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In-depth analysis and insights  
to inform your decision-making.



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## Global Equity **FINDING OPPORTUNITIES IN AN ERA OF RAPID CHANGE**

### EXECUTIVE SUMMARY

- Key global industries are being disrupted from many factors, including technological innovation, changing consumer preferences, and political or regulatory initiatives. Growth investors need to understand these disruptions and seek to position themselves on the right side of them.
- Disruptive change potentially may produce extreme but sustainable performance gains for a relatively small number of companies, especially if innovation and consumer demand converge in blockbuster products that transform existing markets.
- In our view, successful growth investing in an era of disruption requires both conviction and prudence. Investors unwilling to take significant positions in their best ideas are likely to risk missing out on extreme performance outcomes, but careful management of overall portfolio risk also is essential.
- Strong research skills are critical to identifying companies that benefit from or are hurt by disruption. A portfolio structure that allows investors to compare opportunities across geographic regions can leverage the ability of fundamental stock picking to add value.

Disruption—the idea that markets are in a constant state of flux, as new technologies or business models rise to challenge established ones—has become something of a Silicon Valley cliché. Yet the term still conveys a wider truth for investors: Being on the right side of change potentially brings great rewards.

Unfortunately, that same truth applies in reverse: Being on the wrong end of disruptive change can be an expensive investment mistake.

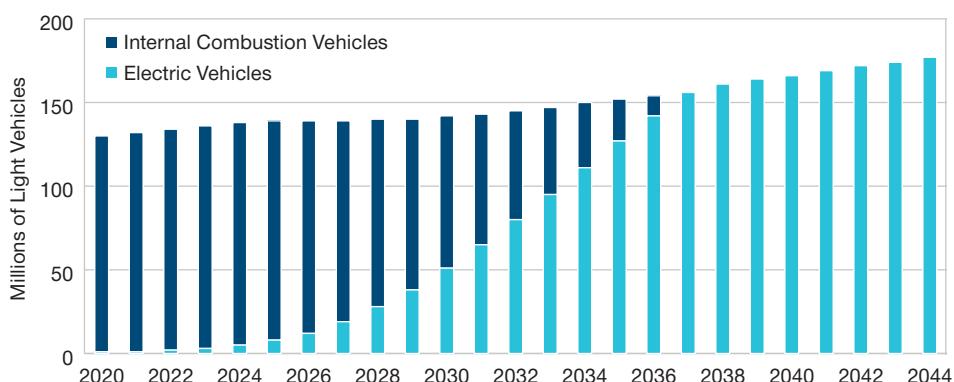
The theory of disruption is rooted in the work of the Austrian economist Joseph Schumpeter, who argued that market dislocations and business failures are both part of a process of

“creative destruction” that is essential for economic growth. Innovation has the potential to boost some companies while damaging others, and rapidly shifting capital and other resources from fading enterprises to growing ones is essential if the benefits of innovation are to be shared widely.

For investors, being on the “creative” side instead of the “destructive” side of that process has never been more important than today. The waves of disruption washing through the global economy and society are unprecedented, both in size and in speed. And they are coming from multiple directions: technology, health care, politics, popular culture, economic policy, and regulation.

**FIGURE 1: Extreme Disruption: Electric Vehicles**

T. Rowe Price's Projections of U.S. Market Share for Electric Vehicles, as of October 1, 2017



Source: T. Rowe Price.

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Investors have to be aware of how disruption ripples through society and the economy. Labor dislocation, innovative drug pricing, changes in energy technology, and shifts in manufacturing are just a few examples of major changes in industry organization that should be considered. The more concentrated the benefits of change are for the companies potentially aided by it, the greater the impact will be on the companies potentially hurt by it. So investors need to understand that economic disruption can produce political disruption—and vice versa.

Those questions are particularly urgent at a time when we continue to face concerns about excessive debt and stubbornly low inflation rates. Some of our greatest innovations are contributing to falling prices and idle capacity. Meanwhile, the increasingly complex and abstract nature of economic output—intellectual property and services instead of things—makes it more difficult to measure growth and productivity. Distinguishing between stagnation and innovation can be almost impossible from a top-down perspective, at least in the short run.

Given the economic backdrop, it's not surprising that low growth and accelerating disruption are spurring populism and protectionism in many

countries. Investors need to have a broad understanding of how policymakers could respond to these political pressures in the short run, as well as an appreciation of the enduring changes that are likely to prevail in the long run.

### CAPTURING EXTREME OUTCOMES

Disruption often has a winner-take-all dynamic, with a handful of early movers grabbing the lion's share of the benefits. It can also be explosively fast, especially if technological innovation and enthusiastic consumer demand pave the way for blockbuster products that quickly transform an existing market.

A classic example: the converging technologies that are quickly making electric vehicles (EV) viable replacements for internal combustion vehicles. Our own projections for EV market penetration are considerably higher than the industry consensus (Figure 1). Spin-off applications, such as the mass production of high-capacity batteries for decentralized power systems, are disrupting the traditional utility business model as well.

The vital lesson for investors is that extreme outcomes do happen. Explosive revenue and earnings growth—plus higher valuations as the market recognizes future growth potential—may

help generate rapid but sustainable price gains. When paradigms shift, markets tend to underestimate the long-term outcomes and focus too heavily on short-term valuation metrics. In many cases, investors simply do not understand the scale of the opportunities disruption has created. Hard work and skill are necessary to see the future, assess it correctly, and have conviction in the analysis.

### EXAMPLES OF DISRUPTIVE CHANGE

As noted previously, global capitalism, and its equity markets, are being buffeted by change from many directions. The effects are visible in a number of key industries, not just information technology (IT). As was true for the smartphone, supply and demand shifts can reinforce each other powerfully, creating the potential for similarly extreme performance outcomes. Some examples:

#### ■ Internet-based data services:

The ability to deliver enterprise and consumer applications over the Internet has created booming markets for cloud hosting, software by subscription, interface design, and other services, and is encouraging even larger companies to outsource their data operations. Potential beneficiaries include large online retailers or consumer technology companies that can leverage their own data platforms to serve the outsourcing market. Companies potentially harmed include older providers of hardware, software, or system integration services for in-house corporate IT departments.

#### ■ Streaming video:

Web delivery has enabled on-demand services to challenge traditional cable in both the delivery and production of entertainment content. For consumers, this means greater choice and flexibility. For cable providers, it undermines the bundled channel package and the revenue streams tied to it. Potential beneficiaries

include on-demand services that have achieved global scale and can use intensive viewer analytics to identify niche audiences. Potentially harmed: cable providers or content producers that rely on bundled channels for significant revenues.

- Electric vehicles:** As noted above, the automotive industry is at the intersection of a convergence of technologies, including electric drive trains, battery capacity, autonomous software (i.e., self-driving cars), and mobile broadband. High-end car buyers are eager for these technologies, but established automakers are making only halting progress in bringing them to market. Potential beneficiaries: startups or existing tech companies that can use the luxury market to scale up production of electric and/or self-driving cars, then leverage that platform to penetrate the mass market. Potentially harmed: established U.S. automakers and their foreign counterparts.

- Pharmaceuticals:** The mapping of the human genome and accelerated inflows of venture capital into biotechnology research have led to exciting advances in the health sciences. However, media coverage has fueled hostility to patent “roll up” strategies, in which companies acquire the rights to existing drugs and then raise prices, possibly leading to political or regulatory backlash. Potential beneficiaries: stable biotech firms developing promising therapies and some larger diversified pharmaceutical companies with profitable drugs that are still under patent. Potentially harmed: firms relying on patent roll-ups and/or acquisition deals to generate revenue growth.

- Digital payment:** Direct payment via mobile devices is attacking the dominant market position of credit and debit card issuers and giving non-bank financial providers direct access to business and retail customers. Meanwhile, cryptocurrencies are

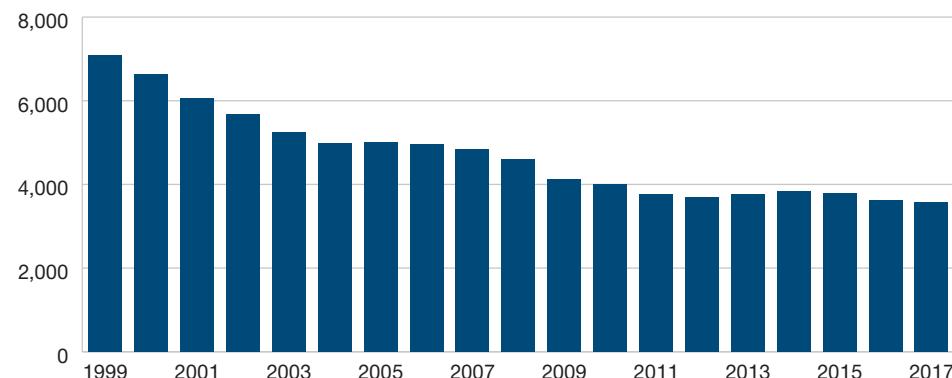
### A Changing Opportunity Set

A slowdown in initial public offerings, surging merger and acquisitions activity, and sizable corporate share buybacks are all shrinking available market capitalization in the U.S. public equity markets, potentially disrupting investment strategies that largely focus on U.S. domestic stocks.

The number of public companies in the Wilshire 5000 Total Market Index has fallen by almost half since 1999 (Figure 2). Structural quality—especially in the U.S. small-cap market—also appears to have deteriorated. This suggests that U.S. investors may need to consider expanding their investment horizons to include growing non-U.S. equity markets and, where appropriate, U.S. private equity.

**FIGURE 2: The U.S. Public Equity Market is Shrinking**

Number of Companies in the Wilshire 5000 Total Market Index  
As of June 30, 2017



Source: Wilshire Associates.

challenging the very definition of money itself, and the underlying blockchain technology is supporting new platforms for issuing and trading “virtual” securities. Potential beneficiaries: web-based payment systems and supporting technology vendors. Potentially harmed: Traditional credit card companies and bank issuers.

### COMBINING CONVICTION AND PRUDENCE

For growth investors, the days of “one decision” investing—buying reliable growth companies with durable, entrenched franchises and holding them for years—are gone, probably for good. Understanding the factors driving

change, identifying the companies helped or hurt by it, recognizing when to take sizable positions, and determining when the risks outweigh the potential benefits are all complex ongoing challenges.

In our view, successfully navigating these currents requires a combination of high conviction and prudent attention to risk. Conviction, because investors unwilling to take significant positions in their best ideas are more likely to miss out on the extreme performance outcomes experienced by the beneficiaries while capturing the underperformance of the much larger number of companies hurt by disruption. Prudence, because concentrated positions create risk, which must be matched with careful

management of overall portfolio risk factors. Valuation entry points become especially important, so investors need the stomach to add to their best ideas when market conditions are volatile.

Finally, we believe the ferocious pace of change makes a strong argument for greater exposure to global markets. Some sources of disruption—like technology—have no respect for borders, while others (political developments, regulatory responses) may be national or even local. Comparing companies across geographic regions may reveal hidden opportunities, provide access to segmented markets (like China's Internet sector), or otherwise leverage the ability of fundamental stock picking to add value.

#### **BACKING INSIGHTS WITH KNOWLEDGE**

Change can be creative or destructive, and in a market economy it can be both at the same time. Disruption can also be highly selective: Firms within the same industry, or even divisions within the same company, may be on different sides of change, for better or for worse.

**In this environment, what distinguishes intelligent investment decisions from “story stocks” is research: the ability to quantify change, fully understand its dimensions, and correctly identify the stocks most likely to benefit from it.**

In this environment, what distinguishes intelligent investment decisions from “story stocks” is research: the ability to quantify change, fully understand its dimensions, and correctly identify the stocks most likely to benefit from it. This requires a granular understanding of individual companies—their business models, strategic focus, product capabilities, management teams, and a host of other factors.

With more than 45 years of experience investing in international markets, T. Rowe Price has the experience, resources, and capabilities to invest in an era of extreme disruption. Our

research process provides in-depth coverage across both major axes of the international equity markets: geographic and sectoral.

This knowledge base allows our analysts and portfolio managers to analyze companies from both regional and industry perspectives, which are both critical dimensions when assessing the impact of change and identifying potential portfolio opportunities. We believe these capabilities will serve our clients well in an era when economic and social disruption show no signs of slowing.

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