Citi Research
Equities

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Transportation - General (Citi)
Global

Global Transportation M&A

Consolidation Set to Continue

■ Industry Overview

- **M&A has shaped the investment landscape for a decade** — logistics, forwarding and express consolidation began in earnest in 1998 and has blurred boundaries, increased interdependency and has started to deliver tangible benefits. Transport infrastructure M&A has been led by financial buyers in developed markets and trade buyers in emerging markets. Shipping and aviation has seen local/regional M&A and extended alliances rather than global M&A due to legal and ownership barriers.
- **We expect M&A activity to continue** — as stable financial conditions return, fuelled by new entrants, emerging market-centric growth and customer demands for global logistics and forwarding capabilities. We expect low and volatile profits, poor returns and depleted equity to drive shipping and aviation to a more rational industry structure. Capital-intensive transport needs a few global players to match the pricing power of global customers, as is the case with the 3 global integrators.
- **We believe industry trends point to forwarding and logistics consolidation** – given clients' demands for global reach, including relatively minor geographies with end-to-end systems visibility. Systems that are costly but boost productivity and protect margins. We expect consolidation of 2nd tier forwarders to reach the scale, reach and capability of the likes of K+N and DHL. New entrants remain a possibility.
- **We see an undiminished appetite for port and airport assets** — due to the relative yield, inflation hedge, duration and portfolio diversification characteristics. We expect the flow of mature/undervalued assets direct to pension funds, sovereign wealth funds and insurance companies or via intermediary infrastructure funds to continue. We see an opportunity for asset owners to divest mature/undervalued assets to release capital to recycle into new projects in higher growth markets.
- **We believe aviation and shipping needs further consolidation** — both are asset-heavy, commodity businesses with multi-billion dollar profit swings. Current alliance structures replicate revenue benefits of M&A without the legal, political and financial issues but offer few cost savings. We believe the recent consolidation of US carriers offers a road map to a sustainable industry structure generating acceptable returns.

Figure 1. Overview of Global Transportation M&A

Segment	Motive	Success	Urgency	Prospects	Barrier
Airports	Financial	Good	Low	High	Scarcity
Airlines	Necessity	Mixed	High	Medium	Legal
Container Shipping	Necessity	Limited	High	Medium	Financial
Forwarding & Logistics	Strategic	Mixed	Medium	Medium	Uncertainty
Integrators	Footprint	Mixed	Low	Low	Anti Trust
Ports	Financial	Good	Low	High	Scarcity

Source: Citi Research

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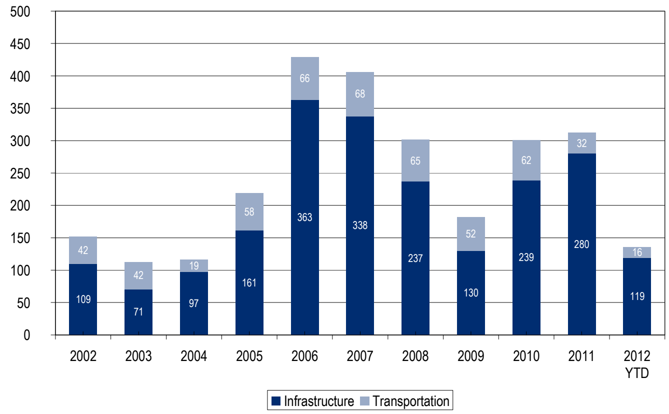
Introduction

24,000 infrastructure and transportation transactions in the last decade

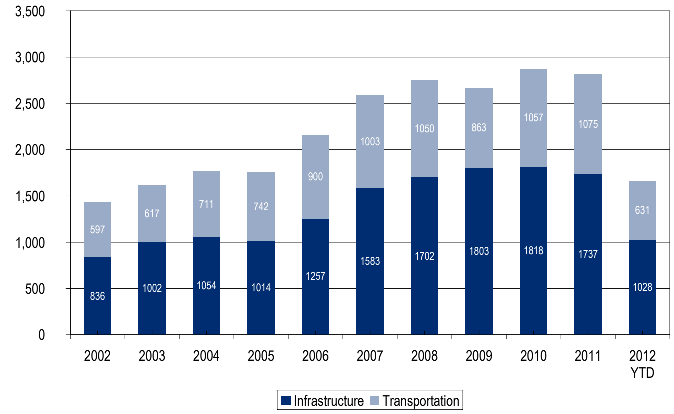
The period 2002 to mid-2012 saw some nearly 15,000 infrastructure deals to a value of $2,100bn (where deal value is announced) recorded and over 9,000 transportation deals to a value of $522bn. In 97% of infrastructure transactions and 91% of transportation transactions the acquirer was strategic rather than financial (private equity investor or Sovereign Wealth Funds). Peak years for activity were 2006 and 2007 with total deal value still below

Figure 2. Transport & Infrastructure Deal Value 2002 to 2012 ($Bn)



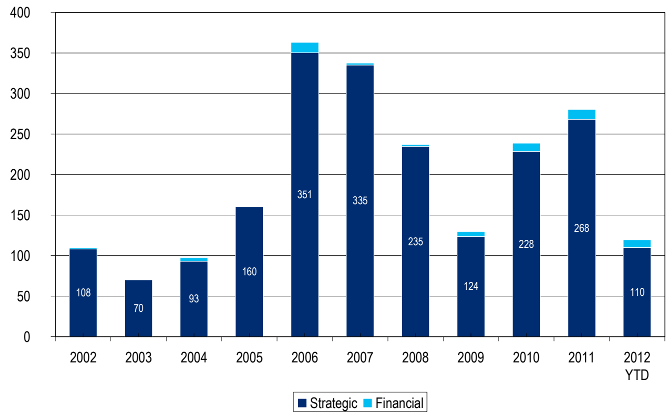
Source: SDC Database

Figure 3. Transport & Infrastructure Deal number 2002 to 2012



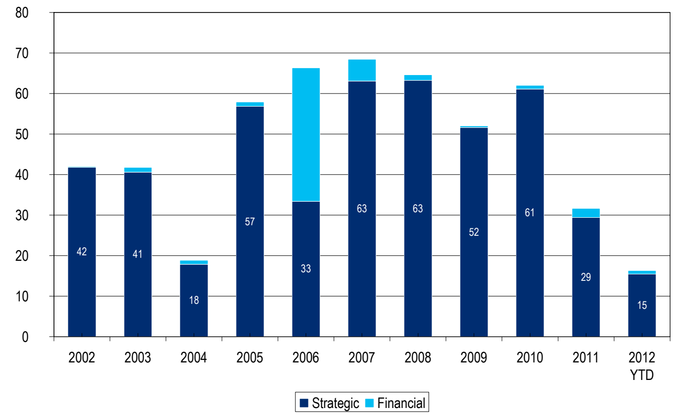
Source: SDC Database

Figure 4. Strategic vs. Financial Infrastructure Deals 2002 to 2012 ($Bn)



Source: SDC Database

Figure 5. Strategic vs. Financial Transport Deals 2002 to 2012 ($Bn)



Source: SDC Database

Deal Drivers – Thrive and Survive

Varied motives: industry trends, new buyers and poor financial performance

M&A in the last decade has been a feature of most sub-sectors of global transportation fuelled by a variety of factors including:

- Rapid change in the pattern, volume and nature of global trade and corporate supply chain developments. A volatile macroeconomic backdrop has seen asset-light business models increasingly favored with a growing distinction between asset ownership and operation. We have observed a rush to enter new geographic markets (in recent years emerging markets) and to add skills in new industry verticals with attractive prospects, such as extractive industries and cool chain verticals such as life sciences and pharmaceuticals.

- The corporatization and/or privatization of major transportation undertaking such as Deutsche Post and the corporatization of others, such as Deutsche Bahn and latterly RZD in Europe pursuing strategies to diversify overseas and in to related activities.

- The rise of transport infrastructure as an alternative to falling yields on Government Securities in developed markets. Port and airport assets that match the duration of liabilities for pension funds, insurance companies and Sovereign wealth funds and also offer portfolio diversification and inflation hedging. The implicit (by virtue of an unregulated local monopoly with pricing power) or explicit (by virtue of statutory regulation) local monopoly characteristics give confidence on lower-term cash flow and offer an inflation hedge. Interest has seen specialist investors acquiring both private assets and by the acquisition of publically listed companies where market valuations tended to reflect modest near-term earnings growth rather than the value of long-term cash flow particularly when matched with a more aggressive capital structure.

- Container shipping has seen limited consolidation despite approximately zero net profit reported for the industry in 2008-11 with major profit swings: $(20)bn in 2009, $17bn in 2010 and $(6)bn in 2011. Fundamental imbalances suggest profit volatility will continue. In response, co-operation between carriers has increased (such as code sharing and vessel sharing agreements) and larger global alliances have been formed. Balance sheets have been eroded by substantial losses and we see no obvious consolidator with the balance sheet strength and the will. A P Moller, for example, plans to reduce the proportion of invested capital exposed to container shipping by up to 13pp (from 38% in 2012) over the next 5 years by accelerating growth in non-shipping divisions.

- Global aviation has also seen volatile profits. IATA report that member airlines generated annual net profit of between $(4.6)bn and $19.2bn in 2009-12 with a $25bn adverse movement from 2009 to 2010. IATA expects the airline industry to generate $4.1bn net profit in 2012 and $7.5bn in 2013. M&A activity in aviation has been dictated by what is possible under existing global bilateral arrangements and, as a result, has been limited to the domestic and regional level. Global co-operation continues with enlarged alliances.

Industries and ownership has been re-shaped

The outcome of M&A has been:

- Fewer but larger transportation companies.

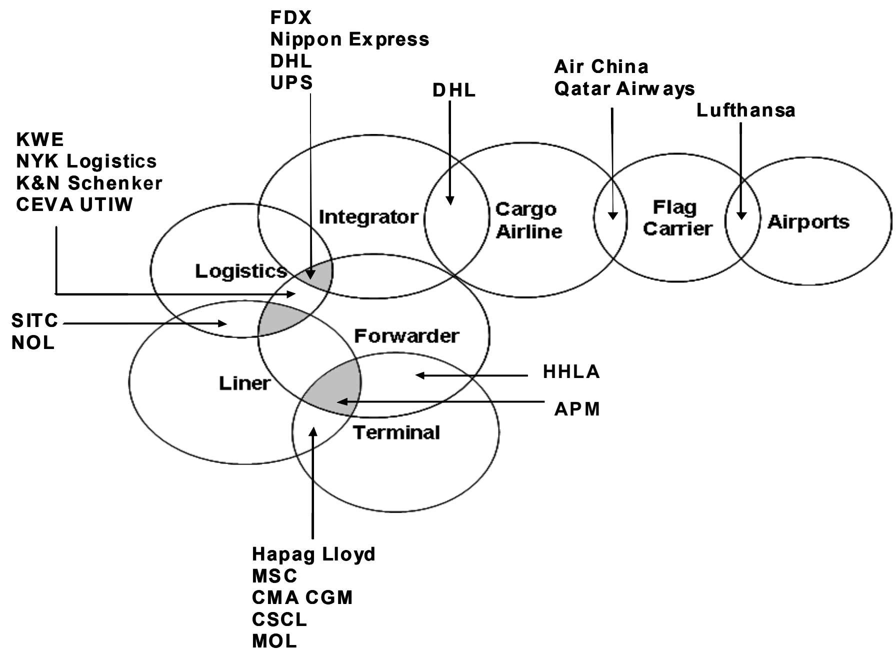
- Consolidation of ownership of ports, logistics and forwarding companies.

- Convergence of corporate strategies.

- Blurring of the boundaries between providers.

- Inter-dependency and cross ownership between participants, particularly on the freight side with freight forwarders at the centre as illustrated below in Figure 6.

Figure 6. Blurred Boundaries between Providers

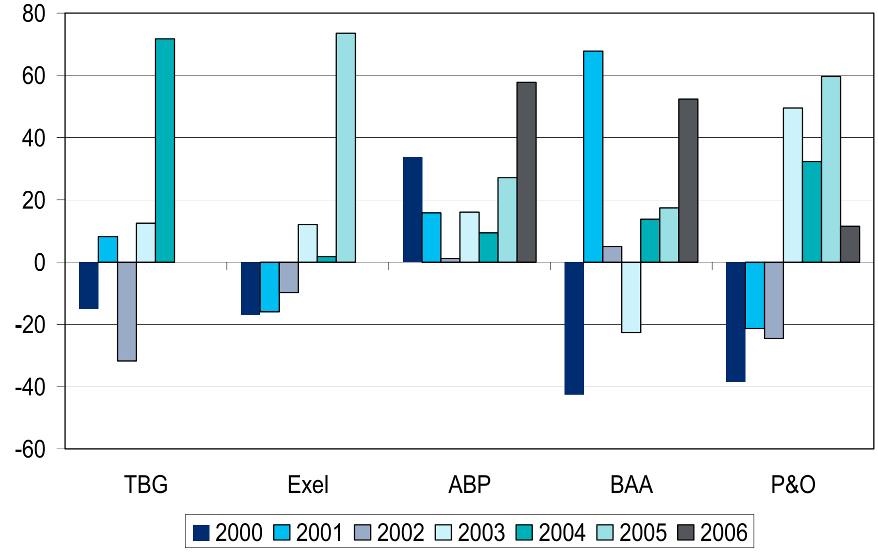


Source: Citi Research

M&A has transformed shareholder returns from UK transport investments between 2000 and 2006

Figure 7 presents the total shareholder return delivered by key UK transport companies acquired in the period 2000 to 2006. Between 1 January 2000 and the date of de-listing total shareholder returns ranged from 39% to 103% with an average of 58%. We note that investment returns over this period, excluding the control premium (difference between the undisturbed share price and the Offer Price), would be negative for four out of five companies at -14% to -29% and on average negative 8%. Only ABP would have delivered positive returns over the period even excluding the control premium paid in 2006.

Figure 7. Total Shareholder Returns for Key UK Transport Stocks Acquired 2000-2006 (%)



Source: DataStream. Note dividends assumed to be taken as cash rather than re-invested

Mixed Macro Backdrop

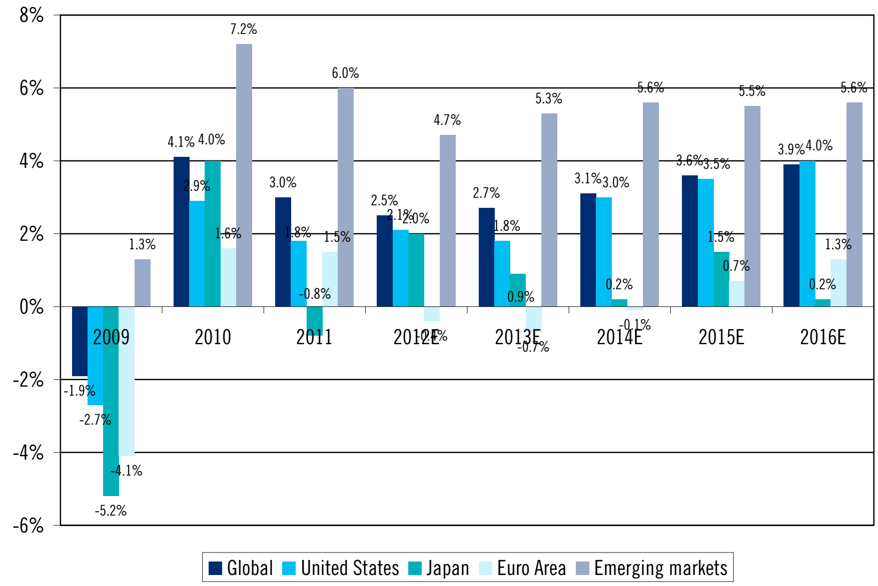
External economic environment is a consideration

We believe the financial and macro economic backdrop is an important factor in the level of M&A activity. We believe management teams are more cautious about seeking the support of Boards and shareholders and are mindful of raising funding on reasonable terms when the market outlook is uncertain. In addition, profit forecasts and particularly synergy assumptions are more uncertain when the backdrop is uncertain. In the past, freight forwarders have commented that valuation expectations of potential sellers of private businesses take time to adjust to changed macro economic circumstances.

No significant macro improvement expected until 2014

The outlook for real GDP as outlined in Global Economic Outlook and Strategy: October 2012 and illustrated below in Figure 8 is for real GDP growth in the period 2012E to 2016E to remain weak in Europe and in Japan, slowly strengthening in the US and to stay strong across global emerging markets. We believe this pattern of economic growth will see many transport companies continue to seek greater exposure to parts of the world where economic growth continues to be strong and structural change provides further opportunities while being focused on the developed world.

Figure 8. Real GDP Growth 2009 – 2016E (%)



Source: Citi Research. As of 24 October 2012

Industry bodies expect modest growth in global trade and in airfreight, sea freight and passenger volumes in 2013

In September 2012, the WTO reduced its forecast for global trade growth in 2012 from 3.7% to 2.5% and in 2013 from 5.6% to 4.5%. In June 2012, the World Bank forecast global trade volume growth of 5.3% in 2012, 7% in 2013 and 7.7% in 2014.

The outlook for near-term global freight volume is, as a result, uncertain. IATA recently downgraded its aviation outlook with air cargo demand growth in 2012 cut from 0.3% to -0.4% with average yields 2% below 2011 as capacity growth is expected to exceed demand. IATA expects global air cargo growth in 2013 to be 2.4% with the caveat that underlying assumptions for stronger economic growth (2.5% vs. 2.1% in 2012) and stronger trade growth (5.1% vs. 3.4% growth in 2012) prove to be correct. IATA expects cargo yields to be -1.5% in 2013.

Expectations for global sea freight demand is for modest overall growth that will be again skewed to the non mainline trade lanes. Clarkson, as of September 2012, expects global 6.8% container volume growth comprising 4.2% on the mainline EW trades (largely due to transpacific +5.7%) and 7.9% on the non-airline trades. Drewry, as of 3Q12, expect 4.9% growth in 2013 global container volumes and 6.1% in 2014.

IATA Global airline passenger volume outlook was for 5.3% growth in 2012 and 4.5% growth in 2013 with passenger revenue yield growth of 2.5% in 2012 and 0% in 2013.

Long-term Trade Outlook is more positive

Favorable medium- and long-term prospects for trade are well documented

The business models of many global transportations companies rely directly or indirectly on the volume, nature and pattern of global trade that also stimulates premium passenger demand for global flag carriers. We believe many of the decisions behind M&A reflect a near-universal view that global trade will continue to grow at a healthy multiple of GDP and that future growth will be heavily biased to the emerging markets.

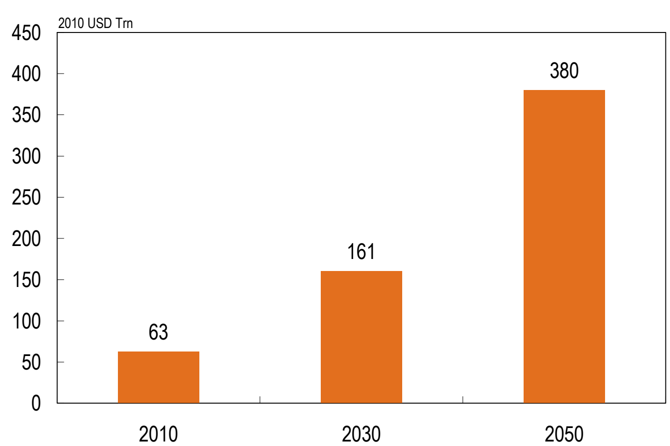
TRADE TRANSFORMED: The Emerging New Corridors of Trade Power highlighted very positive medium- and long-term prospects for cross-border trade with positive implications for many companies engaged in the facilitation of global trade, particularly with those with strong existing foundations in emerging and frontier markets. *Trade Transformed* forecast the current period of rapid global trade growth, sometimes referred to as the 'third wave of globalisation', would extend at least another four decades with global trade increasing from $37trn in 2010 to $287trn in 2050. Citi economists also flag risks to these long-term forecasts:

- Cyclically or secularly lower-than-expected GDP growth.
- A prolonged return to a more protectionist environment.
- Current WTO round (Doha) dormant.
- Past crises and post-crises periods have been marred by return to protectionism.
- Geopolitical conflict.
- Increases in commodity prices or in security-related costs of cross-border trade.

Trade growth driven primarily by increases in GDP per capita and population

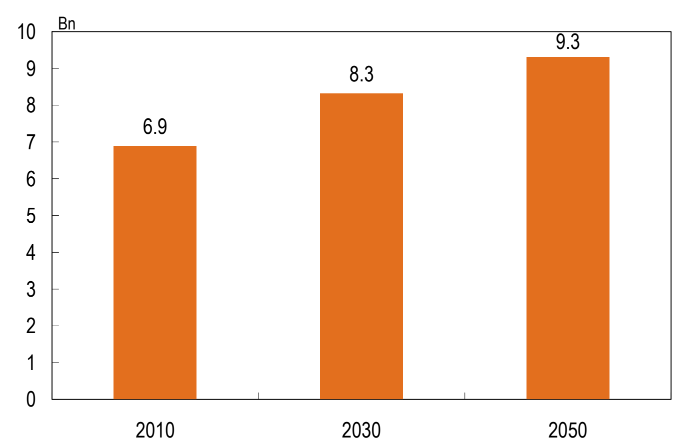
Citi economists expect high growth in world GDP in the period 2010 to 2050 driven by increases in GDP per capita and population and also further gradual erosion of man-made and technological barriers to trade. As a result, Citi economists expect global trade growth to expand at an average rate of 6.1% pa 2010 to 2030 and 4.4% pa 2030 to 2050 vs. growth of 5.4% pa 1990 to 2010. At constant prices this implies global trade rising from $37trn in 2010 to $122trn in 2030 to $287trn in 2050.

Figure 9. Global GDP (2010 Prices; USD)



Source: Citi Research estimates

Figure 10. Global Population 2010 - 2050

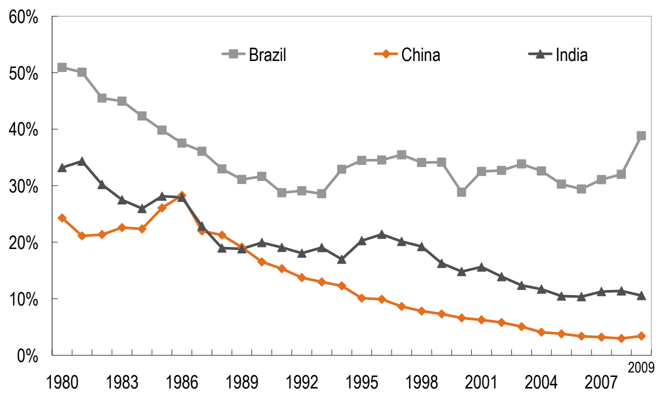


Source: Citi Research estimates

Citi economists also expect structural evolution of emerging economies

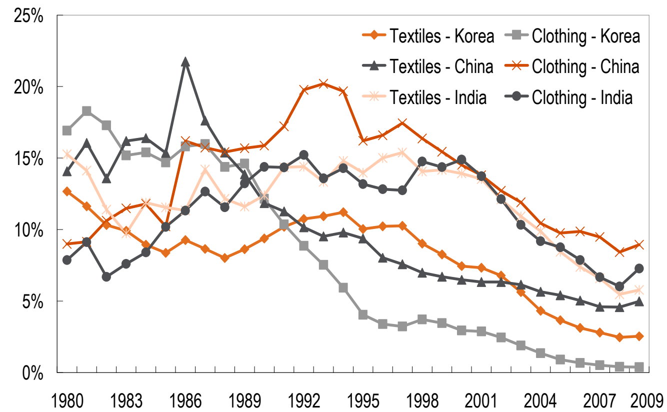
Citi economists expect industrialising emerging markets and commodity exporters to export (and import) more goods and services for consumption and commodity exporters to diversify. Figure 11 and Figure 12 illustrate that the importance of agricultural goods and textiles and clothing has fallen significantly since 1980 among the fastest-industrialising countries. We believe such structural changes have important implications for the providers of transportation services as we would expect a similar evolution in the nature of services required from relatively basic port-to-port services provided typically by a shipping company to end-to-end.

Figure 11. Exports of Agricultural Goods (% of Total Exports)



Source: Citi Research

Figure 12. Exports of Textiles & Clothing (% of Total Exports)

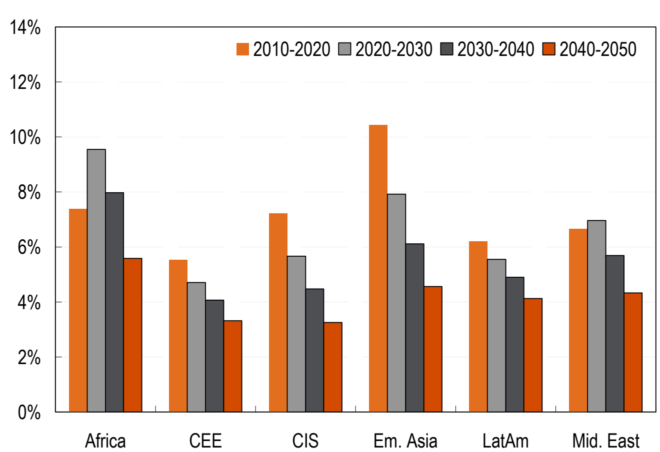


Source: Citi Research

Growth is polarized between emerging and developed economies, with Africa expected to the highest-growth global region from 2020 to 2050

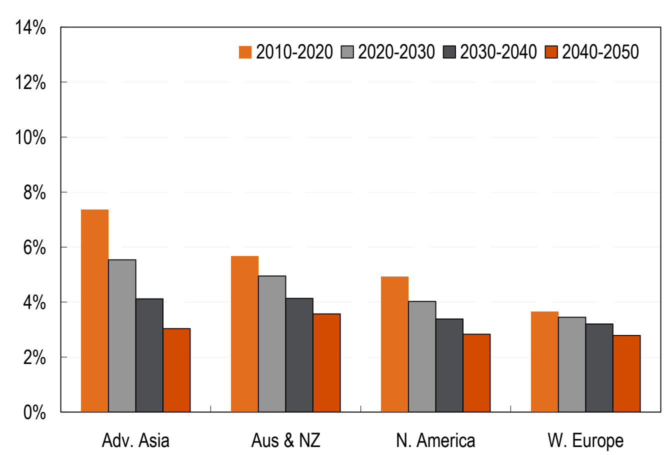
Figure 13 and Figure 14 illustrate the significantly more attractive medium- and long-term growth prospects of emerging markets vs. advanced economies. Citi economists expect emerging Asia to be comfortably the fastest-growing region until 2020. However, we believe it is the potential of Africa that is most striking, with healthy growth between 2010-20E, accelerating growth from 2020-30E and the fastest growth of any region globally until 2050E. We believe the potential for transport and infrastructure providers in serving this expected growth is substantial, given the significant distances from port to market and the capacity and draught constraints at many ports.

Figure 13. Growth in Emerging Markets Trade (YoY%)



Source: Citi Research estimates

Figure 14. Growth Advanced Economy Trade (YoY%)



Source: Citi Research estimates

Asia set to become the largest trading regions

Citi economists expect emerging Asia to overtake Western Europe to become the world's largest trading region by 2015, with China, already the world's largest exporter in 2010, to be the world's largest trading nation by 2015, overtaking the US. Emerging Asia is expected to become the largest trade region by trade volume by 2025, even though its share of world trade was only about half the level of Western Europe – the largest trading region today – in 2010. We estimate India, currently not even on the list of the 10 largest nations by trade, will overtake the US and Germany to become the world's second-largest country by trade in 2050.

Airlines

Global Airline Concentration – Still Very Fragmented Despite Consolidation

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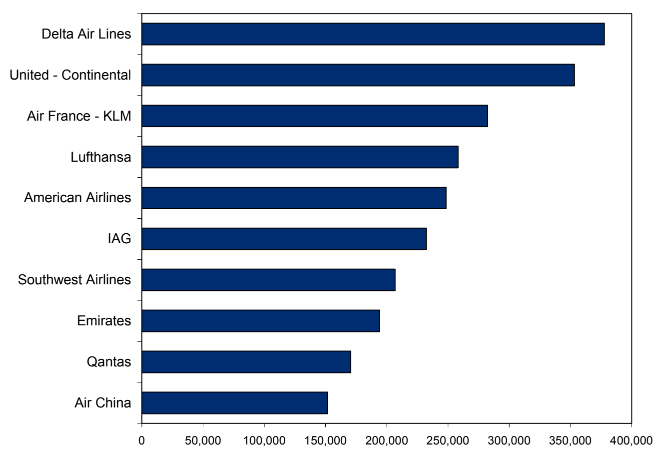
Despite decades of M&A activity, the global airline industry remains very fragmented due to most countries having foreign ownership restrictions

The global airline industry is very fragmented, driven by foreign ownership restrictions in most countries. These restrictions are as a result of the 1944 Chicago Convention, which established a framework of bilateral air traffic agreements between the world's c.150 countries. Each bilateral agreement generally limits the airlines flying between country A and country B to those being majority owned (i.e. at least 50.1%) or majority controlled by citizens of countries A and B. Some countries have even more restrictions, such as the US limiting foreign ownership of its airlines to 25%, ostensibly for military defence and labour protection reasons. Since many smaller and, especially poorer, countries do not have a deep domestic investor base, it is often up to government ownership to ensure that an airline is domestically majority owned. Many governments have also historically liked to own and control their airlines on national sovereignty grounds.

The world's largest airlines are mainly US and Europe based, all of which have grown as a result of acquisitions over the last 30-40 years

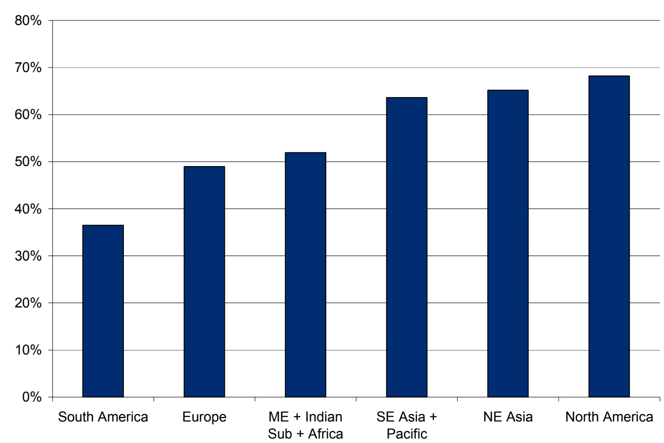
The world's 10 largest airlines (see Figure 15) carried only 38% of the world's total air passenger traffic (in terms of RPKs – Revenue Passenger Kilometres) in 2011. The largest airline in RPK terms is Delta Air Lines and there are three other US airlines in the top 10, reflecting the large size of the US domestic market and four decades of consolidation. Three European airline groups also feature in the global top 10 (Air France-KLM, Lufthansa and International Consolidated Airlines Group – IAG), themselves also the result of M&A activity over the last 30 years with the largest transactions taking place in the last 10 years.

Figure 15. Global Top 10 Airlines by Capacity, 2011 (Available Seat Kilometres (ASKs) million)



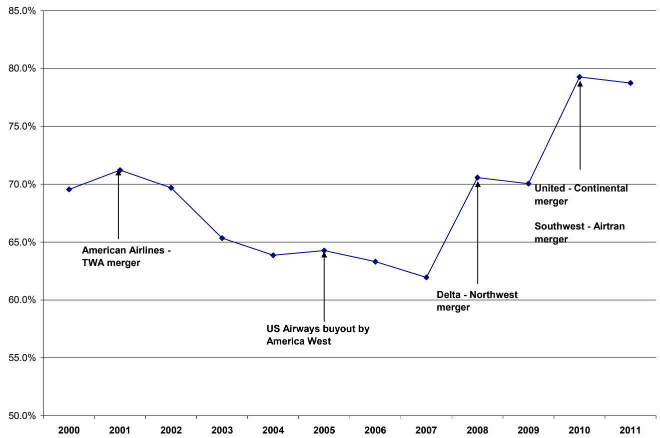
Source: Company Reports

Figure 16. Global Airlines – Market Share of Top 10 Airlines in Each Region, 2011 (% RPKs)



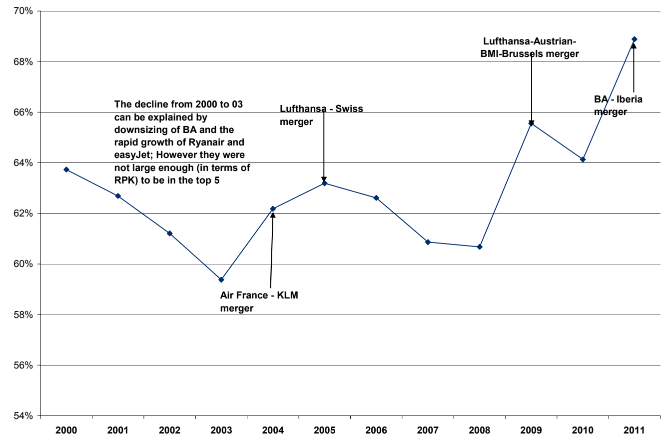
Note: Capacity share defined a total share of top 10 airlines of each region on routes to, from and within each region.
Source: Citi Research based on data from companies and Boeing Current Market Outlook, 2012

Figure 17. Top 5 US Airline Groups Market Concentration, 2000-2011 (% of RPKs)



Source: Company Reports, A4A and Citi Research

Figure 18. Top 5 European Airline Groups Market Concentration, 2000-2011 (% of RPKs)



Source: Company Reports, Association of European Airlines and Citi Research

We expect airlines from China, Middle East and Latin America to be among the fastest growing in future, both organically and by acquisition, except for Emirates, which is the only top 10 global airline not to have grown by acquiring majority airline stakes

Toward the bottom of the global top 10 are rapidly growing airlines in China (Air China) and the Middle East (Emirates Airline) as well as Qantas of Australia, who features large in terms of ASKs because of the longer average distances of Australia to the rest of the world. Two other Chinese airline groups, China Southern and China Eastern, lie just below the global top 10 in 11th and 12th places, respectively, and LATAM of Latin America in 13th place. Given their higher growth outlooks, we would expect these Chinese airlines, as well as Emirates and LATAM, to rise up the top 10 chart. We note that Emirates is the only airline to have grown organically (apart from a 44% stake in Sri Lankan Airlines in 1998 which it sold back to the Government in 2008). Southwest has grown mainly organically but has made acquisitions – Morris Air and AirTran.

North American airlines face the most concentrated competition, while South American airlines and African airlines face the most fragmented competition, followed by Europe

North American is the most concentrated region and South America the least concentrated, followed by Europe (see Figure 16). The largest 10 airlines in each major global region are shown in Figure 19 to Figure 24.

- The top 10 North American airlines carry 68% of all passenger traffic to, from and within North America (defined as Canada, Mexico and USA), the most concentrated region because of the proportionately large size of the US domestic market and the higher amount of M&A activity historically. The largest North America (and global) airline (in terms of ASKs) is Delta, followed by United-Continental and American Airlines. The largest 5 US airline groups accounted for 79% of total US airline passenger traffic in 2011, up from 62% in 2007, driven mainly by the Delta-Northwest and United-Continental mergers.

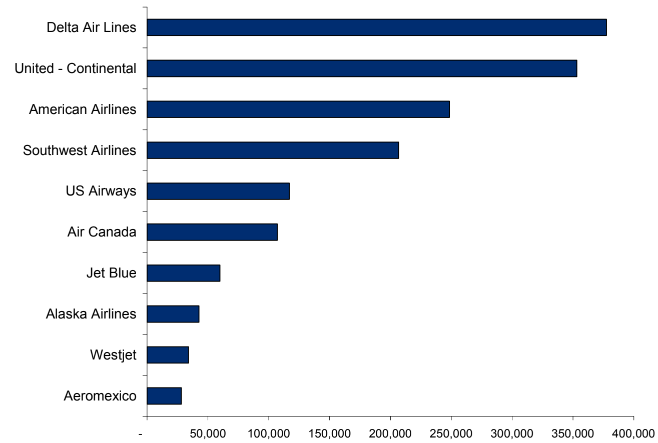
- The top 10 South American airlines, by contrast carry only 36% of passenger traffic to, from and within South America, primarily a function of the financial weakness of many South American airlines and dominance of foreign airlines (especially US and European) on long-haul routes to/from the continent. This is changing, however, with the emergence of three large groupings growing organically and via mergers – including LATAM (the recent merger of LAN Airlines of Chile and TAM of Brazil) and GOL (Brazil). These three airlines are pursuing strategies aimed at creating pan-Latin American airlines by a combination of acquisitions and establishment of foreign subsidiaries.

- The top 10 European airlines carry almost half (49%) of passenger traffic to, from and within Europe (including Russia and the CIS countries). This relatively low proportion reflects the relatively high fragmentation of European airlines due to the high number of countries in Europe compared to other regions, each with their own foreign ownership restrictions. This low concentration is despite the European Union (EU) allowing any EU majority owned airline to fly anywhere within the EU area and despite the fact that there have been over 60 M&A transactions in Europe since 1986, involving majority equity stakes, and another over 40 transactions involving large minority stakes. The largest pan-European airline groups are network airlines Air France-KLM, Lufthansa and IAG, followed by low cost carriers (LCCs) Ryanair and easyJet, all of whom have grown through acquisition. Turkish Airlines (THY) and Aeroflot are also becoming larger players in Europe, mainly because of the rapid growth of their domestic economies. Turkish Airlines is also pursuing a global hub strategy at Istanbul, similar to Emirates Airline at Dubai, and it too has grown only organically and not via any significant acquisitions. The relative size of the top 5 airline groups in Europe has increased significantly from 59% of total European airline traffic in 2003 to 69% in 2011 (Figure 18) and we would expect this concentration to continue.

- The top 10 Asian airlines carry 64% of addressable passenger traffic in the South-East Asia-Australia region and 65% in North East Asia. These relatively high concentrations partly reflect the large domestic markets of Australia, China and Japan (where there are fewer number of airline competitors than on international routes) and partly due to the Chinese Government orchestrating a strengthening of its airlines by encouraging mergers around the three major groups of Air China (Beijing), China Eastern (Shanghai) and China Southern (Guangzhou). In addition, most Asian/Australasian air traffic is domestic and intra-regional, where competition from non-Asian/Australasian airlines is limited.

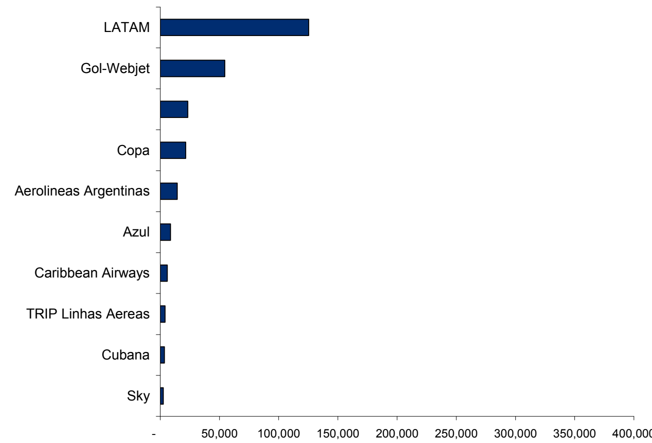
- The top 10 airlines in the Middle East/Indian Sub-Continent/Africa region carry only 52% of passenger traffic to, from and within this very large region. This relatively low rate is a function of the high degree of fragmentation in India and Africa and is also due to the financial and commercial weakness of Africa’s airlines. Most international African traffic is carried by foreign airlines, mainly European and Middle Eastern. We would expect the Middle East sub-region itself to be more concentrated, especially given the size and growth of the main global network airlines – Emirates, Qatar Airways and Etihad.

Figure 19. North America Top 10 Airlines by Capacity, 2011 (ASKs m)



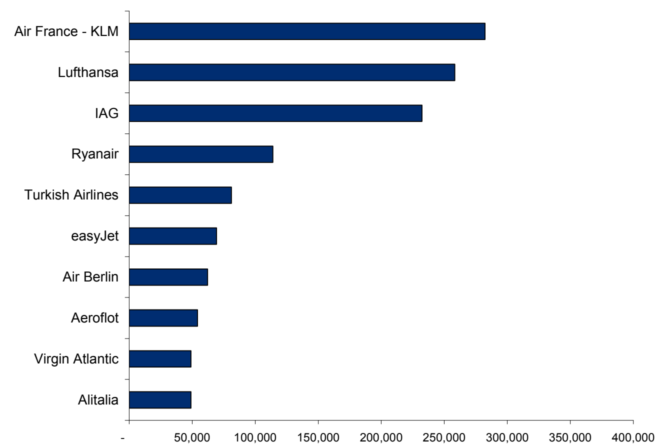
Source: Company Reports

Figure 20. South America Top 10 Airlines by Capacity, 2011 (ASKs m)



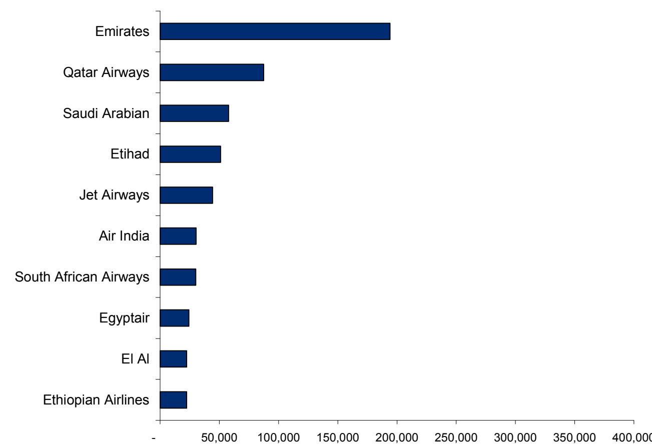
Source: Company Reports

Figure 21. Europe Top 10 Airlines by Capacity, 2011 (ASKs m)



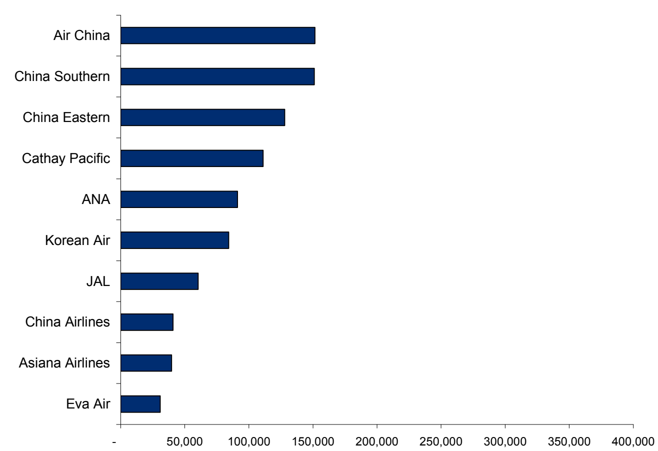
Source: Company Reports

Figure 22. Middle East, Africa, Indian Sub-Continent Top 10 Airlines by Capacity, 2011 (ASKs m)



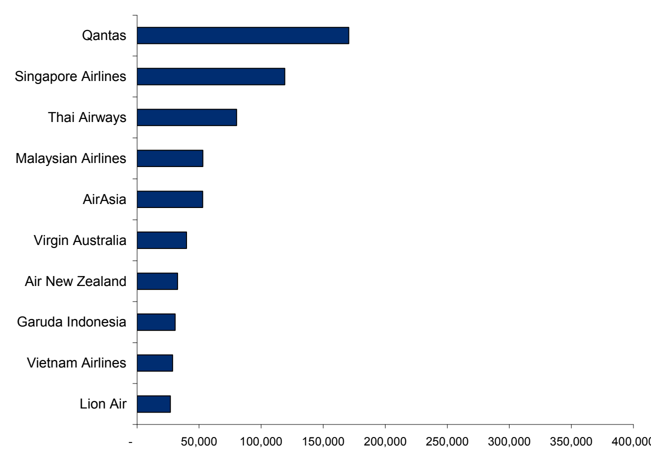
Source: Company Reports

Figure 23. North East Asia Top 10 Airlines by Capacity, 2011 (ASKs m)



Source: Company Reports

Figure 24. SE Asia Pacific Top 10 Airlines by Capacity, 2011 (ASKs m)



Source: Company Reports

Key Airline Mergers and Acquisitions since 2000

We identify 24 key M&A transactions since 2000, which apart from S-E Asia/Australasia and the Middle East/Africa regions, have created the largest airlines in each region and 8 out of the 10 largest airlines globally

In Figure 25, we identify what we believe are the key mergers and acquisitions among airlines that have shaped the current structure of the global airline sector:

- North America: 6 major transactions, with the most prominent being the Delta-Northwest merger in 2008 and United-Continental in 2010, which created the world's two largest airlines;
- Latin America: 3 major transactions, of which the largest is the current merger of LAN Airlines of Chile and TAM of Brazil to form LATAM airlines as by far the region's largest airline, more than double the size in ASK and revenue terms of the next largest, GOL;
- Europe: 7 major transactions, of which the most important have been the Air France-KLM merger in 2003 (world's third largest airline), Lufthansa-Swiss in 2005 (which subsequently went on to acquire Austrian Airlines and BMI, which has now been disposed) and the formation of International Consolidated Airlines Group (IAG) with the merger of British Airways and Iberia in 2011 (subsequently followed by the integration of BMI in 2012 and its current intention to take-over the 54.85% of Vueling that it did not already own);
- Asia: 8 major transactions, most of which have involved the domestic expansion of the three major Chinese airlines – Air China, China Eastern and China Southern – as well as the take-over in 2006 of Dragonair by Cathay Pacific, which has also entered into several cross-shareholding transactions that has resulted in Air China owning 30% of Cathay Pacific and Cathay Pacific owning 18% of Air China;

The Middle East and Africa regions are the only ones where there has been minimal M&A activity, with most growth coming organically from start-ups, especially in the Gulf regions

- Middle East and Africa: there has been no major merger and acquisition activity since 2000, apart from Etihad taking minority stakes in several airlines outside of the region (Aer Lingus, Air Berlin, Air Seychelles and Virgin Australia). Indeed, this region has generally been fragmenting with three states pulling out of the pan-Gulf region carrier, Gulf Air, to form their own airlines (Dubai in 1985 to form Emirates, Qatar in 2002 to form Qatar Airways and Abu Dhabi in 2005 to form Etihad).

Of these 24 key transactions, only 5 have been cross-border and all of them were conducted within their own regions. As mentioned earlier, foreign ownership restrictions of bilateral air traffic agreements inhibit cross-regional mergers of airlines. Of the 5 cross-border transactions, 4 were in Europe and 1 in Latin America. Cross-border mergers are possible in Europe because of the European Union (EU) allowing intra-Europe flying by any EU majority owned airline. The European Commission (EC) is also in the process of converting individual EU country's bilateral agreements with countries outside of the EU, such that they recognise the EU, rather than the individual country, as the denomination of ownership, such as with the US. In order to meet the bilateral agreement obligations with other countries, airline groups like Air France-KLM have structured their governance such that, for example, KLM is majority Dutch controlled (by having more than 50% Dutch votes on the KLM Board of Directors), despite being majority French owned.

The only cross-region equity transactions have involved only minority stakes, such as Singapore Airlines' 49% equity stake in Virgin Atlantic (1999) and Etihad's various minority stake purchases, as we have already mentioned.

Figure 25. Global Airlines – Key Mergers and Acquisitions since 2000 by Region

Region	Acquiror	Acquiree	Year	2011 Revenue (US$ bn)	Rationale
North America	Air Canada	Canadian Airlines	2000	11.8	Creation of a dominant Canadian airline
	American Airlines	TWA	2001	21.3	Complementary domestic networks but most of TWA's operations were shut down post 9/11
	US Airways	America West	2005	13.3	Complementary domestic networks
	Delta Air Lines	Northwest Airlines	2008	35.1	Complementary domestic and international networks
	United Airlines	Continental	2010	37.1	Complementary domestic and international networks
	Southwest	Air Tran	2011	15.7	Expansion into Atlanta and Florida markets
Latin America	GOL	Varig	2002	5.0	International expansion; planning to merge with Webjet
	LAN Airlines(LATAM)	TAM Airlines	2011	13.3	Creation of largest pan-South American airline
Europe	easyJet	Go	2002	5.6	London Stansted slots; bought GB Airways in 2007 for Gatwick slots
	Ryanair	Buzz	2003	6.1	London Stansted slots
	Air France	KLM	2003	33.9	Strengthen global network, reduce overlap. Also acquired VLM
	Lufthansa	Swiss Airlines	2005	39.9	High yield market, strengthen long-haul networks. Also bought Austrian Airlines in 2008 and 45% of Brussels Airlines
	Air One	Alitalia	2008	4.9	Strengthening of Italian airlines after Alitalia bankruptcy
	British Airways (IAG)	Iberia	2011	25.1	Complementary networks, no overlap. Also acquired BMI in 2012. Planning full take-over of Vueling
	Aeroflot	Rostekhnologii	2010-11	5.4	Rescue of 6 smaller Russian state owned airlines
Asia	Japan Airlines	Japan Air System	2002	14.2	Expansion of network to include domestic flights
	China Southern	Northern Airlines, Xinjiang Airlines	2002	14.0	Government led initiative to strengthen and consolidate China's airlines
	China Eastern	Northwest Airlines, Yunnan Airlines	2002	12.9	Government led initiative to strengthen and consolidate China's airlines
	Air China	Southwestern Airlines, Zhejiang Airlines	2002	15.3	Government led initiative to strengthen and consolidate China's airlines
	Cathay Pacific	Dragonair	2006	12.6	Reduction of unnecessary competition; Increased access to China
	Jet Airways	Air Sahara	2008	3.2	Increase domestic market share and access to parking slots
	China Eastern	Shanghai Airlines	2009	12.9	Reduction of unnecessary competition
	Air China	Shenzhen Airlines	2010	15.3	Network extension to southern China

Source: Company Reports

Strategic Rationale of Airline Mergers and Acquisitions

We identity three waves of airline consolidation with a potential fourth wave, global consolidation, currently off the table due to foreign ownership restrictions

Overall, we have observed three waves of airline consolidation:

1. First wave: creation of national champions via domestic mergers and acquisitions;

2. Second wave: cross-border acquisition of minority stakes in preparation for full liberalization, a wave that we view as adding limited, and even destroying, value;

3. Third wave: pan-regional mega mergers, consistent with regional liberalisation.

There could be a fourth wave possible, which would be cross-regional acquisitions to form global airlines, but so far this has not happened and is unlikely to while foreign ownership restrictions of airlines remain in place.

North American M&A – Completion of Domestic Networks, Boosting Global Presence and Extracting Revenue and Cost Synergies

North America is the most advanced region in terms of M&A activity, although it has been confined to just national mergers and a few minority stakes in Latin American airlines

North America is the most advanced in terms of domestic and regional airline consolidation because the US was the first country to deregulate its aviation sector in 1978. Delta, the world's largest airline originally acquired Northeast Airlines in 1972 but its largest purchases were Western Airlines in 1987 and then its merger in 2008 with Northwest Airlines, itself having acquired Republic Airlines in 1986. United Continental Holdings is the result of their merger in 2010. United was originally a purely domestic airline but ventured overseas when it purchased Pan Am's Asian (1985), European (1990) and Latin American (1992) operations. Continental itself was the result of mergers with Texas Air, People Express and New York Air in the 1980s. American Airlines first acquired AirCal in 1986, TWA's London routes in 1991, Reno Air in 1999 and the rest of TWA in 2001. USAirways, which is considering a merger with American Airlines, itself is the product of the merger of Pacific Southwest Airlines and Piedmont Airlines in 1989, Trump Shuttle in 1992 and America West Airlines in 2005.

The Canadian market was liberalised in 1999, which was shortly followed by Air Canada taking over the only other major Canadian airline, Canadian Airlines, in 2001.

North America, despite being the most advanced region, in terms of consolidation, is only at the second wave of consolidation. There has been no cross-border merger activity between the US and Canada, although American Airlines made an attempt in 1999 but fell foul of foreign ownership restrictions. Most cross-border equity stakes in North America have involved US airlines taking minority stakes in Latin American airlines, such as Continental taking a 49% stake in Copa in 1998 (since sold in 2006) and Delta taking stakes in AeroMéxico (3.5%) and GOL (3.0%) in 2011.

US airline mergers have been mainly for reasons of boosting frequent flier loyalty by having a complete domestic network, followed by complementing international network and unit cost reduction

We identify four major rationales behind US airline mergers:

1. **To meet the full set of requirements of corporate and frequent travellers** by offering an expanded range of destinations, routes and frequencies, involving the creation of pan-US route networks with complimentary multiple hubs (e.g. in the United-Continental merger, United offered its Chicago, San Francisco and Washington hubs, while Continental brought its key hubs of Cleveland, Houston and New York Newark). More frequent flier mileage earning and redeeming opportunities boost loyalty.

2. **To compete more effectively on a global scale by combining complementary networks**. In the Delta-Northwest merger, Delta brought not only its US strengths (e.g. Atlanta, Los Angeles, New York JFK and Salt Lake City hubs) but also its Trans-Atlantic and Latin American route networks, while Northwest brought its northern domestic hubs (Detroit and Minneapolis St. Paul) and its strong trans-Pacific operation, including a major Asian hub at Tokyo Narita, in addition to its strong trans-Atlantic hub connection to Amsterdam.

3. **To reduce unit cost** via route network optimisation, streamlined corporate overhead, common IT platforms, operational rationalisation, procurement and fleet simplification.

4. **To enable more flexible operations** within changing market conditions and infrastructure constraints to better match aircraft capacity to network demand due to larger scale.

European M&A – Pan-European Mega Mergers to Strengthen Global Networks and Extract Revenue and Cost Synergies

Europe is in the third wave of consolidation, having created national champions up to 1990 and destroyed value by making cross-border purchases of secondary airlines to exploit EU liberalisation up to 2002

We would assess Europe as having been through all three waves of airline consolidation:

- **1970-1990 creation of national champions** (e.g. Air France from the combination of Air Charter, Air Inter and UTA in 1990 and British Airways from the merger of BEA and BOAC in 1974).
- **1990-2002 purchasing of cross-border equity stakes** with the intention of exploiting European liberalisation from 1993 (e.g. British Airways buying a 49.9% stake in TAT European Airlines of France, taking it to 100% in 1996). Swissair's parent, SAir Group, was the most aggressive acquirer of large minority stakes in this period. There were also purchases of minority stakes by European airlines in non-European airlines, such as BA taking a 25% stake in Qantas of Australia and 24.6% of US Airways. This round of consolidation ultimately failed, with most acquired airlines shut down or large minority stakes sold on – e.g. Lufthansa selling BMI to IAG in 2012 after 12 years of losses. Despite being the number one airline in its home market, being the number two or three in another country proved to be highly loss-making, especially as most acquisitions focused on short-haul operations that have been perennially loss-making for most European legacy carriers.

Since 2002 has seen the creation of three mega global carriers (Air France-KLM, IAG and Lufthansa) by cross-border mergers for tier one airlines, in addition to two major pan-European LCCs, easyJet and Ryanair, who have grown mainly organically with the occasional acquisition to get access to runway slots at London's airports

- **2003-2012 pan-European mega mergers**, involving the merger of the number one airlines in two or more European countries to create pan-European airline groups. Air France and KLM were the first to merge in 2003, followed by Lufthansa acquiring Swiss in 2005, followed by Austrian Airlines and BMI and a 45% stake in Brussels Airlines (with a call option over the remaining 55%). The most recent major consolidation was that of British Airways and Iberia in 2011 to form International Consolidated Airlines Group (IAG), to which BMI was added in April 2012 and the 54.15% remaining stake in Vueling currently being bid for.

There have also been acquisitions among Europe's low cost carriers (LCC's) – such as easyJet buying Go in 2002 and GB Airways in 2007, Ryanair buying Buzz from KLM in 2003 and Vueling merging with Clickair in 2008. Hybrid full-service LCC, Air Berlin, is itself the result of mergers of Air Berlin, LTU of Germany, DBA of Germany, Belair of Switzerland and Fly Niki of Austria.

The first wave of European mergers up to 1990 involved mainly the combination of various, generally weak, domestic airlines to create just one, stronger, national airline for each country. The rationale for the second waves of cross-border stakes in second-tier airlines would appear to have been to build strategic footholds in other EU countries as European aviation liberalised.

The main rationale for European airline mega-mergers has been to strengthen global route networks and defend global alliance benefits, followed by cost reduction as a secondary objective

The rationale for the latest third wave of pan-European consolidation would appear to be more meaningful and larger scale than previous waves:

1. **To strengthen their global route networks** centered on Europe to generate substantial market share gains and revenue synergies by offering an improved route network offering to their customers – e.g. in terms of breadth of destinations and frequency of services. In the case of Air France-KLM, the merger offered not only a reduction in competition among these two, closely located, network carriers but also the opportunity to co-ordinate their networks and schedules to offer more connections to more destinations than the prior two individual networks. For example, to many Asian cities, the combined airlines offer c.4 flights per day from their combined Amsterdam/Paris hubs,

timed throughout the day to be as attractive as possible to premium business travellers, in particular. In the case of IAG, the networks of BA and Iberia are complementary, with minimal overlap, unlike Air France-KLM and Lufthansa-Swiss. BA could never afford to develop an extensive Latin American route network and nor could Iberia do so in Asia, for example.

2. **To defend existing global alliance benefits** by ensuring an alliance partner is not acquired by an airline in another alliance, which would have resulted in a defection and loss of existing synergies. The best example of this was Lufthansa's purchase of Austrian Airlines in 2010. In the two years prior to the acquisition, Lufthansa had said that it did not need to take-over Austrian because it was already receiving revenue benefits from Austrian's membership of the Star Alliance – e.g. in terms of long-haul feeder traffic from Austria to its hubs at Frankfurt and Munich. However, when the Austrian Government openly sought offers from other airlines, including Air France-KLM, Lufthansa came to the table and made a winning bid.

3. **To achieve cost synergies**, especially in back-office and ancillary activities. In the case of IAG, cost synergies from 2015 are targeted to be 54% of total synergies (€290m p.a. out of a total target of €560m p.a. by 2015). Sources of cost synergies are expected to come mainly from IT systems integration (28%); maintenance (24%); combining back office activities, sales forces, call centres and airport operations (21%); procurement (16%) and optimising aircraft fleet procurement (11%). We believe that cost synergies could theoretically be higher because, in all of the large airline mergers in Europe, the core flight operations will not be merged and each airline will retain its own identity. This would be unlike a US airline merger, where brand names disappear (e.g. Northwest in the case of the Delta-Northwest merger) and flight operations combined.

4. **To obtain access to runway slots at increasingly congested European airports** to ensure long-term growth potential despite these constraints. The best example of this was IAG's purchase of BMI from Lufthansa earlier in 2012 for its slots at Heathrow. IAG had no interest in the BMI brand name and not much in its, mainly short-haul, destinations. Instead, the real jewels of BMI are its 56 daily runway slot pairs at London Heathrow (less 14 that may have to be surrendered to competitors on certain BMI routes), at least one-third of which IAG intends to switch from short-haul to long-haul routes, where revenue per slot is 2.5 times greater than for short-haul. easyJet bought Go for its slots at London Stansted (as was the reason for Ryanair buying Buzz) and GB Airways for its slots at London Gatwick.

Asian M&A – Development of National Champions and Enabling of Pan-Asian LCC Networks

Asian airline consolidation would appear to be only at the first wave of consolidation, creating national champions, although recently there have been some cross-border purchases of minority equity stakes, primarily in the rapidly developing LCC segment. Given the large size of Asia, it is hard to generalise as economies and aviation are in different stages of development.

With the exception of India, national champions have emerged in most of the largest countries of Asia

The most mature markets of Asia, Australia and Japan, have been consolidated for many years. In Australia, Qantas merged its international operations with Australian Airlines' domestic operations in 1995. There have been trans-Tasman mergers in the past, and at one time Air New Zealand owned the second largest Australian airline, Ansett, before the latter collapsed in 2001. Qantas and Air New Zealand

have attempted merging in the past but was ruled out by regulators. Virgin Australia, the second largest Australian airline, is partly owned by Air New Zealand (19.99%), Etihad (10%) and Singapore Airlines (10%). Most recent M&A activity has been mainly of regional airlines, such as Virgin Australia's recently proposed 60% purchase of LCC Tiger Australia and take-over of Skywest Airlines.

In Japan, most airlines are owned by either ANA or Japan Airlines (JAL) with the latest transaction being the merger of JAL and Japan Air System in 2002.

The Chinese Government has actively nurtured the creation of three national champion airlines – Air China, China Eastern and China Southern

In China, the government has deliberately been trying to cultivate 3 national champions since 2000 – Air China, China Eastern and China Southern – by orchestrating their taking over of several domestic and regional airlines to strengthen its airline industry and reduce unnecessary competition. The Chinese Government has generally succeeded in the development of these three national champions.

Cathay Pacific of Hong Kong has also been associated with efforts to develop China's national champions. It bought a 9.9% stake as a strategic investor in Air China's H share IPO in 2004. In 2006, Cathay Pacific, Air China, Citic Pacific, Swire and CNAC jointly announced a transaction in which Cathay Pacific took over the remainder of Dragonair and purchased an additional 10% in Air China. At the same time, Air China bought shares in Cathay Pacific from Citic Pacific and Swire. In 2009, Air China bought more shares in Cathay Pacific from Citic Pacific, such that Air China now owns c.30% of Cathay Pacific, which in turn owns c.18% of Air China.

In India, the two main recent mergers were Jet Airways and Air Sahara in 2007 and Kingfisher and Air Deccan in 2008. Air Sahara provided Jet Airways with a lower-cost domestic brand, whereas Kingfisher used Air Deccan's longer operating record to start flying internationally. Given the financial weakness of Kingfisher, the state subsidies used to keep Air India in business and ferocious domestic competition, it is doubtful that India has yet to create a national airline champion.

The purchase of cross-border equity stakes in Asia has been limited to minority stakes, due to foreign ownership restrictions, taken mainly by Singapore Airlines, Air New Zealand and the region's LCC's – AirAsia, Tiger and Jetstar – as they attempt to build pan-Asian LCC networks in a sub-optimal way

The second wave of consolidation, involving cross-border purchases of minority equity stakes has already started in Asia:

- Singapore Airlines has led cross-border consolidation, in part probably because there were no other competing Singaporean airlines to acquire. Its first purchase was a 49% stake in Virgin Atlantic in 1999, a stake that it still owns today. It used to own a 25% stake in Air New Zealand but this was diluted down to 6.4%, following a rescue recapitalisation of Air New Zealand in 2001 and the stake was subsequently disposed in 2004. It had planned to acquire a 24% stake in China Eastern Airlines, along with Temasek Holdings, in 2008 but was rejected by CEA's minority shareholders. Singapore Airlines' most recent stake purchase is its 10% stake purchased in Virgin Australia to cement its operating alliance. In general, Singapore Airlines' minority equity stakes have not added value. It lost most of its Air New Zealand investment and its Virgin Atlantic 49% stake has generated no return so far and there has been no strategic co-operation between the two. All that Singapore Airlines has managed to achieve is to prevent the Virgin Atlantic brand from competing on the London-Singapore route.

- Air New Zealand has always wanted a strong presence in Australia, its second largest market. It used to own Ansett before it collapsed in 2001 and this has since been replaced by a c.20% stake in Virgin Australia in 2011.

- The region's LCCs have been the most active airlines in taking cross-border minority stakes in Asia. In the absence of pan-regional liberalisation and in the

presence of foreign ownership restrictions, these airlines are compelled to take minority stakes in other airlines, with the majority stake being owned by a local partner, as they build their pan-Asian networks to replicate the successful pan-regional networks in more liberalised markets, such as Southwest in the US and easyJet in Europe. Their purchases of large minority stakes were mainly to allow assumption of the airline operator's certificate (AOC) of smaller airlines that are subsequently re-branded. The optimal approach would be to have full control over their foreign operations, but this is prohibited by foreign ownership restrictions, necessitating the search for friendly, local investors with majority control. AirAsia of Malaysia was the first to go cross-border with stakes in Thai AirAsia (45%), Indonesia AirAsia (49%), AirAsia Philippines (40%) and AirAsia Japan (33%). It was going to buy a stake in Batavia Air of Indonesia but recently pulled out. Tiger Airways, 33% owned by Singapore Airlines, has a 40% stake in Tiger Australia (following recent sale of 60% to Virgin Australia), 33% stake in Mandala Airlines of Indonesia and a 40% stake in SE Air of the Philippines. Jetstar, a 100% owned LCC by Qantas, similarly has a 50% stake in Jetstar Hong Kong, a 42% stake in Jetstar Japan. It used to have a 30% stake in Jetstar Pacific of Vietnam but this was reverted to parent, Qantas, after the Vietnam Government demanded in 2010 that Jetstar Pacific cannot carry the Jetstar logo.

The main rationale behind Asian M&A activity has been to strengthen national champions at home and enable LCC's to develop pan-Asian route networks

In summary, the rationale behind Asian airline M&A activity is as follows:

1. To create national champions by strengthening domestic networks and reducing unnecessary competition, with China being the main example of this since 2000;
2. To enable LCCs to build pan-Asian route networks by taking large minority stakes in smaller airlines, to get access to their AOCs, and then re-brand;

Latin America – Development of Pan-Regional Airlines and Consolidation in Brazil

Before 2000, there was relatively little M&A activity in Latin America with most consolidation occurring via the failures of many airlines

Historically, there has been relatively little merger and acquisition activity in Latin America. Much consolidation has been achieved by the failure of airlines, for example in Brazil (e.g. Transbrasil) and Mexico (e.g. Mexicana), while airline groups like LAN of Chile expanded abroad merely by establishing subsidiaries in other countries (e.g. LAN Peru and LAN Ecuador). The largest airline, LAN, was itself the product of the consolidation of three Chilean airlines in the 1990s – LAN Chile, Ladeco and Fast Air. Spanish airline, Iberia, had also been active in taking large, sometimes majority, stakes in Latin American airlines in the late 1980s and 1990s, such as in Aerolineas Argentinas, Ladeco and Viasa. But, with the exception of a 38% stake in Ladeco, which it sold to LAN in 1997, it lost money on these investments when Aerolineas Argentinas and Viasa went bankrupt in 1997.

The rationale for M&A in Latin America has been mainly the creation of two pan-regional airlines via the merger of top tier airlines

Most M&A activity since 2000 has related to the development of two pan-regional airlines:

- LATAM Airlines Group is the region's largest airline and the result of the merger of LAN Airlines of Chile (as well as its various subsidiaries throughout Latin America) and TAM Airlines of Brazil. First proposed in 2010, the merger was completed in June 2012. LATAM. LATAM is similar to a European style merger, with LAN and TAM being operated as separate brands. LAN has subsidiaries in Argentina, Colombia, Dominican Republic, Ecuador, Peru, Mexico and a 25% stake in a US cargo airline, Florida West International Airways. TAM is present only in Brazil and Paraguay and is Brazil's largest international airline.

Most domestic Latin American M&A consolidation has been in Brazil, while Mexico's airline consolidation has been mainly by airline failures

Another recent major merger of note was the domestic combination of Brazilian airlines, low-cost carrier GOL and former international carrier, Varig, in 2008. Varig has since dropped most of its long-haul services, with its route rights taken up by TAM, and focuses only on short-haul routes. GOL also purchased Brazilian domestic airline, Webjet, in 2011. GOL would therefore appear to be pursuing a predominantly Brazil-focused strategy.

Most domestic consolidation in Latin America has centered on Brazil. In addition to GOL's take-overs of Varig and Webjet, TAM bought Pantanal Airlines in 2010 and Azul plans to merge with TRIP. According to consultants CAPA, post merger market shares of RPKs in Brazil would be mainly in the hands of four airlines:

- GOL-Webjet: 40.6%
- TAM: 39.5%
- Azul-TRIP: 14.1%
- Other: 5.8%.

Quantifying Merger Synergies – On Average 300 Basis Points Improvement in Operating Margins

In Figure 26 to Figure 29, we show the merger synergies targeted and achieved by 13 selected mergers (i.e. where we can find data) in North America, Europe and Latin America.

Based on analysis of airline mergers in the US, Europe and Latin America and Asia, we calculate that mergers can boost operating margins by an average 300 basis points, of which 60% due to revenue synergies (1.8% increase in revenue) and 40% due to cost synergies (1.7% reduction in operating costs excluding fuel)

We calculate that the consolidation experience so far is that, on average, operating margins are boosted by c.300 basis points, comprised of 180 basis point improvement due to revenue synergies and 120 basis points due to cost synergies – i.e. on average c.60% of synergies come from revenue initiatives and 40% from cost initiatives. Typically, these are achieved or targeted run rates in the fourth of fifth year of merger implementation.

There are, however, regional variations, with the US airlines achieving and targeting higher levels than the Europeans, for example:

- US Airlines – average is total synergies of 4.5% of revenue, two-thirds arising from revenue initiatives and one third from cost initiatives;
- European Airlines – average is total synergies of c.2.0% of revenue, half arising from revenue initiatives and half from cost initiatives;
- Latin American Airlines - average is total synergies of 3.0% of revenue, 60% arising from revenue initiatives and 40% from cost initiatives.
- Asian Airlines – China Eastern achieved total synergies in its take-over of Shanghai Airlines of c.4.5% revenue, 85% from revenue initiatives and 15% from cost synergies.

US airline mergers have generally targeted and achieved higher margin improvements than European and Latin American mergers because US airline mergers involve complete integration of brand names and operations whereas European and Latin American mergers have not due to various cross-border differences

We would argue that US airline mergers have generally been more aggressive than European and Latin American mergers. US mergers have involved a complete integration of the airlines involved with just one airline brand. In Europe and Latin America, the major mergers have generally involved the creation of a holding company while maintaining separate brand names and operations. The experience of the airline sector, even within Europe, is that it is far easier to integrate operations domestically than across borders due to national brand names, differences in airline operating procedures, different languages, different unions and so forth.

In our experience, these synergy targets have generally been achieved. In Europe, Air France-KLM, IAG and Lufthansa have all raised their original target synergies after 1-2 years of implementation. The issue is the extent to which synergies are passed on to passengers and shippers, via competitive forces, or eroded by the rising cost of jet fuel.

Figure 26. Merger Synergies Targeted of Selected US Airline Consolidations (US$ millions per year)

Airline Group	Merger/ Acquisition	Target Year	Revenue Synergies	% of Revenue	Cost Synergies	% of Non-Fuel Cost	Total Synergies	% of Revenue	Comments
Delta Air Lines	Delta-Northwest	2012	$1,400	4.1%	$600	1.7%	$2,000	5.8%	% of combined Delta-Northwest revenue and cost
Southwest	Southwest-Air Tran	2013	$390	2.3%	$10	0.1%	$400	2.4%	% of combined Southwest-Air Tran revenue and cost
United Continental	United-Continental	2013	$800-900	2.3-2.6%	$200-300	0.9-1.3%	$1,000 - 1,200	2.9-3.5%	% of combined United-Continental revenue and cost
US Airways	US Airways-America West	2008	$340	3.2%	$340	4.0%	$680	6.5%	% of combined US Airways and America West revenue and cost
Average				**3.0%**		**1.7%**		**4.5%**	**Average merger synergies c.4.5% of combined revenue**

Source: Company Reports and Citi Research calculations based on company data

Figure 27. Merger Synergies Targeted of Selected European Airline Consolidations (local currency in millions per year)

Airline Group	Merger/ Acquisition	Target Year	Revenue Synergies	% of Revenue	Cost Synergies	% of Non-Fuel Cost	Total Synergies	% of Revenue	Comments
Air France-KLM	AF-KLM	2011	€ 443	1.9%	€557	3.1%	€ 1,000	4.2%	% of combined Air France-KLM revenue and cost
IAG	BA-Iberia	2015	€ 270	1.4%	€290	2.5%	€ 560	2.9%	% of combined BA-Iberia revenue and cost
IAG	BA-BMI	2015	€ 50	0.4%	€50	0.7%	€ 100	0.8%	Cost estimated base on 1,200 job losses; % of BMI and BA revenue and cost
Lufthansa	Swiss	2010	€ 122	0.7%	€112	0.9%	€ 234	1.3%	% of combined Lufthansa and Swiss revenue and cost
Lufthansa	Austrian	2010	0	0.0%	€130	1.2%	€ 130	0.8%	% of combined Lufthansa and Austrian revenue and cost
easyJet	GB Airways	2008	£20	0.8%	£15	1.0%	£35	1.5%	% of combined easyJet and GB Airways revenue and cost
Average				**0.9%**		**1.6%**		**1.9%**	**Average merger synergies c.2.0% of combined revenue**

Source: Company Reports and Citi Research calculations based on company data

Figure 28. Merger Synergies Targeted of Selected Latin American Airline Consolidations (local currency in millions per year)

Airline Group	Merger/ Acquisition	Target Year	Revenue Synergies	% of Revenue	Cost Synergies	% of Non-Fuel Cost	Total Synergies	% of Revenue	Comments
GOL	Webjet	2012	0	0%	R$100	2.1%	R$100	1.3%	% of combined GOL-Webjet revenue and cost
LATAM	LAN-TAM	2015-16	$360-410	2.0-2.5%	$240-290	2.5-3.0%	$600-700	3.5-4.0%	% of combined LAN-TAM revenue and cost
Average				**1.9%**		**2.1%**		**3.0%**	**Average merger synergies c.4.5% of combined revenue**

Source: Company Reports and Citi Research calculations based on company data

Figure 29. Merger Synergies of China Eastern, Shanghai Airlines merger

Airline Group	Merger/ Acquisition	Target Year	Revenue Synergies	% of Revenue	Cost Synergies	% of Non-Fuel Cost	Total Synergies	% of Revenue	Comments
China Eastern	Shanghai Airlines	2009	Rmb2bn	3.8%	Rmb300-400m	0.8-1%	Rmb2.3-2.4bn	4.4-4.6%	% of combined China Eastern-Shanghai Airlines, revenue and cost

Source: Company Reports and Citi Research calculations based on company data

Assessing the Success of Airline M&A Activity

We would conclude that most airline mergers have succeeded in helping to rationalise industry structure and capacity as well as attaining synergy targets

We would conclude that, in the main, most airline consolidations to date, involving majority owned stakes, have been successful, in terms of the following parameters:

- Helping to reduce industry fragmentation and create airline champions in each region, strong enough to compete on a global scale with champions from other regions;
- Enabling the reduction of capacity due to fewer and more rational competitors, which has been particularly beneficial in the US;
- Attaining synergy targets, both revenue and cost, within intended timescales. Most airlines that we cover have increased their original synergy targets and have generally delivered on them. This is not always seen in increased reported profitability, however, because inevitably a portion has been passed onto customers, given competitive forces, and a portion has been eroded by rising fuel costs.

The main implementation challenges have been labour unions (especially in the US with the integration of pilot groups with different contract structures) and IT systems integration, problems with which have occasionally resulted in loss of revenue and a deterioration in operational performance.

The main drawbacks of the major European mergers have been the financial costs and management effort needed to restructure problematic companies post-acquisition

Also, particularly relevant to the European consolidations, each of the major legacy carrier groupings has suffered from additional restructuring issues of one of its partners that it would not have had to face had the merger not taken place. Air France-KLM has suffered from the need to restructure Air France itself because the merger with KLM in itself did not result in the loss of many jobs, unlike most other mergers. There is a similar issue at IAG, where Iberia loses almost as much as British Airways makes, necessitating IAG's recent announcement to cut Iberia's capacity by 15% and its jobs by 4,500 heads. Lufthansa had similar issues at Austrian Airlines and BMI. Austrian Airlines has now been successfully restructured but not before the CEO of Lufthansa claimed that he would not be involved in acquisitions that needed significant restructuring in future. BMI was solved by its sale to IAG.

In general, the purchase of non-controlling minority stakes in other airlines has not proved to be successful because they wield insufficient influence and have generated little if any financial return or value

We would argue, though, that the purchase of non-controlling minority stakes in other airlines has largely failed:

- Most of the cross-border minority stakes acquired by European airlines in other European countries, as well as in North and Latin America in the 1990s, have since been disposed of, often at a loss, and these stakes often undermined alliance and JV partnerships;

- Singapore Airlines' purchase of minority stakes in Virgin Atlantic (49%) and Air New Zealand (25%), also made during the 1990s, achieved limited if any value or returns, although this has not prevented it from recently taking a 10% stake in Virgin Australia to cement its operational alliance;

- We also note the recent minority stakes purchased by Qatar Airways (35% of Cargolux) and by Etihad (29.2% of Air Berlin, 2.99% of Aer Lingus, 40% of Air Seychelles and 10% of Virgin Australia); foreign ownership restrictions limit their ability to influence. Qatar Airways recently announced plans to sell its stake in Cargolux, after only 14 months of owning it, after disagreements concerning its restructuring and management.

Scope for Possible Further Consolidation

The logic for further airline consolidation is compelling given industry over-capacity, poor shareholder returns and increasing competition from Middle East and emerging market airlines

The logic in support of further consolidation is that the global airline industry remains fragmented, especially outside of the US, resulting in industry over-capacity, sub-scale cost and revenue structure and therefore poor returns to shareholders. Increasing competition from fast growing Middle Eastern global hub carriers, BRIC and other emerging market airlines serves to increase the pressure on many European and Asian/Australasian airline groups to consolidate further to defend themselves.

Ideally, the global passenger airline sector should be similar in structure to the global express package sector, which is at scale and with only 4-5 major participants globally – DHL, FedEx, TNT and UPS. This is unlikely to ever happen in the passenger airline sector, given foreign ownership limits, Government ownership of many airlines and labour unions. Weak balance sheets and large pension deficits of potential targets also represent a barrier to consolidation because cash-strapped airlines are often unwilling to take on these financial liabilities and are unwilling to take on substantial restructurings and deal with labour unions and local politics of, especially, foreign airlines.

M&A activity in the US is likely to slow with most eyes on whether or not American Airlines decides to team up with US Airways when it emerges from Chapter 11

- **North America**. The US consolidation is almost done, in our opinion, with c.80% of domestic airline capacity controlled by the 5 largest airlines, led by Delta and United-Continental. The main outstanding potential move surrounds American Airlines, whose parent, AMR, has been in Chapter 11 bankruptcy protection since November 2011. US Airways has made no secret of its desire to merge with American Airlines and it had already sought to take-over Delta Air Lines, also when in Chapter 11, in 2006 but the approach was rejected by Delta's creditors committee and management. US Airways is the smallest of the 5 largest US airlines. A potential merger with American would on paper create the second largest, just behind Delta and just ahead of United-Continental in terms of ASK capacity, and would take the concentration of the top 5 airlines in the US to c.85% of capacity. We note historical US airline merger synergies have been around c.4-5% combined revenue. Alaska Airlines, the 7th largest US airline, has also been mentioned by the media as a potential suitor for American, as has JetBlue and Frontier. There is also likely to be further rounds of consolidation among the US regional airlines.

Further consolidation among European airlines looks likely because all except the top 6 (Air France-KLM, easyJet, IAG, Lufthansa, Ryanair and Turkish Airlines) are sub-scale but near-term consolidation is likely to be driven by smaller deals and exits/down-sizing of weaker airlines because the 3 large legacy airline groups have limited appetite, given their own integration and restructuring efforts

- **Europe**. With the top 5 airlines controlling less than 70% of total ASK capacity in Europe, there is scope for further consolidation compared to industry concentration in the US. There are three live merger transactions ongoing in Europe, of which two are awaiting regulatory acceptance (Ryanair-Aer Lingus and Aegean Airlines-Olympic Air) and the other is IAG's proposed take-over of the 54.15% of shares in Vueling it does not already own. In addition, SAS is looking to sell its Wideroe regional airline, Lufthansa has a call option over 55% of Brussels Airlines it currently does not own and Air France-KLM has a shareholder agreement with the other shareholders of Alitalia that could eventually see it take-over the remaining 75% stake it does not own. Media have also reported on Lufthansa's relationship with Turkish Airlines after it announced deeper co-operation (other than via their Star Alliance and Sun Express relationships) earlier this month. In our global report, Global Aviation: Merge or Die? (Not Exactly). Views on Global Airline M&A dated 23 July 2012, we identified 16 European airlines (including Aegean Airlines, Aer Lingus, Olympic and Vueling) as potential consolidation candidates. The problem is that most of these airlines are unprofitable and many in need of restructuring, especially those that could be made available by their Governments via privatisation. Europe's three largest airline groups, Air France-KLM, IAG and Lufthansa appear to have little appetite to take over airlines in need of restructuring, given their own current restructuring issues, in part related to their mergers. IAG is having to step up the downsizing and restructuring of Iberia and integrating BMI, Lufthansa is bruised by having to turn around Austrian Airlines and BMI (which it failed to turn around and sold to IAG instead) and Air France-KLM is busy restructuring its French operations. We therefore expect most near-term consolidation to come in the form of smaller airlines down-sizing further and even exiting the industry via closure, as Cimber Sterling, Malev, Spanair and Windjet have already done so far this year.

In Asia, domestic consolidation looks largely complete, apart from India and the Philippines, but we would expect an increase in cross-border activity within the region as foreign ownership restrictions are slowly relaxed, involving both low cost carriers and full service airlines

- **Asia**. Domestic consolidation looks mostly complete in Australia, China and Japan but it continues in India and is beginning in the Philippines. We expect regulatory restrictions on foreign ownership to be gradually relaxed across Asia, as India has done recently, for example. Not only could such relaxation spur on the development of pan-Asian networks by Asian LCC's but also it could lead to more cross-border M&A activity as we have already seen in Europe and Latin America. We maintain our thesis that the end-game could be a merger between Air China and Cathay Pacific but it is likely to be a long way off because the differential between the two airlines' service offerings and the fact that Air China is a member of the Star Alliance and Cathay Pacific a member of the oneworld alliance. They are getting closer, however, following their cross-ownership in 2006 and already have established air cargo and ground handling joint ventures.

We expect further domestic consolidation and cross-border consolidation activity in Latin America, given the region's relatively early stage of development of the pan-regional airline sector

- **Latin America**. Given its relatively early stage of development compared to the rest of the world, we would expect there to be further consolidations in Latin America as the top 3-4 airline groups continue to develop their pan-Latin America route networks and strive to take back market share on long-haul routes from foreign airlines. We expect more domestic and cross-border consolidation, especially among the privately held airlines, and especially should Brazil and/or Mexico reduce their maximum foreign share ownership limits (20% and 25% respectively). In Global Aviation: Merge or Die? (Not Exactly). Views on Global Airline M&A, dated 23 July 2012, we identify some potential candidates who could participate in further consolidation. Examples include Copa, Sky Airline of Chile and even Government-owned Aerolineas Argentinas. Delta could possibly play a role, given its minority stakes in airlines in the region.

Alternatives to Mergers and Acquisitions

The existence of EU and national ownership requirements throughout the world, as per bilateral air traffic agreements, is likely to be a drag on airline consolidation activity, especially between airlines in different regions. Here we discuss some alternative forms of consolidation in order to get around these ownership restrictions.

Figure 30. Airline Global Alliances – Membership by Region, 2012

Region/Alliance	oneworld	SkyTeam	Star Alliance	Major Unaligned Airlines
Africa/Middle East		Kenya Airways Middle East Airlines Saudi Arabian Airlines	Egyptair Ethiopian South African Airways	Air Astana Arik Air El Al Emirates Etihad Gulf Air Kuwait Airways Oman Air Royal Air Maroc
Asia-Pacific	Cathay Pacific Japan Airlines Qantas	China Airlines China Eastern China Southern Korean Air Vietnam Airlines Xiamen Airlines	Air China Air New Zealand ANA Asiana Singapore Airlines Thai Airways	Air India Air Mauritius Hainan Airlines Jet Airways Philippines Airlines PIA Virgin Australia
Europe	Air Berlin British Airways Finnair Iberia S7	Aeroflot Air Europa Air France Alitalia Czech Airlines KLM TAROM	Adria Aegean Airlines Austrian Airlines Blue 1 Brussels Airlines Croatia Airlines LOT Polish Airlines Lufthansa SAS Scandinavian Airlines Swiss TAP Air Portugal THY Turkish Airlines	Aer Lingus Norwegian Air Shuttle Transaero UTAir Virgin Atlantic
Latin America	LATAM (LAN)	Aeromexico Aerolineas Argentinas	Copa Airlines	Caribbean Airways GOL Sky Airline
North America	American Airlines	Delta Air Lines	Air Canada United US Airways	Alaska Airlines JetBlue Virgin America
Future Members Expected to Join	Kingfisher Airlines (on hold) Malaysia Airlines Qatar Airways Sri Lankan Airlines Vueling (possible)	Garuda Indonesia	EVA Air Shenzhen Airlines	
Passenger Volume	324m	554m	679m	Na
Number of Destinations	810	993	1,356	Na

Note: Unaligned airlines excludes low cost carrier (LCC) airlines, who generally have no intention to join a global alliance

Source: oneworld, SkyTeam, Star Alliance, Citi Research

Global alliances have been the main answers to cross-border airline consolidation, given national ownership restrictions throughout the world

Alliance partnerships – only a handful of meaningful airlines unaligned

The three global alliances are well established and have been in place for over 12 years (Star Alliance founded in 1997, oneworld in 1999 and SkyTeam in 2000). See Figure 30 for a list of current and future member airlines globally, as well as major airlines that are not aligned.

The most prominent non-aligned airlines globally are the three fast-growing global hub carriers in the Middle East – Emirates, Etihad and Qatar Airways – although we note that Qatar Airways has recently decided to join the oneworld alliance in 2013. Etihad could consider joining a global alliance but Emirates has stated it will not, even given its soon to be launched code-sharing agreement with Qantas from April 2013.

Most future airline recruitment to the global alliances is likely to be in China, India, the Middle East and Russia

Most future airline recruitment to the global alliances is likely to be in China, India, the Middle East and Russia, where there are currently sizeable airlines that are not aligned.

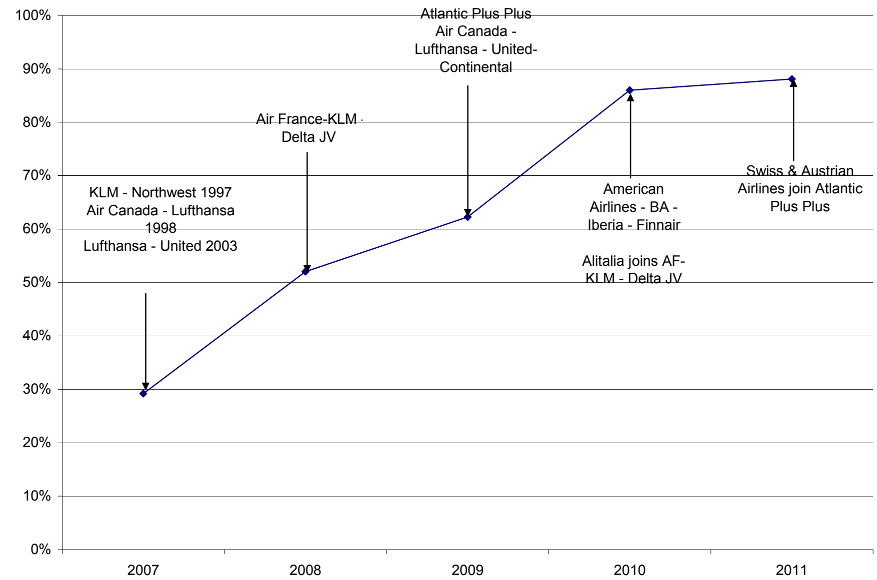
Within Europe, there are few unaligned airlines left, the largest ones being Aer Lingus, Transaero of Russia and Virgin Atlantic – excluding easyJet and Ryanair, who have no desire to join a global alliance.

Aer Lingus used to be a member of oneworld but withdrew in 2007 to focus on its transformation to a no-frills airline on short-haul routes. It reviewed this decision three years later but decided at a Board meeting in 2011 to remain independent and instead pursue an 'open access' strategy – i.e. code-sharing with multiple airlines without being constrained to just the members of one alliance.

As we have discussed, Virgin Atlantic is currently considering joining an alliance, of which only SkyTeam and Star Alliance would be eligible, given British Airways' presence in oneworld.

Within Asia/Australasia, the most prominent non-aligned airlines are Hainan Airlines, China's fourth largest airline group, Air India and Jet Airways in India, and Virgin Australia, which is partly owned by Star Alliance members, Air New Zealand and Singapore Airlines, and non-aligned Etihad Airlines.

Figure 31. North Atlantic Joint Ventures - % Share of Passenger Traffic, 2007-2011



Source: Company Reports, Association of European Airlines and Citi Research Estimates

Already established and delivering benefits on North Atlantic routes, we would expect further JVs in other route areas in order to increase global alliance synergies, manage capacity better and help ensure that alliance members remain within their alliances

Joint Ventures – North Atlantic lessons to extend to other regions

The main JVs are on North Atlantic routes and predominantly between European and North American airlines in the same global alliance, as shown in Figure 31. Air France-KLM has the deepest joint venture on North Atlantic routes, having initially started in 1993 between KLM and Northwest Airlines, and focused on profit sharing – unlike the oneworld and Star Alliance North Atlantic JV's, which are based on revenue sharing.

The airlines are generally coy about the benefits they derive from these JVs, probably because they have reluctantly been granted anti-trust immunity by the US and EC authorities, who reserve the right to re-visit this immunity should there be any signs of abuse. However, IAG has targeted annual benefits of €150m by 2015 based on market share gains, especially of premium traffic. As of the first 18 months of its JV, it claimed a 1.6 point increase in trans-Atlantic premium market share to 26.5% and a 1.0 point increase in trans-Atlantic non-premium market share to 20.4%. We estimate that these targeted synergies would equate to c.4% of IAG's North Atlantic revenue by 2015, which is consistent with the 4-5% claimed by other North Atlantic JV's. We believe that these North Atlantic JVs have the added benefit of disciplining capacity because only three JVs control c.90% of capacity (see Figure 31).

The next set of joint ventures have started on routes to/from Asia and Australasia, although at the moment they are country-specific – e.g. the BA/Qantas JV on routes to/from Australia and New Zealand (which has been in place since 1995 and which will be terminated in March 2013 when Qantas starts code-sharing with Emirates on European routes) and Europe-Japan JVs concerning BA/JAL to/from Japan being planned. These and other future JVs are unlikely to be nearly as large or as important as the North Atlantic JVs but they are a necessary step to increase global alliance synergies and help ensure that global alliance partners remain within their alliances rather than defect.

Figure 32. Global Airlines Major Joint Ventures by Region and Major Routes, 2012

Region	oneworld	SkyTeam	Star Alliance	(Partly) Unaligned
North Atlantic	Joint Business Agreement (2011): - American Airlines - British Airways - Iberia US$7.9bn revenue	North Atlantic (2009): - Air France - Alitalia - Delta Air Lines - KLM US$11.5bn revenue	A++ (2010): - Air Canada - Austrian Airlines - Lufthansa - Swiss - United Continental US$10bn revenue	
Trans-Pacific	Asia, China and Japan to USA, Canada, Mexico (2011): - American Airlines - Japan Airlines (JAL)		Singapore, HK and Japan to USA (2011): - ANA - United Continental	Australia-USA (2011): - Delta Air Lines - United Continental
Intra-Asia				Singapore-Australia (2012): - Singapore Airlines - Virgin Australia China-Hong Kong - Air China - Cathay Pacific (Dragonair)
Europe to Asia Pacific	Europe-Australia JSA (1995-2013): - British Airways - Qantas Europe-Japan (2012): - British Airways - Japan Airlines (JAL) - Finnair from 2013	Europe-China planned (2012): - Air France - China Eastern - China Southern	Europe-Japan (2012): - ANA - Lufthansa - Austrian (to join) - Swiss (to join)	Europe-Australasia (2012): - Etihad - Virgin Australia
Europe to Latin America	Europe-Latin America (2006): - Iberia - LAN Ecuador - LAN Peru			
Europe			Germany-Scandinavia (1995): - Lufthansa - SAS	
Europe-Middle East				Europe-Middle East/Asia (2011): - Air Berlin - Etihad
Europe-Africa		Africa-Europe-US (1997): - Kenya Airways - KLM		

Note: British Airways-Qantas JSA will end in March 2013

Source: Company Reports

Container Shipping

Consolidation Conundrum

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Liner consolidation is a journey, not an end

Consolidation has been a constant in the liner trades for more than a century. The need to achieve economies of scale, improve service frequency and breadth, overcome high barriers to entry, especially significant amounts of investment capital, achieve freight rate stability, and cushion the impact of excess capacity from a new entrant, are amongst the many reasons put forth by the industry for forming alliances, embarking on M&A activities, or simply growing organically to gain market share.

The economic justification for consolidation is that the long-run average cost curve for liners is downward sloping, so scale benefits lead to lower costs for liners and lower prices for customers. At the same time, short-run marginal costs decline sharply due to the high fixed cost nature of the business so, in a free-market environment, the strategy of individually pursuing short-term profits may lead to unsustainable collective long-term losses for the industry.

Liner consolidation should be seen in the context of industry developments – liners need to achieve scale, shippers need better service, and regulators have the objective of preventing unfair competition. The gradual abolishment of the conference system and the mixed success of M&A attempts over the past 15 years have led to today's industry structure comprising loose global alliances of mid-sized members co-existing alongside large, independent players. Future market share consolidation may be achieved through organic growth rather than M&A.

Cartels are good? A century of controversy.

Liner conferences are groups of shipping companies which essentially control capacity and freight rates on a given trade route. The first liner conference was the UK to Calcutta conference, set up in 1875, based on the belief that unrestricted competition in the liner trades was undesirable. The conference was established following a period of severe over-capacity after the introduction of steam propulsion and the opening of the Suez Canal in 1869. Over the next 50 years, liner conferences spread to almost every liner trade globally and were the most common forms of "liner consolidation" (other forms are discussed on the next page).

The benefits and costs of liner conferences have been debated for well over a century, and we reproduce the common arguments on Figure 33. The arguments remained largely the same throughout the century, and the general conclusion was that the benefits from liner cooperation far outweighed the costs, though the abuse of higher market concentration should be kept in check through competition laws.

Figure 33. Liner Conferences – Advantages and Disadvantages

Advantages	Disadvantages
Ability to overcome high investment costs by pooling together assets/capital	Possibility of charging excessive rates due to strong bargaining position
More frequent sailings by pooling together a large number of vessels	Less incentive to care for cargo due to lack of need to compete
Better quality ships as fleet maintenance enjoys economies of scale	Arbitrary nature of the settlement of claims
Wider coverage of ports with a larger number of vessels	Lack of adequate notice of freight rate changes
Greater stability of freight rates	Secrecy of conference operations; difficulty in obtaining tariffs
Ability to forecast with more certainty and provide for future trade growth	More resources to prevent non-conference liners from entering the trade
Lower costs as wasteful competition and excess capacity are avoided	Little difference in bargaining power whether customers have large or small volumes

Source: Citi Research

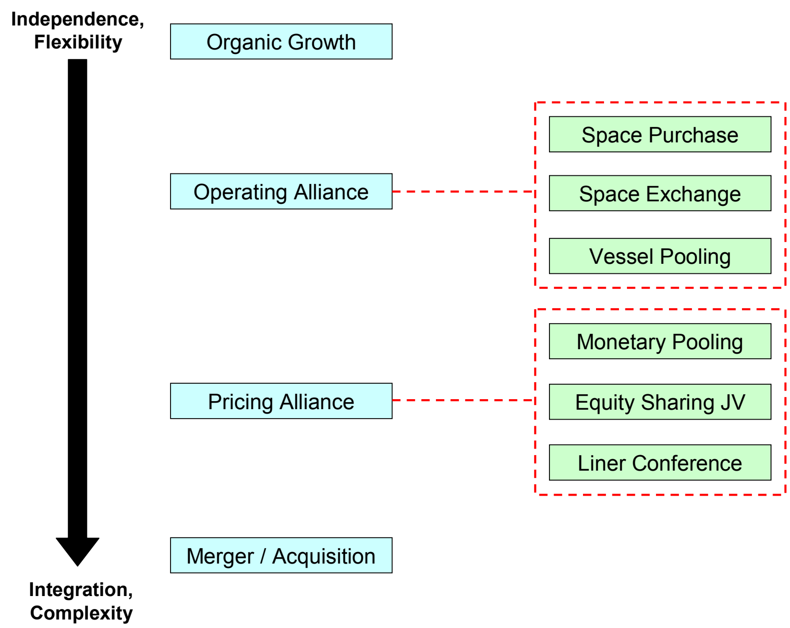
Despite their cartel-like behaviour, liner conferences dominated the history of liner trades for more than 130 years. Special exemptions were made in competition laws to allow for conferences to continue operating. Despite their ability to limit competition, restrict customers' choices, and control pricing, liner conferences were also structured to bring advantages to customers and arguably facilitated global trade by weeding out excessive costs and overcoming high investment barriers.

The desire to consolidate inspired many forms of alliances

Consolidation in liner trades is usually inspired by individual members' desires for integration and group synergies balanced against independence and flexibility. This has given rise to many forms of consolidation, starting with the basic space-purchase agreement to the complex liner conferences. Liners may simultaneously be engaged in different forms of alliances with different partners. Thus, liner consolidation is complicated by multiple inter-linkages which blur the line between friend and foe. We show the spectrum of liner consolidation activities on Figure 34 below. We also summarise on Figure 35 – in very simple terms – the various types of shipping alliances, characteristics, advantages, and disadvantages.

Container shipping alliances are a halfway house between fully independent operators and full consolidation, by attempting to reduce industry fragmentation and achieve some scale benefits. This is commonly practised in deep-sea East-West routes where capital requirements are higher and unrestricted competition may be undesirable for trade participants – shippers and carriers alike. However, striking a balance between independence and integration, and maintaining harmony and common purpose between alliance members, often appear difficult. Moreover, in more integrated alliances, the lack of accountability, lack of incentive to be efficient, and inequitable distribution of benefits (stronger members supporting weaker ones) remain thorny issues between members.

Figure 34. Spectrum of Liner Consolidation



Source: Citi Research

Figure 35. Types of Liner Alliances – Description, Characteristics, Advantages and Disadvantages

Type of alliance	Basic description	Schedule coordination	Vessel sharing	Revenue/profit sharing	Joint marketing	Price-setting	Advantages	Disadvantages
Space purchase	Selling capacity to another liner	No	No	No	No	No	- Seller secures stable income for some cargo space - Seller delays the entry of new competitors by offering smaller amount of committed capacity - Buyer overcomes cabotage laws especially for feeder services	- Seller introduces a new competitor to the trade - Seller has less capacity to commit to customers
Space exchange	Exchanging cargo space between independently-operated liner services. Liners are responsible for the services they operate but not their partners'	Yes	No	No	No	No	- Broadens network coverage with little additional asset commitment - Reaps economies of scale on existing services - Minimises unnecessary duplication of services through schedule coordination	- Higher start-up costs due to need for schedule coordination - Requires more coordination in service levels, pricing, reliability
Vessel pooling	Liners pool their vessels and operate a joint service	Yes	Yes	No	No	No	- Lowers entry barrier for small and mid-sized operators who would otherwise not be able to enter some trades due to high capital investment - More flexibility in launching multiple sub-services based on vessel characteristics and compatibility	- Loss of individual cost accountability - less incentive to be individually cost-efficient - Loss of service independence - less incentive to engage in service differentiation - More complicated to execute, less flexible to respond to market changes
Monetary pooling	Similar to vessel pooling, but with additional clauses to share revenues or profits	Yes	Yes	Yes	Maybe	No	- Members have a common incentive to maximise revenue/profits, so unused space is re-allocated within the group - Little incentive to engage in destructive pricing strategies	- Potential for members to free-ride on others since revenue/profit is shared under a pre-determined formula - More complicated to execute, less flexible to respond to market changes
Equity sharing JV	Members commit capital to form a separate JV entity that operate vessels, with a separate marketing team	Yes	Yes	Yes	Yes	No	- Minimises internal competition as there are no separate marketing identities	- More complicated to execute, less flexible to respond to market changes, difficult to terminate - Separate management team may be more costly to maintain; decisions may also require more levels of approvals - Difficult to reach consensus on strategic direction of the entity if members have different ideologies
Liner conference	Members coordinate pricing and capacity deployment strategies, often subject to competition laws	Yes	Yes	Yes	Yes	Yes	See Figure 33 on Page 31	See Figure 33 on Page 31

Source: Citi Research

Competition laws prohibits pricing alliances

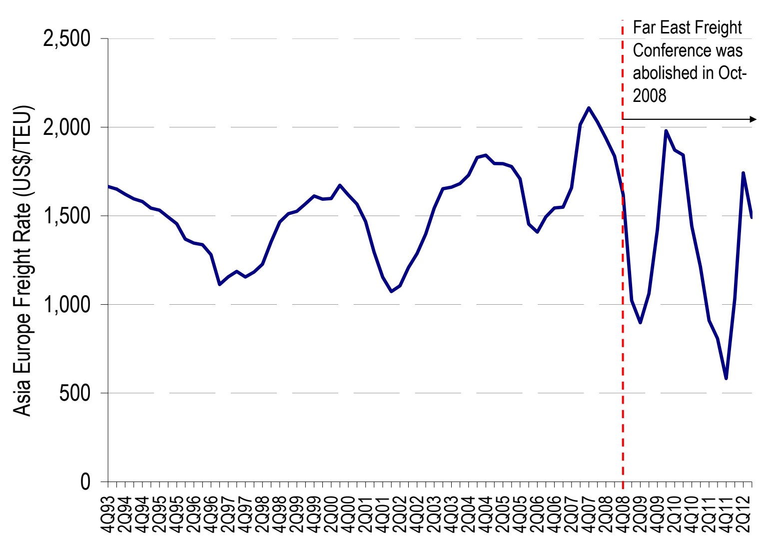
It was only in the last 15 years that the power of liner conferences became significantly diminished as anti-trust laws gained prominence. Pricing alliances were outlawed and operating alliances came under new restrictions.

The exemption from competition laws that liner conferences enjoyed for well over a century came under scrutiny as competition laws evolved. Under the US Ocean Shipping Reform Act 1998, conference tariffs no longer have to be filed but have to be published publicly, confidential service contracts were permitted, independent rates action was permitted by conference members, and conference capacity management remained disallowed. However, in a later review, the Federal Maritime Commission acknowledged that "discussion agreements" among liners and the higher market share of a diminishing number of surviving carriers may provide opportunities to tacitly manage capacity, and hence freight rates.

In Europe, the Far East Freight Conference was officially abolished in October 2008 and liner shipping consortia enjoyed block exemption from competition laws if they have a combined market share of <30%, otherwise a detailed assessment must be carried out to assess whether there is infringement of competition laws. Under the EU regulations, liners may coordinate sailing schedules, engage in slot purchase or exchanges, pool vessels, or adjust capacity in response to market conditions. However, liner consortia are not allowed to fix prices, limit capacity for non-market reasons, or allocate markets or customers.

The value of pricing alliances was widely discussed following the abolishment of the Far East Freight Conference. The shipping crisis which followed led to very intense competition between liners under free market conditions, and depressed freight rates to unsustainably low levels in 2009 not seen during the days of the conference. Rates then surged dramatically to very high levels in 2010 as capacity deployment lagged inventory re-stocking. The Far East Freight Conference had helped to stabilise freight rates and allowed better forward planning of capacity in the past, benefitting shippers and carriers – the abolishment of the conference led to unstable freight rates from 2009-2011 under free market conditions.

Figure 36. Asia-Europe Westbound Freight Rates – More Volatility after FEFC was Abolished



Source: Containerization International, Alphaliner, Citi Research

Rise of Independents and unsuccessful M&A

Over the past 15 years, the imperfections of conferences, constant desire for scale efficiencies, stronger competition laws, and cyclical fortunes of liners have spurred the industry to pursue M&A activities and forge wider but looser alliances. Large, independent container shipping companies mostly unaligned with operating alliances also emerged. We discuss these trends in more detail below:

Rise of independent liners

Independent liners – unaligned to any major conferences – have existed throughout the history of liner trades but remained relatively small until the last 15 years. Under the conference system, independent liners faced immense challenges securing customers because conferences had ample resources to restrict their entry into protected trades, for example by introducing "deferred rebates" to customers who stayed loyal to the conference throughout the year (even the smallest amount given to a non-conference ship would disqualify the shipper from the rebate) and by keeping a fleet of "fighting ships" – funded by the conference – sailing side-by-side with non-conference ships to force the independent liners out of business.

The last 15 years have seen independent liners such as MSC, CMA CGM and Evergreen Marine expanding rapidly and becoming some of the 10 largest liners globally. These liners were generally well-funded, rode on the trend of liberalisation of liner shipping (abolishment of conferences), and targeted shippers who wanted to negotiate their own rates rather than be controlled by strict conference rules. Independent liners were also able to provide safe and reliable services at competitive rates, so the "deferred rebate" no longer seemed as attractive.

M&A activities occurred in spikes; mixed success

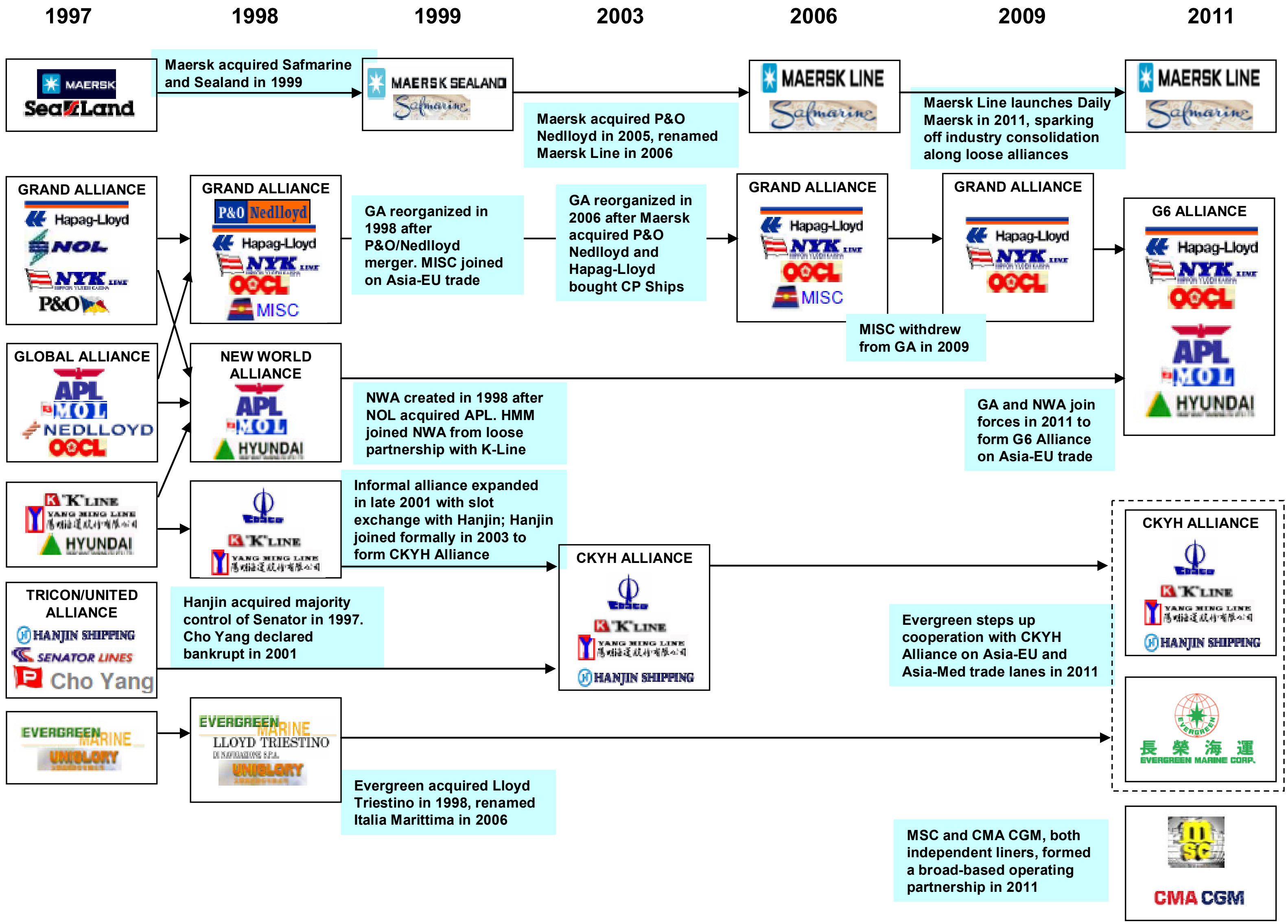
The liner industry also engaged in M&A activities over the last 15 years, starting with the merger of P&O and Nedlloyd and followed by a wave of other mergers and acquisitions, mostly during the periods 1997-1999 and 2005-2007. The imperfections of operating alliances, differing marketing philosophies, and introduction of total logistics thinking (and other complex supply chain demands as trade became more globalised and urgent) resulted in a need to build scale at a faster pace, integrate marketing and IT systems, and also integrate land-side logistics in addition to shipping networks.

Liners scaled up by acquiring their competitors. However, large-sized acquisitions have mostly failed to deliver benefits as integration was complex and slow (e.g. Maersk and P&O Nedlloyd), restructuring proved more difficult than imagined (e.g. Evergreen and Lloyd Triestino), or debt burdens became too large to handle (e.g. NOL and APL). No major M&A has taken place since 2007, as the industry realised that integration difficulties outweighed intended synergies.

Operating alliances are disrupted by M&A

The flexible but non-binding nature of operating alliances delivered benefits to members but were also often disrupted by M&A activities as some members left alliances or other alliances became stronger. For example, NOL left the Grand Alliance and switched allegiance to the newly-created New World Alliance in 1998 after acquiring APL. The Grand Alliance was significantly weakened in 2006 after the acquisition of Royal P&O Nedlloyd by Maersk resulted in RPONL exiting the alliance, but mitigated by the purchase of CP Ships by Hapag-Lloyd.

Figure 37. Container Shipping – Development of Alliances, M&A Activity



Source: Company Reports, Citi Research

Figure 38. Container Shipping – Major M&A Transactions and Post-Transaction Outcomes

Year	M&A Transaction	Capacity Involved	Rationale	Transaction Size	Post Transaction Outcome
1997	**P&O merges with Nedlloyd to form P&O Nedlloyd**	Combined capacity of 224,000 TEU	Both P&O and Nedlloyd were amalgamations of different lines with long histories. The merger was a radical attempt by the chairmen of both companies to become more competitive in the global market. It created the second biggest liner globally after Maersk.	Formed as a 50/50 joint venture	The combined entity acquired more companies, including Blue Star Line, and Harrison Line. It was the largest partner in the Grand Alliance and remained second largest liner in the world, until its acquisition by Maersk.
1997	**NOL acquires APL**	Combined capacity of 167,000 TEU	NOL acquired the APL franchise and continued to use the APL brand until today. The combined entity was the fifth largest liner globally and complemented each other in network configuration and terminal interests.	US$825mn	As a result of the downturn shortly after APL acquisition, and significant debt arising from the acquisition, NOL's balance sheet became stretched. It raised equity in 1999.
1997	**CP Ships acquires Contship and Lykes Lines**	Combined fleet of 33 ships totaling 38,000 TEU	Grow transatlantic base, expand geographical scope, seek operational synergies.	Not available	Believed to be rather successful. CP ships went on to acquire Ivaran Lines and Australia-New Zealand Direct Line in 1998, Italia/D'Amico in 2002, before being acquired by Hapag-Lloyd in 2005.
1998	**Evergreen acquires Lloyd Triestino**	Not available	Evergreen saw potential in acquiring the Italian liner and restoring it to its past glory, by introducing best practices in its own company to the struggling liner. The acquisition was at the invitation of the Italian government - and the then Prime Minister was a personal friend of Evergreen's chairman. Evergreen was the sole bidder as other bidders were concerned about LT's mounting losses.	US$35mn and took over US$100mn debt	LT remained loss-making for many years after the acquisition, with Evergreen chairman saying Evergreen had been given the "booby prize" with Lloyd Triestino, with the line "grossly mismanaged" and being in a much worse plight than they had originally realised.
1999	**Maersk acquires Safmarine and Sealand**	Maersk-Sealand combined fleet of 250 ships, 500,000 TEU. Safmarine has a fleet of 50 vessels and 80,000 TEU	Acquired Safmarine to expand network to include the strong base in South Africa. Acquired Sealand - a close alliance partner - to achieve even greater operational synergies by merging sales, marketing, administration and IT systems.	Acquired Safmarine for US$240mn and an assumed tax friendly debt of US$115mn (1.2x P/B at that time). Acquired Sealand for US$800mn.	Achieved desired scale benefits; Safmarine continued to deliver good results after the acquisition as exports from South Africa were strong.
2000	**CSAV acquires Norasia**	Combined fleet of around 85,000 TEU	To gain critical mass to compete on a global scale. The deal allowed CSAV to diversify from being a reefer operator to become a mainstream container ship operator.	US$38mn	Achieved desired diversification, though two years later Norasia's "important profits" turned into losses as higher-capacity ships were introduced into Asian trade routes.
2002	**Maersk acquires TORM Lines**	Torm operated 8 container ships	While the acquisition size was small, it was strategic: Torm may help Maersk penetrate West Africa break bulk trade which Safmarine failed to achieve.	US$8.3mn	The acquisition boosted Safmarine's conventional shipping services to West Africa, becoming the biggest carrier on West African trades.
2005	**Maersk acquires Royal P&O Nedlloyd**	RPONL had a fleet of 160 vessels totaling 635,000 TEU	Gain scale - the acquisition created the largest shipping company in the world with ~18% market share.	US$3.4bn	Following the RPONL acquisition APM considered it had sufficient scale and withdrew from the global conference system. In the 18 months post acquisition of RPONL, APM lost c.4pp of the combined Maersk/RPONL market share, or about 22% of the combined customer base. A radical re-organisation was announced in January 2008 to rebuild profitability by introducing global standard processes supported by a single IT application.
2005	**Hapag-Lloyd acquires CP Ships**	Combined fleet of around 413,000 TEU	Gain scale - the acquisition created the 5th largest shipping company in the world and the biggest member in the Grand Alliance. The acquisition was expedited by the acquisition of Royal P&O Nedlloyd by Maersk, with the former leaving the Grand Alliance.	US$2.0bn	The combined entity sank into losses in 2006 due to a combination of higher charter, fuel and inland transport costs and the impact of its acquisition of CP Ships.
2005	**CMA CGM acquires Delmas**	Combined fleet of around 470,000 TEU	Delmas was recognised as a specialist in Africa. The acquisition allowed CMA CGM to offer a complete range of services particularly on North-South routes where the group was less developed.	US$700mn	The acquisition enhanced CMA CGM's network with African destinations through Delmas, which was retained as a separate brand.
2007	**CMA CGM acquires Cheng Lie Navigation**	CNC had a fleet of 16 vessels, varying between 750-1700 TEU	To fill the network gap for CMA CGM by transforming CNC from a "conservative" regional player focused on Taiwan to a top three Intra-Asia operator. CNC took over all feeder activity from CMA CGM in Asia.	US$159mn	CNC transformed from a pure Intra-Asia network model to a feeder for CMA CGM under the hub and spoke model. While it managed to increase CMA CGM's Intra-Asia presence, it did not achieve its goal of becoming a top three player in Intra Asia.

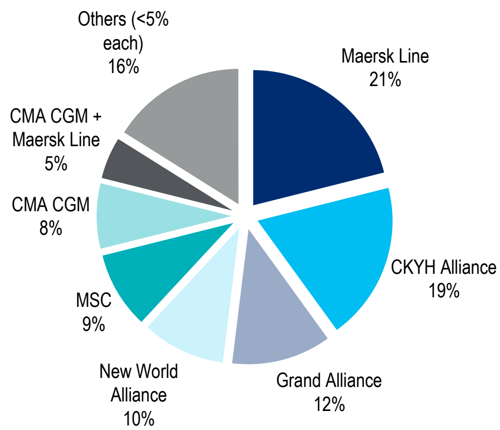
Source: Company Reports, Citi Research

"Daily Maersk" prompted enlarged imperfect alliances

The latest round of "consolidation" took place over the last 12 months, beginning with the launch of "Daily Maersk" by Maersk Line in Oct-2011, offering daily services from Asia to Europe at fixed schedules with a punctuality guarantee. "Daily Maersk" entailed: ***i)*** mega-sized vessels that offer significant economies of scale, ***ii)*** frequent departures from major ports, ***iii)*** fixed schedules with refunds for late delivery; and ***iv)*** no surcharge for reliability. The intention was to use low rates and slot cost advantage to squeeze out the weaker competitors for good.

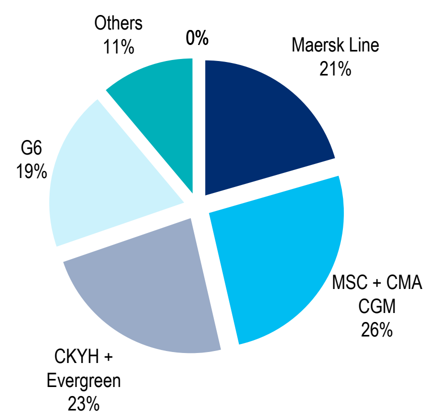
"Daily Maersk" prompted the industry to review their strategies. By the end of 2011, the realisation that no other player could match the scale of Maersk Line's offering led to ***i)*** a broad-based operating partnership between MSC and CMA CGM; ***ii)*** Grand Alliance and New World Alliance joining forces to form the G6 Alliance on Asia-Europe; ***iii)*** Evergreen stepping up cooperation with CKYH Alliance on Asia-Europe. The Asia-Europe trade route evolved from one dominated by Maersk Line and several other mid-sized consortia, to an apparent oligopolistic structure.

Figure 39. Asia-Europe West-Bound Market Share – 4Q11



Source: Drewry, Citi Research

Figure 40. Asia-Europe West-Bound Market Share – 4Q12



Source: Alphaliner, Citi Research

The hastily-arranged partnerships and expanded alliances in response to Daily Maersk resulted in some semblance of rates stability returning to Asia-Europe. Liners were able to push through successive rounds of freight rate increases from March to May 2012 despite low utilization levels. While rates declined since May-2012, liner' capacity discipline remained largely intact and liners were able to achieve partial success on another round of rate hikes in Nov-2012.

Imperfect but enlarged alliances and organic growth are now preferred over complex M&A

The imperfections of operating alliances suggest that, theoretically, liners can compete on price even within their respective alliances. However, enlarged alliances may be able to better match capacity with demand and offer members downside protection to freight rates, which may otherwise decline to unsustainably low levels under a free-market environment if excess capacity is not curtailed.

In the current environment, further M&A is unlikely as transactions over the last 15 years did not deliver the promised benefits, and current low asset prices may lead to significant impairments during asset valuations. Instead, liners may be content to stay within their imperfect but enlarged alliances in the near term – the next-best option in the absence of M&A – while pursuing medium to long-term organic growth.

Figure 41. Bigger liners tend to have stronger balance sheets and more new ship orders

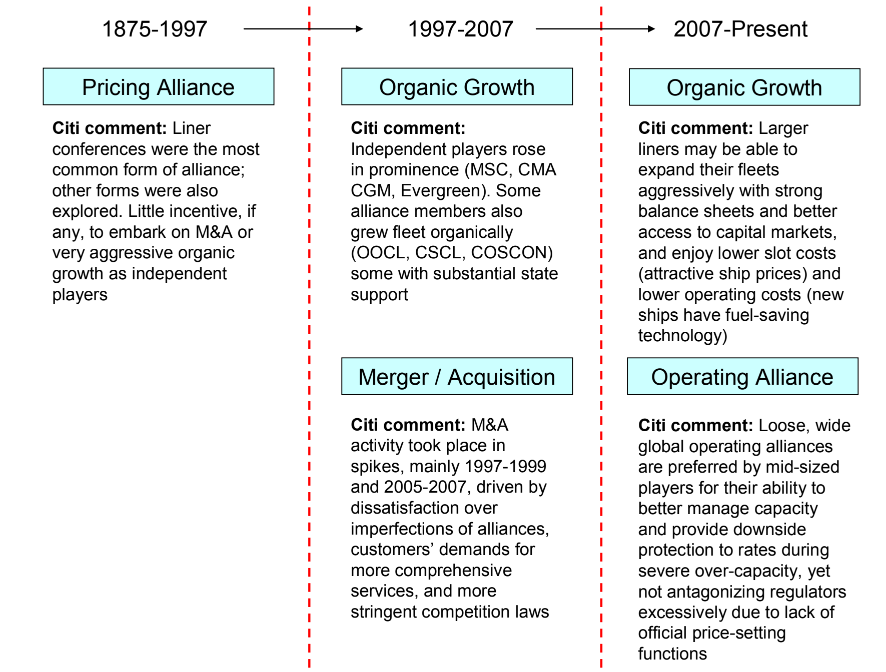
	Market Share	Order Book to Fleet Ratio	Net Debt to Equity
Maersk	16%	17.4%	0.43 *
MSC	13%	12.8%	NA
CMA CGM	8%	10.6%	1.45
COSCON	4%	53.5%	0.84
Evergreen	4%	20.7%	0.53
Hapag-Lloyd	4%	16.6%	0.53
Hanjin	4%	30.9%	5.07 *
APL	4%	37.9%	1.19 *
CSCL	3%	17.6%	0.48
MOL	3%	17.2%	1.33 *
OOCL	3%	29.3%	0.15
Hamburg Süd	3%	41.2%	NA
NYK Line	3%	12.9%	1.63 *
HMM	2%	25.3%	4.62
Yang Ming	2%	16.5%	2.38
K Line	2%	5.6%	1.44 *
Zim	2%	46.6%	13.54
PIL	2%	23.1%	NA
UASC	2%	0.0%	NA
CSAV	2%	12.8%	0.79
Wan Hai	1%	12.2%	0.14
X-Press Fdrs	1%	4.4%	NA
TS Lines	1%	0.0%	NA
HDS Lines	1%	0.0%	NA
NileDutch	0%	21.5%	NA

Net gearing is as at end-2Q12; 3Q12 marked by *

Source: Company Reports, Alphaliner, Citi Research

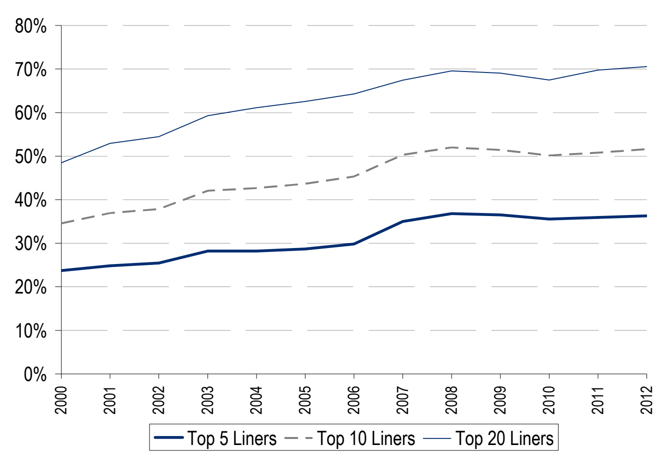
Larger liners (especially those in the Top 10) may be able to expand their fleets aggressively with strong balance sheets and better access to capital markets, and also enjoy lower slot costs (attractive ship prices) and lower operating costs (new ship designs incorporate the latest fuel-saving technology). We expect the Top 20 liners to pull away in market share concentration over the next 10 years.

Figure 42. Liner Trades – Preference for Consolidation; Different Formats in Different Periods



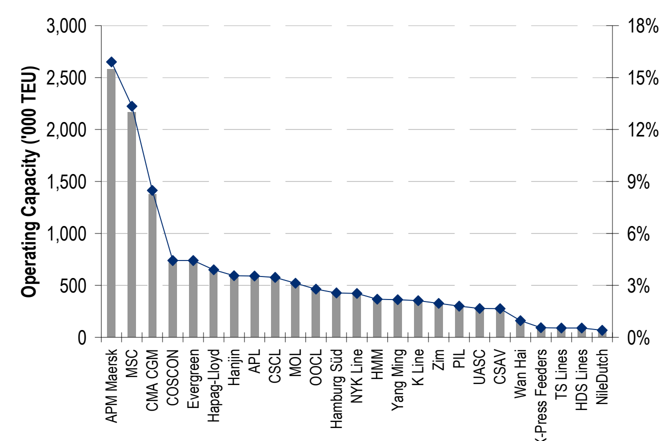
Source: Citi Research

Figure 43. Market Share Consolidation History in Container Shipping



Source: Containerization International, Citi Research

Figure 44. Existing Liner Market Share Breakdown by Capacity



Source: Alphaliner, Citi Research

The "absorption challenge" may test the effectiveness of the current market structure

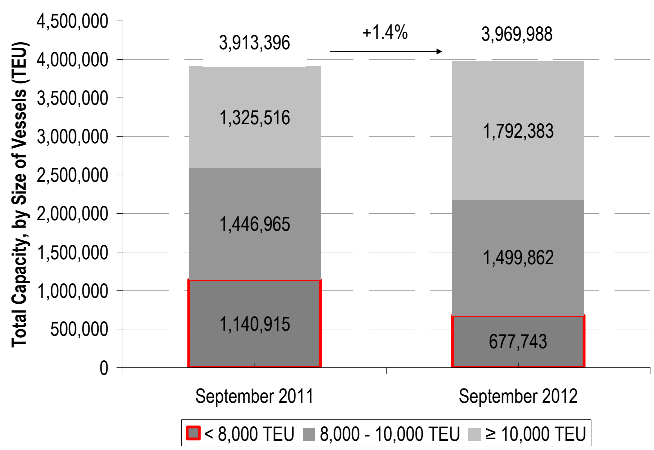
The effectiveness of the current market structure – loose global alliances of mid-sized players co-existing alongside large independent liners – may be tested in 2013 when even more Ultra-Large Container Ships are delivered into Asia-Europe.

Slow-steaming, idle capacity, and vessel cascading were tools that liners used to manage capacity. However, the limit to cascading is approaching: the total capacity of Ultra-Large Container Ships (which can only be deployed meaningfully on Asia-Europe) scheduled for delivery for the rest of 2012 and 2013 exceeds the total capacity of vessels <8,000 TEU in size on Asia-Europe. So, if all the ULCS scheduled for delivery in the rest of 2012 and 2013 are deployed in Asia-Europe, the entire fleet of vessels <8,000 TEU in size from Asia-Europe and some vessels in the 8,000-10,000 TEU size range will first have to be displaced. This is the "absorption challenge".

Ships in the 8,000-10,000 TEU size range currently on Asia-Europe may have to look for alternative deployment opportunities, but there are not many cascading options. The Transpacific is a viable option (>85% of ships in this size range are deployed in Transpacific or Asia-Europe) but this may potentially drive down utilisation levels and spot rates – which liners may be reluctant to ahead of annual contract negotiations. Other trade lanes (LatAm-related or Asia-Middle East) may not be large enough to sustain cascading without under-utilization. Further slow-steaming, skipped sailings, and vessel idling of 8,000-10,000 TEU ships may become necessary.

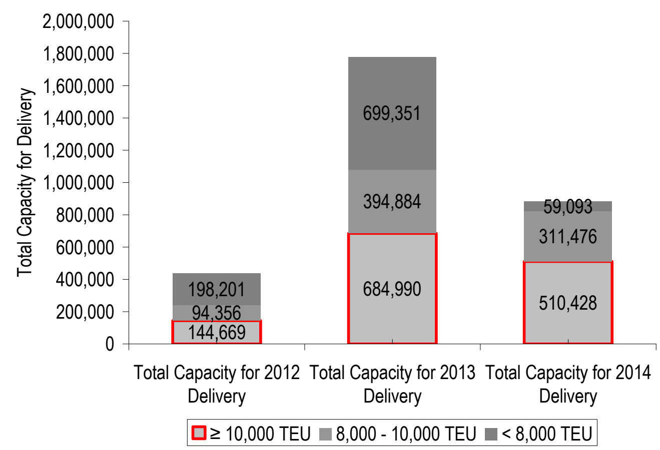
The litmus test for the current market structure lies in the way additional deliveries of ULCS into Asia-Europe can be managed without triggering an intense rate war under a free market system as utilisation levels fall due to weak demand.

Figure 45. Asia-Europe Liners – Cascading of Smaller Vessels Helped Limit Supply Growth



Source: Alphaliner, Clarkson, Citi Research

Figure 46. Container Shipping – Total Scheduled Capacity Delivery by Vessel Size



Source: Alphaliner, Clarkson, Citi Research

Liner consolidation vs. airline consolidation

Liner consolidation has some parallels with airline consolidation. We compare them in Figure 47 below:

Figure 47. Comparison Between Liner Consolidation and Airline Consolidation

Industry Characteristic	Container Shipping	Airline
Business model	B2B - Business to Business	B2C - Business to Consumer
Ability to manage capacity	Allowed under operating alliances and under "discussion agreements", usually in response to demand trends.	Usually not managed between airlines but on a G to G level through bilateral air traffic rights.
Capacity visibility	Shipping schedules are published in advance but often subject to short-term changes, so capacity visibility is limited.	Airline schedules are published in advance and industry participants can foresee short-term capacity trends, up to 6 months.
Ability to set prices	Allowed under liner conferences, until these were outlawed over the past 15 years. Operating alliances nowadays do not allow for rate-setting.	Not allowed under airline alliances.
Equity ownerships	Few cases, if any, of cross-equity ownerships. However, equity-sharing JVs were common in the past.	Taking minority equity stakes (e.g. SIA's 10% stake in Virgin Australia) or even cross-equity stakes (Air China and Cathay Pacific owning each other) are common.
Foreign ownership restrictions	Few restrictions, if any. However, nationalistic interests may arise in M&A, e.g. NOL's attempt to acquire Hapag Lloyd in 2008.	Usually subject to some foreign ownership restrictions due to nationalistic interests.
Operating alliances	Range from loose forms of cooperation to closely integrated alliances.	Usually more integrated for the big alliances (Star, oneworld, Skyteam) with high barriers to entry and exit.
System integration	Distribution systems and marketing platforms are seldom integrated between alliance partners	Reservation systems, loyalty programs, and even service standards must be integrated between alliance partners
Industry behaviour	Highly unpredictable; industry losses are usually due to irrational competition driving down freight rates to undesirable levels.	Also unpredictable, but less so than shipping. Losses are usually due to weak demand or high operating costs, rather than irrational competition.

Source: Citi Research

The airline sector appears more fragmented than shipping due to foreign ownership restrictions and the existence of one or more large “flag carriers” in every country, yet passenger air fares do not fluctuate as wildly as shipping freight rates. We believe airlines’ greater transparency in capacity deployment and greater degree of integration of distribution systems under operating alliances are important reasons why the airline industry displays more features of a consolidated industry than the shipping industry – i.e. ultimately, it is substance over form.

The recent rise of large unaligned airlines, such as Emirates, Etihad and Virgin Australia, is analogous to the rise of large independent liners, such as MSC, CMA CGM, and Evergreen over the past 15 years. Independent airlines such as these target customers who don’t mind leaving aside their loyalty incentives with the alliances because of more competitive pricing, better service, or improved reliability.

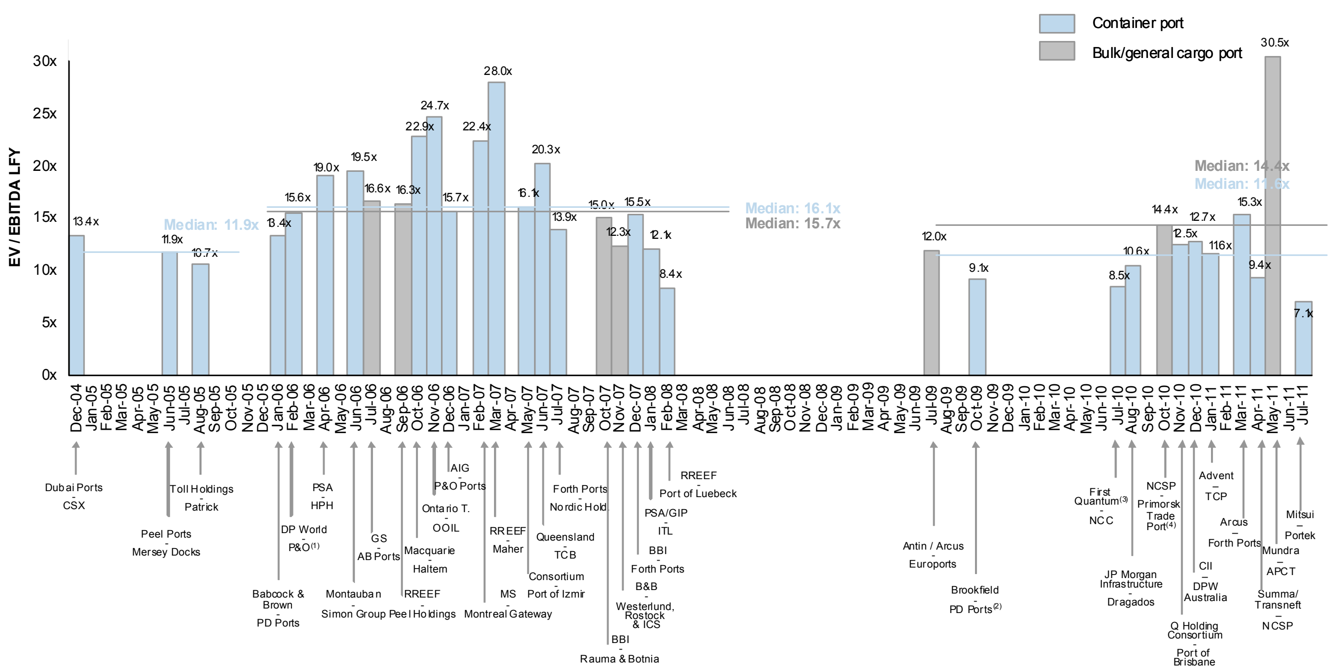
The history of container shipping may reveal some insights into the future of airlines. The flexible and usually non-binding natures of shipping alliances in the past have allowed members to regroup to respond to the rise of independent liners. Similarly, the rise of large unaligned airlines is now prompting the airline industry to question the relevance of the traditional alliances and adopt a more flexible approach, e.g. Qantas and British Airways ended their long-standing partnership on the Kangaroo route when Qantas teamed up with Emirates in Sep 2012.

Container Ports

A consistently active segment for M&A dominated by financial buyers in more mature markets

Container port M&A has been one of the most active segments of activity in both development and emerging markets though mostly at the individual terminal level rather than large transactions. A selection of multiples for some of the key port sector transactions since December 2004 is presented below in Figure 48.

Figure 48. Selected Precedent Port Transactions Dec 2004 – July 2011 (EV/LTM EBITDA)



Notes: Implied enterprise values at exchange rate on announcement date. LFY = Last completed financial year of target.
(1) DP World / P&O transaction considered as 28 Jan 08 (date of final, revised offer) rather than 29 Nov 05 (date of initial offer).
(2) PD Ports FV includes (as of YE 30-Jun-09) £100m bank debt facilities, £215m securitised loan notes as per balance sheet plus estimated equity value of £0m; LTM EBITDA as of 30 June 2009 of £35m used.
(3) NCC Net debt and EBITDA based on 2009E estimates, as per Company information. EBITDA excludes Illyichevsk contribution.
(4) Primorsk Trade Port EBITDA of USD 150m as per management estimates.

Source: Company Reports

Combinations of container terminals generate few cost synergies other than overhead elimination, best practice transfer and customer relationships. The logic of most port sector M&A has been either to increase presence in target markets (usually emerging) or due to different types of buyer (strategic vs. infrastructure fund) valuing the same asset in a different way, perhaps weighting long term dividend potential more than earnings potential.

We see several sources of potential future supply

Current ownership of container terminals is varied and includes public entities and private companies including liner companies, specialist operators and financial buyers. We expect the supply of assets to come from three sources:

- Privatisation of state owned terminals to improve productivity and to increase investment.
- Divestments by Terminal Operators either to arbitrage valuation differences between different types of terminal assets to re-cycle capital for investment into markets of interest such as India, Africa and Latin America. For example, to enhance the growth profile of a maturing portfolio.
- Divestments by Liner Companies. The interests of liner companies date back to when securing adequate capacity and efficient terminal handling was a strategic necessity. We believe these needs can be increasingly met at multi user

terminals and equity interests in dedicated container terminals are no longer essential. In addition, many financially stretched liner companies could also seek to monetise any non shipping assets such as terminals to reduce debts incurred in the build out of container shipping fleets.

Bid or buy?

The key benefit of acquisition rather than bidding for a concession in a new market is that the operator can reduce risk on market entry and establish strong commercial positions more rapidly than by an extended concession bidding process that carries no guarantee of success. Historically, acquisitions have not generated the same long term value as concessions but the ability to extract value faster and at lower risk could make acquisitions more attractive for market entry in some instances. New concessions are either greenfield developments or privatisation/ redevelopment of underperforming infrastructure where the management proposition of a global operator offers the most value add through creating new business and enhancing existing operations. However, such transformation projects can involve changing perceptions of the shipping line customers and the way local markets work so they have time to deliver value.

The following section outlines the container M&A activity in Asia.

Asia

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M&A in the Past Decade

Boosted by its buoyant foreign trade, container throughput in Asia has recorded a CAGR of 27.4% in the past decade and has reached 327m TEU in 2011, or 56% of global port throughput. We attribute increasing M&A activity within the region to the rapid trade growth. Global terminal operators such as HPH, PSA, DP World and APMT and Chinese state-backed conglomerates such as COSCO Pacific and China Merchants have been expanding aggressively in Asia in recent years (see Figure 49). We note from Figure 49 that most M&A activity has been strategic in nature unlike the developed markets of North America and Australia.

Most of the M&A has occurred at the individual terminal level; however, there have been a few transactions with Asian operators taking shareholdings in other terminal operating companies (see **Error! Reference source not found.**). Notably, PSA took 20% stake in HPH, which aligned the interests of two Asian terminal giants.

Figure 49. Selected Terminal Acquisitions in Asia (2002 – 2012)

Year	Target	Target Region	Acquirer	Reported Cost	Acquisition Details
2002	Shekou Container Terminals (Phase II)	Shenzhen, China	China Merchants	RMB1.74bn	51% in Shekou berth #3-4
2002	Busan / Kwangyang	Busan, S. Korea	HPH	US$215mn	2.9mn TEU capacity at Busan / Kwangyang
2003	Mundra Container Terminal	Mundra, India	P&O Ports	£120mn	100% stake of Mundra Container Terminal
2003	Yantian Phase III	Shenzhen, China	COSCO Pacific	US$16.7mn	4.45% stake in Yantian Phase III
2003	COSCO-PSA Terminal	Singapore	COSCO Pacific	US$23.1mn	49% stake in COSCO-PSA Terminal
2003	Qingdao Qianwan Terminal	Qingdao, China	COSCO Pacific	US$14.8mn	20% stake in Qingdao Qianwan Terminal
2003	Shanghai Pudong Int'l Terminals	Shanghai, China	COSCO Pacific	US$45.8mn	20% stake in Shanghai Pudong Int'l Terminals
2003	Qingdao Qianwan Container Terminal	Qingdao, China	APMT	US$60mn	20% stake in Qingdao Qianwan Container Terminal
2004	Shekou Container Terminals Ltd	Shenzhen, China	MTL	US$26.1mn	Acquired equity stake in Shekou Container Terminal Phase I
2005	CSX World Terminal 8	Hong Kong	PSA	US$141mn	Acquired 33.34% in CSX World Terminal Hong Kong Limited which in turn holds 100% interest in CSXWT8
2005	Asia Container Terminal	Hong Kong	PSA	US$244mn	31.4% stake in ACT
2005	Shekou Container Terminals (Phase III)	Shenzhen, China	China Merchants	US$37.2mn	100% stake to operate berth #5-7
2005	Guangzhou Nansha Phase II	Guangzhou, China	APMT	Undisclosed	19.6% stake in Nansha Phase II
2006	Quanzhou Container Terminal	Quanzhou, China	COSCO Pacific	Undisclosed	71.43% in joint venture to operate Quanzhou container terminal
2006	Shanghai Pudong Int'l Terminals	Shanghai, China	COSCO Pacific	US$58.12mn	Additional 10% stake in Shanghai Pudong Int'l Terminals
2006	Modern Terminal SCT Phase I	Shenzhen, China	China Merchants	US$101.9mn	Additional 17.5% stake in Shekou Phase I
2007	Gwadar Port	Pakistan	PSA	Undisclosed	40 year concession in Gwadar port
2007	Yantai Gangtong Container Terminal	Yantai, China	ICTSI	Undisclosed	60% stake in Yantai Gangtong Container Terminal Company
2007	Shenzhen Yantian West Port	Shenzhen, China	HPH	US$30mn	Additional 23.33% stake in Shenzhen Yantian West Port
2007	Port of Karachi	Karachi, Pakistan	HPH	Undisclosed	20 year concession to operate port of Karachi
2007	Saigon Int'l Terminals	Saigon, Vietnam	HPH	Undisclosed	70% stake in 50 year concession to develop and operate Saigon Int'l Terminals
2007	Ningbo Beilun Phase II	Ningbo, China	HPH	Undisclosed	49% stake in Ningbo Beilun Phase II
2007	Shenzhen Dachan Phase II	Shenzhen, China	APMT	US$1.06bn	51% stake in Shenzhen Dachan Phase II
2007	Qingdao New Qianwan Container Terminal (Phase 4)	Qingdao, China	DPW / APMT / COSCO	US$1bn	Acquisition DPW-23%, APMT-20%, COSCO-16% stake in Qingdao New Qianwan Container Terminal (Phase 4)
2007	Haicang Terminal	Xiamen, China	CMA CGM	Undisclosed	Acquisition of 30% stake in Haicang Terminal
2007	Busan 2-3	Busan, S. Korea	CMA CGM	Undisclosed	Acquisition of 12% stake in Busan 2-3
2008	Huizhou Quanwan Int'l Container Terminals	Huizhou, China	HPH	Undisclosed	Acquisition of 50% stake in Huizhou Quanwan Int'l Container Terminals
2008	Xiamen Yuanhai Terminal	Xiamen, China	COSCO Pacific	Undisclosed	Acquisition of 70% stake in Xiamen Yuanhai Terminal
2008	Taipei Port Container Terminal	Taipei, Taiwan	Evergreen / Yang Ming	Undisclosed	JV of Evergreen (50%), Wan Hai (40%), and Yang Ming (10%) to operate the terminal
2008	Port of Tianjin	Tianjin, China	CMA CGM	Undisclosed	20% stake in 50 year concession agreement
2009	Ba Ria-Vung Tau Container Terminal	Vietnam	Hanjin	Undisclosed	JV with Saigon New Port for constructing dedicated terminal
2009	Pusan Newport Int'l Terminal	Busan, S. Korea	PSA / Hanjin	Undisclosed	JV between PSA Int'l (60%) and Hanjin (40%)
2010	Yantian Int'l Container Terminals	Shenzhen, China	COSCO Pacific	US$520mn	Purchase of ~10% stake owned by APMT
2010	Qingdao United Container Terminal	Qingdao, China	APL / NOL	US$25.8mn	NOL and SITC formed JV to operate this terminal
2011	HIT / COSCO-HIT / Yantian	Hong Kong, Shenzhen	HPH	HK$5.7bn	8% of HIT, 4% of COSCO-HIT, 4% of Yantian
2012	Ningbo Meishan Container Terminal	Ningbo, China	APMT	US$674.4mn	25% stake with Ningbo Port to jointly invest and operate Meishan Container Terminal, expected to start in Dec 2014

Source: Drewry, Thomson Reuters, Citi Research

Figure 50. Selected Examples of Terminal Operators Taking Shares of Another Terminal Operators (within Asia)

Year	Target	Acquirer	Seller	Reported Cost
2005	17.62% stake of MTL	Wharf / China Merchants	Swire Pacific	HK$2.9bn
2005	30% stake of SIPG	China Merchants	SIPG	Rmb5.57bn
2006	205 stake in HPH	PSA	Hutchison Whampoa	US$4.39bn
2008	5.4% stake in Ningbo Port Company Ltd	China Merchants	Ningbo Port Company Ltd	HK$924mn

Source: Citi Research

Rationale for Asian Ports M&A

Rationale for ports M&A varies by category of generic port investor as illustrated below in Figure 51, as port assets in different geographies and/or at different stages of maturity offer different attractions to different groups of generic port investors:

Figure 51. Key Characteristics for Different Types of Port Investors

	Operators	Carriers	Financial
Focus of Business	Terminal Operation	Container Shipping	Generate Return on Investment
Function of Terminals	Profit Centre	Cost Centre	Investment Assets
Operation Strategy	- Greater efficiency gained by implementing common systems across the terminal network to improve productivity - Extensive terminal networks spread investment risk	- Greater efficiency is gained by integrating the terminal with the wider shipping service network - Extensive terminal networks support shipping activities and strategy	- Serve as financial investor with little involvement in operation - Expand geographic coverage to spread investment risk
Examples	HPH, SPA, ICTSI, DP World	Evergreen, Hanjin, K Line, China Shipping	Macquarie Fund, Arcus Infrastructure,

Source: Drewry, Citi Research

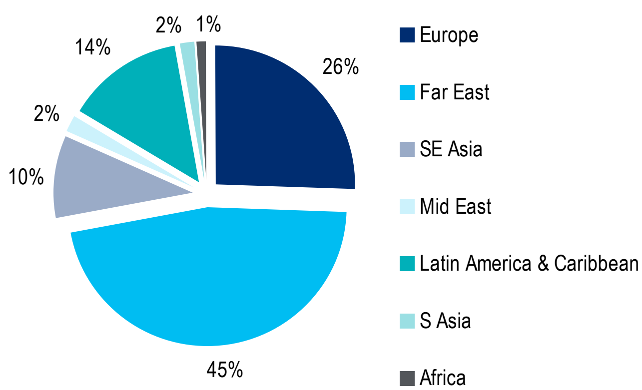
- **Owner Operator – Maintain High Growth and/or eliminate competition**

Portfolio Growth

M&A is a common growth strategy to counter the effect of limited space to expand or of shifting demand. Port location is usually one of the most important factors. Popular targets are either located in strong economic hinterlands with baseline traffic, or close to the main shipping lane with transshipment volume.

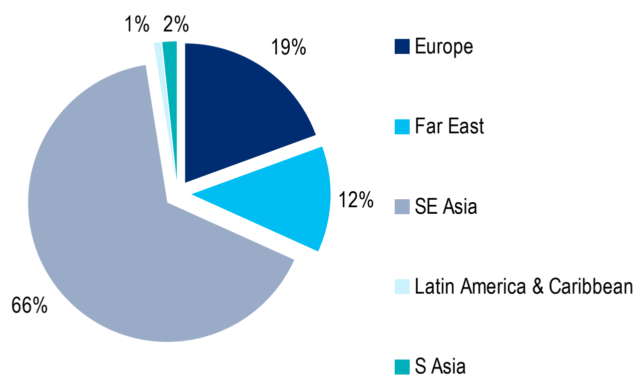
The two Asian terminal giants, PSA and HPH, are among the most active in terminal acquisitions. Both of their home ports (Hong Kong for HPH, Singapore for PSA) are the key transshipment hubs in the region. With little hinterland volume and limited scope to further expand, both HPH and PSA started overseas acquisitions fairly early. PSA currently participates in 29 ports projects in 17 countries across Asia, Europe and the Americas as illustrated below in Figure 53. HPH's port network comprises 52 ports spanning 26 countries throughout Asia, the Middle East, Africa, Europe, the Americas and Australia as illustrated below in Figure 52.

Figure 52. HPH Throughput by Region (2011)



Source: Drewry, Citi Research

Figure 53. PSA Throughput by Region (2011)



Source: Drewry, Citi Research

Asian port authorities are usually receptive to M&A, especially in the developing countries, as local authorities welcome the capital investment and operational best practice brought by the well experienced port operators. One popular practice is to develop new facilities under Build Operate Transfer (BOT) arrangements in which the ultimate ownership of the port assets is retained by the local governments.

In the past decade, terminals in Asia, particularly in China, have been the most popular acquisition targets, thanks to the surge of Asian/China foreign trade. In recent years, China's coastal ports have started to show signs of overcapacity after a decade's fast expansion, and leading terminal operators are turning to areas such as Latin America or Africa for future growth potential. Being flexible and expanding into a wider geographic area enables their portfolios to maintain a relative high growth.

Remove competition within the region

In addition to portfolio size and geographic scope, port operators sometimes make acquisitions near existing facilities to eliminate competition and achieve scale economies. Adjacent facilities offer opportunities to re-route the traffic if existing facilities are congested during peak periods and consolidation often helps to remove the uncertainty and reduce unnecessary local competition.

HPH's acquisition of the Hanno Terminal in Rotterdam, Netherland, in 2004 is an example of this. Before the acquisition, HPH owned the ECT terminal in Rotterdam, and was developing the new Euromax terminal (a 50:50 JV with P&O Nedlloyd). The acquisition of Hanno immediately added HPH's capacity in the region, which was important given the construction of Euromax was delayed. On the other hand, it reduced the level of competition.

A more recent example is China Merchants' regional consolidation in Western Shenzhen in China, which was achieved when China Nanshan Development became a subsidiary of China Merchants in 2010. China Merchants can thus exert some influence over Chiwan terminal, which previously competed against China Merchants' directly held Shekou terminal. Pricing at the western Shenzhen ports has became more transparent and more rational, which made it easier for the liners to negotiate down the rate.

- **Liner Companies – Support core shipping activities**

Secure capacity and drive operational efficiencies

With the growing competition and high utilisation, some liners began investing in terminals to improve their operational efficiency and secure guaranteed capacity in peak periods. Examples in Asia include, Hanjin, K Line and China Shipping, etc. Terminals are run as the cost centre, and are used to support the liner activity.

For the container carriers, the acquisition of container terminals is to better synchronise with the core container shipping business. Berthing at their own group terminals, container shipping companies can usually generate operational synergies by getting higher service priority and removing the uncertainty of handling charges. One good example is South Korean shipping group Hanjin, which has a stake-hold in 14 container terminals that are strategically located in the Far East, Europe or North America. As such, those ports provide strategic support to Hanjin's container shipping business along the main trade lanes.

Besides the operational synergies between terminal and shipping operators, the acquisition of terminals also helps carriers to secure capacity in the strategically important region. COSCO's investment in the Piraeus project in 2007 is such an example, in which the Chinese carrier hoped to secure port capacity in the important Mediterranean region for its transshipment boxes.

- **Financial Buyers – Harvest strong and stable cash flow**

Relatively under represented in Asia

We note relatively few investments by financial buyers in Asia, which we attribute to a combination of perceived higher country risk in the region and rapid growth with the attendant need for capital. To date, relatively mature port assets in Europe, North America or Australia better match the needs of financial investors for high and stable cash flow. Macquarie has the largest Asian exposure among major financial operators, with several terminals in the Far East area as illustrated below in Figure 54.

Figure 54. Macquarie Investment in Asia

Port	Terminal Name	2011 Capacity ('000 TEUs)	Macquarie Shareholding
Tokyo	Hanjin Terminals	480	40.0%
Osaka	Hanjin Terminals	450	40.0%
Kaohsiung	Hanjin Terminals Kaohsiung	1,500	40.0%
China	Changshu Xinghua Port	400	38.0%

Source: Drewry, Citi Research

Future Trends in M&A

- **South Asia to expand faster than Far East in the next two decades**

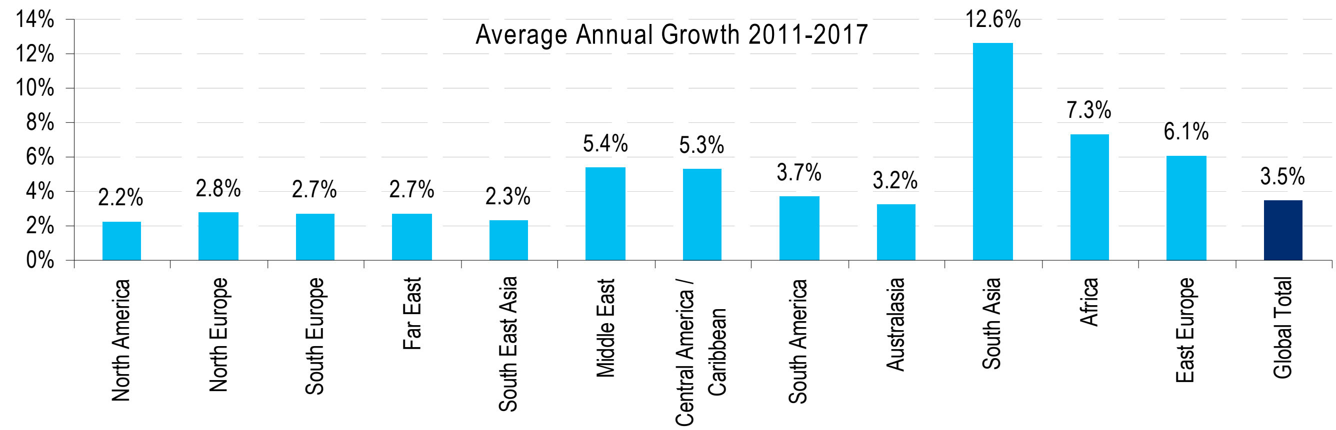
We expect more interest in South Asia

The Far East region reported the fastest rate of capacity expansion at an average annual rate of ~30% in the past decade. In 2011, Drewry estimates the total capacity in the region at c/334m TEU or more than double South East Asia at 112m TEU. We believe this mirrors the strategic importance of the Far East in the container shipping industry, especially China whose surge of export growth has made it the fastest growing region for container handling.

However, China's coastal line has already shown signs of over expansion, and the recent slowdown of the country's export growth has made people ask if future growth will shift to other parts of the world. Citi economists expect the trade between Emerging Asia and Advanced Asia to create the world's largest trade corridor by 2030. Trade between Emerging Asia and the Middle East, Africa and Latin America is also expected to gain in size and importance.

Figure 55 presents the current Drewry Shipping Consultants projection of global container capacity. Figure 55 also indicates that the high growth of capacity is moving away from the Far East region to South Asia, while the Middle East and Central America / Caribbean region will also see faster capacity growth. India shows a clear shortage of capacity, and requires immediate investment to address the bottleneck issue.

Figure 55. Drewry Capacity Expansion Forecast by Region



Source: Drewry, Citi Research

■ Local Protectionism may Discourage M&A in Certain Areas

Local regulation and politics factors can impede M&A

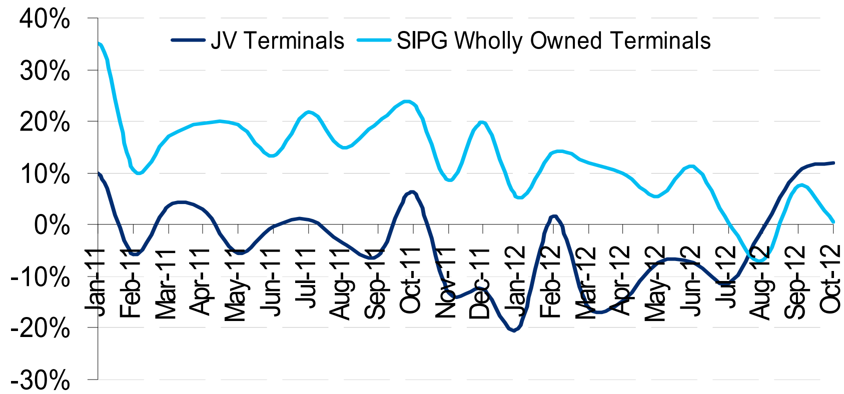
We do see local policies affecting the opportunities for investment by international port operators. India, for example, as one of the important markets in Asia, has been very strict in its scrutiny of foreign investors which may partly explain its current capacity bottleneck. India has only cooperated with selected foreign port operators such as DP World, PSA and AMPT. HPH, as one of the leading operators in Asia, has never been successful in bidding on any project in India due to India's security concerns about Chinese control of its port assets.

In China, the *Port Law* introduced in 2003 has opened up port investment to foreign capital. Although local government usually takes a substantial stake in the port assets, they typically welcomed foreign port operators, expecting foreign investors to bring in capital and expertise. Now almost one decade after the introduction of Port Law, we start to see signs of local protectionism in some of the mature ports.

One example is represented by the recent service reshuffle in Shanghai Port. Starting from late 2011, Shanghai port authority has transferred some of the container lines from the JV terminals (Waigaoqiao Phase 1, 4&5) to SIPG's wholly owned Yangshan terminals. JV terminals, as a result, recorded a declining throughput volume since late 2011. For example, Cosco Pacific's Pudong terminal's throughout declined by 10% in the first 10 months of 2012 and Yangshan's throughput increased by 7% during the same period.

Currently, this kind of action can only be achieved by Shanghai which has a strong negotiating position relative to liner customers. Nonetheless, we believe it is a worrying precedent for foreign investors. Foreign investors now find it increasingly difficult to acquire interests in popular Chinese ports (such as Yangshan in Shanghai), particularly where the local port operator has had long-term cooperation with an international operator from whom best practice operation and management was learnt.

Figure 56. Shanghai Port Throughput Trend



Source: Chineseport.cn, Citi Research

Change in China: from Coastal to Inland River Ports

We expect role of local operators to increase

Following the trend of industry relocation and increasing domestic trade, we expect terminals M&A in China to gradually shift from the coastal line to the currently underdeveloped river ports. However, we do not expect a high level of involvement from the global port operators. We see the most likely form of expansion as being for local governments to partner with established Chinese ports operators. We have already seen SIPG involved in several inland river port projects as illustrated below in Figure 57, which should eventually enable SIPG to better connect the river ports with coastal ports.

Figure 57. SIPG Inland Port Investments

Region	Terminal Name	Nature of Involvement	SIPG Shareholding
Wenzhou	Wenzhou Jinyang Container Terminal	JV with Wenzhou Port (55%)	45.0%
Jiangyin	Jiangyin Sunan Container Terminal	JV with PYI Corporation (40%), Jiangyin Port (30%)	30.0%
Nanjing	Nanjing Longtan Container Terminal	JV with Nanjing Port (45%), COSCO Pac (20%), Sinotrans (10%)	25.0%
Jiujiang	SIPG Jiujiang	JV with Jiujiang Municipal Government (8.33%)	91.7%
Wuhan	Wuhan Port Group	JV with Wuhan Municipal Government (26%), Wuhan New Port (25%)	49.0%
Changsha	Changsha Jixing Container Terminal	JV with Hunan Changsha New Port (54.3%)	45.7%

Source: Drewry, Citi Research

Asian Operators Expand Overseas

We expect Asian operators interest in overseas assets to increase

We expect to see more Asian terminal operators expand their footprint outside Asia with opportunities from liners divesting terminal assets for debt reduction and using capital strength to enter other emerging markets. HPH and PSA are the earliest oversea investors. HPH started their first overseas expansion back in 1991 (Port of Felixstowe, UK). PSA also ventured outside of Singapore with its first international port project in Dalian, China in 1996. As a comparison, COSCO and China Merchants only started oversea acquisitions in recent years, and we expect this trend to continue as China's coastal line started to see signs of overcapacity. Lloyds List[1] reports that CMA CGM plan to divest up to 49% of its terminal business by the end of 2012. The CMA CGM portfolio includes interests in 14 container terminals (including Le Havre, Marseille-Fos, Zeebrugge, Miami and Pusan with holdings of between 10% and 100%) with at least one Asian bidder said to be interested.

[1] 18 October 2012

Figure 58. Selected Oversea Acquisitions by Asian Terminal Operators (2003 – 2012)

Year	Target	Target Region	Acquirer	Reported Cost	Acquisition Details
2003	Euro Combined Terminals	Netherlands	HPH	Euro10.4mn	21% stake of Euro Combined Terminals
2003	LC Terminal Portuaria de Contenedores S.A. de C.V	Mexico	HPH	Undisclosed	51% stake in LC Terminal Portuaria de Contenedores S.A. de C.V
2004	Hanno Terminals	Netherlands	HPH	Undisclosed	100% stake in Hanno Terminals
2004	Antwerp Gateway NV	Belgium	COSCO Pacific	Euro133.9mn	25% stake acquired from P&O Ports
2005	Terminal Catalunya SA	Spain	HPH	Undisclosed	Majority stake of the terminal
2006	Ceres Paragon Terminal	Netherlands	NYK	Undisclosed	50% stake in Ceres Paragon Terminal
2006	Manta port	Ecuador	HPH	US$523mn	30 year concession of Manta port
2006	Suez Canal Container Terminal	Egypt	COSCO Pacific	Undisclosed	20% stake in Suez Canal Container Terminal
2007	Port of Mersin	Turkey	PSA	US$755mn	36 year concession of Port of Mersin
2007	Port of Izmir	Turkey	HPH	US$1.275bn	49 year concession of Port of Izmir
2007	Great Yarmouth Port	UK	PSA	Undisclosed	60% stake in 30 year concession in Great Yarmouth Port
2007	Port of Guayaquil	Ecuador	ICTSI	US$30mn	20 year concession of Port of Guayaquil
2007	Euromax Terminal	Netherlands	HPH	Undisclosed	51% stake in Euromax Terminal
2007	Port Piraeus	Greece	COSCO Pacific	US$6.6bn	Won concession to develop and operate port Piraeus
2008	Terminal in Algeciras	Spain	Hanjin	US$80.3mn	30 year concession to develop container terminal in Algeciras
2008	ABG Kandla Container Terminal	India	PSA	US$60mn	49% stake in 30 year concession to develop and operate ABG Kandla Container Terminal
2008	Exolgan	Argentina	PSA	Undisclosed	Acquisition of majority interest in Exolgan
2008	Port Panama	Panama	PSA	Undisclosed	Won concession to develop and operate port Panama
2008	Amsterdam Container Terminal	Netherlands	HPH / NYK	Undisclosed	Acquisition HPH-70%, NYK-30% stake in Amsterdam Container Terminal
2008	ECT Delta (Maasvalakte)	Netherlands	HPH / NYK / Evergreen	Undisclosed	Acquisition HPH-78%, NYK-10%, Evergreen-10% stake in ECT Delta (Maasvalakte)
2008	Container Terminal Frihamnen, Stockholm	Sweden	HPH	Undisclosed	Obtain the right to operate the terminal Container Terminal Frihamnen, Stockholm
2008	Container Terminal Nynashamn, Stockholm	Sweden	HPH	US$264mn	100% stake in developing new terminal in Container Terminal Nynashamn, Stockholm
2008	Felixstowe South Container Terminal	UK	HPH	Undisclosed	100% stake in terminal re-development Felixstowe South Container Terminal
2010	Port of Portland Terminal 6	USA	ICTSI	US$8mn	25 years lease signed in May 2010
2010	APM Terminal Zeebrugge	France	SIPG	US$33.7mn	25% stake acquired by SIPG
2010	Tin-Can Island Container Terminal	Nigeria	China Merchants	US$154mn	Acquisition from Zim by the 60-40 JV between CMHI and CAD Fund of the 47.5% stake in TICT
2011	Colombo Intl Container	Sri Lanka	China Merchants	Undisclosed	55% stake in a 35-year BOT concession for a 4-berth container terminal
2012	Tolaram Container Terminal at Lekki	Nigeria	ICTSI	US$1bn	Tolaram Container Terminal at Lekki
2012	Lome Container Terminal	Togo	China Merchants	Euro150mn	50% stake in a 35-year concession

Source: Drewry, Citi Research

India

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The Indian Ports sector is still in a very nascent stage and M&A activity within India has been virtually non existent. Typically, companies bid for development of ports in a consortium with other partners. The ports are developed in a Public Private Partnership (PPP) model, wherein a developer builds the port, operates it for a certain number of years (usually between 20-30 years) and then transfers it back to the government. There are some restrictions on change of ownership under such contracts, which further complicates any potential M&A activity.

Adani Port and SEZ is the largest private port company in India. Over the years, the company has expanded Mundra Port (its primary port) and has won concessions to build and operate ports at Hazira, Dahej and Mormugao. Adani Port has made one acquisition so far, acquiring Abbott Point Coal terminal in Australia for AUD1.8bn. This is an operational port with a current capacity of 50mtpa, with a significant part of the capacity under take or pay contracts with coal exporters. Adani Enterprises (parent company of Adani Port) has a coal mine in Australia. The main rationale behind the acquisition was to establish a mine-to-port connectivity – the parent benefits as it now has access to infrastructure to evacuate part of the coal.

We believe that growth opportunities will continue in the mode described above, i.e. companies will bid for port development concessions from the government. We believe that M&A activity may pick up once the port sector matures, organic growth opportunities diminish, regulations become more conducive and the incumbent companies start generating enough free-cashflows to be able to carry out such transactions.

North America

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Airfreight and Less-Than-Truckload Have Been the Most Acquisitive

Since 2000, Airfreight and Less-than-Truckload have been the most acquisitive sectors within U.S. transportation universe. Airfreight has accounted for the highest dollar value of transactions at $14.6 billion, bolstered by UPS' recent, but still pending, acquisition of TNT Express at $6.7 billion, although its acquisition spend per dollar of market cap is the second largest and only 4c above the average for broader transports at 15c of acquisition spend per dollar of market capitalisation. Less-than-Truckload has been the most acquisitive sector on a relative basis, having spent 22c per dollar of market cap. Truckload and Logistics companies have spent 11c per dollar of market cap, while rails have spent the least amount at 6c. Within the rail sector, there have not been any significant acquisitions by the major Class I rails since 2007, and 31% of the total rail acquisition spend was from Genesee & Wyoming, which has been the most acquisitive company in transports having spent 94c per dollar of market capitalisation (excludes Arkansas Best at 98c given that its ratio was driven higher more by its large fall in market capitalisation).

Figure 59. Acquisition History by Segment Since 2000

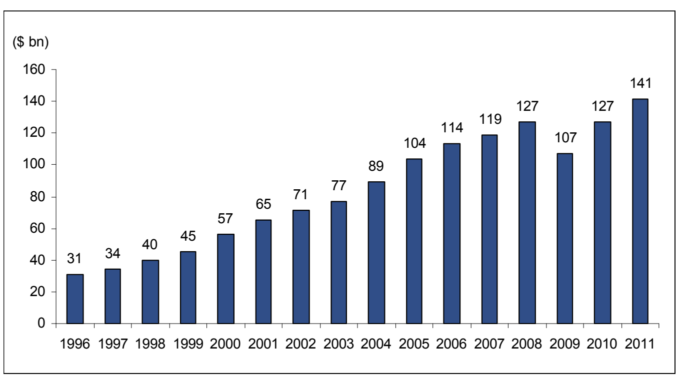
	Total Deal Value ($mm)	Mkt Cap ($mm)	Deal Value / Mkt Cap ($)
LTL	$1,018	$4,592	$0.22
Airfreight	$14,664	$96,860	$0.15
Logistics	$2,834	$14,481	$0.20
TL	$486	$4,113	$0.12
Rails	$9,208	$161,647	$0.06
JBHT	$0	$7,158	$0.00
Average			$0.12

Source: Citi Research; Factset

Logistics Sector to Lead Domestic M&A Activity

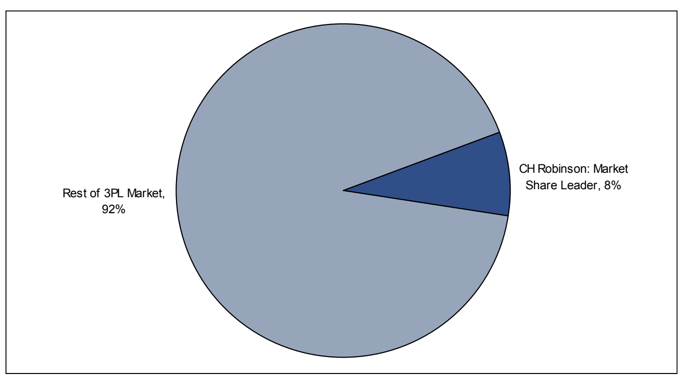
Freight forwarding remains among the most fragmented industry in transports with no carrier exceeding 10% of market share. We expect further consolidation for years to come with larger logistics companies rolling up smaller companies, as well as asset based carriers, primarily truckers, expanding their footprint and service offerings given margin pressure in core offerings. However, we believe that we could see continued investment in international acquisitions, particularly those which have a high exposure to global trade with the U.S.

Figure 60. 3PL Market Growth



Source: Citi Research; Echo Logistics

Figure 61. 3PL Market Share Still Heavily Fragmented



Source: Citi Research; Echo Logistics

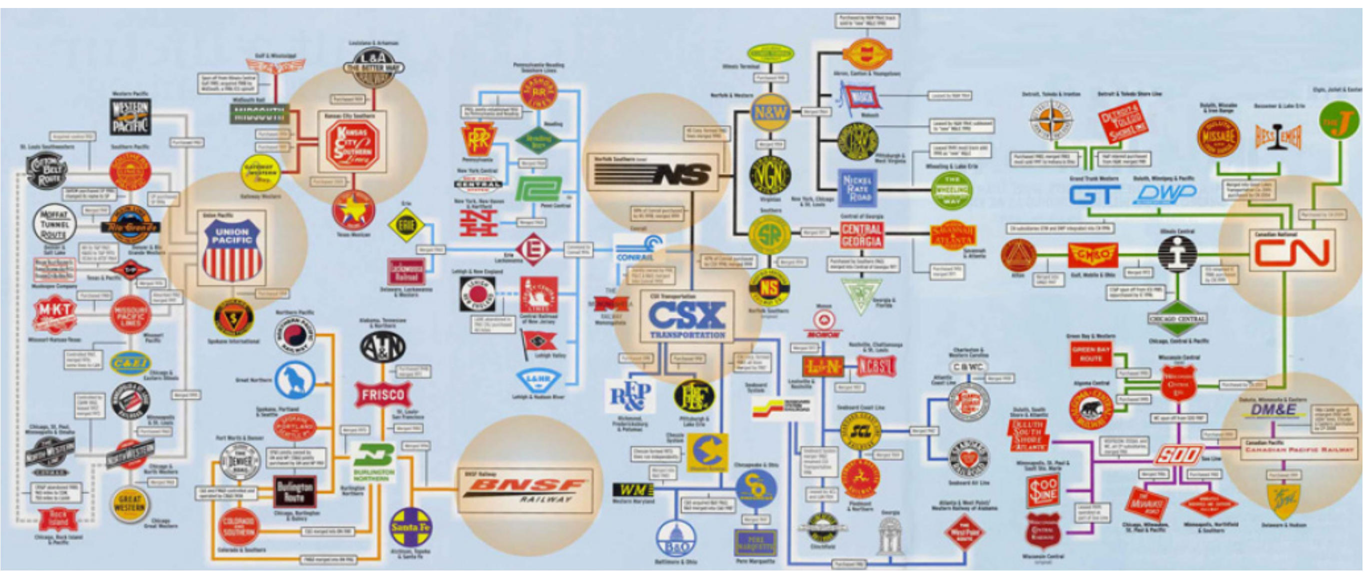
Truckers Likely to Continue Being Acquisitive Going Forward

We believe asset based truckers, both Less-than-Truckload and Truckload, will remain acquisitive, primarily as their sectors evolve into a more integrated transportation solution. We expect that asset based carriers will continue to buy small freight brokers, freight forwarders, logistics companies, customs companies and other smaller businesses that are tangential to core trucking operations given the potential synergies from a larger operational footprint, larger scale and a desire from customers to have a more integrated transportation solution. In addition, we believe company managements view expansion into less asset intense end markets as an effective means of increasing margins and returns, particularly as margins and returns have been under pressure from rising costs.

Consolidation Seems to Have Run its Course for Rails and Airfreight

We do not expect transformative mergers within the Rail group given that it seems consolidation has largely run its course, although we expect that Genesee & Wyoming could continue to spend to increase its footprint, particularly post 2013 when it can re-focus on growth after the integration of its purchase of RailAmerica. For Airfreight, we don't see many targets out there for transformative acquisitions, although we continue to expect smaller acquisitions internationally. However, with FedEx's focus on restructuring its domestic air network and UPS' recent acquisition of TNT Express, we believe that opportunistic spending could slow in the near-term, outside of potential divestitures related to the UPS/TNT deal to offset competitive concerns.

Figure 62. Railroads Have Largely Worked Through Consolidation



Source: Trains Magazine

Logistics and Freight Forwarding

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Freight and logistics providers are in the midst of major change with large quoted companies acting as consolidators of companies active in various discrete parts of increasingly global supply chains or active in different geographies. Freight market developments, customer trends and the search for synergies from cross and combined selling have been the main catalysts. Polarisation of capabilities has increased with a small number of global, multi service providers seeking revenue synergies from global customers gradually becoming aware of end to end supply chain costs and demanding more data visibility and fewer providers. The emergence of consolidators from non freight backgrounds has also contributed to logistics and freight forwarding M&A.

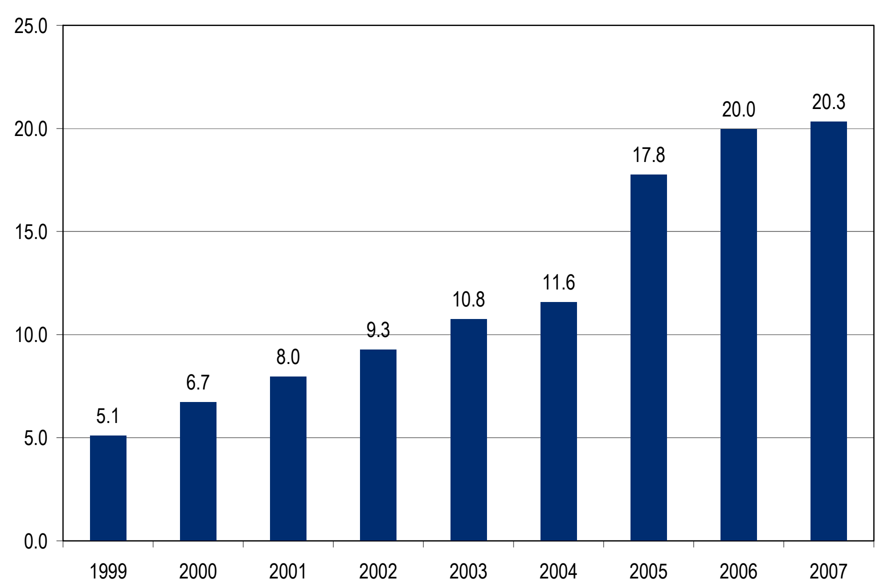
Concept of the multi service, global provider was born in the late 1990's

The trend to multi service providers can be traced to the merger of NFC and Ocean Group in 2000 to create Exel with a series of subsequent in-fill acquisitions. K + N pursued a similar strategy with an equity based strategic alliance with SembCorp Logistics agreed at the end of 2000 (each party took a 20% stake in the other) to provide Asian coverage and the acquisition of USCO in May 2001 for $300m to provide North American coverage. The SembCorp Logistics arrangement was dissolved in October 2004. K + N then followed a more conventional path with organic build out in Asia and the acquisition of ACR Logistics in October 2005 for €500m to cover Europe.

DP DHL invested some €20bn to execute the most ambitious strategy

In the late 1990's, DP DHL had also embarked on a more ambitious strategy that saw some €20bn invested in mostly small to mid sized acquisitions in the period 2000 to 2007 as illustrated in Figure 63 below with the vast majority in cash. Strategically, we view the phased acquisition of 100% of DHL between 1998 and 2002 for €2.4bn in total, the acquisition of forwarder AEI in December 1999 for €1.2bn (of which €1.05bn was goodwill) and the acquisition of Exel for €5.6bn in December 2005 (of which €5.5bn was goodwill) as the cornerstones of improving recent financial performance of DP DHL.

Figure 63. DP DHL Cumulative Gross Acquisition Spend 1999 – 2007 (€bn)



Source: Company Reports

Various motives and mixed outcomes

Bigger and sometimes better

We believe logistics and forwarding M&A has been largely concerned with revenue opportunities. Figure 66 below suggests that size (as measured by average net sales or revenue) has been inversely correlated to total shareholder returns for a selection of leading freight companies over the period 2000 to 2011. From a management perspective, expansion into new activities and geographies brings integration challenges (technical, cultural and product) and, from a market perspective, as size increases visibility on key business exposures and sensitivities reduces. We believe it has taken DP DHL a decade to settle on a strategy that the market can broadly understand and relate to potential macro drivers of over or under performance. This, along with improved disclosure and signs of strategic delivery, has meant that DP DHL has delivered shareholder returns in 2011 ahead of many peers in marked contrast to most of the previous decade. DP DHL and K + N both more than doubled sales in 2000-11 with K + N EBITA more than tripling but DP DHL EBITA only a touch above the level of 2000 in part due to the sharp reduction in mail profits since 2006 alongside accounting policy changes that saw the Exel pension surplus moving to net financial income. DP DHL, K+N and Schenker have established comprehensive global networks that do not depend on third-party agents as illustrated below in Figure 64 ,

Figure 64. Global Networks of Leading Global Forwarders

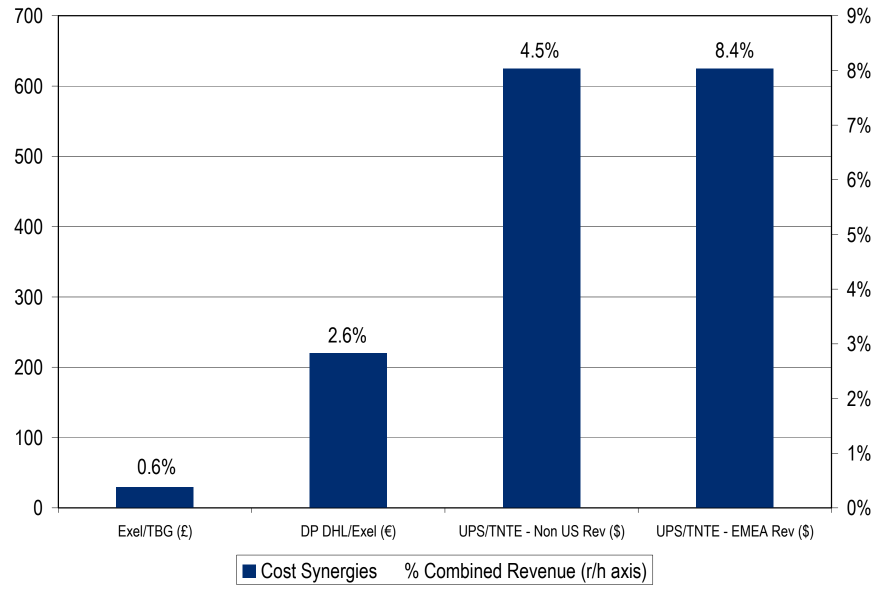
Company	Global Network
DSV	Operations in >60 countries+ 15 in Africa, Middle East and Asia from Swift
CEVA	120 sites in 170 countries;
Dachser Air & Sea	141 locations in 28 countries
DAMCO	300 offices in 90 countries. Agents in 30 countries
DHL	c.200 Countries/territories; >50% Forwarding; c.25% Express and c.25% Agents
Expeditors	250 offices in 60 countries; 46 agents
K + N	830 locations in >100 countries.
Panalpina	500 branches in 80 countries. Agents in 80 countries
Schenker	2000 locations in 130 countries
Toll	70 offices in 30 countries
UTiW	363 locations in 59 countries

Source: Company Reports

Modest cost synergies except where overlapping networks are combined

Figure 65 presents a selection of landmark freight and logistics transactions. The cost synergies are those targeted or reported by the acquirer whilst the revenue used as the denominator is the last reported combined revenue with two adjustments – we use gross profit rather than turnover for freight forwarders (turnover is mostly purchased transportation cost which is a pass through) and for UPS revenue we use reported all non US revenue and reported all EMEA revenue. Synergies for the most part have been modest and limited to consolidating support functions such as Finance, HR, IT, Property into acquirer’s structure, closure of Head Offices and elimination of one Board. In general, the synergies are most significant arising from the country operations, air network and overhead components of express networks; synergies are more modest where forwarding operations are combined mostly related to facilities; and synergies are negligible when a contract logistics operation in combined.

Figure 65. Planned Synergies from Key M&A Transactions (Local Currency in Millions)



Source: Company Reports

A strategic response to declining domestic markets for example in Japan

- With the Japanese market contracting, domestic logistics companies have expanded aggressively in China and other overseas markets where growth prospects are stronger. We highlight to examples

- **Nippon Express** - In 2007, Nippon Express established Nippon Express India by acquiring 51% of the outstanding shares in JI Logistics (an Indian air and sea transport agent) and then changing its name. This put in place the system Nippon Express needed to meet the growing logistics needs of the numerous Japanese firms operating in India. Moreover, because Nippon Express acquired a local firm, and because most of its customers are foreign companies, we expect broad-based customer growth. In October 2012, Nippon Express acquired APC Asia Pacific, a Hong Kong-based logistics company that has a strong consumer goods cargo business in Asia. In addition to Hong Kong, APC Asia Pacific has operations in Singapore, Taiwan, Thailand, and Vietnam. It also has operations in Europe (in France, Norway, the Netherlands, and Sweden) and having routes that link Asia and Europe is one of its strengths. We believe Nippon Express is looking to leverage these strengths to provide impetus to its global strategy.

- **Kintetsu World Express** - Kintetsu World Express (KWE) made M&A (including overseas firms) a key part of its FY/09-FY3/12 medium-term plan. It first acquired the Thai company TKK Logistics in December 2012. TKK Logistics is expected to deliver synergies by 1) complementing auto logistics activities, 2) strengthening the air forwarding business foundation in Thailand, and 3) providing a specialty equipment crating business.

KWE has built a dominant position in bonded logistics in China. In FY3/12, the company established joint ventures in Chongqing and Chengdu with local firms that have allowed it to offer a broader range of services, including regular bonded trucking between coastal and interior areas. Plans call for the start of a scheduled rail service between Shanghai and Chongqing. As manufacturers are now actively developing inland production bases, we believe demand for inland distribution

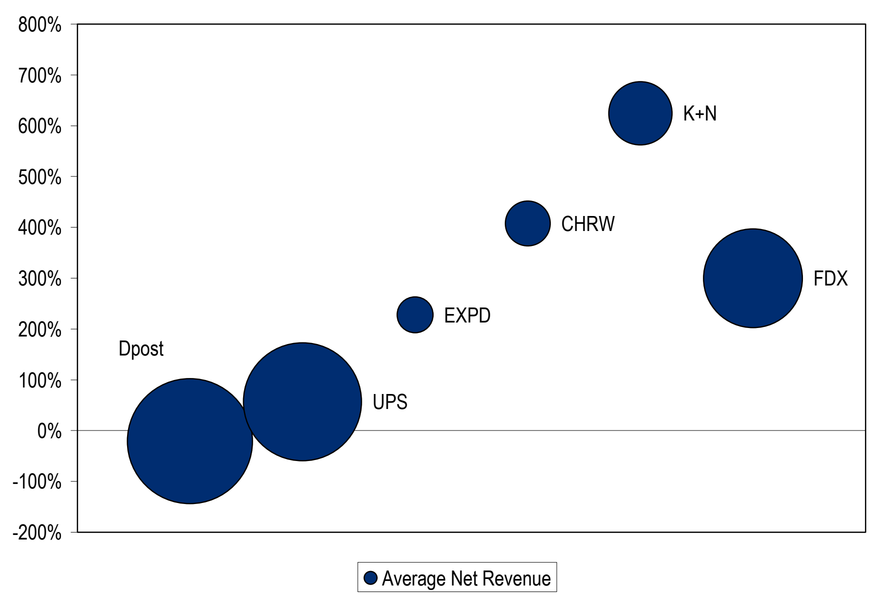
services will continue to grow. For foreign operators in China, transport to interior locations tends to result in one-way trips, lowering efficiency and making it hard for many non-Chinese companies to offer transportation services away from the coastal areas. However, KWE can draw on the marketing muscle of its joint venture partners to find trucking freight going from the interior back to the coast, making regular services possible. With manufacturing in China's interior regions expected to continue growing, KWE appears well-positioned.

In June 2012, KWE established a joint venture with the major Indian logistics company GATI in which KWE has a 30% stake and GATI has a 70% stake. GATI has the most advanced logistics system in India and boasts high-quality logistics services (for example, it is the only company in the local market that allows customers to set a delivery time). It also has the highest domestic transportation volume in the country. By offering customers both GATI's domestic logistics services and KWE's global network, the joint venture is expanding its presence in India. Although KWE was something of a latecomer to the Indian market, establishing a joint venture should accelerate the growth of its Indian operations, in our view. Because both Japanese companies and Western countries see distribution within India as a headache, improving its domestic services within India should help KWE with customer acquisition. We note that the initial-year sales target for the new company is around INR10bn (almost ¥16bn).

Signs of Success beginning to emerge

Figure 66 below illustrates how total shareholder returns in the period 2000 to 2011 have generally been superior for companies following largely organic growth strategies.

Figure 66. Total Shareholder Returns for Selected Freight Companies 2000 to 2011(%)



Source: DataStream. Note any dividends assumes to be taken as cash rather than re-invested

Anecdotal evidence of the beneficial impact of combining contract logistics and freight forwarding is a regular feature of capital markets presentations usually in terms of the number of services sold to major clients. While intuitively we see this as advantageous, we believe it is impossible to demonstrate this business was won only because of the bundled service. We believe the time taken to extract revenue synergies in part reflects the difficulty of fusing typically entrepreneurial freight

forwarding culture with a more disciplined express culture or relationship orientated contract logistics culture. Examples of tangible synergies are presented below but, in both instances, they help support networks where a dense network is a key competitive advantage by helping to reduce transit time and by offering later pick-up times and earlier delivery times.

- The blossoming relationship between DHL Global Forwarding and DHL Express, with significant volumes of forwarding cargo carried on dedicated DHL planes, with DHL Express being the #3 supplier of air capacity to DHL Global Forwarding.
- UPS benefits from the relationship between its after sales focused supply chain business that generates small package volume which can be transported using express infrastructure.

Fast-Changing Freight Markets

A near universally accepted business model has evolved in last decade where forwarding and logistics services are offered as an integrated product. We see key differences in attitudes to supply chain services, such as warehousing, which are sometimes offered independent of freight forwarding business, as is the case with DHL, or only to support to key freight forwarding clients, as is the case of K + N, or not at all, in the case of Expeditors.

We believe greater awareness of end to end supply change costs, including environmental costs, will increasingly favour providers with a global footprint, industry specific competencies and sufficient volume to support owned operations rather than agents to maximise efficiency by standardised systems and processes.

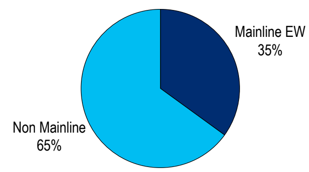
1. Living with sluggish demand growth and volatile rates

Modest growth and shifting patterns of trade

Over the period 2001 to 2011, global sea freight volumes have increased on average 9% pa and airfreight volumes 3.4% driven initially by the mainline East West trade lanes. Clarkson, as of September 2012, expects global 6.8% container volume growth comprising 4.2% on the mainline EW trades (largely due to transpacific +5.7%) and 7.9% on the non mainline trades. Drewry as of 3Q12 expects 4.9% growth in 2013 global container volumes and 6.1% in 2014.

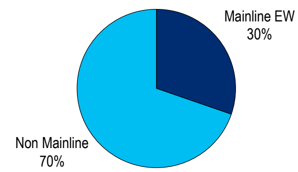
Figure 67 and Figure 68 below illustrate how the importance of the traditional mainline EW trade (Transpacific, Transatlantic and Asia Europe) lanes has fallen 5pp relative to emerging market trade lanes between 2006 and 2012. Clarkson data suggests non mainline EW trades such as Asia Middle East and Asia Africa has grown 10.8% per annum on average 2006 to 2012. Outlook for the coming years is for generally lower pace of growth and biased to emerging trade lanes rather than the mainline East West trade lanes. The largest single container market at some 63m TEU is the myriad of inter-regional trade lanes, of which intra Asia is the single most important.

Figure 67. TEU by Trade Lane Group, 2006



Source: Clarkson

Figure 68. TEU by Trade Lane Group, 2012



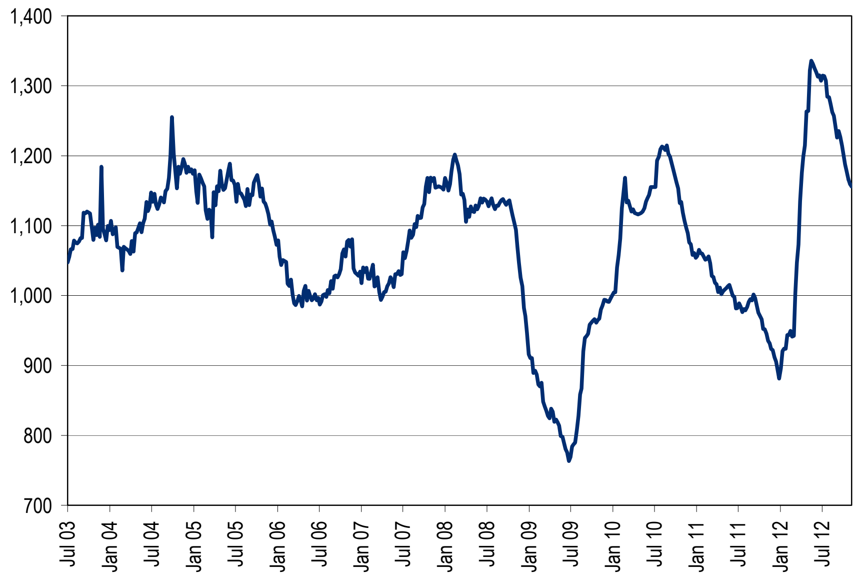
Source: Clarkson

We also see forwarders networks responding to emerging patterns of future global trade. We expect volume growth to be heavily biased to emerging rather than the traditional EW trade lanes in response to general economic developments and to production cycles being re-engineered to move basic manufacturing to the least cost location where many freight forwarders and contract logistics providers have been absent or represented by agents. Recent acquisitions have included:

- DSV announced the acquisition of Swift Group on 1 October 2012 which added 36 offices in 15 countries in Africa, the Middle East and Asia;
- DAMCO acquisition on 10 October 2012 of Pacific Global Networks with 27 offices in 13 countries that specialise in end to end supply chain solutions in the Retail/Lifestyle and apparel verticals, plus air freight volumes from Hong Kong/Mainland China to Australia, and of Chinese air freight forwarder NTS in August 2011, which we expect to be used to introduce new products such as combined sea/air products;
- CHRW acquired Phoenix International for US$635m at 12.5x trailing EBITDA; this represented a major diversification away from truck services and into international forwarding on the Asia to US trade lane.

Ocean freight rate rates in particular continue to be increasingly volatile, as illustrated below in Figure 69, requiring forwarders to managed forward space commitments in an increasingly sophisticated manner

Figure 69. Average Containerised Freight Rates from China Jul 2003 to Nov 2012



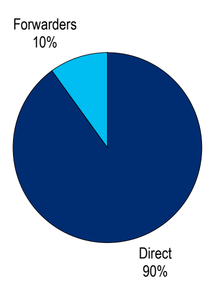
Source: Shanghai Shipping Exchange

2. Greater Growth bias to Sea freight

Seafreight offers more structural growth potential than airfreight

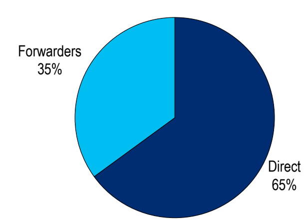
K + N presented Figure 70 and Figure 71 at the 2009 capital markets events. These exhibits illustrate why we expect forwarders who are sub scale positioned in sea freight forwarding to expand sea freight competencies. On the Asia Europe trade, we estimate >70% of container volume is managed by forwarders versus c.25% on transpacific and less intra Asia. We attribute these differences to the value added services that are typically provided by a forwarder on the Asia Europe trade whereas on other trades beneficial cargo owners make arrangements directly. We believe this presents opportunities for large forwarders to grow well above market growth by taking market share from the liner companies, particularly away from Asia Europe as has been the trend for over 20 years. However, the airfreight market is different, with 95%[2] of all airfreight already managed by intermediaries or integrators due to the highly fragmented flows, wide variety of route options and the nature of the cargo.

Figure 70. Forwarder % of Sea Freight 1980s



Source: K + N

Figure 71. Forwarder % of Sea Freight 2008



Source: K+ N

[2] K + N 2009

In addition we see scope for further growth arising from containerisation of neo bulk products (timber, grain, scrap and waste) currently handled as bulk products and for intermediaries to continue to erode the business arranged directly between beneficial cargo owners and the major shipping lines, particularly on trade lanes other than Asia Europe (which is already dominated by intermediaries). We also expect the role of intermediaries strengthened by patterns of sea trade to gradually become more fragmented and for customers to increasingly require end to end rather than port to port services.

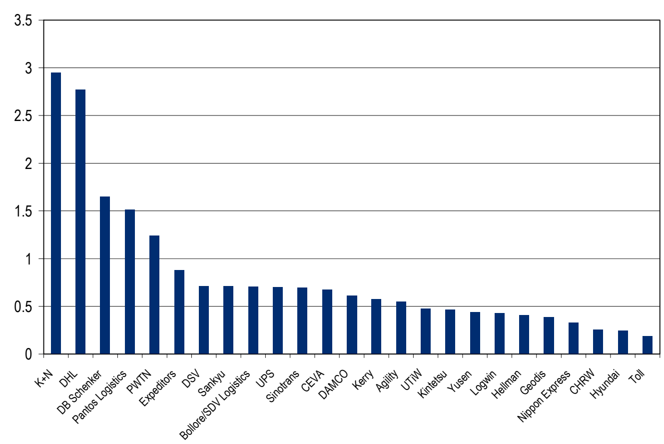
3. Critical mass is Essential

Rates and space allocation depend on achieving critical mass

We believe critical mass is important to a freight forwarder on all its key trade lanes to obtain best rates and secure space allocations from carriers, particularly in peak periods. Figure 72 and Figure 73 below present the leading sea freight intermediaries and the leading air freight intermediaries based on 2010 volume. We note three things:

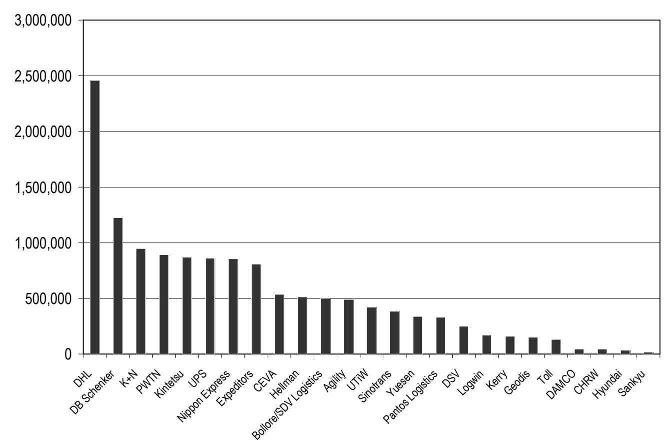
- Distributions have the long tail typical of fragmented industries.
- the same organisations populate both lists.
- the top three positions in both markets are filled by the same organisations.

Figure 72. Leading Sea Freight Carriers 2010 (TEUm)



Source: Company Reports

Figure 73. Leading Air Freight Carriers 2010 (Tons)



Source: Company Reports

4. Greater Need for Global Networks

A key motive

We see significant differences emerging in the network capabilities of freight forwarders. We identify a top tier of K + N, DP DHL and Schenker with dense networks across developed and emerging markets with little or no dependence on agents and a tier of companies with significant white spots in some geographies or capabilities with more reliance on agents in key emerging markets. These companies are the most active in trying to fill gaps in competencies and coverage by acquisition.

Growth niches like pharmaceuticals and life sciences require global networks and expensive competences

The $1 trillion pharmaceutical and biotech market is significant with over 25% of pharma, biologics and vaccines products needing temperature controlled global transport. Many products cannot withstand extended temperature deviations and any deviations can result in a wasted product. Temperature controlled handling requires training, infrastructure, technology including active product monitoring and

a secure global network to prevent spoilage of products that have to be stored in a narrow temperature band (room temperature or a narrow band 2-8 degrees Celsius for flu vaccine and insulin), counterfeiting and theft. Product integrity is a particularly key issue due to regulatory compliance (principles of good distribution practices are contained in many contracts between manufacturers and service providers that can require special infrastructure), supply chains extending globally and products that are increasingly complex, delicate and sensitive to environmental conditions. The global market for temperature control services is estimated at $7.6bn in 2013 vs. $6.5bn in 2010 [3] with healthcare and pharma companies set to increase their outsourcing activities in many areas. We believe mitigating other risks such as maintaining temperature control in the arrival country and addressing any transportation issues such as a delayed flight or late pickup requires 24/7 visibility, global recovery planning and coordination that is only possible with a global network. We believe pharma products are more captive to air with the use of ocean 'reefer' containers to create a lower cost (with longer transit time) solution being impractical due to high product value and ocean carrier liability limitations. We believe the networks required to support the pharma vertical are different from traditional air networks and emerging markets are increasingly important. Here we believe only the biggest forwarders have the volume to support such networks and the integrators can leverage express infrastructure. For example, in the last decade DHL has built a substantial sub Saharan African infrastructure with DHL Express active in 45 of 47 sub Saharan countries, DHL Global Forwarding present in all sub Saharan countries and DHL Supply Chain with 450,000 m^2 of warehouse space in key sub-Saharan countries.

5. New Products, Options and Customers

Less revenue from more shipments; new route options, new markets and demands of new customers

In addition to weight lost to from air freight to sea/air products or to conventional sea freight largely on grounds of cost, of product life cycle effects and of product innovations, we believe air freight is also challenged by structural changes. The impact of product miniaturisation, improved packaging and on line documentation in the electronics aerospace and retail verticals has had a significant impact on the volume and weight of airfreight. When shipment weights drop below 30kg, integrator services are an option for such shipments. The airfreight industry is transporting more consumer electronics products with a lower total weight and a much lower transportation charge. A packaged ipod is c.38 cubic inches and weighs 8 ounces vs. 1,200 cubic inches and a weight of 10 pounds for the boombox. Bulky console televisions vs. plasma or LCD – five plasma TV's occupy the space of one old console TV and plasma/LCD units are one third the weight of a console TV.

Logistics and forwarders have to adjust for the potential opening of new transport options (sea air products), new corridors (trans Siberian rail freight to North Europe and Northern sea passage), major new infrastructure (Panama canal widening) and emergence of major new suppliers (Chinese and Middle Eastern airlines).

We expect Chinese importers to become increasingly important customers as economic development continues. Chinese importers typically transact on a CIF basis (Cost Insurance and Freight where the seller pays the costs including insurance to bring the goods to the port of destination. Risk is transferred to the buyer once the goods are loaded on the ship). As import volumes increase and importers become more sophisticated, we expect FOB (Free on Board where the seller loads the goods on board the ship nominated by the buyer, cost and risk being divided at ship's rail. The seller clears the goods for export) to increase as FOB basis can be cheaper cost and give more control over the supply chain and

[3] Pharmaceutical Commerce July 2012

lead times. We believe FOB will tend to favour forwarders with local logistics capabilities to provide more integrated solutions.

In due course, we expect international logistics providers to seek overland domestic and regional freight capabilities in the BRIC countries as demand for integrated solutions increases. The experience of TNTE in China and in South America is that, while such markets offer considerable long term opportunity as local corporations become more important to multi national customers, the business environment is very different and challenging.

6. Increasing Costs of Doing Business

We believe scale offers the leading freight forwarders a competitive edge in technology, compliance and funding due respectively to the size of the business to amortise these costs over and to a customer base, diversified by geography and vertical.

We see technology as a productivity driver, a management tool and a source of competitive advantage for large companies

We expect the emerging/developed market volume mix to become more biased to emerging in the coming years and with it downward pressure on unit GP as emerging markets volumes have far fewer of the value added services typical of developed markets. Therefore, it is increasingly important for forwarders to deliver mitigating productivity improvements. Timely information on rates, volumes and customer profitability is also extremely important in volatile markets when pricing new business and understanding customer profitability. K + N reported its annual technology budget in 2010 was SFr250m or 3% of GP; that represents a significant challenge for competitors with much smaller volumes to obtain the same productivity and provide the same level of visibility to customers.

- We believe K + N leads the field in the development and application of technology to forwarding. K + N operates one standard application per business field run from four regional, and one global, data centre. KN Login provides partner carriers with EDI bookings (c.80%) and customers with full tracking and automated eBooking capabilities (aims to move from c.5% to 25% e-booking largely by encouraging SME customers to book online) with the potential to include automated invoicing, payment processing (via additional EDI processes) and to support shared service centres. System provides full management visibility for financial and operational reporting. KN Login received 60m hits in 2012 vs. 10m hits in 2008 and is used by some 90% of K+N customers.

- DHL Global Forwarding acknowledges that significant productivity gains without automation would not be possible and has embarked on a transformational program labelled ‘New Forwarding environment’ (NFE) to improve network performance (data routing to reduce IT run costs), to streamline (product and tariff structures) standardise and to replace manual and reactive processes with automated solutions. DHL targets full pilots in 2Q13 with roll out in 2014 and 2015. DHL booked significant NFE expenses in 2011 and expects them to continue until 2015.

- Panalpina targets at least a 10% improvement in productivity by 2015 by implementing optimised, standardised and automated core business processes through the role out of SAP-TM with the potential to implement shared business centres. Panalpina expects SAP-TM to improve reaction times to business and to market and customer requirements.

Forwarders have noted rising pressure on working capital requirements arising from shippers seeking extended payment terms in recent quarters. We expect bigger, well capitalised companies to have an advantage in securing the finance necessary

to grow at reasonable rates. In addition, the system capabilities of the leading forwarders aid monitoring and controlling of receivable risk.

The global freight forwarding sector has seen industry-wide and company-specific investigations into compliance breaches involving cartel activity and other business practices since 2007. We believe the organisational and training implications for small and medium size freight forwarders are significant given, in some cases, the relatively small businesses to amortise the cost.

Trends could be a catalyst for more M&A

We believe market trends could drive further cross border combinations of forwarding and logistics providers

We believe that, as traditional markets face structural challenges which we expect will put a premium on obtaining best rates, space allocations and procurement strategies and new markets might emerge which will need significant resources; thus we think further consolidation is likely. Growth niches, particularly in airfreight need specialist, industry specific capabilities; controlled infrastructure that reaches beyond traditional markets and constant investment in technology and systems. We expect the industry leaders DP DHL, K + N and Schenker to pull further ahead, particularly in the most attractive industry verticals – such as pharmaceutical. We believe small and mid sized providers will either retreat to niche strategies, combine or be absorbed by the industry leaders. We believe any combinations would have to consider:

- Organisations active in similar geographic markets with some common customers risk volume loss as some major customers deliberately select more than one provider of a specific service or select different providers for each service.
- Organisations with different cultures risk difficult integrations, for example centralised vs. decentralised capacity procurement or the transactional nature of forwarding vs. the relationships nature of logistics.
- Financial and economic uncertainties mean increased risks around divesting any part of an acquisition that is not required.
- Willingness to burden balance sheet with substantial goodwill and/or other intangible assets that would be the by product of acquiring an asset light forwarding businesses.

We believe combinations that stand the best chance of success are where skills and footprint are complementary and culture is similar.

We see competition from Japanese providers in the high growth markets in Asia

As expansion into mainland China has to a certain extent played out, we expect greater development in Thailand, Indonesia, Vietnam and other countries that are considered viable “China plus one” candidates. We believe expansion into India (a promising consumer market), Myanmar (where democratic reform is progressing), and emerging economies like Cambodia, Laos, and Bangladesh may also take off. In these emerging Asian markets, we anticipate an upswing in M&A activity with local forwarders, warehousing companies, and shipping firms. In particular:

- **Nippon Express** - Nippon Express in particular has set a target of deriving half its sales from international business and placed M&A in Asia and other fast-growing markets at the heart of its management strategy. As the logistics infrastructure in Asia is still immature, we believe Nippon Express has plenty of opportunity to combine its logistics know-how with the networks and customer access of local logistic companies to provide differentiated services.

Kintetsu World Express (KWE) - KWE has built a business platform in China and East Asia and strengthened its presence in Southeast Asia, and it plans to step up efforts to become stronger in Asia. India, Indonesia, Vietnam, Thailand have all been identified as important markets and Bangladesh, Myanmar, and Laos are also targeted for new business. Elsewhere, KWE is strengthening its business structure in Mexico and Brazil. We believe

We do not discount the emergence of new strategic consolidators

A recurring theme of the last decade in freight and logistics has been large European organisations from postal and railway backgrounds in Europe acting as global consolidators. In recent years other postal and railway companies have become more interested in international freight and logistics. These include:

- **A P Moller** – APM's strategy is to focus on activities that earn an acceptable return across the economic cycle and where APM has a leading global position. We note that APM's freight forwarding subsidiary, DAMCO, earns attractive returns (25.8% in 2011) but is a relatively small player in a global context and we would discount significant acquisitions to achieve global scale for DAMCO.
- **La Poste (France)** - Ambition 2015 strategy presented on 15th April 2010 includes the goal for parcels and express to be the European leader, in terms of market share and profitability, in the fast delivery of light goods.
- **RZD (Russian Railways)** – the planned acquisition of 75% of GEFCO for €800m announced on 20th September 2012 will provide RZD with significant logistics capabilities, although heavily biased to inbound automotive business. The acquisition is part of the 'Trans-Siberian in Seven Days' strategy adopted by RZD in 2009 to boost cargo flows along the Asia transcontinental route by increasing journey speeds and other service features. RZD also owns 16.3% of the YuXinOu (Chongqing) Logistics joint venture that launched container traffic from Chongqing to Duisburg in October 2012. The first train carried 42 FFE with expedited border processes and with a transit time of 16-20 days. The joint venture targets 5800 TEU by the end of 2012, from electronics, machinery, chemical and aviation clients in the Chongqing region
- **Toll Group** – flagged in an investor presentation on 19 June 2012 that the scale of global forwarding operations targeted by management had yet to be achieved. Toll stated acquisition opportunities are still being scoped in key target markets of EMEA, North America and Latin America with the objective of increasing airfreight and sea freight capabilities.

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Appendix

Figure 74. Recommendations and Target Prices

Analyst	RIC	Company	Rating		Target Price (local currency)	Price (local currency)
Deepal Delivala	APSE.BO	Adani Port SEZ	1	Buy	143.0	122.7
	CROM.BO	Crompton Greaves	2	Neutral	129.0	110.8
	ESRS.BO	Essar Ports	1	Buy	109.0	92.4
	GMRI.BO	GMR Infrast	3	Sell	21.0	17.7
	GPPL.BO	Gujarat Pipavav	2	Neutral	54.0	46.3
	GVKP.BO	GVK Power	2	Neutral	15.0	12.2
	IRBI.BO	IRB Infra Dev	1	Buy	238.0	123.1
	IVRC.BO	IVRCL Infra Projects	3	Sell	45.0	39.7
	NCCL.BO	NCC	1	Buy	53.0	42.1
	THMX.BO	Thermax	3	Sell	518.0	575.4
	VOLT.BO	Voltas	3	Sell	103.0	103.7
Roger Elliott	DPW.DI	DP World	1	Buy	14.6	11.8
	DPWGn.DE	Deutsche Post	1	Buy	15.8	15.6
	FGP.L	Firstgroup	2	Neutral	2.1	1.8
	GOG.L	Go-Ahead Grp	2	Neutral	12.3	12.2
	HHFGn.DE	Hamburger Hafen	1	Buy	25.0	18.2
	KNIN.VX	Kuehne & Nagel	1	Buy	130.0	114.5
	MAERSKb.CO	APM Maersk	2	Neutral	41,979.0	41,200.0
	NEX.L	National Express	1	Buy	2.2	1.7
	PTNL.AS	PostNL	1	Buy	5.0	2.5
	PWTN.S	Panalpina	2	Neutral	90.0	86.8
	SGC.L	Stagecoach Grp	2	Neutral	2.9	2.7
	TNTE.AS	TNT Express	1	Buy	9.5	7.2
Akira Funae	9001.T	Tobu Rail	1	Buy	500.0	426.0
	9005.T	Tokyu	1	Buy	440.0	417.0
	9007.T	ODR	2	Neutral	NA	825.0
	9008.T	Keio Corp	2	Neutral	NA	608.0
	9009.T	Keisei Elec Rail	2	Neutral	NA	690.0
	9020.T	East Japan	1	Buy	6,000.0	5,330.0
	9021.T	JR West	1	Buy	4,000.0	3,300.0
	9022.T	CJR	2	Neutral	7,700.0	6,460.0
	9042.T	Hankyu Hanshin	2	Neutral	NA	432.0
	9062.T	Nippon Express	2	Neutral	330.0	296.0
	9064.T	Yamato Hld	1	Buy	1,500.0	1,239.0
	9101.T	Nippon Yusen	1	Buy	220.0	173.0
	9104.T	MOL	2	Neutral	250.0	211.0
	9107.T	K-Line	2	Neutral	125.0	108.0
	9202.T	All Nippon Air	1	Buy	240.0	177.0
	9370.T	Yusen Logistics	2	Neutral	NA	770.0
	9375.T	KWE	1	Buy	3,000.0	2,493.0
Andrew Light	ADP.PA	Aeroports Paris	1	Buy	72.0	58.9
	AER.N	Aercap Hld	1	Buy	19.0	12.4
	AGNr.AT	Aegean Airlines	2	Neutral	NA	1.7
	AIRA.DU	Air Arabia	1	Buy	0.8	0.7
	AIRF.PA	Air France-KLM	2	Neutral	4.5	6.8
	AL.N	Air Lease	1	Buy	29.0	22.2
	AYR.N	Aircastle	1	Buy	16.5	11.1
	EZJ.L	easyJet	1	Buy	7.8	6.9
	FER.MC	Ferrovial	1	Buy	12.7	11.2
	FLY.N	FLY Leasing	2	Neutral	13.5	11.9
	FRAG.DE	Fraport	1	Buy	60.0	43.5
	GEMI.MI	Gemina	2	Neutral	0.7	0.8
	ICAG.MC	IAG	1	Buy	2.6	2.1
	ICAG.L	IAG	1	Buy	2.1	1.7
	KQNA.NR	Kenya Airways	1	Buy	18.0	12.2
	LHAG.DE	Lufthansa	1	Buy	15.0	12.4
	RJAL.AM	Royal Jordanian	2	Neutral	NA	0.6
	RYA.I	Ryanair	2	Neutral	5.1	4.7
	SAS.ST	SAS	2	Neutral	NA	7.2
	FHZN.S	Zurich Airport	1	Buy	460.0	394.0
	VIEV.VI	Vienna Airport	2	Neutral	37.0	35.8
Vivian Tao	0144.HK	China Merchants	3	Sell	20.5	23.3
	0670.HK	China East Air	2	Neutral	2.7	2.7

	0694.HK	Beijing Airport	1	Buy	6.3	5.3
	0753.HK	Air China	1	Buy	6.5	5.1
	1055.HK	CSA	2	Neutral	3.9	3.4
	1138.HK	China Ship	2	Neutral	3.8	3.9
	1199.HK	COSCO Pacific	2	Neutral	11.0	10.7
	1919.HK	China COSCO	3	Sell	2.6	3.7
	2866.HK	CSCL	3	Sell	1.6	2.1
	2880.HK	Dalian Port	3	Sell	1.8	1.7
	600009.SS	SIA	1	Buy	16.1	11.1
Stephen Trent	ALLL3.SA	All Amer Latina	1	Buy	18.0	8.4
	ASR.N	ASUR Airports	1	Buy	114.0	102.3
	BBDb.TO	Bombardier	1	Buy	6.3	3.1
	CCRO3.SA	CCR	2	Neutral	20.0	18.9
	CPA.N	Copa Airlines	1	Buy	119.0	94.4
	ERJ.N	Embraer	2	Neutral	30.0	27.1
	PAC.N	GAP Airports	3	Sell	42.0	51.3
	GOL.N	Gol	1	Buy	9.0	4.5
	LFL.N	LATAM Airlines	2	Neutral	26.0	22.9
	OHLMEX.MX	OHL Mex	1	Buy	28.0	23.7
	OMAB.O	OMA Airports	2	Neutral	21.0	19.0
	RENT3.SA	Localiza	1	Buy	41.0	36.2
	SAVE.O	Spirit Airlines	1	Buy	27.0	16.7
Christian Wetherbee	ABFS.O	Arkansas Best	2	Neutral	8.0	7.4
	BOX.N	SeaCube	1	Buy	21.0	17.8
	CHRW.O	CH Robinson WW	2	Neutral	62.0	60.2
	CNI.N	Canadian Nat Rly	2	Neutral	94.0	86.1
	CNW.N	Con-Way	2	Neutral	31.0	27.4
	CP.N	Cnadn Pacfic Rly	1	Buy	100.0	92.7
	CSX.N	CSX	1	Buy	24.0	19.4
	EGLE.O	Eagle Bulk Shpng	3	Sell	2.5	2.4
	FDX.N	Fedex Corp	1	Buy	108.0	87.7
	GLOG.N	Gaslog	1	Buy	16.0	11.9
	GNK.N	Genco Ship Trade	3	Sell	2.5	2.6
	GWR.N	Genesee & Wyo	2	Neutral	78.0	70.9
	JBHT.O	JB Hunt Trans	2	Neutral	60.0	59.2
	KNX.N	Knight Trans	2	Neutral	16.0	15.1
	KSU.N	Kansas City Sthn	1	Buy	93.0	76.3
	NSC.N	Norfolk Southern	2	Neutral	68.0	57.0
	ODFL.O	Old Dominion	1	Buy	36.0	33.4
	SB.N	Safe Bulkers	2	Neutral	5.0	3.5
	SWFT.N	Swift	2	Neutral	10.0	8.9
	UNP.N	Union Pacific	1	Buy	143.0	120.0
	UPS.N	United Parcel	1	Buy	86.0	71.4
	WERN.O	Werner Entprise	2	Neutral	24.0	22.8
Rigan Wong, CFA	028670.KS	STX Pan Oc	1	Buy	6,000.0	3,060.0
	0316.HK	Orient Overseas	1	Buy	52.0	47.0
	1308.HK	SITC Int Hld	1	Buy	4.0	2.2
	2343.HK	Pacific Basin	1	Buy	4.2	4.0
	2615.TW	Wan Hai Lines	1	Buy	17.6	14.3
	AAV.BK	Asia Aviation	2	Neutral	4.8	4.4
	AIRA.KL	AirAsia	3	Sell	2.3	2.9
	AOT.BK	Airports of Th	3	Sell	55.0	87.0
	CEB.PS	Cebu Air	1	Buy	80.0	62.0
	GIAA.JK	Garuda Indonesia	1	Buy	840.0	700.0
	MAHB.KL	Malaysia Airport	1	Buy	6.1	5.5
	MASM.KL	Malay Airline	3	Sell	0.8	1.0
	MISC.KL	MISC	3	Sell	5.5	4.2
	NEPS.SI	NOL	1	Buy	1.4	1.1
	SIAL.SI	SIA	3	Sell	9.4	10.4
	STXPx.SI	STX Pan Oc	1	Buy	6.6	3.8
	TAHL.SI	Tiger Airways	3	Sell	0.5	0.7
	THAI.BK	Thai Airways	2	Neutral	25.7	20.7

Source: dataCentral, Citi Research

Appendix A-1

Analyst Certification

The research analyst(s) primarily responsible for the preparation and content of this research report are named in bold text in the author block at the front of the product except for those sections where an analyst's name appears in bold alongside content which is attributable to that analyst. Each of these analyst(s) certify, with respect to the section(s) of the report for which they are responsible, that the views expressed therein accurately reflect their personal views about each issuer and security referenced and were prepared in an independent manner, including with respect to Citigroup Global Markets Inc and its affiliates. No part of the research analyst's compensation was, is, or will be, directly or indirectly, related to the specific recommendation(s) or view(s) expressed by that research analyst in this report.

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Citigroup Global Markets Inc. owns a position of 1 million USD or more in the debt securities of CSX Corp

Citigroup Global Markets Inc. owns a position of 1 million USD or more in the debt securities of Delta Air Lines Inc

Citigroup Global Markets Inc. owns a position of 1 million USD or more in the debt securities of FedEx Corp

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