

Cash on the road

Working capital management in the
automotive supply industry 2012

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Summary

Cash on the road is the latest in a series of working capital (WC) management reports based on Ernst & Young research.

For the automotive supply industry, 2011 presented an experience unlike that in any previous year. Macroeconomic uncertainty in Europe and natural disasters in Asia added significant stresses to WC management and supply chains already stretched by the continuing recovery in global demand. Against such a backdrop, it is hardly surprising that automotive suppliers reported a year-on-year deterioration in WC performance, with cash-to-cash (C2C) rising by 6% from its level in 2010.

These results contrast sharply with those reported a year before, when C2C dropped by 13%. However, a detailed analysis reveals a more complex WC picture among and within each region covered in our study. Results for Japan were particularly poor, with every company but one posting weaker results. Both North America and Europe reported a more limited deterioration in WC performance, albeit with wide variations between companies.

The findings for 2011 show that since 2002, the automotive supply industry as a whole still managed to reduce its levels of C2C by 2%, as companies wisely focused their attention on managing cash in response to the onset of challenging market, economic and financial conditions.

Yet, as industry leaders urgently reassess their strategies in the light of a rapidly shifting global automotive landscape, it is important that they continue to implement truly effective WC management strategies.

While many of the most readily available opportunities for WC improvements may have already been exploited, or traded off against sales growth or margin expansion, the wide variations in WC performance between different automotive supply companies in each region point to the potential for further significant gains. Our research indicates that the leading 40 automotive suppliers have up to US\$45 billion tied up unnecessarily in WC. This figure is equivalent to 9% of these businesses' combined sales.

Successfully releasing this excess cash would require much greater cooperation and coordination across the automotive supply industry's entire value chain. For example, by sharing more reliable and real-time information on demand with customers, organizations could dramatically improve their demand forecasting. Further progress could also be made by implementing better integration between sales, engineering, manufacturing, procurement, and supply chain processes; optimizing global sourcing; and putting more robust risk management policies in place. Trust also needs to be built and competencies developed among supply chain partners.



WC performance deteriorated in 2011

A review of the automotive supply industry's WC performance in 2011 reveals a year-on-year significant deterioration compared with 2010, with cash-to-cash rising by 6%.

The headline results for 2011 contrast sharply with those reported the year before, when C2C dropped by 13%. However, a detailed analysis reveals a more complex WC picture, against a backdrop of sustained rises in automotive production in all regions except Asia, which was affected by the impact of natural disasters.

The overall deterioration in C2C performance in 2011 arose mainly from an increase in DIO (up 6%). Performance was slightly weaker in receivables and unchanged in payables. These variations in WC performance may be explained by a number of factors:

- ▶ **Focus on WC management:** A high proportion of automotive suppliers have continued to take rigorous steps to drive cash and cost out of WC. Many have reported ongoing initiatives in this area, especially with regard to development costs billing and cash collection, spend consolidation, low-cost country sourcing, extension of payment terms and supply chain efficiency.
- ▶ **Unusual sales patterns:** For the global automotive industry and its suppliers, 2011 presented an experience unlike any previous year. Growth was strong in the first quarter of the year but was then severely disrupted in the second quarter by the Japanese earthquake and tsunami's impact on production and supply chain. Production fully recovered in the third quarter. This rebound was then followed by a significant slowdown in the final months of the year, as a result of macroeconomic concerns in Europe and floods in Thailand. Overall global automotive production grew by around 3% between 2010 and 2011, with the large variations between regions and in the different quarters of the year putting significant additional stresses on WC

management and on supply chains in particular. Sales of our surveyed automotive suppliers were up 11%, while WC requirements increased by 17%.

- ▶ **Volatility in commodity prices:** Changes in input costs have continued to exert a material impact on the WC performance of the automotive supply industry. While automotive supply industry agreements include price adjustment provisions, the sharing of costs remains a subject for negotiations with customers. Commodity cost inflation returned in the second half of 2010, peaking in the summer of 2011 before falling back in the final months of that year (with availability of some materials returning to normal). In contrast with 2010, softening primary raw materials prices in the second half of 2011 helped to reduce inventory levels and payables balances at year-end.
- ▶ **Change in payment terms between a major US vehicle manufacturer and some of its suppliers:** A major US vehicle manufacturer completed the change to weekly payment terms that it initiated in 2009 for the majority of its supplies. It also terminated one of the remaining fast-account programs with one major US supplier – an agreement that it had entered into during the global downturn of 2008 in exchange of an early payment discount.

More specifically, there were wide regional variations in the degree of change in C2C. Japan reported by far the worst results, while the variations in the other two regions were more limited.

- ▶ **Japan:** Full-year results in 2011 for Japan largely reflect the impact of quarter-to-quarter change in the levels of output through the year compared with 2010, as the result of the unparalleled

supply chain disruptions created by natural disasters in the Asian region. For our sample of automotive suppliers headquartered in Japan, sales fell by as much as 10% in Q2 of 2011 compared with the previous quarter, which were already down 5% from Q4 of 2010. The second half of 2011 saw production bounce back sharply, resulting in higher trading volumes. This in turn led to higher balances of receivables and payables and increased levels of inventories to serve pent-up demand. C2C rose by 17% from its level in 2010, a figure that falls to 7% if the last quarter of the year is used as a basis for comparison rather than the full year. Six companies out of seven reported a deterioration in WC performance.

► **North America:** For the second consecutive year, automotive production in North America rose by close to 10%, after falling to a 27-year low in 2009. Against this backdrop of robust sales, automotive suppliers in North America reported a slight deterioration in WC performance. C2C was up 1% on a year-on-year basis, with a drop almost

similar in DSO and DPO (down 5% and 6%, respectively), which partly reflected the sequential decrease in sales. DIO remained unchanged. Two-thirds of companies (12 out of 18) reported improved WC performance. It is worth noting that the rise in C2C would have been much higher (8%) were the last quarter of the year used as a basis for comparison rather than the full year. This is due to a rising DIO in the last quarter of 2011 (up 6%) in anticipation of strong demand in the early months of 2012.

► **Europe:** In 2011, automotive suppliers in Europe suffered from challenging market conditions in the second part of the year, including the prospect of falling sales in Europe in the early months of 2012. C2C was up 2% on a year-on-year basis, with slightly higher DIO and DSO. Almost three-quarters of the surveyed companies reported deteriorated WC performance. Were the last quarter of the year used as a basis for comparison rather than the full year, C2C for the European companies reporting quarterly data would have risen by 5%, with DIO up 5%.

Table 1: Change in WC metrics across the industry, 2010-2011

All regions	C2C	
	2011	Change from 2010
DSO	58	1%
DIO	40	6%
DPO	46	0%
C2C	52	6%

C2C	C2C	
	2011	Change from 2010
North America	34	1%
Europe	62	2%
Japan	60	17%
All regions	52	6%

Note: DSO (days sales outstanding), DIO (days inventory outstanding), DPO (days payable outstanding) and C2C (cash-to-cash), with metrics calculated on a sales-weighted basis

Source: Ernst & Young analysis, based on publicly available annual financial statements





Lower C2C levels since 2002

The findings for 2011 show that since 2002, the automotive supply industry has managed to reduce levels of WC – as measured by C2C – by 2%, but these results mask significant variations over time and between regions.

The industry's C2C performance remained unchanged from 2002-2007. In the ensuing three years, from 2008-2011, it was affected severely by the global economic downturn. Various regions and companies responded differently to the tougher conditions.

Table 2: Change in WC metrics across the industry, 2002-2011

All regions	Change 07 / 2002	Change 10 / 2007	Change 11 / 2010	Change 11 / 2002
DSO	0%	-5%	1%	-5%
DIO	9%	1%	6%	16%
DPO	5%	3%	0%	8%
C2C	0%	-8%	6%	-2%

C2C	Change 07 / 2002	Change 10 / 2007	Change 11 / 2010	Change 11 / 2002
North America	6%	-11%	1%	-5%
Europe	-7%	-5%	2%	-10%
Japan	-11%	-8%	17%	-5%
All regions	0%	-8%	6%	-2%

Source: Ernst & Young analysis, based on publicly available annual financial statements

WC performance by component

The overall improvement in C2C performance since 2002 has been driven by a significant increase in DPO (up 8%) and, to a lesser extent, a decline in DSO (down 5%), partly offset by much higher DIO (up 16%). Performance in these areas may be explained by a number of factors:

► **Better receivables performance:** In addition to the continuing benefits of a strong focus on cash collection across the board, the primary cause of the overall change in DSO can be found in diverging trends in payment terms with OEMs over time. In both Europe and Japan, OEMs appear to have paid early or negotiated shorter terms since 2002. By contrast, in North America, OEMs extended terms or paid late, a trend that was accentuated by the termination of supplier fast-pay programs. Another factor that influenced receivables performance was the gradual change in the geographical sales mix toward new regions and countries and the resulting effect on average payment terms.

► **Broad inventory performance deterioration:** With OEMs increasingly adopting lean practices and vendor-managed inventory (VMI) arrangements, the past decade has seen a significant shift of industry inventory toward upstream suppliers. For Tier 1 suppliers, however, this trend was partly mitigated by progress made in streamlining their own supply chains and passing the cost further up the supply chain. For example, a number of these suppliers say that significant reductions in lead times and inventory levels have been achieved through lean transformations of sites.

► **Stronger payables performance:** Payables performance benefited from a greater focus on procurement and sourcing, as companies seek to improve cash and cost efficiency by leveraging and consolidating spend, changing payment terms, standardizing processes and working more closely with their own suppliers. Consolidation has also created larger Tier 1 suppliers with increased buying power, capable of extracting better cash terms from suppliers further upstream. However, the degree of change varied between companies, reflecting differences in the way strategies and tactics have been deployed. For example, some companies have been stretching terms with their main suppliers or reducing their supplier base to achieve greater leverage in negotiations. Others have been choosing to pay faster in return for enhanced cash discounts.





WC performance by region

Each region reported improved WC performance since 2002, but with large variations between them and through the different periods under review.

- ▶ **Europe** reported the biggest improvement in C2C among the three regions, with a drop of 10% since 2002. This rapid progress has been driven by a much-improved performance in payables (DPO up 16%) and receivables (DSO down 6%), partly offset by higher inventory (DIO up 8%). The performance in receivables benefited particularly from the decision by European OEMs to ease terms or pay early. Three-quarters of the companies analyzed in Europe reported lower C2C. It is worth noting that steady WC performance improvements have been achieved over time.
- ▶ **North America** posted a drop of 5% in C2C, boosted by a strong showing in payables (DPO +10%), which was partly offset by a similar increase in inventory. Receivables performance remained almost unchanged, with the adverse impact of some US OEMs stretching terms with their suppliers being mitigated by positive changes in payment policies among other OEMs. Ten out of 18 companies analyzed in North America reported lower C2C. WC performance has been volatile over the different periods in our analysis, affected by the global downturn of 2008 and the profound restructuring of the US automotive industry.

- ▶ **Japan** saw a fall of 5% in C2C, driven by a better receivables performance (DSO down 14%), which more than offset the much weaker inventory results (DIO up 19%). Payables performance improved slightly. The performance in receivables benefited particularly from the decision by Japanese OEMs to ease terms or pay early. Four out of seven companies analyzed in Japan reported lower C2C. WC performance in Japan has also been volatile over the different periods on our analysis, affected by currency movements, the global downturn of 2008 and the impact of natural disasters. In contrast with most suppliers in other regions, Japanese suppliers' performance continues to be closely tied to the operating and financial conditions imposed by a limited number of domestic customers.

Main drivers behind the overall WC improvement

The wide variations in WC levels over the past decade have been influenced by a number of factors – some of them conflicting – that have been shaping the automotive supply industry. These factors include continuing pricing pressures from OEMs, intensifying competition, rising product complexity, volatile raw materials prices and currencies, and industry globalization.

Amid these shifts, a number of actions have driven improvements in WC efficiency since 2002, including:

- Application of lean manufacturing techniques
- Reconfiguration of supply chains, with different strategies and solutions deployed for different countries
- Leveraging, consolidating and standardizing of procurement
- Streamlining and standardizing of business and IT processes
- Improvements in billing and cash collections
- More efficient billing of costs incurred under engineering, tooling and R&D costs contracts
- More effective management of payment terms for customers and suppliers, including renegotiation of terms
- Improved coordination between supply, planning, engineering, manufacturing, procurement and logistics functions and processes
- Linking up with OEMs' processes to improve visibility into demand
- Monitoring of the financial viability of key suppliers and implementing dual sourcing
- Adoption of common technologies up and down the value chain to enable sharing of real-time and accurate supply and demand information
- Implementation of robust risk management policies
- Tracking and monitoring of WC metrics and linking compensation to these metrics





Wide variations in WC performance

WC performance in the automotive supply industry varies widely across regions. This is partly due to variations between different countries' customer bases and payment practices and partly to the differing commercial, manufacturing and logistics strategies deployed by the companies analyzed within each region.

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Comparisons between the WC performances of different regions should be approached with a particular nuance in mind. Because some of the business done by North American, European and Japanese suppliers takes place outside their home regions, their WC results to some degree reflect global market conditions and those at home.

Looking at 2011 performance, North American automotive suppliers exhibit by far the lowest levels of C2C (34 days), owing to a superior performance in each WC metric. By contrast, European and Japanese automotive suppliers carry much higher levels of C2C (60-62 days).

More specifically, North American automotive suppliers carry the lowest levels of inventory (DIO of 31 days). This can be

attributed to companies in this region having simpler manufacturing and supply chains structures, while their counterparts in Europe tend to have their operations dispersed across a large number of countries. VMI arrangements are also less widely used outside North America.

A further regional difference is that suppliers in North America exhibit much higher levels of payables (DPO) than their peers in Europe and Japan. While trade terms are generally longer in Europe and Japan, the trend toward globalization in sales and procurement may have dampened the effect of regional payment practices. Some companies also choose to pursue extended payment terms rather than opting to pay faster in return for cash discounts.

In contrast with inventory and payables, the difference in receivables performance (DSO) across regions was more limited. This reflects the global and highly concentrated nature of the industry's customer base, with most automotive suppliers realizing a significant proportion of their sales outside the region where they are headquartered.

Table 3: WC metrics by region, 2011

All regions	C2C			All regions
	North America	Europe	Japan	
DSO	54	60	59	58
DIO	31	46	44	40
DPO	51	44	43	46
C2C	34	62	60	52

Source: Ernst & Young analysis, based on publicly available annual financial statements

Opportunities going forward

Our research reveals wide variations in WC performance between different automotive suppliers in each region of the technology industry. This points to significant potential for improvement.

The performance gap between companies in each region may partly be due to differences in country and customer sales mix, manufacturing and supply chain infrastructure, the degree of vertical integration, and the nature of supply contracts. Yet all these factors alone are not enough to explain the size of the gap, suggesting fundamental differences in management focus and process efficiency between companies within each region.

Our high-level benchmarking analysis suggests that the leading 40 automotive suppliers have between US\$22 billion and US\$45 billion of cash unnecessarily tied up in WC processes, equivalent to between 4% and 9% of their aggregate sales .

This figure is calculated by comparing the performance of the WC components of each company with that of the average (low estimate) and the upper quartile (high estimate) of its peer group. Even taking the top end of each range, our experience across many projects, industries and geographies shows that a dedicated focus on WC management can frequently release results at or above this level. Note that the range of cash opportunity identified in 2011 is higher than a year before, when it was between 4% and 7% of sales.

The cash opportunity is distributed across each WC component, with 45% coming from inventories, around one-third from payables and 20% from receivables.



Table 4: WC cash opportunity, 2011

	Cash opportunity					
	Value (US\$b)		% WC scope*		% sales	
	Average	Upper quartile	Average	Upper quartile	Average	Upper quartile
US	5	9	7%	13%	3%	5%
Europe	10	24	11%	26%	5%	11%
Japan	7	12	13%	24%	5%	10%
Total	22	45	11%	22%	4%	9%

* % WC Scope = sum of trade receivables, inventories and accounts payable.

Source: Ernst & Young analysis, based on 2011 publicly available annual financial statements.



Pursuing key initiatives

Since 2002, companies have made major strides in improving their management of WC. With many of the most readily available opportunities for improvements already exploited, or traded off against sales growth or margin expansion, companies seeking further gains will need to tackle a number of more challenging issues and circumstances. These include:

- ▶ **Assuming greater supply chain responsibilities:** Tier 1 suppliers are increasingly becoming large-scale systems integrators, taking significant responsibility in the design and manufacturing of the relevant systems and coordinating the supply chains required for their manufacturing and assembly. This trend will require these suppliers to gain manufacturing and assembly capabilities, appropriate technical and engineering expertise, and logistical capabilities to manage the supply chain – all of which can pose complex challenges around internal integration and external collaboration. To overcome these challenges, companies will need to develop true cooperation and coordination, clear systems strategies, alignment of business processes and information systems, and competencies across the entire value chain. It is also essential that design and development risks are shared more appropriately (with risk-sharing embedded in supply contracts), as certain supply chain partners tend to be providing most of the investment.
- ▶ **Improving demand forecasting across the value chain:** Forecasting demand accurately remains one of the automotive industry's biggest challenges. By sharing more reliable and real-time information on demand with customers, organizations could remove some of the inherent variability and inaccuracy in their forecasting. To work effectively, this type of process requires trust, a high level of cooperation, common business processes and information systems, and new competencies across the extended enterprise.
- ▶ **Optimizing global sourcing:** Global sourcing has become more and more important to automotive suppliers as they increase their global footprints and seek to optimize their purchasing costs. Yet this move has also introduced an array of additional risks and challenges, including greater complexity in logistics, potentially longer and more variable lead times, excess safety stocks, and the loss of visibility and control over the manufacturing and delivery processes. Thus, decisions on which parts to outsource to third-party manufacturers and which suppliers to use must be made carefully.

- ▶ **Implementing better integration between sales, engineering and manufacturing, procurement, and supply chain processes:** Matching supply and demand in each market and product segment while simultaneously balancing cash and costs with customer service is a complex undertaking. Companies need to understand how they can best combine lean practices with an agile response.
- ▶ **Adapting WC strategies to new geographic markets:** During the past decade, the automotive industry has seen a significant increase in the level of revenues coming from emerging markets. However, alongside clear, evident market opportunities, this trend raises many issues and challenges associated with local operating models and WC in particular, with each new market exhibiting different characteristics and dynamics. The rapid growth in these markets requires WC management strategies to be tailored and regularly reviewed in order to deal with local payment practices, varying manufacturing and supply chain infrastructures, and rapidly evolving market conditions.
- ▶ **Managing risk in the supply chain:** Supply chains have become more vulnerable to business disruptions as a result of lean practices, rising use of outsourcing and smaller supply bases. As last year's natural disasters in Asia demonstrated, the impact of such shocks on supply chains can be severe across the whole network. This means that managing risk in the supply chain requires robust risk management policies. The right process is founded on five key steps: developing a better understanding of the wider supply chain; improving the supply chain by reducing complexity and increasing process reliability; analyzing and managing risks associated with the critical links and nodes of the organization; improving network visibility; and working closely with suppliers and customers.





How Ernst & Young can help

To support companies in gaining greater control over their cash flows and addressing WC opportunities and challenges, Ernst & Young helps identify, evaluate and prioritize realizable improvements in WC derived from process improvements, elevated execution of policies or changes to commercial terms. We also help companies implement these WC and cash flow improvements and realize the resulting benefits.

To help organizations make the transition to a cash-focused culture, we also help them implement the relevant metrics and identify areas for improvement in cash flow forecasting practices. We can then assist in implementing processes to improve forecasting and frameworks to sustain improvements.

WC improvement initiatives deliver a high ROI. In addition to increased levels of cash, significant cost benefits may also arise from process optimization through reduced transactional and operational costs and from lower levels of bad and doubtful debts and inventory obsolescence.

Glossary

- ▶ **DSO (days sales outstanding):** year-end trade receivables net of provisions, including VAT and adding back securitized and factored receivables, divided by full-year pro forma sales and multiplied by 365 (expressed as a number of days of sales, unless stated otherwise)
- ▶ **DIO (days inventory outstanding):** year-end inventories net of provisions, divided by full-year pro forma sales and multiplied by 365 (expressed as a number of days of sales, unless stated otherwise)
- ▶ **DPO (days payable outstanding):** year-end trade payables, including VAT and adding back trade-accrued expenses, divided by full-year pro forma sales and multiplied by 365 (expressed as a number of days of sales, unless stated otherwise)
- ▶ **C2C (cash-to-cash):** equals DSO, plus DIO, minus DPO (expressed as a number of days of sales, unless stated otherwise)
- ▶ **Pro forma sales:** reported sales net of VAT and adjusted for acquisitions and disposals when this information is available

Methodology

This report is based on a review of the WC performance of 40 of the largest automotive suppliers (by sales) headquartered in North America (18 companies), Europe (15) and Japan (7). Most of them are Tier 1 suppliers.

The North American companies are American Axle & Manufacturing Holdings, ArvinMeritor, BorgWarner, Cooper Tire & Rubber, Dana Holding, Delphi, Exide Technologies, Federal-Mogul, Gentex, The Goodyear Tire & Rubber, Johnson Controls, Lear, Magna International, Modine Manufacturing, Superior Industries, Tenneco, TRW Automotive Holdings and Visteon.

The European companies are Autoliv, Continental, Faurecia, ElringKlinger, Georg Fischer, GKN, Grammer, Haldex, Michelin, Nokian Tyres, Plastic Omnium, Robert Bosch, Sogefi, Trelleborg and Valeo.

The Japanese companies are Aisin Seiki, Bridgestone, DENSO, Tokai Rika, Toyo Tire & Rubber, Toyoda Gosei and Yokohama.

The review on which the report is based is industry-specific and country-specific. It uses metrics based on publicly available annual financial statements.

The WC performance of individual companies is not disclosed.



Name	Telephone number	Email
Working capital services contacts		
UK&I		
Jon Morris	+44 20 7951 9869	jmorris10@uk.ey.com
Matthew Evans	+44 20 7951 7704	mevans1@uk.ey.com
Paul New	+44 20 7951 0502	pnew1@uk.ey.com
US		
Steve Payne	+1 212 773 0562	steve.payne@ey.com
Peter Kingma	+1 312 879 4305	peter.kingma@ey.com
Edward Richards	+1 212 773 6688	edward.richards@ey.com
Mark Tennant	+1 212 773 3426	mark.tennant@ey.com
Eric Wright	+1 408 947 5475	eric.wright@ey.com
Australia		
Wayne Boulton	+61 3 9288 8016	wayne.boulton@au.ey.com
Canada		
Simon Rockcliffe	+1 416 943 3958	simon.rockcliffe@ca.ey.com
Chris Stepanuik	+1 416 943 2752	chris.stepanuik@ca.ey.com
Far East		
Noreen Tai	+86 20 2881 2898	noreen.tai@cn.ey.com
France		
Benjamin Madjar	+33 1 55 61 00 67	benjamin.madjar@fr.ey.com
Germany		
Dirk Braun	+49 619 6996 27586	dirk.braun@de.ey.com
Carsten Lehberg	+49 711 9881 14243	carsten.lehberg@de.ey.com
Bernhard Wenders	+49 211 9352 13851	bernhard.wenders@de.ey.com
Benelux		
Danny Siemes	+31 88 407 8834	danny.siemes@nl.ey.com
Italy		
Stefano Focaccia	+39 02 8066 9423	stefano.focaccia@it.ey.com
Latin America		
Matias De San Pablo	+54 11 4318 1542	matias.de-san-pablo@ar.ey.com
Nordics		
Johan Nordström	+46 8 5205 9324	johan.nordstrom@se.ey.com
Peter Stenbrink	+46 8 5205 9426	peter.stenbrink@se.ey.com
Global Automotive Center contacts		
Mike Hanley Global Automotive Leader	+1 313 628 8260	michael.hanley02@ey.com
Jeff Henning Global Automotive Markets Leader	+1 313 628 8270	jeff.henning@ey.com
James Wu Asia-Pacific Automotive Leader	+86 27 8265 5288	james.wu@hk.ey.com
Koki Ito Japan Automotive Leader	+81 3 3503 1100	ito-kk@shinnihon.or.jp
Andy Sale Americas Automotive Leader	+1 213 977 3061	andrew.sale@ey.com
Alicia Masse Automotive Transaction Advisory Services – Restructuring	+1 313 628 8770	alicia.masse@ey.com

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