



GLOBAL WOOD-BASED PANELS MARKETS — TRENDS AND OUTLOOK

Pelice Conference Presentation
Friday April 8th 2016 Atlanta US



POYRY – GLOBAL INDUSTRY SPECIALIST CONSULTING FIRM...

6000 experts, **50** offices, delivering **Management Consulting** and **Engineering** projects in **100** countries worth EUR **650 million**.



* several offices across country

(c) grafikdienst.com

...WORKING WITH INDUSTRY, BANKS & PRIVATE EQUITY...

Industry

Operational Excellence

Markets

Strategy

BioFuture



Banks

Pre-Feasibility / IM Support

Commercial Due Diligence

Technical Due Diligence

After Financing Support



Private Equity

Pre-Feasibility / IM Support

Commercial Due Diligence

Technical Due Diligence

After Financing Support



... ACROSS THE WOOD PRODUCTS VALUE CHAIN

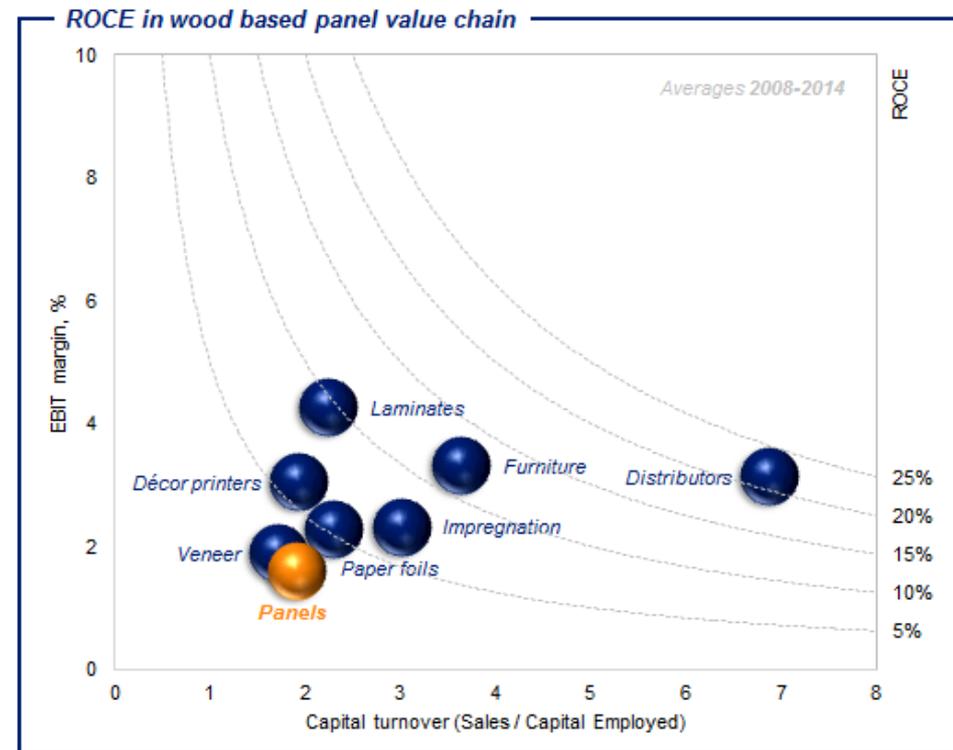
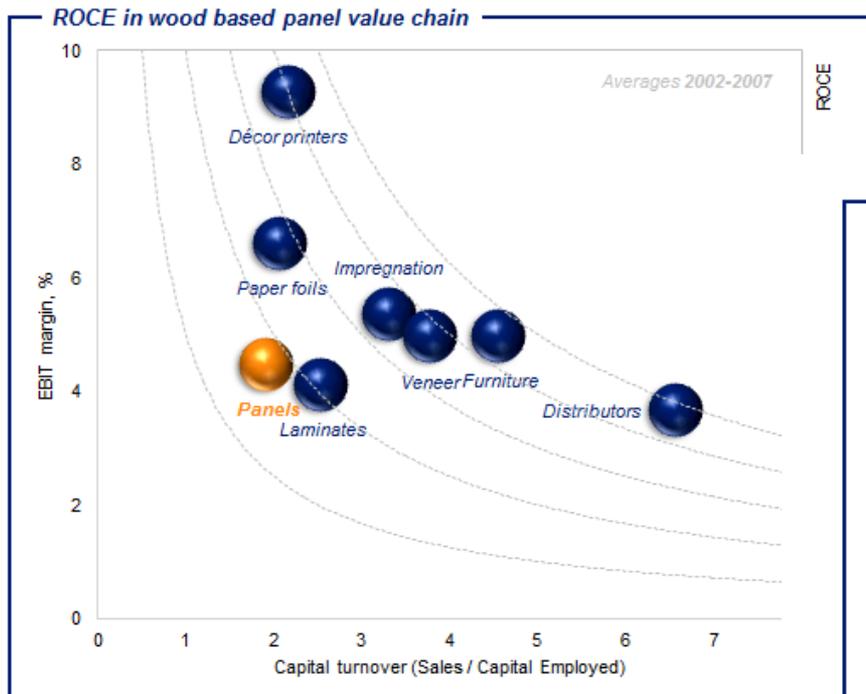


BEFORE WE LOOK FORWARD.....

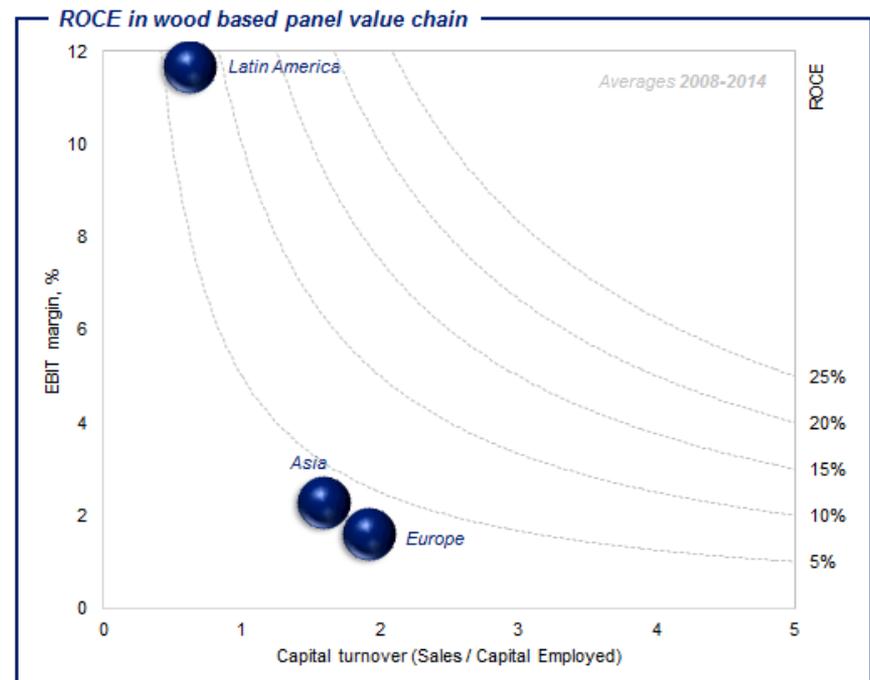
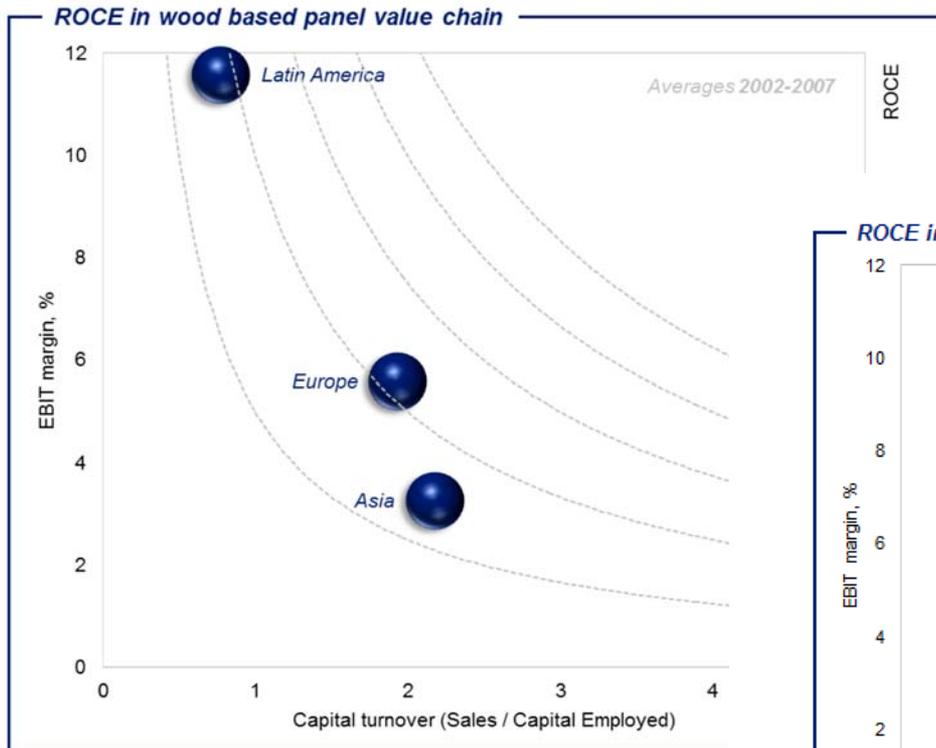
**LETS EXPLORE SOME FUNDAMENTALS TRENDS
AND TRY TO REFLECT ON HOW THESE CAN
INFLUENCE THE BUSINESSES LOCALLY**



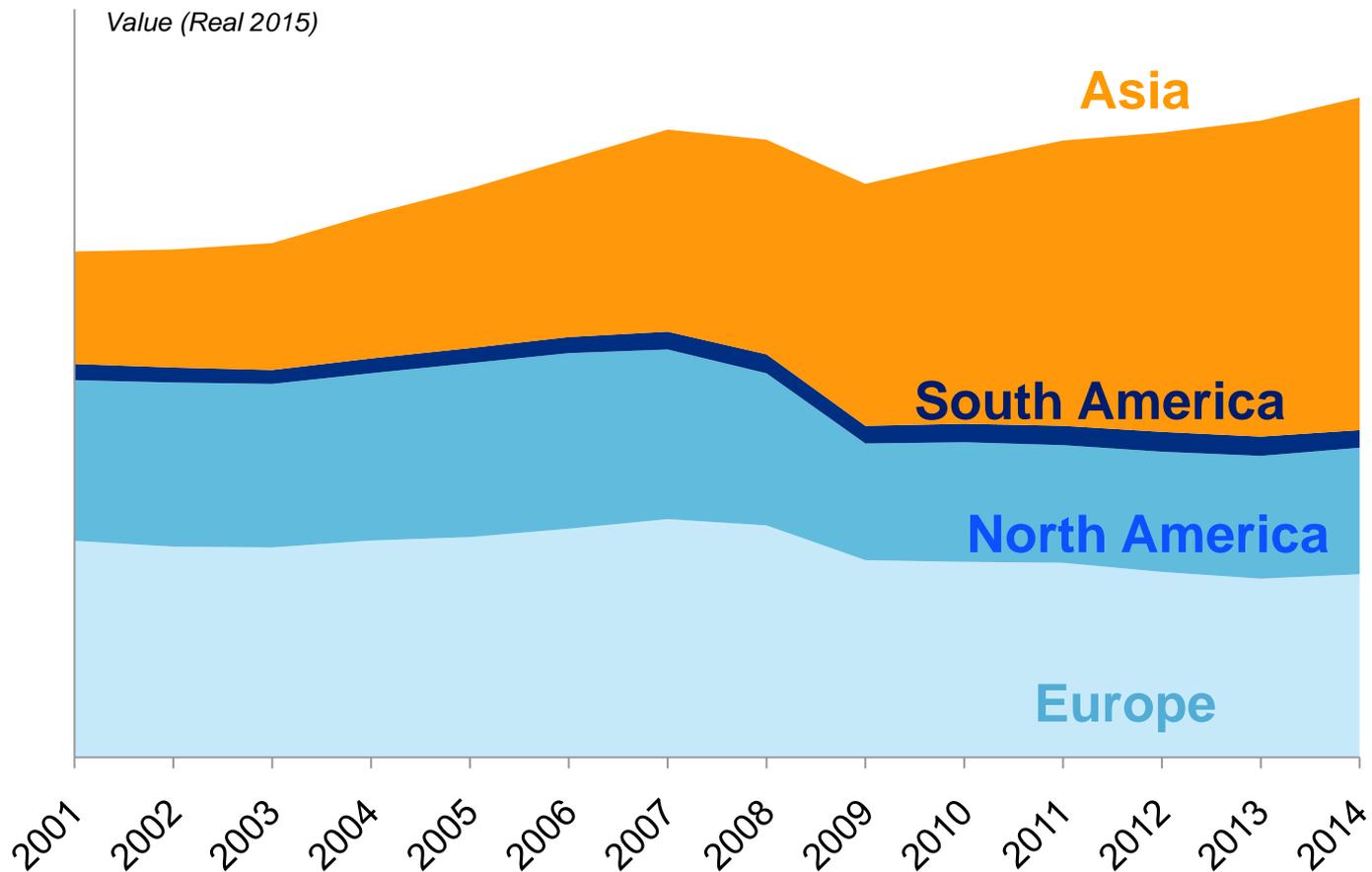
PROFITABILITY – THERE ARE STILL CHALLENGES...



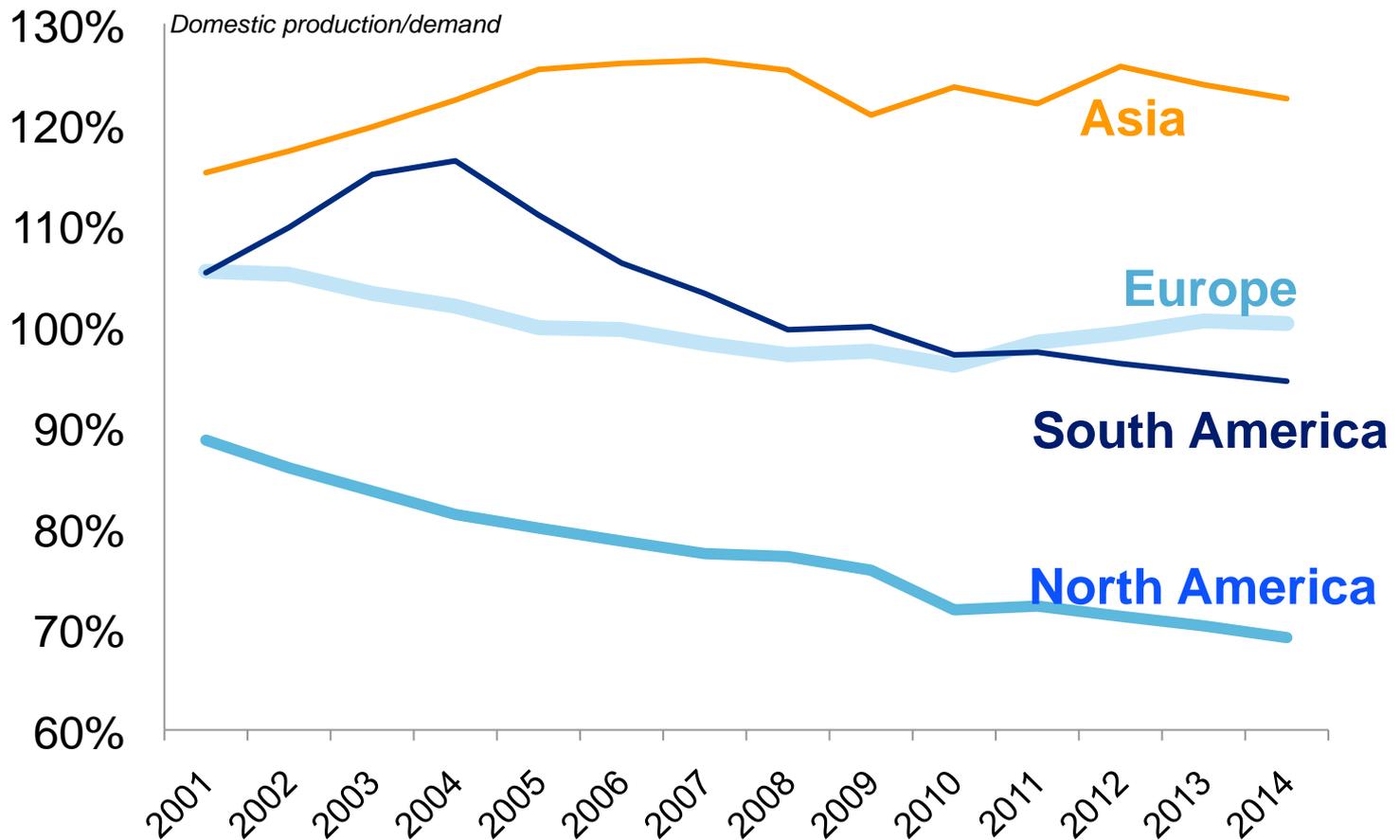
AND DIFFERENT "BATTLES" TO BE WON IN DIFFERENT REGIONS



FURNITURE DEMAND GROWTH MOVED EAST...

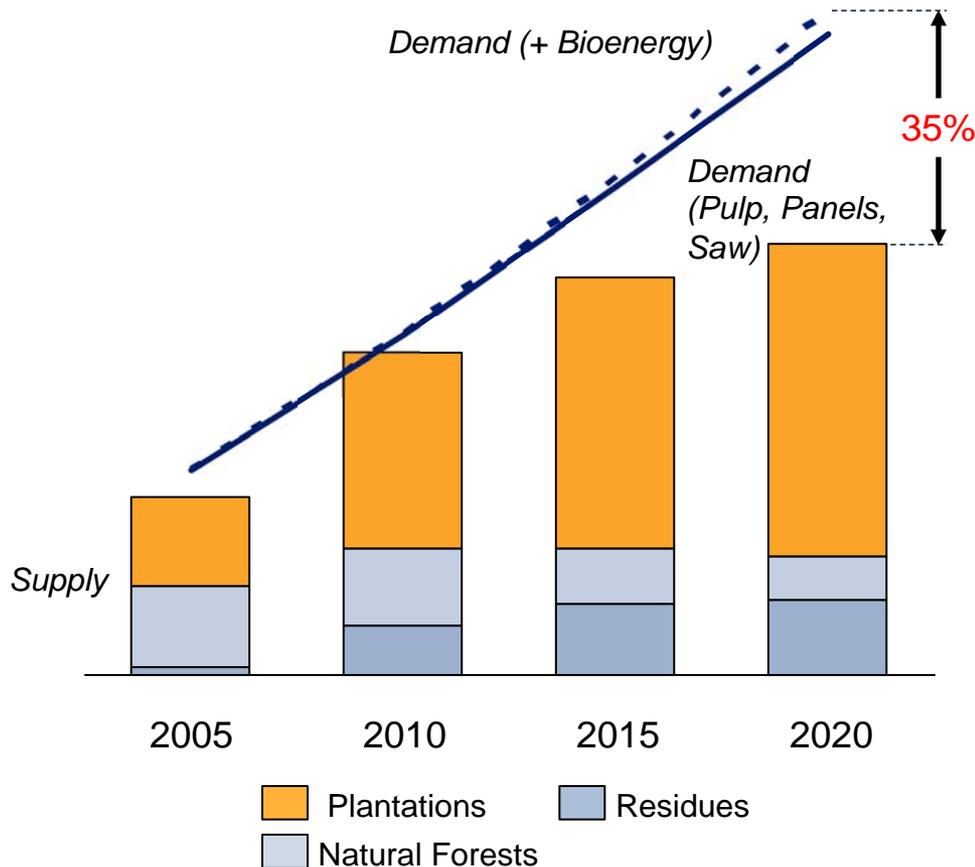


ASIAN FURNITURE PRODUCTION WILL GROW SLOWER THAN DEMAND...



...BECAUSE ASIA IS RUNNING OUT OF WOOD...

- APAC Wood Supply [M m3]



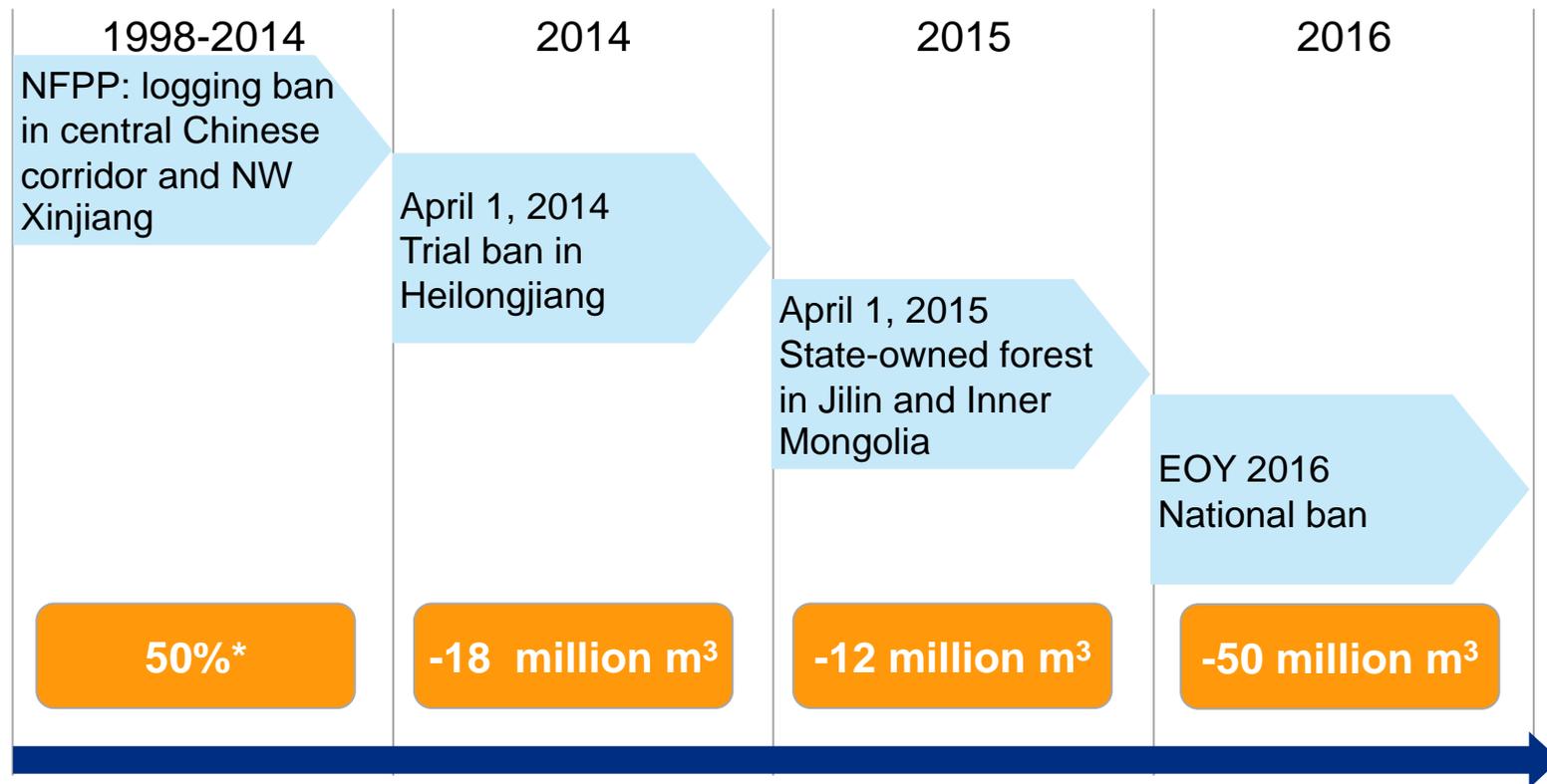
Implications?

- Investments in productivity improvement (more with less)
- New products (lower weight or non-wood based)
- New plantation investments estimated need of USD 5-10 billion for 4.2 million ha
- Reversal of trade flows of fibre/raw products/end products?
- Will Chinese MDF go back East?
- Will increasing demand for wood products create opportunities for exports in the West?

Source: Pöyry Management Consulting

CHINA IS BANNING HARVESTS IN NATURAL FORESTS

Total annual volume affected is ~ 50 million m³, which is around 15% of domestic harvest level



* Share of natural forests covered by ban

Source: China State Forestry Administration

CHINA FOREST RESOURCE – MACRO TRENDS

A need for continued reliance on log, lumber and WBP imports

Short-rotation Hardwood Expansion



Short-rotation Eucalypt and Poplar

Softwood Plantation Relatively Static



Masson Pine Plantation and Logs

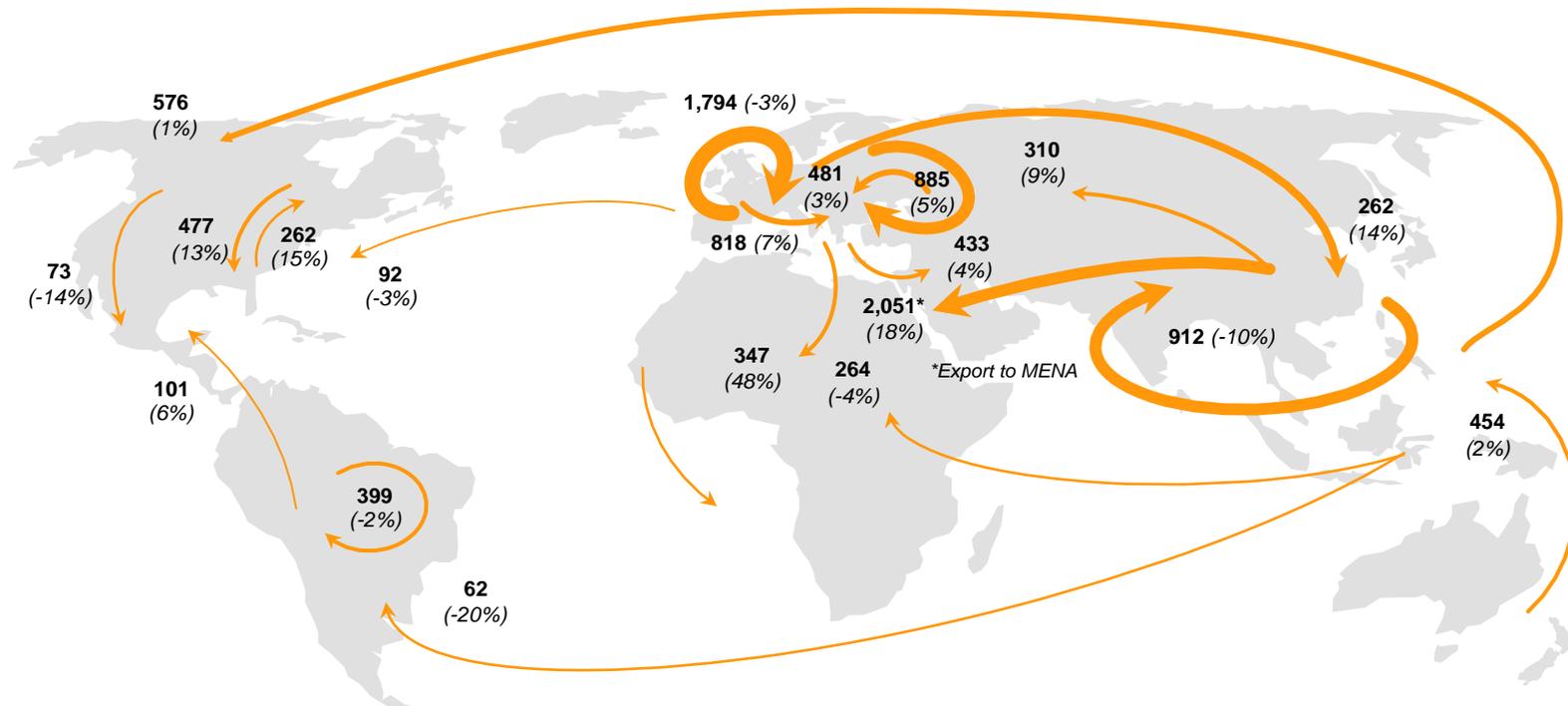
Natural Forest Harvest Ban



Natural Forest and Logs in NE China

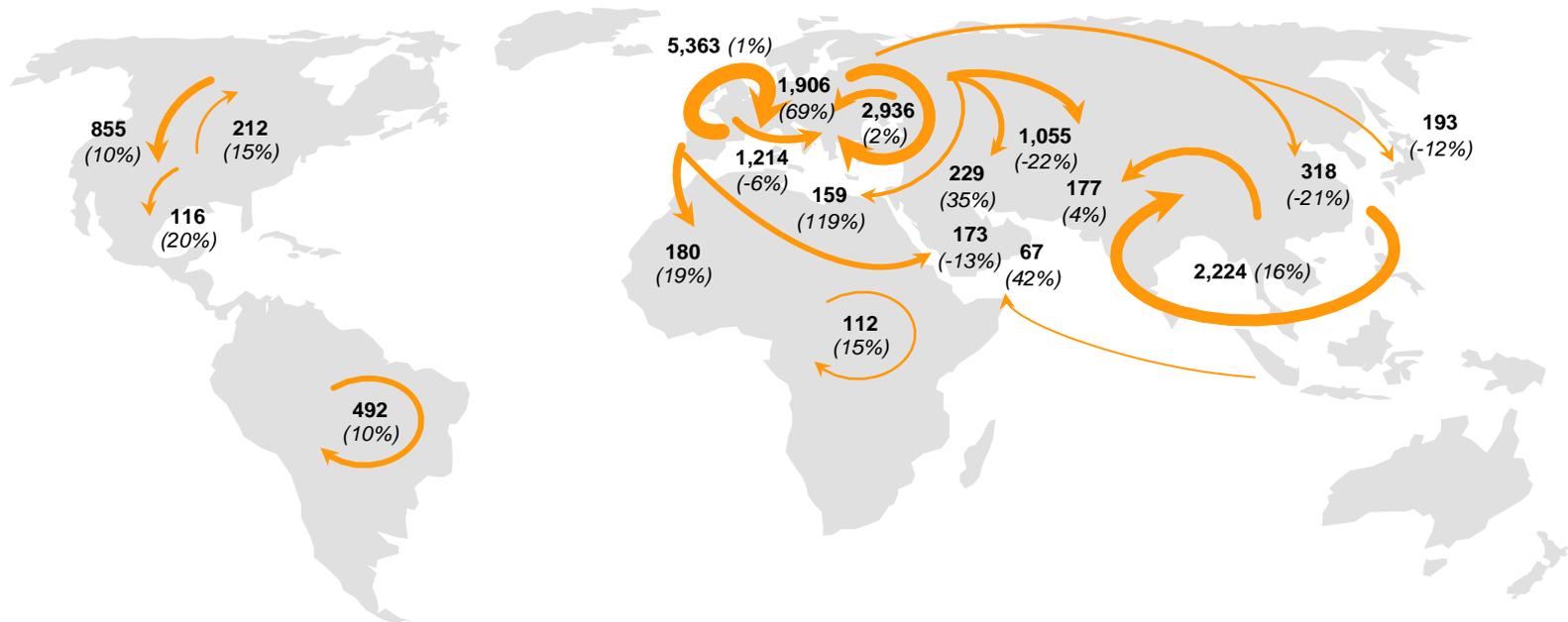


MDF GLOBAL TRADE FLOWS EXPECTED TO GO BACK EAST



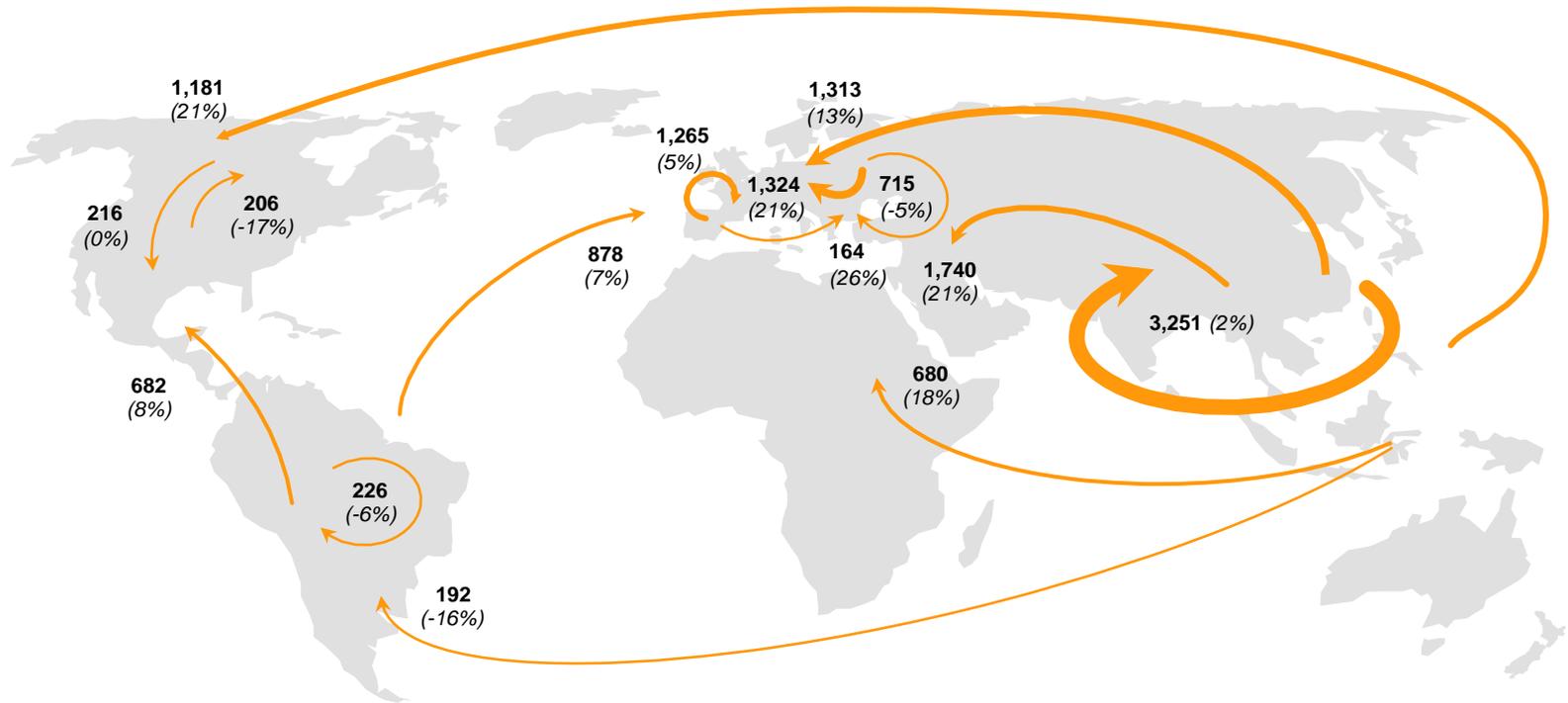
2014 (change from 2013 in brackets),, Map shows trade flows in 1,000 m³ and includes trade flows above 50,000 m³

GLOBAL PARTICLEBOARD TRADE STARTED GOING EAST AND THIS TREND IS EXPECTED TO CONTINUE



2014 (change from 2013 in brackets),, Map shows trade flows in 1,000 m³ and includes trade flows above 50,000 m³

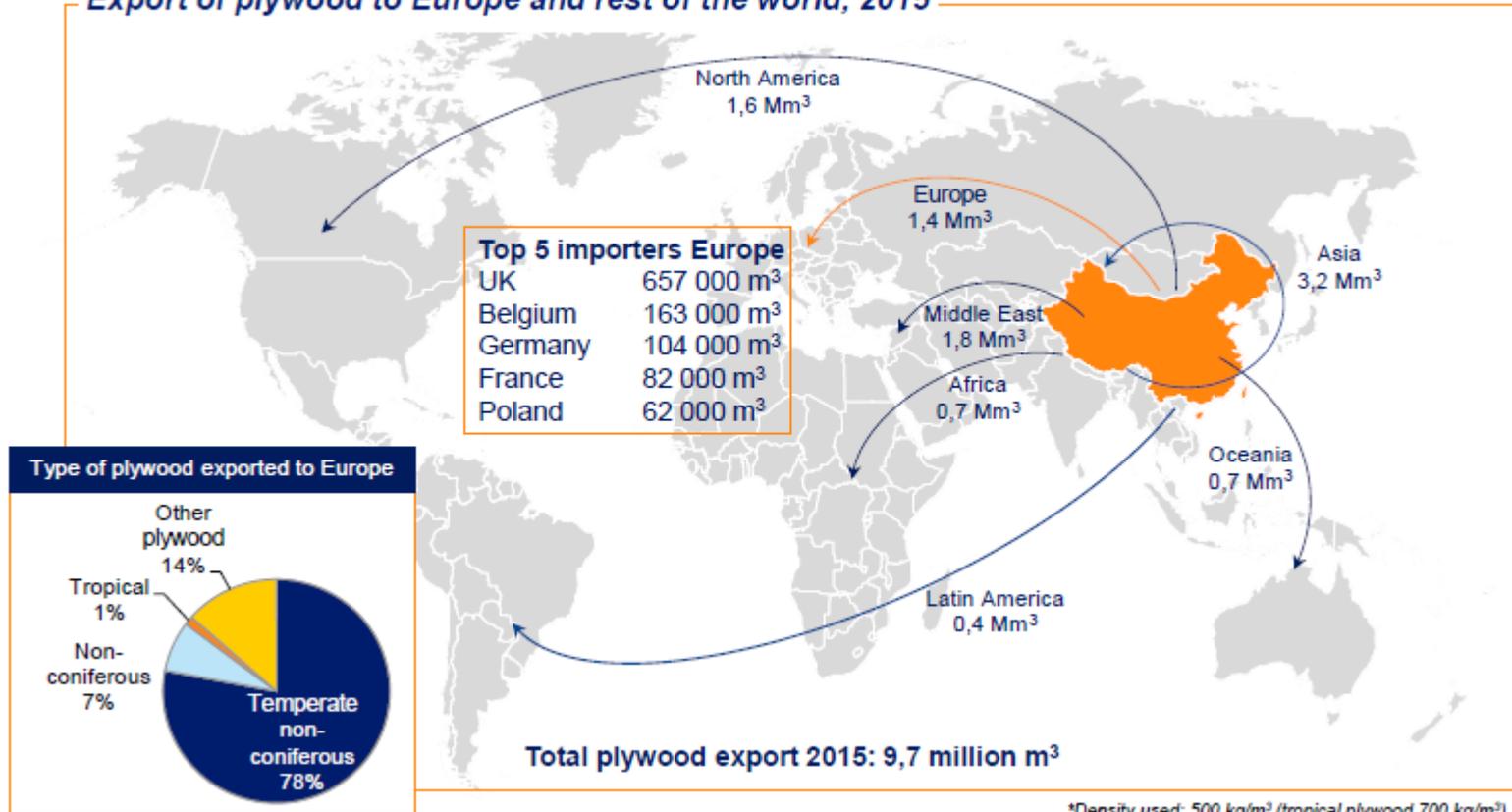
WHILST GLOBAL PLYWOOD TRADE WILL REMAIN IN THE WEST FOR MUCH LONGER



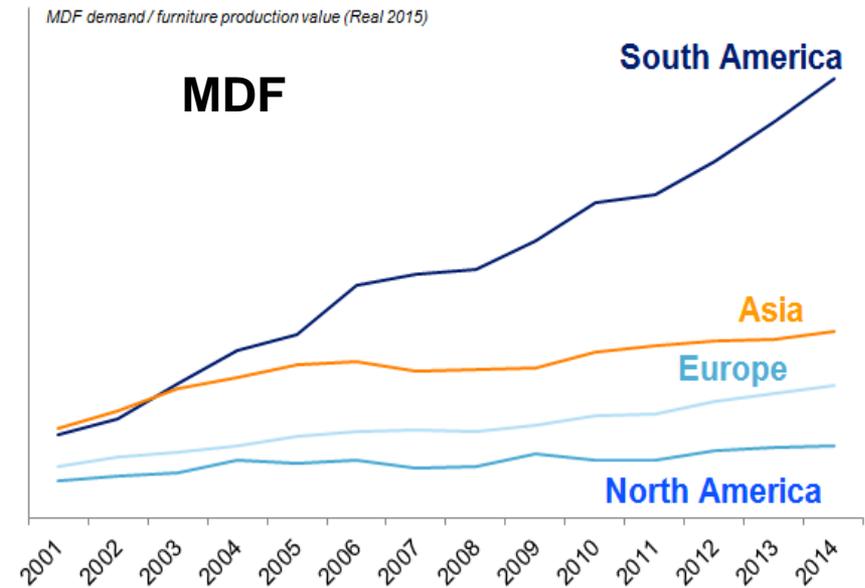
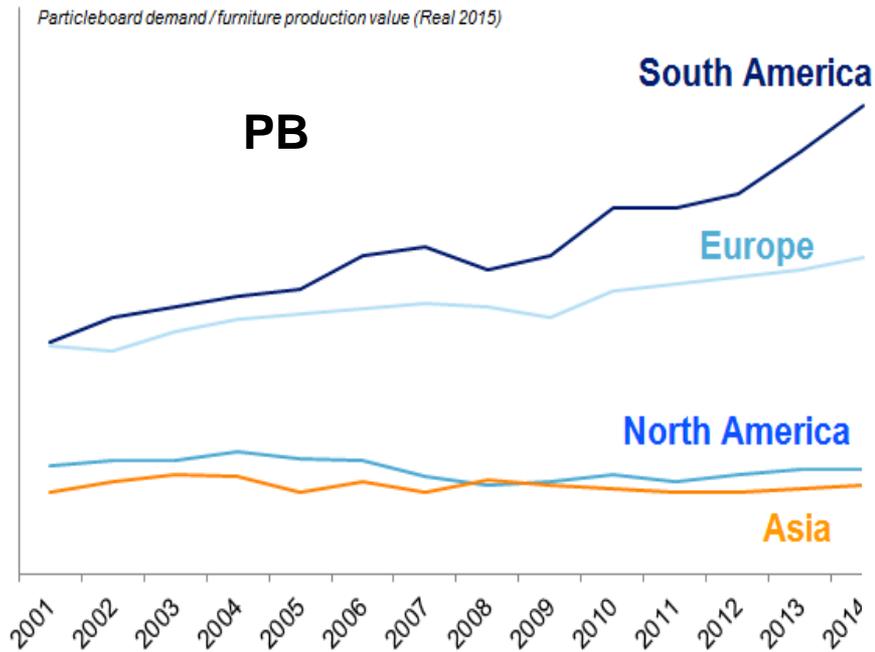
2014 (change from 2013 in brackets), Map shows trade flows in 1,000 m³ and includes trade flows above 100,000 m³

BECAUSE CHINA PLY IS A PROVEN AND COST COMPETITIVE ALTERNATIVE PRODUCT...

Export of plywood to Europe and rest of the world, 2015

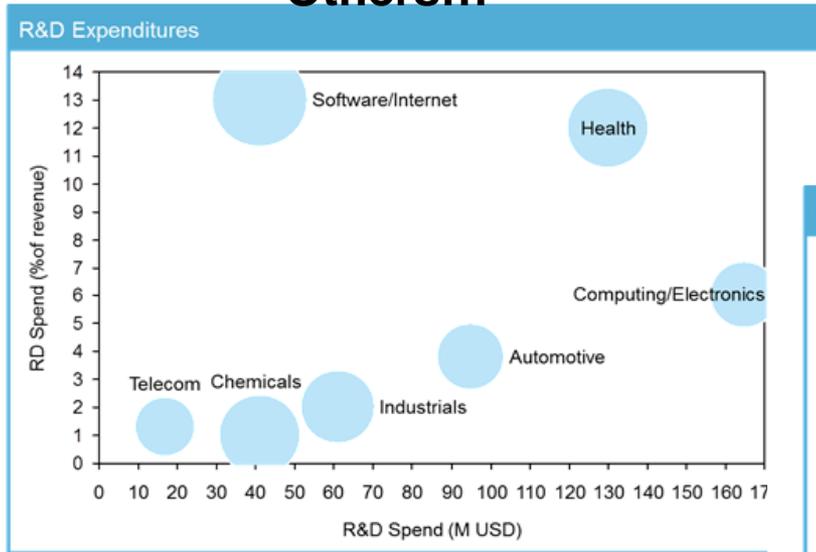


PANEL MARKET PENETRATION REACHING MATURITY?



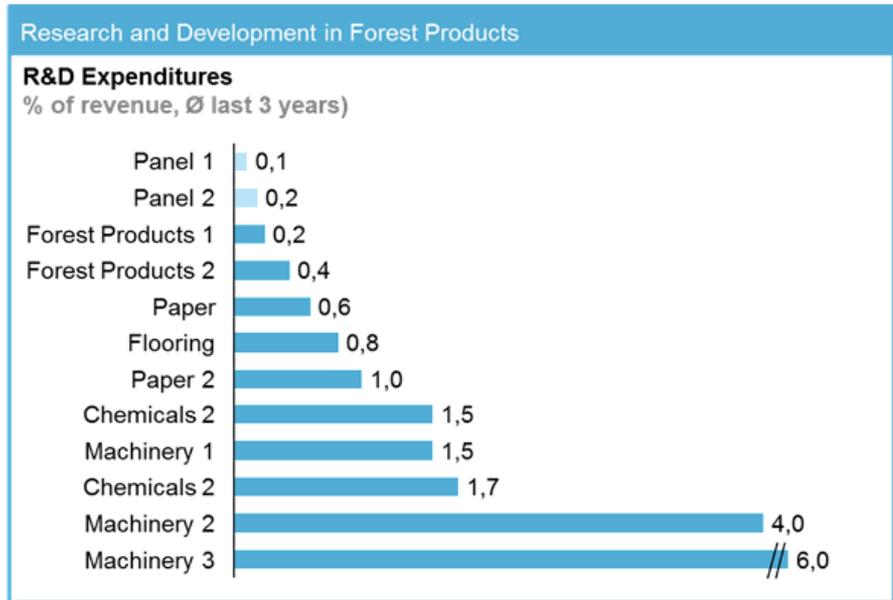
DEFYING MATURITY WITH INNOVATION... HOW MUCH WE REALLY SPEND ON INNOVATION?

Others...

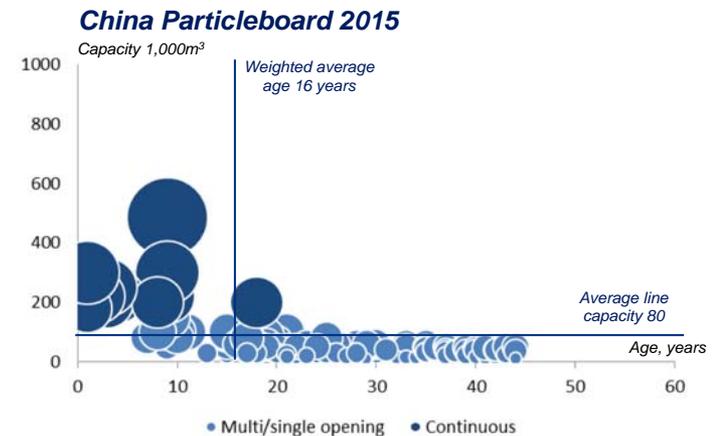
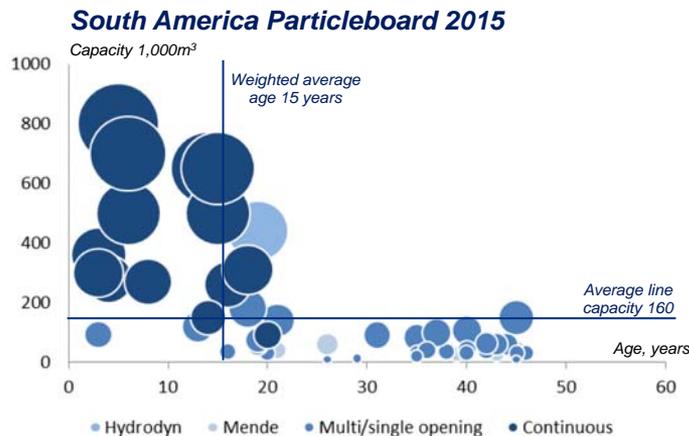
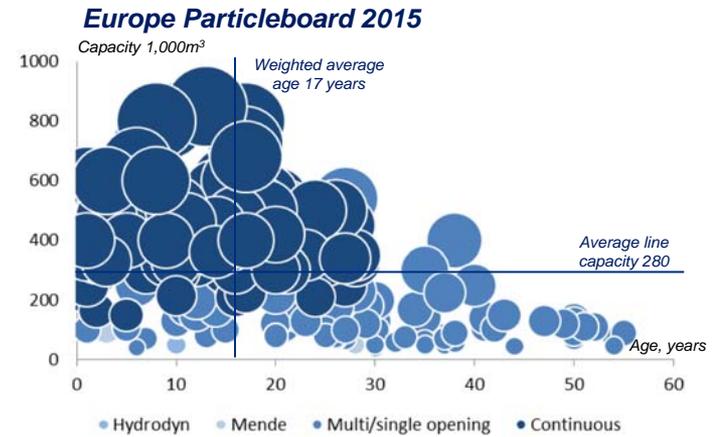
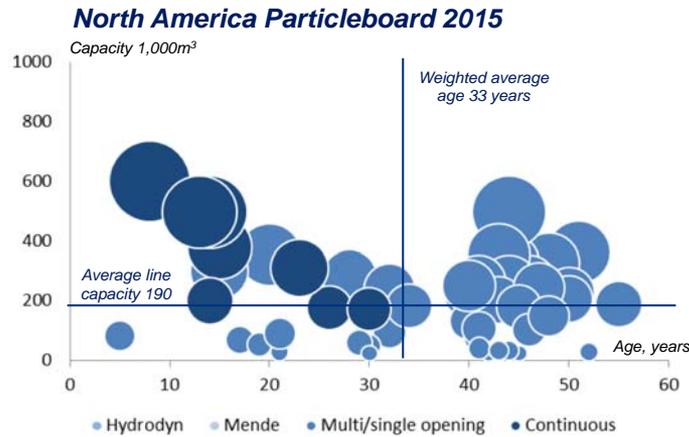


Source: Booz & Co. Bubble size equals R&D spend in relation to 2004

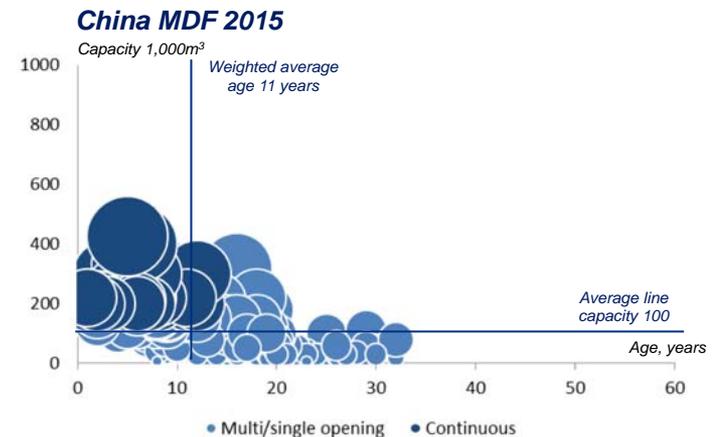
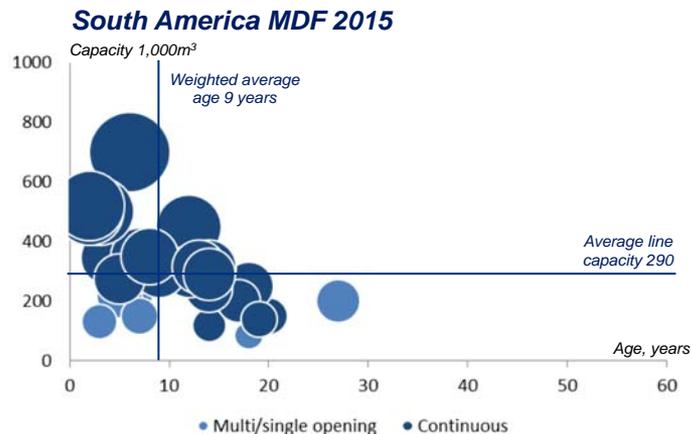
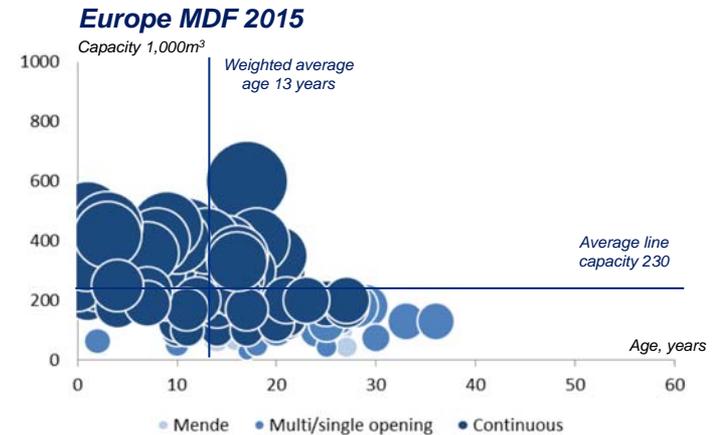
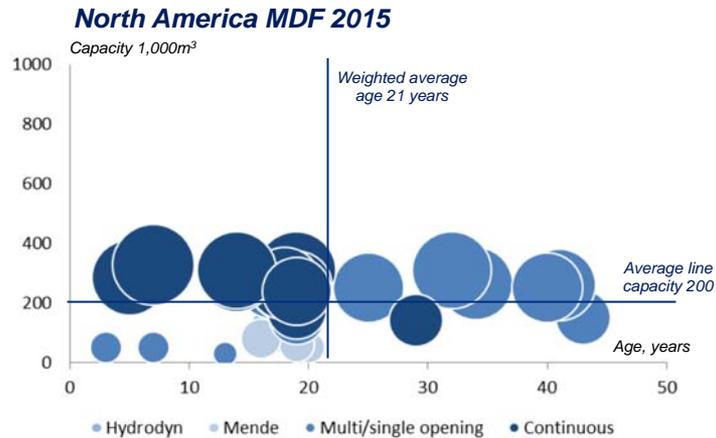
and us....



RATIONALISING INEFFICIENT AND LESS FLEXIBLE CAPACITY WILL ALSO HELP – PB



RATIONALISING CAPACITY – THERE IS LESS ROOM FOR RATIONALISING MDF CAPACITY

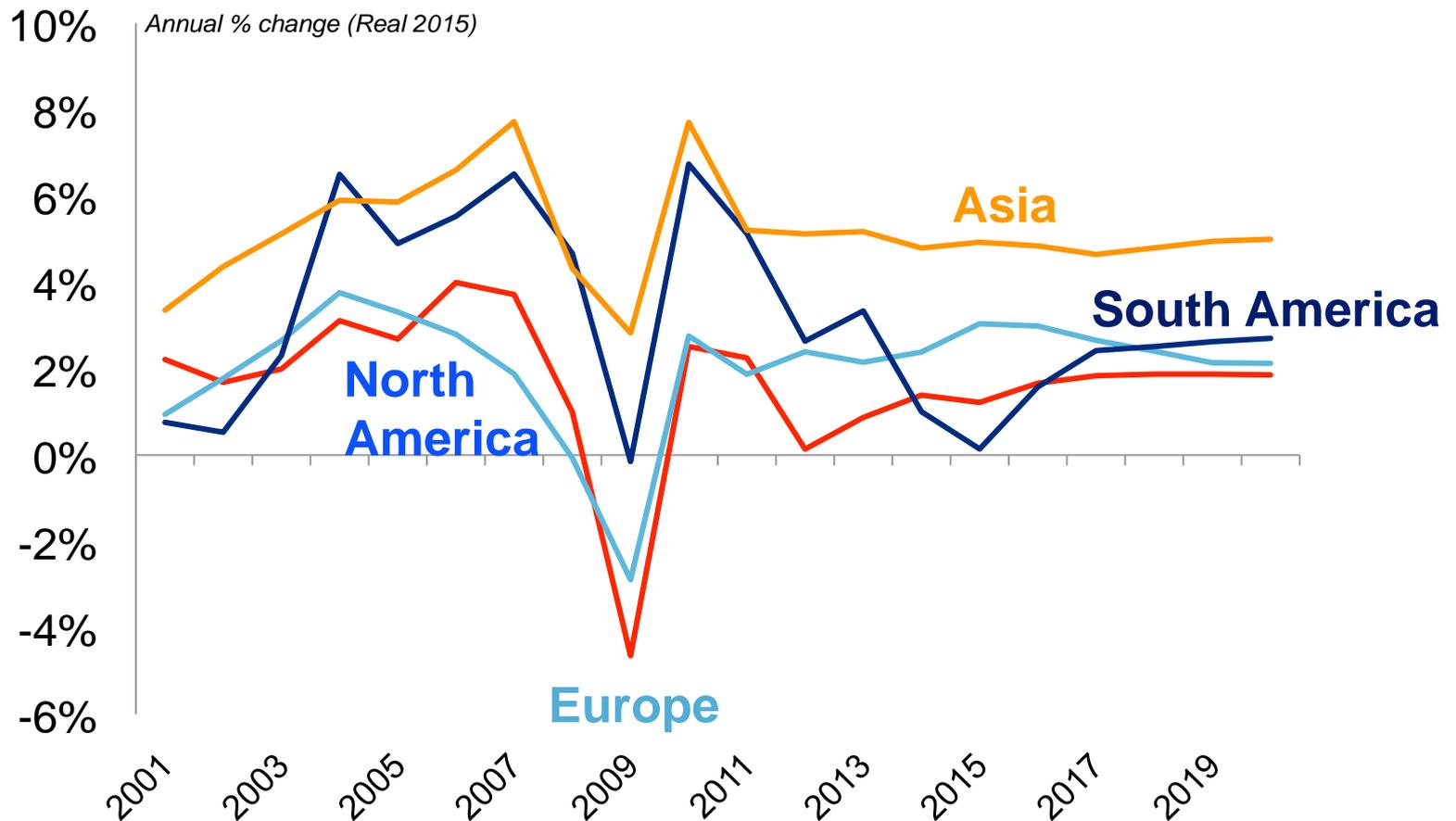


LETS NOW LOOK FORWARD....

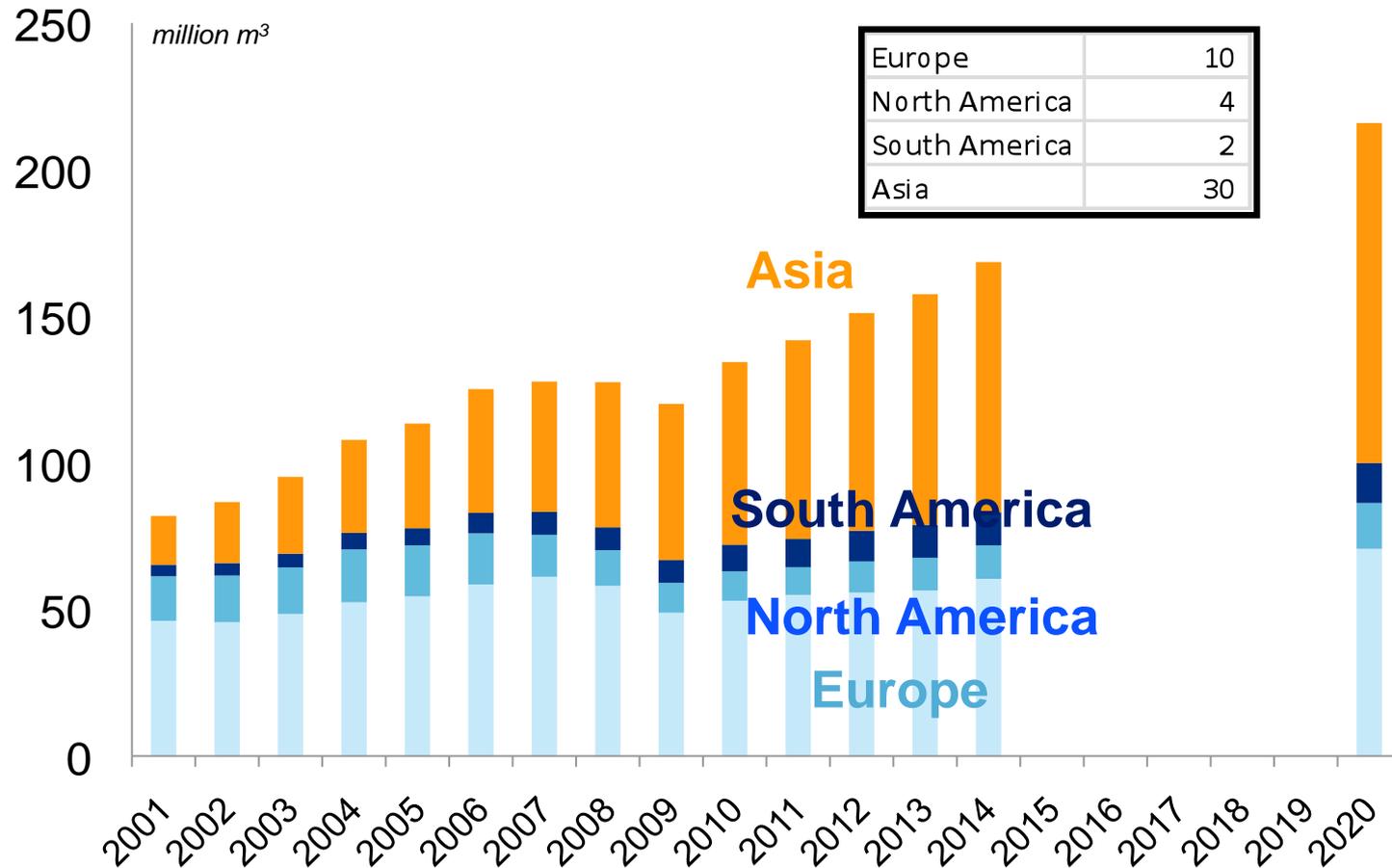


GLOBAL GDP GROWTH OUTLOOK (CENTRAL SCENARIO)

South American and European economies are facing tough period over the next few years. North America is recovering and Asia remains the global growth engine.

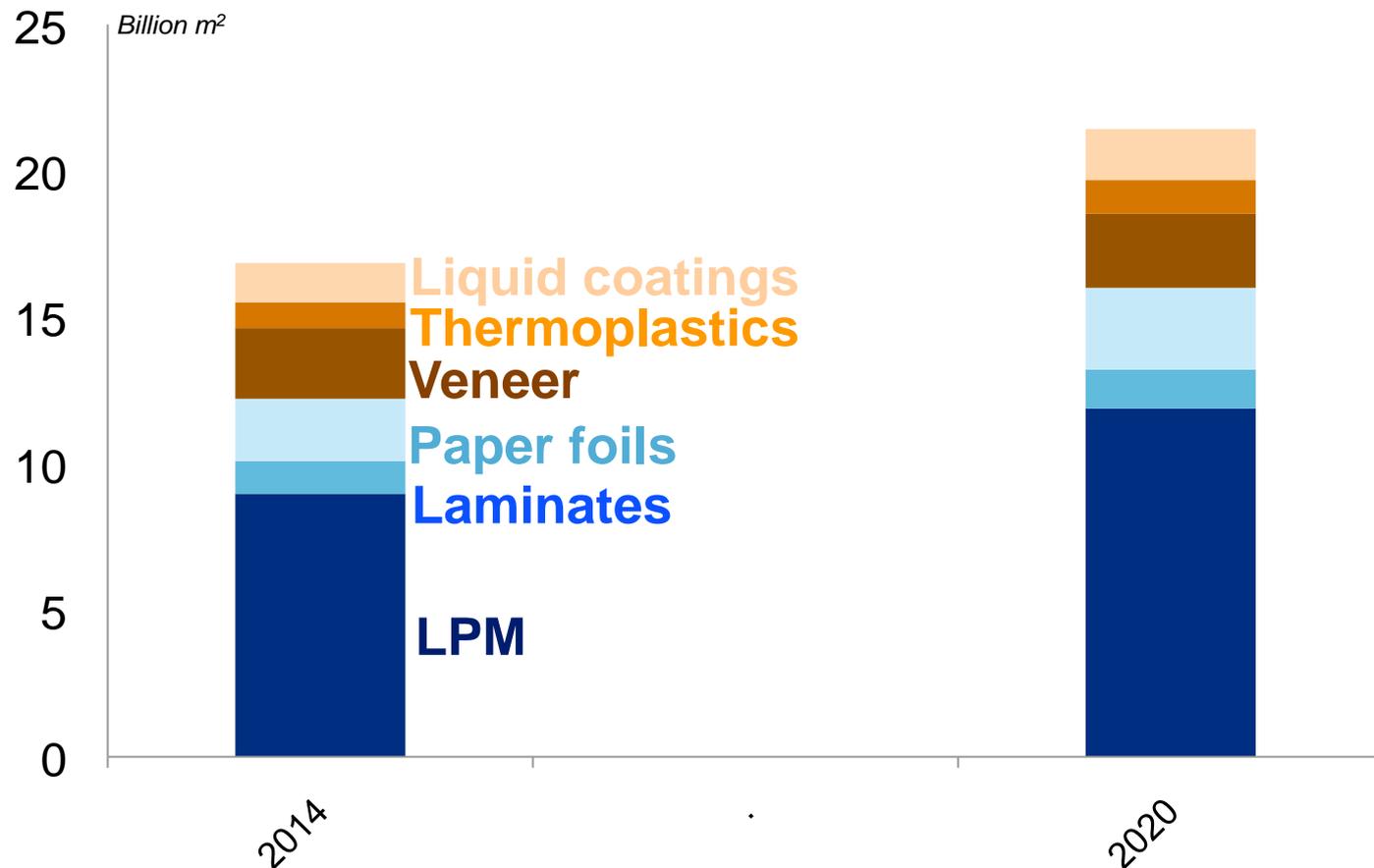


WOOD BASED PANEL DEMAND CENTRAL SCENARIO



SURFACING MATERIAL DEMAND CENTRAL SCENARIO

LPM is and will remain the main surfacing material accounting for more than half of the market. Veneer is expected to continue facing substitution from other materials.



FOCUS ON NA – WHAT ARE THE SCENARIOS GOING FORWARD?

Central

- The underpinnings for a continued economic expansion remain in place and **GDP growth develops in line with the latest IMF forecasts.**
- Respectable economic growth over the next few years will return US output to potential before it decreases **to a long term sustainable level of 2% over the medium term**, which is considerably weaker than pre-crisis.
- **The American job market is returning to pre-crisis norms**, but subdued participation and high levels of part-time work suggests that the economy remains well below full employment.
- The recovery in the construction sector continues and the annual number of housing starts in the US approaches **1.5 million towards 2020.**
- The **strong US dollar** exchange rate works against any significant expansion of the American furniture industry, but off-shoring is slowing down.

Dynamic

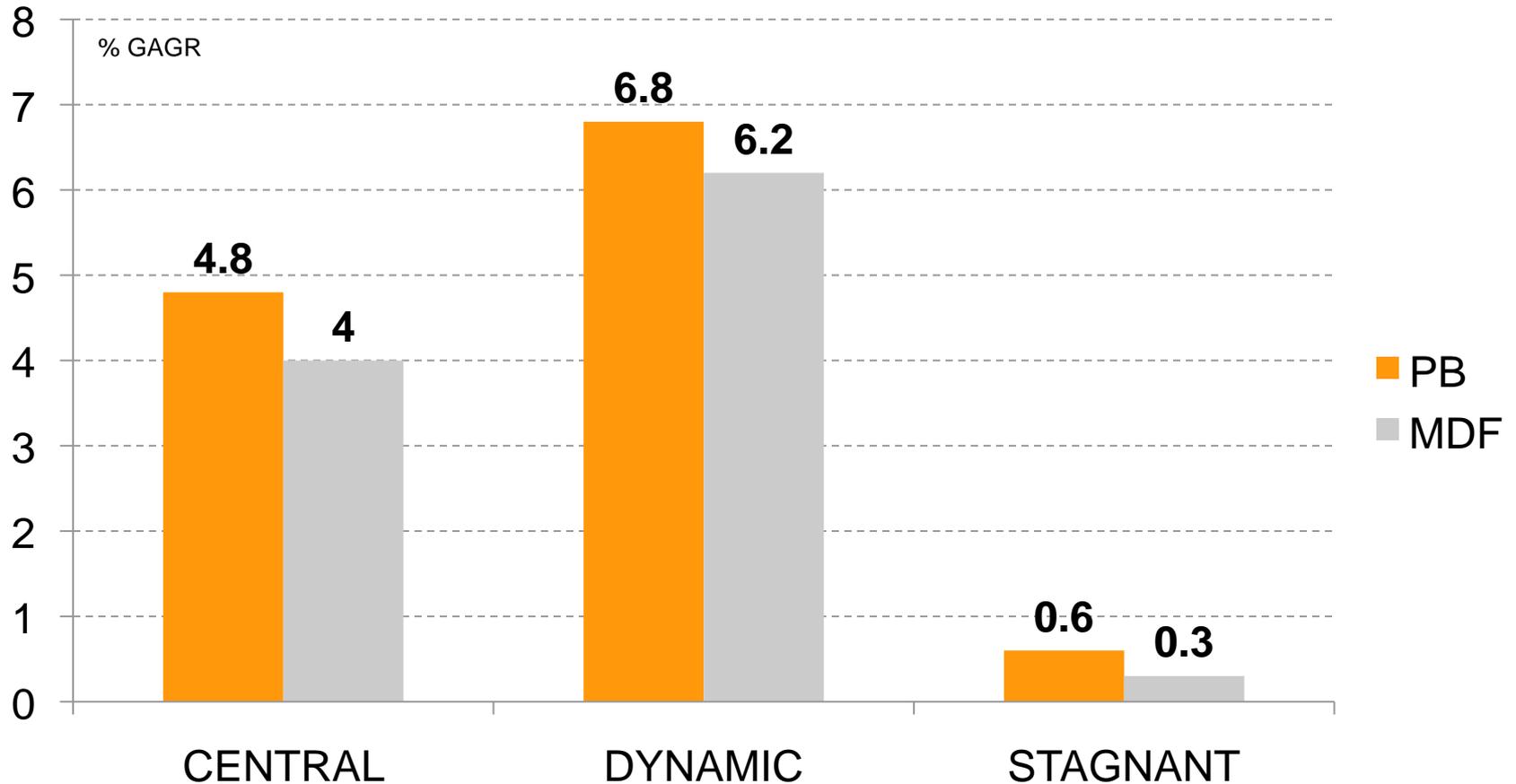
- Close to **zero short-term interest rates** and an upbeat equity market result in **cheap financing for both consumers and firms.**
- A continued **low oil price** will boost consumer spending and support a more dynamic economic growth path in the short term.
- A range of **structural issues** in the North American economy (poverty, productivity, infrastructure and labor force participation) **are addressed** through active policy work, resulting in **higher long term sustainable growth rates.**
- The output in the US and the Canadian **construction sector approaches pre-crisis levels.**
- With increased investments and improved productivity the **furniture industry manages to keep or even increase its market share.**

Stagnant

- **Non-oil, non-residential investments are well below rates in previous recoveries.** This eventually leads to lower economic growth rates and a less competitive manufacturing industry.
- **Continued weakening of growth in the global economy** (or a **pronounced China slowdown**) suppress North American exports, while the USD continue to appreciate as the currency is seen as safe haven by investors
- **Household formation in the US continue to be depressed**, despite the potential for pent-up demand from demographics. This permanently lowers the equilibrium rate of new housing construction.
- Due to sluggish domestic demand and low productivity, **the North American furniture industry continue to loose market share** domestically as well as in export markets.

AND HOW THOSE ARE TRANSLATED TO DEMAND OUTLOOK?

Investment decisions should take into account more than one scenario



WHAT THE SCENARIOS MEAN FOR PB CAPACITY DEVELOPMENT?

Assuming that currently mothballed capacity does not come back on-stream...

*Economically feasible capacity investments (additional to already announced investments)
by region and demand scenario (2022)*

(1000 m³)

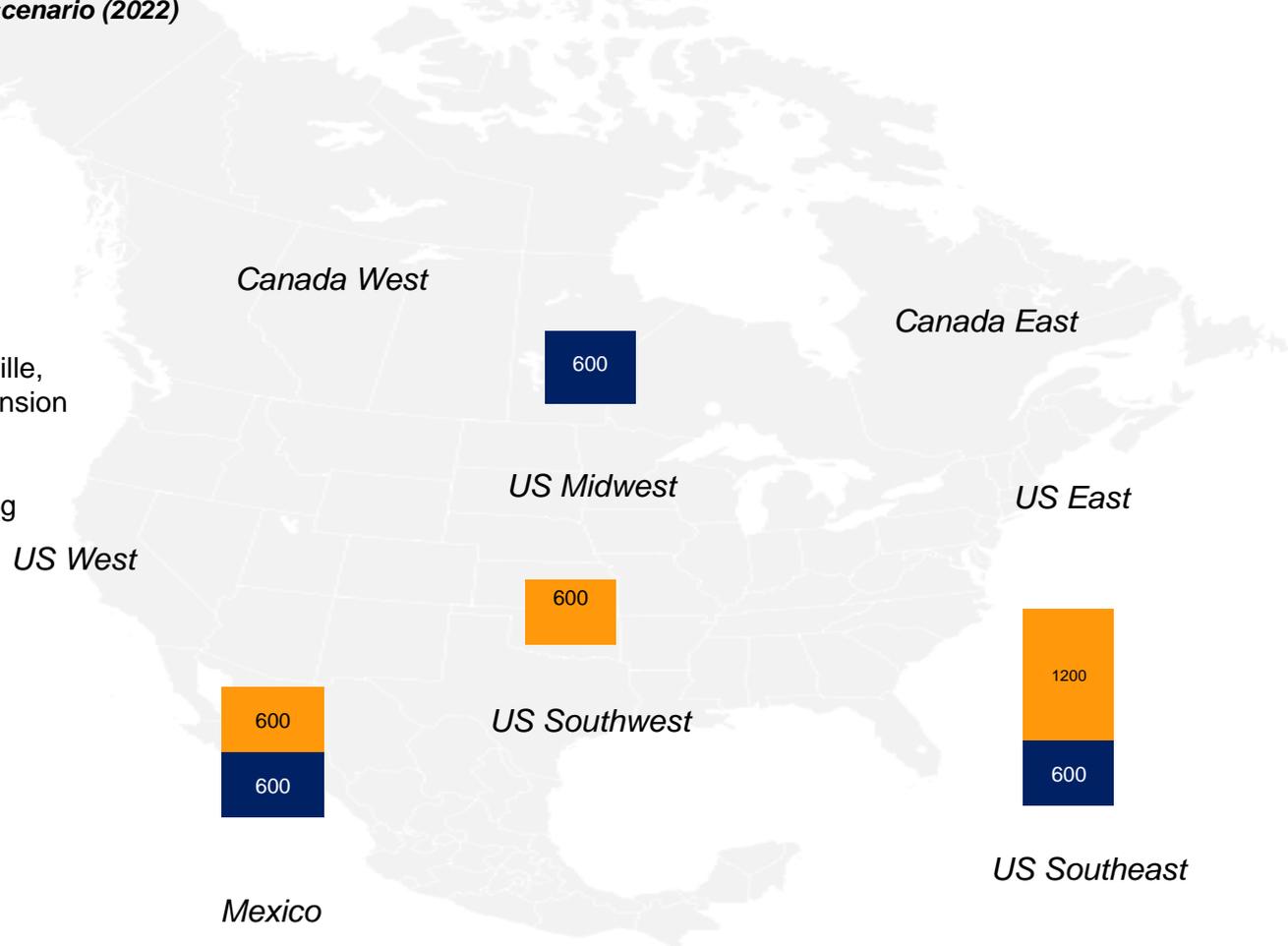
Dynamic scenario

Central scenario

Stagnant scenario

Included: +200,000m³ to 2022
(arauco expansion in Bennetsville,
South Carolina, Uniboard expansion
in Val dor, Quebec.

Not included: Arauco in Grayling
Michigan, others



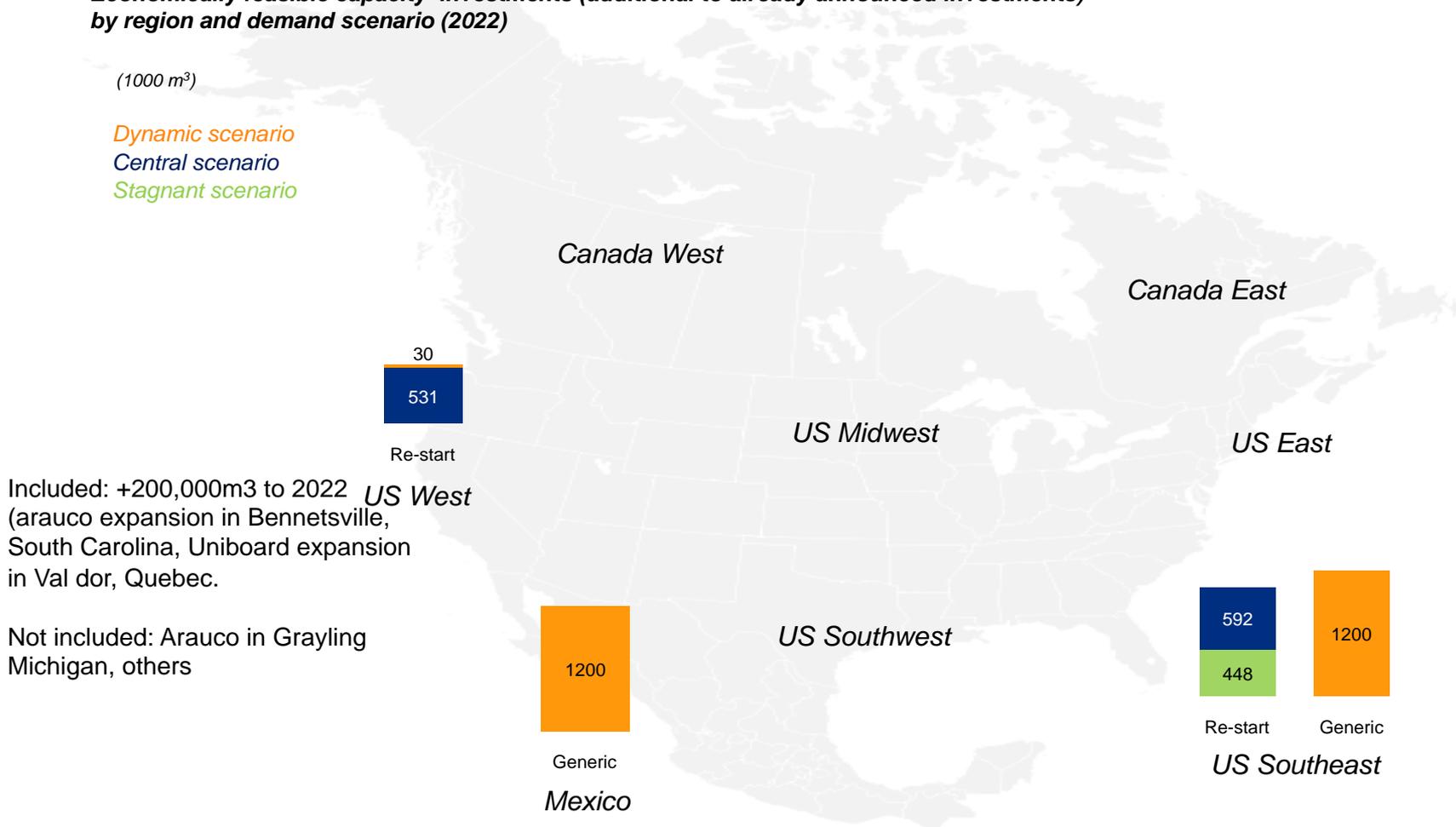
AND WHAT ARE THE OTHER FACTORS THAT NEED TO BE TAKEN INTO ACCOUNT PRIOR INVESTING IN A NEW PB LINE

If mothballed capacity comes back, the situation is different..

Economically feasible capacity investments (additional to already announced investments) by region and demand scenario (2022)

(1000 m³)

Dynamic scenario
Central scenario
Stagnant scenario



30
531
Re-start

Included: +200,000m³ to 2022 *US West* (arauco expansion in Bennetsville, South Carolina, Uniboard expansion in Val dor, Quebec.

Not included: Arauco in Grayling Michigan, others

1200
Generic
Mexico

592
448
Re-start
Generic
US Southeast

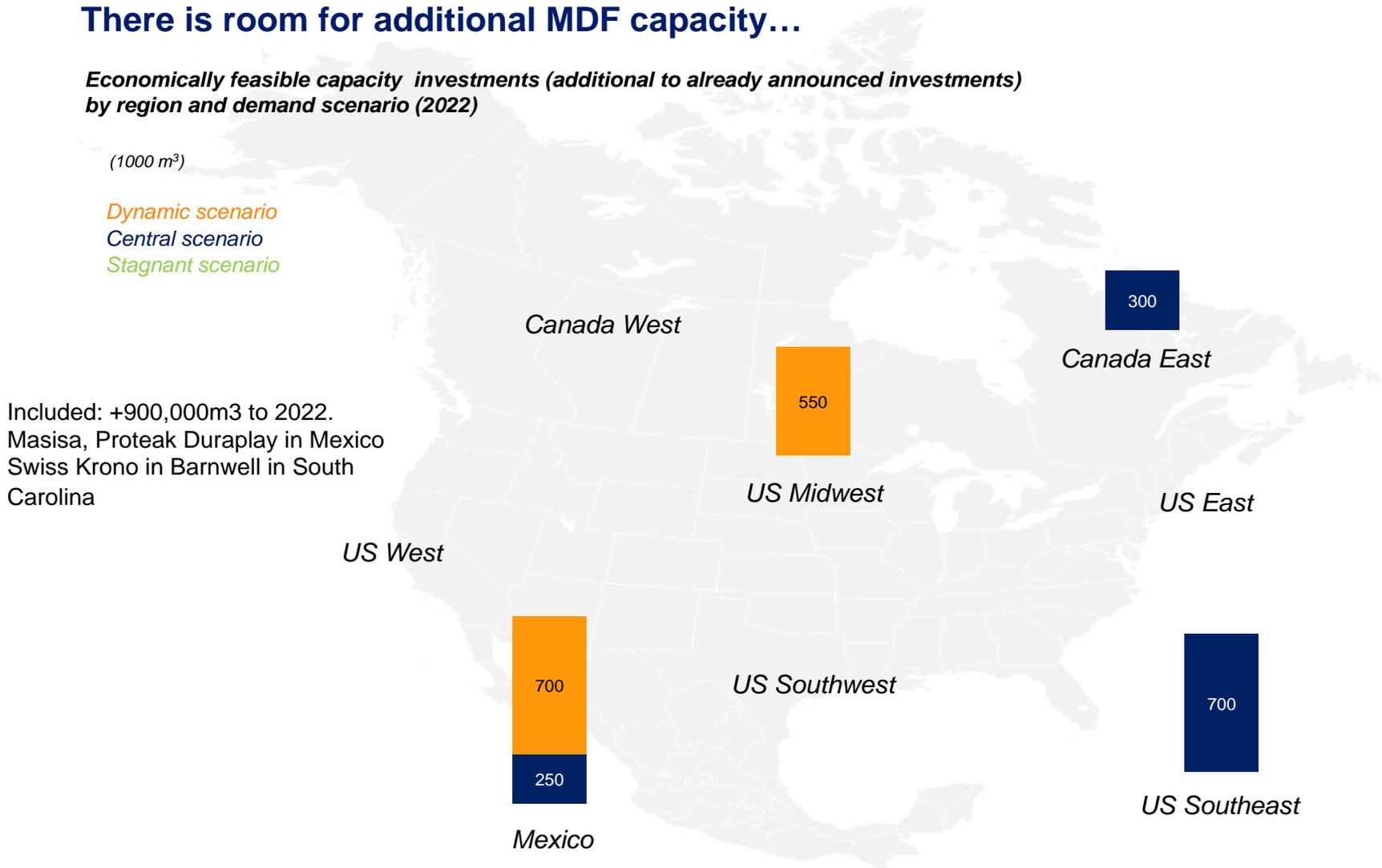
WHY THE SITUATION FOR MDF IS MORE CLEAR?

There is room for additional MDF capacity...

*Economically feasible capacity investments (additional to already announced investments)
by region and demand scenario (2022)*

(1000 m³)

Dynamic scenario
Central scenario
Stagnant scenario



Included: +900,000m³ to 2022.
Masisa, Proteak Duraplay in Mexico
Swiss Krono in Barnwell in South
Carolina

CONCLUSIONS

- Profitability improving but there are different challenges to be addressed. Latin America is facing an overcapacity challenge whilst the product penetration opportunity has not fully captured. US the market is recovering and margin are expected to improve in our Central scenario. Europe it seems to be facing a slow painful recovery but this has helped industry to rationalise whilst in NA industry should accelerate the pace of capacity rationalisation.
- The importance of Asia (China) is now a given fact. We believe that industry should focus on recovering back its furniture production domestically. We show this happening in Europe where the sector although was hit with furniture offshoring reacted faster than in the US and defended its position by creating strong clusters. Latin America needs to defend its position which is eroding despite some of the best state of the art assets are located there. There is a value adding and marketing gap that needs to be addressed there. Asia is the clear growth story where we expect further growth to come. The challenge will be access to fibre. We believe China will start to become more and more focusing on its domestic market and reduce its exposure to exports. This creates opportunities for other regions.
- Innovation remains a major gap of our sector. We need to invest more in R&D. There is research that is happening on product innovation, lots of technology improvements or addressing technical and scientific challenges. However innovation in our sector should focus beyond product and technical and explore areas such as creating different routes to market, improving our product marketing, creating supply chain alliances etc. The growing fibre gap in Asia will lead to innovation where non wood or with less wood products will appear in the market.

CONCLUSIONS

- Looking forward, panel global panel demand will continue growing. We expect 40-50 million m3 of new PB and MDF demand (2020/22) with more than 60% of it in Asia. We will face the challenge of how to supply new mills with wood. Europe is expecting reasonable growth with about 10 million m3 of demand.
- In North America we expect some 4 million m3 of demand increase in the next few years (2022). However there is uncertainty and new investments should be tested against different economic outlooks. Another risk is to manage is to avoid having more capacity invested than what the market can absorb. This risk can be managed through managing better the old capacity rationalisation which we believe needs to happen at a faster pace, to improve the overall sector cost competitiveness and create a stronger cluster that can lead in the reshoring of the furniture production.
- We believe there is a need for a much better understanding of the cycle and the market when it comes to qualifying new investments. It seems that industry players react with very similar criteria creating an effect where all are looking at the same opportunity regardless if the opportunity is not big enough for all.

LETS LOOK AT SOME TOOLS THAT CAN HELP INVESTMENT OPPORTUNITY ANALYSIS

POYRY FORECASTING MODELS AND REPORTS

Market linear optimisation

Scenario based outlook



Zeno

Panel Market & Price Model



Agora

Surfacing Market Model



Agora

Panel Market Model

POYRY REPORTS

4/18/16

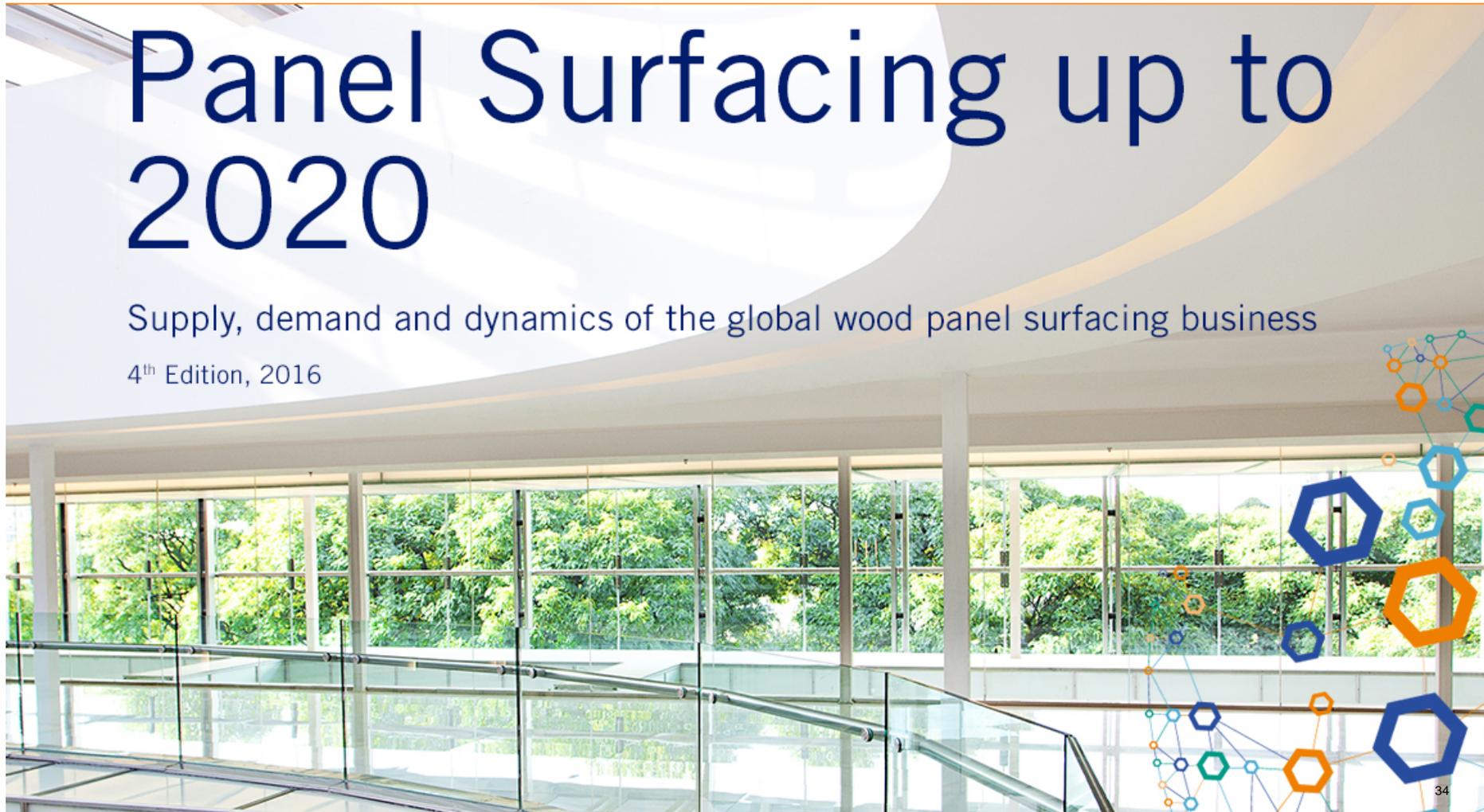




Panel Surfacing up to 2020

Supply, demand and dynamics of the global wood panel surfacing business

4th Edition, 2016





The leading advisor to the world's energy, forest and bio-based industries. Clients choose us for the sharpness of our insight, deep industry expertise and proven track record – because results count.

Pöyry Management Consulting

