on account of everything mentioned above, a rating improvement is a possible outcome in the future. Indeed, when we look at the median CDS of countries that are rated "Ba1" (yet non investment grade, but just on its frontier) and "Baa3" (Investment grade scale)[2] of 100,08bps, Brazil's 132,18bps 5Y CDS is in line and even converging to it, if we take into account it's decreasing tendency this year (*See Countries rating vs. CDS analysis*).

In conclusion, with Brazil back on the game (i) delivering a more consistent growth year over year due to the political and economic projects that the new government is implementing, and a (ii) deleveraging policy of public debt, which strengthen the country's payment ability, a (iii) credit rating improvement becomes more and more plausible as financial agents' perception of risk toward the nation decrease. All of these points positively affect Brazil's CDS, which in turn, reduces Brazilian companies Cost of Equity and, therefore, increases their expected return.

But what could go wrong?

- **Macroeconomic Risk I "Bolsonaro" Risks**

Is he always like this? Ever since in charge, Mr. Jair Bolsonaro was associated to several economically stressful events that raised uncertainty about Brazil's perspectives: (i) corruption scandals by some of his political partisans; (ii) his call for the armed forces to parade in celebration of the 1964 Military Coup on March 31th; (iii) Amazonia burns, which brought to surface not only his indifference towards environmental sustainability, but also political seizures with other countries, like France and Ireland, putting in danger some of Brazil's commercial agreements; and (iv) all of his controversial speeches and tweets. As much as Mr. Bolsonaro's election represented a positive change on political power and ideology, the uncertainty brought by his unique temper could harm Brazil's growth as it (i) discourages international investments by raising the country's volatility; and (ii) raises Brazil's risk perception.

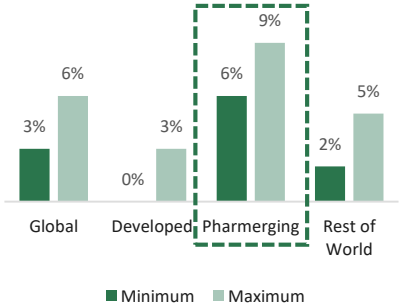
• Appendix 17: "*Pharmerging*" Countries

The world pharmaceutical market is projected to rise between three and six percent from 2018-2022, with the greatest growth expected in 'pharmerging markets'— developing countries where use of pharmaceuticals is growing rapidly.

Aging populations coupled with increasing healthcare expenditure, a growing number of public hospitals and increased disease burden of chronic diseases have boosted the demand for pharmaceuticals in "*pharmerging*" markets. These markets have been divided into three tiers based on economic growth levels.

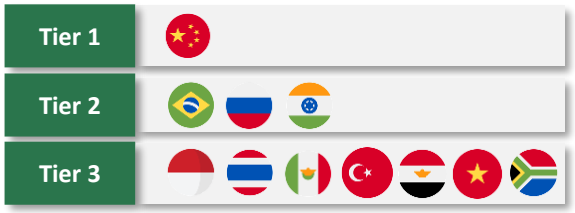
Projected Pharma

Source: IQVIA



***"Pharmerging"* Tier Division**

Source: IQVIA

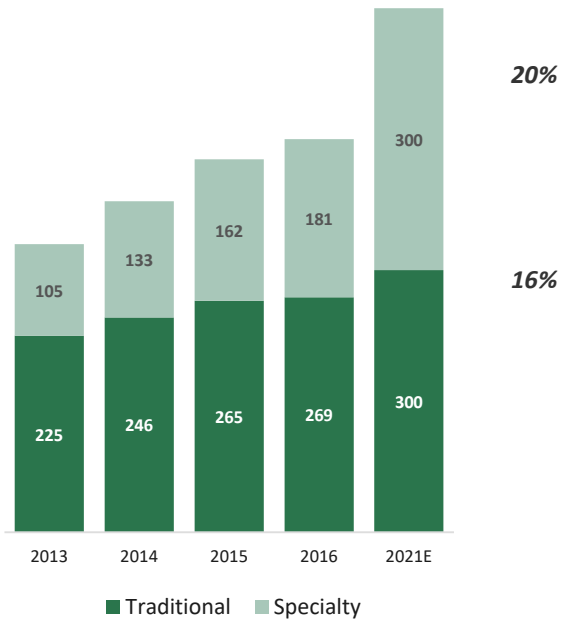


[1] As of Sep/2019); [2] Looking exclusively to Moody's rating

• Appendix 18: Specialty Drugs Market

US Pharma Evolution (US$ bn)

Source: IQVIA



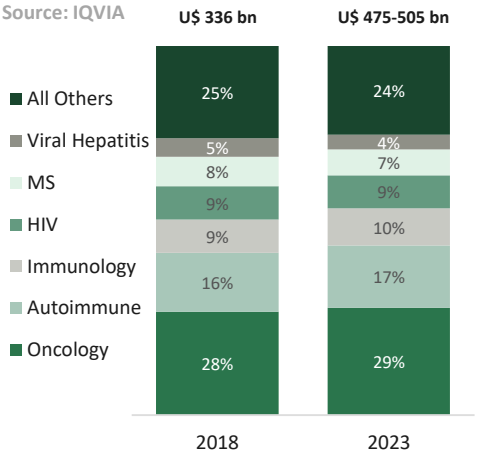
As Brazil's market is still in a low-penetrated stage of the specialty segment, there isn't much information about its evolution. Thus, we shall use the U.S. market, as it is a good proxy to give us insight on the potential demand that this segment posses.

In U.S., specialty drugs experienced a $CAGR_{2013-2016}$ of 20%, over 3% CAGR in the same period for traditional medicine, and so specialty is expected to reach 50% of U.S. market by 2021.

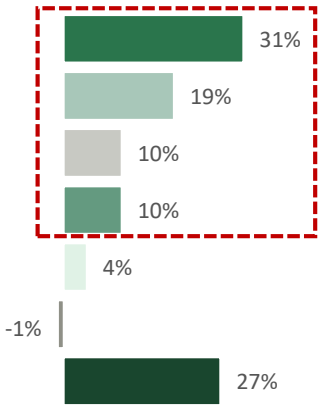
By analyzing trends regarding developed countries, according to IQVIA data, we can see that Oncology, Autoimmune, Immunology and HIV will be the main growth drivers for this segment, specially Oncology (31% of growth contribution).

Developed Pharma Market Evolution

Source: IQVIA



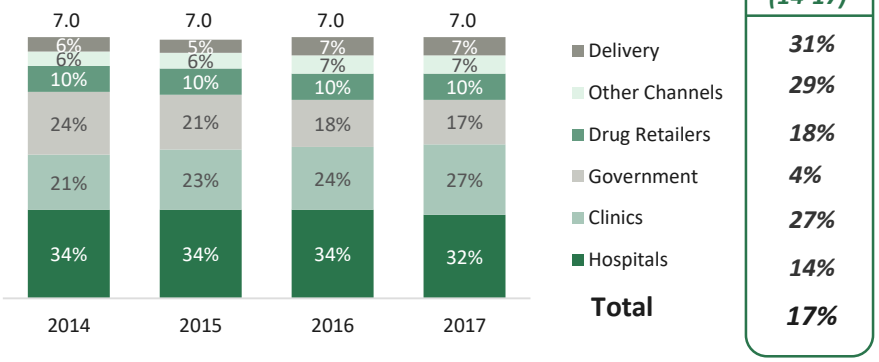
Contribution to Growth 2019-2023



Brazil's market growth drivers are similar to Developed Market's. As people grow older, their chances of acquiring more serious illness increases exponentially, as 80.5% of total cancer incidence is related to 65+ age group (see exhibit 4), and as incidence of Pulmonary Hypertension diseases are mostly focused on 50+ people (see exhibit 5). However, not only Brazil's has limited healthcare access compared to more developed countries, implying a development gap to be shortened in upcoming years, but also possess a faster aging population, which promote sector's sustainable growth in the future. The main bottleneck for this value unlockment is the high monthly ticket associated with these treatment and the 90% of out-of-pocket medicine spending. We believe, however that due to juris prudency in constitution about universal health law, people who in need of specialty drugs will be financially backed by the government, thus mitigating demand obstacles.

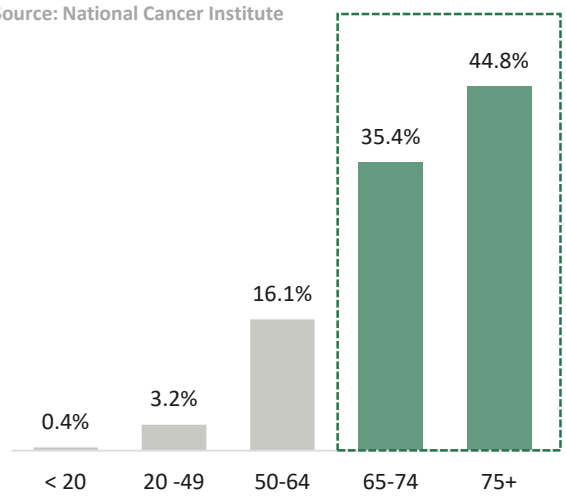
Brazil's Specialty Drugs Sales (R$ bn)

Source: IQVIA



Cancer incidence by age group

Source: National Cancer Institute



Pulmonary Hypertension Age Focus

Source: SEER 2014

PAH - Registry	Time Period	Age Years
US NIH Registry	1981-1988	36 +/- 15
French Registry	2002-2003	52 +/- 15
US REVEAL	2006-2009	50 +/- 15
PH Registry of the UK and Ireland	2001-2009	50 +/- 17
COMPERA	2007-2011	65 +/- 15
New Chinese Registry	2008-2011	38 +/- 13
Czech Registry	2000-2007	52 +/- 17

Source: Company's data and Team Estimates.

Appendix 19: SWOT Analysis

STRENGTHS

- Best-in-class stores positions, Most of them on positive corners]
- Outstanding NPS scores and reference in customer service
- Brand Awareness
- Excellent in training its employees
- Leaner logistic chain of the sector
- Higher ROIC and Revenue per store than its peers.
- Nationwide presence

WEAKNESSES

- Positioning in terms of in-store health services offering
- Over key management dependence
- Higher cost per store
- Intense store concentration in São Paulo
- Store cannibalization

OPPORTUNITIES

- Room for expansion in Traditional and SPOP formats
- Digital transformation, increasing E-commerce and "Click & Collect"
- Drug Retailer as a pathway to the health system
- Increasing Special Medicines segment
- Age pyramid´s inversion
- Economical recovery and growth in people expending

THREATS

- Intensified Cannibalization
- New price war scenario
- Low public adherence to the e-commerce
- International players expansion
- Legalization of OTC sales in Supermarkets
- Economic slowdown
- Apps selling medicines, such as Rappi

Appendix 20 - Porter's Five Forces

High income segment is less attractive for new entrants as its powers are very high, mainly due to bargaining power of consumers and competitive rivalry, while the less competitive **Low-Income segment still has room for new players to entry.**

We use the Porter's Five Forces model to analyze competition within the high-income market (Current RD's Market) and low income (SPOP format). We highlight that we do not create a specific Porter's five forces model for RD as it should be applied only to industries/sectors, and never for a single company, as it shows how competitive a certain market is independently of the company, thus, not being possible of making a specific for RD.

High Income

Threat of Substitute Products: Medium-Low – In the US, Amazon's purchase of Pill Pack created a large fear for the large drug retailers as a digital superpower was entering its reins. In Brazil though we believe this risk is mitigated for two reasons. (i) There is not a player in Brazil with an influence or capillarity as high as Amazon in the US and (ii) ANVISA controls the drug market fiercely, not allowing the sale of prescription drugs remotely. Even if the bill that would allow the online sale of such products is passed, the fear of a new regulation should scare investments in this area.

Bargaining Power of Customers: High – The proximity of one POS to a competitor tends to be minimal, thus the client can compare prices and services provided easily, and have a close to none switching cost, thus having a lot of power. Additionally, e-commerce made it even easier for the consumer to compare prices before visiting the store, increasing the its bargaining power.

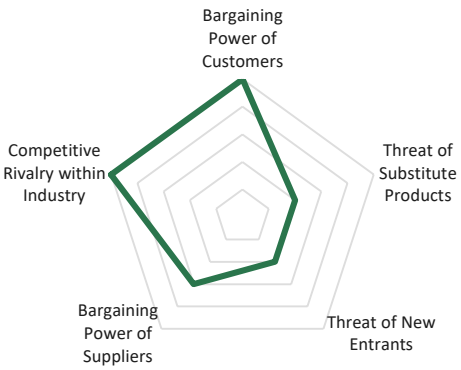
Bargaining Power of Suppliers: Medium – Although pharmaceutical industry and drug distribution is quite concentrated, the high number of SKUs diversifies the suppliers' dependence for retailers. On the other hand pharma industries hold a large power on branded medicines in which the patent has yet to be broken

Threat of New Entrants: Medium-low – The market is highly regulated, with many health requirements to be met before opening a store. Additionally, there is a high concentration of stores per area, and thus high cannibalization between stores, decreasing the returns for a new store.

Competitive Rivalry within Industry: High – Plenty of relevant players dispute the most attractive regions, with a high store concentration. Furthermore, besides national players, most regions have strong regional players competing at a high level.

High Income Pharmacies Porter's Five Forces

Source: Team Elaboration



Low Income

Threat of Substitute Products: Low – We believe that low income players are even less exposed to substitute products, as the low penetration of internet access and credit cards for lower income population in Brazil limits the threat of a digital player.

Bargaining Power of Customers: Medium – The lower concentration of stores in lower income areas, combined with players less involved in ecommerce makes it tougher for consumers to compare prices, thus reducing its power.

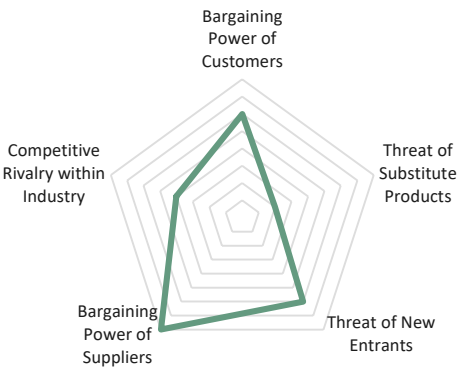
Bargaining Power of Suppliers: Medium-high – Players in this sector many times are dependent on large distributors, as their smaller average size reduces its bargaining power. On the other hand, association movement between peers has decreased the power of suppliers.

Threat of New Entrants: Medium – Smaller capex expenditure requirements, lower concentration of stores and the potential of associate makes it less difficult for new players to entry, but the regulatory requirements remain a hindrance.

Competitive Rivalry within Industry: Medium-low – Despite store concentration still being quite high, the low-income sector is less concentrated, with mainly independent local players that do not have many economies of scale benefits.

High Income Pharmacies Porter's Five Forces

Source: Team Elaboration



Source: Company's data and Team Estimates.

- **Appendix 21: Players' National Competitive Positioning per State.**

Southeast Region

SP	RD 975	DPSP 772	Drogal 160	Farma Ponte 123	Pague Menos 90	Drogão Super 58	extra farma 46
RJ	DPSP 304	RD 131	d1000 121	Venâncio 73	Moderna 62	Pague Menos 34	A Nossa Drogaria 34
MG	Araújo 218	RD 128	DPSP 111	Indiana 76	Pague Menos 64	Drogaria Minas-Brasil 39	Drogão Super 9
ES	RD 42	Santa Lucia 34	DPSP 33	Pague Menos 26	Indiana 2		

South Region

PR	Nissei 245	Farmácia Preço Popular 120	RD 105	Panvel 61	Vale Verde 33	Pague Menos 25	São João 5
SC	Farmácia Preço Popular 277	RD 48	São João 48	Panvel 44	Pague Menos 19	Nissei 15	
RS	São João 603	Panvel 316	Farmácia Preço Popular 96	RD 35	Pague Menos 15		

Mideast Region

DF	RD 70	d1000 67	Santa Marta 25	DPSP 21	12
GO	RD 70	Santa Marta 49	Pague Menos 26	DPSP 9	d1000 4
MT	RD 20	Pague Menos 19			
MS	RD 25	Farmácia Preço Popular 12	d1000 7	Pague Menos 6	

Northeast Region

AL	Pague Menos 56	Farmácias Permanente 41	RD 15	DPSP 4	extra farma 3		
BA	Pague Menos 93	RD 65	DPSP 65	Farmácia Preço Popular 27	Indiana 21	extra farma 18	Drogarias Globo 10
CE	Pague Menos 172	extra farma 91	RD 26				
MA	extra farma 55	Pague Menos 51	Drogarias Globo 17	RD 13			
PB	Pague Menos 51	Redepharma 36	RD 15	Farmácias Permanente 15	Drogarias Globo 11	extra farma 9	
PE	Pague Menos 95	RD 62	extra farma 37	DPSP 22			
PI	Farmácias Permanente 42	Drogarias Globo 27	Pague Menos 25	extra farma 9	RD 8		
RN	Pague Menos 45	Drogarias Globo 24	extra farma 17	RD 14	Farmácias Permanente 1		
SE	Pague Menos 21	RD 15	extra farma 5				

North Region

PA	extra farma 123	RD 28	Pague Menos 19	Drogarias Globo 2
TO	RD 7	extra farma 7	Pague Menos 7	d1000 3

The Southeast. In Brazil's main region, with 37,435 points of sale, RD has historically been the leader after its merger. The region is home to the two largest players in the sector, RD, with a 9% market share and DPSP, with 1,276 and 1,220 stores in the region, respectively. São Paulo is the most competitive state, with 12% of the stores belonging to large chains, mainly due to the large store bases in the capital and other main cities of RD (975 stores), with a 25% market share and DPSP (772 stores) (See Exhibit 25); large local players on the countryside, such as Drogal (160 stores) and Farma Ponte (123 stores) being able to compete locally with larger chains; and players originally from other regions trying to enter the market in a faster and more aggressive manner, such as Pague Menos, Extra Farma, Panvel, Nissei and Clamed. In RJ, DPSP (304 stores) positions itself as leader through the Pacheco brand, with strong competition coming from RD and D1000 (131 and 121 stores, respectively) and local stablished players, such as Venâncio (73 stores), an iconic brand with tremendous results, having the country's largest results per store and per square meter; Moderna (62 stores) and Nossa Drogaria (34 stores). In MG, Drogaria Araújo (218 stores) has made loyal a great number of customers through its centenary history, operating as a convenience hub for the local population, with a diversified portfolio, offering from drugs to pet food in its "drug store" format, while Indiana (76 stores) has created a strong presence in the state's countryside. Recently, RD and DPSP (128 and 111 stores) have increased efforts in the state, battling local players even with the unfavorable competitive scenery. Espírito Santo, on the other hand is way more fragmented, with just 5% of the number of stores, being part of large chains, being the main players: RD, DPSP and Santa Lúcia Drogarias, the main local player.

The South. This region has a total drug retailing market of 14,040 pharmacies. Regional players, such as Panvel (421 stores), an extremely strong brand with large focus on HPCs sales and the country's largest and most successful private label operation, largest e-commerce branch and a well-developed omnichannel strategy; São João (656 stores), a company with remarkable organic growth history, opening 500 stores in the last 5 years; Nissei (260 stores), which adopts a "drugstore" model, selling a larger number. of convenience items and has accelerated its expansion plans in the past few years; and Clamed (493 stores), which includes the centenary Catarinense and the fast-growing Preço Popular. Nationwide chains have a weaker presence than the national average, with only RD (188 stores) being a significant player in the region with a 7.4% market share. The region has the country's least fragmented competition, with the largest share of stores owned by chains (15%, against 10% nationally), with all states having higher concentration than the national level, with RS having the most intensive competition (19% of stores belonging to chains) due to the large presence of São João and Panvel *(See Exhibit 24)*, in the states of PR and SC, the main players are, respectively, Nissei and Preço Popular.

The Midwest. RD is positioned as leader, with 185 stores and a 15.5% market share, competing with Pague Menos (98 stores), D1000 (78 stores) and the local players São Bento (91 stores) and Santa Marta (74 stores). The competition in the DF is fierce, due to the large per capita GDP, with 13% of stores belonging to large chains, with RD (70 stores), D1000, (67 stores) and Santa Marta (25 stores), in Goiás, meanwhile, the main players are RD (70 stores) and Santa Marta (49 stores). In Mato Grosso and Mato Grosso do Sul, the market is less competitive, with few large chains present, being RD the main player in both with, respectively, 20 and 25 stores.

The Northeast. Pague Menos maintains itself as the clear regional leader *(See Exhibit 26)*, being the chain with the largest number of stores in all states of the region but one, totaling more than 600 stores and a 20% market share, competing mainly with Extrafarma (244 stores), positioned as the 2nd largest player in Maranhão and Ceará. RD (233 stores) has been entering the market aggressively and assertively, reaching a 7.5% market share, DPSP has also invested on the region, but not on the same scale, reaching 91 stores in limited states (Bahia, Pernambuco and Alagoas). Farmácias Permanente (101 stores) and Drogarias Globo (89 stores) also have a significant presence in the region, while Redepharma (36 stores) in Paraíba, Preço Popular (27 stores) and Indiana (21 stores) in Bahia maintain a good positioning in its respective states. Ceará and Paraíba are the most disputed markets in the region, as the former has a large presence from Pague Menos and Extra Farma and the latter from Pague Menos and Redepharma.

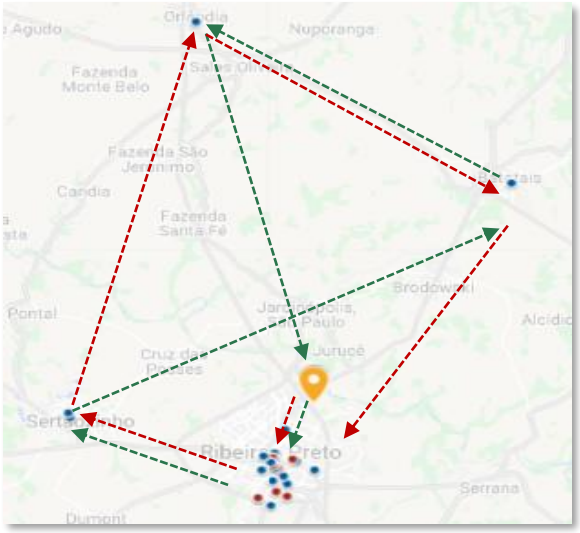
The North. Such region presents logistics challenges that burden the entry of new players and the retail consolidation, resulting in the most fragmented market in the country. Pague Menos, with its national coverage strategy, is the only player with presence in all 7 states, while Extra Farma has the largest number of stores overall (141 stores), mainly due to its large presence in its home state, Pará (123 stores), the state chosen by RD (35 stores in the region) as the focal point for their recent and very successful expansion to the North (2.5% market share, up from 0.3% a year ago), exploiting the gap created by Big Ben bankruptcy, including using some points previously occupied by the former company. In Amazonas, there is a strong local player, Grupo Tapajós (56 stores), who faces competition from Pague Menos (21 stores) and soon from RD, which will probably open from 10 to 20 stores in the next years. The states of Acre, Amapá, Rondônia, Roraima and Tocantins are still extremely fragmented, while also being relatively small.

Source: Company's data and Team Estimates.

• Appendix 22: Travelling Salesmen Model - Explained

Exhibit 1: Simulated Optimum Route

Source: IQVIA



In order to understand how RaiaDrogasil's logistiscs capillarity is positioned compared to its peers, we conducted the Traveling Salesman Algorithm:

1. By Python coding, we mapped 4,831 stores and 24 distribution centers of main national chains: RaiaDrogasil, Drogaria Pacheco São Paulo, Pague Menos and Extrafarma. After finding each address, we converted them in geographical coordinates.
2. Then, we analysed individually each DC with all these stores which it supply, according to company's guidance and team's estimates. It is important to say that in case of Pague Menos, after speaking with supply chain team, we assumed that MG's Distribution Center, supplied only stores in MG, while stores located in South and Southeast were supplied by GO's Distribution Center
3. After dividing each store to each respective distribution center, we used a matrix with all the cities supplied and calculate the distance from the DC to all cities and from all cities to all cities. After that, we used Excel's Solver to measure the Evolutionary solutions, assuming that the truck always returned to the origin (Distribution Center)

Optimum Route

Non-optimum Route

Distribution Center · Droga Raia · Drogasil

Exhibit 2: Route Calculation Matrix Example

Source: Team Elaboration

Raia Drogasil CE - Distribution																		
Latitude	-4° 9' 26"	-6° 7' 47"	-6° 6' 57"	-4° 15' 24"	-4° 7' 14"	-6° 53' 44"	-3° 28' 56"	-23° 3' 23"	-1° 22' 33"	-6° 28' 22"	-2° 42' 26"	-2° 38' 5"	-2° 37' 48"	-2° 35' 45"	-2° 16' 27"	-6° 39' 15"	-7° 55' 52"
Longitude	-39° 24' 22"	-36° 49' 6"	-36° 47' 59"	-39° 31' 23"	-39° 23' 46"	-43° 14' 50"	-45° 46' 26"	-47° 27' 29"	-48° 39' 19"	-48° 33' 44"	-48° 3' 32"	-49° 38' 19"	-49° 37' 7"	-49° 34' 14"	-49° 6' 58"	-50° 53' 51"	-50° 5' 45"

Latitude	Longitude																	
-4° 9' 26"	-39° 24' 22"	-	440	439	17	4	482	643	2,280	1,036	999	1,077	1,120	1,122	1,126	1,168	1,178	1,278
-6° 7' 47"	-36° 49' 6"	440	-	3	435	439	843	1,070	2,249	1,471	1,358	1,505	1,546	1,548	1,552	1,589	1,543	1,630
-6° 6' 57"	-36° 47' 59"	439	3	-	434	438	841	1,069	2,246	1,469	1,356	1,503	1,545	1,547	1,551	1,588	1,541	1,628
-4° 15' 24"	-39° 31' 23"	17	435	434	-	21	498	653	2,295	1,045	1,014	1,087	1,130	1,132	1,137	1,178	1,192	1,293
-4° 7' 14"	-39° 23' 46"	4	439	438	21	-	480	643	2,276	1,037	997	1,077	1,120	1,122	1,126	1,167	1,176	1,276
-6° 53' 44"	-43° 14' 50"	482	843	841	498	480	-	330	2,015	711	521	714	748	749	752	777	704	799
-3° 28' 56"	-45° 46' 26"	643	1,070	1,069	653	643	330	-	2,274	405	488	435	477	479	484	525	625	743
-23° 3' 23"	-47° 27' 29"	2,280	2,249	2,246	2,295	2,276	2,015	2,274	-	2,471	1,930	2,400	2,395	2,395	2,392	2,361	1,967	1,902
-1° 22' 33"	-48° 39' 19"	1,036	1,471	1,469	1,045	1,037	711	405	2,471	-	542	99	140	142	148	210	557	666
-6° 28' 22"	-48° 33' 44"	999	1,358	1,356	1,014	997	521	488	1,930	542	-	472	472	472	469	450	186	280
-2° 42' 26"	-48° 3' 32"	1,077	1,505	1,503	1,087	1,077	714	435	2,400	99	472	-	47	50	56	115	466	571
-2° 38' 5"	-49° 38' 19"	1,120	1,546	1,545	1,130	1,120	748	477	2,395	140	472	47	-	2	9	70	448	548
-2° 37' 48"	-49° 37' 7"	1,122	1,548	1,547	1,132	1,122	749	479	2,395	142	472	50	2	-	7	68	447	546
-2° 35' 45"	-49° 34' 14"	1,126	1,552	1,551	1,137	1,126	752	484	2,392	148	469	56	9	7	-	62	442	541
-2° 16' 27"	-49° 6' 58"	1,168	1,589	1,588	1,178	1,167	777	525	2,361	210	450	115	70	68	62	-	401	493
-6° 39' 15"	-50° 53' 51"	1,178	1,543	1,541	1,192	1,176	704	625	1,967	557	186	466	448	447	442	401	-	119
-7° 55' 52"	-50° 5' 45"	1,278	1,630	1,628	1,293	1,276	799	743	1,902	666	280	571	548	546	541	493	119	-

• APPEDIX 23: General Personal Data Protection Act (GDPA)

The bill nº 13,709 (GDPA) intents to regulate the use and processing of personal customers' data by private and public firms. It was enacted on 2018 and will be effective on 2020, having the power of hugely affect all business across Brazil, RD included, specially when we take into account its plans to be closer to its clients, understanding their journey and delivering a more tailor-made experience.

The Act:

(i) Define as data use and processing: any policy that involves the collection, storage, classification, processing, utilization, sharing or transfer, disposal and other similar actions that utilizes costumers' or users' data for personal benefit.

(ii) Define as "sensible data" (that is embraced by the law): Data regarding ethnicity, religion, political judgments, **healthy**, sexual life and **genetical or biometrical data**.

(iii) Establish the need of employing three different professionals that will be responsible for data manipulation:

1. The controller: The one who makes the call about how data will be used and with what purpose.
2. The operator: That who effective the controller orders.
3. The commissionaire: He's the one responsible for the communication between the company, the client (data's owner), and the government area that is responsible for the law attendance (*ANPD, free translated as: National Authority of Data Protection*).

(iv) Gives the client the right of knowing exactly how his data is going to be used and the power of allowing it or not by **prior and explicit** consent. Besides, if the costumer ever changes his/her mind about this consent, he/she can cancel the contract and order the data discard at anytime.

(v) Imposes a **fine** that can go up to 2% of the company's revenue (limited to a maximum of R$50 millions) in case of its violation.

How is RD affected by this Act?

(i) Because of the need of an investment in digital compliance and new hiring, the company can experience a cash burn and an increase on operational expenses.

(ii) Its digital transformation plan can be deeply affected if its clients don't feel comfortable in make their data available. In this scenario, its omnichannel strategy can fail and client loyalty may not become a reality as the firm won't be able to better understand them.

(iii) Eventual contingencies regarding data use can come to surface in the medium and long-run, which will, in its turn, affect the company's performance.

What is RD doing about it?

Ever since the Act was enacted in 2018, RD is making the necessary moves and investments as to keep her digital development plan running:

Necessary Digital Compliance and New Hires			
Implementation of a Digital Strategies Committee	Omnichannel and IT Manager (Fernando Kozel)	Dunnhumby's hiring	Employee training through Corporate University Program
✓	✓	✓	✓

Ultimately, it can be concluded that the company is already doing everything that is on its reach to go smoothly through the GDPA Act. However, if most of its clients decide that they don't want to make their data available, the company will indeed face huge obstacles to implement its digital transformation and to increase costumer loyalty. This, in turn, puts a doubt into the third point of our thesis *(See Digital Strategy, page 6)* and, therefore, all the upside that comes with it.

Source: Company's data and Team Estimates.

• Appendix 24: Expansion Analysis – Explained

In order to assess RaiaDrogasil's real expansion potential we listed RD's and its competitors' stores locations by webscraping through phyton, companies' websites, converting the addresses to coordinates, finding out the competitive scenario, firstly by city, then by location. After defining the leading chain in a determined city we realized different analyses to calculate the potential openings for RD.

- For cities in which **RD is the leader**: Through coordinates, we found locations in which one of its main competitors had a store and RD did not have any in a 1 km radius. The premises are based on the fact that major players have similar cost structures, thus if one opens and maintains a store in a certain area, makes sense for RD to open one close to it, being a common practice in the market to open a store close to a competitor's and being 1 km a proxy for store cannibalization, thus we are projecting that this new projected store wouldn't have any cannibalization with a current store, what we consider to be a conservative premise since RD commonly opens stores within that radius of another.
- For cities in which **RD is not the leader:** We projected that RD would get close to the leader's current number of stores in 10 years, since it has shown it is capable of doing it, as seen in Recife and Salvador, where in a few years after entering the market they became the leader. We looked case by case to identify cases in which it did not make sense for RD to get close to the leader (ex. Porto Alegre), and estimated the number of stores on the second or third place, whatever seemed more adequate. In order to determine the number of openings we also considered the fastness of growth in that place (how long has RD took to get to current number of stores) and its success. We believe that RD is well positioned to expand in all those markets, as it has shown great results in its expansion to N and NE, despite the aggressive quickness of it, and despite earlier struggles in states like RS and MG, RD has seamed to finally found its edge with current stores, with the next logical step being consolidation.
- For cities in which **RD is still not present**: We created a series of filters to determine in which cities RD could enter. Firstly, we selected cities only from states where RD already is present, excluding Roraima, Acre, Rondônia and Amapá, then we took out cities with the lowest 10% per capita GDP in which RD is present, considering those as possible worst performers, then we removed cities with fewer than 50,000 habitants, as those probably wouldn't represent a large enough market for RD. Finally, we filtered cities in which at least 2 Abrafarma chains were present, being at least one of those a national firm (DPSP, Pague Menos or Extrafarma). For most of those cities, we projected RD would, in 10 years, get to the number of stores the second player in the market has today, as it has been placing at least in second in the vast majority of the cities it enters.

	Current # of stores	Projected Openings		Current # of stores	Projected Openings		Current # of stores	Projected Openings		Current # of stores	Projected Openings
BR	1,917	1429	SP	975	387	RJ	131	179	MG	128	150
PR	105	114	CE	26	96	RS	35	70	BA	65	61
PA	28	58	GO	70	39	PE	62	38	MA	13	36
DF	70	36	ES	42	34	PB	15	27	SC	48	26
RN	14	19	AM	0	17	PI	8	12	MS	25	9
MT	20	7	AL	15	7	TO	7	5	SE	15	2

• Appendix 25: International Case Study – Boots, the e-commerce giant

Source: Boots UK, IBM, Microsoft

Boots is an UK-based pharmacy chain under the Walgreens Boots Alliance, leading its national drug retail industry while also being present in other countries like Ireland and Thailand. It has around 2,500 stores, claiming to be within a 10-minute distance from over 90% of the UK population. Nevertheless, its operations shine not only through regular physical retail, but through its e-commerce of great repute, constituting an ideal omnichannel case study.

In terms of structure provided to customers, Boots offers a website experience optimized for both web and mobile, not to mention the Boots app, which gives exclusive offers that can be loaded directly onto the client's Boots Advantage Card. Besides, all stores are equipped with tablets, which allow for customers to order any product available in Boots' portfolio for delivery in store or in any address. As of August 2018, customers could order from a range of over 33,000 products, available for pick-up at 99% of retail stores in the United Kingdom. Despite those points seeming easy to replicate, they are associated, as we are going to see, to high levels of complexity and detail regarding technology and customer experience focus.

To begin with, Boots' Advantage Card loyalty scheme provides over 15 million cardholders with personalized offers, based on a point accumulation program. Such points are accumulated by spending, and customers can check their available discounts and accumulated points via both mobile app and an in-store kiosk. However, the company decided to go further, seeking to inspire such large loyal customer base to spend more and increase brand engagement. But how did it manage to do that?

Today's customers demand a great shopping flexibility regarding discounts, time and local of purchase. Having that in mind, retailers became aware of the need to adapt, and Boots was no different: it recognized that, without a complete awareness of each customers interaction with the company via all the available platforms, there would be no way to provide the valuable tailored consumer experience it seeks. With near two thirds of its customer base utilizing the Boots' Advantage Card, the major challenge was to organize and make proper use of massive amounts of data in order to achieve their goals.

Before it managed to integrate all of its channels, Boots suffered to exploit its tailoring potential: despite having access to each customers data, it ended up being forced to provide all with catch-all marketing campaigns, regardless of being interested in providing an unique experience for each customer according to its preferences and shopping behavior. However, with the help of IBM solutions, it became easier for internal systems to identify transactions linked directly to each of Boots' customers loyalty card, in a way it guaranteed the company would be able to properly provide consumers with custom discounts via app, for instance.

Diving deeper into technology, the Walgreens Boots Alliance works with the company called Fastly in order to optimize the online customer experience. Besides, it is now partnering with Microsoft "to develop new health care delivery models, technology and retail innovations to advance and improve the future of health care". In this way, Boots is aiming on further developing its platforms and technological systems, which on the present day are already greatly able to provide customers with a smooth, easy and personal online experience. Nevertheless, the Walgreens Boots Alliance is not satisfied. As announced earlier this year, in 2019 they will be spending US$300 million seeking to boost technological partnerships and to take the company's digitalization strategy to a greater level.

Not only such processes generated positive results in terms of sales and operational agility, but it led to a measurement of greater overall customer satisfaction with the services offered by Boots, all of which translates into greater loyalty and engagement with Boots' platforms, providing it with further valuable data. Besides, today, approximately two thirds of online orders are collected in store, in a way that a significant portion of those customers end up buying other products when they arrive at the stores to pick up their orders. According to the company, customers who buy products online and through mobile end up being three to six times more profitable. By the end of 2018, 22.5% of all retail refill scripts were initiated via digital channel, up 2.4%p. Those numbers, altogether, translate the results of all the above-mentioned efforts, which proved themselves to be worthwhile in terms of generating greater customer interaction, building captivity and boosting sales.

Source: Company's data and Team Estimates.

• Appendix 26: Drug Retailers as a pathway to the health system in Brazil

"As in the US, Canada and England, Brazilian pharmacies have begun to contribute to an exponential increase in people's access to health. In addition, encouraging greater interaction between pharmacists, doctors and patients, or helping a public system" Sergio Mena Barreto, CEO of Abrafarma

The pharmaceutical care model has been growing considerably in Brazil and makes the drug retailers protagonist in the health journey of patients. Increasingly pharmacies offer services that were previously only found in hospitals. In a year, the number of services tripled, and, by the end of 2019, the goal is to reach 2,100 health rooms in pharmacies. These rooms exceeded R$ 2.5 million in investments in 2018 compared to 1.4 million in 2017.

Several services are already offered in Brazilian pharmacies, such as (i) Self-Care, which focuses on giving attention to symptoms and minor cases of malaise, promoting the safe use of non-prescription medicines, (ii) "Cholesterol in Day", which helps the patient to control cholesterol and triglycerides, reduce cardiovascular risk and maintain a healthier diet. (iii) "Diabetes in Day", which accompanies the disease, managing treatment and preventing complications, (iv) "Hypertension in Day", which helps in controlling blood pressure, managing the side effects of medications and promoting adherence to treatments, (v) Immunization Clinic, responsible for helping people keep their schedule of vaccines up to date, and thus preventing disease, (vi) Quit smoking, helping addicts quit with pharmaceutical aid, (vii) Weight loss, helping patients manage their weight and use weight loss safely and efficiently; and (viii) Review of medication, guiding the patient in organizing the treatment routine, improving its effectiveness.

As can be seen, amongst the main national players, RD and Pague Menos stand out in offering health services in their pharmacies. However, we believe that Raia Drogasil still has plenty of room for growth, as the chain does not yet offer services like Cholesterol in Day and Weight Loss. Other regional players also stand out in regarding heath services, such as Panvel (southeast region), Drogaria São Bento (Midwest region), Nissei (Southeast region) and Vale Verde (southeast region).

Benchmarking of services in drug retailers

Source: Abrafarma

Services for:	RD	Extra Farma	Pague Menos	DPSP	PanVel	Araujo	Drogaria Ipiranga	A Nossa Drogaria	Farmaitem	Drogaria Minas-Brasil	Moderna	Drogaria São Bento	Santa Lucia	Drogaria Venâncio	Nissei	dooo	Drogaria Indiana	Farma Ponte	Farmácia Pernambuco	São João	Vale Verde	Drogal	Redepharma
Self Care	✓		✓	✓	✓							✓			✓		✓	✓			✓	✓	✓
Cholesterol			✓		✓	✓			✓			✓		✓	✓		✓	✓		✓	✓	✓	✓
Diabetes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓
Hypertension	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Immunization	✓		✓	✓	✓	✓	✓	✓		✓		✓			✓						✓		
Smoking	✓		✓	✓	✓		✓		✓	✓	✓	✓			✓		✓				✓	✓	✓
Weight Loss			✓		✓			✓	✓	✓	✓	✓			✓	✓	✓	✓		✓	✓	✓	✓
Medication Review	✓		✓		✓				✓			✓			✓		✓		✓		✓		✓
Rooms	1,205	16	850	20	75	218	6	24	3	3	9	10	2	33	251	7	10	20	13	50	15	12	26

Vaccines

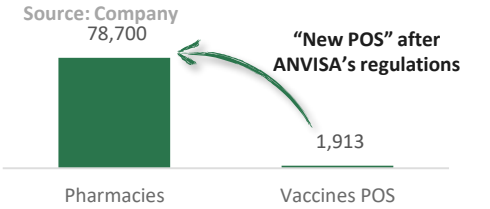
"This is a major innovation in retail, in its noblest mission, which leads us to reach the goal of taking care of people's health and well-being" Marcilio Pousada, RD´s CEO

New Rule. In December 2017, ANVISA published RDC 197, which allows any health facility to administer vaccination, which includes pharmacies and drugstores. The standard has contributed to expand the transformative potential of vaccines for Brazilian health, providing the opportunity for 78,700 pharmacies to be accredited to perform services, nearly 100 times greater than the current supply.

Even after ANVISA's regulation, for a pharmacy to offer vaccination service, a specific CNES code was required, according to the the President of CRF-SP, Marcos Machado, announced the launch of vaccination licensing.

Market after new rule

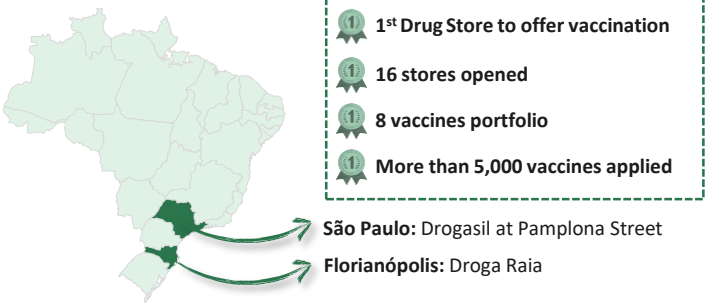
Source: Company



Faster and better pilot project. Given the growing market trend in health-related services, RD began its innovation process by developing a pilot project followed by gradual expansion. In Sao Paulo, Drogasil was the first to launch immunization. It happened at the Pamplona Street unit. Droga Raia also offers the flu vaccination service, but only in Florianopolis. These two cities were chosen to be RD´s first step in order to develop a vaccination structure in its pharmacies. The exhibit below shows the results and strategies of this pilot project in São Paulo and Florianopolis.

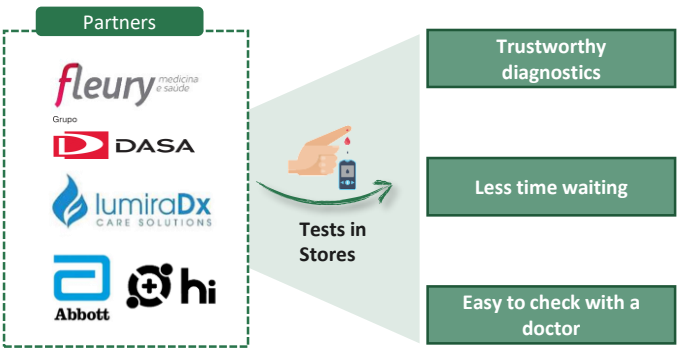
Vaccination Pilot Project

Source: Company



Laboratorial tests

Source: Company



Preparing itself for the future. Recently, Raia Drogasil also began conducting laboratory tests in partnerships with renowned laboratories, such as Fleury and Dasa.. The project is still in its early stages, but we believe RD has been ahead of its competitors in planning and innovation. Therefore, in a scenario in which pharmacies will become health care points, Raia Drogasil would be very well positioned to absorb a new demand for services, since it has been investing in new formats of revenue and partnerships in order to capture any structural change in the pharmaceutical sector.

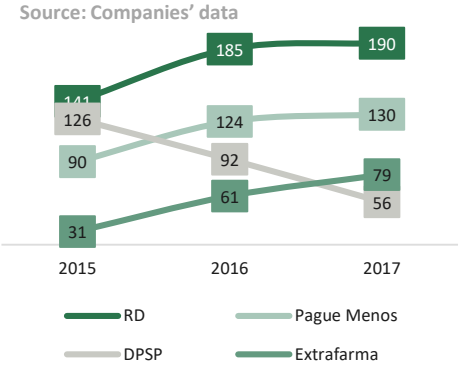
Source: Company's data and Team Estimates.

• APPEDIX 27: A walk through 2017-2018 (Price War on Generics)

During the years of 2015-2017, the drug retailer sector observed a huge increase on three of the top 4 ABRAFARMA chains net stores openings, being most of that openings relative to expansion plans and entrance on new markets (like São Paulo for Extrafarma and Pague Menos). As consequence of that, (i) local competition amongst chains increased and (ii) a price war competition on generics took place, as the cluster that presents the higher margin.

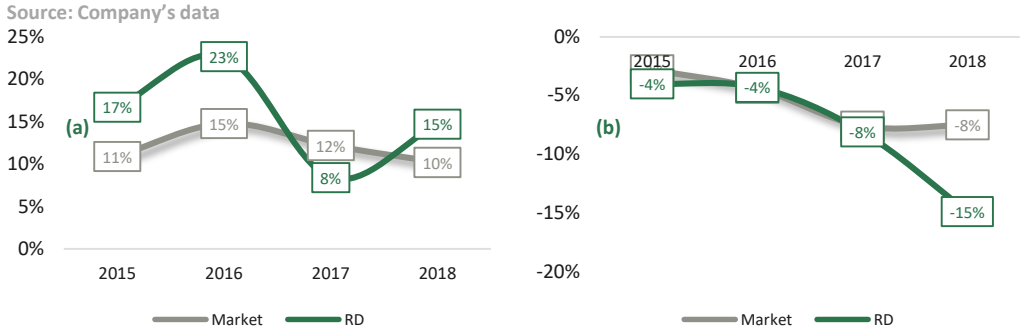
Net Openings TOP 4 ABRAFARMA

Source: Companies' data



(a) YoY % Generics Sales (Units) vs. (b) YoY % Generics Price – IPCA Adjusted

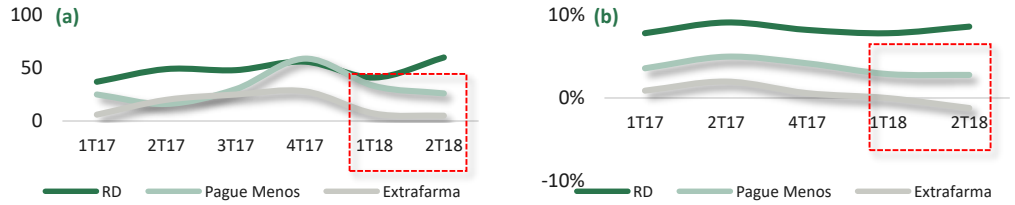
Source: Company's data



The end of this story was a decreased gross margin of all these companies, which affected all margins, and a backup from openings for most of them, except from RD, which size and operational expertise and allowed it to handle this fight without considerably change its expansion plans [1].

(a) Net Additions (LTM) vs. (b) EBITDA Margins

Source: Company's data



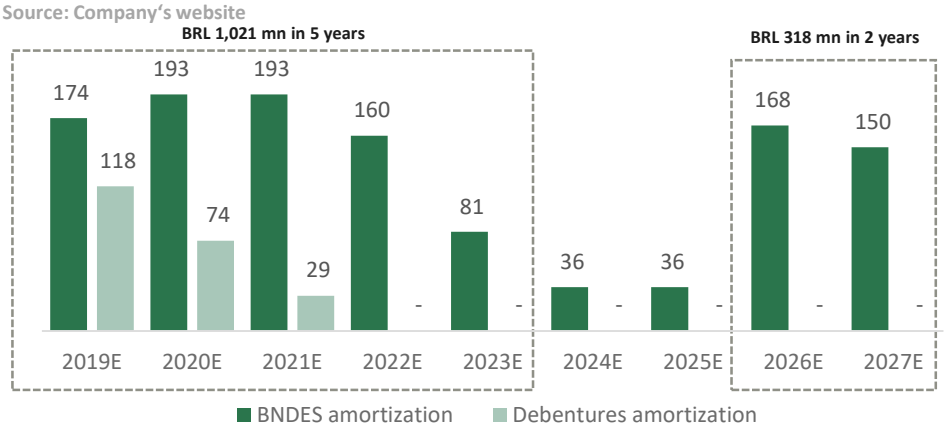
Lastly, taking into account the financial impact this storyline had chain like Extrafarma and Pague Menos, we don't see an expansion cycle or another price war occurring anytime soon.

• Appendix 28: Debt Profile

RD will amortize ~ BRL 1,4000 mn from 2019 to 2027, most of it concentrated in two periods, from 2019 to 2023, when it will amortize BRL 1,021 mn,, paying all of its BNDES debts and its 1st and 2nd debentures emissions, and BRL 318 mn in 2026 and 2027, when it will pay in two installments its 4th emission. In order to analyze RD's indebtedness, we modelled all its contracts monthly, in order to properly project the interest and principal payments, concluding that RD is capable of paying its debts, even on periods with large sums of amortization without taking any new debts. Thus we expect RD to begin to unlever as it starts to decrease its expansion rhythm, eventually getting to a net cash position. Those expectations go in line with RD's history and guideline, as it has been quite conservative on its indebtedness since Raia had debt problems before the merger and is admittedly expecting to reduce its leverage, even getting into a net cash position .

Debt Amortization Schedule

Source: Company's website



Debt Contracts Breakdown

Source: Company's website

Breakdown by Creditor	Interest	Amortization	Total Outstanding (BRL mn)
BNDES 1	TJLP + 2.12%	Monthly (05/17-05/21)	69.46
BNDES 2	Selic + 2.35%	Monthly (05/17-05/21)	82.35
BNDES 3	TJLP +2.02%	Monthly (05/17-05/21)	11.82
BNDES 4	9.54%	Monthly (07/16-07/20)	2.60
BNDES 5	TJLP + 2.12%	Monthly (10/15-10/19)	0.05
BNDES WC	TJLP + 2.12%	Monthly (12/18-12/19)	36.66
Debenture 1st Emission	107.5% CDI	Semestral (10/17-04/22)	235.42
Debenture 2nd Emission - 1st Series	102.25% CDI	Semestral (10/18-04/19)	43.72
Debenture 2nd Emission - 2nd Series	102.25% CDI	Semestral (10/18-10/19)	45.12
Debenture 2nd Emission - 3rd Series	102.75% CDI	Semestral (10/18-04/20)	45.12
Debenture 2nd Emission - 4th Series	103.00% CDI	Semestral (10/18-10/20)	45.12
Debenture 2nd Emission - 5th Series	103.75% CDI	Semestral (10/18-04/21)	45.13
Debenture 2nd Emission - 6th Series	104.00% CDI	Semestral (10/18-10/21)	45.13
Debenture 2nd Emission - 7th Series	105.25% CDI	Semestral (10/18-04/22)	45.14
Debenture 2nd Emission - 8th Series	106.00% CDI	Semestral (10/18-10/22)	45.14
Debenture 2nd Emission - 9th Series	106.25% CDI	Semestral (10/18-04/23)	45.18
Debenture 3rd Emission	98.50% CDI	Semestral (09/19-03/26)	250.00
Debenture 4th Emission	106.99% CDI	Custom (12/26 - 50% and 06/27 - 50%)	300.00

Source: Company's data and Team Estimates.

[1] DPSP wasn't public available.

• APPEDIX 29: Tragedy of the Common Explained

A *Tragedy of the Commons* is a microeconomic situation that happens when many **individuals(i)** all share a **limited resource(ii)**. The key property of these situations is that it offers the opportunity for an agent to benefit him/herself while spreading out any negative consequences across the large **universe(iii)**.
Accordingly to this theory, these circumstances pitch shot-term interests against the common good, what invariable implicates in negative results in the long-run.

Translating that theory into the pharmaceutical retail sector, we define as:
(i) **Individuals**: Each individual drugstore chain
(ii) **Limited Resource**: A given demand of a given area in a given period of time (Dt)
(iii) **Universe**: All drugstores chains that operates in that region in that period time (Ut)

In that case, each individual firm has the incentive of opening as many stores as possible in a given area while there are still good spots[1] that makes economic sense ($ROIC \geq WACC$). Meanwhile, any decline in sales/stores – entailed by an increase of individual/limited resources - is shared by the entire universe. In addition, because no firm wants to lose clients (limited resource) to its neighbors, it concludes that it's in its best interest to open an extra store as well –or even two, or three, or four…-. And the same conclusion is reached by the other drugstores chain, and that's the tragedy.
The decision making of a firm can be roughly synthetized in the following strategic format:

Demand absorbed by each individual	Open new store (Y) i=1	Don't open a new store (N) i=1
Open new store (Y) i=2	Dt/2; Dt/2	Dt; 0
Don't open a new store (N) i=2	0, Dt/2	0,0

By utilizing this simple example, it can be seen that the dominant strategy for players i=1 and i=2 is always opening a new store. And this happens even if player i=2 is another store of the same drugstore chain, once the firm conclude that if they don't make this move, it will be made by a competitive and, therefore, instead of splitting the demand between its own self, it will split between another chain, decreasing consolidated revenue. So, they will keep opening new ones up until $ROIC = WACC$.

Summing up, the end result of this tragedy is a situation of decreasing ROIC in the long-run as new stores keep opening in a given area and, therefore, cannibalization and price war against chains increase continuously.

Tragedy of the Commons

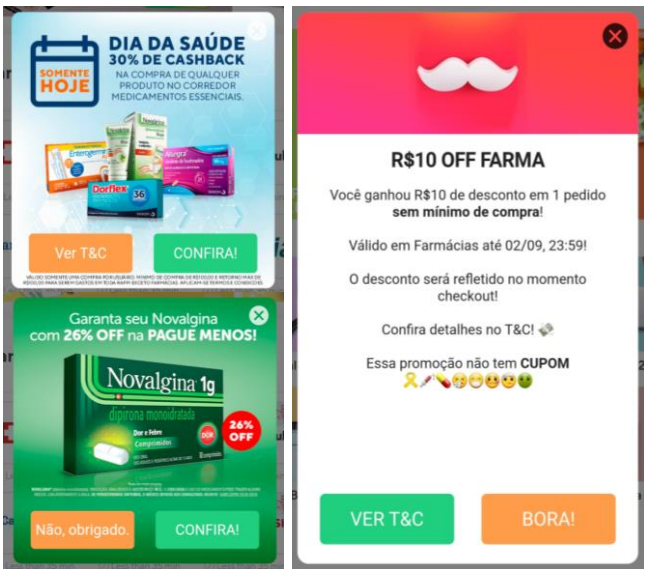
Source: Senac

Indicative of drugstore

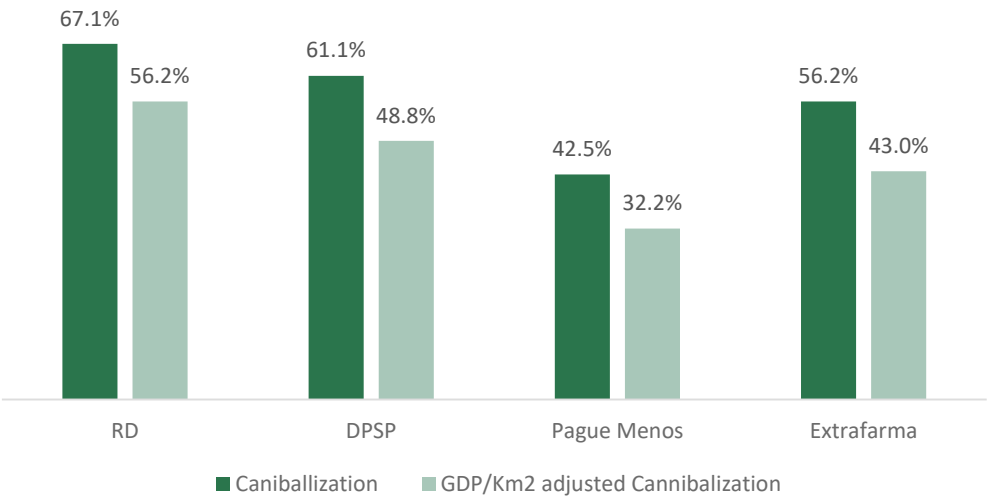
• Appendix 30: Rappi – A *frienemy*

The Colombian startup Rappi, which promises to delivery all kinds of products in under an hour, started operating in the Brazilian market in 2017, and it has grown fast ever since. With deliveryman partners of their own, Rappi is currently present in the biggest Brazilian capitals in terms of both population and drugstore addressable market, such as São Paulo, Porto Alegre, Belo Horizonte, Curitiba and Salvador, among many others.

On the one hand, such enterprise is a gateway for customers which, for example, need any specific OTC and are not willing to leave their homes. In that sense, it bridges the gap between drug retailers and those customers seeking convenience, given that drugstores own e-commerce initiatives tend not to be able to delivery with such agility, hence promoting revenue gains. On the other hand, however, this platform may provide large retailers, such as RaiaDrogasil, with a little headache.
First, considering RD's plans on building captivity through customized shopping experiences, which would be made possible by gathering customer's data, Rappi becomes a threat since it "hijacks" customers for itself, blocking the retailers access to valuable data. This could prevent RD from offering customers proper tailor-made discounts, thus damaging margins. Secondly, given that Rappi's platform allows for an easy and direct price comparison for any product amongst all affiliated drugstore chains, it should intensify online price competition as such platform gains relevance in terms of revenue.
All the processes mentioned above, positive or negative, should be intensified by Rappi's aggressiveness regarding discounts and cashbacks. As customers recognize such platform as a hub for identifying low prices, it should only grow bigger in the drugstore segment.



• Appendix 31: Cannibalization

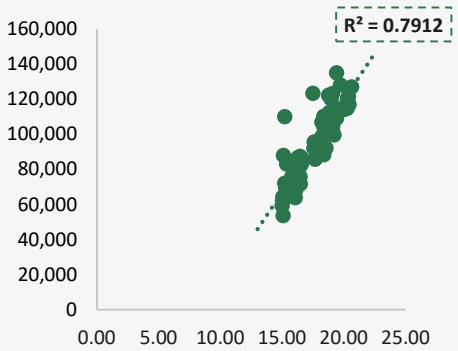


By analyzing distance between all drugstores within the said chains through a distance matrix, we assumed that any drugstore within a radius of 1 km would equally cannibalize the said store. Firstly, we calculated the cannibalization percentage without considering the impact of GDP/Km^2 . However, we know that cities with higher GDP density can take much more cannibalization than cities with lower GDP density. Therefore, we also estimated the cannibalization percentage weighted by GDP density. We did that, by assuming that in a 1 km radius all drugstore would divide between themselves that given GDP per square meter. We concluded that even tough RD has a best in class opening assertiveness, it still is hurt by a higher cannibalization. However, RD can still perform better than its peers even with a higher cannibalization, suggesting above average expertise in operational management.

[1] As of Sep/2019); [2] Looking exclusively to Moody's rating

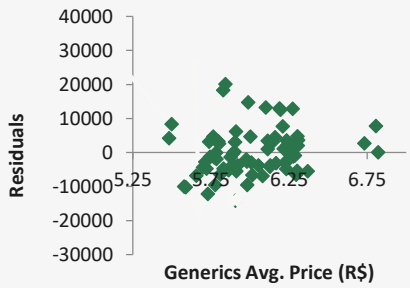
$VolG = F(BaP)$ - in thousands

Source: Sindusfarma; Group elaboration



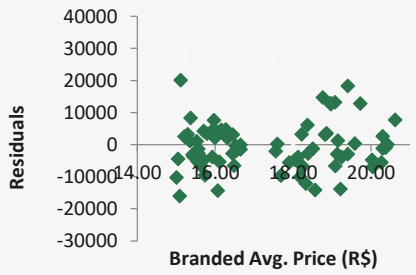
GaP Residual Plot

Source: Group elaboration



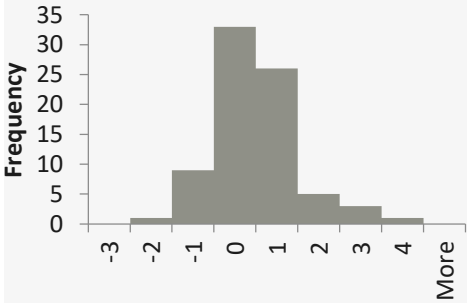
BaP Residual Plot

Source: Group elaboration



Real GDP Growth (YOY%)

Source: BCB (Brazil's Central Bank)



• APPENDIX 32: Adherence to Generics: A Statistical Approach.

As to understand how generics demand behave to price changes regarding generics and branded, its substitute good, prices, we proceed with a regression taking as:

(i) Response Variable: "VolG": Volume of Generics sold in Brazil, per month, in thousand units

(ii) Regressors:

a. "GaP": Generics Average price, in Reais (R$), monthly adjusted

b. "BaP": Branded Average price, in Reais (R$), monthly adjusted

We suspected that the average volume of generics sold per month was negatively influenced by generics average prices, like the demand of any normal good, and positively related to branded average prices, as we supposed that they were substitute goods. In order to check our hypothesis, we proceed with a regression based on the OLS (Ordinary Least Square) method using a sample of 78 observations got from *SINDUSFARMA* website which have monthly periodicity ranging from Jan-2013 to Jun-2019 (time series).

Thus, we first analyzed if all six hypothesis of linear regression were valid:

SLM1. The regression model is linear in the parameters

Our proposed function model to describe the behave of the VolG in term of GaP and BaP is:

$$\boldsymbol{VolG = \beta o + \beta 1Gap + \beta 2Bap + \varepsilon} \; [1]$$

As it can be seen in "$VolG = F(BaP)$ – *in thousands*", which relates the VolG with the BaP, the linear form is a good functional form to estimate the model [1] proposed above.

SLM2. Random Sample

We utilize a data base from *SINDUSFARMA* (Free translated as: "Pharmaceutical Industry Union"), that is the biggest representative entity of the pharmaceutical industry in Brazil. This data-base is a time series that got the variables values from the total pharmaceutical sales in the country from Jan-2013 to Jun-2019.

SLM3. Regressor are nor perfect correlated

(i) Regressors present sample variation: All 78 observations of both regressor were different from each other.

(ii) Correl(GaP; BaP) = 0,42

SLM4. $\boldsymbol{E\,(\varepsilon|x1, x2) = 0}$

We do believe that the regressors retain some level of endogeneity as price and demand are simultaneously related, in most cases. But as prices in this sector are regulated by ANVISA and, therefore, companies can't decide it with 100% freedom, we assumed that this degree of endogeneity was modest. Even so, the group is aware that the estimated Betas value are going to be a little polluted.

SLM5. Homoscedasticity

By analyzing the residuals plots for each regressor (*See Exhbits (i) X: GaP Residual Plot; (ii) X: BaP Residual Plot*), no clear pattern can be seen in the point cloud formed in each scatter plot.

RLM6. Normality ($\boldsymbol{\varepsilon \sim N\,(0, \sigma_\varepsilon^2)}$)

To check this assumption, we proceeded with a Histogram of Standardized Residuals. As showed in "*Histogram of Standardized Residuals",* the standard residuals distribution looks like a Normal.

With all the six assumptions check, we estimate the model for equation [1] and the result can be seen below:

Regression Statistics	
Multiple R	0,902100909
R Square	0,813786049
Adjusted R Square	**0,808820344**
Standard Error	8996,048715
Observations	**78**

ANOVA

	df	SS	MS	F	Significance F
Regression	2	26525457741	13262728871	163,88126	4,22141E-28
Residual	75	6069666936	80928892,48		
Total	77	32595124677			

	Coefficients	Standard Error	t Stat	P-value
Intercept	-36011,13323	20973,33364	-1,71699616	0,0901071
Generics Avg. Price	**-11602,71552**	3847,903122	-3,01533463	**0,00350206**
Branded Avg. Price	**11362,85683**	651,1985821	17,44914246	**4,0265E-28**

$$E\,(\widehat{VolG|GaP, BaP}) = -36011{,}13 \; - 11602{,}72GaP + 11362{,}86BaP$$

By analyzing the result, it can be seen through P-value[1] that, regarding $\widehat{\beta o}$[2], both $\widehat{\beta 1}$ and $\widehat{\beta 2}$ are relevant to explain the behave of the expected value of the volume of generics sold in Brazil, per month, in a way that:

(i) It's expected that the volume of Generics sold in Brazil, per month, measured in a thousand units, decrease, on average, by 11.603 when the average generic price raise R$1,00.

(ii) It's expected that the volume of Generics sold in Brazil, per month, measured in a thousand units, increase, on average, by 11.363 when the average branded price raise R$1,00.

[1] We utilize a 95% trust level; [2] what makes sense, as volumes of goods sold can't assume negative values.

Appendix 33: Fiercer Competition

1) Big International Player – Case Study – CVS & Onofre

Exhibit 1: Onofre related transactions

Source: Company Data and News

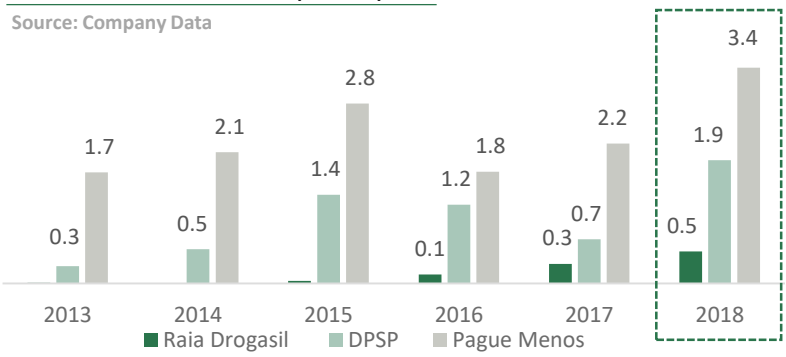
Buyer	Target	Transaction Value	EV/EBITDA	Year
CVS Health	Drogaria Onofre	BRL 670 mn	26x	2013
RaiaDrogasil S.A.	Drogaria Onofre	No Payment	n.a.	2019

In 2013, CVS entered Brazil's pharma retail market by buying 80% of Onofre from Arede family. Market perceived this entry as a major threat to local players as it represented the entry of US Health's Behemoth, with giant equity value and almost infinite financial capacity as CVS's revenue is bigger than the entire Brazil's pharma retail market, at least compared to Brazil's scenario on that time. At the time of this transaction, Onofre's annual gross revenue was of BRL 452 mn and had 44 stores. However, due to multiple feuds between CVS and Arede family and country specific market dynamics, CVS value creation plan for Onofre was unsuccessful and ultimately had to sell its participation in Onofre to Grupo RD. We believe that Brazil's pharma retail dynamics and its complex regulation are very unique, and thus represent major entry barriers for international players.

2.1) National player IPO

Exhibit 1: Net Debt/EBITDA Compared to peers

Source: Company Data



After a debt funded aggressive expansion, increased competition led to margin corrosion and consequently all time high Net Debt/EBITDA in both DPSP and Pague Menos. An IPO of any of these national chain would unleveraged their capital structure, benefiting their margin and possibly even fund a new expansion plan, price investment in order to gain share or even in their own digital transformation. That increase in competition would again hurt RaiaDrogasil's margin, similar to what happened in 2017 and 2018. Capital Markets' increased activity due to optimism to Brazil's economy and investor's trust to drugstore business model, should make it easier for that to happen. Due to General Atlantic's presence in Pague Menos, the former should be the first to file an IPO. However, if this truly happen we believe RD is best positioned to stand its ground and overcome this competition increase, as it already proved to do so in the past against an advance from a greater number of pharma chains.

2.2) Private Equity Investor

Exhibit 1: Private Equity Transactions

Source: Company Data and News

Buyer	Target	Transaction Value	EV/EBITDA	Year
General Atlantic	Pague Menos	BRL 700mm	13.0x	2015
Kinea uma empresa Itaú	PanVel farmácias	n.a.	n.a.	2019

Recent news about Kinea entering Panvel heated up the market. The transaction value was approximatively BRL 200 mn for 10% stake, but probably there was a liquidity discount. Private Equity entries have always been important facts that put sector on cautious. We believe that a minority investment won't be enough to truly oppose a threat to RaiaDrogasil, as Panvel's strategy keeps conservative, not trying to aggressively expand nationally. A minority private equity shareholder can, however, provide useful insight and expertise to Panvel, similar to what General Atlantic has been doing in Pague Menos. As Pague Menos is not a major threat to RaiaDrogasil competitive positioning, we believe that if there is a threat, that would be if a majority stake private equity entered a more national present player. As Pague Menos already have General Atlantic, Extrafarma is currently owned by Grupo Ultra and DPSP may be valued in a demanding valuation for a 5-7 years investment, which will not leave much room for mistake, we see this as an unlikely scenario.

3) M&A

Exhibit 1: Local players related transactions

Source: Company Data and News

Buyer	Target	Transaction Value	EV/EBITDA	Year
Drogaria SãoPaulo	drogarias Pacheco	n.a.	n.a.	2011
Droga Raia	DROGASIL	BRL 1,926.7 mm	18.1x	2011

In 2011, two of the biggest pharma retailing groups were originated from a M&A. The most recent trend in industry is to expand organically. However, in a long term scenario, where there a no physical establishment for a drugstores to be set up, not thinking in a inorganical expansion as a consolidation strategy, may be quite difficult. We believe that the main decision making driver will be overall quality of POS localization and minimum overlap between merging chains. In this sense, considering total size and historical not so satisfying operational performance, the most likely acquisition target, from the main national chains, would be Extrafarma. RaiaDrogasil, disciplined as it is, would not sacrifice its hard earned integration to adopt a whole different chain. Pague Menos, on the other hand would not be able to proceed with the deal, as probably Cade (Brazil's Anti-Trust Government Agency) would not approve such transaction. On the other hand, not only DPSP has a adequate overlapping with Extrafarma, but it would be a nice opportunity to expand to new markets with a already developed trademark. Thus, we believe DPSP is the most suitable buyer.

Source: Company's data and Team Estimates.

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