Pulp & Paper
Initiation of Coverage: Are the theses Growth or Value?

LatAm Pulp & Paper

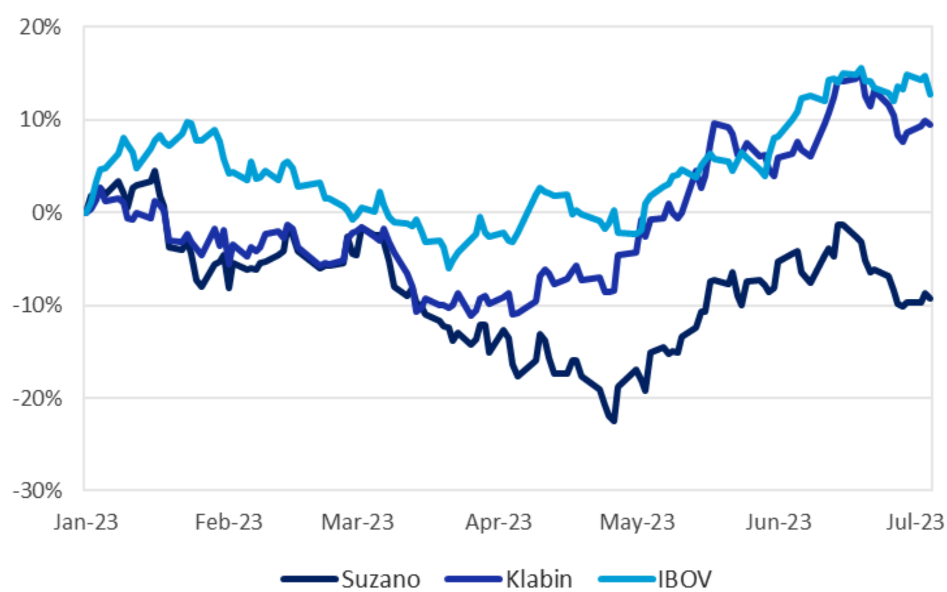
Report Structure:

In each company's chapter, investors will find: **(i)** Investment Thesis; **(ii)** Valuation; **(iii)** Company Profile; and **(iv)** Main Opportunities and Risks. In addition, we believe it is appropriate to also comment on **(v)** our expectation for the 2Q23 result, closing with **(vi)** our view and recommendation, concluding the individual analysis of both companies. Then we move up **(vii)** to Sector Analysis

In this report, **we will start by talking about Suzano and Klabin**, the most relevant companies listed on B3 in the pulp and paper business. **Next, we will analyze more broadly the sector in which they operate**, what are the trends going forward and **how the two companies are positioned** in relation to these trends.

We believe that this structure will help the more experienced investor to understand more quickly which pillars we base ourselves on to recommend the shares of the two companies, as well as better guide those who have less expertise in this market to understand its nuances**. If the reader is not yet familiar with the sector** and its technical jargon**, we strongly recommend starting reading from the sector chapter** entitled "Sector Analysis: What has been happening in the Pulp & Paper market?", **which follows below the individual analysis of both companies**. In other words, the order should then be reversed by starting to read from the last chapter, and then moving up again towards the individual analysis.

Graph 1. Pulp & Paper Stocks Performance YTD



Source: Genial Investimentos, Bloomberg

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Companies

SUZB3 BZ Equity
Buy

Price: US$ 46.53 (Jul-26-2023)
Target Price 12M: R$ 60.00 (B3)

SUZ US Equity
Target Price 12M: R$ 12.60 (NYSE)

KLBN11 BZ Equity
Buy

Price: R$ 22.19 (Jul-26-2023)
Target Price 12M: R$ 26.50

Suzano

Table 1. Suzano's multiples and metrics

Multiples and Metrics	2023E	2024E	2025E	2026E	2027E	2028E
Multiples						
EV/EBITDA	6,96x	6,86x	5,67x	5,14x	4,83x	4,73x
EV/EBIT	5,81x	6,60x	4,68x	3,93x	3,54x	3,40x
P/E	5,50x	18,49x	9,04x	7,86x	5,94x	5,20x
Price/Book	0,69x	0,72x	0,79x	0,87x	0,97x	1,08x
Price/FCFF	-19,78x	24,73x	6,37x	5,12x	4,69x	4,68x
Price/FCFE	-67,91x	46,52x	-131,54x	25,45x	8,34x	27,96x
Metrics						
FCFF per Share	-2,39	1,91	7,41	9,22	10,07	10,08
FCFE per Share	-0,70	1,01	-0,36	1,85	5,66	1,69
Dividends per Share	0,51	1,02	2,09	2,40	3,18	3,63
EPS	8,59	2,55	5,22	6,01	7,94	9,07
Unlevered FCF Yield	-5,05%	4,04%	15,69%	19,54%	21,34%	21,35%
Levered FCF Yield	-1,47%	2,15%	-0,76%	3,93%	12,00%	3,58%
Dividend Yield	1,08%	2,16%	4,42%	5,09%	6,73%	7,69%
Net Debt/EBITDA	3,99x	4,10x	3,19x	2,67x	2,22x	1,87x

Source: Genial Investimentos

Klabin

Table 2. Klabin's multiples and metrics

Multiples and Metrics	2023E	2024E	2025E	2026E	2027E	2028E
Multiples						
EV/EBITDA	7,18x	8,10x	8,27x	7,12x	6,07x	5,48x
EV/EBIT	10,45x	14,20x	14,42x	11,13x	8,70x	7,48x
P/E	7,01x	9,36x	9,72x	7,49x	5,56x	4,69x
Price/Book	1,77x	1,62x	1,52x	1,40x	1,27x	1,15x
Price/FCFF	22,14x	10,16x	9,07x	6,98x	5,57x	4,79x
Price/FCFE	14,97x	56,40x	60,18x	7,93x	13,99x	4,51x
Metrics						
FCFF per Share	1,02	2,22	2,49	3,23	4,04	4,70
FCFE per Share	1,51	0,40	0,37	2,84	1,61	4,99
Dividends per Share	1,26	1,20	1,39	1,81	2,43	2,88
EPS	3,21	2,41	2,32	3,01	4,05	4,80
Unlevered FCF Yield	4,52%	9,85%	11,03%	14,33%	17,95%	20,87%
Levered FCF Yield	6,68%	1,77%	1,66%	12,61%	7,15%	22,15%
Dividend Yield	5,60%	5,34%	6,17%	8,01%	10,79%	12,79%
Net Debt/EBITDA	3,37x	3,64x	3,54x	2,86x	2,22x	1,77x

Source: Genial Investimentos

Suzano

We are initiating coverage on **Suzano (SUZB3-B3**) with a **BUY rating**, at a **12M Target Price** of **R$60.0** and implying **an upside of +29,11%.** Trading at an **EV/EBITDA 23E** of **6.8x** and **6.7x 24E** vs. a historical average of 8.7x**,** we believe the Company is mispriced following the uncertainties seen in global pulp prices, with BHKP retracing around -40% YTD.

We view Suzano as **(i)** market share leader in BHKP production, with 30% of the market; **(ii)** its competitive advantage in costs, with a cash COGS of ~US$180/t vs. an industry average of ~US$480/t; **(iii)** pulp production growth, with the Cerrado Project start-up in 2H24 adding a production capacity of +2.55Mtpy, representing an increase of +22.9% vs. the current 10.9Mtpy; **(iv)** seeking to increase its verticality through higher paper production, growing with acquisitions such as Kimberly Clark Brasil related to paper for hygienic purposes; and **(v)** exposure to a global market with strong demand for paper and related products, consolidate it as our **Top Pick in the Pulp & Paper sector**.

Klabin

We are initiating coverage on **Klabin (KLBN11-B3)** also with a **BUY rating**, at **a 12M Target Price of R$26.50**, which provides the shares with **an upside of +19,74%.** Currently trading at an **EV/EBITDA 23E** of **7.1x** and **8.1x 24E,** vs. historical average of **8.7x**, at which we continue to see upside even after the **sector outperformance** of its shares, rising up **+10,37% YTD**.

Positioned as the **(i)** only Brazilian company with short-fiber (hardwood), long-fiber (softwood) and fluff pulp production, **(ii)** high forest productivity that reflects in low costs per ton (~US$260/t), **(iii)** integrated production along the entire production chain, being the market share leader in the packaging paper markets, with emphasis on the 56% kraftliner and 33% paperboard niches, which have non-commoditized dynamics, providing protection against major volatilities; **(iv)** productive flexibility between papers and packaging, always aiming at exposure in the segment with higher returns, **(v)** with growth by ramp-up of MP27 (450Kt in 2024) and MP28 (460Kt in 2027), increasing the capacity of paperboard and corrugated paper, with its patented Eukaliner line demonstrating its innovation footprint, being the first kraftliner made entirely of eucalyptus fibers.

Suzano (SUZB3): BUY with 12M TP of R$60.00

A case of geographical advantage and scale

Investment Thesis

Currency hedge with the lowest cost in the industry in a resilient sector. Suzano is mostly a pulp exporting company. That is, it has ~80% of its total revenue coming from the sale of the commodity and not from the sale of paper itself. We believe Suzano is uniquely positioned in the global pulp market, with some critical points in favor of our initiation with a **BUY rating** and a **12M Target Price of R$60.00**. Among them: **(i)** hardwood production capacity of 10.9Mtpy, market share leader with ~30% of market capacity; added to **(ii)** production with the lowest cash cost (COGS/t) in the global industry, both points that provide important competitive advantages, and end up protecting the Company a little more in the face of a pulp downturn. In addition, we see **(iii)** the Cerrado Project with start-up planned for 2H24, adding a capacity of 2.55Mtpy, representing an increase of +23% vs. current capacity, which for us should further cool COGS/t by gains in scale in production and generation of an energy surplus of ~180MW.

We believe demand for market hardwood will continue to grow at healthy levels due to its strong linkage to sanitary paper, which has shown greater appetite and resilience. In addition, due to the low-cost competitiveness of Asian players, our view is that Suzano ends up benefiting from a market gap in Eastern countries, mainly China, which need to import pulp to produce paper. This is due to the low integration capacity seen in these countries vs. the growing demand for paper. However, we see a more challenging scenario in the short term, with declines in pulp benchmark curves directly reflecting in lower returns in a shorter period. We point out as a negative factor Suzano's **high concentration only in the sale of the commodity pulp**, not being an integrated paper company and **exposing itself (in our opinion) in a very minimal way to direct paper sales.**

As a major exporter (~80% of revenue dedicated to exports), and belonging to the commodities market, where price dynamics are globally referenced, Suzano's revenue becomes practically dollarized, providing a **natural currency hedge** against the volatilities of the Brazilian economy; which combined with the **structural hedge** positions mounted through options in a zero cost collar targeting an amount of 30-70% of expected revenue, and its gross debt mostly raised in USD (~85%), reinforce the currency shield that the Company has.

How to classify Suzano's Investment Thesis? There is an openness to see Suzano belonging to a growth investment thesis. The justification for this would be: **(i)** the addition of long fiber production, through the structuring of the Cerrado project (more details below), which will increase the current installed capacity by ~1/4 over 2H24, and may slip to early 2025 in order to reach full ramp-up maturity. We also note **(ii)** Suzano's initiatives to precisely advance in the production chain and seek to correct its "not diversified company" flaw, whether through organic or inorganic means, such as the recent acquisition of Kimberly Clark's operation in Brazil, increasing national tissue exposure through a brand that already has market strength.

Even given these two reasons, at the same time we are also considering that the company was founded in 1924, having gone public in 1980, with its core business in commodity trading, which is cyclical and growth in the year depends a lot on which phase of the cycle it is in, in addition to the fact that Suzano is already the largest non-integrated hardwood pulp producer in the world. Thus, we believe that there are more skeptical investors who will not perceive the Company as a typical and traditional growth case.

We are assuming a perpetuity growth **(g) of 3%** after 6 years in our model for Suzano, close to the value we use in our model for Vale (Mining), a company that undoubtedly does not have the label of a growth thesis but of a mature major in the sector. Normally, market analysts tend to look at Growth investment theses with a much higher g, around 5% to 7%, and need to project more than 6 years, usually something close to 10 until the company stabilizes growth a little more, precisely because of the expectation of a very sharp acceleration of revenues, at a pace that accompanies a considerable spread in relation to the GDP of the countries in which the Company is exposed. In terms of profitability, we see Suzano reaching the sixth year of the projection (2028E) with an EBITDA margin of 49%, only slightly above the historical average in normalization cycles (~48%), without any kind of accelerated growth.

Therefore, we do not believe that Suzano should be labeled as a growth case, for some reasons: **(a)** it is already a consolidated company by its lifetime, operating in **(b)** a market with slower revolutions, inflexible and volatile that is the commodities and **(c)** whose main justification for determining growth is a project to increase and capacity, corresponding to ~ 22% of its current production in less than 2 years, which we admit is highly relevant, but after that we do not see so much room to justify growth rates much above GDP. We cannot look at and classify an investment thesis, which should be something linked to the long-term dynamics of the company, based on something that will happen in 2 years, in a ramp-up that will last 9 months. We are also aware of the historical behavior of investment cycles, where the company leverages itself, makes a capacity increase project (usually of a smaller proportion than Cerrado) and de-leverages, repeating the cycle later. But we believe that this is part of the routine of the sector, and not the foundation of the Suzano case in particular.

In other words, the growth seems to us much more circumstantial, linked to the Cerrado project, and sectoral, linked to the need to increase capacity to meet the growing demand for the commodity, and not necessarily structural. Nothing indicates that other peers are also not adding capacity in a relevant way. As we will detail in the sector analysis, the pulp segment, which is, and will continue to be Suzano's main source of income (since the Cerrado project is not for paper production), will undergo a large capacity addition brought by several producers around the world. Our view is that inevitably, this capacity increase will swamp the supply market within 1-2 years, and as investors who negotiate commodity contracts always ride the front, so the situation has already been reflected in the sharp drop in pulp prices.

As we believe that Suzano's great treasure, which is the Cerrado project, will not be fully reverted into revenue growth in the 1/1 ratio, precisely because Suzano is growing, but so are other peers, and the price of the product is basically set on global market conditions, dictated by the law of supply and demand that governs all commodities, we do not find sufficient reasons to look at Suzano as a Growth Thesis. However, this is not necessarily a bad thing... after all, we are initiating with a BUY rating.

So, what is the Thesis based on? In addition to pointing out above the Company's competitive differentiators, a list of which we will give more focus throughout the report, Suzano seems to us to be a **Value Investment Thesis.** Investors adhering to this strategy are convinced that they can optimize gains by identifying companies that are undervalued compared to their intrinsic value. This is usually attributed to certain market imbalances causing these companies to be valued lower than their fair value. And this is exactly what is occurring with Suzano. With the recent drop in the Company's shares after the market reacted in a bearish manner on the price of the commodity pulp, **we believe that Suzano has been discounted relative to its fair value**, as we will detail in the Valuation section below.

Valuation

Trading at a **23E EV/EBITDA of 6,8x** and **24E of 6.7x** vs. a historical average of 8.7x, we understand that uncertainties in the dynamics between global supply and demand are being reflected in the Company's price, resulting in a discounted valuation in our assessment; thus, we assume coverage with a **BUY rating**, at a **12M Target Price of R$60.00**, which leaves the shares with **an upside of 29,11%.** In addition, due to its positioning with several competitive advantages, we consolidate **Suzano as our Top Pick** in the **Pulp & Paper sector**.

We arrived at our Target Price through the **Discounted Cash Flow (DCF**) methodology, using as discount rate a **WACC of 9.99%** and a **Ke** of **13.30%.** As detailed in the figures below. Following our modeling assumptions, we found some dynamics worth highlighting.

Key dynamics: (i) EBITDA grows steadily from 23E R$17.3bn to 28E R$25.4bn, with a CAGR of 8.1%. **(ii)** Net income has a non-continuous and much more moderate growth, from 23E R$11.5bn to 28E R$12.2bn with a CAGR of only 1.4%, which reinforces the Value and not Growth Thesis.

(iii) We project a drastic reduction (-73% y/y) in 2024E net income to R$3.4bn due to almost none revenue progression by pulp price dynamics in the short term, followed by cost increases, squeezing EBITDA margin by -0.75p.p. y/y, and being added a negative effect of -R$4.6bn in the result of derivatives due to our projection of the resumption of the appreciation of the USD/BRL as well as the nominal debt in USD going up, causing a loss with foreign exchange operations. **(iv)** In 2025E our estimates indicate the beginning of the most robust resumption in the level of net income, reaching R$7.0bn (+104% y/y), with an advance in the EBITDA margin (+0.80p. p. y/y), as we project a substantial progression in revenue (+19% y/y), in line with a slight improvement in pulp price dynamics (+) fully executed ramp-up of the Cerrado Project, which in addition to boosting the top line helps to cool COGS/t by gaining scale.

In addition, we also highlight **(v)** a very intense CAPEX in 23E, of R$18bn due to the Cerrado Project, being the main responsible for the cash burn (FCFF) of -R$3.2bn in our Year 1 projection. CAPEX starts to cool down in Year 2 (2024), with a -26% y/y drop, which more than offsets the slight reduction in EBIT, leading to a positive cash generation of R$2.5bn. In 2025, according to our model, the Company's cash generation expands considerably, also due to an even greater reduction in CAPEX (-40% y/y). In 2027 and 2028, we forecast normalized cash generation in the range of R$13.5bn, basically flat from one year to the next.

Table 3. Suzano Income Statement (Genial Est. 2023 – 2028)

Income Statement in BRL 1.000.000	2023E	2024E	2025E	2026E	2027E	2028E
Net Revenue	**37.244**	**38.356**	**45.639**	**48.378**	**50.255**	**51.146**
Pulp	29.382	30.229	37.162	39.883	41.661	42.553
Paper	7.862	8.127	8.477	8.495	8.593	8.593
(-) COGS	**(24.204)**	**(26.424)**	**(29.710)**	**(30.042)**	**(30.176)**	**(30.361)**
(=) Gross Profit	**13.040**	**11.931**	**15.928**	**18.336**	**20.079**	**20.786**
% Gross Margin	35,01%	31,11%	34,90%	37,90%	39,95%	40,64%
(-) Selling Expenses	**(1.951)**	**(1.966)**	**(2.266)**	**(2.342)**	**(2.428)**	**(2.467)**
(-) General and Administrative Expenses	**(1.311)**	**(1.352)**	**(1.526)**	**(1.556)**	**(1.610)**	**(1.634)**
(=) EBITDA	**17.313**	**17.563**	**21.260**	**23.459**	**24.954**	**25.489**
% EBITDA Margin	46,48%	45,79%	46,58%	48,49%	49,65%	49,83%
(-) D&A	**(7.541)**	**(8.951)**	**(9.124)**	**(9.021)**	**(8.912)**	**(8.804)**
(=) EBIT	**9.772**	**8.613**	**12.136**	**14.438**	**16.042**	**16.685**
% EBIT Margin	26,24%	22,45%	26,59%	29,85%	31,92%	32,62%
(+/-) Financial Result	**5.202**	**(4.162)**	**(3.035)**	**(3.965)**	**(2.187)**	**(865)**
(=) EBT	**14.975**	**4.451**	**9.101**	**10.473**	**13.855**	**15.820**
% EBT Margin	40,21%	11,60%	19,94%	21,65%	27,57%	30,93%
(-) Taxes	**(3.389)**	**(1.007)**	**(2.060)**	**(2.370)**	**(3.136)**	**(3.580)**
(=) Net Income	**11.586**	**3.443**	**7.041**	**8.103**	**10.719**	**12.240**
% Net Margin	31,11%	8,98%	15,43%	16,75%	21,33%	23,93%

Table 4. Suzano Cash Flow (Genial Est. 2023 – 2028)

Cash Flow in BRL 1.000.000	2023E	2024E	2025E	2026E	2027E	2028E
(=) EBIT	**9.772**	**8.613**	**12.136**	**14.438**	**16.042**	**16.685**
(-) Taxes	(3.389)	(1.007)	(2.060)	(2.370)	(3.136)	(3.580)
(+) D&A	7.541	8.951	9.124	9.021	8.912	8.804
(+/-) Change in working capital	1.241	(368)	(907)	(346)	(202)	(120)
(-) Capex	(18.384)	(13.613)	(8.299)	(8.297)	(8.026)	(8.191)
(=) FCF Firm	**(3.219)**	**2.575**	**9.995**	**12.446**	**13.591**	**13.597**
(+) Financing Disbursements	4.724	6.658	4.627	5.315	5.865	-
(-) Financing Amortization	(2.828)	(4.520)	(10.754)	(11.031)	(7.740)	(7.740)
(-) Interest Paid	(4.563)	(4.695)	(4.438)	(4.227)	(4.076)	(3.580)
(+/-) Net Proceeds Generated by Derivatives	4.949	1.351	86	-	-	-
(=) FCF Equity	**(938)**	**1.369**	**(484)**	**2.503**	**7.640**	**2.278**

Table 5. Suzano Balance Sheet (Genial Est. 2023 – 2028)

Balance Sheet in BRL 1.000.000	2023E	2024E	2025E	2026E	2027E	2028E
Cash & Equivalents	3.509	5.054	3.321	4.218	9.460	8.809
Receivables	7.354	5.844	6.636	6.981	7.174	7.280
Inventories	6.433	6.155	6.639	6.643	6.682	6.741
Fixed Assets	77.050	81.711	80.885	80.160	79.273	78.658
Others	46.775	46.775	46.775	46.775	46.775	46.775
(=) Total Assets	**141.122**	**145.541**	**144.257**	**144.778**	**149.364**	**148.264**
Suppliers	6.849	4.693	5.062	5.065	5.095	5.140
Short Term Debt	11.873	12.611	11.649	10.938	10.631	9.241
Long Term Debt	60.653	64.423	59.508	55.876	54.307	47.208
Others	17.787	17.787	17.787	17.787	17.787	17.787
Shareholders' Equity	43.850	45.916	50.140	55.002	61.434	68.778
Non Controlling Interest	109	109	109	109	109	109
(=) Total Liabilities and Equity	**141.122**	**145.541**	**144.257**	**144.778**	**149.364**	**148.264**

Source: Genial Investimentos

Table 6. Suzano's WACC

WACC Calculation	
Cost of Capital	
Kd	9,60%
Ke	13,30%
E/(D+E)	43,62%
D/(D+E)	56,38%
Tax Rate	22,63%
Weighted Avg Cost of Capital (WACC)	**9,99%**
Terminal Value	
Growth in Perpetuity (g)	**3,00%**

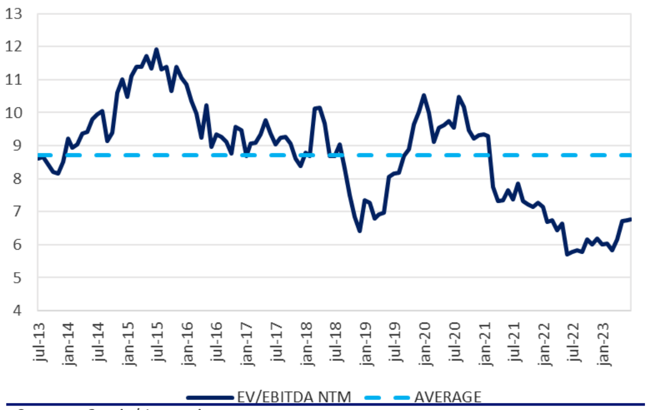
Source: Genial Investimentos

Table 7. Suzano's Sensitivity Analysis

		Growth (g)				
		2,0%	2,5%	3,0%	3,5%	4,0%
WACC	11,9%	27,0	30,0	33,0	37,0	41,0
	10,9%	37,0	41,0	45,0	49,0	55,0
	9,9%	49,0	54,0	**60,0**	66,0	74,0
	8,9%	65,0	72,0	80,0	89,0	101,0
	7,9%	86,0	96,0	108,0	123,0	142,0

Source: Genial Investimentos

Graph 2. SUZB3 EV/EBITDA NTM



Source: Genial Investimentos

Company Profile

History, growth, leverage, and significant projects

History. Founded by Ukrainian immigrant Leon Feffer in 1924, Suzano Papel e Celulose took 17 years to have its first paper mill in operation, but revolutionized the global pulp market with innovations that allowed the production of pulp from eucalyptus fiber. In this way, it consolidated itself as the first company to produce pulp with eucalyptus fibers on an industrial scale. As already mentioned, it listed its shares on the São Paulo stock exchange (currently B3) in 1980, also claiming the title of the first national company in the sector to trade shares. In 2012 it raised R$1.5bn in a follow on, placing 370 million shares on the market, all in primary distribution. In 2017, it joined B3's Novo Mercado, issuing only common voting shares (ON).

Constantly expanding its capacity by organic and inorganic means, the merger with Fibria in 2019 created Suzano S.A., which was already born as the largest pulp producer in the world with 10.9Mt of production capacity in market pulp, and 1.4Mt of capacity in paper production, with 100% integrated pulp in a final display for graphic papers, tissue and cardboard.

In a total of 1.4 million acres planted (equivalent to almost 10x the size of the city of São Paulo), Suzano has 10 mills positioned geographically close to its 3 ports, or directly connected by rail lines, for the shipment or integration of its production with an average productivity of 40m^3/ha/year (vs. 35m^3/ha/year in Brazil).

Graph 3. Suzano's assets distribution

Source: Genial Investimentos, Suzano

Growth. Although it is not currently framed by us as an essentially growth thesis, throughout its history Suzano has been gaining more and more space in the pulp market supply, executing several BHKP projects in recent years, being responsible for 40% of all capacity addition seen in Latin America since the beginning of the century. we highlight that the Company's cash cost (COGS/t) remains low, demonstrating that the aggregate projects are well structured, and capable of generating value for its investors. Currently, its largest mill is Três Lagos, located in Mato Grosso do Sul (MS), after the construction of its two pillars, Três Lagoas Linha I in 2009, and Três Lagoas Linha II in 2017, resulting in a capacity of 3.25Mtpy of market pulp.

Table 8. Market pulp capacity

Mtpy

Company	Country	Capacity	2023	2024	Long Term
COPEC	Chile	1,6	1,6	-	-
UPM	Uruguay	2,1	2,1	-	-
CMPC	Brazil	0,33	0,33	-	-
Suzano	Brazil	2,55	-	2,55	-
Metsa	Finland	0,9	0,9	-	-
Paracel	Sweden	1,8	-	-	1,8
Eldorado	Brazil	2,2	-	-	2,2
Euca	Brazil	2,1	-	-	2,1
COPEC	Brazil	2,5	-	-	2,5
Total		**16,04**	**4,89**	**2,55**	**8,60**

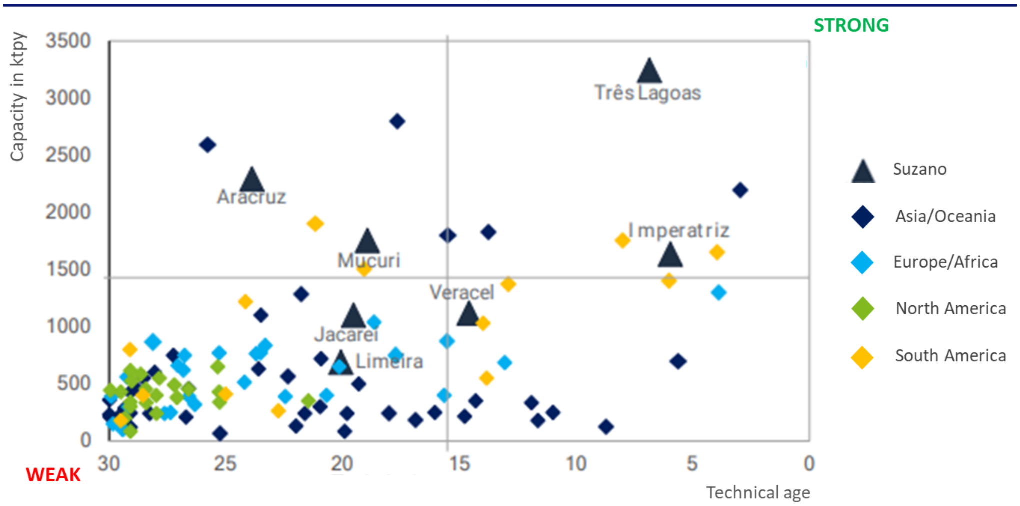
Source: Genial Investimentos

The result of the ramp-up of all these projects is a differentiated positioning in relation to its peers, with plants of great productive capacity in operation for a short time, which reflects in more technologically updated plants, and with less need for maintenance stops, but which is still required on a recurring basis as good practices for productivity and safety.

Leverage. Suzano usually operates with high leverage. Closing 1Q23 with **1.9x LTM Net Debt/EBITDA**, the Company reached a peak of 5.0x in 2019 and has been deleveraging since then. We expect that for 2024, due to **(i)** the continued use of CAPEX valued by us at ~R$14bn, driven by the Cerrado project, and the beginning of its ramp-up, together with **(ii)** a weaker EBITDA after the declines in pulp benchmark curve prices, the Company's leverage will increase to **4.10x 24E Net Debt/EBITDA**. From 2025 onwards, the Company should start its leverage cooling process, reaching a level of **1.9x again only in 2028.**

In general, the market for hardwood pulp is concentrated in mills with low production capacity, with decades since the beginning of operations, leaning towards the lower left side. At the other end, we see Suzano positioning itself on the opposite side, with its main project at the top right, while its others are closer to the center of the table.

Graph 4. Suzano is positioned over strong assets



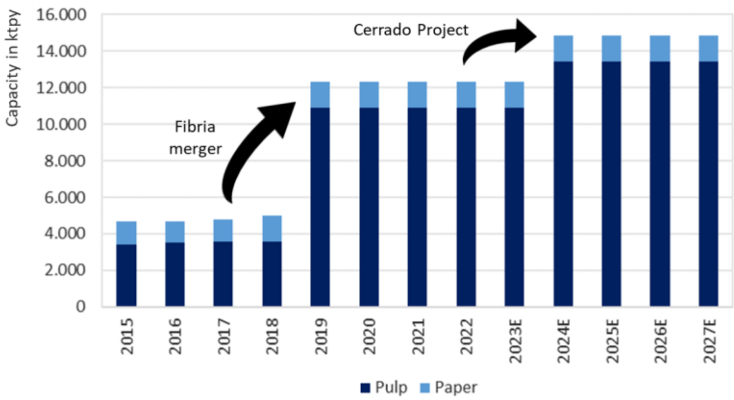
Source: Genial Investimentos, Bloomberg.

Cerrado Project: Suzano's treasure. Located in Ribas do Rio Pardo in Mato Grosso do Sul (MS), the Cerrado Project, named after the state's largest biome, represents the construction of the world's largest single-line pulp mill. Planned on an expected CAPEX of R$22.2bn (~US$4.6bn currently) by the end of 2024, with ~US$9.8bn already disbursed through 1Q23. The Cerrado Project is expected to add a production capacity of +2.55Mtpy from its start-up in 2H24, in which we expect a basically linear ramp-up after the first month, which usually represents the initial testing period, focusing on the set-up for quality to be delivered to customers.

Increasing its production capacity by +22.9% in a single project (vs. the current 10.9Mtpy), the project should initially consume a higher amount of third-party wood, which should raise its costs momentarily. Despite this, the expectation is that after the first planting cycle, the average structural radius of the wood, which basically coordinates wood costs, will decrease significantly.

Leaving the current ~203Km from the mill, in a 156Km structural, the Company expects to arrive at a structural with 140km, due to the project being positioned with an average radius of 65km. In addition, this increase in production is expected to generate a surplus of 180MW of energy, equivalent to 0.63MW/t for the project, vs. the current 0.14MW/t, which creates a positive effect on COGS, and helps to maintain its costs. The project, which is progressing towards ~60% of the total, still has all the necessary infrastructure, with an integrated railway line of ~230km on its way from the Inocência terminal, to the final destination at the port of Santos (SP) after ~1,000km already built, and integrated with Três Lagoas (MS).

Graph 5. Capacity additions focused on market pulp



Source: Genial Investimentos, Suzano

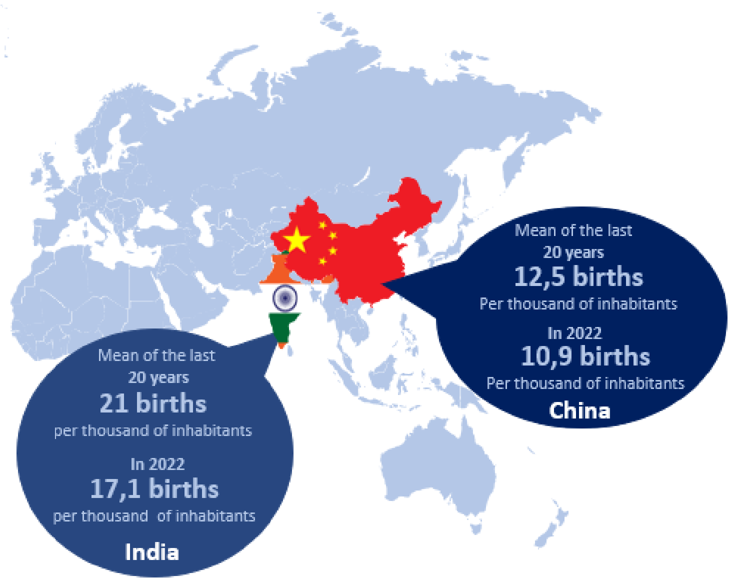
Opportunities & Risks

Our view is that there are **dualities:** some points serve both as opportunities, but also offer risks to the investor. Among them, **(i) Concentrated exposure in pulp** sometimes serves as an **(a) opportunity** for the Company, as it has taken a position as a global leader in the market, and also favors COGS dilution to obtain a lower cash cost than other peers. Even so, it ends up leading to a contrast by also offering a **(b) risk** just when the pulp price dynamics are not favorable, being at the mercy of the commodities market volatility, due to the low diversification of revenue source in relation to the total size of the business. This risk edge is now being observed in the **short term**. In the **long term**, the characteristic tends to be framed in opportunity by the normalization of commodity cycles.

In addition, we see **(ii) China being a double-edged sword** for Suzano, with a strong concentration of the client portfolio in Asia (~2/5 of sales). We currently observe a relevant dynamic in our other commodity coverages, considering that in the past decades being exposed to China was seen as an **(a) opportunity,** given the country's robust GDP growth, which at times exceeded double-digit, representing an average of 7.7% in the last 10 years prior to the pandemic. However, the evolution of China's macro data post-COVID-zero has greatly disappointed the consensus, showing a slowdown from this historical average, evidenced by industrial PMIs coming very close to neutrality (50). This fact goes against the idea of recovery, which would be pulled by a stronger and more expansive movement, and expected by a representative portion of the market. According to our most recent conversations with institutional investors, we believe that a bullish China focus today is functioning more as a **(b) risk,** considering that the expectation of growth at a pace close to that seen in previous years should be the exception, not the rule going forward. Our China growth assumptions in the **near term** are close to 5% Genial Est. (average 2023 and 2024) and in the **long-term** fall to 3.5% Genial Est. (2028 onwards), notably lower than in previous years. The broader market has started to revise China's growth expectations downwards, which has caused considerable volatility for commodity-linked equities this year.

One of the reasons for being more pessimistic on China is linked to our age pyramid inversion thesis, considering that the population is experiencing a lower birth rate (10.9 births per 1k inhabitants in 2022 vs. 12.5 of the last 20 years), even after the one-child policy came to an end in 2016. We believe the population should age, taking on a more mature country characteristic, with a higher cost of living over the years, naturally stabilizing growth. Last year (2022) China reported a population decline for the first time in 50 years. In other words, the thesis that underpinned many commodity companies until 2020, based on the strong expansion of commodity appetite to structure this robust growth in China seems to be losing traction. Today, we believe that India has the greatest potential for population growth in globally relevant terms.

Graph 6. Indian population grows more than Chinese, and should continue to do so



Source: Genial Investimentos, Macrotrends.

We will address points **(i)** and **(ii)** that we mentioned in a more cyclical manner below, as well as talk about point **(iii),** which addresses Suzano's strong connection with the type of pulp used for the tissue paper segment, which we believe is more of an opportunity, without the dual aspect of offering too many risks down the road.

Conjunctural analysis of Opportunities & Risks

(i) Concentrated exposure in pulp. Turning its historical growth to pulp, Suzano finds itself in a concentrated position in market pulp, due to its representativeness of ~83% of revenue, while the other ~17% is filled by the integrated paper unit, 11% by P&W, 3% cardboard and 3% other papers. In market moments such as the current one, in which the commodity is in repressed prices, the consolidated results feel the reflection in a direct way, as we will comment in our 2Q23 preview. However, its large pulp volume allows it a strong dilution of costs, which generates a high margin for the unit (~60% EBITDA margin vs. ~40% for paper, both in 2022), even with a strong inflationary environment for the sector.

In addition, one of the intentions for the future is to increase direct exposure to the tissue segment, which on the other hand, has a great avenue for growth. The consolidation of the trend came with the acquisition of Kimberly Clark's operations in Brazil, disbursing US$175mn for an installed capacity of 130Ktpy in Mogi das Cruzes (SP), sold through the already consolidated brand "Neve".

(ii) China is a double-edged sword. The Company's net revenue is concentrated in the countries with the highest demand for market pulp, and in 2022 we targeted 38% to Asia, focusing on China, 25% to Europe, 20% to America ex Brazil, with the remaining 17% to Brazil.

In our understanding, this relevant exposure can be a double-edged sword, since despite growing their GDP much stronger than the rest of the world, we already see some signs of economic slowdown, in which we highlight **(a)** a weak economic reopening after the ending of Zero-Covid policy, **(b)** demographic boom faded away, with the population shrinking for the first time y/y in the last 50 years, and **(c)** GPD lower than historical growth targets, with changes in government discourse towards more sustainable growth, which is natural after growing by high single digit for multiple times.

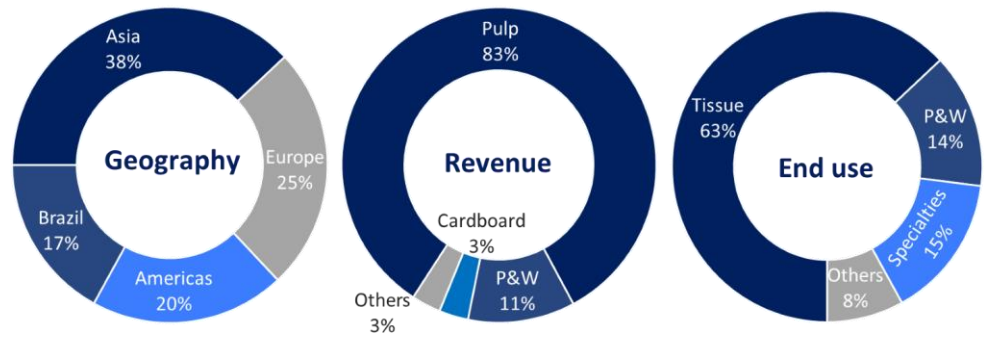
As we will comment in the sector view coming up in the lower end of the report, China has significantly increased its paper capacity since the beginning of the century, and because it is among the high cost producers (average cost above ~US$600/t), regional paper companies end up choosing to import market pulp rather than create an integrated chain, which has increased China's relevance in pulp demand.

(iii) Strong connection with tissue. Despite this, the final utility of the paper is largely for the production of hygienic paper, which has a perennial demand and is expected to be the main source of growth in short fiber demand going forward. About ~63% of what is sold by the Company ends up becoming tissue, while ~14% becomes graphic papers for printing and writing, ~15% for specialties and ~8% for other uses.

It is worth mentioning that historically, per capita tissue consumption is intrinsically linked to per capita GDP, and may benefit from the growth of the global economy, as it is reflected in a greater demand for market pulp. Especially since Brazil has a consumption of 19Kg and China in 31Kg per year, while in European countries the numbers reach up to 70Kg in Germany, Italy and Spain.

Much of Suzano's **global exposure** to the tissue market comes from indirect sales, i.e., from the perspective of selling input through commercialization of pulp, not from the perspective of selling paper. Still, Suzano has a position that can be considered relevant for direct sales in the **regional tissue market**, which even entering with its first production plant only in 2017, it is already the 2nd largest national player (with ~ 20% of the market), after the consolidation of the acquisition of Kimberly Clark Brazil more than doubling its capacity. In addition, there is still a project for the expansion of the line in Aracruz in Espírito Santo (ES), for the production of 60Ktpy of integrated tissue, which must still pass through the Company's Board of Directors, and seek some kind of tax benefit for construction, as usual for the others. It is worth remembering that in this regard Suzano is benefited by SUDENE, and we believe that this type of benefit will not be changed in the tax reform that is currently being discussed in Congress/Senate.

Graph 7. What is Suzano exposed to?



Source: Genial Investimentos, Suzano

2Q23 Preview

Suzano will release its 2Q23 results on 02nd of august, after the market closes. Our expectation is for worse numbers both q/q and y/y, reflecting the drop in the pulp price reference curve, which fell sharply during the quarter, directly impacting its top line, while its currency hedge position via options and dollar debt should help the bottom line remain strong momentarily.

2Q23 Main Takeaways

(i) Higher maintenance should decrease sales volumes; **(ii)** Prices in free fall on strong benchmark retraction; **(iii)** COGS/t continuing to cool down; **(iv)** weaker EBITDA; **(v)** fall in the exchange rate (USD/BRL) brings positive hedge and helps improve the bottom line.

Maintenance stoppages are expected to hamper pulp volumes. According to the schedule for maintenance stoppages, 2Q23 should see the interruption of activities at Imperatriz (1650Kt), Jacareí (1,100Kt), Limeira (690Kt), Mucuri Linha (1,130Kt); using an average of 10 days per maintenance, we understand that each mill should lose ~-11% of its capacity in the period, equivalent to a production 125Kt below usual.

Thus, we project pulp sales to be 2.3Mt Genial Est. (-3.7% q/q; -11.2% y/y), with an estimated 2,187Kt in the foreign market and 176Kt in the domestic, in a ratio in line with historical.

Paper volume still has a slow pace. After a weak 1Q23 due to negative seasonality and the slowing appetite, we expect sales of 285Kt Genial Est. (+1.8% q/q; -12.1% y/y), in a split with 76Kt exported and 209Kt domestic.

Pulp prices in free fall. With the decline in benchmark curves, we expect Suzano's realized price to follow the variations, reaching US$560/t Genial Est. (-22.8% q/q; -22.3% y/y).

Paper prices falling back to normal. After two years of strong increases, realized paper prices are expected to cool slightly in 2Q23, reaching R$7,000/t Genial Est. (-4.9% q/q; +13.6% y/y), suffering in both domestic and foreign markets, with the latter also reflecting the fall in the dollar during the period.

Revenue in double-digit deceleration, following commodity dynamics. Influenced by a sharp drop in realized prices, we expect consolidated net revenue at R$8.5bn Genial Est. (-24.5% q/q; -26.1% y/y). The decline is mainly seen in the pulp unit, which is expected to reach R$6.5bn (-29.3% q/q; -31.6% y/y), while the paper part remains more resilient, where we expect R$2.0bn (-3.2% q/q; -0.2% y/y).

Table 9. Suzano Net revenue (2Q23 Genial Est.)

	2Q23E	1Q23		2Q22	
(R$ millions)	Genial Est.	Reported	% q/q	Reported	% y/y
Net Revenue	**8.513**	**11.276**	**-24,5%**	**11.520**	**-26,1%**
Pulp	6.504	9.201	-29,3%	9.508	-31,6%
Paper	2.008	2.075	-3,2%	2.012	-0,2%

Source: Genial Investimentos, Suzano

COGS/t may see a slight cooling. In continuation of what was seen during 1Q23, we expect a declining input cash cost and wood cost to consolidate a marginal improvement by lowering COGS/t to R$916/t Genial Est. (-2.2% q/q; +7.3% y/y). Due to more relevant maintenance stoppages, we still project a stoppage cost per ton at R$55mn in 2Q23 vs. R$36mn in 1Q23, which brings cash COGS considering stoppages to R$976/t Genial Est. (+0.3% q/q; +10.8% y/y).

EBITDA falling sharply. In a more difficult environment for pulp, with large capacity additions in the coming years potentially unbalancing supply and demand, the fall in the pulp curve should have direct impacts on Suzano's results, where we project an EBITDA of R$3.6bn Genial Est. (-40% q/q; -43.9% y/y). As a result, the pulp unit's EBITDA should reach R$2.8bn, a sharp drop of -44.6% q/q and -48.8% y/y. However, despite being not much of a representative source of revenue, the paper part should show greater resilience, reaching R$743mn in our model, decelerating less (-11.2% q/q; -9.3% y/y).

Table 10. Suzano EBITDA (2Q23 Genial Est.)

	2Q23E	1Q23		2Q22	
(R$ millions)	Genial Est.	Reported	% q/q	Reported	% y/y
EBITDA	**3.632**	**6.054**	**-40,0%**	**6.458**	**-43,8%**
Pulp	2.889	5.218	-44,6%	5.640	-48,8%
Paper	743	836	-11,2%	818	-9,3%

Source: Genial Investimentos, Suzano

Net income should be saved by the hedge. Although the top lines have shown a sharp drop, we expect Net Income to be reported at a more timid drop, driven by **(i)** the positive result of the foreign exchange hedge position at ~R$1bn, considering the devaluation of the USD/BRL and **(ii)** the variation of debt in the financial result, which due to the fall in the dollar during the period, should generate positive results, in which we estimate respectively ~R$1bn and ~R$3bn. Therefore, net income ended up being saved by the dynamics that the fall in the exchange rate brought, reaching a projection of R$4.6bn in 2Q23, a drop of -11.7% q/q although it strongly rises y/y due to an excessively depreciated financial result in 2Q22.

Table 11. Suzano Income Statement (2Q23 Genial Est.)

(R$ millions)	2Q23E Genial Est.	1Q23 Reported	% q/q	2Q22 Reported	% y/y
Net Revenue	**8.513**	**11.276**	**-24,5%**	**11.520**	**-26,1%**
COGS	(5.939)	(5.969)	-0,5%	(6.123)	-3,0%
Adjusted EBITDA	**3.632**	**6.054**	**-40,0%**	**6.303**	**-42,4%**
EBITDA Margin (%)	42,7%	53,7%	-11,03p.p	54,7%	-12,05p.p
EBIT	**1.801**	**4.306**	**-15,7%**	**4.587**	**-60,7%**
EBIT Margin (%)	21,2%	38,2%	-17,04p.p	39,8%	-18,67p.p
D&A	(1.831)	(1.748)	4,8%	(1.871)	-2,1%
Financial Result	4.182	2.470	69,3%	(6.975)	-
Net Income	**4.629**	**5.243**	**-30,7%**	**182**	**2446,4%**
Net Margin (%)	54,4%	46,5%	7,88p.p	1,6%	52,8p.p

Source: Genial Investimentos, Suzano

Our take on Suzano

Due to the concentration of revenues in market pulp, reaching ~70% of its top line, we expect Suzano to post weaker results in the short term, given the -40% q/q drop in the spot price of BHKP in China, to a bottom of ~US$480/t, while it was trading at over US$800/t at the end of last year.

A case of geographical advantage and scale. Still, its position in geographically privileged assets coupled with its large scale, provide lower costs than peers and help bring profitability even in the face of downward movements in the commodity cycle. EBITDA margin declines to **23E 46.5%** in our model **vs. ~58% on average with a bullish cycle.**

Suzano has a **fairly robust margin vs. market pulp peers**. If we compare with Arauco/COPEC (CI-CLP), for example, which is at 23E 9.2% vs. 18.5% at bullish cycle average, we find a clear effect of how lower COGS/t due to scale gains help Suzano to maintain higher margins even in a bearish pulp cycle. A still relevant gap is found when comparing with CMPC (CI-CLP), with an estimated EBITDA margin of 23E 20.1% vs. 24% at bullish cycle average. Although Klabin is also the target of our analysis in this report, we believe that the two Chilean Companies we mentioned are more comparable with Suzano, since Klabin is an integrated Company and has higher sales volume in paper, not in market pulp.

In addition, in this specific occasion of 2Q23, the USD/BRL exchange rate retraction should have a positive effect on its result by the hedge positions previously set up through zero cost collars, and by the variation in debt with a positive effect within the financial result.

Therefore, although we do not like the dynamics that the sectoral conjuncture should bring to the Company's numbers in 2Q23, **we see the Value Investing Thesis very clearly**, and we recommend entering in a potion on the stock through a window of opportunity that has been opened due to cyclical behavior. The higher margin than peers, both in a bullish and bearish pulp cycle, seems to us to indicate the materialization of Suzano's competitive advantages.

Even facing an uncertain near-term, Suzano should generate a fairly robust margin. So we believe the stock has been penalized beyond the fair point by the adverse effect of capacity additions on unfavorable pulp price dynamics. Considering the growth mainly after the entry of the +2.55Mtpa that the Cerrado Project will add in 2H24, which should bring greater cost dilution and production synergies capable of lowering its cash cost even further. Therefore, trading at an **23E EV/EBITDA** of **6.8x** vs. a historical average of 8.7x, we initiate coverage with a **BUY rating**, with a **12M Target Price** for **SUZB3-B3** of **R$60.00** and for the **SUZ -NYSE** ADR of **US$12,60**, which implies an **upside of +29,11%**.

Klabin: BUY with a TP of R$26.50

A mismatch between growth and cost?

Investment Thesis

Productive flexibility with verticalized niche exposure. We believe Klabin is positioned quite attractively in the international paper and packaging market, with some critical points in favor of our initiation with a **BUY rating** and **a 12M Target Price of R$26.50**. Among them: **(i)** it is the only domestic producer of the three types of pulp: hardwood, softwood and fluff, with a market pulp capacity of 1.6Mtpy split between 1.1Mtpy for hardwood and 0.5Mtpy for softwood, while having **(ii)** among its competitive differentiators the fact that it is a fully integrated pulp and paper Company, which results in a hedge against large volatilities in the market pulp price, making it a **(iii)** less dependent player on the international commodity market, while **(iv)** its productive scale in assets with geographical and logistical qualities provide it with low COGS/t (cash COGS of ~US$260/t vs. ~US$480/t of the world average of producers).

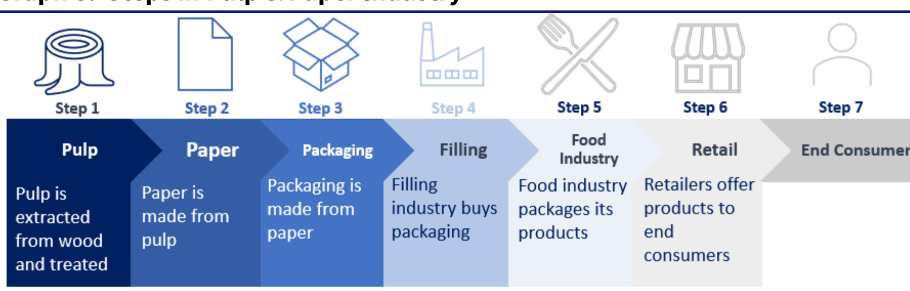
At the consumer end, Klabin's intention is always to provide customized products, seeking to reach the most specific niches in the market. To achieve this, it has a capacity of 2.6Mtpy of integrated pulp for the production of paper and packaging, supported by a capacity to recycle 425Ktpy of recovered fiber, made in machines adaptable between virgin fiber and recycled fiber, which allow a productive flexibility in order to fit the market with the best return to the capital employed.
In addition to these points, we see that **(v)** the Company has already started up the largest project in its history, Puma II. With two Paper Machines (MP), the MP27 for the production of Eukaliner (product invented and patented as the first packaging made 100% of short fibers), which started in 2021, but should reach full capacity in 2024+ with 450Ktpy, and the MP28 that had its start-up recently (less than 2 months ago), with expectations of producing 190Kt this year, initially divided between cardboard and kraftliner, to arrive in 2027+ with the production of 460Ktpy, with the main focus on medium/high grammage cardboard paper.
Despite this exposure in smaller niches, **Klabin is the national market share leader in the packaging paper markets**, with 56% in kraftliner, 33% in cardboard, 50% in industrial bags and 23% in cardboard boxes, which also ends up increasing its bargaining power with the customer.

Looking at the margin, we understand that the **commercialization of paper**, despite having a **more resilient top line growth**, as it is less volatile, also **generates higher structuring costs**. From what we can observe from historical behavior, pulp trading seems to have more margin than paper trading, but it also implies a more cyclical characteristic to the business. Thus, we see Klabin running with EBITDA margins between 30% and 35%, lower than the range observed in Suzano, from 45% to 50%. In other words, we believe that **Klabin has a more addressable**, less volatile **growth,** but **with a lower margin**.

How to classify Klabin's Investment Thesis? Klabin was founded in 1899, having gone public in 1979. With its core business in paper and packaging commercialization, which in our view is less cyclical than pulp. Therefore, growth in the year is almost unaffected by pulp price dynamics. As an integrated company, if the reference price for pulp enters a downward trajectory, the Company's result remains basically unchanged, expunging much of the volatile effect of the commodities market, and favoring greater control of investment proportionality vis-à-vis growth in results.

This is because, in the opposite direction to Suzano, ~70% of Klabin's result is linked to the sale of paper, which is manufactured with pulp. So, the Company's revenue is the direct sale of paper (not pulp) to the customer, many of them printing industries or food filling packaging solutions, such as Tetra Pak, which in turn sell the packaging to the food and beverage industry, such as Ambev for example.

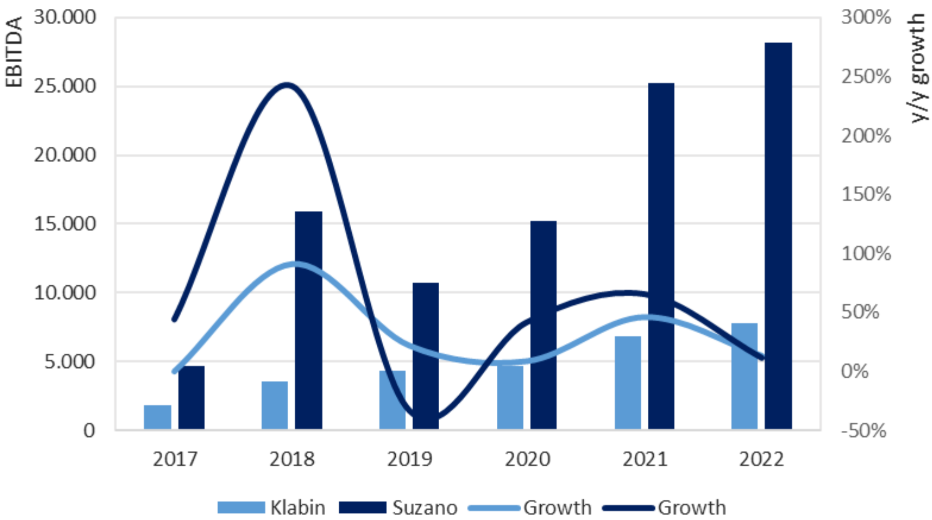
Graph 8. Steps in Pulp & Paper Industry



Source: Genial Investimentos.

Following this path, Klabin operates mainly in the commercialization of Step 2 and 3, while Suzano operates basically in the commercialization of Step 1. For us, this makes a big difference when we evaluate the structure of the Investment Thesis. We understand that, by taking steps further along the production chain, Klabin has more influence on the pricing system of its main product than Suzano has on theirs. And this comes without any downside, since the rise or fall in the price of market pulp does not structurally impact the Company's COGS/t, considering that it is integrated. Like Suzano, we are assuming a perpetuity growth **(g) of 3%** after 6 years of projection in our model for Klabin. Even considering that Growth investment theses usually have a much higher g, around 5% to 7%, Klabin has been delivering consecutive and progressive EBITDA growth in recent years, from R$1.8bn in 2017 to R$7.8bn in 2022, which leads to a CAGR of ~33%. If we look closer at Suzano's numbers in the same period, the CAGR is ~43%, but we do not observe a progressive growth. In 2019, for example, Suzano reported a -32.7% y/y drop in EBITDA, while Klabin grew +21.7% y/y.

Graph 9. EBITDA growth on different dynamics



Source: Genial Investimentos, Klabin, Suzano

If we look at an even longer time frame, this dynamic is also reinforced, with Suzano showing lower *proforma* growth (e.g. Fibria) and more unstable than Klabin over the last 10 years. It is true that Klabin has also done some M&As in this period, such as International Paper for example, but the acquisitions seem to us to have been of significantly smaller sizes, so less of a game changer for Klabin than Fibria was for Suzano. We conclude that, organically, Klabin ended up developing its results more consistently.

From this point of view, we believe we could even use a higher g for Klabin, however, our perception is that paper consumption is tied to GDP in the long run, and the segment as a whole should not perform much more than that. From this perspective, the g in Klabin works more as a market approach than necessarily linked to the dynamics of the Company itself.

Although Klabin is also a well-established company, with more than 100 years of operations, we believe its results are not mature yet, and its growth is still hot in recent years. In addition, contrary to what we said for Suzano, we believe that the golden goose for Klabin, which is the Puma II Project, will in fact be fully reversed in revenue increase in ~1/1 ratio, precisely because, as we explained, the Company has more influence on paper prices than Suzano has on pulp prices. In other words, the MP27 and MP28 machines should bring considerable results in a more controlled proportionality of investment vs. return for the Company. In addition, it is expected that new projects will come, within the investment cycles that are normal in the sector.

From a cost point of view, Klabin will have to buy a larger volume of wood from third parties for some years to supply the pulp for the MP28 ramp-up, due to the eucalyptus cycle lasting 7 years and pine has an even broader cycle of 14 years. Even though the cycle is still below other peers, the Company's average radius tends to increase in the short term and put pressure on COGS/t, specially in 2024. However, after this period, profitability should rise considerably. According to our model, EBITDA margin should fall sharply, by -6.58p.p y/y in 2024. From the following year, Klabin should resume the gradual process of profitability, expanding the margin from 29% to 37% in 2028. No pain, no gain...

In other words, the growth seems to us to be much more structural, both linked to Project I and Puma II, as well as to the growing demand for paper in more assertive segments, such as tissue, and the use of paperboard in beverage packaging, as well as the replacement of plastic by paper in the search for environmental sustainability, as we will go into more detail in the sectoral analysis.

What is the thesis based on? We see that Klabin's main products are directly related to the food sector, since the destination of its sales is divided as ~67% for food, ~13% consumer goods, ~8% in construction and ~12% to the others. Therefore, we conclude that demand is located in resilient sectors, increasing revenue predictability, and providing some protection against economic fluctuations, favoring a more progressive increase in operating results.

As we have shown, Klabin has a very interesting exposure in paper segments that will have more appetite in the coming years, opening an avenue for demand growth, which is added to better price control by bargaining power with customers, in a product less cyclical than the sale of market pulp, as well as capacity expansion projects of historical relevance for the Company. Our analysis is that Klabin fits within a **Growth Thesis**, with a gradual gain in EBITDA improvement over the years, and a contracted revenue growth for the coming decades, due to paper usage trends.

Valuation

Currently trading at an **EV/EBITDA 23E** of **7.1x** and **8.1x 24E** vs. a historical average of 8.7x, we continue to see upside even after Klabin's **sector outperformance**, rising +8.2% YTD, while much of the sector suffered losses, pulled by non-integrated producers who suffered more. Thus, we are **initiating coverage** in Klabin (KLBN11) **with a BUY rating**, at a **Target Price** of **R$26.50**, which provides the shares an **upside** of **+19.75%**.

We arrived at our Target Price through the **Discounted Cash Flow (DCF)** methodology, using as discount rate a **WACC** of **10.14%** and a **Ke** of **13.55%**. As detailed in the figures below. Following our modeling assumptions, we found some dynamics worth highlighting.

Key dynamics: (i) We expect net revenue to grow steadily until our last year of projection, from R$18.2bn in 23E to R$23.1bn in 28E, increasing at a CAGR of 4.88%, primarily due to an acceleration in line with the realized price of some inflation-correlated papers added to the MP28 ramp-up, increasing packaging volume, as well as secondarily due to the slight and gradual recovery in pulp prices. In addition, we believe that **(ii)** EBITDA should end up suffering in the next 2 years (2024 and 2025) with a higher cash COGS/t, as a result of the strategy of supplying a greater amount of third-party wood for the beginning of the MP28 ramp-up, influencing the cash COGS reaching up to ~R$1,500/t and showing improvements only from 2026 onwards. **(iii)** In the same trend, net income should suffer in the medium term, going from the current expectation of R$3.5bn in 23E to R$2.6bn in 24E and R$2.5bn in 25E, in an increasing pace until the projection of R$5.2b in 28E.

(iv) For the eventual ramp-up of Puma II with MP27, MP28 and its special projects such as the figueira project, we expect a CAPEX at higher levels in 2023, Year 1 of our projection. The amount we estimate is R$5.2bn in total, with R$1.8bn directed to Puma II, R$1.1bn to its special projects and R$1.3bn to investments in its forest, with the rest representing ~R$900mn. Therefore, cash generation in the short term should be impacted by the extensive CAPEX, which consumes a large part of the operational performance. Still, unlike Suzano that burns cash in Year 1, we project R$1.1bn of FCFF generation for Klabin in 2023. Following this trend, we expect a strong improvement in Year 2 (2024), with the finalization of the project cooling CAPEX to R$3.1bn (-41% y/y), and continuing similarly for the next few years in our model.

(v) Interestingly, although Klabin has lower margins than Suzano and also suffers from poor short-term dynamics (for different reasons), Klabin's estimated cash generation by 2025 had far exceeded Suzano's, both nominally and the sum brought to present value (NPV). While Klabin's NPV until 2025 accumulates a FCFF generation at an amount of R$3bn in our model, Suzano's points to a burn of -R$817mn, a very considerable difference in the short term. From 2026 onwards, Suzano's cash generation gains a breathing room, and reverses the game. We attribute this to the relevance that pulp price dynamics have within Suzano's results, as well as a less volatile and more linear cash generation in Klabin's case.

Table 12. Klabin Income Statement (Genial Est. 2023 - 2028)

Income Statment in BRL 1.000.000	2023E	2024E	2025E	2026E	2027E	2028E
Net Revenue	**18.242**	**19.803**	**20.870**	**21.748**	**22.597**	**23.102**
Paper	5.954	7.330	7.833	8.298	8.695	8.875
Packaging	6.411	6.710	7.030	7.159	7.354	7.554
Pulp	5.238	5.325	5.531	5.805	6.050	6.166
Wood	111	130	134	139	143	144
Others	528	308	343	347	355	363
(+/-) Variation in fair value of biological assets	**908**	**518**	**524**	**529**	**534**	**540**
(-) COGS	**(11.889)**	**(14.312)**	**(15.239)**	**(15.045)**	**(14.602)**	**(14.154)**
(=) Gross Profit	**7.261**	**6.010**	**6.155**	**7.232**	**8.530**	**9.487**
% Gross Margin	39,81%	30,35%	29,49%	33,25%	37,75%	41,07%
(-) SG&A	**(2.779)**	**(2.710)**	**(2.906)**	**(3.023)**	**(3.144)**	**(3.224)**
(=) EBIT	**4.483**	**3.299**	**3.249**	**4.209**	**5.386**	**6.263**
% EBIT Margin	24,57%	16,66%	15,57%	19,35%	23,83%	27,11%
(+) D&A	**2.950**	**3.000**	**2.937**	**2.894**	**2.859**	**2.829**
(=) Adjusted EBITDA	**6.527**	**5.781**	**5.662**	**6.574**	**7.710**	**8.552**
% Adjusted EBITDA Margin	35,78%	29,19%	27,13%	30,23%	34,12%	37,02%
(+/-) Financial Result	**(139)**	**(197)**	**(265)**	**(325)**	**(147)**	**(46)**
(+/-) Equity Pickup	**27**	**31**	**31**	**31**	**31**	**31**
(=) EBT	**4.371**	**3.133**	**3.014**	**3.915**	**5.269**	**6.248**
% EBT Margin	23,96%	15,82%	14,44%	18,00%	23,32%	27,04%
(-) Taxes	**(828)**	**(478)**	**(460)**	**(597)**	**(803)**	**(953)**
(=) Net Income	**3.543**	**2.655**	**2.555**	**3.318**	**4.466**	**5.295**
% Net Margin	19,42%	13,41%	12,24%	15,26%	19,76%	22,92%

Table 13. Klabin Cash Flow (Genial Est. 2023 - 2028)

Cash Flow in BRL 1.000.000	2023E	2024E	2025E	2026E	2027E	2028E
(=) EBIT	**4.483**	**3.299**	**3.249**	**4.209**	**5.386**	**6.263**
(+) D&A	2.950	3.000	2.937	2.894	2.859	2.829
(-) Taxes	(828)	(478)	(460)	(597)	(803)	(953)
(+/-) Change in Working Capital	(243)	(273)	(140)	(72)	(79)	(42)
(-) Capex	(5.239)	(3.103)	(2.847)	(2.876)	(2.904)	(2.912)
(=) FCF Firm	**1.122**	**2.446**	**2.740**	**3.559**	**4.458**	**5.185**
(+) Financing Disbursements	3.095	-	-	2.891	1.128	4.894
(-) Financing Amortization	(1.731)	(1.118)	(1.485)	(2.521)	(3.023)	(3.791)
(+/-) Equity Pickup	27	31	31	31	31	31
(-) Financial Expenses	(892)	(918)	(873)	(828)	(817)	(815)
(=) FCF Equity	**1.660**	**440**	**413**	**3.132**	**1.776**	**5.503**

Table 14. Klabin Balance Sheet (Genial Est. 2023 - 2028)

Balance Sheet in BRL 1.000.000	2023E	2024E	2025E	2026E	2027E	2028E
Cash & Equivalents	7.959	7.792	7.280	8.924	8.691	11.786
Receivables	2.308	2.502	2.621	2.717	2.813	2.872
Inventories	2.867	3.284	3.393	3.261	3.179	3.087
Fixed Assets	35.319	35.421	35.331	35.313	35.358	35.442
Others	3.775	3.775	3.775	3.775	3.775	3.775
(=) Total Assets	**52.229**	**52.775**	**52.400**	**53.992**	**53.816**	**56.963**
Suppliers	2.318	2.654	2.742	2.636	2.569	2.495
Short Term Debt	1.416	1.393	2.210	2.950	3.599	948
Long Term Debt	26.674	25.579	23.277	22.907	20.363	24.117
Others	7.788	7.788	7.788	7.788	7.788	7.788
Shareholders' Equity	11.939	13.267	14.289	15.616	17.402	19.520
Non Controlling Interest	2.094	2.094	2.094	2.094	2.094	2.094
(=) Total Liabilities and Equity	**52.229**	**52.775**	**52.400**	**53.992**	**53.816**	**56.963**

Source: Genial Investimentos

Table 15. Klabin WACC

WACC Calculation	
Cost of Capital	
Kd	8,29%
Ke	13,55%
E/(D+E)	47,75%
D/(D+E)	52,25%
Tax Rate	15,25%
Weighted Avg Cost of Capital (WACC)	**10,14%**
Terminal Value	
Growth in Perpetuity (g)	**3,00%**

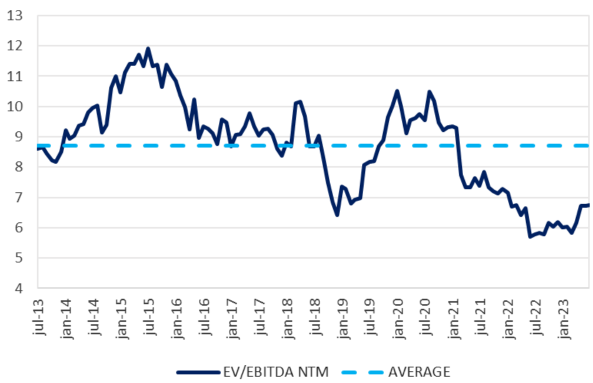
Source: Genial Investimentos

Table 16. Klabin Sensitivity Analysis

		Growth (g)				
		2,0%	2,5%	3,0%	3,5%	4,0%
WACC	12,1%	12,4	13,6	14,9	16,4	18,1
	11,1%	16,6	18,2	20,0	22,0	24,3
	10,1%	22,0	24,1	26,5	29,3	32,5
	9,1%	28,8	31,8	35,2	39,2	44,0
	8,1%	38,1	42,3	47,4	53,5	61,1

Source: Genial Investimentos

Graph 10. KLBN11 EV/EBITDA NTM



Source: Genial Investimentos

Company Profile

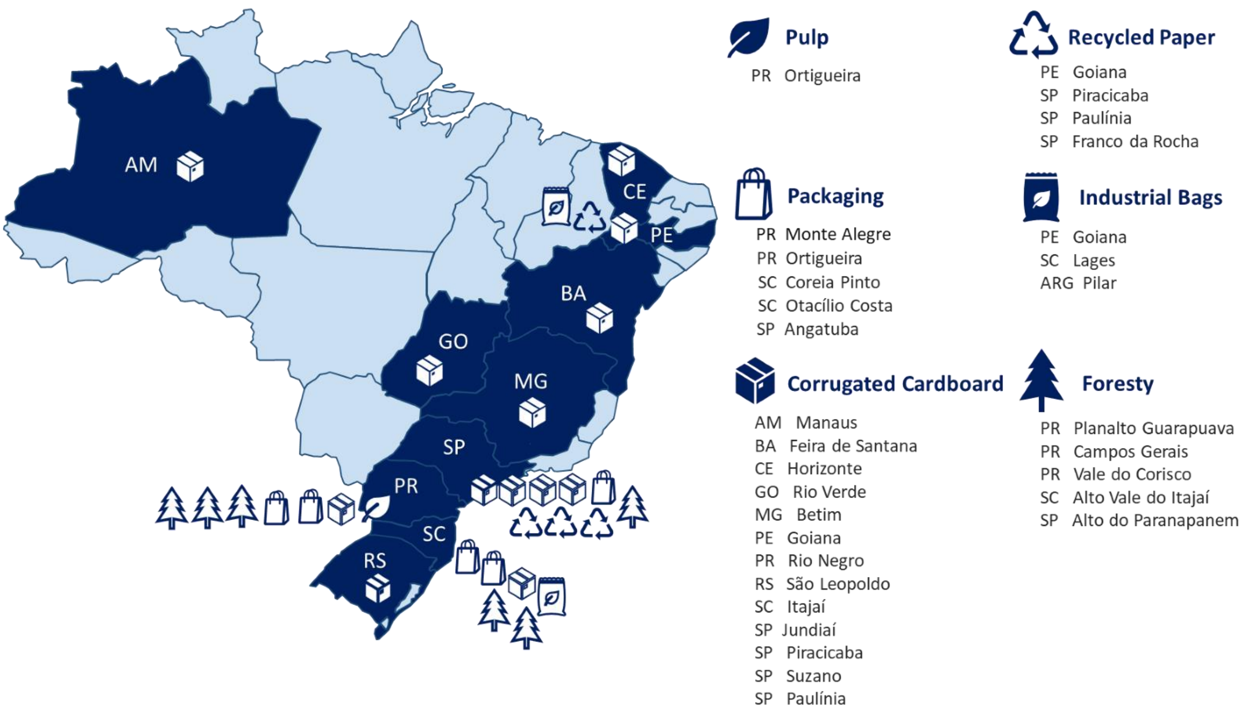
History, growth, leverage, and significant projects

History. With 124 years of operation, Klabin was founded as Klabin Irmão e Cia (KIC), by the brothers Maurício Klabin, Salomão Klabin, Hessel Klabin and their cousin Miguel Lafer, initially importing stationery products, and producing goods for offices, stores and agencies. Completing the construction of the first integrated pulp and paper mill in Brazil, in 1934 on its farm located in Monte Alegre (PR), the Company has in its DNA the evolution of the national industry in the segment, enabling the production of newsprint in a 100% nationalized way. From the second half of the century, the company embarked on a more aggressive expansion, designing mills throughout Brazil, in the South, Southeast and Northeast regions, which culminated in its IPO on the Stock Exchange in 1979. Still, it was only at the turn of the millennium that the focus shifted to the packaging paper business, with a restructuring of its assets and greenfield projects for its expansion, entering a remarkable growth cycle by MA-1100, which consolidated it among the 10 largest paper mills in the world.

Growth. Soon followed by the Puma Unit in Ortigueira (PR), which brought the addition of 1.5Mtpy of pulp and becoming the only producer in Brazil simultaneously capable of supplying hardwood, softwood and fluff. Recently, the expansion of the same project was approved. Named Puma II Project, it comprises the construction of two packaging paper machines (MP), as we will comment in more depth below.

Therefore, Klabin currently has an area of 719 thousand acre, 310 thousand acre of which are planted with pine and eucalyptus, while the remaining 409 thousand acre are directed to environmental preservation. With 23 plants distributed throughout the national territory, in 10 states in Brazil and 1 unit in Argentina, which together total 25 thousand employees to enable the production of 1.6Mtpy of market pulp and 2.6Mtpy of paper and packaging, which is strengthened by the capacity of 42Ktpy to recover the fibers.

Graph 11. Operational distribution from Klabin



Source: Genial Investimentos, Klabin

Klabin's history shows an integrated growth throughout the production chain, with a focus on paper and packaging, but with a large investment made for market pulp during the period, the Puma I Project, which boosted the Company when it started operating in 2016, and even without representing its core business purely, it ends up being important for its cash generation.

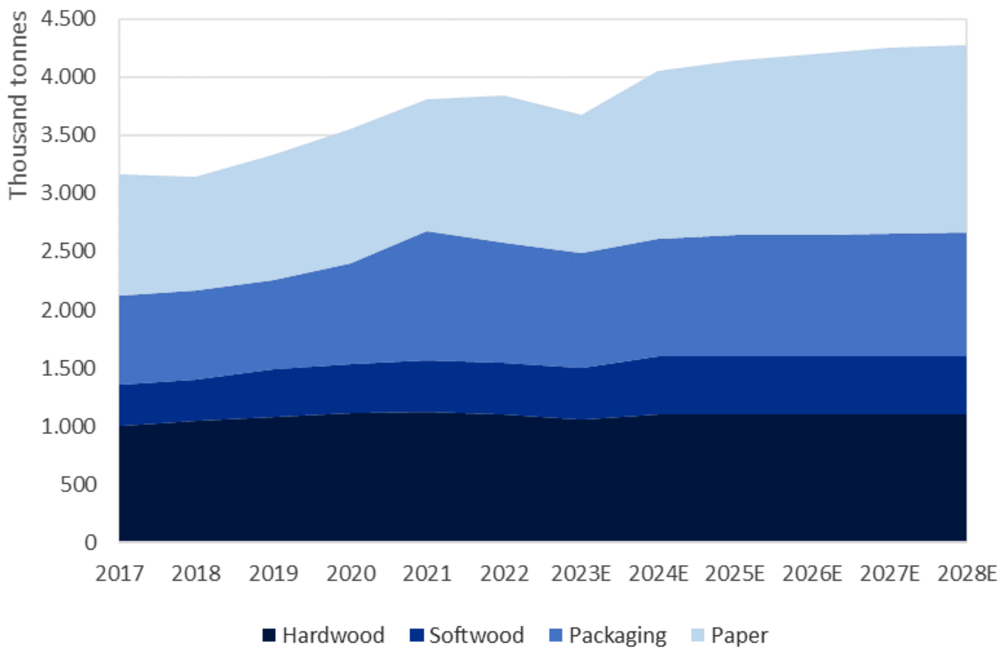
Leverage. Klabin usually operates leveraged, with different leverage targets for Net Debt/EBITDA depending on whether it is **within an investment cycle (3.5x - 4.5x)** or **outside (2.5x - 3.5x)**. Reaching its leverage peak due to the start-up of the Puma I Project in 2016, the Company reported the indicator at 6.0x Net Debt/EBITDA, and deleveraging since then to the current **2.6x of 1Q23**.

Puma II Project: Klabin's golden goose. Bringing innovation aligned with the Growth Investment Thesis, the most relevant project in Klabin's centennial history should bring a considerable expansion of paper capacity. Working as an extension of Puma I, but now integrating with the entire production chain. The Puma II project was approved in 2019, for the development of **(i)** MP27 and **(ii)** MP28 with both adding to its production in an integrated manner.

(i) MP27: as we have commented, it is already in operation since 2019, but initially with a capacity of only 99Ktpy, gradually increasing its production until 2024 when operating with 450Ktpy, its full capacity. A robust growth of 4.5x the start-up capacity in 5 years. In addition to increasing production, MP27 consolidates and rewards Klabin for its innovative DNA, generating value through its research and development segments, obtaining the patent for the first kraftliner made 100% of hardwood, named Eukaliner. It is the first company in the world to develop this type of product. The production from eucalyptus fibers allows a lower cash cost, since eucalyptus has a natural cycle of ~7 years, while the pine's long fiber is obtained within cycle of ~14 years, allowing a reduction in the planted area. In addition, the product was created with a quality gain, having an improved paper printing capacity, with high resistance even with low grammage. Our expectations are for operational efficiency gains in forestry, industrial and logistical synergies.

(ii)MP28: The machine is designed for paperboard production, but with the flexibility to also produce kraftliner, which should be more relevant during the initial ramp-up. With the start-up having occurred less than 2 months ago (June 2023), we project that the expected production of 190Kt in 2023E will be split between kraftliner and paperboard, reaching 100% in paperboard already in 2024, and increasing its capacity until hitting 460Ktpy in 2027+. In a domestic market unable to absorb all the supply, the paperboard produced should serve to supply the foreign market, with emphasis on Asia. With this dynamic, it is possible that Klabin will end up increasing its geographical diversification and bringing a portfolio with higher added value, in addition to the possibility of productive flexibility. However, conservatively, we are not considering the utilization rate close to the upper range of capacity in line with historical values. That is because, for now, we do not know whether or not Klabin will sell the extra volume that the domestic market will not absorb. We believe that consensus also accommodates estimates without considering that particularity, so this situation creates an important upside that is not being priced by the market. Currently, we see it more as an optionality that would add value, however it is not incorporated in our Target Price.

Graph 11. Growth focused into paper packaging



Source: Genial Investimentos, Klabin

In addition, Klabin still has some special expansion projects, mainly focused on corrugated cardboard, with emphasis on the Figueira Project, expected to start-up in 2H24 at a capacity of 240Ktpy in a plant in Sorocaba (SP), with a scope of 2 corrugators and 9 printers, in addition to the construction of all support infrastructure, with a CAPEX outlay of R$1.5bn until 2024E. There are also 22 other projects on the horizon, aimed at increasing the capacity of converting paper into packaging, focusing on cost optimization. For us, there is no doubt that Klabin is a Growth Investment Thesis.

Opportunities & Risks

We see that Klabin's thesis has some armor in the top line that **brings great predictability** for the future, and avoids greater volatilities that are common to the commodity market. We believe that this becomes a strong opportunity for the Company, through the flow of capital allocation for investors who want to expose themselves to the Pulp and Paper sector, even when the pulp price dynamics end up pushing some peers into a bearish cycle, as is the case with Suzano today. However, we also note that historically, market pulp sales companies tend to earn higher margins than more verticalized paper companies, due to the impact on COGS/t that the structuring of the integration process ends up constituting.

Unlike Suzano, we believe that Klabin's characteristics end up leading to **fewer dualities between opportunities and risks,** so that the separation between positive and negative points to the thesis is easier to identify.

The **only point** we found in this **dual relationship** concerns the **integration of production**. In other words, just as verticalization provides an **opportunity** for Klabin from the point of view of less revenue fluctuation, not suffering significantly in its financial results with the dynamics of pulp prices, causing a potential gain in investor flow when the commodity price dynamics experience a downward cycle, on the other hand, it also offers a **risk** precisely because the margin on the sale of paper is considered, in our assessment, lower than the margin on the sale of pulp, especially when the commodity is experiencing a bullish cycle, which can scare away the flow of investors at certain times.

Therefore, despite the Company's results themselves presenting a more constant historical behavior, added to the progressive growth, our view is that partial oscillations in the flow of capital may occur, changing the price of Klabin's shares on the stock exchange depending on the dynamics of the commodity in the short term. In a structural and theoretical way, growth investment theses should foster a time horizon in which an investor would be positioned until the long/medium term, but for better or worse, Klabin is inserted within the context of a commodity company, which in general, has some cyclical tone and brings a natural volatility to the shares, through a short-term reading that a relevant portion of investors have when looking at cases of these sectors.

(i) Opportunities

(a) fully integrated paper trading company, structured by the verticalization of pulp production stages, thus gaining; **(b)** productive flexibility; and possessing a **(c)** diversification of products, with considerable exposure to the commercialization of paper types with a greater tendency of appetite in the coming years. In addition, we highlight the **(d)** well-positioned geography, with a favorable climate in Brazil for planting both eucalyptus and pine on a large scale; and finally, taking advantage of the **(e)** majority placement in non-cyclical markets, due to the low influence of the price dynamics of the pulp commodity as the main input for papermaking, promoting more progressive growth dynamics over time.

(ii) Risks

Regarding risk, we start with the same point of opportunity, due to the dual relationship we have commented on: **(a)** Fully integrated paper trading company, which historically has a lower margin than some peers that are focused on the sale of market pulp, with a fundamentally higher COGS/t structuring pulled by the verticalization process, due to the momentary existence of bullish cycles for pulp prices, benefiting the generation of strong short-term results for non-integrated Companies, which may generate **(b)** partial oscillation of capital flow as investors exit their positions in Klabin shares to take advantage of short-term opportunities in other Companies that have a different approach on market strategy, such as Suzano; **(c)** slight concentration of clients, with a single one representing ~10% of revenue and **(d)** an expectation of increasing the share of third-party wood in pine for the coming years, which should be reflected in a higher cash cost of wood, returning to the share levels seen in 2022 only in 2037. We believe that cash COGS/t should climb from ~R$1,300/t to ~R$1,500/t by the end of 2025. From 2026 onwards, we are projecting a cooling of this cost as the average radius decreases due to the planting cycle starting to bear fruit in the planted area closer to the MP28 production plant.

We will address the points of **(i) Opportunities** and **(ii) Risks** that we mention more conjecturally below.

Conjunctural analysis of Opportunities & Risks

Fully integrated paper trading company. Going into some opportunities, we see that the business model with a focus on the integration of pulp for papers and packaging, always seeking exposure to market niches, generates protection against volatility, even more with the possibility of flexing its production between papers and packaging quickly, using both integrated pulp from its own production, or chips for paper recycling, depending on market conditions.

The paper and packaging market, although related to pulp as the main production input, has different characteristics from market pulp, moving away from cyclical trends and presenting dynamics more related to the specific supply and demand of its product, which increases the predictability of results in the long term, mainly by avoiding large price drops, relatively common in commodities.

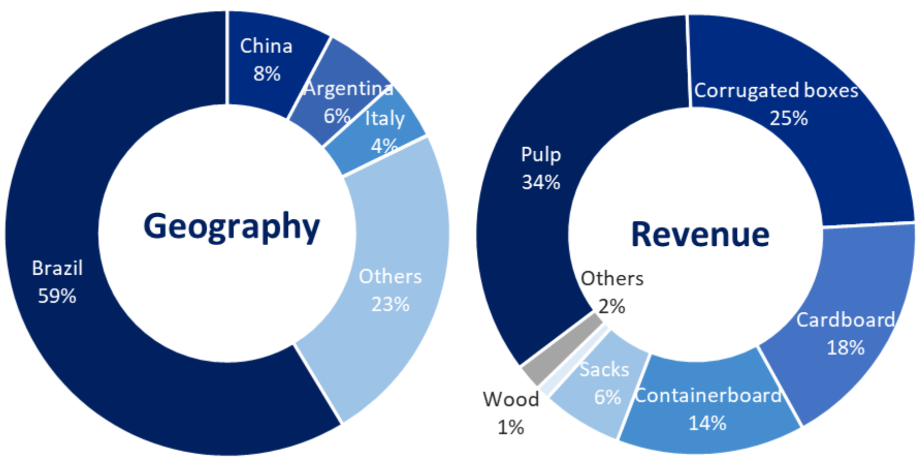
Production flexibility. Klabin presents a diversification in its net revenue, with an exposure of ~34% for market pulp, coming from the production of hardwood, softwood and fluff at Puma I, with the others falling into the paper and packaging segments, especially corrugated paper with ~25% of the total, cardboard with ~18%, containerboard with 14% and industrial bags with 6%.

Looking ahead, with the continuous ramp-up of MP28 in the coming years, we expect paperboard to increase its relevance, which we believe is positive, given the good dynamics in the market for demand, with increasing prices through the contracts already defined. Thus, there is a potential relationship with Asian countries in volume, due to the great advantage in the Company's production costs, by increasing its dilution power in COGS/t (from 2027) by suppressing production capacity, mainly when purchased with other integrated global players and by the possibility of demand absorbing the entry of new supply (which we are not considering in our Target Price, leading to an even greater upside potential).

Well-positioned geography. Despite the concentration of revenue in the domestic market (~59% of total), we believe this brings relevant exposure to the Brazilian biome, which is a natural competitive differentiator, and we see exports as a sharply diversified part of the foreign market, with no other country accounting for more than 10% of total net revenue, unlike Suzano, which is more concentrated in China (which is suffering economic slowdown, and raising the pessimistic tone of institutional investors with stocks that are linked to Asian demand).

Majority placement in non-cyclical markets. In our view, even with the focus on chain integration, the Puma I project was also an important step towards revenue diversification, exposing itself to market pulp in a privileged asset, enabling strong cash generation with pulp exports, made more aggressively in the middle and high part of the cycle, but also in the low.

Graph 12. What is Klabin exposed to?



Source: Genial Investimentos, Klabin

Slight customer concentration. On the other hand, some issues cause us microeconomic uncertainties, and may end up hindering shareholder value generation. In 2020, Klabin disclosed that only 1 paper customer accounted for about 12% of the Company's total net revenue in the year (equivalent to R$1.4bn), marking a high concentration of customers in the paper segment, being mainly focused on the distribution of its products, with the eventual customizations on portfolios.

However, in the following years (2021 and 2022) the concentration of customers decreased, at least to the point that no client would account for 1/10 of its top line; but given the logistical environment in which the industry operates, it does not seem to be a problem that should be solved in the short term.

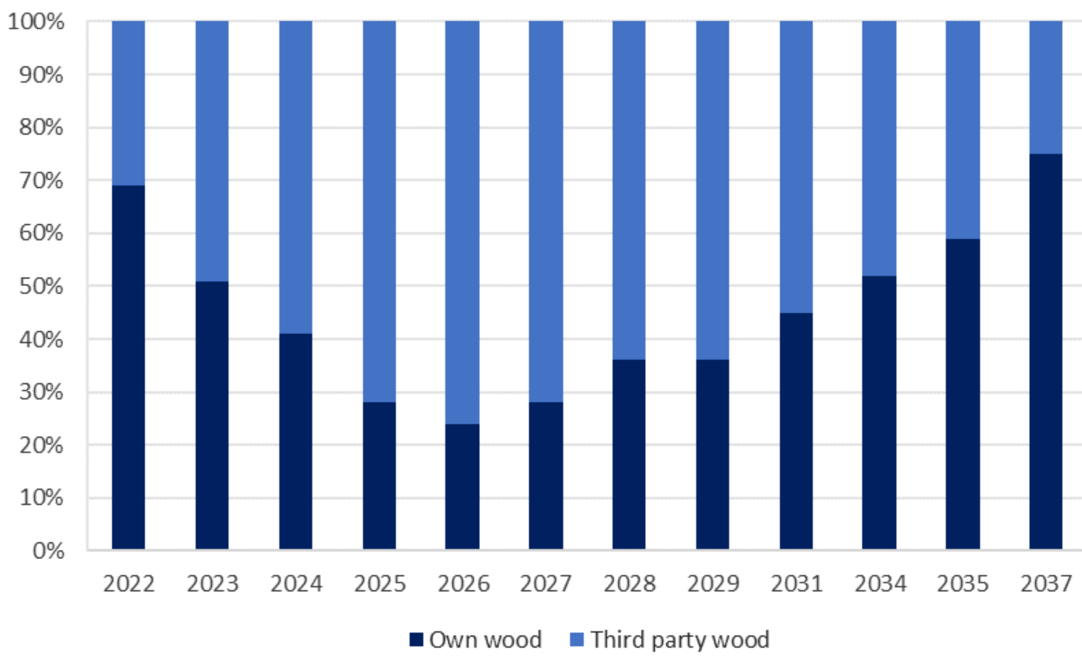
Expectation to increase the share of third-party wood. When designing Puma II, the base scenario that Klabin operated was a slow ramp-up, reaching 100% production capacity in 2033. That would take 10 years, but due to better market dynamics on the demand side, the plans have changed, reaching a scenario with the end of the ramp-up in 2027, taking only 4 years.

This large anticipation in the deadline changed the strategy that the Company should operate its asset, initially using a greater amount of third-party wood to supply Puma II, since the cycle of its own local planting will not yet be complete until start-up. Thus, we see that the greater use of third-party wood should increase its cash cost for production, since third-party wood usually has a smaller scale, making transportation more difficult and expensive, in addition to increasing the average radius to the plant.

In our estimates, about ~2/3 of the wood cost is related to the logistical transportation of wood to the mill, depending on fuel prices and the distance to the mill, while the other ~1/3 is from forest harvesting. Considering that Klabin's estimate for wood use is a relevant increase for third parties for pine until 2026 when it reaches 24% (vs. 69% in 2022), we expect wood-related costs to show a relevant increase until the turn in 2027.

In addition, the cash COGS guidance for 2023 is for a low-double digit increase, but that did not happen in 1Q23 and should not happen in 2Q23 (possibly due to strong declines in fuel and chemical costs, although the Company did not withdraw the guidance), according to our estimates, which we will comment on later. Therefore, we see that this increase will be postponed for the coming years, in case it does not happen in 2H23; returning to a more normalized level only in 2027.

Graph 13. Wood supply strategy on "v" shape



Source: Genial Investimentos, Klabin

2Q23 Preview

Klabin will release its 2Q23 results on 1st of august 2023, before the market opens. Our expectation is for the result to decelerate sequentially and year-on-year, due to a negative price adjustment in some types of paper, with high macro inflation affecting consumption. In addition, we observe the pulp dynamics affecting Klabin, which despite suffering less than Suzano, still has an impact by having a share of revenue linked to direct sales of market pulp. In addition, we believe that with the cooling of the USD/BRL exchange rate, revenues will be pulled down. We also project a higher cash cost (COGS/t) in production due to a scheduled maintenance stoppage.

2Q23 Main Takeaways

(i) Paper volumes still slow; **(ii)** Maintenance in Puma I hinder pulp sales; **(iii)** USD/BRL affects export prices; **(iv)** Pulp benchmarks should reflect large losses in realized price; **(v)** Pulp EBITDA down sharply; **(vi)** Paper and packaging with slight drop in EBITDA; **(vii)** Bottom line shrinking.

In papers & packaging, volumes should come with slight sequential gains. Facing the economic slowdown, we expect sales for the paper and packaging segments to still struggle to grow even with an improvement in seasonality. Showing slight gains on a q/q basis, within paper, our projection points to kraftliner volume at 94Kt Genial Est. (+3.7% q/q; -40.5% y/y), with paperboard coming in at 175Kt Genial Est (+2.2% q/q; +7.3% y/y). In packaging, we expect the exit of a negative seasonality for cement to slightly help industrial bags sales, to hit 40Kt Genial Est. (+3.1% q/q; +1.7% y/y), while for corrugated board we estimate at 207Kt in 2Q23, up a timid +0.9% q/q and in a -5.6% y/y downturn.

Maintenance at Puma I hinder pulp sales momentarily. With a scheduled maintenance shutdown at the Ortigueira (PR) mill during April, we expect pulp sales to fall q/q, similar to what happened during 1Q22, when the same shutdown occurred. We expect short fiber (hardwood) at 234Kt Genial Est. (-13.8% q/q; -23.7% y/y), and for long fiber (softwood) + fluff a projection of 95kt Genial Est (-6.6% q/q; -19.4% y/y).

Prices suffering from the fall in USD/BRL. Due to a relevant volume of exports, we expect the two units to show realized price losses, with stronger drop projections in kraftliner due to negative contract readjustments, reaching R$4,080/t in 2Q23 (-8.9% q/q; -16.5% y/y). For paperboard, despite carrying new adjustments that did not enter 1Q23 and that will have an effect in the quarter, the cooling of the USD/BRL exchange rate should bring a negative effect, reaching a realized price of R$5,420/t (-3.6% q/q; +11.5% y/y).

Despite this, corrugated paper, as usual, should follow the inflation of the period, adjusting +1.0% q/q and reaching R$5,990/t Genial Est. At the other end of the packaging, industrial bags should present prices basically flat compared to last quarter, in which we expect R$9,000/t Genial Est. (-0.7% q/q; +18.0% y/y).

International pulp prices in strong retraction. Due to the cooling seen in the international curves of both BHKP and BSKP, we expect a realized price for short fiber of US$910/t in 2Q23 (-22.2% q/q; -15.0% y/y), while for long fiber a value of US$540/t (-31.5% q/q; -28.4% y/y), with both also losing in the exchange conversion after the fall of USD/BRL rate.

We expect revenue to be down double digits. Driven by the decline in the pulp segment, which suffered both on the price and volume, we expect total net revenue at R$4.1bn Genial Est. (-14.2% q/q; -17.8% y/y). Despite the double-digit decline, our revenue cooling projection for Suzano is much higher, almost double what we estimate for Klabin. In other words, Klabin continues to be affected by pulp price dynamics, but to a lesser degree than Suzano.

The paper part should stand at R$1.3bn Genial Est. (-2.7% q/q; -15.1% y/y), with packaging at R$1.6bn Genial Est. (+2.1% q/q; +5.2% y/y), both showing greater resilience. Unlike the market pulp unit, which should show a greater drop to R$1.0bn Genial Est. (-38.6% q/q and -42.6% y/y), suffering both from a more substantial deceleration in volume, due to the maintenance in Puma I, and in the realized price, due to the retraction of the reference curves.

Table 17. Klabin net revenue (2Q23 Genial Est.)

(R$ millions)	2Q23E Genial Est.	1Q23 Reported	% q/q	2Q22 Reported	% y/y
Net Revenue	**4.143**	**4.831**	**-14,2%**	**5.039**	**-17,8%**
Paper	1.337	1.374	-2,7%	1.575	-15,1%
Packaging	1.603	1.571	2,1%	1.523	5,2%
Pulp	1.051	1.711	-38,6%	1.797	-41,5%
Wood	31	21	47,1%	54	-42,6%
Others	122	154	-20,8%	90	35,6%

Source: Genial Investimentos, Klabin

COGS/t should stay flat, but with maintenance having a negative effect. Despite a guidance for the year 2023 at a high of low double digit, COGS/t excluding the effect of maintenance stoppages should still not show major escalations in 2Q23, allowing an improvement in the expectation of costs for the year, but still dependent on the dynamics in 2H23, related to the increase in the average radius by the greater purchase of third-party wood, as we commented throughout the report.

Thus, we project a slight increase of +2.4% q/q, reaching R$1,388/t Genial Est. due to the lower dilution of fixed costs with the decrease in sales volume, which represents an increase of +9.0% y/y. As for COGS/t including maintenance stoppages, we expect an increase of +22.3% q/q, reaching R$1,657/t in 2Q23, with a maintenance cost of R$269/t in the period.

EBITDA will feel the impact. On the back of cooler revenue (+) flat COGS, we expect a drop in Adjusted EBITDA, with our projections pointing to R$1.5bn Genial Est. (-23.0% q/q; -24.8% y/y), with the pulp unit expected to post an EBITDA of R$0.4bn, on a larger drop, while the paper and packaging unit reaches R$1.0bn, aiming for sequential stability.

Net income with a representative drop. Maintaining the trend, our expectation is for a net profit of R$729mn Genial Est., a more relevant q/q drop of -42.2% and y/y of -24.9%.

Table 18. Klabin Income Statement (2Q23 Genial Est.)

(R$ millions)	2Q23E Genial Est.	1Q23 Reported	% q/q	2Q22 Reported	% y/y
Net Revenue	**4.143**	**4.831**	**-14,2%**	**5.039**	**-17,8%**
COGS	(2.726)	(2.858)	-4,6%	(3.341)	-18,4%
Adjusted EBITDA	**1.496**	**1.943**	**-23,0%**	**1.991**	**-24,8%**
EBITDA Margin (%)	36,1%	40,2%	-4,11p.p	39,5%	-3,4p.p
EBIT	**894**	**1.619**	**-44,8%**	**1.615**	**-44,6%**
EBIT Margin (%)	21,6%	33,5%	-11,94p.p	32,0%	-10,47p.p
D&A	(742)	(711)	4,4%	(962)	-22,8%
Financial Result	(40)	58	-168,5%	(303)	-
Net Income	**729**	**1.263**	**-42,2%**	**972**	**-24,9%**
Net Margin (%0	17,6%	26,1%	-8,54p.p	19,3%	-1,68p.p

Source: Genial Investimentos, Klabin

Our Take on Klabin

Despite the large drop seen in pulp references, Klabin's integrated exposure to paper and packaging should demonstrate the resilience of the consolidated result, avoiding an even stronger influence of the commodity by the verticalized exposure to paper and packaging. If on the one hand Suzano would then be more exposed to this dynamic, on the other hand we believe that the cooling of the USD/BRL exchange rate should interfere more in Klabin's results than its Brazilian peer. Our macro projection shows a USD/BRL exchange rate between R$4.90 and R$4.95 until 2Q24, when it would move to R$5.10.

The reason for projecting this dynamic is linked to the investors pricing a reduction in Brazil's country risk premium by the implementation of the tax reform, which would cancel out the effect of the inflation differential between Brazil and the US, making the exchange rate move sideways during the coming months. The FED announced yesterday +25bps increase for the prime rate, reaching 5.5%. We believe that the payroll data in the US still remains very tight, with wages being adjusted with a still considerable spread in relation to core inflation, making the FED still likely to continue monetary tightening and make further increases in upcoming FOMC meetings. Eventually, this will overlap with the reduction in risk perception and form a USD/BRL appreciation movement after the first months of 2024. With an inflationary environment and a contractionary monetary policy, both in Brazil (despite the probable reduction in the SELIC, the real interest rate will still remain very high), as well as in Europe and the USA, it ends up being reflected in the economic slowdown. This fact is felt in the volume of paper, which should still remain at levels below recent history. This situation, coupled with the expectation of a just a slightly higher cash cost (COGS/t), will affect Klabin's results in 2Q23.

We see that the timid increase that cash costs should have in 2Q23 of +2.4% q/q Genial Est, can make room for disposal the guidance of a low double digit increase y/y , demonstrating control of its costs in the short term, which may explain its sectoral outperformance since the beginning of the year. Another fact that helps explain the good YTD performance in Klabin's share price appreciation vs. Suzano's decline is related to what we commented about capital flow migration. When pulp price dynamics are weak, investors who want to position themselves in the sector look for companies with integrated paper production, which are usually less shaken in terms of results. This is one of the main reasons why we initiated coverage with a **BUY rating**.

Conversely, despite the Puma II Project being of great value to Klabin in terms of increasing production capacity considerably, with the ramp-up of MP28 as well as MP27, we believe institutional investors are pricing short-term pessimism into the stock. This sentiment seems to us to be related to the increase in the average radius for wood, due to the considerable increase in the Company's need to acquire wood from third parties, considering that the pine plantation cycle is long (14 years).

A mismatch between growth and cost? Our projection indicates that Cash COG/t is expected to increase from ~R$1,300/t to ~R$1,500/t by the end of 2025, for the reason mentioned above. However, we anticipate a decline in these costs from 2026 onwards, due to a decrease in the average radius as a result of the start of production utilizing the growing area closest to the MP28 facility, after a few years have passed within the natural cycle for pine plantation growth.

As we view the Company through a Growth Thesis, not a Value one, we believe there is a mismatch between how consensus is penalizing Klabin for cost dynamics vs. the benefits of improved profitability that will be earned in the long run. With the cost of capital at high levels today, it is basically impossible to grow a lot and grow fast at the same time. Certain things take time to mature. As such, we believe the market is not pricing Klabin's growth correctly, causing the Company to trade at an **EV/EBITDA 23E of 7.1x vs. a historical average of 8.7x**. Although more difficult years of operational efforts lie ahead, due to the inevitable pressure on COGS/t, long-term growth (+) greater top-line resilience from verticalization of production provide a **12M Target Price** of **R$26.50**, implying an **upside** of **+19.74%**.

Sector Analysis: What has been happening in the Pulp & Paper market?

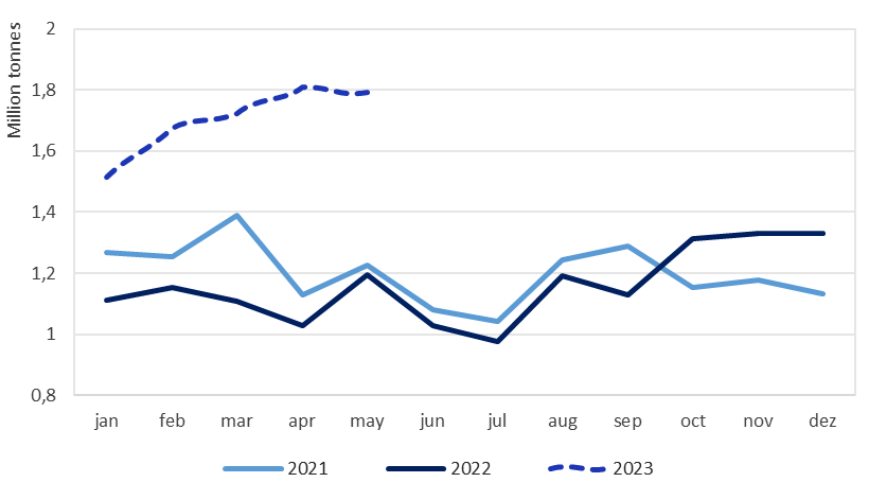
Combination of weak demand and oversupply. Since the beginning of the year, international prices for both short and long fiber in China (the concepts of which we will explain later in the report) have fallen sharply, by ~40% and ~25%, respectively. We believe that the declines are related to the sum of weaker consumption dynamics, combined with a strong addition of production capacity, coming from relevant projects expected to be delivered in 2023 and 2024, disfavoring the balance of global supply and demand.

The drop in the commodity was already widely expected by the market since last year, but ended up being postponed by several factors, focusing on **(i)** the war between Russia and Ukraine, which limited the import of important supplies such as pulp and wood, mainly harming Finland, which accounted for 64% of Russia's paper input imports to Europe; **(ii)** delays in the delivery of projects for new additions, with UPM's 2.1Mtpa Paso de los Toros project and COPEC's 1.56Mtpy MAPA project being postponed, **(iii)** concentration of scheduled shutdowns for mill maintenance, such as ENCE's operation in Pontevedra, in Spain **(iv)** problems in maritime transportation and regional logistics chains in Europe and North America, with port congestion accumulating a large amount of new orders, which allowed producers to announce new price adjustments.

1H23 was challenging for the Pulp & Paper sector. Thus, the gradual normalization of supply, due to the ramp-up of projects, the cooling (in relative terms) of the war and the withdrawal of global lockdowns, ended up going hand in hand with a slowdown in demand due to the effect of rising interest rates in the fight against the inflationary environment, experienced almost without exception in the main countries that make up the global economy. Thus, we observe BHKP volumes in Western Europe (~29% of the market) falling -17.1% y/y in 5M23, while in North America (~13% of the market) shrink by -4.5%, despite sales in China (~37% of the market) rising +3.1% in the same period, but still in a slow recovery after the end of Covid Zero, which was not enough to offset the overall effect, consolidating the entry into a bearish cycle of the commodity.

According to Europulp (Association of pulp manufacturing companies in Europe), pulp inventories in European ports remain at above historical levels, reaching 1.79Mt in May (vs. an average in recent history of 1.27Mt), showing that even after the great depreciating movement in prices, non-integrated paper producers continue without making a relevant movement of re-stocking inputs, mainly because they have made up a considerable volume of inventories previously, in the search to avoid obstacles with the break in the logistics chain, and due to the falls in sales, caused as a reflection a larger stock of finished products.

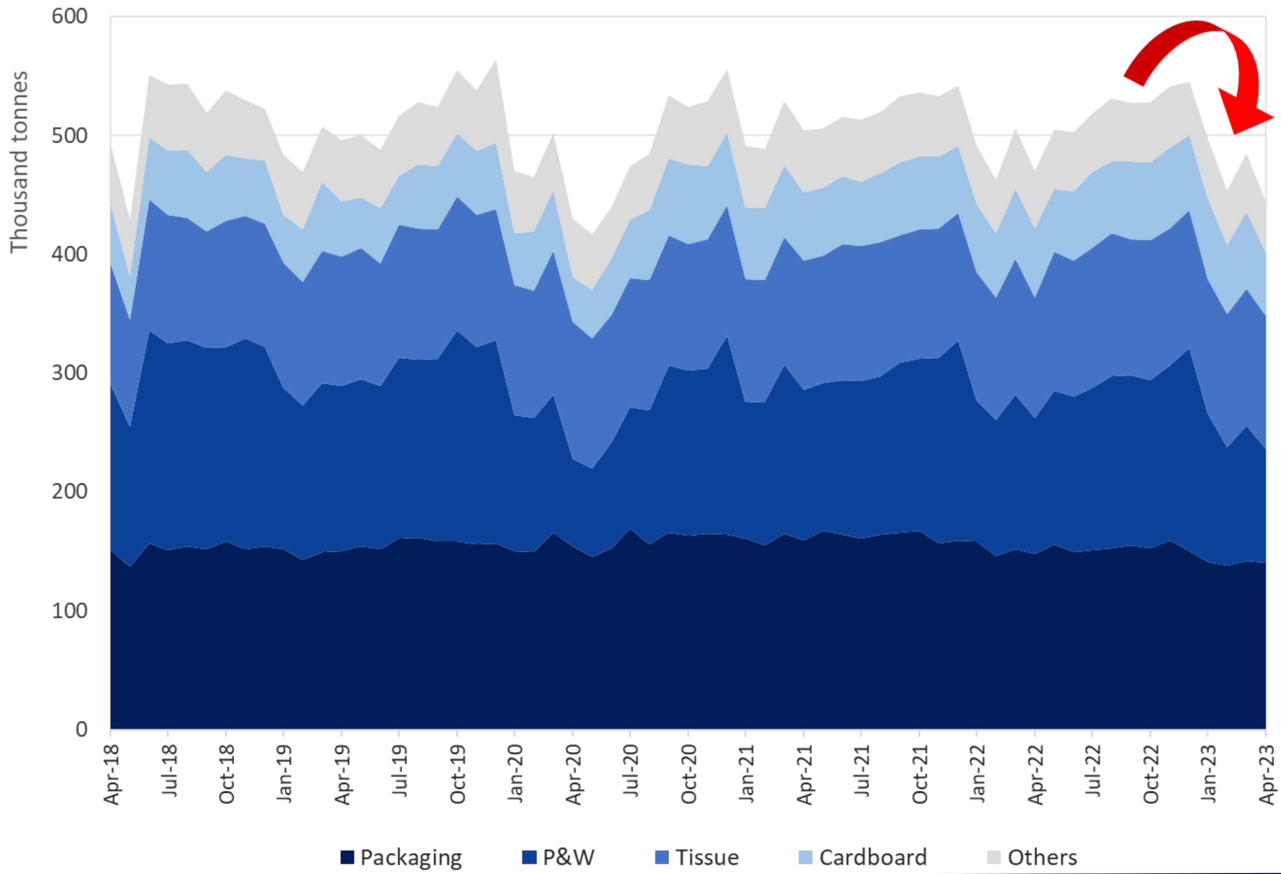
Graph 13. Pulp inventories on Europe still high



Source: Genial Investimentos, Euro Pulp

On the domestic front, IBÁ data show declines in domestic sales of paper and packaging, which retreated -4.5% y/y during 4M23, with exports falling -21.3%, representing a total drop of -9.7% in the period. Despite this, sanitary paper has shown resilience, rising its sales in the same interval by +6.0%, while packaging is down -15.2%, graphic paper by -14.9% and paperboard with -7.8%.

Graph 14. Pulp inventories on Europe still high



Source: Genial Investimentos, Ibã

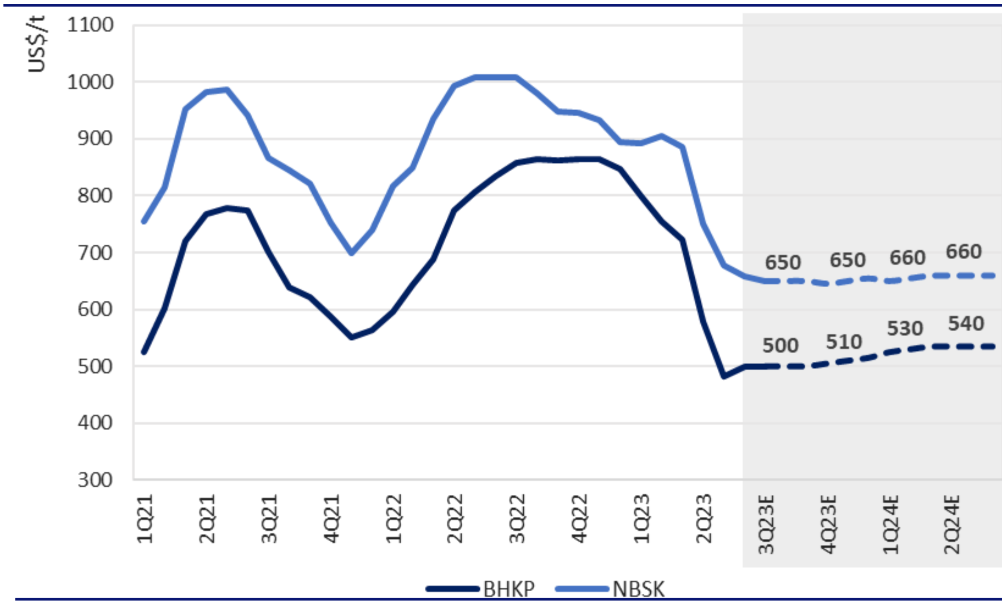
What to expect going forward? We expect 2H23 to remain challenging, with global demand still weak, although large price declines are encouraging an increase in volumes. As such, we expect slight increases for BHKP in the coming quarters, after marking a bottom at ~US$450/t with most producers announcing adjustments of +US$30/t on two occasions; the first occurred from June, and was successfully realized, and the second occurred in July. The latter resulted in the need for individual negotiations with the companies' customer base. Although there is a slightly greater difficulty in processing the price pass-through, depending on the general dynamics for purchases that are usually concentrated in the last week of the month, we believe that the adjustment seems feasible, and our view is that it will be implemented.

Conversely, because NBSK has not retreated at the same level, we may have room for further declines or no upward follow-through, for a narrowing in the gap between the two, which with NBSK at ~US$650/t in June, is at ~US$140/t vs. an average in recent history of ~US$120/t. In other words, the gap between the two references is larger than historical, and we believe that the closing of this gap should happen with a continued retraction of the NBSK. An alternative scenario, but also likely, is for the NBSK to move sideways and the BHKP to rise, also correcting the distance between the two curves.

In addition to stimulating demand, the falls in the reference curves end up reducing supply, with cuts in production capacity due to the high costs until then, with no counterpart in appetite. We observed players in Europe cutting production, in an attempt to force a balance between supply and demand that would promote a more favorable price dynamic. Suzano went down this same path in June, reducing its nominal capacity by -4%, which basically reflects a ~450Kt lower supply in a single movement.

Thus, based on this scenario, we have in our projections for BHKP US$500/t in 3Q23 and US$510/t in 4Q23, closing 2023 at an average of US$570/t; and with expectations of a slight recovery in 2024, with US$530/t in 1Q23 and US$540/t in 2Q23.

Graph 15. Pulp prices to recover slowly



Source: Genial Investimentos, Norexco

Paper should outperform pulp in the short term. Although it is more challenging for structural demand, we expect that in the short term verticalized exposure to paper will outweigh pulp exposure, benefiting Klabin, which has ~65% of revenue directly related to paper and packaging. On the other hand, Suzano has an exposure of only ~20% in paper, and even if this slice is more focused on sanitary purposes, we see the Company behind its direct competitor in terms of business diversification and should get a worse performance in terms of stock appreciation, if we consider a narrower time horizon.

Despite the correlation, even though pulp is the main input for paper production, it is still priced in the market in a system 100% linked to the internationally traded commodity, while in paper, companies have greater market power to avoid major price volatilities. In other words, although the margin on the sale of the raw commodity for the papermaking process is higher than the sale of the paper itself, companies that operate mostly selling pulp have less price control by their own interference than verticalized paper manufacturers. Thus, companies such as Suzano are more fragile when commodity price dynamics are not favorable.

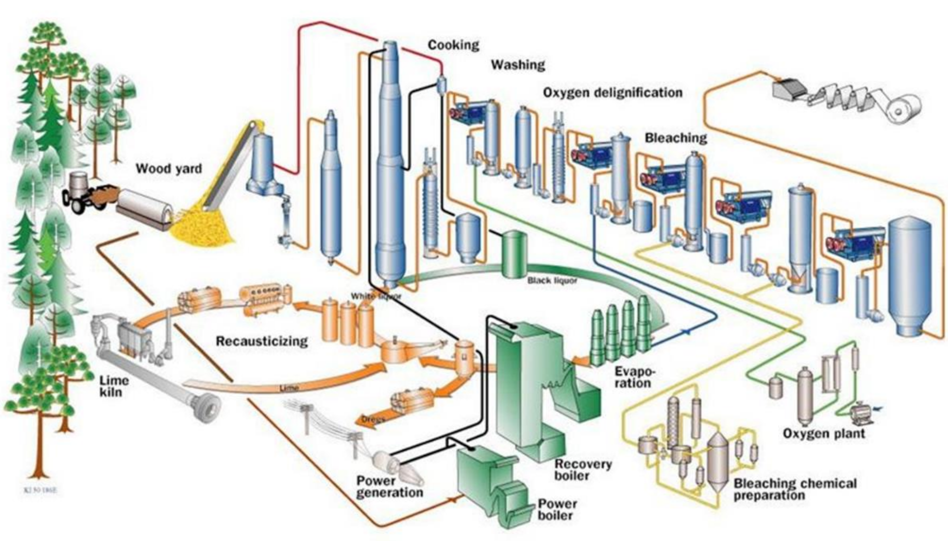
Diving deeper into pulp

Cellulose can be extracted from some plants, especially eucalyptus and pine trees, and represents an important raw material used in several segments, such as the paper, fabrics, and biofuels industry.

Its classification depends on the raw material of origin and the method used for its pulping process, and the three main types of process are **(i)** chemical, **(ii)** mechanical and **(iii)** recyclable.

- **i.** **Chemical process:** Being the most used by the industry, it consists in combining some chemical products, mainly hydroxide and sodium sulphide with the wood chips (which are small crushed pieces of wood), resulting in the chemical pulp, commonly known as Kraft.
- **ii.** **Mechanical process:** The pulp is obtained by wet pressing logs against a rotating roller made of stones, finalized with the presence of steam to obtain a thermomechanical pulp, which is not bleached.
- **iii.** **Recyclable process:** Paper scraps, in the form of small pieces, are used with a mixture of chemicals such as water and caustic soda in order to dissolve the pulp and recover the fibers for new applications

Graph 16. Pulp production process



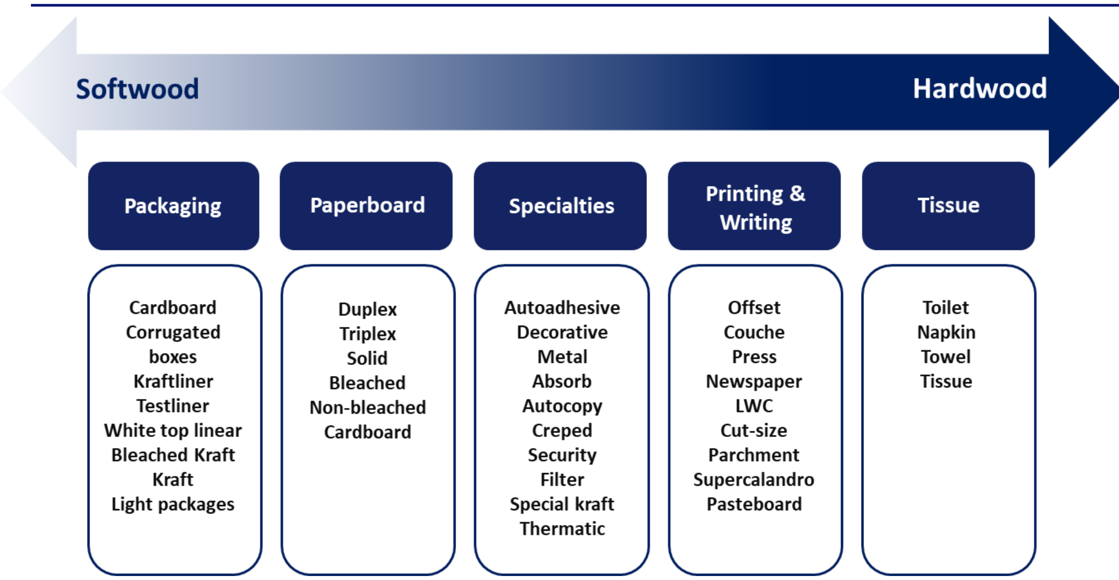
Source: Genial Investimentos, Alfa Laval

In addition, the classification of cellulose is related to the nature of the wood, focusing on two large families: **(i) BHKP or hardwood**, produced from hardwood trees, mainly eucalyptus, with a higher composition of cellulose and lower in lignin, which makes it less resistant. Commonly called **short fiber**, for its length between 0.5mm and 2mm.

At the other end, **(ii) BSKP or softwood**, produced from coniferous trees, such as pine, have a higher composition in lignin than BHKP, which brings resistance properties to the paper produced. They are also known as **long fiber**, as they have a filament length between 2mm and 5mm.

Natural properties dictate the end. Thus, the nature of each tree brings different properties to each type of cellulose, with specific uses for each product. Generally, hardwood is usually related to the part of paper for hygienic purposes and printing & writing, given its characteristic of softness and good absorption, mainly of fluff cellulose. In the opposite way, softwood is usually related to packaging and cardboard, due to its resistance, porosity, and absorption.

Graph 17. What component are papers usually made of

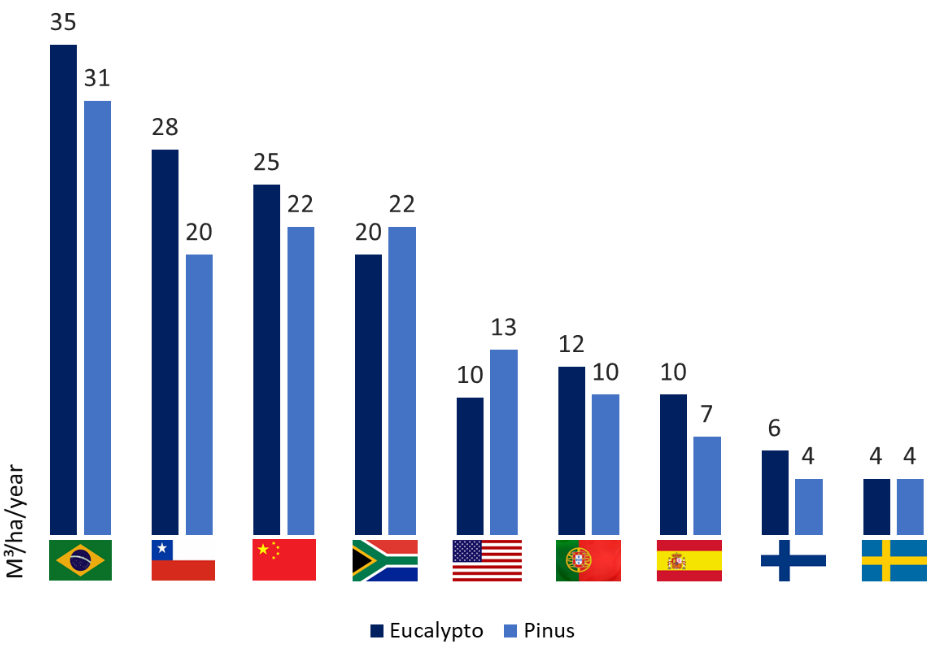


Source: Genial Investimentos, Ibá

Planting cycle. Another important point that can make all the difference for the producer is the time of the planting cycle of each tree, which in addition to varying between species, varies according to the influence of the climate of its corresponding geography. In Brazil, the cycles for eucalyptus run around 7 years, while pine around 14 years, with both being able to be extended depending on the way in which the wood will be used, but still figuring short cycles when compared to other regions of the world.

Brazilian geography results in natural competitive advantages. Some factors characteristic of Brazilian geography provide a privileged position for national producers, in which we highlight **(i)** availability of productive land, **(ii)** excellent soil conditions and light intensity, **(iii)** topography and climate suitable for tree forestry, **(iv)** well-distributed rainfall volume over a large part of the territory and in all years and **(v)** low cost of forest formation and maintenance, in addition to the knowledge added in the conduct of the crop in recent decades, capable of increasing the efficiency of forest management, with a focus on eucalyptus (~75% of the total tree area) and pine (~20% of the total tree area), which result in productivity rates better than global peers.

Graph 18. Brazil on wide advantage on forest productivity

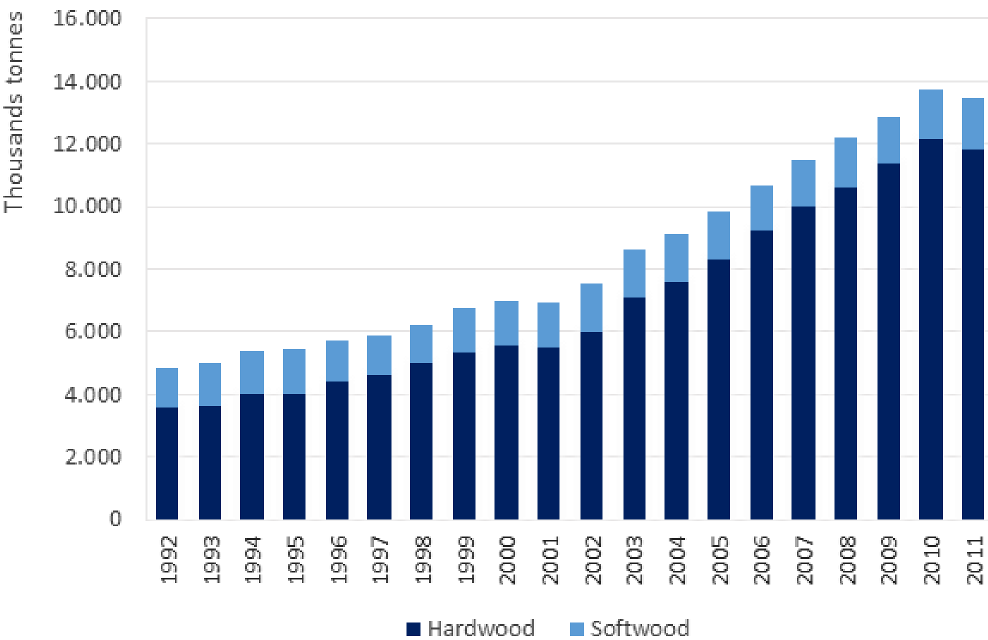


Source: Genial Investimentos, Ibá

Despite superior productivity in both types of trees, the concentration of efforts has been on hardwood, with history showing strong growth on the short fiber front, while softwood has remained stable over the years, leaving domestic demand at the mercy of imports.

In this way, hardwood capacity added in Brazil is mainly to serve the external market, focused on exports, while softwood production is geared towards the domestic market.

Graph 19. Brazilian Pulp production historically focused on hardwood

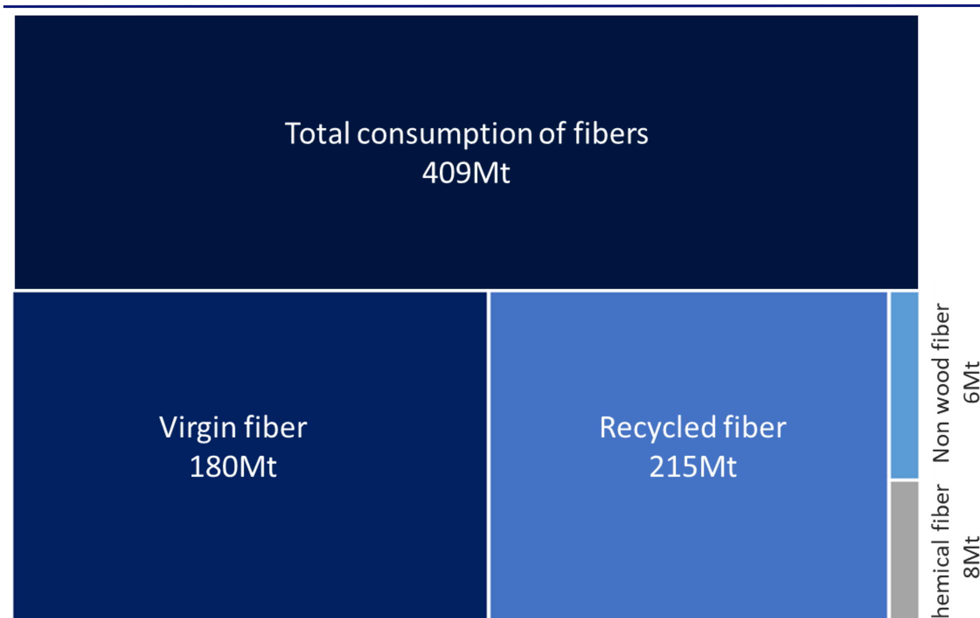


Source: Genial Investimentos, Bracelpa

Market dynamics

The fiber market demanded a consumption of 388Mt in 2021, mainly divided between virgin fiber, representing ~45% of the total, and recovered fiber at ~52% of the total, but also by chemical fiber and other non-wood fiber with the remaining ~3%.

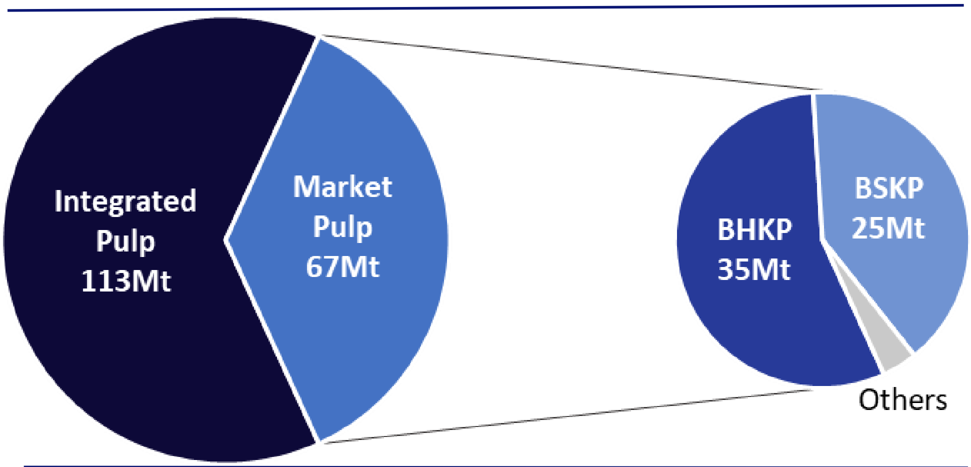
Graph 20. Brazilian Pulp production historically focused on hardwood



Source: Genial Investimentos, Hawkings Wright

Market pulp gaining relevance. Since the beginning of the century, most of the growth in wood pulp has come from market pulp, i.e. demand from paper producers that are not verticalized and rely on market supply to run their operations. Our perception is that because of large new capacity additions that have been made in China (a geographically limited region for pulp production) the market dynamics have undergone some changes, creating the need for imports of both wood chips and pulp as competitiveness with southern hemisphere countries has become increasingly difficult.

Graph 21. Opening up demand for virgin fibers



Source: Genial Investimentos, Hawkins Wright

While pulp is inserted in a global market, paper is usually more regionalized, with producers already positioned close to their customers, due to higher logistics costs and more specific customizations. Usually, the focus is on the domestic market with about ~70% of sales, and with external, being limited to Latin America to Brazil, with the other ~30%. Despite this, its clients are usually diversified, and with a higher seasonality in 2H, due to the festive seasons, while exports are more related to agriculture, such as fruit production in Ecuador, Chile and Argentina.

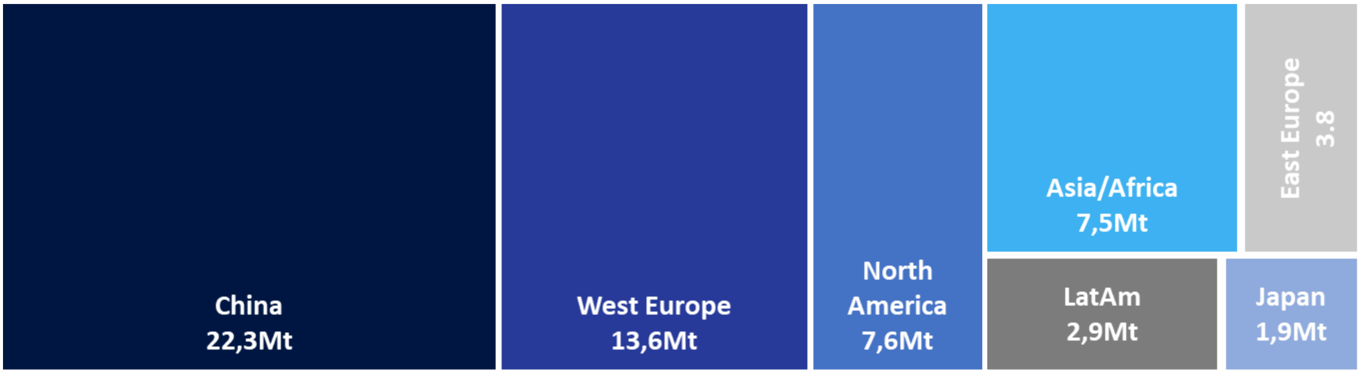
Paper has a lower price volatility than pulp. Despite the proximity between paper and pulp, historically the paper market has shown lower price volatility than pulp, which brings resilience to the results of companies integrated with paper.

From what does the demand for Pulp & Paper derive?

The demand for Pulp & Paper is distributed throughout the world, with a focus on China, which represented a need for 22.3Mt in 2021 (~37% of the market), followed by Europe, divided by the western part of 13.6Mt (~29% of the market) and the eastern part with 3.8Mt (~6% of the market), adding up to ~35% of the total market, consolidating themselves as the two major players, but that going forward we expect different dynamics, more positive in China, in order to increase the consumption gap for both.

In a large consumption gap, North America comes behind with 7.6Mt (~13% of the market), and Asia / Africa with 7.5Mt (~13% of the market), also entering less relevant regions, such as Latin America itself in a demand of 2.9Mt (~5% of the market), and closing with Japan with 1.9Mt (~3% of the market).

Graph 22. Biggest consumers of market pulp in 2021

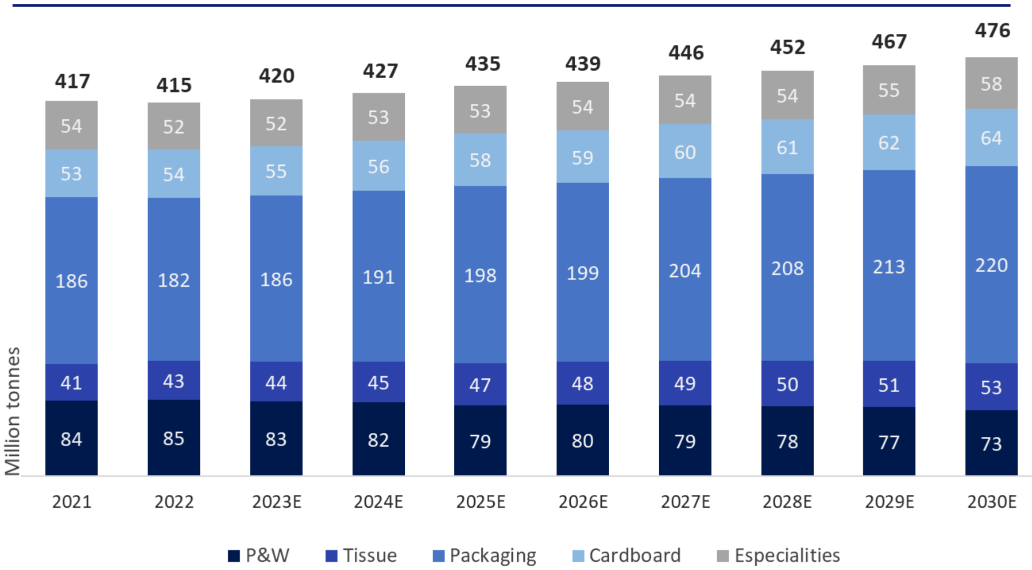


Source: Genial Investimentos, Bracelpa

Demand strongly linked to perennial sectors. As it is involved with end products made of paper that have a resilient demand (with the exception of printing and writing), the need for the commodity then has a perennial growth, being historically aligned with GDP growth, but occasionally surpassing it.

The main consumption at the final end is related to **(i)** P&W; **(ii)** Tissue, **(iii)** Packaging; **(iv)** Paperboard; and **(v)** Specialties. The dynamics between each type ends up being uncorrelated, given the different exposure markets and their specific uses.

Graph 23. Expected growth on pulp final demand



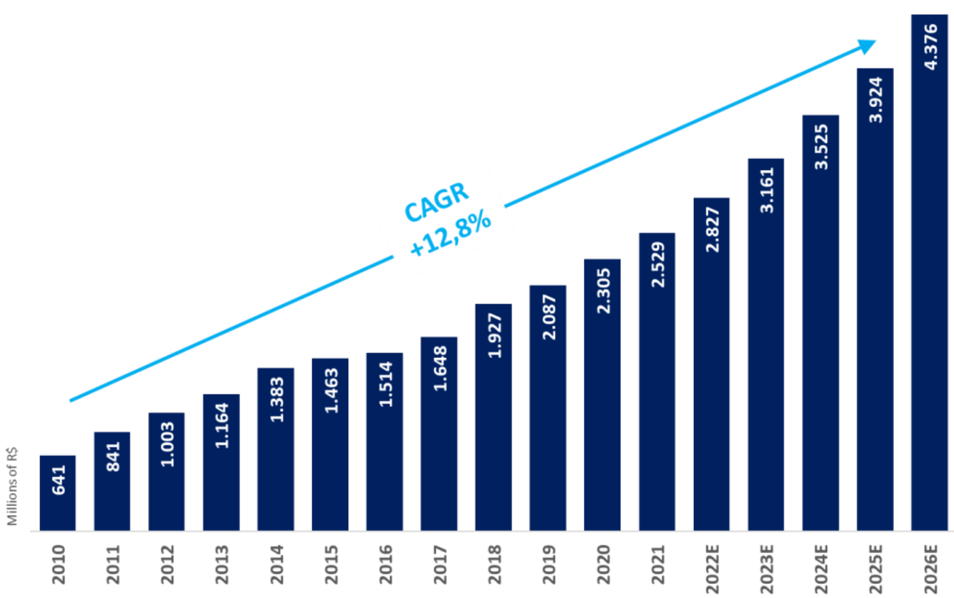
Source: Genial Investimentos, Afry

(i) P&W: Among all five, printing and writing papers (P&W) stands out as the only one expected to face a decrease in demand for the next few years, a movement that has already started a few years ago due to changes in consumption habits and new technologies, which remove the need for the use of printing and writing papers, such as the digitization of newspapers. In total, the division represents about ~20% of total consumption today.

Regarding indirect sales, i.e., the sale of pulp for the manufacture of paper for printing and writing, Suzano has 7% of sales volume linked to this category. In relation to direct sales of paper, this percentage rises sharply to 70%. Looking at Klabin, although the Company does not disclose the destination of the paper, hardwood basically has no direct sales volume in the integration, so we estimate that the total percentage of exposure to the printing and writing segment is basically irrelevant for the Company.

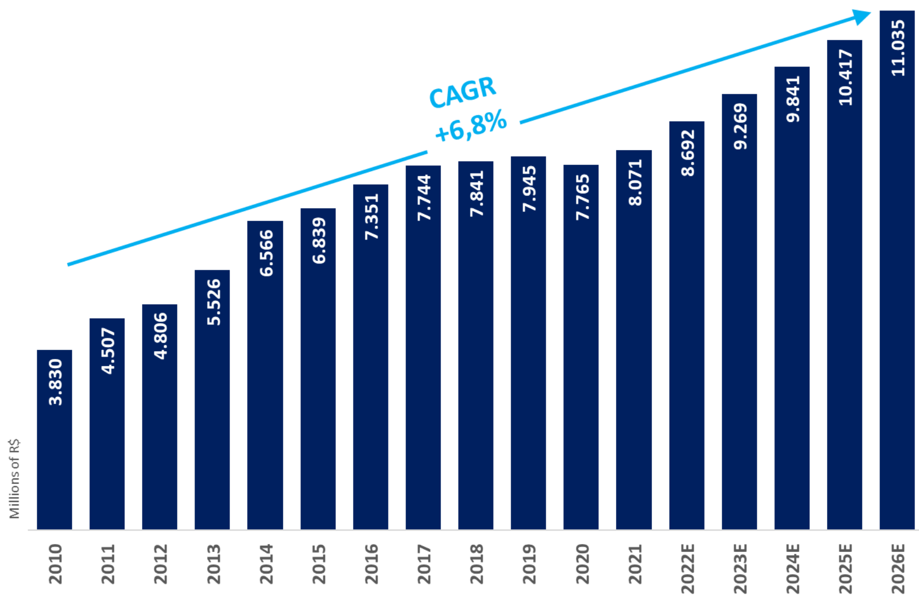
(ii) ***Tissue*****:** This category has a great avenue for growth, as it is strongly related to two fast-rising segments: personal hygiene (such as wipes, pads and toilet paper), as well as diapers. In the first, we see the pandemic as a catalyst for the consumption habit related to hygiene products in general, in a parallel way to feminine hygiene maintaining the strong trend of demand that it already had pre-pandemic. In turn, diapers can be divided according to the type of use, whether for children or adults, showing strong growth in sales in both, but with emphasis on geriatric diapers, given the trend of aging of the world population in the coming decades added to the effect of reducing prejudice and greater information currently available on the need for use for older adults, which directly benefits companies with greater production of pulp aimed at Tissue, which can only be made exclusively with virgin fibers.

Graph 24. Adult Diaper Sales growing on a 12,8% CAGR



Source: Genial Investimentos, Klabin BI

Graph 25. Children diaper salves growing on a 6,8% CAGR

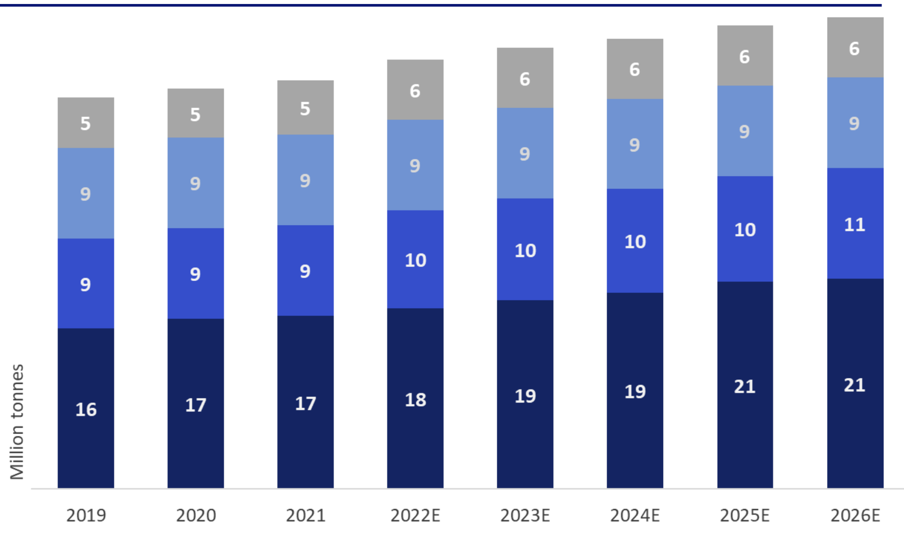


Source: Genial Investimentos, Klabin BI

Representing ~10% of the total demand currently, we still see the possibility of growth in the global market, in an expectation linked to the economic development of emerging countries such as China and India, which should be the economies with the highest GDP evolution in the
coming years, suffering direct effects of their large population, which together are equivalent to 2.4bn people of the 8.0bn worldwide (~30% of the total).

In addition, due to logistical difficulties in relation to finished products, the low scalability of machinery and the great influence of brand and quality, Asian regions end up favoring the demand for market pulp, given their non-verticalized production.

Graph 26. Tissue demand to substantially growth in Asia



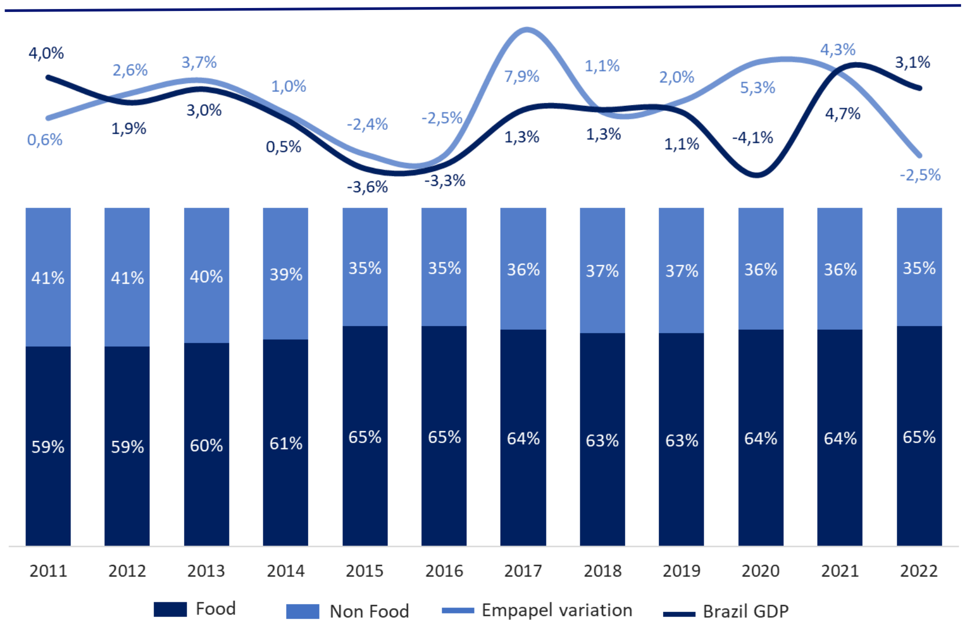
Source: Genial Investimentos, PPC, RISI

(iii) Packaging: Representing the largest demand nominally (~40% of the market), the packaging market has an appetite slightly driven by some factors, among them the favoring of global trends such as **(a)** delivery services, **(b)** e-commerce, as well as **(c)** being made of biodegradable, recyclable and compostable materials, benefiting from the substitution of paper for plastic in various types of packaging, given the long decomposition time of plastic in nature.

Thus, containerboard packaging (widely used in delivery services, for example) is mainly made by recycled paper (RCP), which limits the expectation of direct appetite of virgin fibers, and increases the possibility of growth of recycled paper, but depending on the specific dynamics of each region. Despite the great benefit of RCP, it is important to note that the more recycled the pulp is, the more shortened and degraded its fibers become, with estimates pointing to a limit of up to 6 recyclings for its properties to be completely lost, causing a need for fiber replacement.

Specifically in Brazil, within the packaging market, the containerboard part is intrinsically linked to the food sector, corresponding to a total share of ~65%, growing steadily in recent years, which despite being partially related to the growth of national GDP, ends up having a perennial demand.

Graph 27. Corrugated boxes intrinsically related to food



Source: Genial Investimentos, Empapel

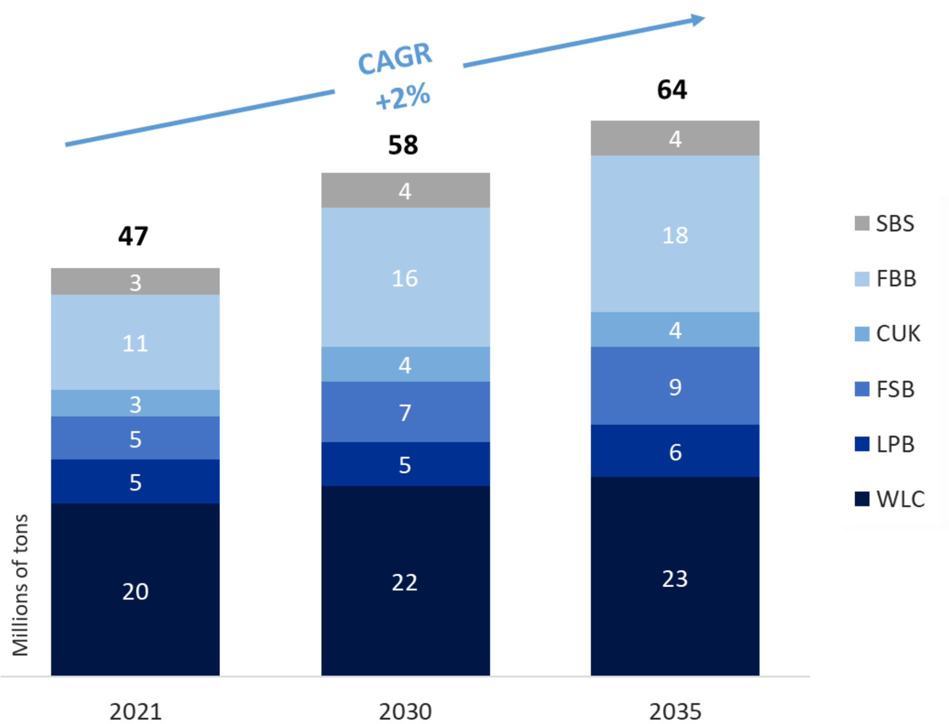
(iv) Cardboard: Another very promising segment for paper, we observe that **(iv)** cardboard also follows a resilient demand, as they are closely linked to non-discretionary consumption, providing paperboard for beverage packaging such as milk, in addition to also being related to the replacement of plastics with paper in search of environmental sustainability.

Generally, in need of a coating for the product, with ease for customizations and cheap molding, the main products that use paperboard as a form of packaging are **(a)** food, which can be dried, frozen or chilled, **(b)** personal health and personal care, **(c)** tobacco, among others.

On the supply side, specific products such as SBS (Solid Bleached Sulphate), FBB (Folding Box Board), CUK (Coated Unbleached Kraft), FSB (Food Service Board), LPB (Liquid Packaging Board), WLC (White-Lined Chipboard) should benefit both from the general growth of the economy, which in the short term seems to be cooling down, as well as from new trends in consumption, which do form factors to be more optimistic.

Among these trends is the replacement of single-use plastic, which several countries are moving in favor of: the European Union banned the marketing of single-use plastic in 2021, India in 2022 and France in 2024 (only the plastic straw in this case), in addition to numerous brands that have already taken the initiative, regardless of being forced by legislation to cut the use of this type of plastic, redirecting this demand to packaging made of cardboard. We believe this dynamic is central to the pulp & paper industry's thesis.

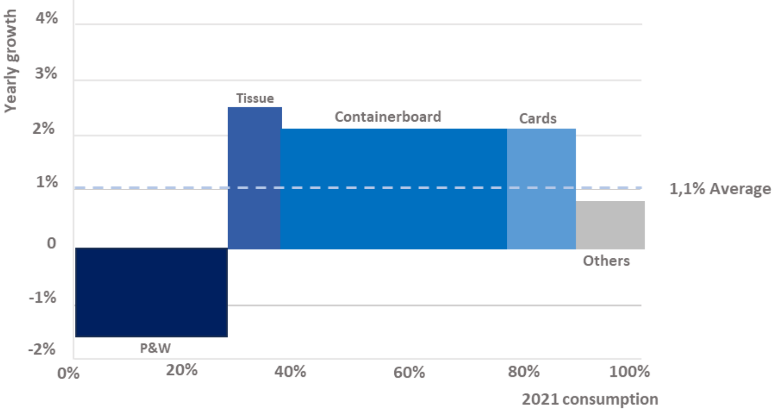
Graph 28. Cardboard market with positive expectations



Source: Genial Investimentos, AFRY, Jay Partners

Robust global growth in the long term. On a consolidated basis, both AFRY and Fisher's expectations, both specialized consultancies in the sector, indicate higher global demand growth for Tissue, containerboard and board markets, given their correlated demand with resilient markets, which should more than offset expected declines in graphic papers.

Graph 29. Expected long term demand growth

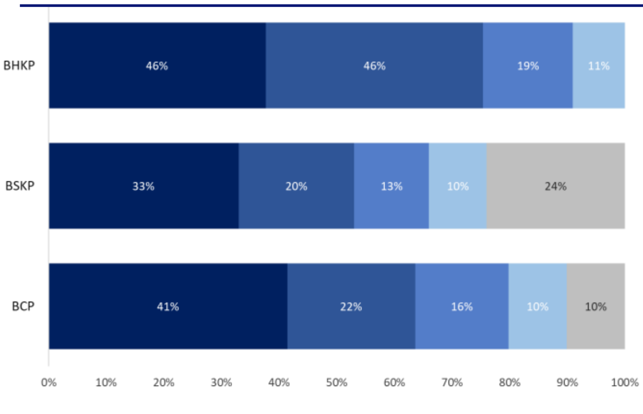


Source: Genial Investimentos, AFRY and Fisher

Hardwood with positive trend. The pulp market in the world should maintain a more focused growth in short fiber, as has been happening historically, mainly due to the final appetite for the tissue category, which can only be made with virgin fiber and should be the main name for the marginal need from now on. Regarding virgin fiber consumption, which reached 60Mt in 2021, 41% of the total came from tissue-related demand. The printing and writing segment is also partly responsible for virgin fiber demand (22% of the total currently), but we do not see it with good eyes, since there is no reason to project appetite in a sector that will most likely suffer a continuous decline due to the changing habits of society.

Over the last 10 years, market pulp demand has risen by ~1.5Mt per year, with BHKP accounting for ~1.0Mt of the total, and BSKP in turn reaching ~0.4Mt, with ~0.1Mt in others. We see that the demand derived from the production of long fiber ends up competing with recycled paper, which discourages the demand for virgin BSKP fiber, and at the other end, encourages the consumption of virgin BHKP fiber. Suzano has 100% of its direct pulp sales tied to BHKP (hardwood), while Klabin has 67%. Although Klabin's penetration is lower in direct sales for this type of pulp, if we consider indirect sales, when we add to the account the volume of paper sales that are made with hardwood, the percentage of exposure to the type of commodity rises considerably, which also makes it well positioned.

Graph 30. Pulp end use by type in 2021



Source: Genial Investimentos, PPC, RISI

The Supply Factor

New capacity additions bring uncertainties about the balance between supply and demand. For the coming years, some relevant projects are expected to start-up and eventually ramp-up, adding new production capacities for market pulp and possibly unbalancing supply and demand, given an expectation of higher growth than demand for the period. In a collection of projects, we list the main ones that we expect to start in 2023 and 2024.

i. COPEC's MAPA project, has been implemented in Chile since 2018, but started in January 2023, after a CAPEX of US$2.3bn for the construction of a new production line with a capacity of **1.56Mtpy of BEKP**, but which should produce ~0.8Mt in 2023 to reach its full capacity in 2024.

ii. Inaugurated last month, UPM started operations at its "Paso de los Toros" project, which adds a capacity of **2.1Mtpy of BHKP** in Uruguay from the investment of almost US$3.5bn. In addition to the mill, the project involves all the necessary infrastructure for logistics, with a specialized pulp port in Montevideo.

iii. In Finland, Metsa Fibre is revamping its mill to increase its capacity to 1.5Mtpy vs. 0.6Mtpy currently. The project then releases an addition of **0.9Mtpy, flexible between BHKP and BSKP**, for an estimated CAPEX of US$1.7bn, expected to start-up in 3Q23.

iv. **0.35Mtpy BHKP** capacity increase at a CMPC greenfield plant in Brazil, with possible ramp-up from 4Q23.

v. In addition to Suzano itself, with the Cerrado project, which will add **2.55Mtpy of BHKP** in 2H24, in Mato Grosso do Sul (MS), for a total CAPEX of R$22.2bn (~US$4.6bn at current price).

In addition to the additions already scheduled until 2024 that we were able to track, the Hawkings Wright consultancy believes in new BSKP capacities coming from the Nordic countries, not counting some projects that are already formulated but have not yet been confirmed, such as:

i. Paracel's project, adding **1.8Mtpy of BHKP**, with an expected start-up in 2025, which is currently raising financial capital for its greenfield plant with an estimated CAPEX of US$3.2bn, in Paraguay.

ii. Eldorado planning its second line for its plant in Brazil, with an incremental **2.2Mtpy of BHKP,** still without official CAPEX estimates, due to consecutive postponements by the Company's control dispute.

iii. Greenfield project by Euca Energy, which seeks financing for the addition of **2.1Mtpy of BHKP** in Mato Grosso.

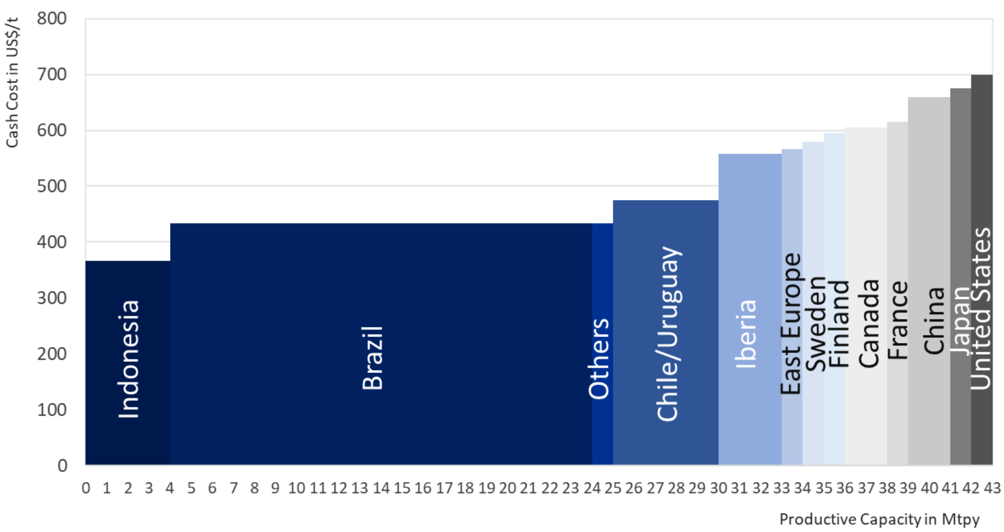
iv. COPEC with a **2.5Mtpy BHKP** project for a greenfield plant called Sucuriu in Mato Grosso do Sul, with an expected start-up date of 2028, but which is not yet confirmed.

Although the expectation of a large growth in supply may unbalance the pulp market, the past shows us that some large capacity additions have already happened together and have not had a strong reflection on commodity prices, as in 2018 when 3 large projects entered the market and yet we had highs of all types of pulp.

South America dominating hardwood supply. In a market with a total capacity of ~40Mtpy, we see South America with a representation of ~60% of the supply. Capacity distribution is heavily concentrated in Brazil, however Chile and Uruguay are still competitive countries.

With several projects in the last 10 years that brought new capacity additions, South America stood out for natural characteristics such as climate and soil, which favor eucalyptus plantations, bringing better productivity and lower costs. Suzano has the lowest cash cost (COGS/t) in the world and Klabin is not far behind.

Graph 31. Productive capacity vs. cash cost of BHKP

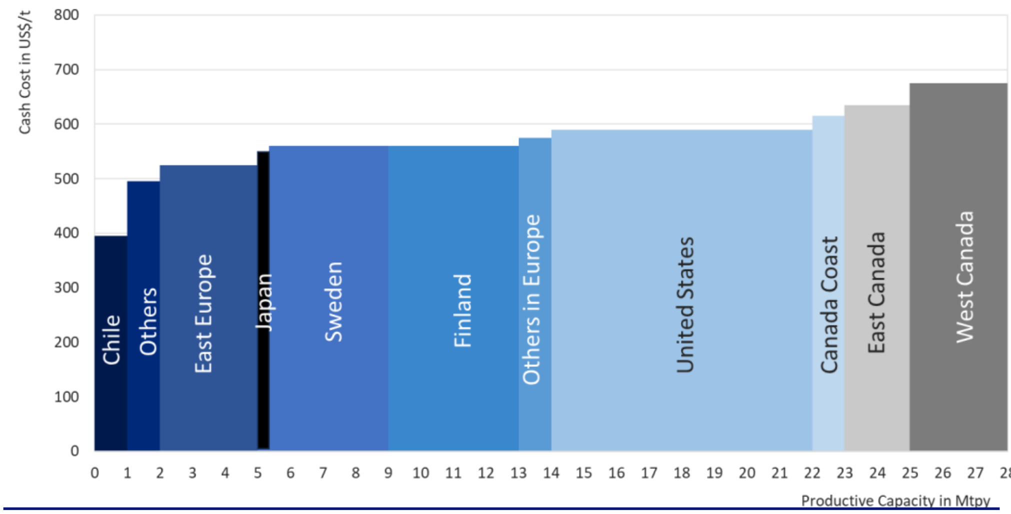


Source: Genial Investimentos, Hawkins Wright

Europe and North America concentrating softwood supply. Out of a total of ~30Mt in softwood supply, we see a strong concentration in Europe and North America, with ~40% of the market split between the US and Canada, and ~50% of the market split mainly between Sweden and Finland, adding up to 90% of supply located in the two continents.

Despite the concentration, the two regions do not demonstrate the lowest costs in the industry, which are still seen in South America, more specifically in Chile. Still, the latest capacity addition projects have been by European countries, even if not as relevant as in hardwood markets.

Graph 32. Productive capacity vs. cash cost of BSKP



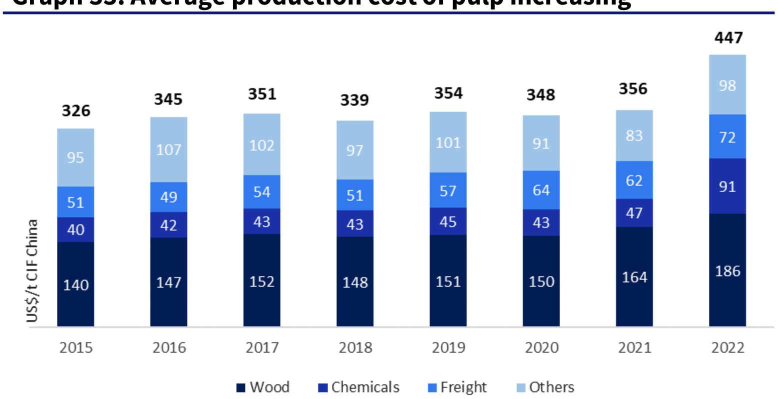
Source: Genial Investimentos, Hawkins Wright

At current prices, some of the industry is operating at negative margins. According to Hawking Wright, based on the prices the commodity trades at in China, more than 10Mt of BHKP capacity and 20Mt of BSKP capacity are operating in the negative, with most of this capacity located in North America, Europe and Asia.

Industry costs are rising. Globally, pulp production costs have risen sharply in the last year (~US$450/t in 2022 vs. ~US$350/t in 2021), mainly due to wood-related costs (historically ~45% of costs) and chemicals (historically ~14% of costs), which despite expectations of normalizing, end up hindering the full availability of supply capacity and demonstrates the possibility that supply issues can help the balance between supply and demand**.**

The availability of wood chips has suffered **from (i)** the start-up of new projects, which increase demand, **(ii)** logistical problems with some restrictions caused by the war in Eastern Europe increasing the regional cost, **(iii)** Brazil suffering from lower than historical productivity growth, while the pulp market competes with biomass and coal and **(iv)** plantation decline in Australia and price increases in Vietnam, which represent the largest Chinese suppliers.

Graph 33. Average production cost of pulp increasing

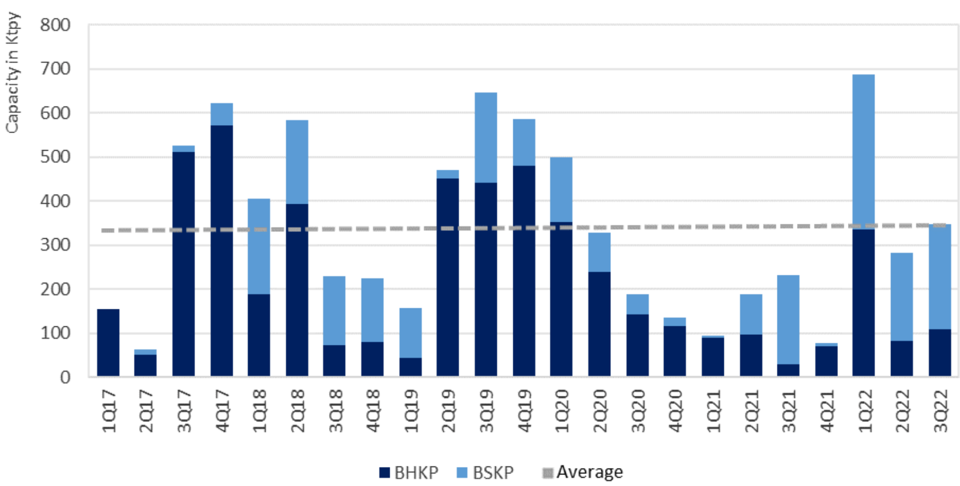


Source: Genial Investimentos, Hawkins Wright

In addition, some fires in important geographies for pulp create holes that need to be plugged in the long term, such as in **(i)** Chile, with the loss of 22.5 thousand hectares of plantations by CMPC (~5% of its total), plus 47 thousand hectares by COPEC (~7.5% of its total), and in **(ii)** Canada, with what is heading to be the worst forest fire ever recorded in the historical series, with the burning of at least 3.3 million hectares (1.3% of the country's total commercial forests).

On a recurring basis, unexpected maintenance stoppages reduce short-term supply. From what we can see from looking at the industry data, unplanned mill maintenance stoppages are common and result in a loss of capacity in supply, usually focusing on the hardwood market, but may also occur less frequently in softwood. Overall, the sector has been affected with an average loss of ~330Ktpy each quarter since 2017 due to these shutdowns.

Graph 34. Unexpected downtimes happe all the time



Source: Genial Investimentos, Fastmarkets

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