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U.S. Truck Brokerage

Will CHRW Get "Uber-ed"? UBS Evidence Lab Analysis + Industry Contacts Suggest They Will Not

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App download analysis shows competition to connect with carriers & capacity

In this report we provide analysis from UBS Evidence Lab of monthly app downloads for conventional and new truck brokers and also load boards. The analysis and our conversations with a variety of industry participants show there is competition among brokers to get carriers / drivers to download their app which can provide visibility and a connection with sources of capacity. However, we note that a large number of downloads (e.g., Trucker Path / Truckloads) does not necessarily translate to commercial success. We do not see evidence of disruption in brokerage and conclude that performance of brokers is likely to be driven by the cycle and their own execution.

New players (Uber, Convoy) have traction but so do the incumbents

Uber Freight has realized traction in app downloads with a share of 19% and 21% in 2017 and 2018TD (Convoy at 5% & 6%), but the conventional brokers also show traction with CHRW in a range of 7%-17% of downloads over the past four years and TQL and Coyote in the 3%-14% range from 2015 – 2018. We note that the app connection with drivers is most meaningful with independent owner operators who have potential to book freight. This group is only 5%-10% of the for hire market.

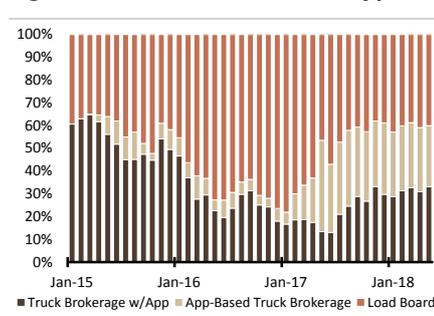
Industry contacts point to value of scale in freight, capacity & the network

Based on our conversations with private brokers, load boards and technology providers, we conclude that there is considerable value to the scale of freight and capacity that are part of the networks of the large incumbents most notably CHRW. We also note that incumbents already have efficient flow of information with shippers (EDI & API) and carriers which is supplemented by app connections.

Reiterate Buy rating on CHRW; little visibility to disruption

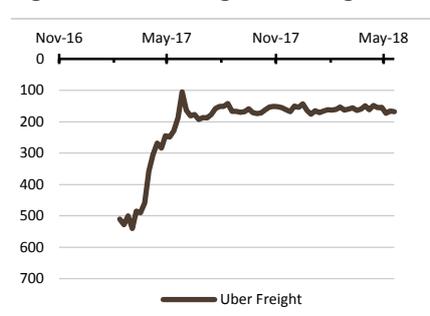
We reiterate our Buy rating on CHRW based on our view that CHRW's model will perform well later in the cycle when TL spot rates are either flat or gradually declining and also given our view that CHRW is on a path of improving execution / margin perf. in its Fwding and Fresh business units following weak performance in 1Q18. The app analysis and industry assessment in this report provides a critical support to our positive view on CHRW as it shows that a large brokerage network remains an advantage and we also do not see evidence of disruption from new truck brokerage competitors.

Figure 1: Shr. of Downloads – Type



Note: Aggregate of iOS and Google Play
Source: UBS Evidence Lab, Sensor Tower

Figure 2: Uber Freight Ranking



Source: UBS Evidence Lab, Sensor Tower

Figure 3: Shr. of Downloads – Broker

Total Shr., Rank	Service	2017	2018
1	Uber Freight	19%	21%
2	Truckloads	28%	13%
3	DAT Load Board	9%	12%
4	J.B. Hunt Carrier	4%	11%
5	Navisphere Carrier	9%	7%
6	123 Loadboard	7%	7%
7	Truckstop	6%	6%

Note: Aggregate of iOS and Google Play
Source: UBS Evidence Lab, Sensor Tower

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Background / Perspective on the App Analysis

Understanding the impact of changing technology is a key issue for the truck brokerage industry and the two primary brokerage names we cover CH Robinson (CHRW Buy) and Echo Global Logistics (ECHO Neutral). In this report we analyze data on app downloads to examine one dimension of the technology question and consider the traction of new competitors and the incumbent larger brokers. In addition we spoke with an extensive group of industry contacts including private brokers, load boards, and technology providers in order to better understand competitive dynamics and impact of new players on the brokerage industry. Our conversations with technology focused players included **Ascend TMS CEO Tim Higham** who provided broad perspective on app downloads and what they mean. At the Transport Intermediaries Association Annual Meeting (mid-April) we also spoke with contacts from McLeod Software (TMS), Trucker Tools, and Cargo Chief along with a variety of mid-sized and large private truck brokers and the major load boards DAT and Truckstop.com.

On the app analysis in this report, we partnered with the UBS Evidence Lab to track the performance of ~30 truck brokerage and load board apps in the US. Within Truck Brokerage we further distinguish between app-based truck brokerage (such as Uber Freight) and apps offered by traditional truck brokerages (such as CHRW's Navisphere app). Our ranking analysis is iPhone only and the download analysis aggregates across the iOS and Google Play stores.

Key Takeaways

App downloads are important because they show the connection with trucking companies and drivers – In this report we look at the trend in app downloads over the past several years comparing the share of downloads across a group of conventional brokers, new tech focused brokers, and load boards. While app downloads are important for a number of reasons, the most significant factor is that they show how well brokers and other transport service companies are connecting with the broader fleet of trucking companies and individual truckers. The connection with trucking companies / truckers is important as it provides visibility into finding available capacity which is a key value add for brokers.

But downloads do not translate directly to commercial success – Within the app analysis one name stands out as showing remarkable traction in terms of downloads but an apparent lack of commercial success based on our conversations with multiple companies in the brokerage industry. Trucker Path and the Truckloads app realized the largest share of downloads in 2016 and 2017 and it shows up in second place in 2018. As a private company detailed financial information is not readily available for Trucker Path but conversations with multiple industry contacts indicate that strong downloads likely have not translated to significant revenue from the parking availability feature while usage of the load board functionality is also in question. In December 2017 Renren Inc acquired 100% ownership of Trucker Path. Renren had previously invested in Trucker Path.

Competition to reach the trucker --- why do drivers download apps? – We believe that there is significant competition among brokers and other intermediaries to have their app on the drivers phone while capacity and appetite among drivers to have apps is limited. In addition to the value of seeing potential loads, we believe that drivers value information that makes their life easier such as

availability of parking spaces, where to buy the cheapest fuel and even which truck stops have the best showering facilities.

Uber Freight & Convoy show traction in app downloads – Uber Freight launched its freight brokerage service in 2017 and it quickly gained traction with a market share of downloads of 19% in 2017 and 21% in 2018TD. Convoy is another relatively new competitor in truck brokerage with a focus on technology and Convoy also shows traction with 5% and 6% share of downloads in 2017 and 2018TD.

But apps may only facilitate access to the owner operator portion of the market – While we believe that app downloads provide a useful indication of how well a broker is building connections with capacity providers, it is important to note that the greatest impact of this connection is likely with independent owner operators who are most likely to be active in booking freight. For small trucking companies with even a couple of trucks, booking of loads is likely to be handled by a dispatcher or sales person and not by the driver. We estimate that owner operators account for roughly 20% - 30% of capacity in the for hire trucking market but a large portion of the owner operators are associated with trucking companies ---- Swift owner operators who are dispatched by Swift. Independent owners operators likely account for only 5% -10% of industry capacity.

And there is little evidence of disruption in the market – Based on our conversations with a variety of small, medium and large truck brokers, there is little evidence of a disruptive effect from the new technology focused truck brokers Uber Freight and Convoy. We estimate that Uber Freight is running at a pace of about \$200 mm in annual revenue which makes it about 20% of the size of Hub Group's truck brokerage activity (they are #8 on our list of brokers) and 2% of the size of CH Robinson. While the new competitors are focused on leveraging technology to drive efficiency, there is evidence that the new players also rely on important tools of a conventional broker such as the use of Truckstop.com and DAT in order to source capacity.

CHRW and Other "conventional" brokers also show traction on app downloads – CHRW's Navisphere has consistently held a meaningful share of downloads in the range of 7% to 17% from 2015 – 2018TD. The third and fourth largest truck brokers are Total Quality Logistics (TQL) and Coyote which is part of UPS (Landstar is a hybrid model which we show as the 2nd largest broker). Both TQL and Coyote show consistent traction in app downloads with share of 3% to 14% from 2015 – 2018TD.

DAT and Truckstop.com remain central hubs for accessing capacity and loads – While other players have load board functionality (eg Truckloads app), DAT and Truckstop.com remain the central hubs for posting loads and capacity in the brokerage industry. The value of incumbency and scale is significant and this principle also applies to the brokers. There is considerable value in the networks of large brokers in terms of both the strong flow of freight through their systems and the broad access to capacity through a large network of carriers.

Brokerage Industry Market Structure and Technology

CH Robinson has long been the largest truck broker with an unmatched network of offices (~150 brokerage focused in the US) and personnel who provided a diverse mix of customers across verticals and shipper size and enviable access to capacity through connections to small, mid and large trucking companies. Over

time CHRW has expanded its reach through acquisition and organic growth in domestic less-than-truckload (LTL) brokerage and also in global freight forwarding. Landstar System is another incumbent with a large presence although the Landstar model is more a hybrid than a pure brokerage approach. Landstar has a mix of dedicated owner operator capacity (Business Capacity Owners in Landstar terminology) and unrelated capacity procured through their brokerage capability.

Figure 4: Selected Truck Brokers' Gross Revenue (\$ in millions)

	2011	2014	2017
C.H. Robinson's NAST segment ¹	8,200	9,000	9,729
Landstar	2,651	2,989	3,388
Total Quality Logistics (a/k/a TQL)	1,047	2,150	2,934
Coyote Logistics (a business of UPS)	559	2,100	2,360
XPO's N.A. Freight Brokerage business ²	0	1,750	2,516
Echo Global Logistics	603	1,173	1,943
J.B. Hunt's ICS segment	356	718	1,025
Hub Group's Truck Brokerage business	339	674	824

Note: (1) NAST segment (actual) for 2017, NAST segment equivalent (UBSe) for 2014 and 2011; (2) Includes intermodal, drayage, and expedite.

Source: Company reports, Transport Topics, UBS analysis and estimates

While CHRW's scale and reach remain unmatched, a number of competitors have realized strong growth and have achieved significant scale over the past 10 years. Total Quality Logistics (Cincinnati) was formed in 1997 and it has become the 3rd largest (or 2nd depending on how you treat LSTR) with nearly \$3 billion in gross revenue. Coyote was founded in 2006 and it also followed a sharp growth trajectory rising to over \$2 bn in gross revenue in 2014 (Coyote was acquired and is currently part of UPS's Supply Chain and Logistics segment). We believe development of TQL, Coyote, and other competitors such as JB Hunt's ICS business drove increased competition for CHRW over the past eight years with a notable effect in 2011 – 2013. From our perspective it is hard to see the addition of new competitors such as Uber Freight or Convoy as being much different. We note that Uber Freight (at ~\$200 mm gross revenue) has not yet grown to the scale of TQL and Coyote when they began to cause increased competitive pressure on CHRW in 2011/2012.

Incumbents vs App Focused vs Load Boards

In this report we refer to conventional or incumbent brokers such as CHRW, Echo and other well established players as Brokers with Apps. While the distinctions in their business models are likely modest, we refer to newer tech focused competitors such as Uber Freight and Convoy as App based brokers. The third category of players we examine in this report is the load boards. Dial a Truck (DAT) and Truckstop.com are the dominant load boards but there are other newer players who offer some load board functionality including Truckloads, 123 Loadboard, Next Trucking and LoadExpress. Loadboards provide a central hub type of function where brokers can post loads for truckers to book and carriers can post capacity. The imbalance of loads vs capacity suggests that brokers are more active posting loads versus carriers offering capacity.

Potential Impact from Uber: Important Differences to Consider Between Passenger & Truckload Freight

Against the backdrop of Uber's dramatic rise in the passenger market, we believe it is worth noting important distinctions between the local passenger transport market and the long haul truckload freight market. Following are a few of the most notable differences in our view.

Uber in Freight vs Uber in Passenger / Taxi

- 1) First Mover Advantage (passenger) is not present in Freight --- We believe that a First Move Advantage was a meaningful factor supporting Uber's rapid rise in passenger transport but this opportunity is not available in truckload freight brokerage where there are a number of large network players and many small and mid-sized brokers.
- 2) Creation of New Capacity (passenger) vs no impact to capacity in TL --- In passenger Uber's approach attracted drivers using their own vehicles which created a large new source of capacity to compete with the incumbent taxi industry. In contrast, Uber Freight does not appear to draw in new capacity as there is not unused tractor and trailer capacity that can be drawn into the market by a new pool of driver labor.
- 3) Commercial vs Consumer & Impact of the Smart Phone --- In the consumer passenger market the smart phone provided a new mechanism to easily set up a pick up. While the smart phone clearly has an impact on trucking it is likely greater in terms of visibility to where the trucks are as opposed to affecting the ease and process for booking freight. Commercial movement of freight is primarily booked from an office using a desktop PC or laptop and the freight booking process is not transformed by the broad adoption of smart phones.
- 4) Complexity of Freight, Customer Service, & Exceptions Management --- Freight can have additional dimensions which create complexity versus passenger. One example is the requirements of refrigerated moves of temperature controlled food and pharmaceutical goods. While passenger moves may not require customer support resources, management of freight does as customers need status updates and in particular exceptions management. What is done when something goes wrong with a shipment is a key value add for brokers that is not a component of the passenger transport business.

The 1-5 Trucks Segment Comprises The Vast Majority Of N.A. Carrier Share; ~23% Are Active Carriers w/ CHRW

As seen in Figure 5, below, carriers with 1-5 trucks comprises 89% of all North America carriers, while carriers with 6-50 trucks comprises 10% and very large carriers with 4,000+ trucks does not register even one-tenth of a percent of all trucking companies. With respect to CHRW's use of carriers by size, ~23% of the carriers with 1-50 trucks are active with CHRW, ~51% of carriers with 6-50 trucks are active with CHRW and 100% of carriers with over 400 trucks are active with CHRW.

Figure 5: North America Carrier Share (CHRW Presentation, May 2017)

	1-5 Trucks	6-50 Trucks	51-399 Trucks	400-3,999 Trucks	4,000+ Trucks	Total
N.A. Carriers	183,916	20,691	1,890	227	22	206,746
% of Total N.A. Carriers	89%	10%	0.9%	0.1%	0.0%	100%
2016 CHRW Active Carriers	41,813	10,486	1,859	227	22	54,407
% of Carriers Active w/ CHRW	23%	51%	98%	100%	100%	26%

Note: Carriers include: For hire, USA 48 State, active status updated in 2014 and 2015
Source: CHRW presentation (analysis of May 2015 FMCSA's MCMIS Census Data)

Uber Freight Has Shown A Meaningful Share Of App Downloads In 2017/18; Load Boards Are #2 and #3

As seen in Figure 6, below, based on analysis by UBS Evidence Lab, Uber Freight has achieved 21% market share of "carrier side" truck brokerage / brokerage-related app downloads so far in 2018. This compares to 19% in 2017 (when Uber Freight's app was first available). Meanwhile, Truckloads – which functions as a 4PL load board rather than a 3PL broker – has seen 13% share of downloads so far in 2018, compared to 28% in 2017 and 46% in 2016. DAT Load Board ranks #3 in 2018 with 12% share of downloads, compared to 9% in 2017 and 1% in 2016. Notably, J.B. Hunt Carrier app has seen its market share rise in 2018 in particular; to 11%, from 4-5% in 2017/16/15. In our view this is consistent with JBHT's increased investment in technology and goal to grow in truck brokerage. Finally, while CHRW's Navisphere Carrier has seen its market share of downloads decrease to 7% in 2018, from 17% in 2015, this is still solid market share; and it also highlights, in our view, that CHRW in fact has a track record of being an early adopter of technology.

Figure 6: Share of Downloads – All including Uber Freight, Brokers w/ Apps, App-based Brokers, Load Boards, & Relay

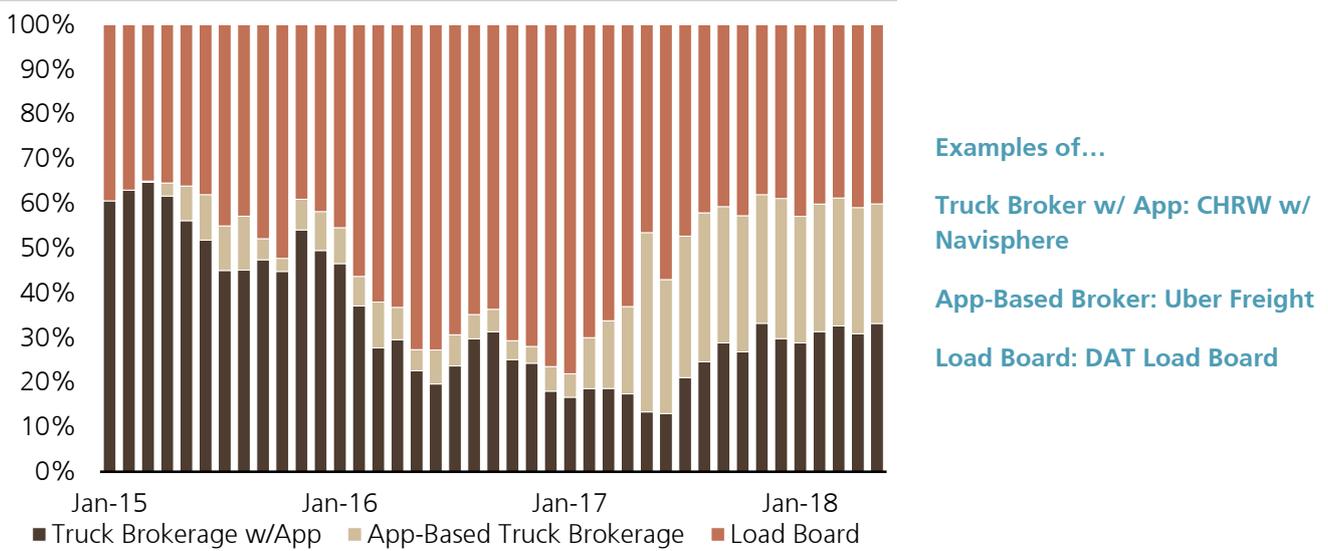
Total Share, Rank	Service	2015	2016	2017	2018
1	Uber Freight	0%	0%	19%	21%
2	Truckloads	4%	46%	28%	13%
3	DAT Load Board	0%	1%	9%	12%
4	J.B. Hunt Carrier	4%	5%	4%	11%
5	Navisphere Carrier	17%	10%	9%	7%
6	123 Loadboard	18%	10%	7%	7%
7	Truckstop	12%	6%	6%	6%
8	Convoy	1%	3%	5%	6%
9	TQL Carrier	14%	6%	3%	6%
10	Amazon Relay	0%	0%	2%	4%
11	Landstar Carrier	8%	2%	3%	3%
12	Coyote Carrier	10%	5%	4%	3%
13	Next Trucking	0%	0%	0%	1%
14	Transfix	4%	2%	3%	0%
15	Loadsmart	0%	0%	0%	0%
16	Allen Lund Carrier	0%	0%	0%	0%
17	LoadExpress	0%	0%	0%	0%
18	Echo Carrier	0%	0%	0%	0%

Note: Aggregate of iOS and Google Play; excludes Koubei
 Source: UBS Evidence Lab, Sensor Tower

Driven By Uber Freight, App-Based Truck Brokers Have Gained Share of Downloads In 2017/18

As seen in Figure 7, below, based on analysis by UBS Evidence Lab, app-based truck brokers have grown to a high 20's market share percentage (note: 27% in May 2018). This compares to about 5% in January 2017 before Uber Freight's app became available. Meanwhile, load boards have a roughly 40% market share of downloads so far in 2018, compared to 78% in January 2017; and truck brokers with apps have a low 30's market share percentage so far in 2018, compared to mid-teens in January 2017.

Figure 7: Shr. of Downloads – Brokers w/ Apps vs. App-based vs. Load Boards



Note: Aggregate of iOS and Google Play
 Source: UBS Evidence Lab, Sensor Tower

Figure 8: Listing Truck Brokers w/ Apps, App-Based Brokers, & Load Boards

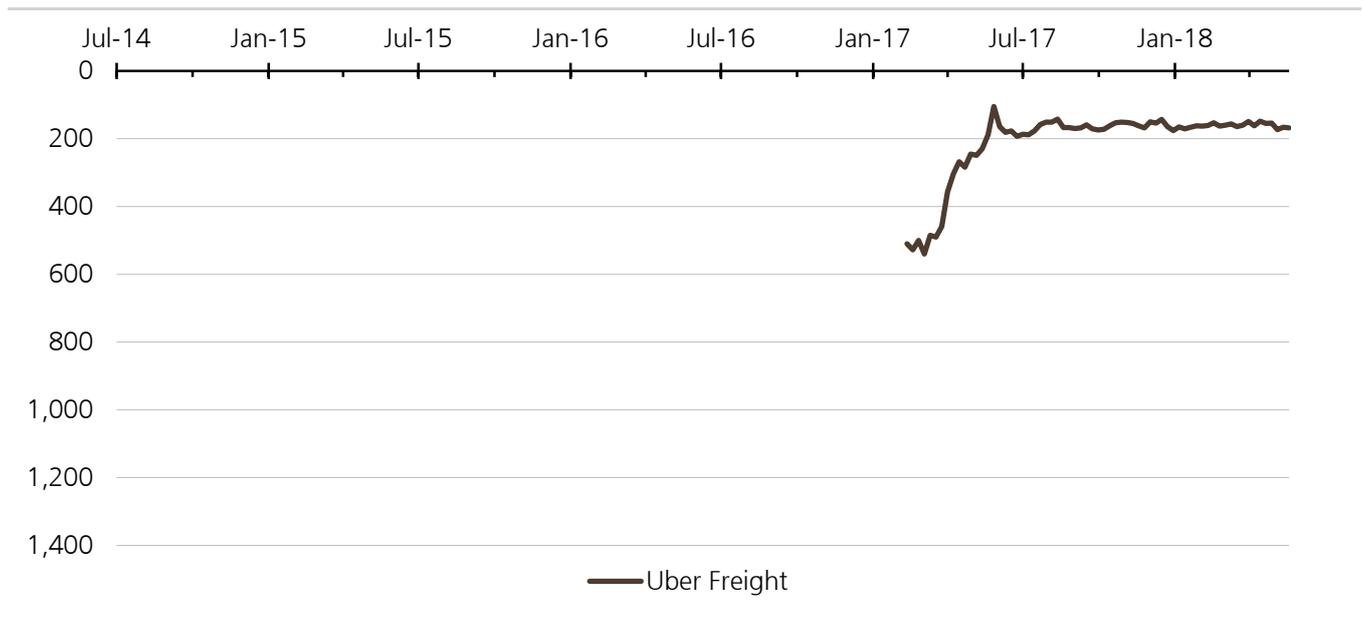
Truck Brokerage w/ App	App-Based Truck Brokerage	Load Board
J.B. Hunt Carrier	Uber Freight	Truckloads
Navisphere (CHRW) Carrier	Convoy	DAT Load Board
TQL Carrier	Transfix	123 Loadboard
Landstar Carrier	Loadsmart	Truckstop
Coyote Carrier		Next Trucking
Allen Lund Carrier		Load Express
Echo Carrier		

Source: UBS

Uber Freight’s App Has Been Ranked Reasonably Consistently Near 150th Most Popular Among Travel Apps

With the help of UBS Evidence Lab we measured the popularity of the Uber Freight app based on its ranking (note: based on number of downloads) in the travel category in which it falls. We show the trend in the Uber Freight app ranking in Figure 9, below. The progression shows that when the Uber Freight app was first launch it was about the five hundredth most downloaded app in the category (specifically it was the 510th most downloaded for the week ended February 11, 2017). The Uber Freight app rose quickly in popularity to a high of 105th most downloaded app in the category for the week ended May 27, 2017. Since then the Uber Freight app has declined in popularity, but only modestly, as it has maintained a ranking in the mid 100’s since then.

Figure 9: Uber Freight iPhone Ranking (Travel, U.S.)

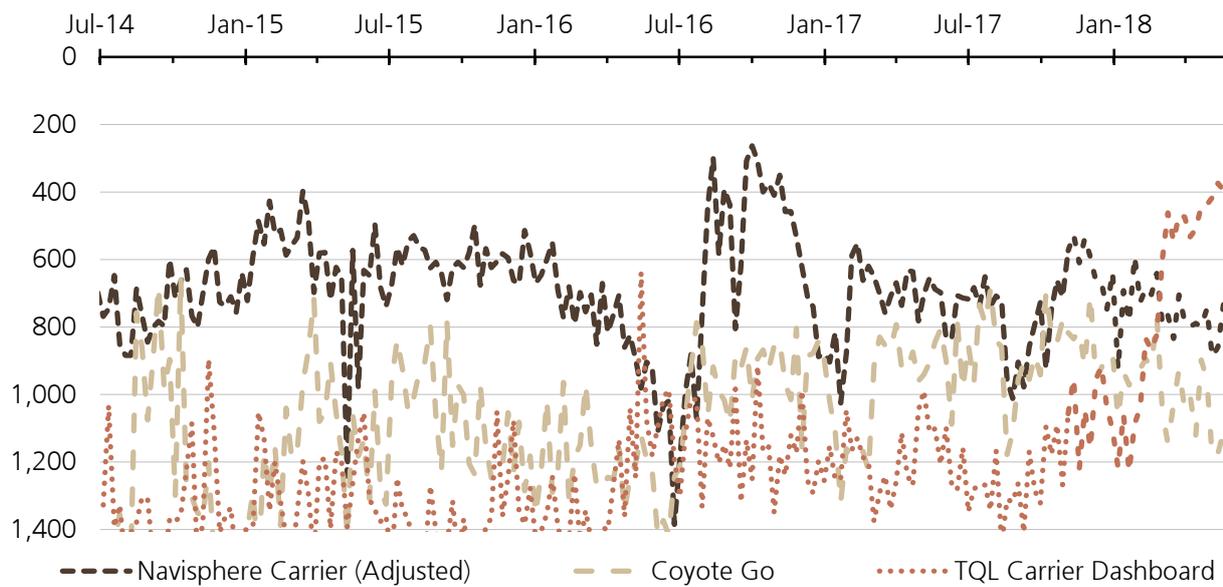


Source: UBS Evidence Lab, Sensor Tower

Navisphere (CHRW) Has Generally Had The Best Download Rank Among Brokers w/ Apps, Until Recently (TQL)...

Our next analysis, with the help of UBS Evidence Lab, was to measure the popularity of the apps of various truck brokers that also have mobile interfaces, based on their ranking (note: based on number of downloads) in the business category in which they fall. Note that because these apps fall in the business category whereas Uber Freight falls in the travel category, the rankings of the broker apps are not comparable to the ranking of the Uber Freight app. That said, the share of downloads that we showed in Figure 6, above, and elsewhere in this report are directly comparable. In any event, our analysis in Figure 10, below, shows that Navisphere (CHRW) has generally had the best download rank of the broker apps since 2014. Broadly speaking, Navisphere has usually ranked between the 1,000th most popular business app and the 400th most popular business app, with limited exceptions where Navisphere was ranked higher or lower. For comparison, Coyote Go and TQL Carrier Dashboard have each usually ranked lower than the 800th most popular in the business category; until 2018 when TQL Carrier Dashboard improved in the rankings to as high as the roughly 400th most popular in the business category in late May.

Figure 10: Selected Truck Brokers w/ Apps – iPhone Ranking (Business, U.S.)

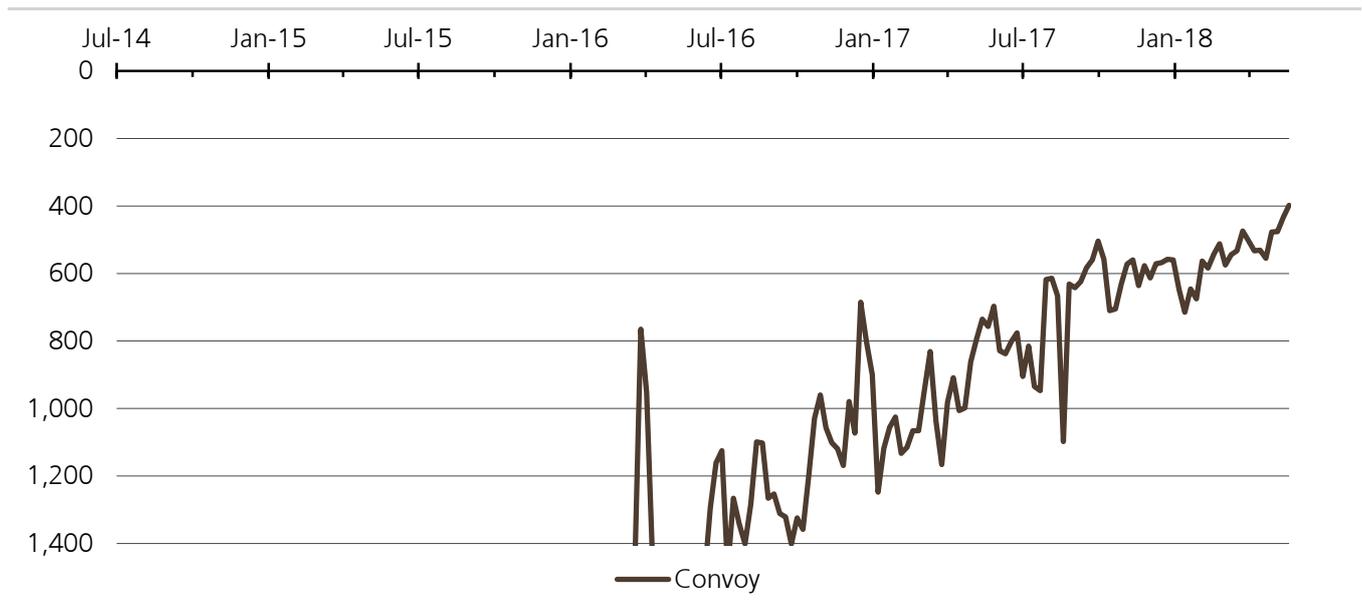


Note: Navistar is CHRW.
Source: UBS Evidence Lab, Sensor Tower

Convoy Is An App-Based Broker That Has Seen Steady Improvement In Download Rank To ~400th In Business Area

Our next analysis, with the help of UBS Evidence Lab, was to measure the popularity of the app-based truck brokers based on their ranking (note: based on number of downloads) in the business category in which they fall. Note that, as with the broker apps that we discussed above, because the app-based brokers fall in the business category whereas Uber Freight falls in the travel category, the rankings of the app-based brokers are not comparable to the ranking of the Uber Freight app. That said, the share of downloads that we showed in Figure 6, above, and elsewhere in this report are directly comparable. In any event, our analysis in Figure 11, below, shows that Convoy has seen steady improvement in download rank from roughly the 1,200th most popular business app in mid-2016 to roughly the 400th most popular business app in late May.

Figure 11: Selected App-based Truck Brokers – iPhone Ranking (Business, U.S.)

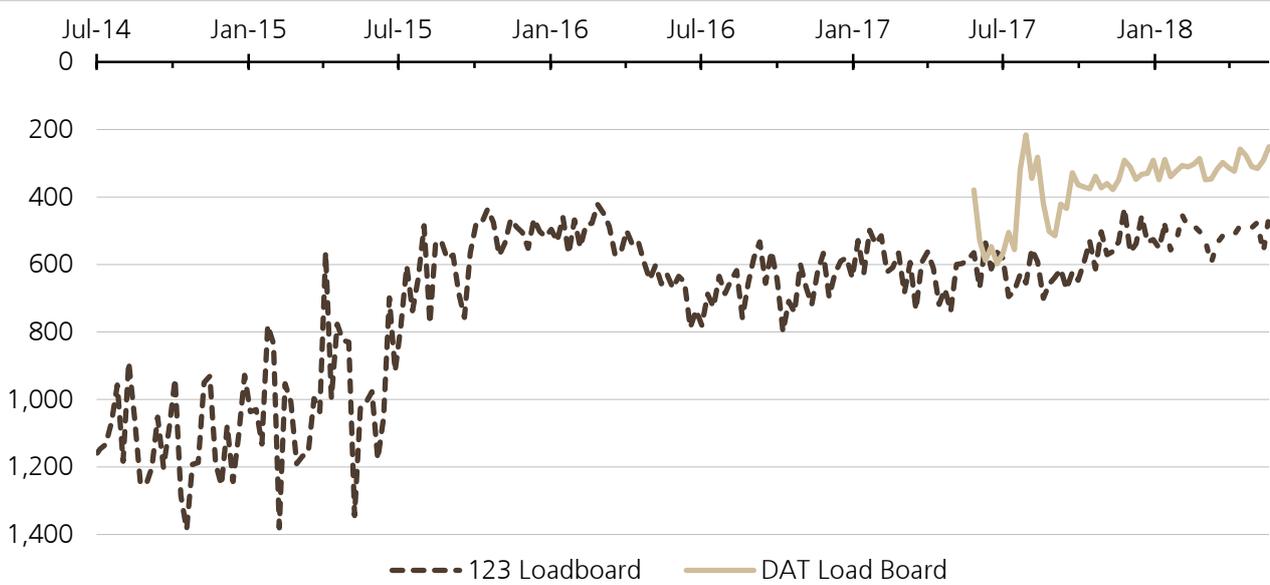


Source: UBS Evidence Lab, Sensor Tower

Load Board Apps Are Popular, With DAT The ~250th Most Downloaded App In The Business Category...

As seen in Figure 12, below, UBS Evidence Lab helped us analyze the popularity of various load board apps based on their ranking (note: based on number of downloads) in the business category in which they fall. Note that, as with the broker apps and app-based brokers that we discussed above, because the load board apps fall in the business category whereas Uber Freight falls in the travel category, the rankings of the load board apps are not comparable to the ranking of the Uber Freight app. That said, the share of downloads that we showed in Figure 6, above, and elsewhere in this report are directly comparable. In any event, our analysis in Figure 12, below, shows that the 123 Load Board app has usually ranked between the 800th most popular business app and the 400th most popular business app since mid-2015. And the DAT Load Board app is even more popular, ranking at roughly the 250th most popular business app in late May.

Figure 12: Selected Load Boards – iPhone Ranking (Business, U.S.)

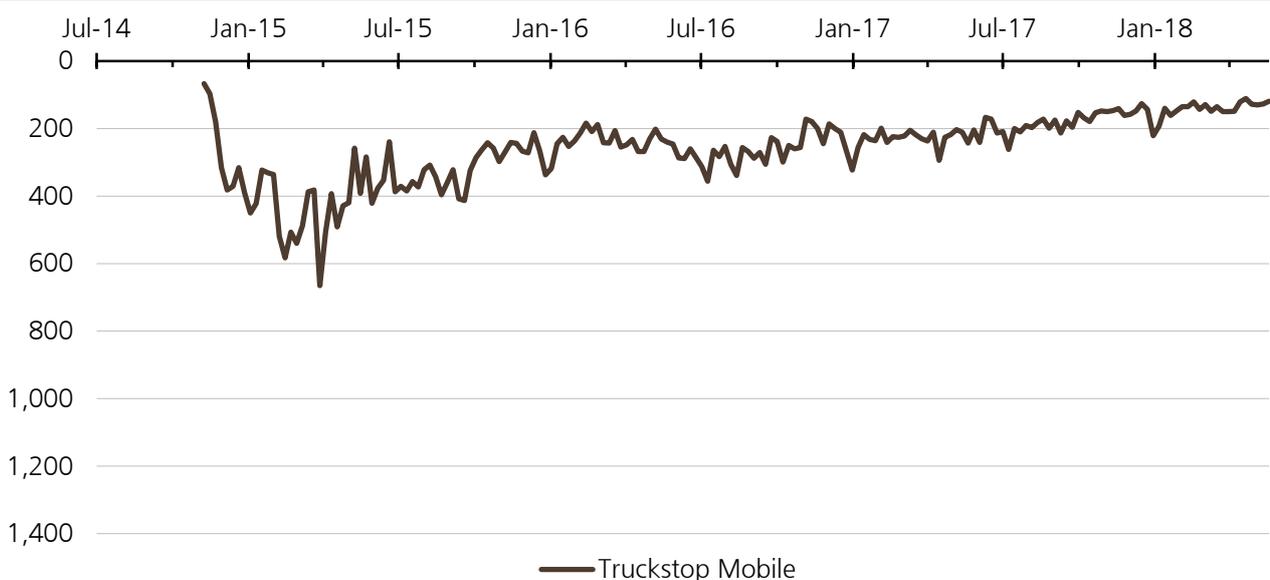


Source: UBS Evidence Lab, Sensor Tower

And Truckstop Mobile Is The ~120th Most Downloaded App In The Navigation Category

As seen in Figure 13 below, UBS Evidence Lab also helped us analyze the popularity of the Truckstop Mobile app based on its ranking (note: based on number of downloads) in the navigation category in which it falls. Our analysis shows that the Truckstop Mobile app is popular and has seen steady improvement in download rank from roughly the 400th most popular navigation app in mid-2015 to roughly the 120th most popular navigation app in late May.

Figure 13: Additional Selected Load Boards – iPhone Ranking (Navigation, U.S.)



Source: UBS Evidence Lab, Sensor Tower

Downloading An App Is Not Hard; Carriers Will Download An App If They Believe It Has A “Critical Mass” Of Freight

In the following Figures (Figure 14, Figure 15, Figure 16, and Figure 17), below, we further segment the analysis into the various apps’ market shares among (i) all truck brokerage related apps excluding load boards and AMZN Relay, (ii) only brokers with apps, (iii) only app-based brokers, and (iv) only load boards. The further segmentation shows that many different apps are popular – each one more or less so depending on which other apps it is being compared to – and, in our view, downloading an app is not difficult and consequently carriers will download an app if they believe it has a “critical mass” of freight.

Figure 14: Share of Downloads – All excluding Load Boards & Relay

Total Share, Rank	Service	2015	2016	2017	2018
1	Uber Freight	0%	0%	40%	37%
2	J.B. Hunt Carrier	6%	14%	7%	19%
3	Navisphere Carrier	29%	29%	18%	13%
4	Convoy	1%	8%	10%	10%
5	TQL Carrier	24%	17%	6%	10%
6	Landstar Carrier	13%	6%	5%	6%
7	Coyote Carrier	17%	15%	8%	5%
8	Transfix	6%	7%	5%	0%
9	Loadsmart	0%	0%	0%	0%
10	Allen Lund Carrier	0%	0%	0%	0%
11	Echo Carrier	0%	0%	0%	0%

Note: Aggregate of iOS and Google Play
Source: UBS Evidence Lab, Sensor Tower

Figure 15: Share of Downloads – Brokers w/ Apps only

Total Share, Rank	Service	2015	2016	2017	2018
1	J.B. Hunt Carrier	7%	18%	16%	36%
2	Navisphere Carrier	33%	36%	41%	24%
3	TQL Carrier	26%	21%	13%	19%
4	Landstar Carrier	14%	7%	12%	11%
5	Coyote Carrier	19%	18%	19%	10%
6	Allen Lund Carrier	0%	0%	0%	0%
7	Echo Carrier	0%	0%	0%	0%

Note: Aggregate of iOS and Google Play
Source: UBS Evidence Lab, Sensor Tower

Figure 16: Share of Downloads – App-based Brokers only

Total Share, Rank	Service	2015	2016	2017	2018
1	Uber Freight	0%	0%	72%	78%
2	Convoy	8%	44%	18%	22%
3	Transfix	59%	39%	10%	1%
4	Loadsmart	0%	0%	0%	0%
5	Cargomatic	33%	17%	0%	0%

Note: Aggregate of iOS and Google Play
Source: UBS Evidence Lab, Sensor Tower

Figure 17: Share of Downloads – Load Boards only

Total Share, Rank	Service	2015	2016	2017	2018
1	Truckloads	9%	69%	57%	34%
2	DAT Load Board	0%	1%	17%	31%
3	123 Loadboard	44%	15%	13%	18%
4	Truckstop	28%	9%	11%	16%
5	Next Trucking	1%	1%	0%	1%
6	LoadExpress	0%	0%	0%	0%
7	Getloaded	19%	5%	0%	0%

Note: Aggregate of iOS and Google Play
Source: UBS Evidence Lab, Sensor Tower

The Ranking Of AMZN Relay Has Been Volatile, But It Has Not Been As Popular As When It Was First Launched

As seen in Figure 18, below, UBS Evidence Lab helped us analyze the popularity of the AMZN Relay app based on its ranking (note: based on number of downloads) in the business category in which it fall. In our view, the core functionality of AMZN Relay today is optimizing fulfillment center traffic, so it is not a brokerage app per se; but more broadly it does connect AMZN with truckers. In any event, our analysis in Figure 18, below, shows that the AMZN Relay app was the 315th most popular business app when first launched in November 2017. Since then it fell at one point to as low as nearly the 1,400th most popular business app in late February before rebounding to about the 400th most popular business app in mid-March; however, as of late May it had fallen again to about the 750th most popular business app.

The core functionality of AMZN Relay today is optimizing fulfillment center traffic, but more broadly it does connect AMZN with truckers.

Figure 18: Amazon Relay – iPhone Ranking (Business, U.S.)

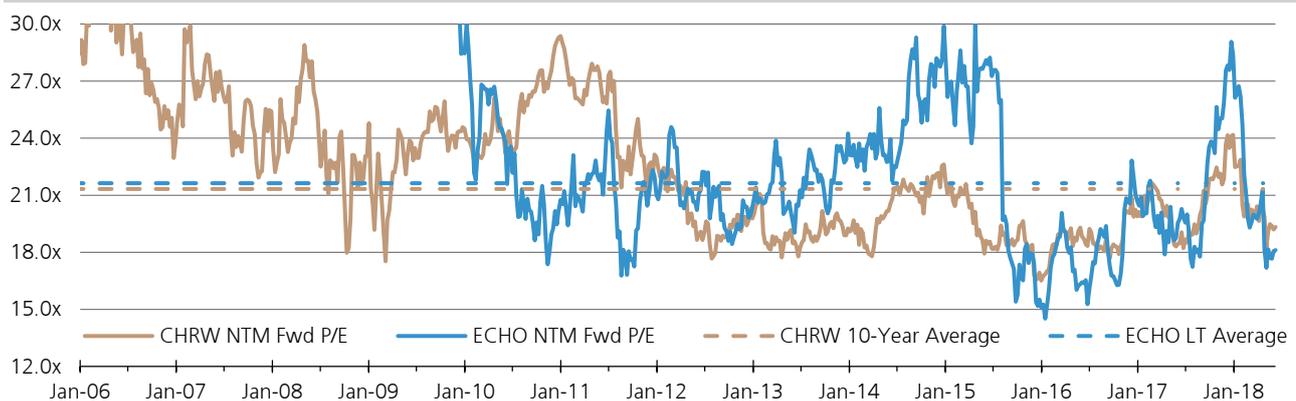


Source: UBS Evidence Lab, Sensor Tower

Brokers' P/E Valuation Is Meaningfully Below LT Average

In the following chart we show the rolling one year forward P/E for CHRW and ECHO from 2006 through the present time. CHRW is trading slightly above 19x which is well below the 10 year average of 21.3x while ECHO, at 18.1x, is also below its long-term average P/E of 21.7x. We believe that concerns regarding Uber Freight have weighed on valuation for CHRW and ECHO.

Figure 19: CHRW and ECHO Rolling Forward P/E

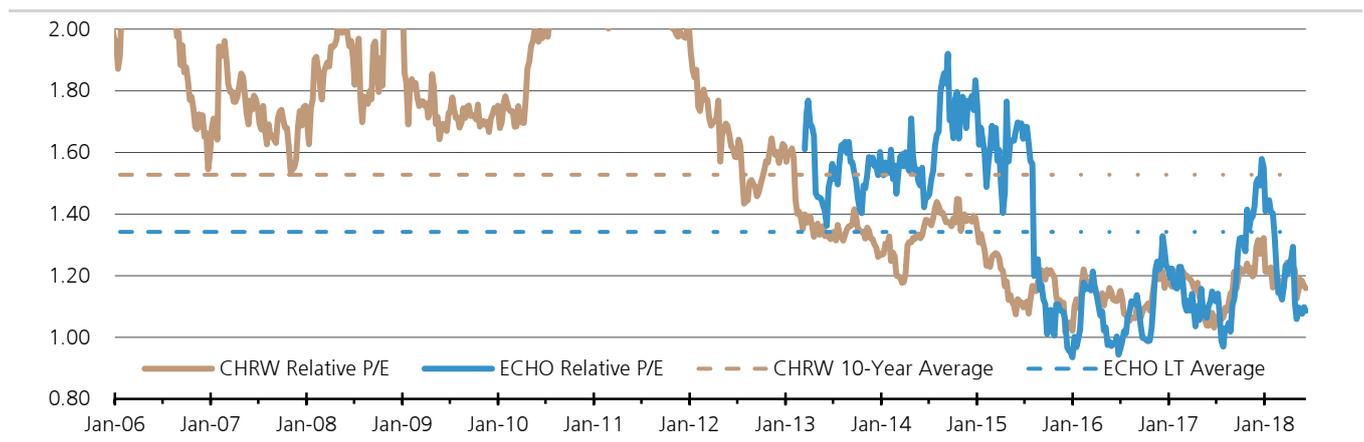


Source: FactSet, UBS analysis and estimates

Relative P/E Valuations Are Depressed For CHRW & ECHO

Since 2013 CHRW and ECHO relative valuations have been in a gradual downward trend as shown in the following chart. At the present time CHRW's relative P/E (versus the S&P 500) is about 24% below its 10 year average of 1.53x while ECHO is about 19% below its long-term average relative P/E of 1.34x. We believe that the depressed relative valuation for both names is a function of concern about secular headwinds.

Figure 20: CHRW and ECHO Relative P/E vs. S&P 500



Source: FactSet, UBS analysis and estimates

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Valuation Method and Risk Statement

Our price targets for CHRW and ECHO are based on multiples, respectively, of 2019E EPS.

We assume that competitive pressures in the truck brokerage markets will cause only modest, gradual decline in thru-the-cycle gross margin performance for the truck brokerage companies, especially for the largest truck broker (CHRW). However, if these pressures are more intense than we anticipate, it would likely be a source of downside risk to our gross margin and EPS forecasts for the truck brokers. Relative to our view for solid freight demand and strong pricing trends in 2H18, a meaningful deceleration in the truckload market would be a source of downside risk to the pace of revenue growth for the brokers. Meanwhile, a rapid increase in trucking supply could cause the truckload market to become more balanced. A more balanced truckload market tends to be less favorable for truck brokers as there is less pressure on shippers to use a broker.

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Neutral	FSR is between -6% and 6% of the MRA.	39%	23%
Sell	FSR is > 6% below the MRA.	15%	12%
Short-Term Rating	Definition	Coverage ³	IB Services ⁴
Buy	Stock price expected to rise within three months from the time the rating was assigned because of a specific catalyst or event.	<1%	<1%
Sell	Stock price expected to fall within three months from the time the rating was assigned because of a specific catalyst or event.	<1%	<1%

Source: UBS. Rating allocations are as of 31 March 2018.

1: Percentage of companies under coverage globally within the 12-month rating category.

2: Percentage of companies within the 12-month rating category for which investment banking (IB) services were provided within the past 12 months.

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UBS Securities LLC: Thomas Wadewitz; Alex Johnson; Michael Triano.

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Company Name	Reuters	12-month rating	Short-term rating	Price	Price date
C.H. Robinson Worldwide, Inc. ¹⁶	CHRW.O	Buy	N/A	US\$88.68	11 Jun 2018
Echo Global Logistics, Inc. ¹⁶	ECHO.O	Neutral	N/A	US\$29.70	11 Jun 2018

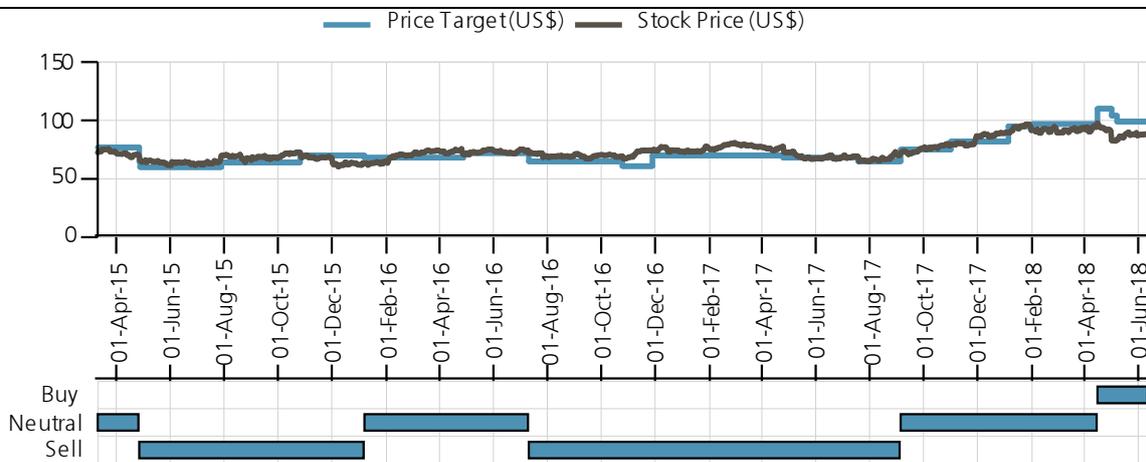
Source: UBS. All prices as of local market close.

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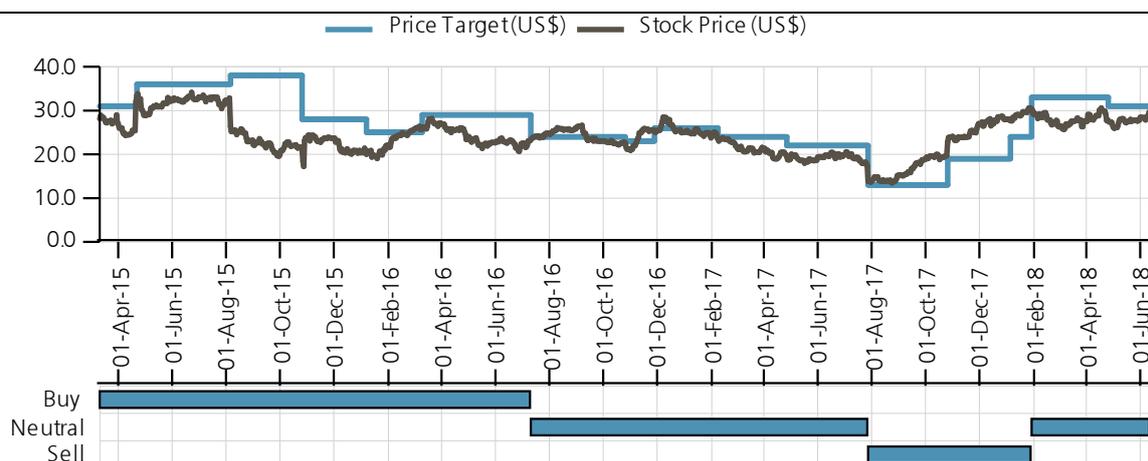
C.H. Robinson Worldwide, Inc. (US\$)



Date	Stock Price (US\$)	Price Target (US\$)	Rating
2015-03-11	72.48	77.0	Neutral
2015-04-27	68.94	65.0	Sell
2015-04-28	65.73	60.0	Sell
2015-07-29	69.85	64.0	Sell
2015-10-26	72.5	70.0	Sell
2016-01-07	63.09	68.0	Neutral
2016-04-28	70.83	72.0	Neutral
2016-07-11	71.86	65.0	Sell
2016-10-25	69.43	61.0	Sell
2016-11-28	74.21	70.0	Sell
2017-04-25	77.7	68.0	Sell
2017-07-19	68.69	65.0	Sell
2017-09-05	71.79	75.0	Neutral
2017-11-01	79.33	82.0	Neutral
2018-01-05	89.57	95.0	Neutral
2018-02-01	91.98	97.0	Neutral
2018-04-16	97.62	110.0	Buy
2018-05-02	82.9	104.0	Buy
2018-05-08	83.93	99.0	Buy

Source: UBS; as of 11 Jun 2018

Echo Global Logistics, Inc. (US\$)



Date	Stock Price (US\$)	Price Target (US\$)	Rating
2015-03-11	28.13	31.0	Buy
2015-04-22	33.39	36.0	Buy
2015-08-06	26.38	38.0	Buy
2015-10-26	20.93	28.0	Buy
2016-01-07	20.0	25.0	Buy
2016-03-10	25.73	29.0	Buy
2016-07-11	23.41	24.0	Neutral
2016-10-26	22.65	23.0	Neutral
2016-11-28	25.2	26.0	Neutral
2017-02-08	23.7	24.0	Neutral
2017-04-27	19.4	22.0	Neutral
2017-07-28	13.85	13.0	Sell
2017-10-26	22.9	19.0	Sell
2018-01-05	27.65	24.0	Sell
2018-01-29	30.35	33.0	Neutral
2018-04-26	27.55	31.0	Neutral

Source: UBS; as of 11 Jun 2018

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