

COOLCHAINASSOCIATION

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## Pharmaceuticals market overview

More insights, better decisions...

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# Introduction Seabury Group

With over 200 professionals, Seabury is the largest global advisory practice in aviation and aerospace, and a leading advisor in the transport and logistics industry



- Founded in 1995, Seabury provides management consulting, investment banking and corporate reorganization advisory services
- Seabury Cargo Advisory has an unparalleled range of expertise in:
  - Strategy consulting and business planning
  - Operational improvement (e.g. cost reduction, revenue boosting, contract negotiations and outsourcing)
  - Network and alliance optimization; fleet selection, acquisition and financing
  - Business intelligence, market research and forecasting
- The practice is led by a combination of former cargo experts and consultants from leading cargo consulting firms
- Seabury's proprietary suite of software tools are considered the industry's best with a depth of analytics necessary to support rapid decision making

# Key customers of Seabury Cargo Advisory

Seabury Cargo Advisory team has worked with a vast array of first-class customers across all segments of the cargo industry



# Global Demand & Supply Databases

Seabury provides the industry's most comprehensive set of data with extensive historical time series and forecasts



Pharmaceutical market dynamics

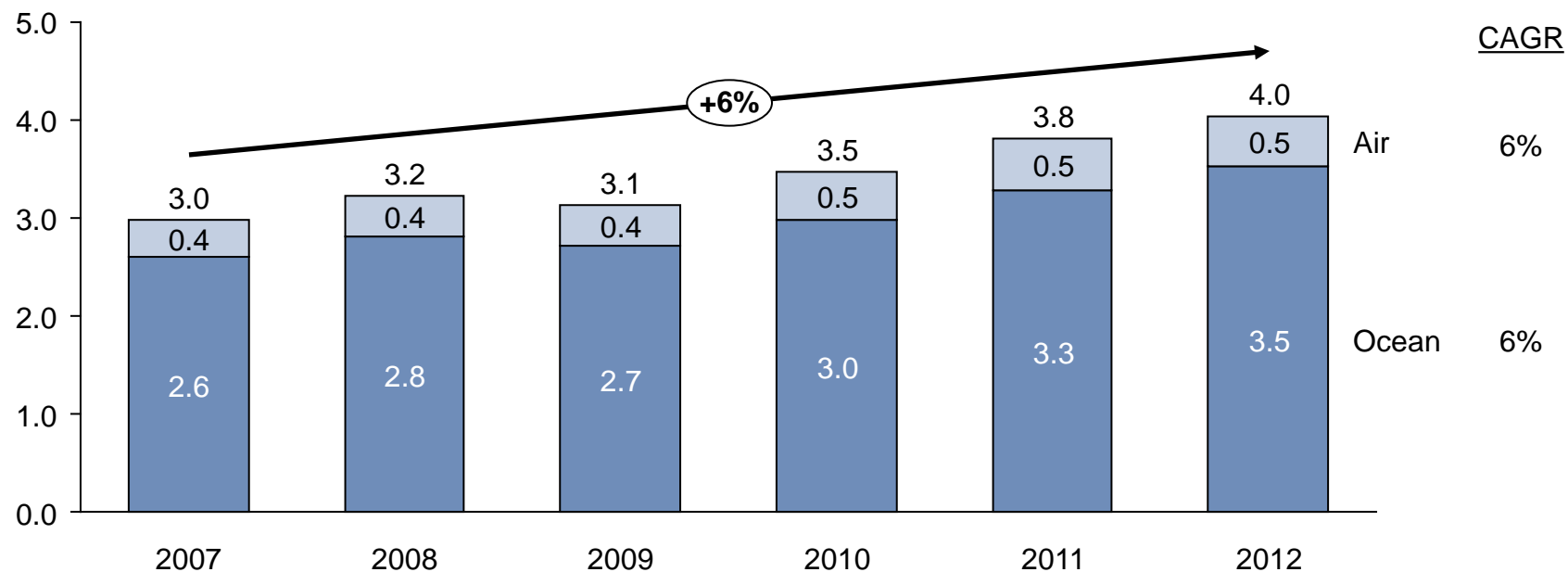
Developments and regional trends

# Global trade in pharmaceuticals

Global tonnage has grown steadily since 2009, with the majority of goods travelling by sea

## Tonnage of worldwide pharmaceuticals market

Tons (x million) per year



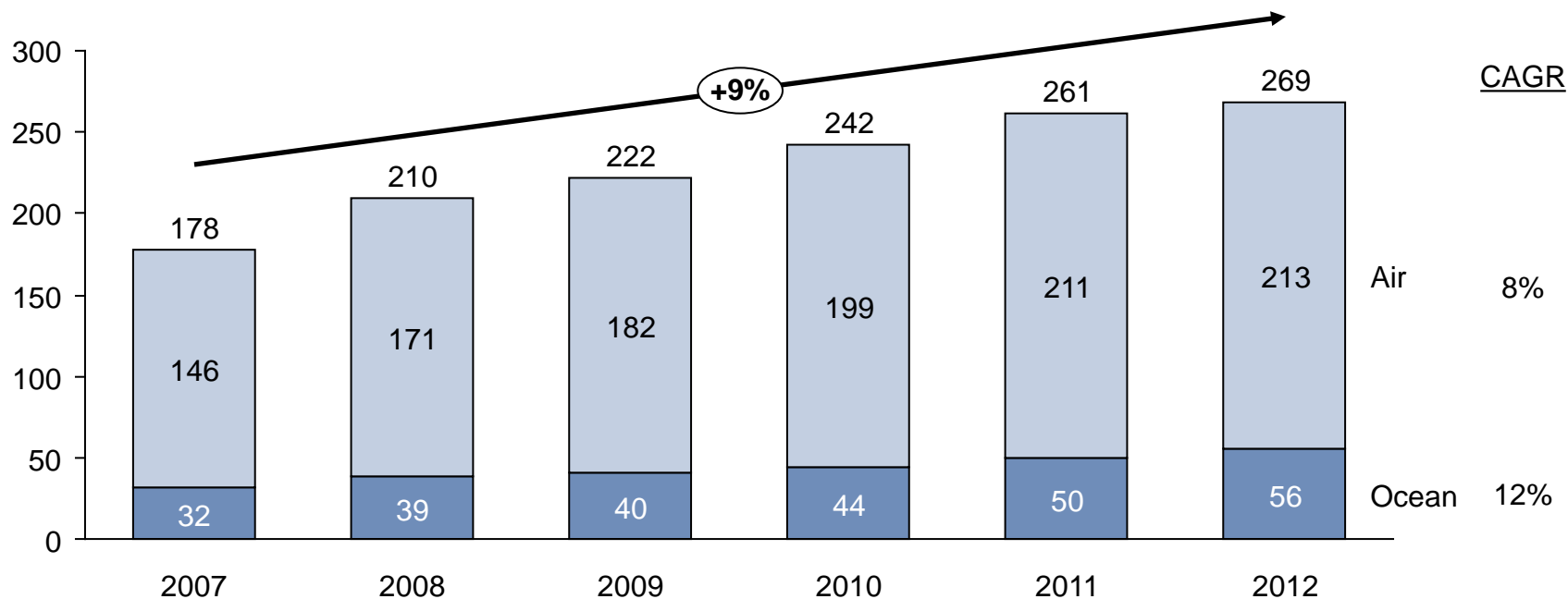
Source: Seabury Global Trade Database

# Global trade in pharmaceuticals

The more valuable goods travel by air, with air freight accounting for the majority of total value shipped

## Value of worldwide pharmaceuticals market

Value (USD B) per year



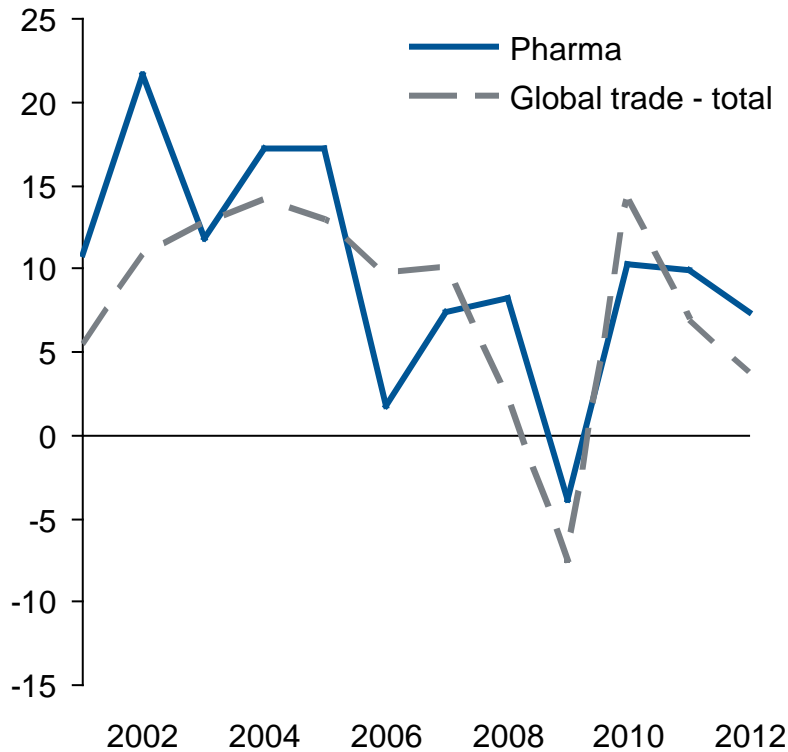
Source: Seabury Global Trade Database

# Pharmaceuticals within global trade

Pharmaceutical growth in ocean freight moves with the overall market, while pharmaceutical tonnage by air has seen more stable growth than the overall air cargo market

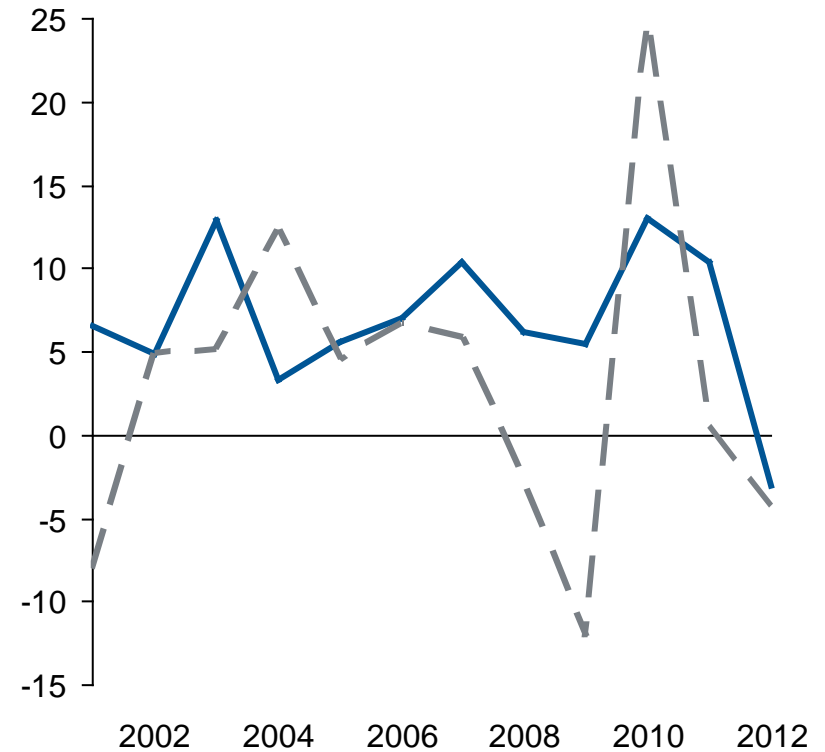
## Ocean trade growth rate

% YOY growth - tonnage



## Air trade growth rate

% YOY growth - tonnage



Source: Seabury Global Trade Database



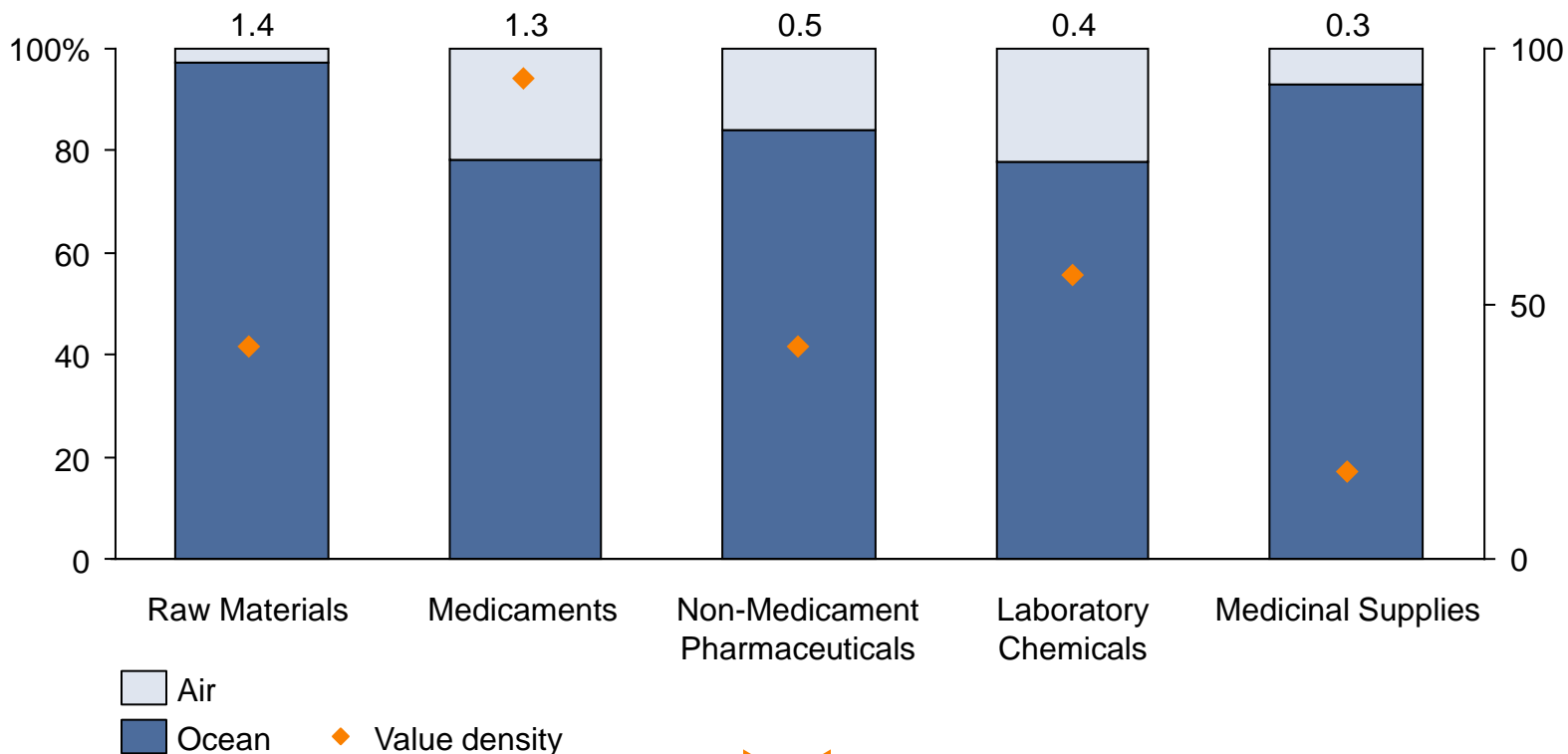
# Pharmaceutical transport modes

Raw materials and Medicaments are the two largest pharmaceutical commodity types, with raw materials being almost exclusively transported by ocean

## Tonnage of global pharmaceutical trade

Tons (x million) per year

Value density, USD / Kg



**The more valuable the commodity, the more likely it is to fly by air**

Note: commodity list excludes waste chemicals, which have low volumes and are primarily transported by surface (truck/rail), as well as chemically pure sugars which are also very low in volume

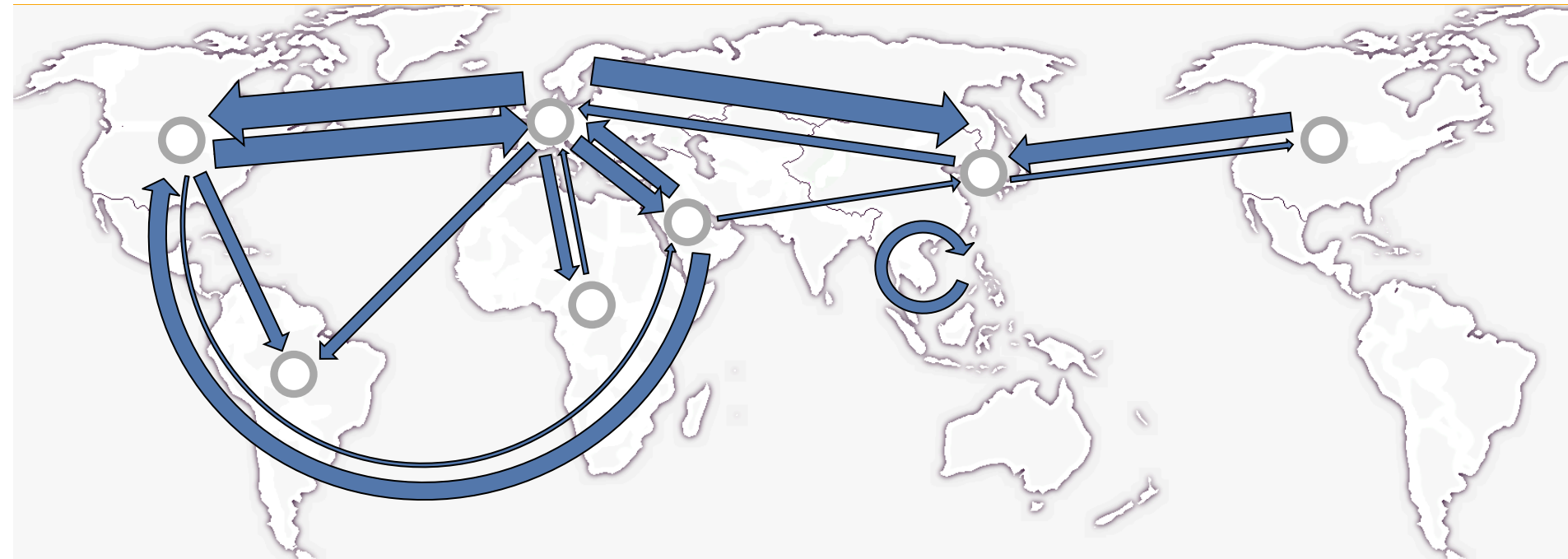
Source: Seabury Global Trade Database

# Pharmaceutical air cargo market key flows

Europe is a major exporter of pharmaceuticals via air freight, while Asia primarily imports

## Air trade 2012

Tonnage



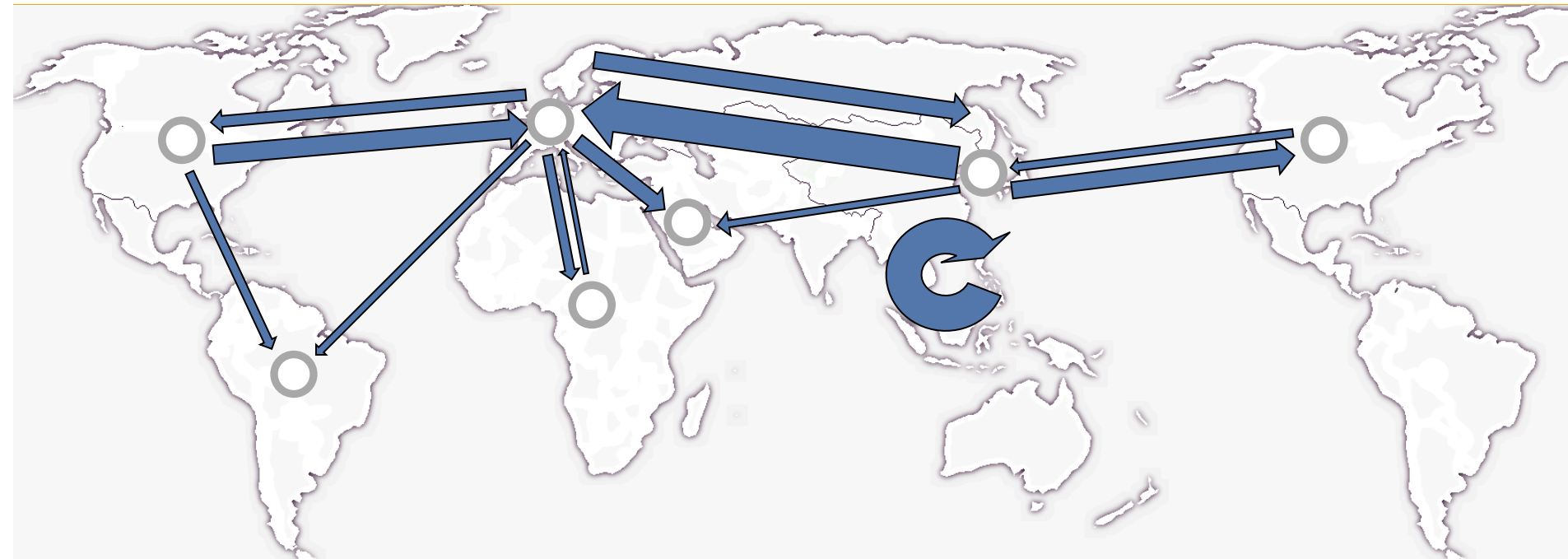
Source: Seabury Global Trade Database

# Pharmaceutical ocean cargo market key flows

Ocean transport of pharmaceuticals is focused in Asia, with significant intra-Asia volumes and Asian exports, while Europe is primarily an import market

## Ocean trade 2012

Tonnage



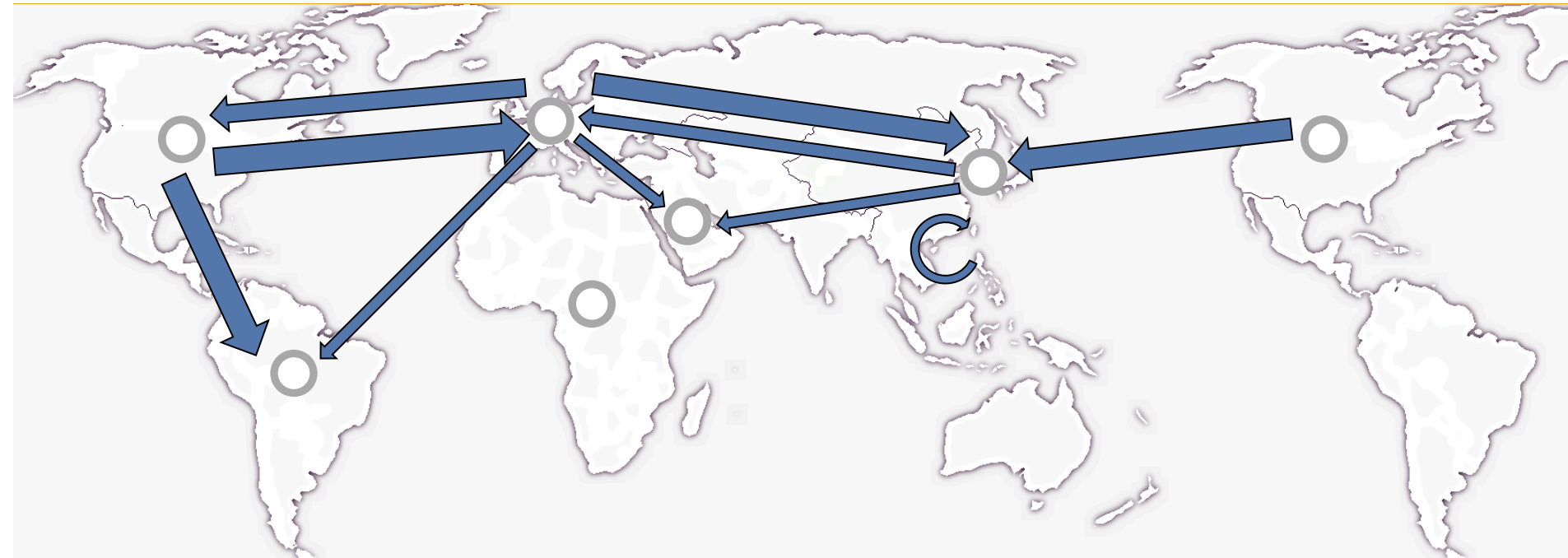
Source: Seabury Global Trade Database

# Key flows for temperature sensitive pharmaceuticals

North America is a major exporter of temperature-sensitive pharmaceuticals, while Asia-Pacific and Latin America are a major importers

## Top air freight trade lanes for non-medicament pharmaceuticals 2012

Tonnage



Notes: "non-medicament pharmaceuticals" includes blood fractions, hormones, vaccines, cell cultures, etc.

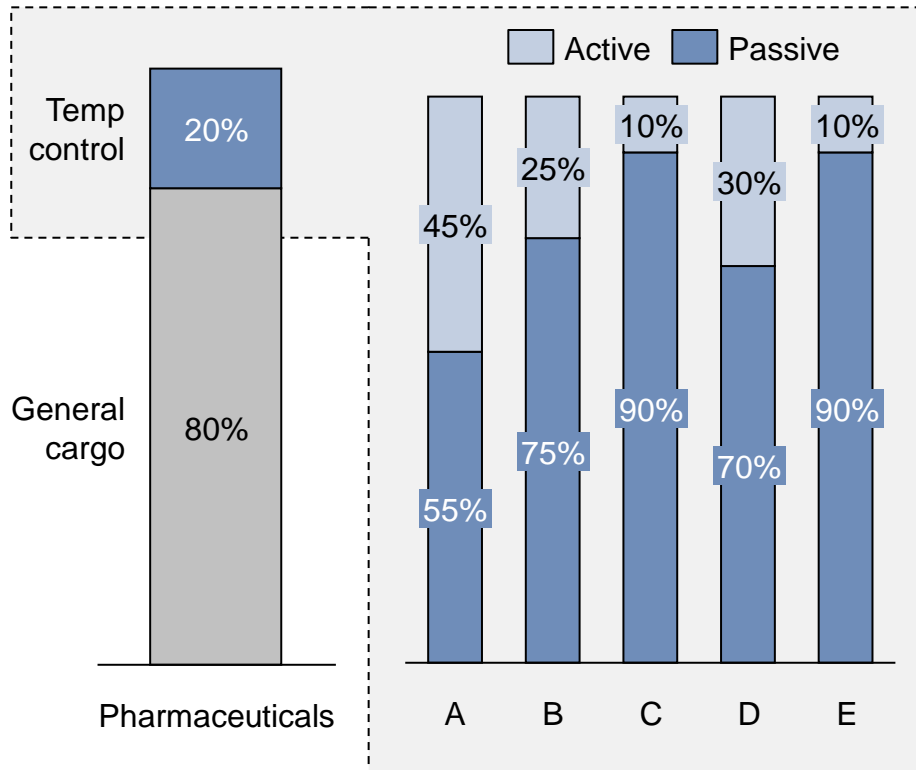
Source: Seabury Global Trade Database

# Pharmaceuticals is driven by passive temperature control

While active temperature control solutions demand a yield premium due to complex requirements, passive solutions drive volume and are less costly to implement

## Temperature control share of pharma

% of total business



## Insights

- Most pharmaceutical shipments are shipped as general cargo, primarily those commodities in the 15-25 degree segment
- While ~20% of shipments require temperature control, greater than 75% of these require only passive cooling solutions
- Forwarders estimated that just 5% of all pharmaceutical shipments require active cooling solutions
  - Several forwarders suggested laws may change to require active cooling for a greater number of pharmaceuticals
- Forwarders new to the segment are moving towards temperature control, while established players see active cooling share decreasing



**Active cooling solutions are approximated to be just 5% of all pharma shipments**

Source: Seabury interviews with forwarders

Pharmaceutical market dynamics

Developments and regional trends

- Mode shift

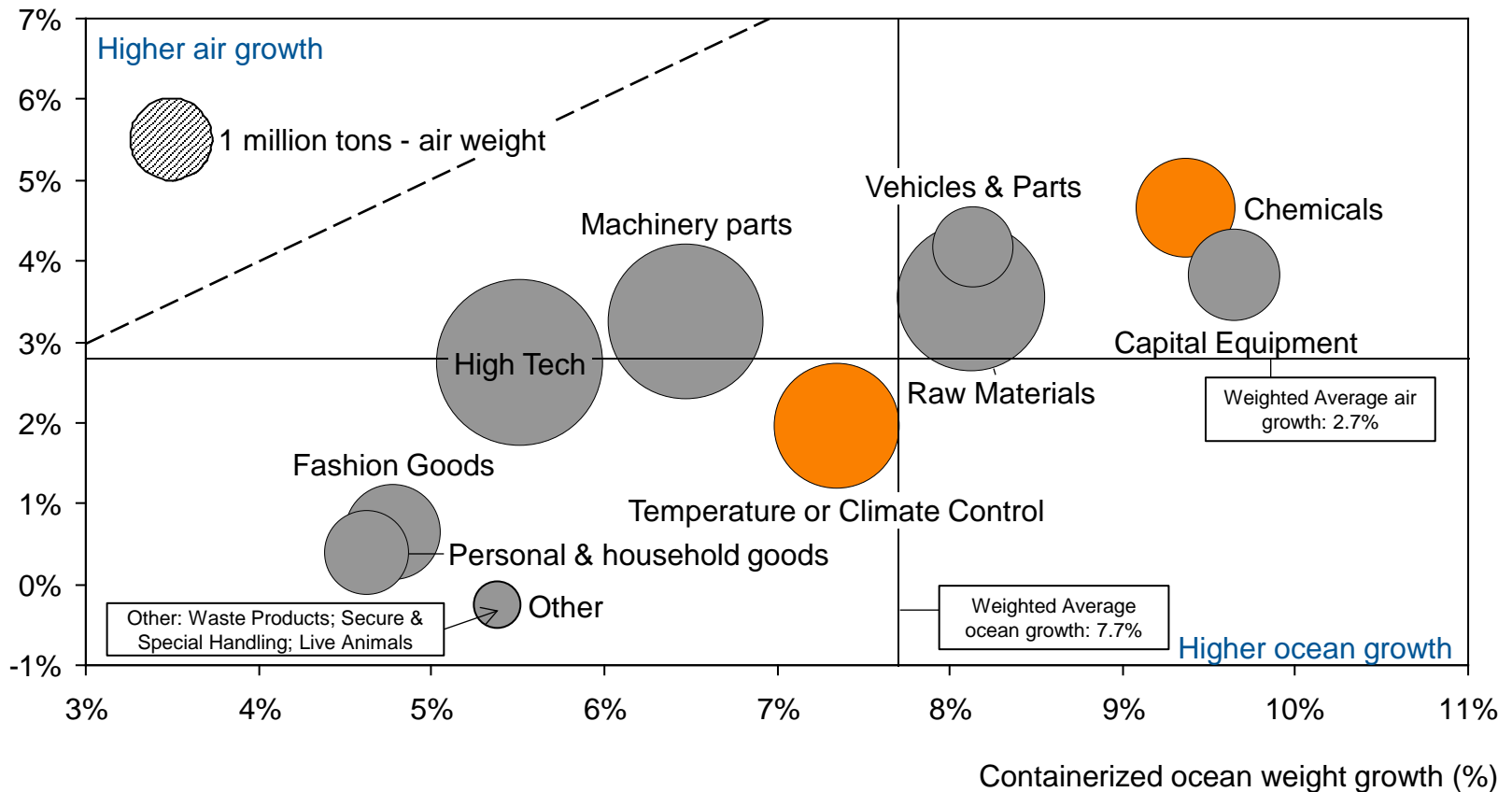
- Regional trends

# Ocean trade has outpaced air trade growth

Ocean trade growth has been much higher; all commodities experienced higher containerized trade growth compared to air trade growth

## Commodities growth for 2000-2012

Air weight growth (%)



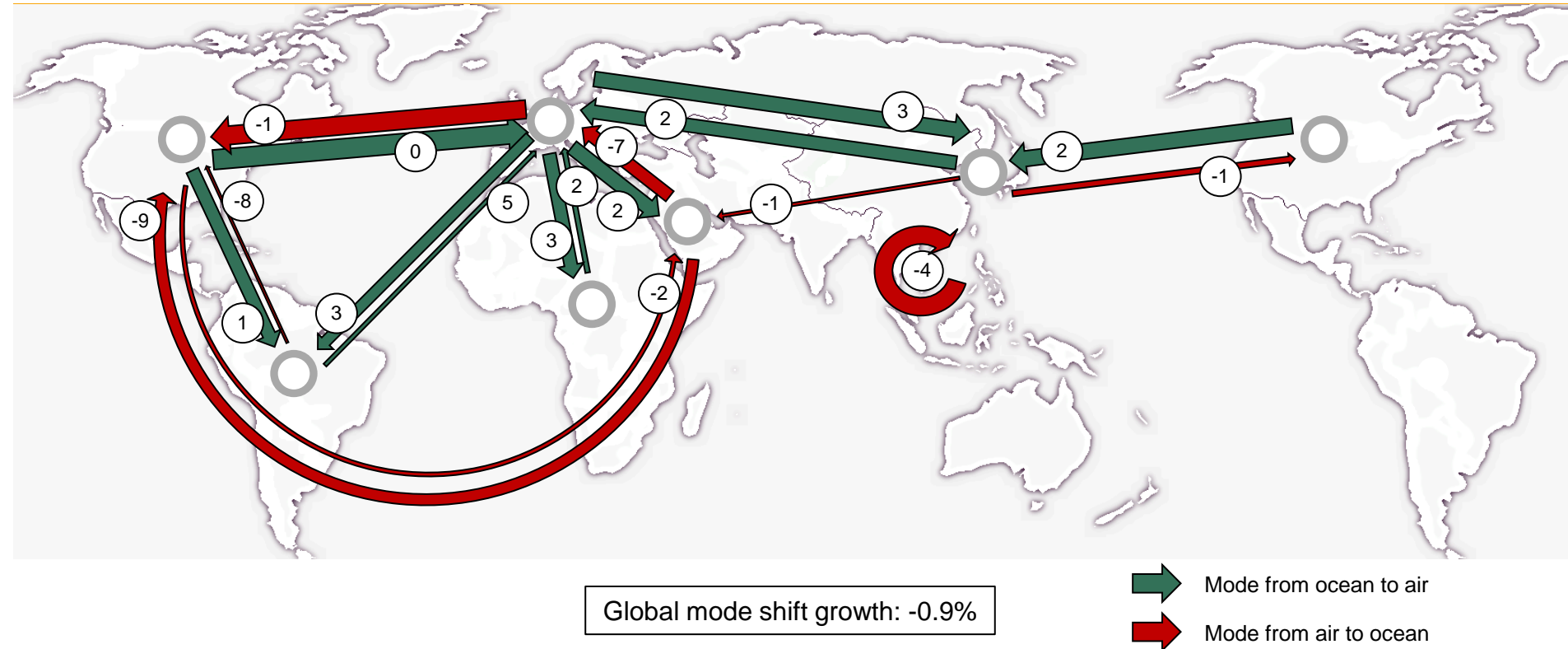
Source: Seabury World Trade Forecast

# Impact of mode shift on global pharmaceutical freight flows

Although global mode shift growth has seen only a small decrease over from 2008-2011, fluctuations exist in regional trade flows from air to ocean shift and vice versa

## Pharmaceutical mode shift growth 2008-2011

%<sup>1</sup>



<sup>1</sup> CAGR 2008-2011 Mode shift in terms of weight, with around 3% of the volumes estimated ;

Note: A negative mode shift number denotes a shift from air to ocean and vice versa

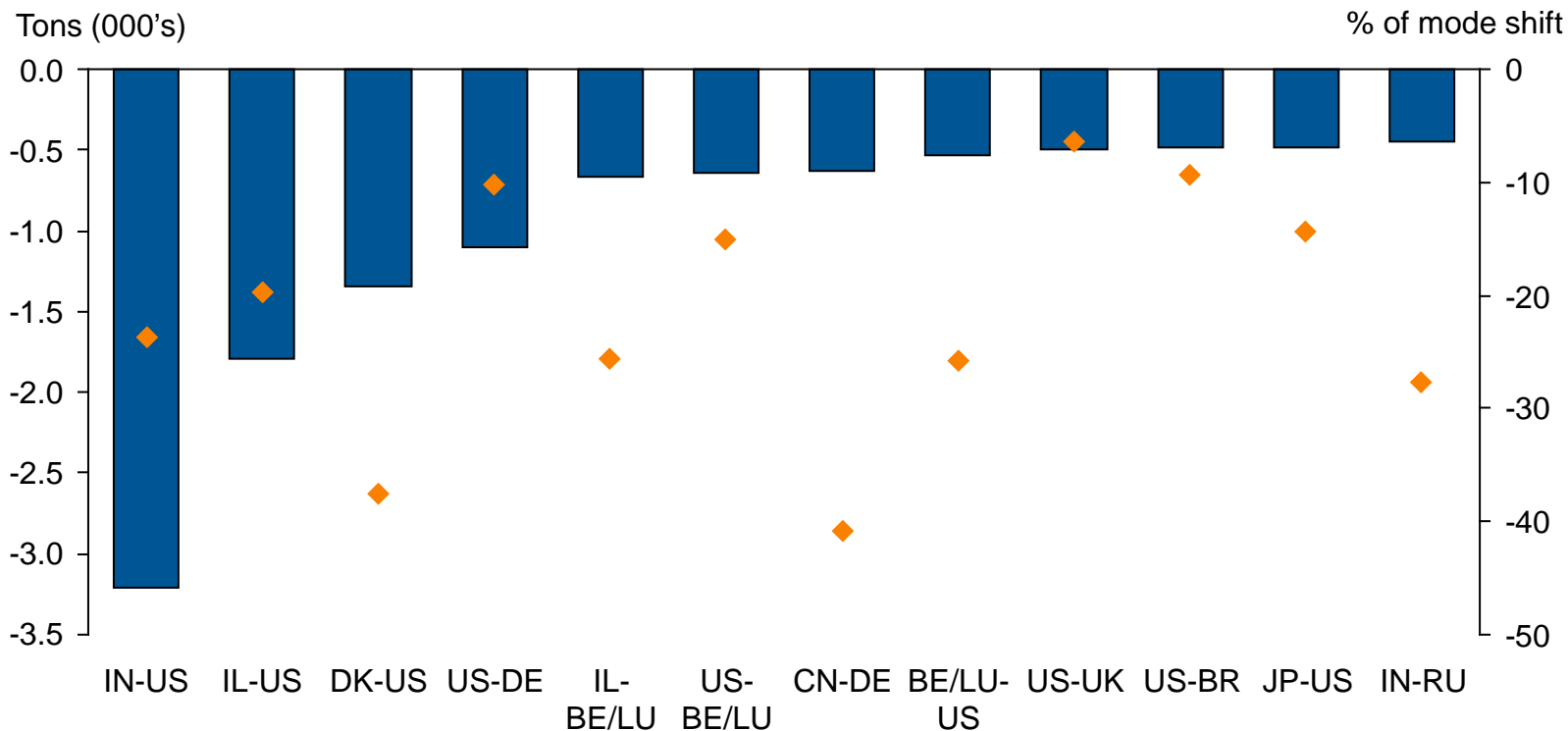
Source: Seabury mode shift database (February 19, 2013)



# Pharmaceutical top lane mode shift from air to ocean

From 2008 to 2011, a number of pharmaceutical trade lanes saw a significant mode shift to ocean; India has played a major role in this trend

## Cumulative mode shift from 2008-2011



**Many of the top trade lanes involve the US as both importer and exporter; India and Israel exports to USA have shown significant shift to ocean**

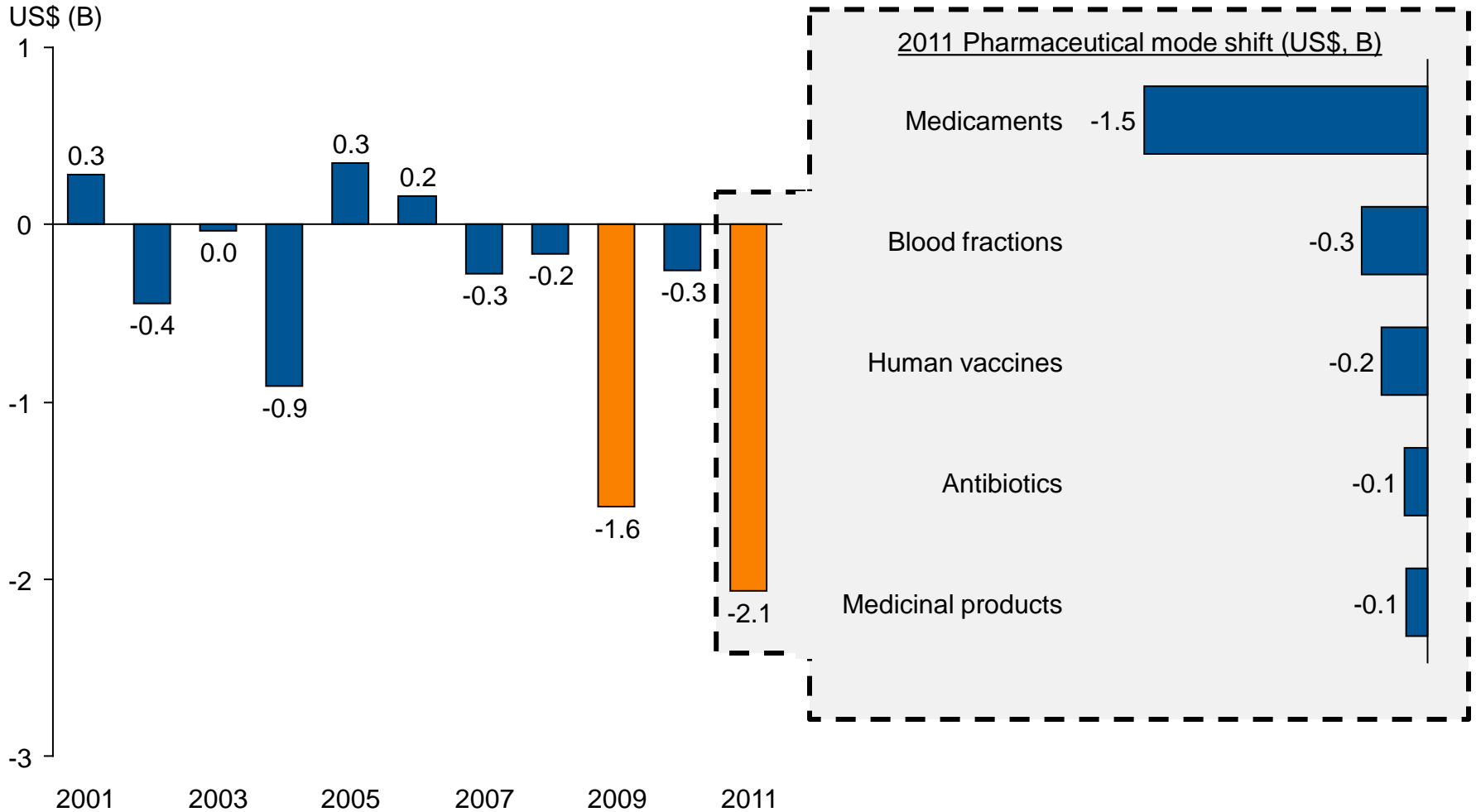
Note: Mode shift data for countries with at least 1,000 tonnes of air trade for a given year

Source: Seabury mode shift database (February 19, 2013)

# Pharmaceutical mode shift by value

The majority of value loss to ocean has occurred in 2009 and 2011; medicaments alone lost \$1.5B in value

## Pharmaceutical value mode shift since 2001

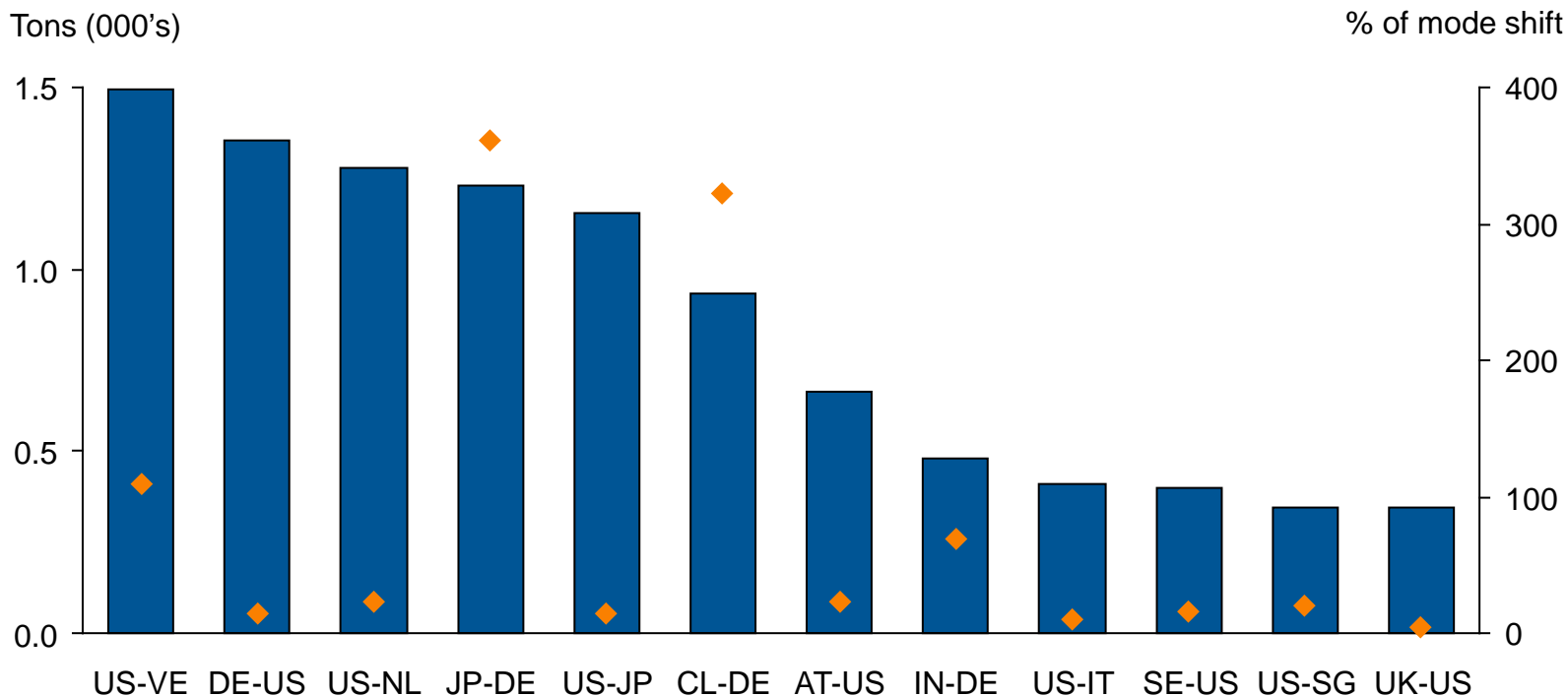


Source: Seabury mode shift database (February 19, 2013)

# Pharmaceutical top lane mode shift from ocean to air

Some pharmaceuticals saw a mode shift from ocean to air between 2008 and 2011; top trade lanes included origins or destinations in Western Europe

## Cumulative mode shift from 2008-2011



**Germany has been active in importing pharmaceuticals, reflecting the impact of mode shift in favor of air cargo**

Note: Mode shift data for countries with at least 1,000 tonnes of air trade for 2011  
Source: Seabury mode shift database (February 22, 2013)

Pharmaceutical market dynamics

Developments and regional trends

- Mode shift

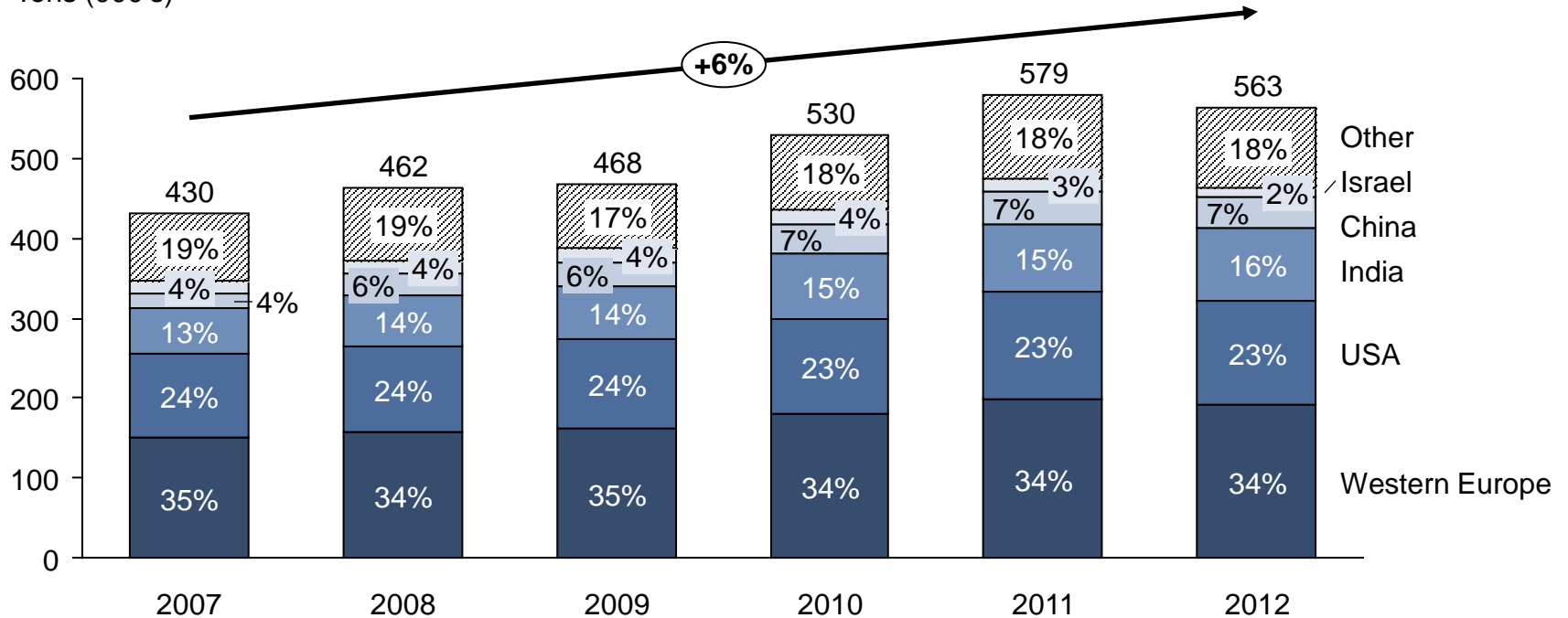
- Regional trends

# Pharmaceutical air trade

Pharmaceutical air trade is dominated by Western Europe and the United States, although emerging economies in Asia have increased market share

## Total pharmaceutical air volumes

Tons (000's)

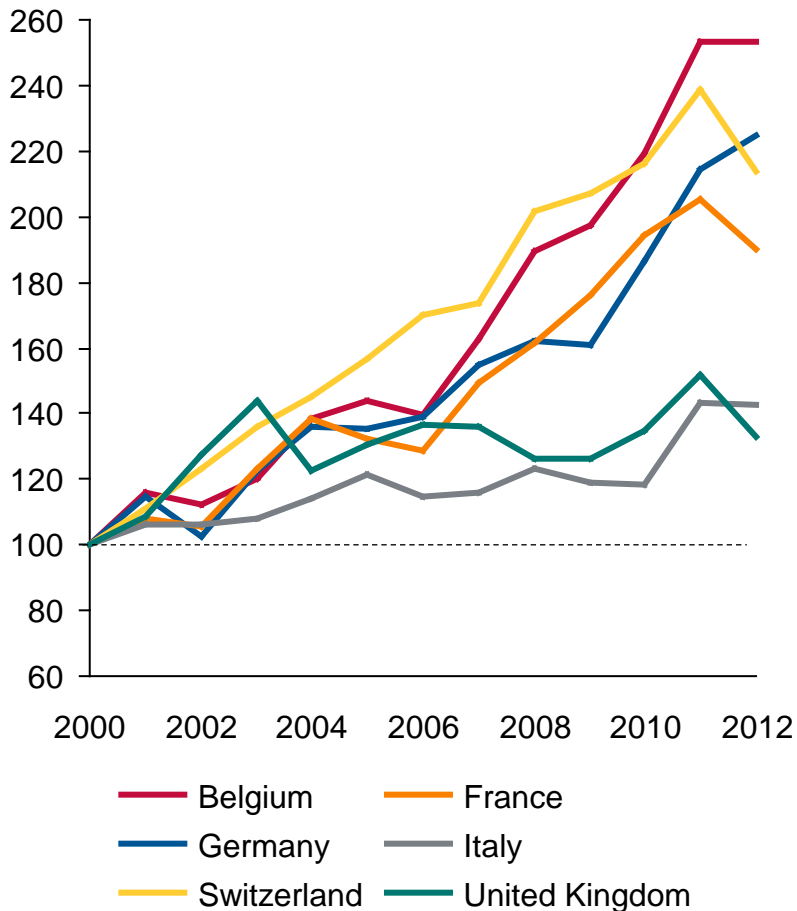


# Growth rates within Western Europe

Certain countries, like Belgium and Germany, have experienced particularly fast growth while Italy and the UK have lagged behind

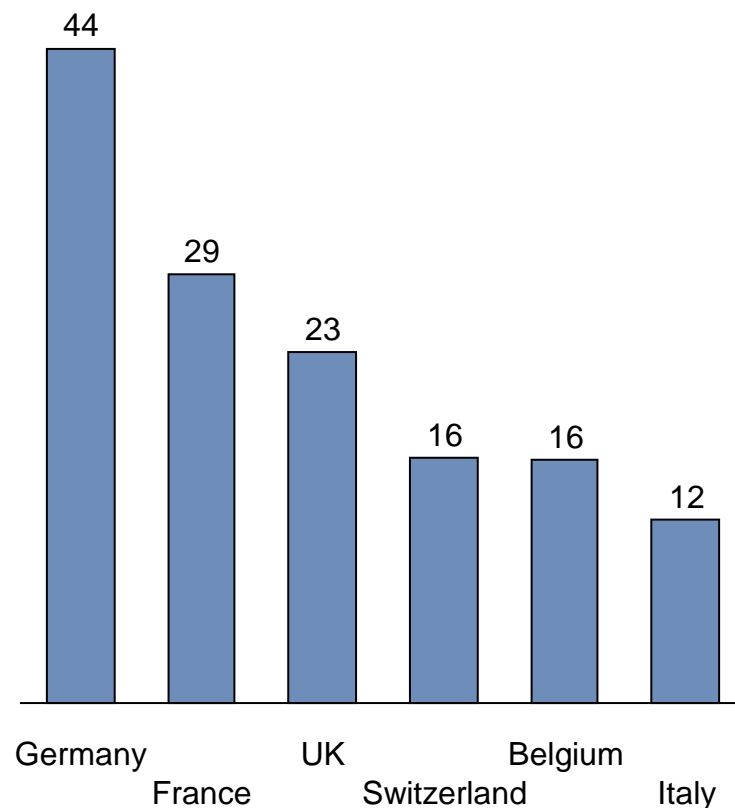
## Indexed growth in pharmaceutical air exports

Growth in air weight indexed to 100



## Total pharmaceutical air exports (2012)

Tons (000's)



Source: Seabury Global Ocean Database

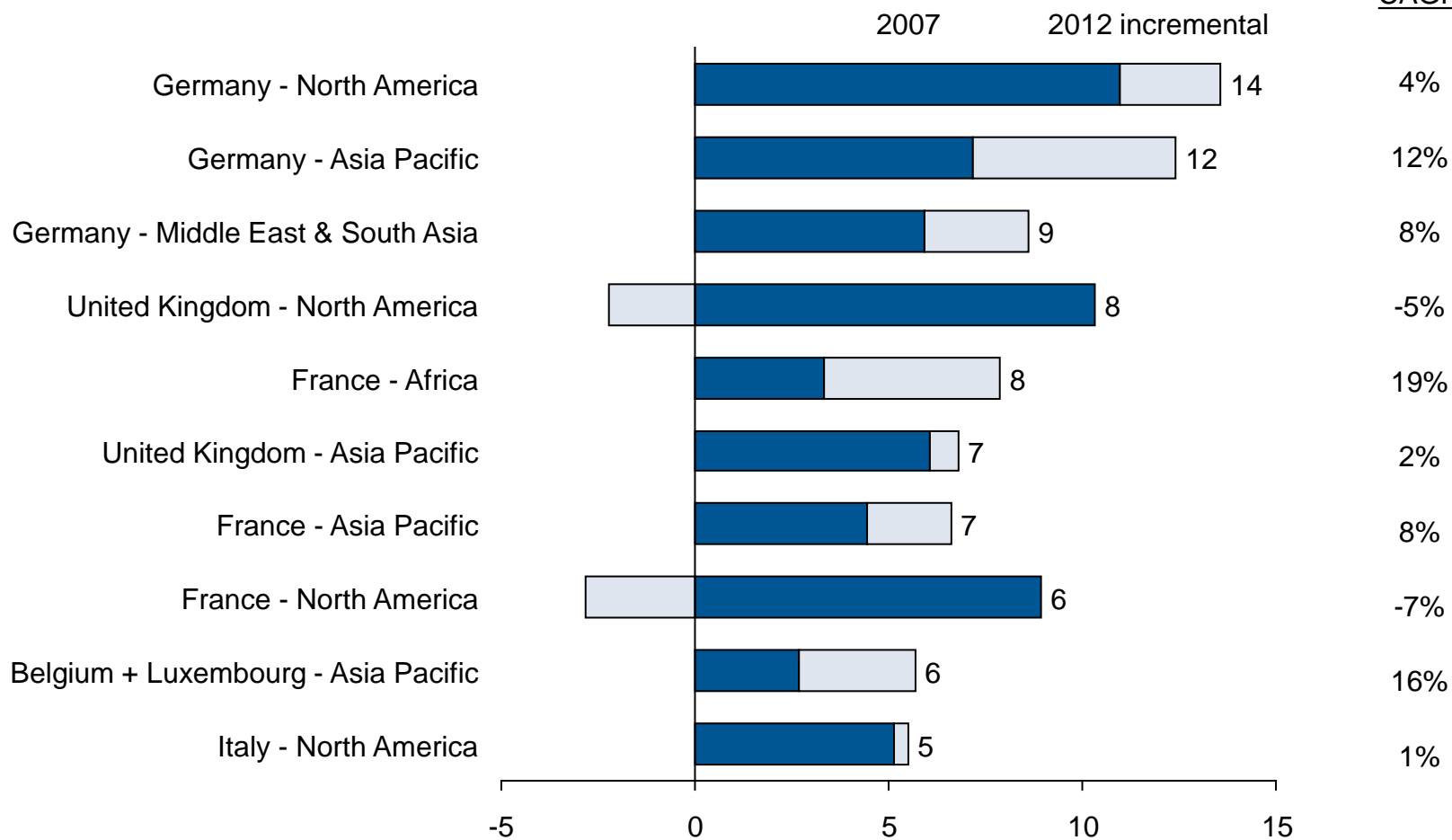
# Europe top export lanes

European pharmaceutical exports have seen a strong shift towards Asia Pacific and away from North America

## Europe top 10 pharmaceutical air export trade lanes

Tons (000's)

CAGR



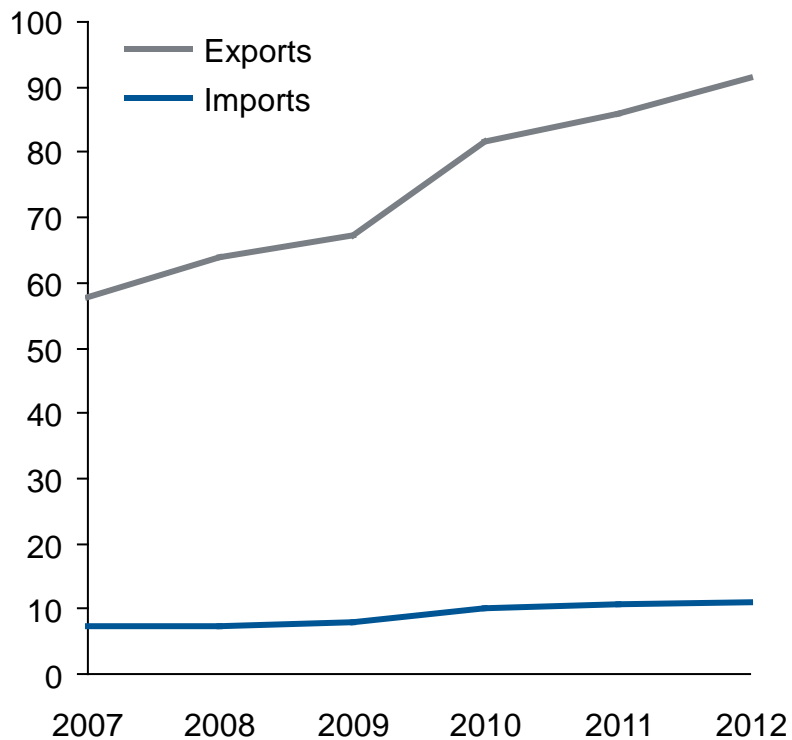
Source: Seabury Global Ocean Database

# India air trade in pharmaceuticals

India exports significant quantities of low value medicaments, while importing more limited quantities of high value lab chemicals and other pharmaceuticals

## Total air trade volume

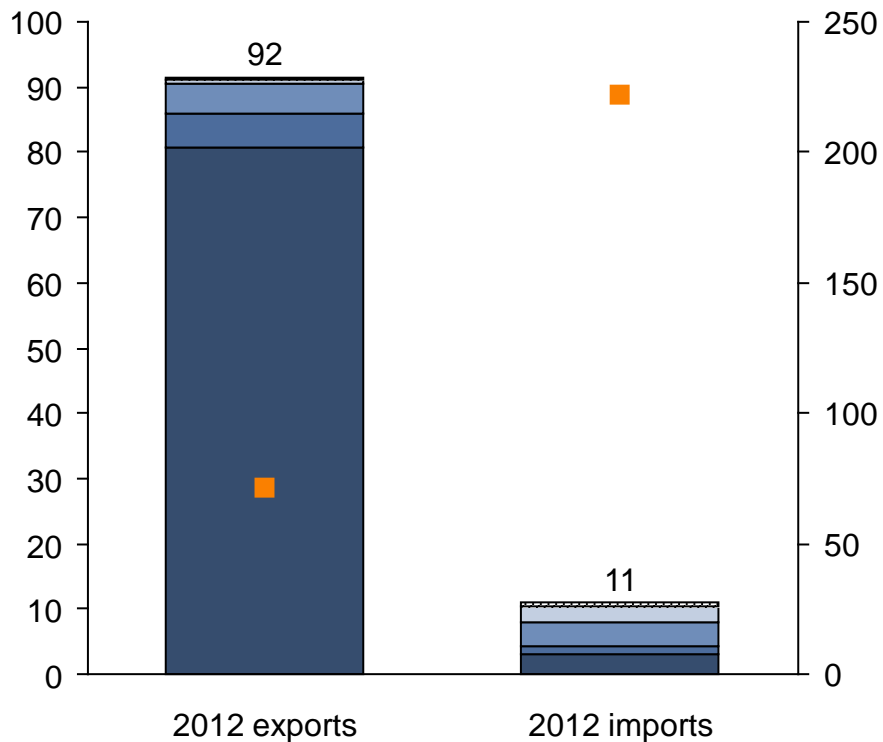
Tons (000's)



## Pharmaceutical commodity mix

Tons (000's)

Value density (\$ / kg)



- Other
- Laboratory Chemicals
- Non-Medicament Pharma
- Raw Materials
- Medicaments
- Value density

Notes: "Other" commodities include medicinal supplies, pure sugars, and waste chemicals  
Source: Seabury trade database

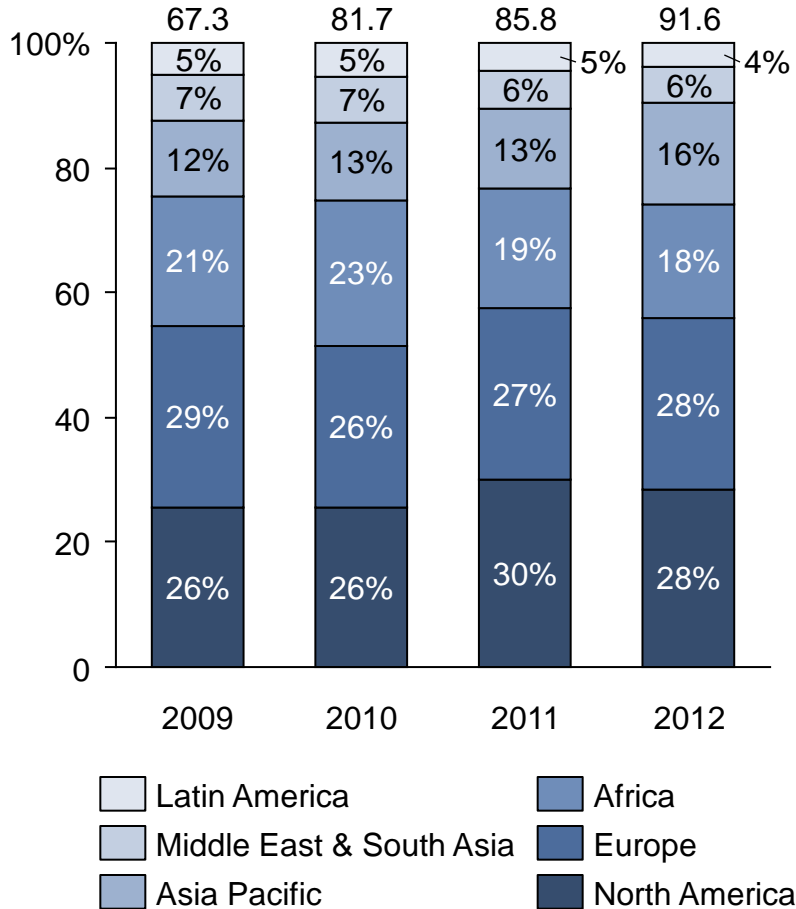


# India export regions

North America, Europe and Africa are the primary destinations of Indian pharmaceutical exports, most of which originate in the Mumbai region

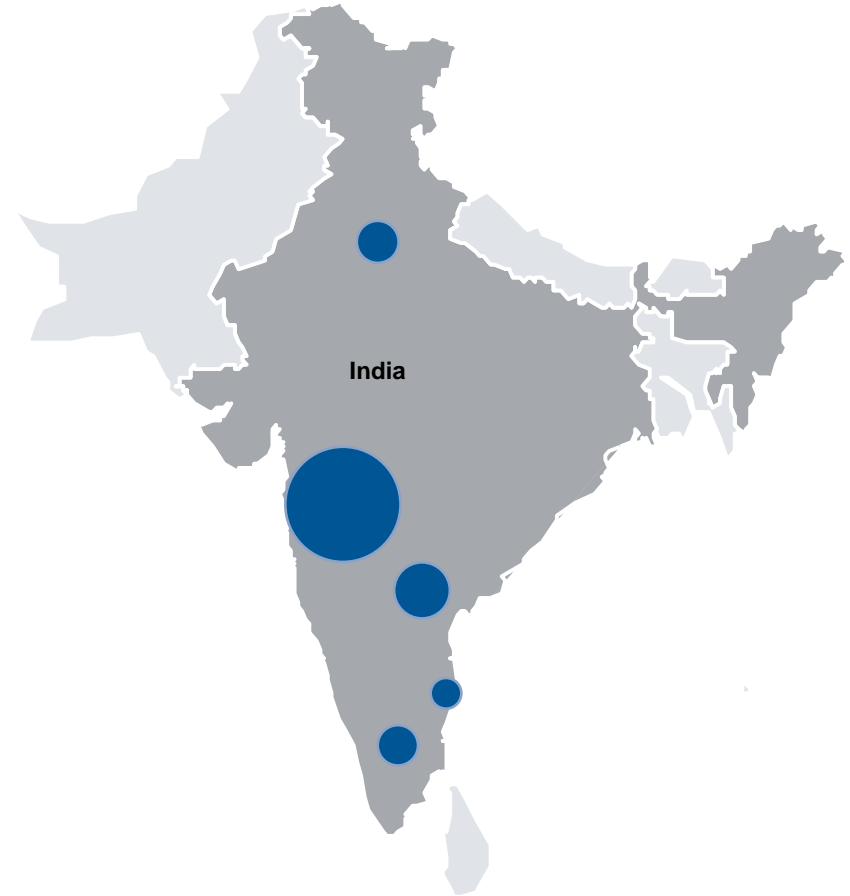
## India air freight export partner regions

Tons (000's) per year



## India export regions

Tons per year



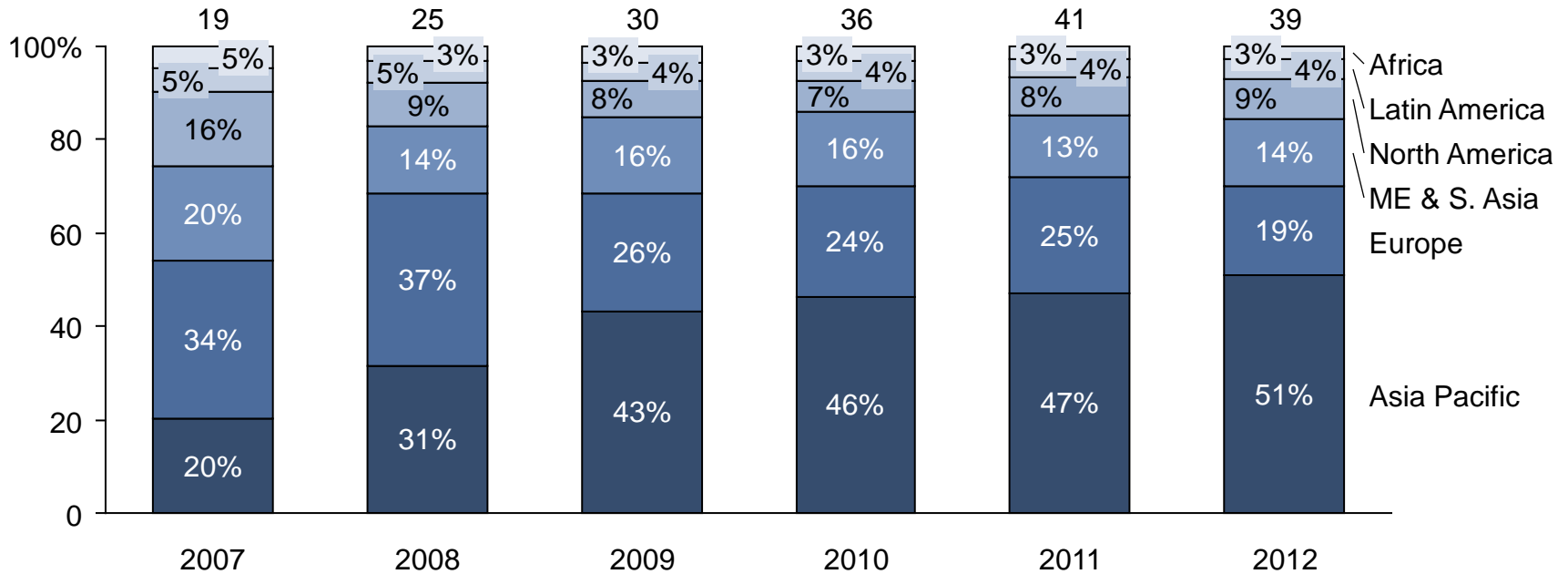
Source: Seabury Global Trade Database

# China export partners

China primarily exports to Asia Pacific countries, with less focus over time on European exports

## China air freight export partner regions

Tons (000's) per year



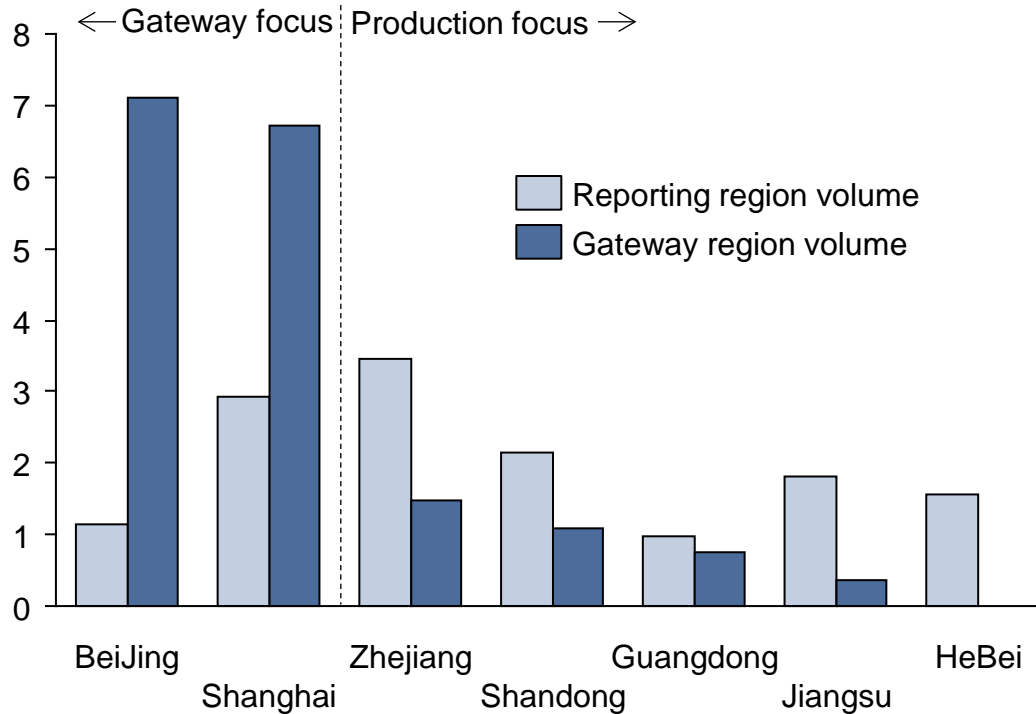
Source: Seabury trade database

# Key pharmaceutical export regions

The key pharmaceutical production regions are along the coast, with most air exports being channeled through Beijing or Shanghai

## China top export regions - 2012

Air weight in tons (000's)



**Pharmaceuticals destined for export are typically manufactured close to their export gateway**

Note: these regions represent the 7 largest pharmaceutical exporters by air freight tonnage, and also represent some of the greatest imbalances between production and gateway volumes

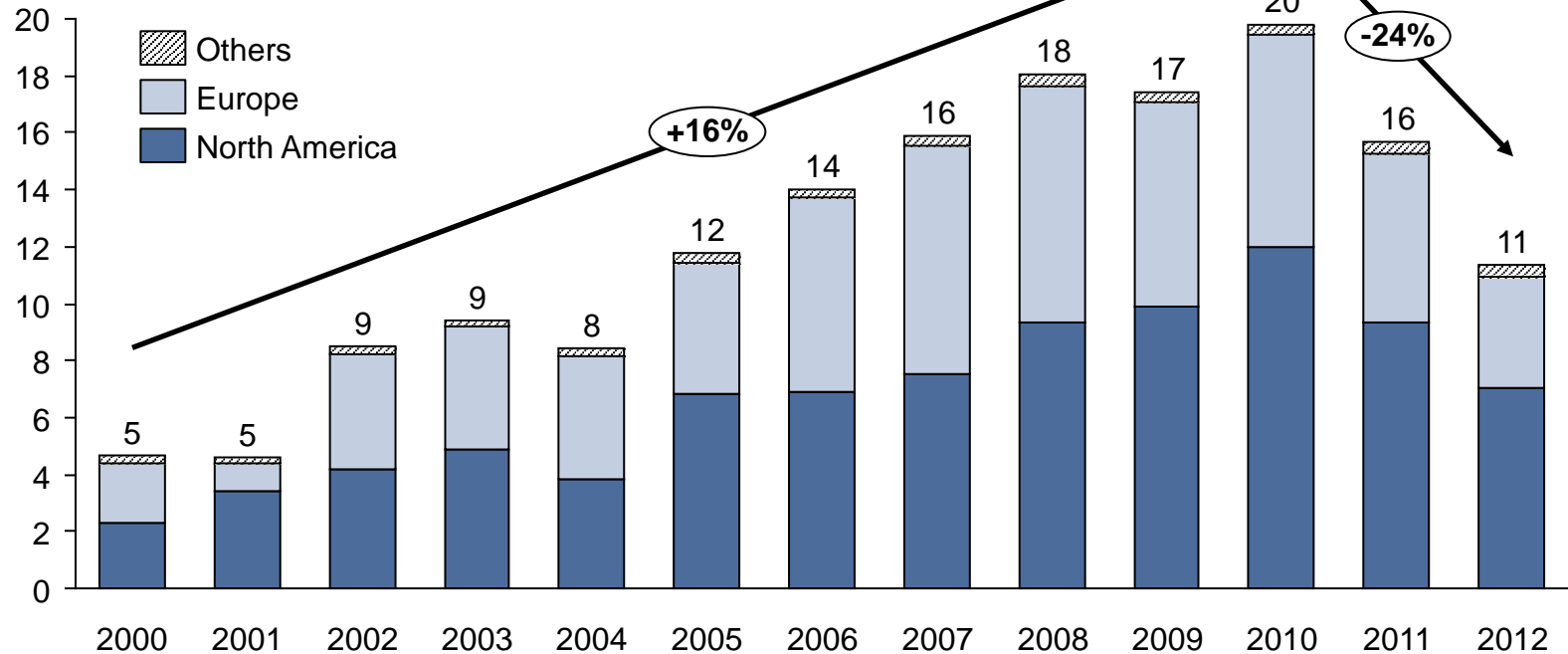
Source: Seabury trade database

# Israeli growth faltering

After ten years of strong growth, pharmaceutical air exports have shrunk dramatically

## Israeli pharmaceutical air exports

Tons (000's)



Israel's exports are very exposed to the North American and European markets

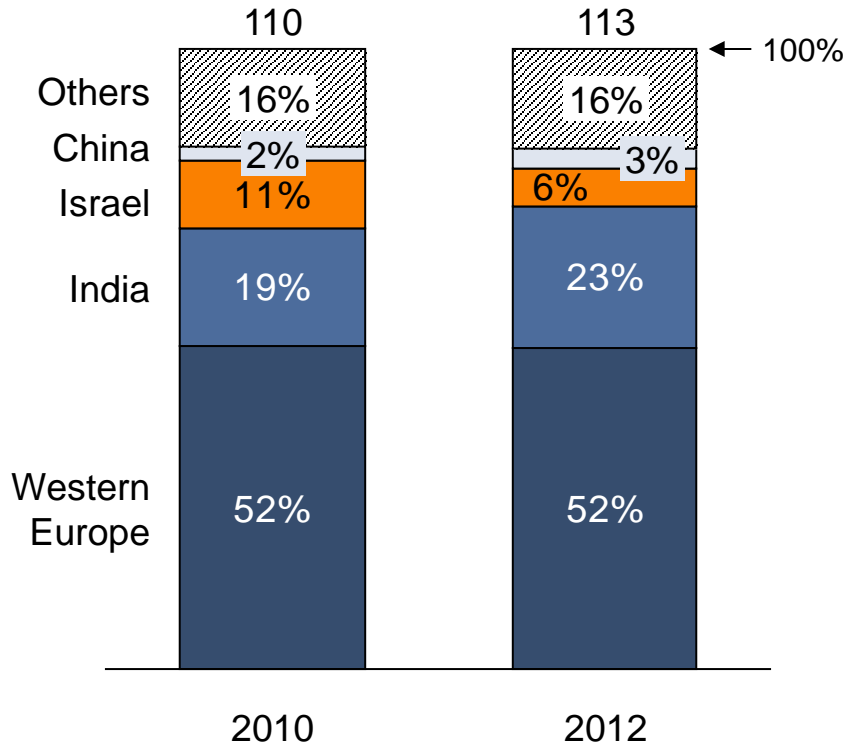
Source: Seabury Global Trade Database

# Competition for European and North American markets

North American and European pharmaceutical imports have seen moderate increases over the past two years, while Israeli imports have lost market share

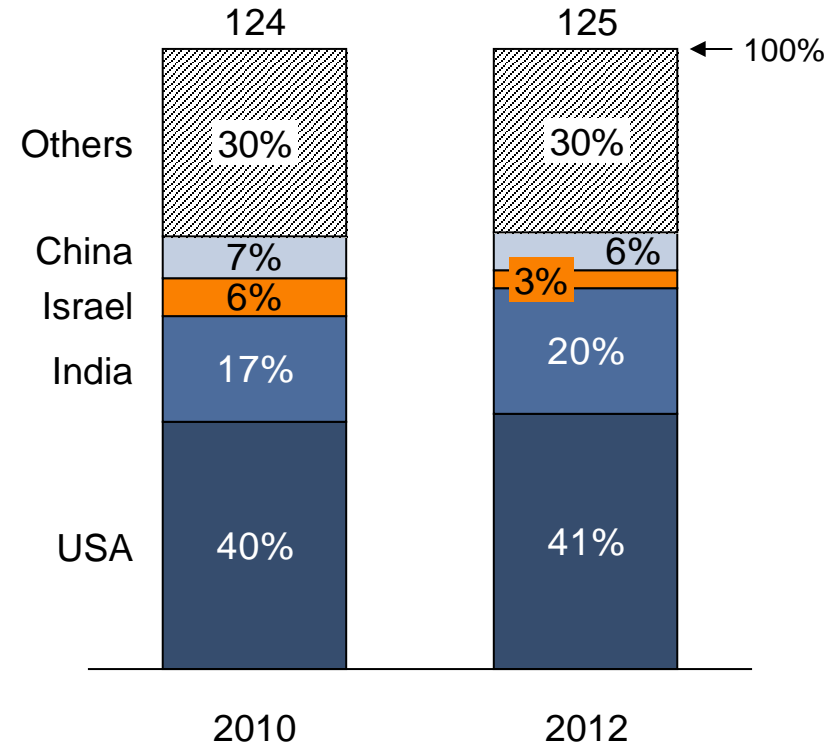
## North America pharmaceutical import share

Air weight, tons (000's)



## European pharmaceutical import share

Air weight, tons (000's)



Source: Seabury Global Trade Database

# Key findings

- 1 Over the past decade, pharmaceutical tonnage has grown in both air and ocean modes, and at similar rates
- 2 Most pharmaceutical shipments do not require cooling, and an even smaller minority require active cooling
- 3 European trade lanes have in recent years seen a mode shift towards air, while many North American trade lanes, especially with India, have seen a shift towards ocean
- 4 European pharmaceutical air exports are showing strong growth with Asia, and slow or negative growth with North America
- 5 India and China have gradually increased their share of pharmaceutical air volumes, while Israel has lost share after a decade of growth

## Contact details

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