Palletizing the Automated Warehouse Opportunity Secular Trend in High Gear; Framing the Winners in Multi-Industry & Logistics

Multi Industry | Industry Primer

- Key Takeaway: We view Warehouse Automation as a secular growth theme that impacts automation, electrical equipment, and logistics suppliers. The COVID-19 pandemic has accelerated the trend to automated warehousing given explosive ecommerce growth and the need for last mile delivery. Despite the likely re-emergence of the "experience economy" we think warehouse automation remains a secular winner. Our key stock ideas to leverage this theme include: HON (OP, Walsh), XPO (OP, Landry), and SIE (OP, Kukhnin).
- Warehouse Automation Market to Double by 2026: E-commerce was gaining share into the pandemic, and the emergence of COVID-19 only accelerated the transition. E-commerce as a % of retail sales has increased to 14% (approaching 25% ex auto/gas+) from 2% in 2005, and is expected to reach 27% by 2024. Supply chains have become increasingly complex, and the pandemic has given rise to a heightened awareness of the importance of supply chain continuity and the potential vulnerabilities of in-sourcing logistics. Advanced automation/intelligent machines afford shippers greater flexibility and visibility, while also lowering costs and rising demand for these capabilities is expected to fuel a doubling of the global warehouse automation market by 2026.
- Several "Winners" in Global Multi-Industry: While the majority of the report focuses on Honeywell (Intelligrated) and Rockwell (Independent Cart) from an Electrical Equipment & Multi-Industry perspective, there is also a significant opportunity for electrical equipment. For example, automated warehouses typically require 40-foot ceilings to support all sorting, picking, and packaging equipment (e.g., conveyors, packaging). This increases the electrical intensity of the warehouse significantly and will benefit ETN, and ATKR. There is even discussion that the future automated warehouse will be "lights out" meaning fully automated using software and robotics. In European Cap goods, Siemens offers Intralogistics Solutions and supplies controllers and communication technology to be equipped with AGVs, conveyors and storage systems to help enable warehouse automation. Siemens also offers digital twin, PLM software and cloud-based IoT operating systems to help digitalize warehouse operations. We are raising our TP on HON to \$244 (from \$235).
- Key Logistics Winners XPO, DHL: XPO is a prime beneficiary of the structural acceleration in warehouse automation (#2 player in contract logistics globally). It is a leader in tech investment and proprietary innovation in transport/logistics, including advanced warehouse automation, intelligent machines (robots and cobots; warehouse AGVs), dynamic data science (Al and predictive analytics), and its digital freight platform all of which are aimed at increasing efficiency, creating new top line opptys, and driving a competitive wedge between itself and its peers. It's differentiated and scalable tech platform positions the company to capitalize on the secular tailwinds in automation/e-Commerce and we note that the company has inked \$4B in contract wins YTD through April. DHL Supply Chain is also a beneficiary; it is the largest contract logistics player globally, and operates ~2k sites globally and offers a range of warehousing and supply chain mgmt solutions, with an emphasis on high impact scalable technologies.



Research Analysts

John Walsh 212 538 1664 john.walsh@credit-suisse.com

Allison M. Landry 212 325 3716 allison.landry@credit-suisse.com

Andre Kukhnin, CFA 44 20 7888 0350 andre.kukhnin@credit-suisse.com

Tamjid Chowdhury 212 325 7816

tamjid.chowdhury@credit-suisse.com

Jing Zhang

212 325 3781 jing.zhang.2@credit-suisse.com

Brian Wright

212 538 1855 brian.wright@credit-suisse.com

Chandni Chellappa

212 325 2759 chandni.chellappa@credit-suisse.com

Iris Zheng, CFA 44 20 7883 5298

iris.zheng@credit-suisse.com

DISCLOSURE APPENDIX AT THE BACK OF THIS REPORT CONTAINS IMPORTANT DISCLOSURES, ANALYST CERTIFICATIONS, LEGAL ENTITY DISCLOSURE AND THE STATUS OF NON-US ANALYSTS. US Disclosure: Credit Suisse does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the Firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.



Table of Contents

The Future of Warehouse Automation	3
Types of Warehouse Automation	4
Logistics Industry Ripe for Disruption	5
Warehouse Automation Industry Players	5
Integrators	7
Acquisitions	7
Market Drivers	8
Accelerating E-commerce Growth	8
Automation Penetration Still Low	9
Supply Chain Reconfiguration	10
Robust Demand for Industrial Real Estate	11
Retail-to-Industrial Conversions Accelerating	12
Form Follows FunctionNew Facilities Built to Accommodate Demand	12
Labor Demand and Rising Costs	12
Lights-Out Warehousing	13
Cost of Warehouse Automation	13
Contract Logistics	14
Market Underpinned by Solid Growth Expectations	14
Plenty of Share Up for Grabs Amongst Key Players	14
Key Stock Picks for Automated Warehousing	16
Honeywell Intelligrated	16
Rockwell Automation	17
XPO Logistics	17
Valuation	23
Honeywell International Inc.	25



The Future of Warehouse Automation

The robust growth in distribution and fulfillment centers, driven largely by an increase in ecommerce, has put the spotlight on warehouse automation. The focus further intensified in 2020 as growth in e-commerce accelerated as a result of COVID-19/work-from-home trends. In order to keep up with rising demand levels, warehouse automation will become increasingly important as it helps drive improved productivity, more efficiency, increased order accuracy, and improved safety levels. Additionally, increased automation levels help warehouses adapt to new social distancing measures and operate with fewer employees. We do not expect the reemergence of the "experience economy" to slow down this secular trend. Consumer expectations for shorter "delivery" time is also increasingly putting focus on micro-fulfilment solutions.

As a testament to this, LogisticsIQ estimates that the warehouse automation market will grow at 14% CAGR from 2019-2026, reaching \$30B in 2026 from \$15B in 2019. Berkshire Grey, a provider of Al-enabled robotics that enables automation in e-commerce fulfillment, retail resupply, packaging/ handling logistics etc., sees a TAM of \$280B+. This includes \$230B+ of annual warehouse labor spend and \$56B of automated material handling equipment market (expected to grow 13% per year). On 2/24/2021, Berkshire Grey announced a business combination with Revolution Acceleration Acquisition Corp that valued the business with an estimated post-transaction equity value of \$2.7B.

It is estimated that only 40% of the warehouse industry employs automation and within that 30-35% only use basic automation such as package conveyance. Despite all the press, we think a few early "first movers" continue to dominate the marketplace such as Amazon, FedEx, Target, and Walmart. However, the market has broadened with 32 available case studies based on Honeywell's Intelligrated offering.

The bottom line is that warehouse automation will take on an increasingly important role in order for companies to keep up with demand and remain competitive. And arguably, companies with more advanced warehouse operations should eventually be rewarded with a higher multiple.

The strong growth is evident from strength in Honeywell's Intelligrated business, which reported organic sales growth of 14% (Warehouse and Workflow Solutions) and a backlog increase of 70% in FY20. In a survey conducted by Honeywell, more than half of the respondents indicated that they are increasingly open to investing in automation including industries such as e-commerce, grocery, food and beverage, and logistics industries.

Figure 1: Global Warehouse Automation Market Expected to Double by 2026 (\$ billions)



Source: LogisticsIQ



Note: Figures as of O4 for every year except 2020 (as of O220); Warehousing and storage category (private est.)

Figure 2: Warehousing Establishment Continues to Rise

Source: BLS, Credit Suisse



Types of Warehouse Automation

There are various types of warehouse automation, and most facilities deploy an assortment of customized technologies tailored to their specific needs. Different types of automation include:

- Assisted Picking Robots: These robots move autonomously throughout facilities and bring packages directly to employees. They help to reduce travel time for workers, optimize travel routes, and reduce employee fatigue. Additionally, they can help increase units picked per hour by 30-180%.
- Goods-to-Person Technologies: This includes machines, conveyor systems, or robots, which bring shipments directly to employees for assembly or packing and can also help put away materials. These devices help drive a 200% increase in picking productivity, and improve put-away time by 50%.
- Indoor Robotic Transport: This includes both pallet-focused indoor robotics, which help forklifts pick up and put away shipments, and bin-focused indoor robotics, which transport items and trolleys throughout facilities.
- *Wrapping Robots:* These robots help with wrapping of shipments and materials in order to reduce physical work for warehouse staff.
- Inventory Management Robots: These devices monitor inventory levels and can alert staff when inventory is low.
- Robotic Arms: Robotic arms help to complete tasks (e.g. assembly and packaging) that can otherwise be monotonous for humans.
- Wearable Devices: Workers can use these devices in lieu of paper pick lists and RF scanners. These help improve accuracy and speed of picking materials, and improve picking productivity by 10-20%.
- Pick-to-Light: These devices can scan barcodes and alert workers where to pick up or place specific items. This in turn helps to reduce walking/searching time and also improves accuracy levels.
- Voice Picking and Tasking: Robots can use speech recognition and headsets in order to direct employees where to retrieve or place objects. This eliminates the need for handled devices, which in turn improves efficiency and safety.
- Drones: Some warehouses use drones to help with inventory management and communicating when inventory levels are low. These are more time and energy efficient than humans and forklifts in terms of barcode scanning. That said, drones are typically not used to pick and place items around a facility.





Figure 3: Various Types of Automation Deployed in Warehouses

Source: DHL Group

Logistics Industry Ripe for Disruption

The Logistics industry has lagged other industries with regards to digital disruption, and there appear to be significant opportunities to drive efficiency gains and change through technology. This includes using AI and data analytics to improve demand forecasting, workforce productivity, predictive maintenance for warehouse equipment, etc. It also means increasing automation through robotics and smart operations to increase efficiency, accuracy, and safety throughout facilities. All in all, as the logistics industry continues to develop its technology initiatives, this will transform both the top line by accommodating more growth and margins as companies can operate significantly more efficiently.

Figure 4: Opportunity for Disruption is Large



Source: DHL Group

Warehouse Automation Industry Players

In Figure 5, below, we highlight key players in the warehouse automation space. The European Food Retail team hosted an expert call with AutoStore management in April 2021 (<u>"AutoStore Call feedback: Q-grocery requires urban brownfield automation, less room for large CFC</u>



solution?", 4/22/21). Recall, in April 2021, Softbank agreed to purchase a 40% stake in the company for \$2.8B.

Figure 5: Industry Mapping (Select Companies)

Figure 5: Industry Mapping (Select Compar	•	
laterial Handling Equipment and System Integrato	AGV (Automated Guided Vehicles) and AMR (Autonomous Mobile Robots)	Contract Logistics Players
KION Group	• Omron Adept	DHL Supply Chain
• Daifuku	Berkshire Grey	XPO Logistics
Honeywell Intelligrated	Geek+ Robotics	• Kuehne & Nagel
• Toyota	 ForwardX Robotics 	Hitachi Transport System
• Fives Group	 6 River Systems (Shopify) 	• CEVA
• Conveyco	• Grenzebach	SNCF Geodis
• OPEX	Fetch Robotics	• Ryder
 Shanxi Oriental Material Handing (OMH) 	Wellwit Robotics	• UPS SCS
C&D Skilled Robotics Inc.	JBT Corporation	• Neovia
Hinditron	Milrem Robotics	• DB Schenker
	• Rexroth (Bosch)	• Nippon Express
Robotics Components	Automatic Identification and Data Capture (AIDC)	Energy and Power Automation
Siemens	• Zebra Technologies	Schneider Electric
• Energid	• Honeywell	• Siemens
• OnRobot	Datalogic	Johnson Controls
 Advanced Motion Controls 	• SATO	General Electric
Soft Robotics	• Cognex	• Alstom
• SICK	• SICK	Cummins
• RobotlQ	• Bluebird	• Festo
Elmo Motion Control	DENSO Wave	• Eaton
Harmonic Drive	• Toshiba TEC	
Nord Drive Systems	• TSC	
Micro-Fulfillment	Machine Vision, Imaging and Wireless	ASRS and Storage
• Swisslog	• Teledyne Imaging	ROBO Technologies Automation
Takeoff Technologies	• Basler	• Daifuku
• Muratec	• Cognex	Honeywell Intelligrated
• Knapp	National Instruments	• Toyota
• OPEX	• LMI Technologies	• Fives Group
Exotec Solutions	• Keyence	• Raymond
Ocado Technology	Stemmer Imaging	• Conveyco
Commonsense Robotics (Fabric)	• FLIR	• Westfalia
AutoStore	• Intel	• Jenbunjerd
Alert Innovation	Omron Microscan	• Dambach Lagersysteme GmbH & Co. KG
	• Renesas	• ALStef

Source: LogisticsiQ, Credit Suisse



Integrators

Warehouse integrators work to integrate material handling equipment, with warehouse execution systems for higher efficiency and throughput. Honeywell's Intelligrated is a warehouse integrator with offerings including AS/RS (automated storage and retrieval), conveyor systems, picking and putting technologies, palletizing/depalletizing, robotics, and sortation.

Figure 6: Major Warehouse Systems

Automation Software Stack			
Pick-and-Put Sortation			
Motorized transportation of materials throughout a warehouse; including automated guided vehicle (AGV) and autonomous mobile robot (AMR)	Systems to sort products and materials		
<u>Conveyor</u>	Transport		
Conveyor belts that deliver, move, store products	Motorized ways to transport materials througout the warehouse; also includes AGV and AMR		
<u>Storage</u>	Palletizing		
Equipment that stores and retrieves inventory from racks/shelves, including ASRS	System that stacks materials on pallets for storage or transportation		

Source: LEK, Credit Suisse

Acquisitions

The warehouse automation industry has also witnessed M&A activity involving both strategic and financial acquirers. After the acquisition of Intelligrated, HON acquired Transnorm (a European conveyor solutions provider) and invested in FLUX (a warehouse management software company in China).

Figure 7: Select Warehouse Automation M&A

Year	Acquirer	Target
2012	Amazon	Kiva systems
2015	Siemens	Magazino
2016	Honeywell	Intelligrated
2017	THL	MHS
2017	Toyota Industries	Bastian Solutions
2017	Toyota Industries	Vanderlande Industries
2017	Honeywell	FLUX
2017	Warburg Pincus	Duravant
2017	Rockwell Automation	PTC
2017	Shopify	6 River Systems
2018	Honeywell	Transnorm
2019	THL	Fortna
2018-2020	Duravant	WECO/ motionDG/ Wulftec
Note: Rockwell	made \$1B equity investment	t in PTC; HON acquired 25% of FLUX

Source: L.E.K. research and analysis, Credit Suisse



Market Drivers

Accelerating E-commerce Growth

The growth of e-commerce has fueled the need for warehouse utilization, resulting in increasing need for further automation. E-commerce sales in the US has increased at 17.6% CAGR since 2005, resulting in ~14% of total retail sales (approaching 25% ex auto, gas, F&B, and grocery per Pitney Bowes), versus 2% in 2005.

250,000 16 200,000 12 150,000 8 100,000 4 50,000 0 0 ,21202 6/2004 ,21205 ~2120⁸ 6/2010 6/2016 2/2017 6/2019 ,21,999 6/2007 212011 6/2013 12/2014 ~212020 612001 E-commerce % of total sales (RHS) E-commerce retail sales (\$mn)

Figure 8: US E-commerce Retail Sales

Source: US Census, Company data, Credit Suisse

We also think that e-commerce growth was accelerated by multiple years as a result of the pandemic. Prior to COVID-19, e-commerce was expected to be ~25% of total retail sales by 2024. This estimate has been revised up to 27% in 2024 given the impact of COVID. Additionally, FDX expects the U.S. small package market to double to 100m packages/day by 2023, which was recently pulled forward from its initial estimate of 2026. While UPS more conservatively estimates that the small package market will double by 2025, it's clear that the small package market is growing exceptionally quickly, helped largely by the pull forward in e-commerce demand – which speaks to the need for warehouse automation.

Moreover, we point out that a number of retailers are not currently prepared to handle rapidly growing e-commerce volumes. Roughly 52% of brands surveyed by Geodis and Accenture reveal that potential e-commerce growth is hindered by their logistics operations. As such, we believe this supports ongoing demand for warehousing and automation services.







Source: Company data, Credit Suisse estimates

Automation Penetration Still Low

While there has been a focus on the expansion of warehouse footprint, automation within the warehouse remains low. A third party research firm, LEK, notes that currently 60% of warehouses use very little to no automation, while 30-35% of warehouses use basic automation such as conveyers.

Figure 10: Warehouse Automation Penetration



	Level Description		
Level 0	Fully manual with no usage of automation software or equipment		
Level 1	Manual picking supported by warehouse management software		
Level 2	Mechanized support includes conveyers, picking systems; control systems remain uncommon		
Level 3 Level 4	ASRSs common; control/ execution systems are required Virtually operator free; autonomous vehicle usage is common		

Source: LEK, Credit Suisse



As we can see in Figure 11, below, the adoption of AI, robotics, and blockchain is expected to accelerate from 2019 through 2030. For example, LogisticsIQ estimates that adoption of robotics & automation in 2019 was 36% and will increase to 85% in by 2030. Similarly, AI stood at 11% adoption, which LogisticsIQ estimates will increase to 75% by 2030. As such, we think the market for warehouse automation will continue to accelerate at a rapid pace, as it becomes increasingly more important in order to stay competitive.





Source: Company data, Credit Suisse estimates

Supply Chain Reconfiguration

Given the rapid growth of e-commerce, we also expect supply chains to shift to accommodate these volumes, and with AMZN's one or two day Prime delivery, retailers need the infrastructure in place that affords them the agility to move goods to consumers quickly in order to stay competitive. Specifically, we think distribution hubs will be pushed closer to the consumer, and retailers are more likely to operate a number of smaller hubs near densely populated areas, rather than one large regional DC (favoring LTL given shorter haul nature). Retailers may also use storefronts as mini distribution hubs (for rapid delivery or curbside pickup) since they are typically located closer to the consumer.

Additionally, given severe pandemic-related supply chain disruptions, many retailers have shifted their inventory management strategy to "just in case" vs. "just in time." Retailers are increasing inventory levels from 15 days to as many as 60 in order to protect inventory levels. This will likely lead to higher demand for warehousing for a longer period.

Onshoring is another potential trend driving demand for warehouses and automation in North America. Many shippers are moving manufacturing hubs out of China (or employing a "China Plus One" strategy) to South Asia or Mexico and the US. We see select onshoring opportunities, largely around PPE and semiconductor facilities.

All in all, the point of these supply chain changes is to move goods more efficiently and position brands closer to the consumer – which will be helped by increasing warehouse automation.



Figure 12: Potential Omni-Channel Supply Chain Solutions



Source: CBRE

Robust Demand for Industrial Real Estate

CBRE believes the industrial real estate market will continue to prosper in 2021 given low vacancy rates, high rental rates, and strong development given robust growth in e-commerce volumes. Specifically, CBRE estimates that new industrial completions will increase by 29% y/y next year given rising demand for industrial facilities. CBRE expects ~250m sq. ft. of industrial net absorption in 2021, which is well above the 5-year average of 211m sq. ft.



Figure 13: Total U.S. Industrial Investment Sales Volume

Source: Real Capital Analytics, CBRE Research



Retail-to-Industrial Conversions Accelerating

The growing shift to e-commerce and the subsequent shift away of brick-and-mortar has led to the conversion of retail properties to industrial sites. For example, underperforming Class B and C malls have been shifted to last-mile warehouses in some instances. Given that retail shopping behaviors have likely changed over the long term, we believe there will be more opportunities to convert traditional retail locations to warehousing space – further exacerbating an already existing trend.





Source: CBRE Research

Form Follows Function...New Facilities Built to Accommodate Demand

Given that e-commerce is a key driving force behind elevated demand level for industrial real estate, CBRE pointed to key features in these buildings that suit automation. Specifically, these facilities call for ceiling heights of 40' or greater, multiple mezzanine floors, and 3m sq. ft. or more. These requirements help to accommodate larger machinery, robotics, and picking and sorting technology. As such, we expect these new facilities to adopt higher levels of automation than older warehouses may be able to easily accommodate.

Labor Demand and Rising Costs

Given the increasing demand and expansion of warehouses, there has also been a gradual increase in number of employees in the industry and hourly wage. As per BLS data, since 2000 number of employees in warehousing has tripled to 1.4mn. During the same period, hourly wage has increased 28%. During 2021, we are seeing labor inflation in several industries including retail and food service. We see potential for this to spill over into manufacturing as unfilled employment vacancies remain elevated post pandemic.



Figure 15: Employee and Earnings Trends



Note: Figures as of Dec for every year except 2020 (Jan); Warehousing and storage category (private establishment)

Source: BLS, Credit Suisse

Lights-Out Warehousing

Lights-out warehouses are facilities that are fully automated to a point where there is no manual human involvement in operations. While it is relatively new in warehousing, the concept has been in practice in manufacturing by companies such as FANUC and Phillips. While it is hard to predict when lights out warehouse centers will be widely in use, experts interviewed by Modern Material Handling estimate it to be over the next 5 – 30 years. One key challenge being the 7 to 10 years of favorable ROI timeframe associated with lights-out facilities. In the meantime, companies are focused on fully automating specific functions where applicable. For example, automated storage and retrieval system (AS/RS) used in cold-storage facilities, where human presence is limited.

Cost of Warehouse Automation

Cost of warehouse automation varies across the degree of automation implemented at a specific facility. For instance, systems that improve conventional picking cost \$500k to \$1mn, while a fully automated solution set would be \$25mn or above. Similarly, payback on automation investments varies from 6-12 month on a simpler projects, and up to 5-10 years on a fully automated warehouse.

Figure 16: Cost of Automation at Varying Levels

	Level of Automation	Cost Range	Payback Period
Level 1	Systems to improve conventional picking	\$500k - \$1mn	6 - 12 months
Level 2	Mechanized solutions	\$1mn - \$5mn	1 - 2 years
Level 3	Semi-automatic installation	\$5mn - \$15mn	3 - 4 years
Level 4	Fully-automated	>\$25mn	5 - 10 years

Source: Viastore Systems, Credit Suisse estimates



Contract Logistics

Market Underpinned by Solid Growth Expectations

The contract logistics market is the outsourcing of logistics and supply chain needs including ecommerce fulfillment, reverse logistics, warehouse and inventory management, cold chain solutions, packaging, etc. As such, it's no surprise that the global contract logistics market stands to be a key beneficiary of warehouse automation.

Given shifting supply chains and surging e-commerce demand, this market is expected to grow rapidly over the next several years – leading to rising demand for automation. Currently, the global contract logistics market is roughly \$250B.

While the global contract logistics market contracted slightly in 2020, Ti Insights expects the market to grow by 5% CAGR from 2020 through 2024, helped by accelerating e-commerce growth, less disruptive trade policy, and ongoing fiscal stimulus. Specifically, North America is expected to expand by 3.1% CAGR over that period, while Asia is forecasted to be exceptionally strong at +8.0%. See Figure 17.



Figure 17: Global Contract Logistics Market Size (\$ Billions)

Source: Ti Insight

Plenty of Share Up for Grabs Amongst Key Players

The industry is highly fragmented, with the top ten players accounting for less than 20% share. DHL Supply Chain is the #1 player, followed by XPO, KNIN, Hitachi and Ceva. UPS Supply Chain and Ryder are also key players in the U.S. market. See Figure 18.



Figure 18: Top 10 Players in Global Contract Logistics Market



Source: DHL, Company data, Credit Suisse estimates



Key Stock Picks for Automated Warehousing

Honeywell Intelligrated

HON acquired Intelligrated in 2016 for an EV/EBITDA valuation of 12X, when the company's sales were estimated at \$900mn. Intelligrated sales were \$2B in 2020 and are approaching \$3B in 2021. Intelligrated provides warehouse automation solutions, software and services, and is part of the SPS segment (31% of segment sales). Since the addition of Intelligrated, HON has acquired Transnorm (a European conveyor solutions provider) and made an investment in FLUX (a warehouse management software company in China) to further enable international expansion. While the company is mostly concentrated in North America, Honeywell is increasingly focused on Europe, China, and India, with the expectation of 25-30% sales contribution from these regions in the next 3-4 years. Intelligrated's sales are more heavily weighted towards blue chip e-commerce customers driven by their focus to implement automation in warehouses in order to meet end customer demand of faster delivery schedules. However, the mix is expected to shift towards smaller customers as automation adoption becomes less concentrated. Typical order-to-sales cycle ranges from 6 months for small projects to 18 months for larger projects. While equipment accounts for majority of the sales, software sales are meaningful and expected to grow as percentage of the total. While Intelligrated margins are dilutive to SPS segment margin, the business has improved its project/OE margins over the last several years through restructuring and scale. We expect the project business growth rate to remain elevated compared to aftermarket/services but over time this mix will shift and help drive SPS margin towards its LT target of 18-20%. Main competitors include Dematic, Daifuku, and Vanderlande.

Overall, we are positive on HON and think the company can sustain double-digit earnings growth driven by its collection of businesses (Aero, Buildings, Process, Intelligrated), operating margin expansion, and capital deployment. Cash optionality and discipline remain intact. The Digital transformation is also helping drive better cash performance around inventory management and manufacturing space utilization (cost avoidance). Further, the Aerospace recovery is only just starting to recover with visibility into 2023+ as vaccines are deployed globally.



Source: Company data, Credit Suisse

Source: Company data, Credit Suisse

16



Figure 21: Intelligrated Business Mix



Figure 22: Global Material Handling Market



Note: as of SPS Investor Showcase (May 2018)

Source: Company data, Credit Suisse

Source: Company data, Credit Suisse

Rockwell Automation

Rockwell has exposure to warehouse automation through various end markets including ecommerce and Food & Beverage. In FQ221, the company's e-commerce sales grew 70%. Rockwell has highlighted its independent cart technology (ICT) as a differentiator in the space due to its precision motion and traceability characteristics. Other product offerings include controls (modular/large), drives, I/O, sensors, and safety components. Previous acquisitions such as Emulate3D (simulation) and MagneMotion (magnetic motion control and conveying systems) will also be accretive to the company's efforts to grow in warehouse automation.

Independent Cart Technology: The independent cart technology is an alternative conveyor system, which utilizes electromagnetic force for control motion. This differs from traditional conveyors, which are mechanical in nature, and rely on parts such gears, chains, and belts and could be prone to significant maintenance needs. Given that the independent cart technology uses linear motors for electromagnetic force, there is minimal need of maintenance. The flexibility in conveyor speed and "pitch" (i.e. distance between the movers) variations also makes the ICT more efficient and results in higher throughput. The "independent moving cart" also allow for greater modularity and traceability.

Overall, we think ROK's current guidance captures a cyclical upturn in discrete and hybrid markets. We remain Neutral, with our cycle view (shift to late from early) and valuation the principal gating factors. However, we expect the company to benefit from targeted reshoring activity, particularly in healthcare, PPE, and semi markets.

XPO Logistics

XPO Logistics is a transportation and logistics company operating primarily in North America and Europe. At present, XPO is a key player in North American LTL, truck brokerage, heavy goods last mile, and intermodal (which collectively account for 62% of revenue and 67% of adjusted EBITDA) – and is also the second largest contract logistics provider globally (with operations in N.A. and Europe), with one of the largest outsourced e-commerce fulfillment platforms. The logistics segment represents 38% of gross revenues and 33% of adjusted EBITDA.

XPO has been a leader in tech investment and proprietary innovation in transport/logistics over the last several years, including advanced warehouse automation, intelligent machines (robots and cobots; warehouse AGVs), dynamic data science (AI and predictive analytics), and its digital



freight platform – all of which are aimed at increasing efficiency, creating new top line opportunities, and driving a competitive wedge between itself and its peers.

In our view, XPO is at the forefront of a long-term secular trend in the transports/logistics industry - with a differentiated and scalable tech platform, that importantly, is backed by a solid bench of executives that have deep experience in supply chain and technological innovation.

In December 2020, XPO announced that it would spin off 100% of its logistics segment as a separate publicly traded company (recently named GXO) – the transaction is expected to be completed in 2H21. The rationale for the spin is that by splitting the business segments, it will allow for the simplification of operations; an undiluted focus on each segment's specific strategic priorities and customer requirements; increased flexibility with respect to capital allocation (including reducing leverage and targeting investment grade credit ratings) and the pursuit of strategic M&A; among other benefits.

In our view, the spin-off of the contract logistics business will help the company to better capitalize on the secular tailwinds in automation, and to capture market share as well as to grow its wallet share with existing customers.

As a testament to this, we note that YTD through April, XPO inked ~\$4B in new biz wins/contract renewals – including its largest contract ever at \$1.8B (which extends through 2032), as well as a contract with Apple to build a 1m sq. ft. state of the art e-commerce fulfillment center in Indiana, which will use advanced automation and robotics to ship personalized products directly to consumers.

The backlog for contract logistics is very strong in both North America and Europe – which should result in at least HSD top line growth over the longer term.

We note that we are modeling for a 3-year segment revenue CAGR of 10% through 2023, which along with margin improvement, should drive an EBITDA CAGR of 17%.

Contract Logistics (GXO Post-Spin)

The contract logistics segment is an asset-light business that is mainly comprised by long-term contractual relationships with high renewal rates and low-cyclicality. XPO is the #2 provider in the \$130B industry in N. America and Europe (with ~5% market share). It also has the largest outsourced e-commerce fulfillment platform in Europe, and a leading platform for e-Commerce and reverse logistics in North America.

The segment generated ~\$6.6B of gross revenue in the TTM ending 1Q21; operates 885 warehouses in 27 countries, with 210m sqft of warehouse space globally (99m in North America; 104m sqft in Europe; and 7m sqft in Asia) (see Figure 24).

Broadly, the company manages supply chains and warehouse operations for a diverse set of customers (and geographies) whose relationships tend to be long-term and very sticky (see Figure 25 and Figure 26). XPO provides customized and high-value add solutions (including advanced automation) through a variety of services such as e-commerce fulfillment, reverse logistics (one of the fastest growing areas in logistics), warehousing and distribution, order personalization, package and labeling, cold chain logistics, inventory management, and supply chain optimization.

Importantly, XPO's investments in technology help set it apart from its peers and prevent commoditization. The integrated and customized suite of proprietary warehouse management software creates stickier business, allowing the company to become an integral part of customer supply chains. (See Figure 27).



Figure 23: XPO Contract Logistics (GXO) - Key Metrics

TTM revenue ¹	\$6.6 billion
Countries of operation	27
Warehouses	885
Team members ²	~93,000
Total warehouse space	~210 million sq. ft.
 Capacity in Europe 	~104 million sq. ft.
 Capacity in North America 	~99 million sq. ft.
 Capacity in Asia 	~7 million sq. ft.

Source: Company data

Figure 24: XPO Logistics Segment Revenue by Geography



Source: Company data

Figure 25: XPO Logistics Segment Revenue by Vertical



Source: Company data



Figure 26: XPO Contract Logistics Offers Sophisticated Capabilities that are Deeply Integrated with Customer Supply Chains

ADVANCED AUTOMATION AND ROBOTICS

- Technology-enabled fulfillment and returns, continuously improved by AI and machine learning
- Significant increases in unit throughput
- Enhanced safety and workplace environment
- Ongoing robotics implementations planned in North America and Europe

REVERSE LOGISTICS AND AFTERMARKET SUPPORT

- Burgeoning demand for reverse logistics, valued by e-commerce companies and retailers with high consumer expectations
- Full lifecycle management of returned merchandise, including return-to-retail, recycling or disposal
- Consistently reliable aftermarket distribution with rigorous inventory management

SUPPLY CHAIN OPTIMIZATION

- Cross-functional forecasting platform
- Customer collaboration for speed-to-market and omnichannel strategies
- Ability to shift between short and long-term warehousing for cost flexibility
- Optimization of outbound and inbound logistics flows
- Automated replenishment of materials and parts

VALUE-ADD SERVICES AND CUSTOMIZATIONS

- Personalization during order fulfillment
- Channel-specific boxing and labeling
- Co-packing of similar goods for distribution cost efficiency
- Compliance monitoring of regulated goods
- Manufacturing support
- Carrier management
- Engineered packaging

Source: Company data

A Global Leader in Warehouse Automation...

Through its focus on robotics, autonomous vehicles, automated sortation systems, drones and other technologies that speed goods through the supply chain – which drive significant productivity benefits – XPO has become a global leader in warehouse automation (Figure 26). It then integrates these technologies using its WMx (Warehouse Management) platform, and is also able to leverage its XPO Smart[™] labor analytics tool to optimize productivity once the facility is up and running. At the same time, machine learning and predictive analytics allows for flexibility and automation adaptations when customer's requirements change.

Consequently, XPO's sophisticated and proprietary tech suite helps to entrench itself deep within customer supply chains (Figure 27).



Figure 27: Intelligent Warehouse Automation Drives Significant Productivity Benefits



- Automation delivers reliable, consistent outcomes for customers, with increased speed and accuracy
- · Warehouse management platform integrates several types of automation as an integrated solution
- · First-mover advantage with advanced automation; strongly differentiates XPO as logistics partner of choice
- Robotics work cooperatively with humans or as standalone solutions
- Collaborative robots and autonomous goods-to-person systems overcome space and labor constraints; can move between projects and sites

4-6x productivity improvement with employees supported by goods-to-person systems 2x productivity improvement with employees who work alongside cobots

Source: Company data

Figure 28: XPO a Global Leader in Warehouse Automation with Differentiated Proprietary Technology

 #2 contract logistics provider in a \$130 billion industry in North America and Europe, with 5% share Strong positioning in a fast-growing industry with massive tailwinds Well-positioned to continue to benefit from the rapid growth in e-commerce and reverse logistics, customer demand for warehouse automation and the secular trend toward outsourcing Largest outsourced e-commerce fulfilment platform in Europe and a leading platform for e-commerce and reverse logistics in North America
 Global leader in innovation, capitalizing on the increasing complexity of supply chains, as B2C companies turn to 3PL partners to help them meet consumer demands Integrated technology solutions for warehouse management, intelligent automation, predictive analytics and labor productivity are valued by customers
 Blue-chip customer base with 15-year average tenure of top 20 customers Blue-chip customer base with 15-year average tenure of top 20 customers Long-term relationships with world-class brands, including more than a third of the Fortune 100 Deep roots in sectors with high-growth outsourcing opportunities, such as retail and e-commerce, food and beverage, consumer packaged goods and consumer technology
 Long runway for margin expansion through ongoing technology deployments and an asset-light business model with multiple drivers of profitable growth Proven resilience across cycles, with strong free cash flow generation Majority of revenue tied to multi-year contracts, with high visibility into revenue and earnings
 Experienced and cohesive leadership Hands-on executive team with decades of logistics experience; focused on winning Long track record of delivering above-industry performance with multinational operations Successful leaders of an entrepreneurial, inclusive and team-oriented culture

Source: Company data







Source: Company data



Valuation

Figure 30: Honeywell Valuation



Source: FactSet, Credit Suisse



Figure 31: Rockwell Valuation



Rockwell Automation, Inc.







Source: FactSet, Credit Suisse



Figure 32: XPO Forward EV/EBITDA (FY2)

Figure 33: XPO Forward P/E (FY2)



Source: FactSet

Palletizing the Automated Warehouse Opportunity

Source: FactSet

CREDIT SUISSE

Honeywell International Inc. Palletizing the Automated Warehouse Opportunity

Multi Industry

- Estimate Revisions: While our 2022 estimates remains unchanged, we are increasing our 2023 estimates to reflect better performance from Intelligrated within the SPS segment. We are raising our organic sales growth to 8% (vs. LT guidance of MSD+) and our segment margin to 18% (vs. LT guidance of 18-20%). We are at the lower end of the range due to adverse mix as the project business grows faster than services/aftermarket.
- Valuation & Risks: Our target price of \$244 (up from \$235) is based on 27X (from 26X) our 2022 EPS estimate of \$9.05 (unchanged). This represents 25X inclusive of capital deployment and represents a positive one standard deviation band versus the S&P 500. We are raising our 2023 estimates to reflect stronger performance at the SPS segment. We think HON can hold its premium multiple driven by execution, capital deployment, and a multi-year recovery in commercial Aerospace markets. Risks include broadening of short cycle weakness, valuation impact from noncash pension income, supplier pressure from BA/AB, and software competition.

HON

Target price (12M, US\$) 244.00 Outperform

Previous target price (12M, USS	\$) 235.00
Price (25 May 21, US\$)	224.04
52-week price range	232.11 - 138.21
Enterprise value (US\$ m)	164,159

Research Analysts

John Walsh

212 538 1664 john.walsh@credit-suisse.com

Tamjid Chowdhury

212 325 7816 tamjid.chowdhury@credit-suisse.com

Jing Zhang

212 325 3781 jing.zhang.2@credit-suisse.com

Financial and valuation metrics

Year	12/20A	12/21E	12/22E	12/23E
EPS (CS adj.) (US\$)	7.10	8.01	9.05	10.25
Prev. EPS (US\$)	-	-	-	10.15
Revenue (US\$ m)	32,637.0	34,903.3	37,366.8	40,126.1
EBITDA (US\$ m) 1	7,722.0	8,878.3	9,648.6	10,664.9
P/OCF (x)	24.4	24.3	21.3	19.3
EV/EBITDA (current)	21.3	18.5	17.0	15.4
Net debt (US\$ m)	7,164	8,551	7,868	6,789
ROIC (%)	21.29	22.55	24.44	26.90
Number of shares (m)	694.56	IC (current, US\$ m)		24,954.00
Net debt (Next Qtr., US\$ m) 1	9,364.0	Dividend (current, US\$)		3.08
Net debt/tot eq (Next Otr.,%)	51.0			
Source: Company data, Refinitiv, Credit Suise	se estimates			

Share price performance



On 25-May-2021 the S&P 500 INDEX closed at 4188.13Daily May26, 2020 - May25, 2021, 05/26/20 = US\$144.94

Quarterly EPS	Q1	Q2	Q3	Q4
2020A	2.21	1.26	1.56	2.07
2021E	1.92	1.95	1.98	2.17
2022E	2.08	2.21	2.27	2.48

Honeywell International Inc. (HON)

				00) 044 00
Price (25 May 2021): US\$224	.04	Target Price:	(from 235.	.00) 244.00
Income Statement	12/20A	12/21E	12/22E	12/23E
Revenue (US\$ m)	32,637.0	34,903.3	37,366.8	40,126.1
EBITDA (US\$ m)	7,722	8,878	9,649	10,665
Depr. & amort.	(1,002)	(1,037)	(1,085)	(1,139)
EBIT (US\$)	6,720	7,841	8,564	9,526
Net interest exp	(359)	(365)	(350)	(344)
PBT (US\$) Income taxes	6,501 (1,362)	7,311 (1,572)	8,194 (1,762)	9,172 (1,972)
Minorities	(1,002)	(1,072)	(1,702)	(1,372) (94)
Reported net income (US\$)	5,053	5,651	6,341	7,106
Other NPAT adjustments	0	0	0	0
Adjusted net income	5,053	5,651	6,341	7,106
Cash Flow	12/20A	12/21E	12/22E	12/23E
EBIT	6,720	7,841	8,564	9,526
Net interest	(359)	(365)	(350)	(344)
Change in working capital CAPEX	1,363	140	(1 000)	0
	(906) 5,302	(1,000)	(1,000) 6,366	(1,000)
Free cashflow to the firm Acquisitions	(261)	5,495 0	0,300 0	7,058 0
Divestments	(201)	-	-	-
Cash flow from investments	(987)	(1,000)	(1,000)	(1,000)
Changes in Net Cash/Debt	(1,578)	(1,387)	683	1,079
Balance Sheet (US\$)	12/20A	12/21E	12/22E	12/23E
Assets	15 000	14,000	15 0 10	10,100
Cash & cash equivalents Total current assets	15,220	14,360	15,043	16,122
Total assets	28,175 64,586	27,202 65,259	28,632 66,604	30,514 68,348
Liabilities	04,580	05,259	00,004	00,340
Total current liabilities	19,197	18,755	19,614	20,417
Total liabilities	46,796	46,519	46,968	47,339
Total liabilities and equity	64,586	65,259	66,604	68,348
Net debt	7,164	8,551	7,868	6,789
Per share	12/20A	12/21E	12/22E	12/23E
No. of shares (wtd avg)	711	705	701	693
CS adj. EPS	7.10	8.01	9.05	10.25
Prev. EPS (US\$)	-	-	-	10.15
Dividend (US\$)	3.43	3.18	3.59	4.06
Free cash flow per share Earnings	7.45 12/20A	7.79 12/21E	9.08 12/22E	10.18 12/23E
Sales growth (%)	(11.1)	6.9	7.1	7.4
EBIT growth (%)	(12.5)	16.7	9.2	11.2
Net profit growth (%)	(15.2)	11.8	12.2	12.1
EPS growth (%)	(12.9)	12.8	12.9	13.3
EBITDA margin (%)	23.7	25.4	25.8	26.6
EBIT margin (%)	20.6	22.5	22.9	23.7
Pretax margin (%)	19.9	20.9	21.9	22.9
Net margin (%)	15.5	16.2	17.0	17.7
Valuation	12/20A	12/21E	12/22E	12/23E
EV/Sales (x)	4.99	4.70	4.37	4.05
P/E (x) Price to head (v)	31.5 9.0	28.0 8.4	24.8 8.0	21.9 7.4
Price to book (x) Asset turnover	9.0 0.5	0.5	0.6	0.6
Returns	12/20A	12/21E	12/22E	12/23E
ROE stated-return on (%)	27.7	30.9	33.0	35.0
ROIC (%)	21.3	22.6	24.4	26.9
Gearing	12/20A	12/21E	12/22E	12/23E
Net debt/equity (%)	40.3	45.6	40.1	32.3
Interest coverage ratio (X)	18.7	21.5	24.5	27.7
Quarterly EPS 2020A	Q1 2.21	Q2	Q3	Q4
2020A 2021E	1.92	1.26 1.95	1.56 1.98	2.07 2.17
2021E 2022E	2.08	2.21	2.27	2.17
	2.00	2.21	2.21	2.10

Source: Company data, Refinitiv, Credit Suisse estimates



Analyst: John Walsh Rating: Outperform

Company Background

Honeywell is a diversified technology and manufacturing company that makes a variety of commercial and consumer products, engineering services and aerospace systems.



Our Blue Sky Scenario (US\$)

(from 262.00) 269.00

(from 209.00) 210.00

Our Blue Sky value of \$269 is based on a 3.2% sales CAGR between 2019-2022 with incremental margins of 38%. We also assume HON increases leverage by 0.5x and uses the additional capital to buy back stock. Applying 26.0X our 2022 blue sky EPS estimate of \$10.34, we get to our blue sky value of \$269.

Our Grey Sky Scenario (US\$)

Our Grey Sky value of \$210 is based on a -1.0% sales CAGR between 2019-2022 with incremental margins of 23%. Applying 25.0X to our 2022 grey sky EPS estimate of \$8.41, we get to our grey sky value of \$210.



On 25-May-2021 the S&P 500 INDEX closed at 4188.13 Daily May26, 2020 - May25, 2021, 05/26/20 = US\$144.94



Valuation Methodology and Risks

Target Price and Rating

Valuation Methodology and Risks: (12 months) for Amazon com Inc. (AMZN.OQ)

- Method: We use the discounted cash flow (DCF) method to calculate our \$4,000 target price for AMZN. Our 5-year DCF uses a 3% terminal growth rate and a market-implied discount rate derived by discounting our unlevered FCF (free cash flow) estimates from 2021 through 2026 to arrive at the stock's current trading price. We then applied this discount rate to our 2021-2026 unlevered free cash flow estimates for AMZN. We maintain our Outperform rating for AMZN shares, and factors that can provide potential upside to our estimates include: 1) re-establishment of e-commerce segment operating margin expansion as Amazon grows into its larger infrastructure, 2) ongoing margin benefit due to shipping loss moderation, and 3) upward bias to AWS revenue forecasts and likely more moderate deceleration path as suggested by ongoing capital intensity in the business.
- **Risk:** Risks to our \$4,000 target price and Outperform rating for AMZN include a deteriorating global economy, competition from major offline retailers, volatility in operating margins, and unpredictable investment spending.

Target Price and Rating

Valuation Methodology and Risks: (12 months) for Atkore Intl Grp (ATKR.N)

- Method: Our \$87 target price and Outperform rating for ATKR are based on 16.0X our calendar 2022 EPS estimate of \$5.42. We rate ATKR Outperform as we expect it to perform in premium with its peers.
- **Risk:** Risks to our \$87 target price and Outperform rating for ATKR are (1) lack of execution in integrating strategic initiatives driven by M&A; (2) customer concentration; (3) continued volatility of commodity costs; (4) a slowdown in U.S. non-residential construction markets, (5) interest rate and credit risk.

Target Price and Rating

Valuation Methodology and Risks: (12 months) for Deutsche Post DHL (DPWGn.DE)

- **Method:** We value Deutsche Post DHL using a DCF model. Our DCF model uses a long term EBIT margin of 10%, a WACC of 7.5% and a terminal growth rate of 2% to produce a target price of Eur56.09. Given the limited upside potential, we rate the shares Neutral.
- **Risk:** The key upside risks to our TP of Eur56.09 and Neutral rating include: i) an accelerated global economic recovery, ii) an easing in the rate of mail volume decline, stamp price increases, USO relaxation or strengthening parcel growth, and iii) accelerated productivity gains in PeP, continued market share gains in Express and Supply Chain. The key downside risks include: (i) increasing global trade restrictions, (ii) Amazon competition build out in Germany, (iii) slowing margin expansion in Express, (iv) further Forwarding restructuring delays, (v) cost inflation in developed and emerging markets, and (vi) economic softness or geopolitical risk. The earnings and cash flow implications of these risks may impact our Neutral rating, which is driven by our existing earnings and cash flow expectations.

Target Price and Rating

Valuation Methodology and Risks: (12 months) for Eaton Corporation (ETN.N)

- Method: Our \$158 target price is based on 23.0X our 2022 EPS estimate of \$6.85. We rate ETN Outperform based on its 12-month expected return.
- **Risk:** Risks to our \$158 target price and Outperform rating for ETN include a prolonged slowdown in new construction starts, a slower-thananticipated recovery in commercial aerospace and vehicle markets, and capital deployment.

Target Price and Rating

Valuation Methodology and Risks: (12 months) for FedEx Corporation (FDX.N)

Method: Our 12-month price target for FDX is \$351 and our rating is Outperform. We derive this using a proprietary discounted cash flow model. We start with a base year level of profit consistent with our earnings estimate of \$19.06 per share in FY22. From there, we assume FDX can generate operating profit growth of about 4.5% annually over the subsequent 3-5 year period. Based on our estimate of FDX's return on incremental invested capital (ROIIC) of 40%, we assume it costs the company ~\$2.50 of incremental capital (capex + acquisitions - D&A - divestitures +/- working capital) to generate \$1.00 of incremental earnings before interest, taxes (EBIT). We use a consistent discount rate across the entire airfreight sector; the rate runs in the range of about 7% - 11%, depending on prevailing investor sentiment toward the group. Once we have calculated the company's enterprise value, we add the value of cash on the balance sheet plus any anticipated dividends to be paid between now and the end of the year, we add estimated values for equity investments, subtract the value of minority interests, and subtract market value of balance sheet debt to arrive at the value available for equity holders. Our Outperform rating reflects the fact that our TP implies greater relative upside in FDX shares than the balance of our coverage universe.



Risk: Risks specific to FDX achieving our price target of \$351 and our Outperform rating are the global economy (particularly Asia), fuel prices, a cyclical rotation out of the airfreight sector, competitive pricing pressures, and whether or not FedEx employees could have the ability to unionize.

Target Price and Rating

Valuation Methodology and Risks: (12 months) for General Electric (GE.N)

- Method: Our \$14 target price and Neutral rating for General Electric are based on 28.0X our 2022 EPS estimate of \$0.49. We rate General Electric Neutral based on its expected 12-month total return.
- **Risk:** Risks to our \$14 target price and Neutral rating for General Electric are (1) an accelerated displacement of gas power, (2) a slowdown in aerospace aftermarket, (3) asset quality deterioration within GE Capital, and (4) calls on cash besides delevering.

Target Price and Rating

Valuation Methodology and Risks: (12 months) for Honeywell International Inc. (HON.OQ)

- Method: Our \$244 target price and Outperform rating for HON are based on 27.0X our 2022 EPS estimate of \$9.05. We rate HON Outperform based on its expected return.
- **Risk:** Risk to our \$244 target price and Outperform rating for HON are (1) a slowdown in building markets, (2) a slowdown in the global economy, (3) a slowdown in the aerospace aftermarket, (4) a relaxation of capital allocation metrics, and (5) negative impact from COVID-19.

Target Price and Rating

Valuation Methodology and Risks: (12 months) for Johnson Controls Inc (JCI.N)

- Method: Our Outperform rating and \$66 TP is based on 20.0X our calendar 2022 EPS estimate of \$3.32. We rate the shares Outperform based on their 12-month expected return.
- **Risk:** Risk to our \$66 target price and Outperform rating for JCI include: (1) a slowdown in construction markets (2) delivering on margin targets while investing in salespeople (3) FCF generation.

Target Price and Rating

Valuation Methodology and Risks: (12 months) for Schneider Electric (SCHN.PA)

- Method: We use DCF valuation to derive our EUR155 target price. Our DCF is based on a mid-cycle top line growth of 4.5%, through-cycle margin of 18%, terminal growth of 2%, WACC of 7% and company NOPAT to free cash flow conversion ratio of 85%. We rate Schneider Outperform. We continue to see an attractive investment case based on margin expansion to a targeted 17%, attractive positioning in the structurally growing Datacentre segment as well as the Industrial Automation software and the Building Information Modelling (BIM) software segment. We see scope for structural re-rating towards its quality growth peers. Our valuation is backed by SOTP and group P/E and EV/EBITA multiples relative to Schneider's key peers.
- **Risk:** We see the following key risks to earnings forecasts and hence EUR155 target price and Outperform rating for Schneider: Prolonged shut-downs and extensive knock-on effect from COVID-19 pandemic. Execution on Productivity improvement programme and RIB Software acquisition integration.

Target Price and Rating

Valuation Methodology and Risks: (12 months) for Shopify Inc. (SHOP.N)

- Method: Our \$1,400 target price and Neutral rating for SHOP is based on our DCF analysis and implies a 2022 EV/Revenue multiple of ~29x. While we remain positive on SHOP given numerous LT drivers, including: the secular shift to eCommerce, Shopify Plus, International, and adoption of additional merchant services (such as Fulfillment) we see risk reward more balanced at these levels.
- **Risk:** Risks to our \$1,400 target price and Neutral rating for SHOP are (1) increased churn, (2) an inability to become profitable, (3) competitive threats, (4) inability to capture share internationally, and (5) lower than forecast Merchant Solutions attach rates.

Target Price and Rating

Valuation Methodology and Risks: (12 months) for Target Corporation (TGT.N)

- **Method:** Our \$245 target price and Outperform rating for TGT is based on ~20x our 2022 EPS. Our target price is based on our peer multiple analysis (weighted based on TGT' s sales mix), and fundamental stock drivers (specifically, comps as a driver of valuation and relative valuation).
- **Risk:** Risks to our \$245 target price and Outperform rating for TGT include I) Reliance on sales to drive EBITDA improvement. Other costs could be an offset, including transportation; 2) Competitive landscape: risk of incremental price/other reinvestments; and 3) Structural business mix challenges.



Target Price and Rating Valuation Methodology and Risks: (12 months) for Walmart Inc. (WMT.N)

- Method: Our Outperform rating and \$150 target price for WMT are based on 25x our FY23 EPS estimate. That is similar to its relative valuation during prior recessionary/slowdown periods.
- **Risk:** Risks to our Outperform rating and \$150 TP include: The consumer a significant portion of Walmart's customer base may be impacted financially by disruption caused by workplace closures. Supply chain disruption and inventory challenges.



Companies Mentioned (Price as of 26-May-2021)

Amazon com Inc. (AMZN.OQ, \$3265.16) Atkore Intl Grp (ATKR.N, \$77.14) AutoStore (Unlisted) Daifuku (6383.T, ¥9,670) Deutsche Post DHL (DPWGn.DE, €54.19) Eaton Corporation (ETN.N, \$142.98) FedEx Corporation (FDX.N, \$310.75) General Electric (GE.N, \$13.4) Honeywell International Inc. (HON.OQ, \$224.27, OUTPERFORM, TP \$244.0) Johnson Controls Inc (JCI.N, \$65.94) Kion Grp (KGX.DE, €85.78) Rockwell Automation (ROK.N, \$260.51) Schneider Electric (SCHN.PA, €129.04) Shopify Inc. (SHOP.N, \$1238.83) Siemens (SIEGn.DE, €134.7) Target Corporation (TGT.N, \$227.11) Walmart Inc. (WMT.N, \$142.17) XPO Logistics, Inc. (XPO.N, \$143.64)

Disclosure Appendix

Analyst Certification

John Walsh, Tamjid Chowdhury, Jing Zhang, Andre Kukhnin, CFA, Iris Zheng, CFA, Allison M. Landry, Chandni Chellappa and Brian Wright each certify, with respect to the companies or securities that the individual analyzes, that (1) the views expressed in this report accurately reflect his or her personal views about all of the subject companies and securities and (2) no part of his or her compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed in this report.

3-Year Price and Rating History for Honeywell International Inc. (HON.OQ)

HON.OQ	Closing Price	Target Price	
Date	(US\$)	(US\$)	Rating
11-Oct-18	148.74	164.60	N *
22-Oct-18	147.76	165.00	
29-Oct-18	141.06	158.00	
03-Jan-19	130.07	158.00	0
10-Apr-19	159.97	170.00	
22-Apr-19	168.24	185.00	
19-Jul-19	172.99	187.00	
06-Jan-20	177.51	195.00	
03-Feb-20	171.32	190.00	
08-Apr-20	139.25	148.00	
04-May-20	135.20	158.00	
09-Jul-20	141.37	166.00	
27-Jul-20	150.76	170.00	
02-Nov-20	173.61	182.00	
22-Dec-20	207.94	225.00	
04-Jan-21	207.95	234.00	
21-Jan-21	205.23	230.00	
01-Feb-21	195.56	222.00	
25-Mar-21	213.88	224.00	
25-Apr-21	224.50	235.00	
* Asterisk sig	nifies initiation or	assumption of a	overage



* Asterisk signifies initiation or assumption of coverage.

As of December 10, 2012 Analysts' stock rating are defined as follows:

Outperform (O) : The stock's total return is expected to outperform the relevant benchmark* over the next 12 months.

Neutral (N) : The stock's total return is expected to be in line with the relevant benchmark* over the next 12 months.

Underperform (U): The stock's total return is expected to underperform the relevant benchmark* over the next 12 months.

Relevant benchmark by region: As of 10th December 2012, Japanese ratings are based on a stock's total return relative to the analyst's coverage universe which consists of all companies covered by the analyst within the relevant sector, with Outperforms representing the most attractive, Neutrals the less attractive, and Underperforms the least attractive investment opportunities. As of 2nd October 2012, U.S. and Canadian as well as European (excluding Turkey) ratings are based on a stock's total return relative to the analyst's coverage universe which consists of all companies covered by the analyst within the relevant sector, with Outperforms representing the most attractive, Neutrals the less attractive, and Underperforms representing the most attractive, Neutrals the less attractive, and Underperforms representing the most attractive, Neutrals the less attractive, and Underperforms representing the most attractive, Neutrals the less attractive, and Underperforms representing the most attractive, Neutrals the less attractive, and Underperforms the least attractive investment opportunities. For Latin America, Turkey and Asia (excluding Japan and Australia), stock ratings are based on a stock's total return relative to the average total return of the relevant country or regional benchmark (India - S&P BSE Sensex Index); prior to 2nd October 2012 U.S. and Canadian ratings were based on (1) a stock's absolute total return potential to its current share price and (2) the relative attractiveness of a stock's total return potential within an analyst's coverage universe. For Australian and New Zealand stocks, the expected total return (ETR) calculation includes 12-month rolling dividend yield. An Outperform rating is assigned where an ETR is



greater than or equal to 7.5%; Underperform where an ETR less than or equal to 5%. A Neutral may be assigned where the ETR is between -5% and 15%. The overlapping rating range allows analysts to assign a rating that puts ETR in the context of associated risks. Prior to 18 May 2015, ETR ranges for Outperform and Underperform ratings did not overlap with Neutral thresholds between 15% and 7.5%, which was in operation from 7 July 2011.

Restricted (R) : In certain circumstances, Credit Suisse policy and/or applicable law and regulations preclude certain types of communications, including an investment recommendation, during the course of Credit Suisse's engagement in an investment banking transaction and in certain other circumstances.

Not Rated (NR) : Credit Suisse Equity Research does not have an investment rating or view on the stock or any other securities related to the company at this time.

Not Covered (NC) : Credit Suisse Equity Research does not provide ongoing coverage of the company or offer an investment rating or investment view on the equity security of the company or related products.

Volatility Indicator [V] : A stock is defined as volatile if the stock price has moved up or down by 20% or more in a month in at least 8 of the past 24 months or the analyst expects significant volatility going forward.

Analysts' sector weightings are distinct from analysts' stock ratings and are based on the analyst's expectations for the fundamentals and/or valuation of the sector* relative to the group's historic fundamentals and/or valuation:

Overweight : The analyst's expectation for the sector's fundamentals and/or valuation is favorable over the next 12 months.

Market Weight : The analyst's expectation for the sector's fundamentals and/or valuation is neutral over the next 12 months.

Underweight : The analyst's expectation for the sector's fundamentals and/or valuation is cautious over the next 12 months.

*An analyst's coverage sector consists of all companies covered by the analyst within the relevant sector. An analyst may cover multiple sectors

Credit Suisse's distribution of stock ratings (and banking clients) is:

Global Ratings Distribution

Rating	Versus universe (%)	Of which banking clients (%)
Outperform/Buy*	54%	(32% banking clients)
Neutral/Hold*	34%	(24% banking clients)
Underperform/Sell*	10%	(19% banking clients)
Restricted	1%	

Please click here to view the MAR quarterly recommendations and investment services report for fundamental research recommendations.

*For purposes of the NYSE and FINRA ratings distribution disclosure requirements, our stock ratings of Outperform, Neutral, and Underperform most closely correspond to Buy, Hold, and Sell, respectively; however, the meanings are not the same, as our stock ratings are determined on a relative basis. (Please refer to definitions above.) An investor's decision to buy or sell a security should be based on investment objectives, current holdings, and other individual factors.

Important Global Disclosures

Credit Suisse's research reports are made available to clients through our proprietary research portal on CS PLUS. Credit Suisse research products may also be made available through third-party vendors or alternate electronic means as a convenience. Certain research products are only made available through CS PLUS. The services provided by Credit Suisse's analysts to clients may depend on a specific client's preferences regarding the frequency and manner of receiving communications, the client's risk profile and investment, the size and scope of the overall client relationship with the Firm, as well as legal and regulatory constraints. To access all of Credit Suisse's research that you are entitled to receive in the most timely manner, please contact your sales representative or go to https://plus.credit-suisse.com.

Credit Suisse's policy is to update research reports as it deems appropriate, based on developments with the subject company, the sector or the market that may have a material impact on the research views or opinions stated herein.

Credit Suisse's policy is only to publish investment research that is impartial, independent, clear, fair and not misleading. For more detail please refer to Credit Suisse's Policies for Managing Conflicts of Interest in connection with Investment Research: <u>https://www.credit-suisse.com/sites/disclaimers-ib/en/managing-conflicts.html</u>.

Any information relating to the tax status of financial instruments discussed herein is not intended to provide tax advice or to be used by anyone to provide tax advice. Investors are urged to seek tax advice based on their particular circumstances from an independent tax professional.

Credit Suisse has decided not to enter into business relationships with companies that Credit Suisse has determined to be involved in the development, manufacture, or acquisition of anti-personnel mines and cluster munitions. For Credit Suisse's position on the issue, please see https://www.credit-suisse.com/media/assets/corporate/docs/about-us/responsibility/banking/policy-summaries-en.pdf.

The analyst(s) responsible for preparing this research report received compensation that is based upon various factors including Credit Suisse's total revenues, a portion of which are generated by Credit Suisse's investment banking activities

Please refer to the firm's disclosure website at <u>https://rave.credit-suisse.com/disclosures/view/selectArchive</u> for the definitions of abbreviations typically used in the target price method and risk sections.

See the Companies Mentioned section for full company names

Credit Suisse currently has, or had within the past 12 months, the following as investment banking client(s): WMT.N, AMZN.OO, ATKR.N, DPWGn.DE, ETN.N, GE.N, SHOP.N

Credit Suisse provided investment banking services to the subject company (WMT.N, AMZN.OQ, ATKR.N, DPWGn.DE, ETN.N, GE.N, SHOP.N) within the past 12 months.

Within the last 12 months, Credit Suisse has received compensation for non-investment banking services or products from the following issuer(s): HON.OQ, WMT.N, DPWGn.DE, GE.N

Credit Suisse has managed or co-managed a public offering of securities for the subject company (ATKR.N, SHOP.N) within the past 12 months.



Within the past 12 months, Credit Suisse has received compensation for investment banking services from the following issuer(s): WMT.N, AMZN.OQ, ATKR.N, DPWGn.DE, GE.N, SHOP.N

Credit Suisse expects to receive or intends to seek investment banking related compensation from the subject company (HON.OQ, WMT.N, AMZN.OQ, ATKR.N, DPWGn.DE, ETN.N, SCHN.PA, GE.N, JCI.N, SHOP.N) within the next 3 months.

Credit Suisse currently has, or had within the past 12 months, the following issuer(s) as client(s), and the services provided were non-investment-banking, securities-related: HON.OO, WMT.N, DPWGn.DE, GE.N

Credit Suisse currently has, or had within the past 12 months, the following issuer(s) as client(s), and the services provided were non-investment-banking, non securities-related: WMT.N, DPWGn.DE, GE.N

Credit Suisse or a member of the Credit Suisse Group is a market maker or liquidity provider in the securities of the following subject issuer(s): AMZN.OQ, ATKR.N, DPWGn.DE, ETN.N, FDX.N, GE.N, HON.OQ, JCI.N, SCHN.PA, SHOP.N, TGT.N, WMT.N

A member of the Credit Suisse Group is party to an agreement with, or may have provided services set out in sections A and B of Annex I of Directive 2014/65/EU of the European Parliament and Council ("MiFID Services") to, the subject issuer (WMT.N, AMZN.OQ, ATKR.N, DPWGn.DE, ETN.N, GE.N, SHOP.N) within the past 12 months.

Credit Suisse beneficially holds >0.5% long position of the total issued share capital of the subject company (DPWGn.DE, SCHN.PA).

For date and time of production, dissemination and history of recommendation for the subject company(ies) featured in this report, disseminated within the past 12 months, please refer to the link: <u>https://rave.credit-suisse.com/disclosures/view/report?i=619934&v=273fqz4nsq4p8eqa3pcedzv5y</u>.

Important Regional Disclosures

Singapore recipients should contact Credit Suisse AG, Singapore Branch for any matters arising from, or in connection with, this research report. The analyst(s) involved in the preparation of this report may participate in events hosted by the subject company, including site visits. Credit Suisse does not accept or permit analysts to accept payment or reimbursement for travel expenses associated with these events.

For Credit Suisse Securities (Canada), Inc.'s policies and procedures regarding the dissemination of equity research, please visit https://www.credit-suisse.com/sites/disclaimers-ib/en/canada-research-policy.html.

Investors should note that income from such securities and other financial instruments, if any, may fluctuate and that price or value of such securities and instruments may rise or fall and, in some cases, investors may lose their entire principal investment.

To the extent any Credit Suisse equity research analyst employed by Credit Suisse International (a "UK Analyst") has interactions with a Spanish domiciled client of Credit Suisse AG or its affiliates, such UK Analyst will be acting for and on behalf of CSSSV, with respect only to the provision of equity research services to Spanish domiciled clients of Credit Suisse AG or its affiliates.

Pursuant to CVM Resolution No. 20/2021, of February 25, 2021, the author(s) of the report hereby certify(ies) that the views expressed in this report solely and exclusively reflect the personal opinions of the author(s) and have been prepared independently, including with respect to Credit Suisse. Part of the author(s)'s compensation is based on various factors, including the total revenues of Credit Suisse, but no part of the compensation has been, is, or will be related to the specific recommendations or views expressed in this report. In addition, Credit Suisse declares that: Credit Suisse has provided, and/or may in the future provide investment banking, brokerage, asset management, commercial banking and other financial services to the subject company/companies or its affiliates, for which they have received or may receive customary fees and commissions, and which constituted or may constitute relevant financial or commercial interests in relation to the subject company/companies or the subject securities.

This research report is authored by:

Credit Suisse International...... Andre Kukhnin, CFA ; Iris Zheng, CFA

Credit Suisse Securities (USA) LLCJohn Walsh ; Tamjid Chowdhury ; Jing Zhang ; Allison M. Landry ; Chandni Chellappa ; Brian Wright To the extent this is a report authored in whole or in part by a non-U.S. analyst and is made available in the U.S., the following are important disclosures regarding any non-U.S. analyst contributors: The non-U.S. research analysts listed below (if any) are not registered/qualified as research analysts with FINRA. The non-U.S. research analysts listed below may not be associated persons of CSSU and therefore may not be subject to the FINRA 2241 restrictions on communications with a subject company, public appearances and trading securities held by a research analyst account.

Credit Suisse International...... Andre Kukhnin, CFA ; Iris Zheng, CFA

S&P Disclosures

Copyright © 2021, Standard & Poor's Global Markets Intelligence and its affiliates (collectively, "S&P"). S&P sourced information is the exclusive property of S&P. Without prior written permission of S&P, such information, including data and ratings, may not be reproduced in any form. S&P and any third parties involved in or related to, computing or compiling this information, disclaim any guarantees of accuracy, adequacy, completeness, timeliness or availability with respect to this information. S&P and its licensors are not responsible for the results derived from their provided data, including any errors, omissions, observations, investment views or recommendations. In no event shall S&P or its licensors be liable for any damages, costs, expenses, legal fees, or losses (including lost income or lost profit and opportunity costs) in connection with any use of its content.

Important disclosures regarding companies that are the subject of this report are available by calling +1 (877) 291-2683. The same important disclosures, with the exception of valuation methodology and risk discussions, are also available on Credit Suisse's disclosure website at https://rave.credit-suisse.com/disclosures. For valuation methodology and risk associated with any recommendation, price target, or rating referenced in this report, please refer to the disclosures section of the most recent report regarding the subject company.



This report is produced by subsidiaries and affiliates of Crefit Suisse operating under its Sustainability. Research & Investment Solutions Division. For more information on our structure, please use the following link: <u>https://www.aredit.suisse.com/whor.wee.are</u> This report may contain material that is not directed to, or intended for distribution to or use by, any person or entity who is a citizen or resident of or located in any locality, state, country or other jurisdicion where such distribution, publication, availability or use would be contrary to law or registred tadamarks. Service marks or sovice marks or similare CTS: To internation of loansing requirement within such instication. All material presented in this report are not to be used or considered as an offer or the solicitation of an offer to be solicitation of an offer or the solicitation of an offer or to buy or subscribe for securities or other financial instruments. CS may not have taken any steps to ensure that the securities referred to in this report are suitable for any particular investment, and avisor if you are in doubt about such investment of you. Prease were the bases and levels of taxation may drange. Information and opinions presented in this report may to the exercites or there suitable for any particular investment divisor if you are in doubt about such investment services. Nothing in this report constitutes investment services and levels of taxation may drange. Information and opinions presented in this report may be eno obtained or derived from sources believed by CS to be reliable, but CS make and evels of the attention of any report, except that this exclusion of labitity does on apply to be exert this actualibity and in the attention of any recipient of this report are presentation as their accuration as their accurations are included for the securities or the attention of any recipient of this report. See three attentions of the attention of any recipient of this report are presentation and the recommination opinantian to

This report is issued and distributed in European Union (except Germany and Spain): by Credit Suisse Securities (Europe) Limited, One Cabot Square, London E14 4QJ, England, which is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority, Spain: Credit Suisse Securities, Sociedad de Valores, S.A. ("CSSSV") regulated by the Comision Nacional del Mercado de Valores; Germany: Credit Suisse (Deutschland) Aktiengesellschaft regulated by the Eundesanstal fuer Finanzdienstleistungsautischt ("BeFin"). United States: Credit Suisse Securities (USA) LLC; Canada: Credit Suisse Securities (Canada), Inc.; Switzerland: Credit Suisse (México), S.A. (bxico), S.A. (bxico), S.A. de L.V., Grupo Financiero Credit Suisse (México), The authors of this report have not received payment or compensation from any entity or company other than from the relevant Credit Suisse Grupo ompany ompany other than from the relevant Credit Suisse Gue Securities (Lagan) Limited, Financial Instruments Firm, Japan: by Credit Suisse Horge (Mixico), S.A. (bxico), No. 66, a member of Japan Securities Laganes Securities (Lagan) Limited, Financial Instruments Firm, Sacociation, Type II Financial Instruments Firm, Sacociation, Type II Financial Instruments Firm, Sacociation, Type II Financial Limited; Thailand: Credit Suisse Securities (Malaysia) Sto Rhd; Singapore: Credit Suisse AG, Singapore Branch, India: Credit Suisse Securities (Malaysia) Sto Rhd; Singapore: Credit Suisse AG, Singapore Branch, India: Credit Suisse Securities (Malaysia) Sto Rhd; Singapore: Credit Suisse AG, Singapore Branch, India: Credit Suisse Securities (Lagan) Limited; Thailand; Credit Suisse Securities (Lagan) Limited; Singapore: Credit Suisse AG, Singapore Branch, India: Credit Suisse Securities (India) Pirvate Limited (CIN no. UR7201, Rama IV Read, Silom, Bangrak, Bangkok10500, Thailand, Thei - 466 2614 6000; Malaysia: Credit Suisse Securities (Malaysia) Sto Rhd; Singapore: Credit Suisse AG, Singapor

Additional Regional Disclaimers

Australia: Credit Suisse Securities (Europe) Limited ("CSSEL") and Credit Suisse International ("CSI") are authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority ("FCA") and the Prudential Regulation Authority under UK laws, which differ from Australian Laws. CSSEL and CSI do not hold an Australian Financial Services Licence ("AFSL") and are exempt from the requirement to hold an AFSL under the Corporations Act (Cth) 2001 ("Corporations Act") in respect of the financial services provided to Australian Laws. CSSEL and CSI do not hold an Australian Financial Services Licence ("AFSL") and are exempt from the requirement to hold an AFSL under the Corporations Act (Cth) 2001 ("Corporations Act") in respect of the financial services"). This material is not for distribution to retail clients and leigible counterparties as defined by the FCA, and wholesale clients as defined under section 761G of the Corporations Act. Credit Suisses (Hong Kong) Limited ("CSHK") is locensed and regulated by the Securities and Futures Commission of Hong Kong under the laws of Hong Kong, which differ from Australian laws. CSHKL does not hold an AFSL and is exempt from the requirement to hold an AFSL under the corporations Act in respect of providing Financial Services. Investment banking services in the United States are provided by Credit Suisse Securities (USA) LLC, an affiliate of Credit Suisse Group. CSSU is regulated by the United States Securities and Exchange Commission under UNIted States laws, which differ from Australian laws. CSSU does not hold an AFSL under the Corporations Act in respect of providing Financial Services. Tredit Suisse Securities and Exchange Commission under US laws, which differ from Australian laws. CSSU does not hold an AFSL under the Corporations Act in respect of providing Financial Services. Tredit Suisse Securities and Exchange Commission under US laws, which differ from Australian laws. CSU does not hold an AFSL and is exempt from the requirement to hold an A

Singapore: This report has been prepared and issued for distribution in Singapore to institutional investors, accredited investors and expert investors (each as defined under the Financial Advisers Regulations) only, and is also distributed by Credit Suisse AG, Singapore Branch to voerseas investors (as defined under the Financial Advisers Regulations). Credit Suisse AG, Singapore Branch tray distribute reports produced by its foreign entities or affiliates pursuant to an arrangement under Regulation 32C of the Financial Advisers Regulations should contact Credit Suisse AG, Singapore Branch ta 465-6212-2000 for matters arising from, or in connection with, this report. By virtue of your status as an institutional investor, excerdited investor, expert investor or overseas investor, Credit Suisse AG, Singapore Branch ta 465-6212-2000 for matters arising from, or in connection with, this report. By virtue of your status as an institutional investor, accredited investor, expert investor or overseas investor, Credit Suisse AG, Singapore Branch ta estatin compliance requirements under the Financial Advisers AG, Singapore Branch ta estatin compliance requirements under the Financial Advisers AG, Singapore Branch and the relevant Notices and Guidelines issued thereunder, in respect of any financial advisory service which Credit Suisse AG, Singapore Branch ta estating approximation and the relevant Notices and Guidelines issued thereunder, in respect of any financial advisory service which Credit Suisse AG, Singapore Branch ta estating approximation and the relevant Notices and Suisse AG.

EU: This report has been produced by subsidiaries and affiliates of Credit Suisse operating under its Sustainability, Research & Investment Solutions Division.

In jurisdictions where CS is not already registered or licensed to trade in securities, transactions will only be effected in accordance with applicable securities legislation, which will vary from jurisdiction to jurisdiction and may require that the trade be made in accordance with applicable securities legislation, which will vary from jurisdiction to jurisdiction and may require that the trade be made in accordance with applicable securities legislation, which will vary from jurisdiction to jurisdiction and may require that the trade be made in accordance with applicable securities legislation, which will vary from jurisdiction to jurisdiction and may require that the trade be made in accordance with applicable axemptions from registration or licensing requirements. This material is issued and distributed in the U.S. by CSSU, a member of NYSE, FINRA, SIPC and the NFA, and CSSU accepts responsibility for its contents. Clients should contact analysts and execute transactions through a Credit Suisse subsidiary or affiliate in

This material is issued and distributed in the U.S. by CSSU, a member of NYSE, FINRA, SIPC and the NFA, and CSSU accepts responsibility for its contents. Clients should contact analysts and execute transactions through a Credit Suisse subsidiary or affiliate in their home jurisdiction unless governing law permits otherwise.

CS may provide various services to US municipal entities or obligated persons ("municipalities"), including suggesting individual transactions or trades and entering into such transactions. Any services CS provides to municipality. In connection with the provision of the any such services, there is no agreement, direct or indirect, between any municipality (including the officials, management, employees or agents thereof) and CS for CS to provide advice to the municipality. In connection with the infrancial, accounting and legal advisors regarding any such services provide to rindirect or indirect, between any municipality (including the officials, management, employees or agents thereof) and CS for CS to provide advice to the municipality. In connection with their financial, accounting and legal advisors regarding any such services provided by CS. In addition, CS is not acting for direct or indirect compensation to solicit the municipality on behalf of an unaffiliated broker, dealer, municipal advisor, or investment advisor or fluctany and advisor or fluctany and advisor or foldiary and the municipality or in connection with their intended in the invite provide investment advisor or investment advisor, or in connection with Municipal Financial Products, the issuance of municipal securities, or of an investment advisor prediction should contact that institution on the responsible for distribution. Clients of that institution should contact that institution to effect a transaction in behalf of the municipality for the purpose of or any taken as a entered and employees accept any liability whatsoever for any direct or consequential loss arising from their use of this report or is content. No information or communication provide herein or otherwise is intended to be, or should be construed as, a recommendation within the meaning of the US Department of Labor's final regulation defining "investment advice" for purposes of the Employee Retirement income Security Act of 1974, as amended and Section 4975 of the Intern

When you purchase non-listed Japanese fixed income securities (Japanese government bonds, Japanese municipal bonds, Japanese government guaranteed bonds, Japanese corporate bonds) from CS as a seller, you will be requested to pay the purchase price only.