

Journal of

APPLIED CORPORATE FINANCE

Private Equity and Public Companies

- 8 **Private Equity: Accomplishments and Challenges**
Greg Brown, University of North Carolina; Bob Harris, University of Virginia; Tim Jenkinson, University of Oxford; Steve Kaplan, University of Chicago; and David Robinson, Duke University
- 21 **Private Equity and Portfolio Companies: Lessons from the Global Financial Crisis**
Shai Bernstein and Josh Lerner, Harvard University; and Filippo Mezzanotti, Northwestern University
- 43 **Board 3.0: What the Private-Equity Governance Model Can Offer Public Companies**
Ronald J. Gilson, Columbia University and Stanford University; and Jeffrey N. Gordon, Columbia University
- 52 **The Growing Blessing of Unicorns: The Changing Nature of the Market for Privately Funded Companies**
Keith C. Brown and Kenneth W. Wiles, University of Texas at Austin
- 73 **EQT: Private Equity with a Purpose**
Robert G. Eccles, University of Oxford; and Thérèse Lennehag and Nina Nornholm, EQT AB
- 87 **Private Equity and the COVID-19 Economic Downturn: Opportunity for Expansion?**
David Haarmeyer
- 92 **University of Texas Roundtable on LP Perspectives on the State of Private Equity**
Panelists: Chris Halaska, Memorial Hermann Health System; Tom Tull, Employees Retirement System of Texas; Russell Valdez, Wafra; and Shelby Wanstrath, Texas Teachers Retirement System. Moderator: Ken Wiles, University of Texas at Austin
- 100 **Columbia Law School Roundtable on Public Aspects of Private Equity**
Panelists: Emily Mendell, International Limited Partners Association; Chris Cozzone, Bain Capital Double Impact; and Donna Hitscherich, Columbia Business School. Moderated by Aamir Rehman, Columbia Business School
- 108 **A CEO's Playbook for Creating Long-Term Value: Ten Essential Resource Allocation Practices**
Harry M. Kraemer, Jr., Northwestern University; Michael J. Mauboussin, Counterpoint Global; and Alfred Rappaport, Northwestern University
- 118 **A Tale of Leadership in Value Creation**
Greg Milano, Fortuna Advisors
- 128 **What Public Companies Can Learn from Private Equity Pay Plans**
Stephen O'Byrne, Shareholder Value Advisors

COLUMBIA LAW SCHOOL ROUNDTABLE ON
Public Aspects of Private Equity

Co-Sponsored by The Richard Paul Richman Center for Business, Law, and Public Policy and
The Ira M. Millstein Center for Global Markets and Corporate Ownership, in partnership with the Private Equity Program
Columbia Law School | New York, NY | November 19, 2019



Emily Mendell
Managing Director,
Institutional Limited Partners
Association



Chris Cozzone
Bain Capital Double Impact



Donna Hitscherich
Director, Private Equity
Program and Senior Lecturer
in Business, Columbia
Business School



Amir A. Rehman
Senior Fellow, Richman
Center, Columbia Business
School

Aamir A. Rehman: Good evening, I'm Aamir Rehman, Senior Fellow at the Richman Center at Columbia Business School and Partner at Hoopoe Capital. I want to welcome you all to this discussion of the public aspects of private equity. The title is intended to be a bit provocative. Given the name private equity, one might assume that it refers to private transactions among private actors, and that these actors are left to pursue their returns on investment largely unfettered by concerns about the public good or public accountability. And yet, when we look at the ecosystem of private equity, we find many players and institutions that in fact do have a social mandate.

PE firms routinely make important changes—to expand or shrink companies, to cut or create new jobs, and to create sustainable business models—that can have significant social effects for good or ill. Private equity funds and the firms that manage them also have a lot of influence over whether their portfolio companies create social benefits or not. And as we're approaching an election year, there are many public policy issues to consider, from taxation to private equity's effect on social problems like inequality and the environment as well as the general economy.

We will be joined today by **Emily Mendell**, who is Managing Director at the Institutional Limited Partners Association (ILPA), which represents the limited partners who invest in private equity funds. Collectively, these institutions have invested over \$2 trillion in private equity alone, representing roughly half of total private equity investments. Many of these limited partners invest on behalf of public sector employees, state-owned institutions, or pension boards or retirement funds. Such institutions have a social aspect to their missions, so they naturally care

about stakeholders and nonfinancial considerations. And as a consequence, public considerations inevitably play a role in private equity analysis, particularly because private equity institutions intend to make changes to the companies in which they invest.

We also will be joined by **Chris Cozzone** of Bain Capital Double Impact, a pioneer in thinking about sustainable or socially responsible private equity. Chris will tell us about Bain's business model and how the firm works with their LP investors to achieve their ESG objectives.

Finally, we will be joined by **Donna Hitscherich**, Director of the Private Equity Program and Senior Lecturer in Business here at Columbia Business School. Donna will tell us how this all fits into the broader financial universe and how private equity seems to be evolving in ways designed to address social concerns.

Let me begin by asking Emily to tell us how the limited partner members of her organization approach ESG. How do environmental and other social considerations affect private equity LPs' investing decisions?

The Challenge for LPs: Getting ESG on the PE Agenda

Emily Mendell: Thank you, Aamir, for having me here today. I represent ILPA, a global organization with about 530 institutional investors. About 70% of our members are here in North America, about another 20% are in Europe, and the rest are based in Asia, Middle East, Australia, and New Zealand. Our limited partner members look at ESG very broadly, but from many different perspectives that seem to evolve almost monthly.

Their perspectives vary with the types of limited partner, but also with

the norms of the countries where they are based and invest. To a lesser degree, the size of their institutions matter, as does the extent of their knowledge of private equity. On the basis of these differences, I characterize three limited partner approaches to ESG: they are either ESG leaders, ESG followers, or uninterested in ESG.

The leaders are largely public pension funds, who spend a considerable amount of time and effort designing their investment strategies to reflect their own members' wishes to invest in a socially responsible way. Universities generally have student bodies with opinions on where money should be invested. Foundations usually have specific mission criteria, and some family offices are increasingly interested in ESG investing, particularly with generational turnover.

But not all our members are as focused on ESG. The attitudes of corporate pension managers and sovereign wealth funds vary widely, depending on their particular corporate or regime philosophy. Geography seems to matter as well. Our Nordic country members have shown the most leadership, followed by Canadians. Our U.S. and Middle Eastern members have been slower to adopt ESG strategies. And our smaller institutions often find themselves scarce of the critical resources for managing ESG strategies.

Larger organization like CalPERS or Washington State can hire a chief sustainability officer or ESG head and form ESG committees to review all of their investments. It is much more difficult to institutionalize an ESG strategy at a small family office. Most of the leaders who are really interested in ESG are mission-driven because their beneficiaries want them to be.



hen we look at the ecosystem of private equity, we find many players and institutions that in fact do have a social mandate. – Aamir A. Rehman



Nevertheless, there is a growing group of limited partners who have realized that their fiduciary duties include ESG. For a long time, LPs believed that their fiduciary duty was simply to produce the highest returns. But over time, and especially within the last several years, more have realized that there is a great deal of “headline risk” and social risk that comes with the conventional notions of fiduciary duty. You cannot create long-term value if you don’t take into account negative externalities and engage in risk mitigation. So more and more LPs are engaging on ESG, with many if not most of them motivated by a deeper understanding of investment risks.

Rehman: Wonderful, Emily. Now let’s get a manager’s perspective from Chris Cozzone. Chris, please tell us how Bain Double Impact has integrated ESG into its investment process and how that plays out in your interactions with LPs and portfolio companies.

The Bain Approach to ESG: A Practitioner’s View

Chris Cozzone: Thanks, Aamir. Let me first tell you a little about the double impact strategy within the Bain Capital organization. Bain Capital was founded in 1984 and now manages over \$100 billion of assets. Bain Capital Double Impact was created in 2015

as a lower middle market fund targeting financial returns similar to what our parent organization expects, but with a double mandate— meaning that we also aim to achieve measurable and intentional, social, and/or environmental returns within every one of our portfolio companies.

We accomplish this by looking at all of the various stakeholders that are critical to or affected by the business. When we look at a business, we look at its customers, its employees, the environment, its community, the public sector, its competitors, as well as groups of second-order stakeholders. In every business we look at, we figure how we could have a positive influence on its stakeholders and find a way to measure that effect. These measures then become part of the incentive packages of our management teams. So their compensation depends not only on profitability, but also on the positive impact they have on stakeholders.

In addition to helping our management teams achieve financial targets, we work with them to reduce negative externalities. We seek to improve three social and environmental outcomes in particular: (1) the health and wellness of our customers and our employees, (2) environmental sustainability, and (3) workforce education and development.

Rehman: Thanks, Chris. Now let’s turn to Donna. What do you see as the role

of ESG-oriented funds like Double Impact in the industry, and how do you see that role evolving?

Some Historical Perspective on PE

Hitscherich: Thanks for having me, Aamir. I’m here to provide some historical perspective on an industry that I’ve followed for quite a long time. I find the language in this discussion very interesting. Some of the terms are a bit slippery, though, and so I think it’s useful to examine them.

Private equity firms are expected, first and foremost, to earn high rates of return on their portfolio companies and, by so doing, for their LPs. But the question we’re addressing here is about PE’s “externalities”—their effects on parties other than their LPs—particularly the *negative* externalities and how we go about reducing them without affecting those returns. Capital is attracted to those places in the financial ecosystem with high rates of return. But how do ESG concerns affect returns? How does it make a difference?

Undoubtedly, making operational improvements and creating more efficient capital structures increase the rates of return. But at the end of the day, this asset class needs to deliver returns to Emily’s constituents. Maybe the constituents think about their investments in private equity as a way of balancing their portfolios—that is, earning higher

For a long time, LPs believed that their fiduciary duty was simply to produce the highest returns. But over time, and especially within the last several years, more have realized that there is a great deal of “headline risk” and social risk that comes with the conventional notions of fiduciary duty. You cannot create long-term value if you don’t take into account negative externalities and engage in risk mitigation. – Emily Mendell



returns on activities with larger social costs—while accepting lower returns on public companies that make larger investments in ESG programs. I can see something like that happening.

For a long time, business school graduates have thought of maximizing shareholder value as a corporation’s prime directive. And large CEO stock option grants reflected that priority. But the recent Business Roundtable announcement redefines the purpose of a corporation to promote “an economy that serves all Americans.” I think this change is both good and significant, and likely to stay—not least because our European friends are focusing so heavily on it.

Monitoring and Measuring ESG Impacts

Rehman: I think this whole discussion about the centrality of returns is pivotal. Emily, your members are certainly interested in return. How do the LPs you referred to as leaders think about integrating ESG and financial returns?

Mendell: You’re right that returns are paramount to our members because they need to meet the financial needs of their beneficiaries. The good news is

that private equity is the number one performing alternative asset class within the private pension system. Our leaders incorporate ESG criteria and strategies directly into their investment decisions. They have also decided to avoid categories of investments, saying, “We will not put any of our money into these types of industries.” A number of our investors avoid firearms and pornography, for example; cannabis is another.

Other areas of avoidance we are starting to see include exclusion. LPs establish those exclusions upfront with their general partners in the form of side letter agreements. And then they monitor the general partner to ensure it is living up to the standards that they have set forth.

Many of our members and many of the general partners are also signatories of the Principles for Responsible Investment, which are guidelines that provide certain investment parameters. These LPs both act on these principles and make them public. They have ESG specialists reviewing every deal and GP fund manager for ESG compliance. They continue monitoring the GPs after making their investments and receive complex measurement reports.

Rehman: Chris, what can you tell us about how Bain measures and monitors ESG risk? And how do your nonfinancial metrics interact with the financial metrics? And then how do you create incentives both for the firm and also for your portfolio companies to achieve those metrics?

Cozzone: The metrics are critical. As I mentioned, the devil’s in the details.

We define two or three company-specific metrics that are linked to positive outcomes, and we measure the outputs. For instance, when we invested in Impact Fitness, we needed to track whether we were effectively providing access to fitness to underserved populations. That’s why our key metric, tracked monthly, was the percentage of first-time users among our new joiners. Each measurement is company-specific; it is a tailored measurement directly linked to our product or service where there’s no bridge of assumption. And it’s only by having these types of metrics that are tied specifically to your business model that your incentives work.

Rehman: Do you have to sacrifice profit to score highly on these measures? Have you seen trade-offs? Emily suggested

Our role as an impact investor is to find business initiatives that create value by either increasing profit or reducing risk—and in that sense there is no trade-off between shareholder value and ESG investment ... and the longer one’s investment perspective, the fewer trade-offs one encounters. But I won’t claim that there are no trade-offs at all. – Chris Cozzone



that ESG integration is a way to mitigate risk. It’s important for sustainable long-term returns. Have portfolio companies told you about a trade-off between a social metric and financial performance?

Cozzone: All companies face trade-offs between near-term and longer-run profits—and some make choices to reduce near-term profit that can create value by reducing investors’ perception of risk. Our role as an impact investor is to find business initiatives that create value by either increasing profit or reducing risk—and in that sense there is no trade-off between shareholder value and ESG investment. Let me add that we are better able to find and take advantage of such opportunities because we are not driven by a quarterly or even a yearly time frame. We have a five-year time frame.

As one example, an employee training program for one of our portfolio companies has a short-term cost, but the program is expected to provide more than adequate returns through higher productivity five years down the line. And the longer one’s investment perspective, the fewer trade-offs one encounters. But I won’t claim that there are no trade-offs at all.

That said, good management has always been in significant part about

making the right decisions for the long haul. The true pioneers of impact investing were the family offices and family businesses a hundred years ago who actually cared about their communities, did not pollute their backyards, and took care of the families of their companies. Those were good capitalists who drove returns, increased their own wealth, but at the same time had a really positive impact on those around them. And that’s the vision we’re trying to go back to. We are proud capitalists—but believe that there’s a better way to do business, if we all just do a little bit more work.

Rehman: So, maybe impact investing’s not so new after all. Donna, as a scholar of this field, how do you react to Chris’s remarks about trade-offs?

ESG, LP Returns, and the Next Recession

Hitscherich: Like Chris, I think there are trade-offs, but I think the biggest one has to do with investors’ holding period returns. In the past, some private equity firms exited investments after just three years. And such firms might not have been willing to invest in employee training programs. And I think taking a longer-term view, such as five or more years, is clearly a good thing. I know

Blackstone and other companies now have had longer-dated funds.

Lengthening the holding period changes the whole incentive scheme of the portfolio management team who want to work with a private equity sponsor. And as I said, the investment perspective of private equity firms seems to have gotten longer. Today, over 60% of private equity deals are add-on acquisitions—which means that PE firms are now adding to their portfolios. When I first worked at First Boston years ago, if I sold a company to a private equity firm, it was because I had no other buyers.

But the greater capabilities of today’s PE firms have changed that. By adopting the policies that you talk about, Chris, with all your portfolio companies, they can have a very positive impact. In fact, given the greater size and sophistication of GPs today, I think they can have a *huge* positive impact.

I was also intrigued by Emily’s comments about LPs screening out investment in certain industries. If private equity firms need the capital but the LPs insist they don’t want to invest in certain types of industries, then the LPs ought to prevail. The GPs are there to create returns, but the LPs, the suppliers of capital, can and should establish the boundary conditions.

Good practices can lead to better valuations over time. And perhaps there's a new opportunity for private equity to make such an ESG premium a component of value creation—as opposed to just the cost cutting they seemed to be most noted for. — Donna Hitscherich



Rehman: I hear you saying that the supply of capital shapes what GPs do. But what does that really mean? And what about the possibility of a recession that seems to be on people's minds?

Hitscherich: The LPs have more say than they think in all this. But that said, I also think the next recession is going to be equally unkind to those people who have ESG and people that don't have ESG. It will be indiscriminate, something like a tornado. We are always warned against saying, "It's going to be different this time." But in one respect, at least, I think things are different. I have been surprised at the Fed's ability to cut interest rates. In 2007, all the investment banker presentations showed all the debt that was coming due in the next seven years. "It was a mountain of debt," they all said, "and the markets can't possibly absorb this." But it did, and PE came out of it stronger than ever. So, interest rates will be very important.

Mendell: I agree that a recession is going to be equally harsh on both companies with ESG and those without ESG, but limited partners are expecting that if we do go into a recession, capital will be a little bit harder to come by. As limited partners, we may have more leverage with the GP in getting the terms we want. As returns start to become less

favorable, LPs will have more bargaining power; they'll be able to ask for more and get it.

Cozzone: I agree with you. We've been reviewing various scenarios with every one of our portfolio companies as to how different downturns could affect different stakeholders. But that part of my job now isn't very different than in my old job in the more traditional fund. That's one thing that PE firms do especially well—plan for downturns. But it's hard to see signs of a recession in today's high stock prices. It's also hard to see what role ESG factors are playing in those prices.

Hitscherich: But stock prices are very noisy, and it's very, very difficult, to extract a pure ESG effect from all that noise. It is a lot like the difficulty of trying to isolate and identify the effects of good corporate governance.

Cozzone: I agree that trying to isolate these effects statistically is extremely difficult. I have not seen a study showing conclusively that ESG results in better financial performance. But there's a great paper from Morgan Stanley that shows that although high-ESG and sustainable companies don't distinguish themselves during normal or boom times, such companies clearly outperform during down cycles.

Hitscherich: Companies like Patagonia seem to enjoy premium valuations, and we would all like to be able to do the same thing. I agree with Emily, however, that limited partners are not able to pound their fist and create change right away. But good practices can lead to better valuations over time. And perhaps there's a new opportunity for private equity to make such an ESG premium a component of value creation—as opposed to just the cost cutting they seemed to be most noted for.

Mendell: I suspect there are going to be more and more "impact" companies like Patagonia and that private equity will begin to take more interest in these companies. Impact investing is now very trendy. Think about all of the funds today that call themselves "impact funds." Everybody wants to measure impact now; it's very much the norm. And there are consulting companies that can tell you how to measure impact across your portfolio. So I expect to see a lot more discussion about impact, even if it's not initially the founding principle of the fund.

Cozzone: Impact investing is my bread and butter. I made the shift to this industry because I believe this is the trend. And we're also seeing an increasing shift to consumer-facing companies that are getting rewarded more for impacts by

their customers. Who wouldn't pay more for a cleaner supply chain or healthier products?

The ILPA Plan for Diversity and Inclusion

Rehman: Emily, let me ask about something where you personally have deep expertise, which is diversity and inclusion. Tell us what your members at ILPA think about it, how your work addresses it, and what impact it is having on private equity and on companies that are owned by PE funds?

Mendell: Earlier in this discussion I said that ESG has gained the most traction in Europe. But organizations in the U.S. have really driven the diversity and inclusion part of it. I've been in venture capital and private equity since early 2000. And things feel different after the “#Me Too” summer of 2017. Even ILPA didn't have a diversity and inclusion strategy in the summer of 2017, when the Binary Capital scandal and subsequent stories of harassment within the VC ecosystem came out in *The New York Times*.

But we very quickly realized that the press would not only ask the portfolio companies and the general partners what they're doing to fix this, but they would ask the LPs as well. Ultimately, the LPs are the critical actors in this because they have all the money. But because private equity returns have been so high in recent years, that influence that LPs hold hasn't fully manifested itself yet.

ILPA released our first standard due diligence questionnaire in 2013. In 2018, we added an entire section on diversity and inclusion that asks companies to describe their employee makeup, and the promotion and attrition rates for women and minorities. We have a template that allows GPs to list staff

based on seniority, by position, and even by compensation.

So LPs are starting to ask questions more commonly during the due diligence process, and we're starting to see change as a result. The other thing I'll say is that it's really important to take a positive, not punitive, approach at this early stage. Penalizing a general partner because you don't have enough women or minorities on your team today is not going to help anybody. We've tried to articulate a view of how GPs and LPs can and should work together. The ILPA Principles is a 40-page document that does just that and includes a lot of material on both ESG and D&I throughout.

Hitscherich: I want to back Emily up here. Although I've been around a long time, too, it does feel different this time. We here at Columbia Business School do a lot of research on diversity and inclusion. And there's lots of academic research that suggests that diverse teams make better decisions.

Rehman: On the theme of it being different this time, do you see your students being more focused on this than before?

Hitscherich: I think we're making progress. We just finished our KKR case writing competition on diversity and inclusion. The teams were also rated on the diversity of their team in terms of thought and experience. We had over 30 teams of people do the competition, so it was really quite amazing. So I think the students take it seriously, and I'm starting to see the PE firms take it very seriously.

Mendell: Donna's right about diversity of thought and perspective. ESG

specialists come from a lot of different places. They can come from sustainability backgrounds, they can come from environmental analysis backgrounds, or they can also come from financial backgrounds. And the ability to apply a financial mindset to some of these risks that are out there is also a really great skill to bring to any table.

And when running a successful business, retention and promotion matter a great deal. A lot of folks are focused on getting the numbers and the diversity when getting the people in. But it's not going to help if once they're there, they don't feel like they belong and don't feel like they're a part of the organization.

So we at ILPA are actually working on two long-term projects—one on ESG and one on Diversity and Inclusion. In both cases, we're creating a roadmap for limited partners and general partners to set their own direction in both of these spaces. And in the case of diversity and inclusion, there is an entire chapter in the roadmap devoted to “Retention and Inclusion.” It recommends setting up affinity groups within the organization that address the needs of minorities within the organization. It includes recommendations about mentorship and family leave policy—making sure that folks can leave and have a child or care for an older parent and be able to come back to a job and not be penalized for it, both men and women. It's about promotion and making sure that everybody has an opportunity to be promoted. So there are lots of initiatives that can be taken.

Hitscherich: This will all take time. When I started as Wall Street as a banker, senior managers would talk a great game, but you didn't see a lot of women partners—and that really affects retention. When I went to law school,

ROUNDTABLE

about 30% of law students were women; but that number is now about 50%. When I went to business school here, about 20% of students were women—and that's now about 38%.

And so it takes time. It's not just enough to have a great crop of junior people and say, "Okay we're going to bring them up." Junior people are naturally skeptical. I always found that, in investment banking, men and women sell differently. When I would pitch business to clients with a male managing director, he'd often try to impose on me how he would sell the deal. If you don't have people like you in the organization, people sometimes are not evaluating you appropriately.

Talent is multi-faceted so it's very important to have a diverse group. I think we'll get there, but it's going to take time and everything starts with a step. And I agree with Emily that this time it definitely is different. I think we're in an incredibly exciting time.

Things feel different this time because people matter. Much of ESG involves treating our employees and customers better. I think the time is ripe for that because society wants it very much after having swung so far

in the opposite direction. I think we'll see greater investment returns generated just by doing that. We can call it ESG or something else but, ultimately, the companies that perform well will be those that treat their people well. I think we're in for a great ride. I can't tell you how quickly it's going to happen, but this has legs.

In Closing

Rehman: All right, thanks Donna. Chris and Emily, closing thoughts?

Cozzone: I think the main driver of the ESG movement is the availability of information. Information is now ubiquitous, and capitalism is changing as a result. Supply chains are now much more transparent. Customer service has to improve because of the "front page of *The New York Times* test" and the "Yelp review test." Prices are transparent.

New terms like "ESG impact" are popular but the real challenge is, "How can we be better capitalists?" Much work remains, but the tide is shifting. Anyone who wants to be in the investing field should have no doubt that this is the side you want to be working on because it is where the growth will be.

Mendell: I share the other panelists' optimism about the private equity industry. I really do believe that the next generation is going to do better than we've done. ESG is critical. It's critical to returns and to value creation, and it's critical to saving our planet. It's also going to be critical to the PE industry and the viability of the PE industry long term.

Big problems still need to be overcome, though. The public perception of private equity continues to need work. Some of that negative brand is deserved. But the only way that private equity is going to be able to defend itself is to walk the talk. I truly believe we are better off with private equity because it creates jobs, opportunity, and value. But we have to do better, we have to behave better, we have to govern better, we have to think about our employees and our people. And within the next year, private equity is going to be right in the middle of the spotlight. ESG is one way we can make the case that we really are a valuable contributor to the U.S. economy. So stay tuned, it's going to be an interesting year.



ADVISORY BOARD

Yakov Amihud
New York University

Mary Barth
Stanford University

Amar Bhidé
Tufts University

Michael Bradley
Duke University

Richard Brealey
London Business School

Michael Brennan
University of California,
Los Angeles

Robert Bruner
University of Virginia

Charles Calomiris
Columbia University

Christopher Culp
Johns Hopkins Institute for
Applied Economics

Howard Davies
Institut d'Études Politiques
de Paris

Robert Eccles
Harvard Business School

Carl Ferenbach
High Meadows Foundation

Kenneth French
Dartmouth College

Martin Fridson
Lehmann, Livian, Fridson
Advisors LLC

Stuart L. Gillan
University of Georgia

Richard Greco
Filangieri Capital Partners

Trevor Harris
Columbia University

Glenn Hubbard
Columbia University

Michael Jensen
Harvard University

Steven Kaplan
University of Chicago

David Larcker
Stanford University

Martin Leibowitz
Morgan Stanley

Donald Lessard
Massachusetts Institute of
Technology

John McConnell
Purdue University

Robert Merton
Massachusetts Institute of
Technology

Gregory V. Milano
Fortuna Advisors LLC

Stewart Myers
Massachusetts Institute of
Technology

Robert Parrino
University of Texas at Austin

Richard Ruback
Harvard Business School

G. William Schwert
University of Rochester

Alan Shapiro
University of Southern
California

Betty Simkins
Oklahoma State University

Clifford Smith, Jr.
University of Rochester

Charles Smithson
Rutter Associates

Laura Starks
University of Texas at Austin

Erik Stern
Stern Value Management

G. Bennett Stewart
Institutional Shareholder
Services

René Stulz
The Ohio State University

Sheridan Titman
University of Texas at Austin

Alex Triantis
University of Maryland

Laura D'Andrea Tyson
University of California,
Berkeley

Ross Watts
Massachusetts Institute of
Technology

Jerold Zimmerman
University of Rochester

EDITORIAL

Editor-in-Chief
Donald H. Chew, Jr.

Associate Editor
John L. McCormack

Design and Production
Mary McBride

Assistant Editor
Michael E. Chew

Journal of Applied Corporate Finance (ISSN 1078-1196 [print], ISSN 1745-6622 [online]) is published quarterly per year by Wiley Subscription Services, Inc., a Wiley Company, 111 River St., Hoboken, NJ 07030-5774 USA.

Postmaster: Send all address changes to JOURNAL OF APPLIED CORPORATE FINANCE, John Wiley & Sons Inc., c/o The Sheridan Press, PO Box 465, Hanover, PA 17331 USA.

Information for Subscribers

Journal of Applied Corporate Finance is published quarterly per year. Institutional subscription prices for 2020 are:

Print & Online: US\$844 (US), US\$1007 (Rest of World), €656, (Europe), £516 (UK). Commercial subscription prices for 2020 are: Print & Online: US\$1123 (US), US\$1339 (Rest of World), €872 (Europe), £686 (UK). Individual subscription prices for 2020 are: Print & Online: US\$137 (US), \$137 (Rest of World), €115 (Europe), £79 (UK). Student subscription prices for 2020 are: Print & Online: US\$49 (US), \$49 (Rest of World), €41 (Europe), £28 (UK). Prices are exclusive of tax. Asia-Pacific GST, Canadian GST/HST and European VAT will be applied at the appropriate rates. For more information on current tax rates, please go to <https://onlinelibrary.wiley.com/library-info/products/price-lists/payment>. The price includes online access to the current and all online back files to January 1, 2016, where available. For other pricing options, including access information and terms and conditions, please visit <https://onlinelibrary.wiley.com/library-info/products/price-lists>. Terms of use can be found here: <https://onlinelibrary.wiley.com/terms-and-conditions>.

Delivery Terms and Legal Title

Where the subscription price includes print issues and delivery is to the recipient's address, delivery terms are Delivered at Place (DAP); the recipient is responsible for paying any import duty or taxes. Title to all issues transfers FOB our shipping point, freight prepaid. We will endeavour to fulfil claims for missing or damaged copies within six months of publication, within our reasonable discretion and subject to availability.

Journal Customer Services: For ordering information, claims and any inquiry concerning your journal subscription please go to <https://hub.wiley.com/community/support/onlinelibrary> or contact your nearest office.

Americas: Email: cs-journals@wiley.com; Tel: +1 781 388 8598 or +1 800 835 6770 (toll free in the USA and Canada).

Europe, Middle East and Africa: Email: cs-journals@wiley.com; Tel: +44 (0) 1865 778315.

Asia Pacific: Email: cs-journals@wiley.com; Tel: +65 6511 8000.

Japan: For Japanese speaking support, Email: cs-japan@wiley.com

Visit our Online Customer Help at <https://hub.wiley.com/community/support/onlinelibrary>

Production Editor: Shalini Chawla (email: jacf@wiley.com).

Back Issues: Single issues from current and recent volumes are available at the current single issue price from cs-journals@wiley.com. Earlier issues may be obtained from Periodicals Service Company, 351 Fairview Avenue – Ste 300, Hudson, NY 12534, USA. Tel: +1 518 537 4700, Fax: +1 518 537 5899, Email: psc@periodicals.com

View this journal online at wileyonlinelibrary.com/journal/jacf.

Statement on Research4Life

Wiley is a founding member of the UN-backed HINARI, AGORA, and OARE initiatives. They are now collectively known as Research4Life, making online scientific content available free or at nominal cost to researchers in developing countries. Please visit Wiley's Content Access – Corporate Citizenship site: <http://www.wiley.com/WileyCDA/Section/id-390082.html>

Journal of Applied Corporate Finance accepts articles for Open Access publication. Please visit <https://authorservices.wiley.com/author-resources/Journal-Authors/open-access/onlineopen.html> for further information about OnlineOpen.

Wiley's Corporate Citizenship initiative seeks to address the environmental, social, economic, and ethical challenges faced in our business and which are important to our diverse stakeholder groups. Since launching the initiative, we have focused on sharing our content with those in need, enhancing community philanthropy, reducing our carbon impact, creating global guidelines and best practices for paper use, establishing a vendor code of ethics, and engaging our colleagues and other stakeholders in our efforts.

Follow our progress at www.wiley.com/go/citizenship.

Abstracting and Indexing Services

The Journal is indexed by Accounting and Tax Index, Emerald Management Reviews (Online Edition), Environmental Science and Pollution Management, Risk Abstracts (Online Edition), and Banking Information Index.

Disclaimer

The Publisher, Cantillon and Mann, its affiliates, and Editors cannot be held responsible for errors or any consequences arising from the use of information contained in this journal; the views and opinions expressed do not necessarily reflect those of the Publisher, Cantillon and Mann, its affiliates, and Editors, neither does the publication of advertisements constitute any endorsement by the Publisher, Cantillon and Mann, its affiliates, and Editors of the products advertised.

Copyright and Copying

Copyright © 2020 Cantillon and Mann. All rights reserved. No part of this publication may be reproduced, stored or transmitted in any form or by any means without the prior permission in writing from the copyright holder. Authorization to photocopy items for internal and personal use is granted by the copyright holder for libraries and other users registered with their local Reproduction Rights Organization (RRO), e.g., Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, MA 01923, USA (www.copyright.com), provided the appropriate fee is paid directly to the RRO. This consent does not extend to other kinds of copying such as copying for general distribution, for advertising or promotional purposes, for republication, for creating new collective works or for resale. Permissions for such reuse can be obtained using the RightsLink "Request Permissions" link on Wiley Online Library. Special requests should be addressed to: permissions@wiley.com.