

# Flying Blind

into the  
**Next  
Recession?**

Consult a  
Business-Cycle  
Checklist

—  
**(Part 2)**









Part 1 (December 2017–January 2018 issue) presented the nine risk factors listed on the authors’ business-cycle checklist. At that time, three factors were addressed: discretionary versus nondiscretionary spending, commodity-type businesses, and industry-specific volatility. Part 2 considers the remaining factors and offers a summary that can assist lenders in their credit decisions.

**BY RICK BUCZYNSKI  
AND KENNETH I. BROWN**

AS WE WROTE in Part 1 of this article, no one knows when the next recession will start, so it’s important to be prepared. At this stage of the business cycle, risk committees must be aware of how each factor on our checklist impacts their institutions and how to make the necessary adjustments.

**CAPEX: Correlations and Concentration Risks Abound**

Bank risk managers and business planners must embrace the “acceleration principle,” a concept that connects total economic output with private capital investment (CAPEX), the term for corporate spending on machinery, equipment, software, training, and industrial infrastructure. According to the principle, if aggregate income increases following a recession, there will be a corresponding and magnified surge in investment. The reverse is true when economic output declines. In short, industries related to private investment are hypersensitive to downside risks.

Boom-and-bust cycles in CAPEX are equally relevant in equipment financing. Once activity declines, defaults

increase—and, commensurately, asset values decrease—because there is little or no demand for equipment in tough times. Collateral values fall and banks often incur losses beyond what loss-given-default models predicted when capital equipment demand was robust. During recoveries, banks should encourage aggressive lending in this area. Toward the end of a cycle, conservative risk management is required. The same holds true for equipment lease financing.

Unfortunately, the upside of the acceleration principle didn’t appear during this recovery, as indicated in Figure 1. Over the past two years, CAPEX spending has been dreadful, particularly considering the low borrowing costs and solid profits. We surmise this is largely due to a lack of business confidence. We’ll see if there is a sustained rebound if corporate tax cuts take hold. As of this writing in mid-December, that outcome seems precarious and the potential impacts, even with passage of a tax bill, are unclear.

Several industries are highly correlated with CAPEX. The theme here is concentration risk. Table 1 lists the results of calculating the correlations between value-added industry data at the two- to three-digit level with nonresidential fixed investment.<sup>1</sup> It’s based on data from the two most recent

**THE BUSINESS-CYCLE CHECKLIST**

1. Discretionary versus nondiscretionary spending.
2. Commodity-type businesses.
3. Industry-specific volatility.
4. Private capital spending: correlations and concentration risks.
5. The domino effect of concentration risk pools.
6. Risks and opportunities of technological innovation.
7. Perils and opportunities of an industry’s life cycle.
8. Products and services that can compete.
9. The “Five C’s of Credit.”

cycles, spanning 2000 to 2010.

Several subsectors of manufactured goods have strong links to CAPEX—in particular, wood products, motor vehicle bodies and parts, fabricated metal products, furniture, and printing. Risk professionals need to track and communicate this factor throughout the bank.

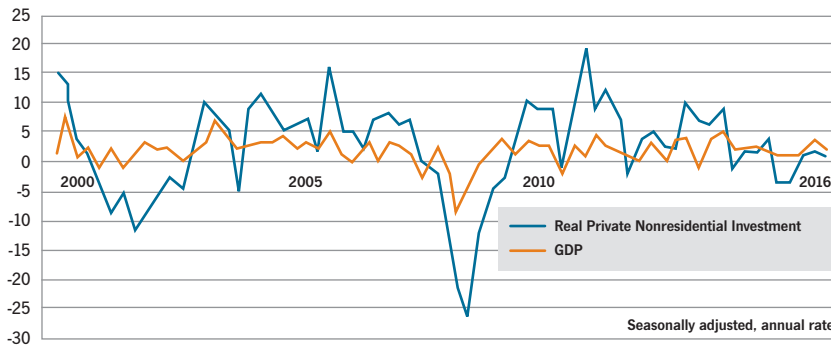
Table 2 highlights the manufacturing industries most closely linked to CAPEX. Table 3 does the same for wholesale trade. Note the connections along the supply chain that should alert banks to latent concentrations. Examples include office furniture manufacturing and furniture wholesaling, construction equipment production and wholesaling of construction and mining equipment, and wood product manufacturing and lumber wholesaling.

The key lesson is that capital spending is highly cyclical and industries correlated to CAPEX are in tow. As such, caution is always needed in this segment, particularly near the end of a credit cycle.

**The Domino Effect of Concentration Risk Pools**

Concentration risk in the housing market ignited the Great Recession. As the housing market collapsed, this “common factor” roared along the supply chain.

**FIGURE 1: BUSINESS INVESTMENT UNDERPERFORMS DURING “RECOVERY”**  
GDP vs. Private Nonresidential Investment (% Change)



Source: Bureau of Economic Analysis

Unfortunately, the upside of the CAPEX acceleration principle didn't appear during this recovery.

**TABLE 1: CAPEX CORRELATIONS IN TWO- AND THREE-DIGIT GOODS PRODUCTION**

Industry Sector	CAPEX Correlation
Manufacturing	0.51
Durable Goods	0.37
Wood Products	0.82
Machinery	0.36
Electrical Equipment/Components	0.45
Motor Vehicles Bodies & Parts	0.87
Fabricated Metal Products	0.87
Furniture & Related Products	0.81
Nondurable Goods	0.78
Paper Products	0.63
Printing & Support Activities	0.73
Chemical Products	0.56
Plastics & Rubber Products	0.49

Sources: Chain-Type Quantity Indexes for Value Added by Industry, Bureau of Economic Analysis; IBISWorld.

Figure 2 illustrates the transmission of this shock. Housing starts are the common risk factor in this example. Without proper mapping of C&I concentration pools and an understanding of a “heat map” that identifies potentially obscure risks correlated with downstream demand, disaster awaits. A supply chain weaves an intricate web. Understanding interconnections is essential for engineering meaningful early warning systems and conducting relevant stress tests.

An excellent starting point for grasping concentration pools linked to NAICS codes is offered by a 2011 bulletin from the

**TABLE 2: CAPEX CORRELATIONS IN FIVE-DIGIT MANUFACTURING**

Manufacturing Industry	CAPEX Correlation
Office Furniture	0.77
Plastics & Rubber Machinery	0.35
Semiconductor & Circuits	0.27
Semiconductor Machinery	0.43
Copier & Optical Machinery	0.49
Construction Machinery	0.84
Metalworking Machinery	0.68
Wood Paneling	0.75
Millwork	0.86
Wood Product	0.94
Wood Pulp Mills	0.40
Sawmills	0.69
Paper Mills	0.42
Paper Product	0.46
Coated & Laminated Paper	0.61
Printing	0.46
Plastic & Resin	0.29
Plastic Pipe & Parts	0.53
Polystyrene Foam	0.76
Iron & Steel	0.52
Steel Rolling & Drawing	0.72
Nonferrous Metal Foundry Products	0.64
Communication Equipment	0.65
Automobile Parts	0.41
Valve Manufacturing	0.65
Wire & Spring Manufacturing	0.57
Metal Pipe & Tube Manufacturing	0.54

Sources: Chain-Type Quantity Indexes for Value Added by Industry, Bureau of Economic Analysis; IBISWorld.

**TABLE 3: CAPEX CORRELATIONS IN FIVE-DIGIT WHOLESALE INDUSTRIES**

Wholesale Industry	CAPEX Correlation
Auto Parts	0.64
Furniture	0.91
Lumber	0.91
Roofing, Siding & Insulation	0.78
Copier & Office Equipment	0.26
Computer & Packaged Software	0.70
Metal Wholesaling	0.69
Tool & Hardware	0.97
Construction & Mining Equipment	0.80
Industrial Machinery & Equipment	0.59
Industrial Supplies	0.56

Sources: Chain-Type Quantity Indexes for Value Added by Industry, Bureau of Economic Analysis; IBISWorld.

OCC that outlines the “OCC taxonomy.”<sup>22</sup> Astute banks use it as guidance to map, monitor, measure, and manage risk and devise prudent business development strategies. After all, factors that drive risk also drive business development.

**Technological Innovation: Not Always What It's Cracked Up to Be**

Emerging technologies can foster the birth of industries while reshaping existing ones. But rapid technological innovation can be as perilous as it is seductive.

The Internet bubble was marked by poorly capitalized, highly leveraged companies funded by zealous investors—including banks. Bankruptcies and defaults prevailed and the industry coalesced, evolved, and matured.

Cybersecurity appears to be another hot opportunity. We don't claim to be smart enough to judge its risks and opportunities, nor those of biometrics, biotechnology, or nanotechnology. Are you? Jumping on a fast-moving, tech-inspired bandwagon can be dangerous as new and improved technology solutions displace former technology leaders. Be alert to possible consolidations in the high-tech space that can accelerate during a recession, though consolidations are often credit positive depending on your footprint and overall corporate mission. We simply suggest due diligence as M&A activity offers both opportunities and risks.

The effects of rapid technological change are not limited to the tech industry. They have structurally transformed the information (*Newsweek*), retail (Circuit City), and transportation (taxi) industry groups. The supply chain itself has morphed into a more streamlined system, leading to an increasingly efficient movement of commodities and intermediate and final goods—and reducing the need to

hold large inventories that formerly were financed chiefly through short-term borrowing. Rapid technological innovation in manufacturing and distribution could accelerate with continuing deployment of robotics and artificial intelligence.

Our concern revolves around a potential lack of institutional knowledge as lenders scurry for a foothold while being ill equipped to assess opportunities and risks. Regardless of where one sits in the loan origination hierarchy, diligence is required when rapid technical innovation is occurring. Lack of institutional knowledge can lead to misguided risk assessment.

### Perils and Opportunities of an Industry's Life Cycle

Knowing where an industry exists in its life cycle is also critical. An obligor's vulnerability to downside risks is highly related to the stage of its life cycle. The dynamics of how—and how quickly—an industry moves from phase to phase vary widely by industry.

There are basically four stages to consider, as shown in Figure 3.

The *emerging* stage includes industries in their infancy that have developed a new product or service or may be applying a new technology. Often the market is untested, vast amounts of capital are needed (note we say *capital* and not debt), and losses are prevalent. As such, these industries can be extremely vulnerable to downside risks and defaults. Examples include dot-coms and biotech. Be leery of the banker bandwagon chasing fleeting opportunities.

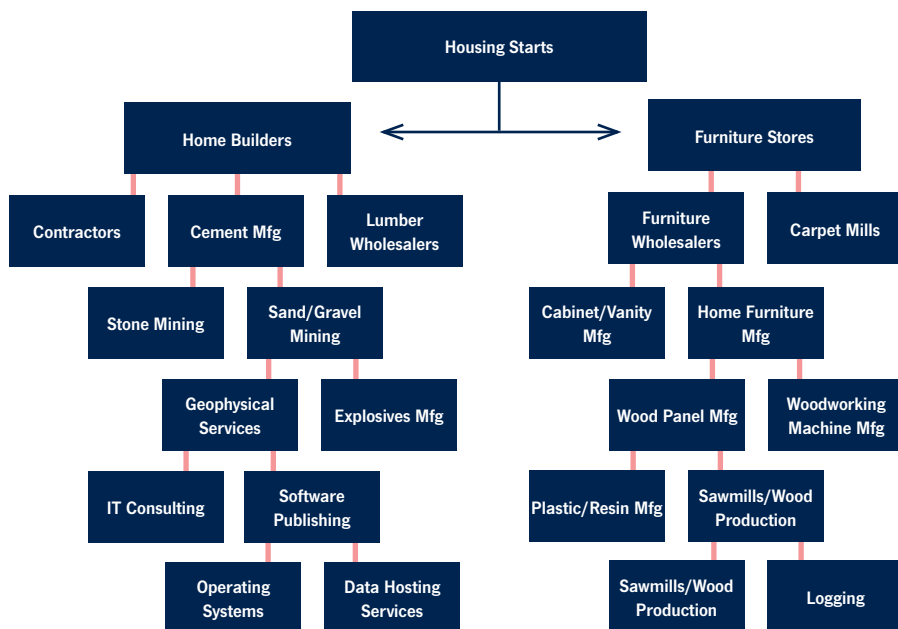
*Growth* industries have graduated from the emerging phase, have a “real” product or service to sell, and require funds to fuel growth. But they still require much capital. Successes in this group experience rapid revenue growth and net profits, although in the early stages of this phase many do endure losses. As in any life-cycle stage, there are winners and losers—but this category can be a sweet spot of opportunities. Still, this classification tends to have a wide dispersion of longevity depending on a precise industry grouping. Fad items can fade to obscurity very quickly. (For you older readers, consider “pet rocks.” You others, Google it.)

Growth segments like smartphones and tablets have expanding markets and an apparently insatiable craving for new apps and more sophisticated hardware. Other examples of growth segments are tortilla production, wineries, vitamin and supplement manufacturing, software publishing, VoIP, IT consulting, video games, marijuana growing, and a host of online retailers.

Industries in the *mature* phase require scrutiny and segmentation, especially when considering concentration pools. These are relatively slow-growth firms that are often market-share phobic, where profits are driven primarily by cost reductions, not sales increases. It's not a fun place to be if you are vested here; nonetheless, there are two sides to the sword.

While mature industries have obviously survived previous life-cycle stages, some are close to decline and inevitable death. There are few examples of resurrection,

FIGURE 2: AN EXAMPLE OF A COMMON FACTOR AND SUPPLY CHAIN LINKAGES



Source: IBISWorld

but here's one that, in our opinion, is worth noting:

*IBM was able to transform itself from a market-dominating mainframe computer company many decades ago to a well-diversified player in the tech-consulting arena. Branding, foresight and, we hazard, the 1993 hiring of outsider Louis V. Gerstner, Jr. as CEO, saved the iconic American Company. The IBM experience is an exception, not a rule.*

A prudent focus on mature “cash cow” industries is a solid downturn hedge. Despite slow growth, they have galvanized market shares and, with stable profits, can weather the storm. They are not exciting, but annuities aren't a bad pick when uncertainty prevails. There are a preponderance of mature firms in manufacturing, transportation, and broadly defined service industries. Health care fits, but other factors are powerful forces given the ongoing debate on health care reform.

Industries in *decline* are scary. Their withering sales put them on a trajectory of death by attrition, and risk managers generally need to steer clear. Nonetheless, if firms in this category can sell variable assets, opportunities might present themselves. M&A and broad consolidations are the norm as survivors scramble to hold a shrinking market. Key examples of American industries in decline are hosiery and apparel knitting mills, shoe and footwear manufacturing, printing services, camera and film manufacturing and wholesaling, and hobby, toy, record, and book stores.

### Substitute Products and Services That Can Compete

One of Michael Porter's Five Forces<sup>3</sup> defines the threat of substitute products or services. Several determinants of this risk are amplified during periods of economic stress and include the following situations:

- When a consumer's switching costs are low.
- If the substitute product or service is highly price competitive.
- If the substitute product or service is

FIGURE 3: AN INDUSTRY'S LIFE CYCLE IS AN IMPORTANT DETERMINANT OF CREDIT RISK



of equal or superior quality and/or its functions, features, or performance are equal or superior to the industry's product.

One example is the Internet's effect on brick-and-mortar retailers. A more specific example is competition between recycled paper versus virgin pulp. Recycled paper, although environmentally friendly, entails more complex production than paper from virgin pulp—which can mean higher costs. Moreover, virgin pulp fibers are longer than the recycled variety, making the latter less suitable for many products. The rub is that market conditions aren't always equally friendly to virgin pulp and recycled paper, hence they are substitutable products that compete.

Understanding the subtleties of your borrower's business model and the competitive landscape can be the difference between a good loan and a default. When contemplating competition between borrowers in the same industry, some bankers fail to recognize competition and substitution among the “feeding industries” that supply intermediate goods. The cost and substitutability of a business's factors of production need to be analyzed carefully, especially with market vagaries or a downturn looming.

### The “Five C's of Credit”

Although our research focus is on credit portfolio management and deals principally with the “conditions” aspect of the Five C's of Credit,<sup>4</sup> we find it relevant to quote from *Journal* contributor Dev Strischek's April 2000 article addressing another C, “character”:<sup>5</sup>

*“Character, which can be defined as the complex of mental and ethical traits marking and often individualizing a person, group, or nation, typically ranks first among the five C's in determining*

*creditworthiness. The other C's have their places, but unless the borrower is willing to live up to his promise to repay the debt, the lender is taking a risk at the outset of the credit extension so great that the other C's are unlikely to mitigate. The borrower's willingness to honor obligations reflects the value the borrower puts on reputation, honesty, and integrity.”*

In a world of big data and metrics, talk of character may seem outdated. Marketplace lending further distances the lender from the borrower, possibly rendering the most critical of the Five C's antiquated. But we suggest that this traditional cornerstone of prudent lending remain at the foundation of commercial banking.

### Summary

Whether you are a risk professional, relationship manager, sales manager, underwriter, or policy maker, we suggest that the nine factors in the business-cycle checklist serve as a “tick box” in your decision tree for commercial lending and, in many cases, consumer lending as well. This pertains to both the origination side (loan by loan) and the broader portfolio side (lines of business and risk buckets).

For *commercial bank risk committees*, we offer the following summary:

- *Discretionary versus nondiscretionary spending*

Unfortunately, this is one of the most basic yet often ignored signals of doom for banks: failure to discern what households and businesses purchase for day-to-day sustenance versus what they spend with longer-term objectives in mind. Look for signs of eroding household incomes in your footprint. This indicates increased stress on borrowers that produce or sell luxury goods or big-ticket items like expensive cars.



- **Commodity-type businesses**

These are industries that are, by nature, highly competitive, have low barriers to entry, and live on low margins. For many banks, this LOB segment is their lifeblood and includes small or mid-market commercial borrowers. Be attentive to your borrower's commitment to cost containment and the impact on profit margins. Have you thought about the susceptibility of low-margin obligors that carry heavy loads of short-term debt in a world where the cost of credit—and hence debt servicing—is likely to increase?

- **Industry-specific volatility**

This is a preeminent bane of banks. Be careful not to underestimate risks associated with historically volatile, idiosyncratic industry groups that have little correlation with economic cycles. Commodity-based or dependent industries offer examples. The energy and agriculture sectors are constant reminders of the importance of volatility. It is imperative that risk committees identify segments where performance is highly variable historically and doesn't necessarily correlate with credit or business cycles. This also applies to collateral securing the loan in which the value of that collateral is generally correlated to the financial health of the obligor. Often, by the time warning signals emerge it is too late to mitigate risk. Early warning systems need to be wired to identify seemingly random variations in delinquencies and charge-offs for volatile segments.

- **Private capital spending: correlations and concentration risks**

Industries and LOBs that are linked to CAPEX are notoriously hypersensitive to economic downturns. Many bankers are unaware of this, the exception being those with ample experience in equipment financing. Watch for weakening earnings from companies with a high capital intensity of production. And identify their major suppliers of

machinery, equipment, and software because these can collectively tank.

- **The domino effect of concentration risk pools**

Smaller banks often don't track industries that are connected along the supply chain, greatly limiting their ability to diversify. As stated above with respect to CAPEX, risk managers must be aware of industry linkages both upstream and downstream. For example, once it becomes apparent that an industry is beginning to struggle, assess the potential damage to key suppliers in cases where the bank has significant exposure.

- **The risks and opportunities of technological innovation**

Be suspicious of rapid innovation in technology, as it often portends massive industry restructurings and bankruptcies. Lacking the institutional knowledge required to understand the ramifications of technological change can be dangerous. Employ the necessary resources to analyze the opportunity carefully instead of blindly mimicking the behavior of competitors. Bandwagons are often an unsafe mode of travel.

- **Perils and opportunities of an industry's life cycle**

Industries in the declining stage of their life cycle should always be scrutinized. Moreover, emerging industries are often spawned by technological innovations and can have high failure rates. (Remember the dot-com boom and bust?) Industry groups in the growth phase of their life cycle and mature industries with stable profit margins are safer bets. Understanding where an industry exists in its life cycle can be even more critical than analyzing the stage of the credit cycle.

- **Substitute products and services that can compete**

This is one of the most subtle and powerful of Porter's Five Forces, especially in a business climate fraught with emerging and, at times, seemingly

confusing vagaries. What should be on your watch list? Track gyrations in selling prices of substitutable, competitive products and services as well as new entrants and products (note our previously mentioned examples). Also, understand a buyer's switching costs. Think of a consumer shifting from brick-and-mortar establishments to online shopping.

- **The "Five C's of Credit"**

These may have lost some luster in the era of big data, particularly the two C's "character" and "conditions." We surmise that the bigger the bank, the greater the tendency to forsake intuition and expert judgment for grander applications of automated decision-making. Surely, AI scorecarding for small business and especially personal loans has become a sensitive issue. Ultimately, bankers, not the machines they use, are responsible for their decisions. Let's train young bankers to use technology, not be dictated to by it.

*This article has been adapted from a white paper by Buczynski and Brown, soon to be available on RMA's website. ®*

**Rick Buczynski**, Ph.D., is senior vice president and chief economist at IBISWorld. He can be reached at rickbucz@aol.com or rick.buczynski@ibisworld.com. **Kenneth I. Brown** is the senior vice president of risk management at the CIT Group. He can be reached at kenneth.brown@cit.com. The authors thank Richard J. Parsons, author of the RMA-published books *Broke and Investing in Banks*, for valuable comments on an earlier version of the paper on which this article is based.

#### Notes

1. The Pearson Product Moment Correlation Coefficient was used for the calculation.
2. See "Concentrations of Credit," OCC Bulletin 2011-48, December 13, 2011. An updated version of this guidance will reportedly be available in early 2017.
3. See Anita McGahan and Michael Porter, "How Much Does Industry Matter, Really?" *Strategic Management Journal* 18, 1997.
4. The Five C's of Credit are conditions, character, capacity, capital, and collateral.
5. See "The Quotable Five C's," by Dev Striscek, *The Journal of Lending & Credit Risk Management*, April 2000.