

## Original Text

The author of this new book is a reporter for Bloomberg News, where he has covered wthe private equity business. As Jason Kelly observes, private equity is "ny nature and design, is secretive, a breathtakingly wealthy corner of the world". His new book "The New Tycoons" opens up and explains this often hidden world for both the financial professional and the indovidual investor. For those who are new to this world, the book starts with a chart "Following The Money", and "Deciphering Private Equity" which explains the acronyms and abbreviations used in this business. The financial professionals will get in-depth pictures of the major PE firms and the personalities of the major players, plus the major trends and challenges.

One theme of the author is that the scope and impact of private equity is not generally known, despite most of us come into contact with one or more of their financed companies every day. The total estimated assets in private equity is \$3 trillion. Their owned companies employ 8.1 million people. As a point of comparison, Wallmart employes 2.2 million. Those who go main New York Public Library, are entering the Schwarzman building, named to honor the financial contributions of Steve Schwarzman of Blackstone.

One of the most instructive parts of "The New Tycoons" is the profiles of the major firms. These can be read as lessons on management of financial businesses. While the 2008 financial crisis hit PE firms, none of the majors suffered the catastrophic and fatal losses of many banks and brokerage firms. One reason maybe the founders are still hands on active in these firms, and have most of their wealth invested in them. In 2007 Bill Conway of Carlyle sent a message to each Carlyle employee "not to get swept up in the deal heat surrounding them", and told their companies to draw down their lines of credit.

The major PE firms are very careful in recruiting, make a focused effort to create a common culture, and communicate management thinking with all parts of their firms.

## Edited Text

For Jason Kelly, "private equity by its nature and design, is secretive, a breathtakingly wealthy corner of the world." Kelly is a writer at Bloomberg News, where he covers the global PE (private equity) industry. In his new book, *The New Tycoons: Inside the Trillion Dollar Private Equity Industry That Owns Everything*, he uncovers hidden aspects of the field. Readers new to PE will find value in the book's frontmatter, which includes a list of key organizations, individuals, and terms, and a chart illustrating the flow of money. Financial professionals will appreciate Kelly's depictions of the major businesses and individuals and his coverage of trends and challenges.

The scope and impact of PE are not generally known, despite the fact that most of us come into contact with one or more of their financed companies every day. Assets in PE total an estimated \$3 trillion. The owned companies employ 8.1 million people; in comparison, Walmart employs 2.2 million. If you visit the New York Public Library's main branch, you will be in the Stephen A. Schwarzman building, renamed in honor of the Blackstone chairman and CEO who contributed \$100 million towards the library's expansion.

Kelly's profiles of the large firms are lessons in the management of a financial business. In the crisis of 2008, none of these organizations suffered the catastrophic losses that many banks and brokerage firms faced. One reason for this is that the founders have tended to stay active in their firms and have invested most of their wealth in them. In 2007, Bill Conway, cofounder of The Carlyle Group, sent a letter to employees urging them "not to get swept up in the euphoria of the deal heat surrounding them" and told Carlyle's companies to draw down their lines of credit.

The big PE organizations are particular in their recruitment, strive to create a common culture, and communicate management's thinking to all parts of the business.

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Dawn Cavalieri

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## Original Text

Another field of fast growth is the field of terahertz technology (addressing the range of frequencies between the microwaves and the infrared). Waves of terahertz frequency propagate poorly in the air, so their application for the communication on Earth is limited. Yet, terahertz waves have a significant unexplored potential for space communications and in some applications their limited range may not be a problem. One such field is a security technology. Unlike the X-rays, terahertz radiation does not pose a known health hazard. Furthermore, it can not only sense the shape of the object in question but provide important chemical clues as to the presence of explosives or narcotics. (Lee, 2010, Lewis, 2012, Roebuck, 2012)

Terahertz waves can be also applied for *in vivo* imaging of the intricate mechanisms inside the cells. Here again, the high losses of terahertz waves in the air are not important but the ability to make analyses without damaging cells by X-rays or electron microscopy is paramount. A particular technique developed by the company Applied Research & Photonics has been described in January 2012 issue of the Laser Focus (Laser Focus, January 2012b).

Another related opportunity is to produce broadband pulse of ultrasound in live tissues by local optical (or terahertz) heating. Current medical technology uses quasi-continuous and almost monochromatic sources of ultrasound. A new technology promises appending current medical ultrasound imaging, which can be compared to black-and-white vision with something reminiscent of a color flash photography. This promotes an emerging field of photoacoustics, see below (Laser Focus, May 2012). Current applications of terahertz are hindered by a relative difficulty of generating and detecting radiation in that range.

One novel approach towards terahertz generation used vertical-cavity-surface-emitting laser (VCSEL), now an ubiquitous gadget in all CD/DVD players, to provide terahertz excitations in specially patterned layers of GaN was presented on SPIE West by a group from U. Montpellier 2 (France).

## Edited Text

Terahertz technology, which involves the range of frequencies between microwave and infrared, is experiencing rapid growth. Terahertz waves propagate poorly in the air, so their application for communication on Earth is limited. However, they have a significant unexplored potential for space communications, and in some applications, including security technology, their limited range may not be a problem. Unlike X-rays, terahertz radiation does not pose a known health hazard. Furthermore, it can not only sense the shape of an object, but also provide important chemical clues to the presence of explosives and narcotics (Lee 2009; Lewis 2012).

Terahertz waves can also be used to image the intricate mechanisms inside living cells. Here again, the high losses of terahertz waves in the air are not important; the ability to make analyses without causing the kinds of damage that X-rays and electron microscopy cause is paramount. The company Applied Research & Photonics has developed a technique to this end (Rahman and Rahman 2012).

Another related opportunity is the production of a broadband pulse of ultrasound in live tissues by local optical (or terahertz) heating. Current medical technology uses quasi-continuous and almost monochromatic sources of ultrasound. The new technology can be appended to current medical ultrasound imaging; the result is analogous to the combination of black-and-white vision with something reminiscent of color flash photography. This promotes an emerging field of photoacoustics (see Overton 2012). Current applications of terahertz are hindered by the relative difficulty of generating and detecting radiation in that range.

A novel approach toward terahertz generation uses a vertical-cavity surface-emitting laser (VCSEL), now ubiquitous in CD and DVD players, to provide terahertz excitations in specially patterned layers of gallium nitride (GaN). A group from the University of Montpellier 2 presented this at the SPIE Photonics West 2013 conference.

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microwave and infrared, is experiencing rapid growth. Terahertz waves propagate poorly in the air, so their application for communication on Earth is limited. However, they have a significant unexplored potential for space communications, and in some applications, including security technology, their limited range may not be a problem. Unlike X-rays, terahertz radiation does not pose a known health hazard. Furthermore, it can not only sense the shape of an object, but also provide important chemical clues to the presence of explosives or narcotics (Lee 2009; Lewis 2012).

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I deleted the Roebuck reference. There seems to be some question about the credibility of the author and book. See <http://www.infosecisland.com/blogview/17693-Security-Charlatans-Making-Money-Off-Wikipedia.html>. (If he's just cutting and pasting from Wiki, you'd be better off just citing Wiki.) You have two reliable sources, so it's not needed anyway.

## Original Text

Economists started to ask this question long ago, particularly in its more philosophical form: why do the organizations exist? The first cohesive answer came from Ronald Coase in 1930s. (When I started this column in summer, centenarian R. Coase was still alive. He died in September). First, he mentioned the role of the transaction costs. He pointed out that time and cost of negotiating a contract is not negligible and, frequently, cannot be regarded as simple add-on to the total cost of production. Another important insight came in 1960s with another set of winners of Nobel Memorial Prize in Economics, Akerlof and Stiglitz and concerned information asymmetry and the institutional framework as the way to partially alleviate this asymmetry. Finally, the re-discovery of the almost forgotten work of the English XIX century economist Cecile Pigou (Cambridge professor of J. M. Keynes) exposed the existence of markets detrimental to social welfare.

There is further pertinent set of questions on the public-private relations. Why, for instance, in developed nations, defense and law enforcement are almost always functions of the government? Why infrastructure, health care and education typically present a mixture of public and private efforts? Yet, the production of, e.g. pastries, is private everywhere except may be in North Korea.

In the end one can formulate five principal reasons for market dysfunction. I list them below.

- Transaction costs and market frictions
- Information asymmetry and adverse selection
- Market externalities
- Existence of public goods (bads), non-exclusivity of consumption and Pigovian markets (activities reducing society's welfare or marketing bads)
- Problems of collective action (arms races, etc.)

## Edited Text

Economists have been asking this question for a long time, particularly in its more philosophical form: why do organizations exist? The first coherent answer came from Ronald Coase (1937, 1991) in the 1930s. Coase pointed out that the costs of negotiating contracts—"transaction costs"—are not negligible and cannot be regarded as simple add-ons to the cost of production. Another important insight came in the 1970s, when George Akerlof (1970, 2003) and Joseph Stiglitz (2002) discussed the institutional framework as a way to partially alleviate information asymmetry. Finally, there has been a renewal of interest in the work of English economist Arthur Cecil Pigou (1932), one of John Maynard Keynes' teachers at Cambridge. Pigou emphasized the existence of some markets as detrimental to social welfare, and proposed "sin taxes" as a means to regulate them. Similar ideas have existed throughout history: the Bible hints at the regulation of prostitution, and ancient Greek and Chinese treatises contain condemnations of gambling.

There are additional questions that pertain to public-private relations. For instance, in developed nations, why are defense and law enforcement almost always functions of the government? Why are infrastructure, healthcare, and education typically a mix of public and private efforts? Yet consumer goods are produced by private entities almost everywhere, North Korea being an exception.

In the end, one can formulate five principal reasons for market dysfunction:

- Transaction costs and market frictions;
- Information asymmetry and adverse selection;
- Market externalities;
- Existence of public goods (bads), nonexclusivity of consumption, and Pigovian markets (activities that reduce society's welfare, or marketing bads); and
- Problems of collective action (e.g., arms races).

<p>Economists <b>have been asking this question for a long time</b>, particularly in its more philosophical form: why do organizations exist? The first <b>coherent</b> answer came from Ronald Coase (1937, 1991) in <b>the 1930s</b>. <b>Coase</b> pointed out that <b>the costs</b> of negotiating contracts—"transaction costs"—<b>are</b> not negligible and cannot be regarded as simple add-ons to the cost of production. Another important insight came in <b>the 1970s, when George Akerlof (1970, 2003) and Joseph Stiglitz (2002) discussed</b> the institutional framework as <b>a way to partially alleviate information asymmetry</b>. <b>Finally, the rediscovery of the almost forgotten work of English economist Arthur Cecil Pigou (1932) exposed the existence of markets as detrimental to social welfare.</b></p>	<p>asking this question for a long time, particularly in its more philosophical form: why do the ...rganizations exist? The first cohesive ...herent answer came from Ronald Coase ↓</p> <p><b>Dawn Cavalieri</b> You did not mention the title of the almost forgotten work(s). I put The Economics of Welfare in the references so that the reader would have something to read if they wanted more. Is there a better reference?</p> <p>It's unclear as written. The REDISCOVERY of the work exposed the existence of markets as detrimental to social welfare, or the work itself did so? When and by whom was the book rediscovered? Can you add a few lines about how, according to his school, markets are detrimental to social welfare?</p>
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