TPG INSIGHTS

Impact Investing: The Road Ahead

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- Jim Coulter

"Rise represents an opportunity to do nothing less than bend private capital markets to do good… Luckily, we've already achieved that goal.

- Maya Chorengel & Steve Ellis

"Given our commitment to both returns and impact, we're able to deliver the profitability sufficient to attract the increasing amounts of capital that the energy transition requires.

- Hank Paulson

Following the seismic shocks of recent years, the market and society are fundamentally reassessing the nature of value creation. Just as the sharp rise in interest rates has forced a reset in market valuations, so too have the disruptions caused by the pandemic and the challenges posed by climate change prompted a reset in investors' mindset about the role of capital in driving social impact. To provide some perspective on the road ahead for impact investing, we speak with **Jim Coulter**, TPG Executive Chairman and Co-Managing Partner of The Rise Fund, **Maya Chorengel** and **Steve Ellis**, Co-Managing Partners of The Rise Fund, and **Hank Paulson**, executive Chairman of TPG Rise Climate and former US Secretary of Treasury. Despite ongoing market volatility, all three fundamentally agree that there's never been a more promising time for impact investing, where excellence requires an "And" not "Or" approach that's intently focused on both driving impact and delivering strong investor returns. Lastly, we sit down with **Maryanne Hancock**, CEO of Y Analytics, to delve into TPG's evidence-based, rigorous, and transparent impact assessment tools, which are critical to The Rise Fund's differentiated approach to impact investing.

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TPG INSIGHTS

Interview with Jim Coulter

Jim Coulter is the **Executive Chairman** and a **Founding Partner of TPG, co-Managing Partner of The Rise Fund**, and **Managing Partner** of **TPG Rise Climate**. Coulter, Maya Chorengel, and Steve Ellis worked with co-founders Bono and Jeff Skoll to create The Rise Fund in 2016, and he has been intimately involved in developing and leading its work since its inception. Below, he discusses his approach to investing, the development and evolution of the Rise platform, and the outlook for impact and climate-oriented investing in 2023.

Q: At TPG, we're big believers in the concept of "and" not "or". What's this idea, and how does it inform the culture and investment approach of TPG and The Rise Fund?

Jim Coulter: The world often fixates on frameworks based on "or". It's a red state "or" a blue state. You're either a liberal "or" a conservative, spending too much "or" cutting too much. I'm a centrist, and I find most problems require "and" solutions. Across the history of TPG, we've always sought to deliver strong returns "and" a responsible approach to business.

The driving insight behind the TPG Rise platform is precisely a form of investing that drives excellent returns "and" measurable societal impact. We fundamentally believe that business can play a positive role in addressing societal issues, and that by building great companies whose products and services are "collinear", meaning their societal impact grows as their business scales, we can live in an investment world of "and".

When we decided to build Rise with a maniacal focus on both impact and returns, the idea was at odds with the concessionary nature of many of the early impact funds. We had confidence in the approach after looking at the history of deals from across all of our funds and finding that those that would have been characterized as impact deals actually had returns as high or higher than the rest of our portfolio. In other words, the market had almost been trained to expect lower returns from impact deals. But our experience showed that needn't be the case.

A good deal doesn't know it's an impact deal. As investors, we should treat them like any other deal we look at. In fact, we believe that by holding our "impact" companies to the same standards as any other company, we build stronger companies and stronger impact. Seven years into the Rise journey, we've built a strong track-record of delivering on this vision.

Q: What's contributed to this success?

Jim Coulter: In a word: excellence. It's not so easy to deliver on the idea of "and" not "or". Doing so requires excellence across two fronts. First, it requires excellence in investing. One of the reasons Rise has been so successful is that TPG has a long history of building successful investment teams, and we apply the same standards and rigor to impact investing as we do everywhere else. Second, it requires excellence in our approach to impact, which really means leveraging the rigorous methodology of Y Analytics to bring authenticity to measuring both profitability and impact.

Looking back on it, Rise is only Rise because TPG is TPG. We were able to build a leading impact platform because we've been focused for decades on doing the right thing across our entire portfolio. Building a firm within a firm, as we did with Rise, required a culture that was aligned with the Rise vision and an authenticity which rang true to our investors and to our teams across TPG.

Q: How does this influence how you're putting capital to work?

Jim Coulter: At TPG, we're intensely focused on being in the right neighborhoods. Across the firm, we're investing in the most interesting and fastest-growing sectors in the world: innovation at scale in technology, decarbonization, education, healthcare access, and financial inclusion, to name a few. These are all sectors with significant financial tailwinds and massive markets, which is critical given the backdrop of global and macro uncertainty in 2023. But it's also the case that there are a number of promising companies in these sectors that provide social impact, which is an added advantage.

Rise Climate, for example, is a leading platform for investing in decarbonization, and it's at the center of what will be perhaps the largest trend in the economy over the next 15 years. Climate investing is very complex, and it requires a differential

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knowledge base and focused capital, which has served investors well during the technology revolution. The same will be the case for the decarbonization revolution.

More broadly, the response to and recovery from the pandemic have produced large and lasting tailwinds for the other sectors where Rise is focused. I'm a big believer in what I call the "Maginot Line" theory of investing. As with the French in World War 2, we're always building our defenses for the last war rather than the war ahead. The world is still rebuilding in areas like healthcare, education, and financial access given the sizable disruptions of the pandemic. These are all sectors where Rise is deeply engaged and where the pandemic and subsequent recovery have generated massive opportunities and TAM expansion. So, we invest not just based on where we think we can make a difference but by getting in front of the sectors and themes that will define the future of the economy and society.

Q: Does this "and" not "or" approach help with sourcing when you're looking for good companies to partner with?

Jim Coulter: Absolutely. There's a whole new generation of entrepreneurs who are building businesses to address societal challenges, and they see growing their businesses' profitably as fundamental to having sustained impact at scale and having impact as fundamental to their ability to grow their businesses. They are not oblivious to the types of capital that they want to bring into their companies. When they partner with someone like Rise, there's clear mission alignment that helps with strategy. There's also a unique ecosystem that's been created around the Rise brand that involves a combination of knowledge, companies, advisors, and LPs who are all aligned. As a result, Rise and TPG become a preferential capital partner because of what we can bring to companies and entrepreneurs.

Q: Given TPG's early leadership in this space, what do you make of the increased number of private market impact funds?

Jim Coulter: The increase in activity tells you that the market recognizes the power of what we're doing. Impact investing is aligned with the broad trend towards responsible business initiatives. Over roughly the past year, for example, we saw the number of LP requests for information about our ESG program double. And impact also provides advantageous sourcing and value creation opportunities in several exciting sectors.

That said, the impact investing marketplace, and particularly the climate investing marketplace, still remains short of capital. Based on our latest count, there are over 190 funds with more than $1bn that are focused on technology investing. But there are only a few funds and firms of comparable size focused on climate investing. The market has certainly advanced quickly, but it still has a long and very interesting path ahead.

Q: Why does decarbonization represent such a big opportunity for private capital and TPG?

Jim Coulter: When it comes to the green transition, there's no silver bullet. It's going to have to be silver buckshot. Whether directly or indirectly, decarbonization will touch every part of business and the economy, and the complexity of the problem means anyone with deep knowledge has an advantage. By establishing a track record, building relationships with experts in the field, and developing an ecosystem of companies and executives, as we've done historically in healthcare and technology, we're well-positioned to understand this complexity and deploy capital toward potential solutions. While there are parts of green tech that we're skeptical about, we're still able to find plenty of opportunity in the 80-plus subsectors that we follow.

Decarbonization is also going to require a massive amount of capital, and a large portion of the profits will go to its providers because of the physical nature of the problem. In this sense, the decarbonization revolution will be distinct from the technological revolution, where a disproportionate amount of value went to the "idea" because the internet was free, distribution was easy, and it wasn't a physical asset. This is also going to be a global effort, and so having a global footprint like TPG and being able to build knowledge, scale, and reach is key.

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Q: But given elevated energy prices and a renewed focus on energy security, could the climate transition stall or reverse?

Jim Coulter: No, if anything we believe the conflict in Ukraine and rise in energy prices made the green premium disappear both in Europe and elsewhere. Perhaps more importantly, it turned green energy into a critical answer for energy security. It's also important to keep in mind that there are policy tailwinds for green investment, particularly in the US following the passage of the Inflation Reduction Act (IRA). In fact, we think the sum total of new funds for renewables could be around $1 trillion when you add up the uncapped IRA, the CHIPS Act, and the Infrastructure Act, which will then be multiplied by 2-3 times in terms of the private capital it brings to the table.

The IRA and its companion efforts by governments around the world represent a revolution in the clean energy marketplace. Governmental green energy investment in the US will not only affect activities in this country, but they will also push technologies down the cost curve around the world. This combination of increased focus on energy security, where green energy has an important role to play, and favorable policy tailwinds make me confident that the decarbonization revolution is on track or even beginning to accelerate.

TPG INSIGHTS

Interview with Maya Chorengel and Steve Ellis

Maya Chorengel and Steve Ellis are **Co-Managing Partners** of **The Rise Fund**. Maya has over two decades of private equity, venture capital, and impact investing experience, including as a Co-Founder of Elevar Equity, a leading impact venture firm. Prior to joining TPG, Steve served as CEO of Asurion, a leading provider of technology protection services, and the Global Managing Partner for Bain & Company. Below, they discuss TPG's approach to impact investing, the strategy of The Rise Fund, and why they remain fundamentally optimistic about the outlook for impact returns in 2023 and beyond.

Q: What inspired the creation of Rise as TPG's impact platform?

Maya Chorengel: Early on, we identified a critical need and distinct opportunity for private capital to play a central role in solving many of the world's most intractable social and economic challenges. When we started our work in 2016, the existing sources of capital for impact-oriented companies was dominated by a combination of public funding, grants, philanthropic dollars, and a bourgeoning segment of private capital, albeit one that was primarily venture driven and quite small. The size of the average impact fund back then was somewhere around $100-$150 million, and the largest was no bigger than $300 million. At the same time, the UN had identified a funding gap of more than $2.5 trillion per year in new investment that was needed to reach its Sustainable Development Goals by 2030. So, it was frankly imperative for larger pools of private capital to come in and fill the gap, and the realities of climate change and growing social and economic inequality globally have since only increased that need.

Steve Ellis: While Maya has touched on the demand side, we also saw a clear opportunity with the TPG platform to leverage a unique set of solutions to supply capital to this massively underserved market. As we looked across TPG's existing growth equity portfolio, we found quite a few companies that fit the profile of offering "collinearity", meaning that their profitability and growth was directly tied to generating positive social and environmental good. It was a logical next step to say why don't we lean on one of the world's leading global growth equity platforms to provide impact investing solutions at scale. With Rise I, which was just over $2 billion in size, we created an impact fund larger than anything that had ever been done before and one capable of bringing all of the tools at TPG's disposal to inflect and accelerate companies' growth and impact.

Q: Have the results both in terms of returns and impact lived up to your expectations?

Steve Ellis: Absolutely. We were clear from the outset about our commitment to providing non-concessionary growth equity returns. We've achieved that for both Rise I and Rise II. Rise I has also generated one of the strongest levels of distribution to paid-in capital (DPI) in terms of distributions to our LP partners among funds in its vintage. When it comes to impact, we've meaningfully exceeded our goal of generating around two-and-a-half times the dollar value of impact for the amount of equity we've invested, or what we call the "Impact Multiple of Money". But Rise I and Rise II aren't done yet, and so while performance has been strong, we're still very much focused on sustaining these IRRs and delivering healthy multiples of money (MoMs) across both funds.

Q: But do you worry that these strong returns are unsustainable given the increasing number of private market impact funds?

Maya Chorengel: No. We're not yet at the stage in the evolution of this industry where the inflow of capital is going to drive down returns. While that could eventually be the case, the fact that we were an early mover with Rise and have built an iconic portfolio based on our ability to provide exits and showcase them both to our investors and entrepreneurs has enabled us to establish market leadership. Our head start and strong brand allow us to attract very high-quality, proprietary deal flow and to negotiate deal terms that are frequently more favorable than in the traditional private equity industry. As a result, I don't expect we will find ourselves going head-to-head with a handful of other private equity impact funds in a meaningful way anytime soon.

Steve Ellis: Despite plenty of competition, there's no part of the private equity industry where the top firms don't consistently outperform because of their experience, track record, brand, and capability to reach deep into an industry in terms of sourcing. We've built a leadership position in impact, and we're continuing to deepen it, which we fully expect will lead to sustained outperformance. I would add that the world's problems are only getting bigger and bigger, and so the market of opportunities for solutions driven capital is expanding far faster than capital is accumulating to tackle these challenges.

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Q: How would you characterize the strategy of The Rise Fund?

Maya Chorengel: There are three big "Ds": decarbonization, digitization, and democratization. Decarbonization is at the center of our climate work, and it's a megatrend that will impact every part of society. Digitization touches almost all of the industries we invest in, including the in-person business models where technology is lowering costs, broadening reach, and increasing the personalization of services. Lastly, democratization is key to our work across many sectors as well, where we're deeply focused on broadening access to resources like financial services, education, and health care, especially for those who're most in need.

Steve Ellis: Our broad strategy involves addressing the primary sources of inequality in the world. Critical to this effort is investing behind companies that are tackling issues like financial inclusion, health care access, and education access. But this also applies to our decarbonization work too given climate change is going to disproportionately affect underserved populations. So, the "S" of ESG is really core to the broader Rise platform, and it provides an anchor that ensures that we remain focused on lifting everyone up in everything we do.

Q: Why has Rise taken a multi-sector approach to impact investing?

Maya Chorengel: Diversification is critical to any successful investment strategy, and it's even more important for a newer strategy such as impact where we're still perfecting how to apply the methodology, attract the right companies, and scale the capital that has been deployed. Our multi-sector approach also enables us to be nimble and calibrate our investments up and down across sectors and geographies based on industry dynamics over time. This all benefits LPs relative to an approach that's narrowly focused on a single sector or part of the world, and it's a critical aspect of our differentiation in this marketplace.

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Steve Ellis: From the standpoint of diversification, there's a lot of interdependence across our platform that generates beneficial crosscurrents. When we think about delivering impact in health care access, continuing education, or financial inclusion, there are places where many of our portfolio companies are attacking similar issues from different angles. So, for instance, our osteopathic medical school, the Center for Education and Access (CHEA), is addressing the shortage of primary care physicians in second and third tier cities across the US. Is that a health care investment or an education investment? The answer is: yes. That is, it's both. These points of overlap show up again and again across the Rise platform, and they're incredibly beneficial in terms of our ability to find unique investments with great economics and impact potential.

Q: What are you focused on when it comes to financial services?

Maya Chorengel: Financial services and fintech are fundamental to delivering impact. If you think about what's needed to lift up individuals from challenging economic backgrounds, it requires education, better health care, and cleaner sources of energy, among other things. The financial services industry is the backbone that enables all of these other sectors to receive funding and for services to be paid for, and so it's mission critical for them to function. Over the past few years, there's been a tremendous amount of dynamism in financial services that perhaps produced an ebullience that led to overfunding and elevated valuations. But with the end of the era of free money, valuations are starting to come down, which should be to our benefit as disciplined investors who're fundamentally focused on longer-term secular growth trends.

Q: How about across the education part of the platform?

Steve Ellis: Coming out of the pandemic, we're in a worse place in terms of education inequality, but there are also far more tools at our disposal. Covid was a massive shock to the education sector, and we experienced significant learning loss, especially for underserved and low-income populations. The good thing is that it also accelerated the pace of digital adoption by probably 5-7 years, which unlocked solutions for many school districts that otherwise wouldn't have had a computer for each student. As a result, we now have the infrastructure to deliver digital learning solutions at scale, which is a big area of focus for Rise. Given the pandemic's impact on behavioral health issues, we've also invested in solutions to help support special education and address mental health concerns. Lastly, the pandemic also refocused attention on the need to reskill and upskill the workforce, which is another important education theme for us.

Q: Stepping back, what drew you to this project personally?

Steve Ellis: After a long private sector career, there was nothing that came close to Rise in terms of the catalytic potential. Success in this endeavor means crowding in hundreds of billions worth of incremental high value-add private capital to solve some of the world's biggest challenges. This mission presents an opportunity to do nothing less than bend private capital markets to do good, which is a powerful motivation for me and our entire team.

> "Success in this endeavor means crowding in hundreds of billions worth of incremental high value-add private capital to solve some of the world's biggest challenges.

Maya Chorengel: Luckily, we've already achieved that goal. Our growth and the response of other private market participants has been beyond our expectations. It's been a very fulfilling journey for me personally because I started in the world of impact investing in 2004 before the term was even coined. From early on in my career, I was a strong believer that there were limits to what philanthropic capital and government aid could achieve because of the incentive systems in which they operated, and so I set out to prove that private capital could be a force for good while still delivering competitive returns. When TPG came along and decided to scale what was at the time mostly a cottage industry, it was a natural choice for me to double down on my commitment to this work. I couldn't be happier with the results so far.

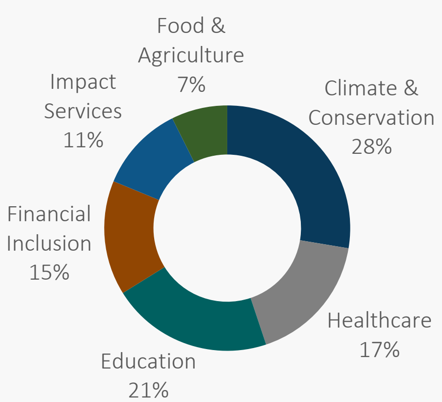
TPG INSIGHTS

An Overview of The Rise Fund

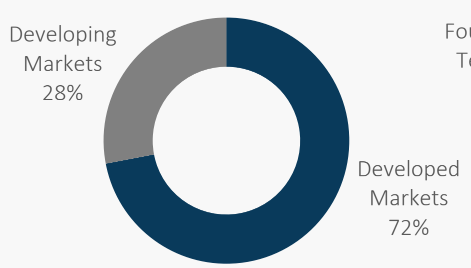
SOCIAL

ENVIRONMENTAL

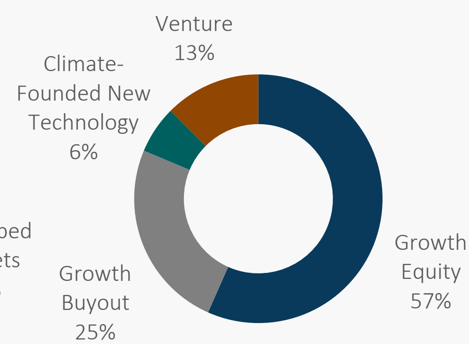
Investments by Sector



Investments by Geography



Investments by Deal Type



Note: As of March 2023 across The Rise Fund I, The Rise Fund II, and The Rise Fund III. The companies shown above reflect all of the Rise Fund's investments. There is no assurance that any portfolio construction objectives can be achieved, duplicated, or that any such portfolio will be profitable. Diversification does not eliminate a risk of loss. Classifications of Growth Equity, Growth Buyout, Venture, and Climate-Founded New Technology is based on TPG's subjective views and are subject to change. Actual results may vary, totals may not sum due to rounding.

TPG INSIGHTS

Interview with Hank Paulson

Hank Paulson is **executive chairman** of **TPG Rise Climate** and **founder and chairman** of **the Paulson Institute**. He served as the **74th Secretary of Treasury** under President George W. Bush, from July 2006 to January 2009. Prior to that, he had a thirty-two-year career at Goldman Sachs, serving as **chairman and chief executive officer** beginning in 1999. Below, he discusses the critical role of public policy and private capital working together to address climate change and the impact of recent geopolitical shocks on the green transition.

Q: What role does TPG and private capital more broadly have to play in terms of delivering positive social impact, particularly when it comes to addressing climate change?

Hank Paulson: The climate crisis is the biggest challenge facing our planet today. We're confronted with nothing less than the most significant global economic transition since the industrial revolution, which is going require the complete transformation of a global energy system that's almost 80% reliant on fossil-fuel based energy to a low-carbon economy. This is going to take decades and trillions of dollars of capital to accomplish, and the TPG Rise Climate fund has an important role to play in helping to accelerate that process by financing the commercialization of critical climate technologies while making a direct social impact measured in terms of carbon emissions avoided. Importantly, given our commitment to both returns and impact, we're able to deliver the profitability sufficient to continue to attract the increasing amounts of capital that this historic energy transition will require, including by working with management teams to transform ongoing projects into the successful climate companies of the future.

Q: You've worked for decades at the highest levels of both the public and private sectors. How can the two work together to achieve the world's goal of reaching net zero emissions by 2050?

Hank Paulson: Both have a critical role to play. Governments have a responsibility to fund basic research in emerging climate technologies and to put in place the policies, incentives, investments, and regulations necessary to attract private capital. It's then the private sector's role to develop, adapt, and commercialize these technologies and bring them to scale. Governments can set the policies, but the investments are going to have to be made by the private sector, and so it's critical that governments work with the private sector when developing their climate policies. A great example of this is the recently passed US Inflation Reduction Act (IRA), which is arguably the biggest climate program in the history of the world, and if implemented properly, will have a multiplier effect in attracting private capital dollars to investments in decarbonization. The IRA will not only accelerate the development of critical emerging technologies, but it will also drive down the cost of these technologies around the world, which will, in turn, further accelerate the development of these technologies and the opportunity for more private sector investment.

"Governments can set the policies, but the investments are going have to be made by the private sector, and so it's critical that governments work with the private sector when developing their climate policies.

Q: As countries look to accelerate new investments, do you worry that they'll end up competing for green tech supremacy?

Hank Paulson: Nations and companies have always competed fiercely in the economic arena, and this time is going to be no different. Given the economic stakes, there will be plenty of healthy competition and a good deal of unhealthy competition. Of course, nations should make their best effort to coordinate their policies in order to minimize the amount of unhealthy competition. But, on net, global competition over the development and commercialization of the climate technologies of the future is going to be to everyone's benefit. Even if it isn't coordinated, competition among companies and countries will reduce the cost of new technology and lead to a faster transition to a low carbon global economy.

"The climate crisis is the biggest challenge facing our planet today. We're confronted with nothing less than the most significant global economic transition since the industrial revolution, which is going require the complete transformation of the global energy system.

Q: How concerned are you that the renewed focus on energy security could hinder global climate efforts and a smooth energy transition?

Hank Paulson: Quite concerned, at least in the near term. Russia's invasion of Ukraine and the resulting energy dislocations and shortages have increased economic challenges around the world. During such tough times, political leaders and business leaders, for that matter, tend to focus more narrowly on jobs and growth at the expense of thinking ahead and prioritizing long-term prosperity. There are many signs of this sort of short-term decision making today. But there's also a positive aspect to the renewed focus on energy security because it's forced many nations to focus on moving more quickly to develop renewables as an alternative to relying on fossil fuels produced by rogue nations like Russia and Iran. So, there's a short-term hit today, which has been evidenced in places like China where they've gone back to building coal power plants even though existing plants are operating at only 50% capacity. But the fundamental drive will be towards the acceleration of the development of alternative sources of energy in the form of renewables, in my view.

Q: Since the launch of TPG Rise Climate in 2021, what have been the biggest takeaways or surprises for you so far?

Hank Paulson: This is the good news, which is that the biggest surprises have all been positive ones. First, I've been pleasantly surprised by the extent of innovation that's coming out of the private sector in terms of developing new climate technologies. What we're seeing is that companies recognize the inevitability of this transition, and so for both offensive and defensive reasons they're taking steps to get ahead of it. Second, I never would've expected the successful passage of the IRA and other climate-related bills a year ago. Third, I would say the extent of the capital needed to facilitate this massive global effort has been surprising. We all knew that investing in decarbonization was going to be a capital-intensive endeavor, but it's been so to an even greater extent than I could've imagined. Overall, it's been an incredibly rewarding journey, and I'm optimistic about our trajectory because of the immense amount of capital required to achieve this necessary transition towards a low carbon world and TPG's unique ability to find and scale companies that are going to play a central role in that process.

TPG INSIGHTS

Inflation Reduction Act: Climate Overview

A breakdown of **$386 billion** in climate spending and tax rebates

Buildings & Energy Efficiency

Residential Clean Electricity Credit	$22.0bn
Nonbusiness Energy Property Credit	$12.5bn
High-Efficiency Electric Home Rebate Program	$4.5bn
Home Energy Performance Rebates	$ 4.3bn
Use of Law-Carbon Materials	$2.2bn
Other	$5.5bn

Manufacturing

Advanced Manufacturing Production Credit	$30.6bn
Advanced Energy Project Credit	$6.2bn
Advanced Industrial Facilities Deployment Program	$5.8bn
Advanced Technology Vehicle Manufacturing	$3.0bn
Domestic Manufacturing Conversion Grants	$2.0bn
Other	$1.3bn

Environmental & Climate Justice

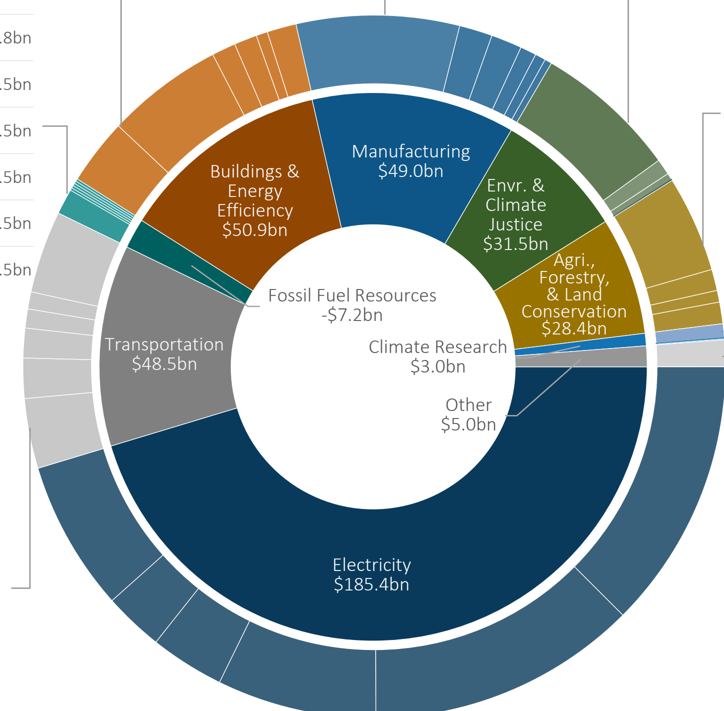
GHG Reduction Fund	$27.0bn
Environmental & Climate Justice Block Grants	$3.0bn
Extension of Black Lung Disability Trust Fund	$1.2bn
Other	$.3bn

Fossil Fuel Resources*

Methane Emissions Reduction Program	-$4.8bn
Offshore Oil and Gas Royalty Rate	-$0.5bn
Mineral Leasing Act Modernization	-$0.5bn
Royalties of All Extracted Methane	-$0.5bn
Lease Sales under Continental Shelf Leasing Program	$0.5bn
Ensuring Energy Security	-$0.5bn

Agriculture, Forestry, & Land Conservation

Agriculture Conservation Investments	$18.1bn
Drought Mitigation	$4.0bn
State and Private Forestry Conservation	$2.2bn
Other	$4.1bn



Climate Research

Investing in Coastal Communities and Climate Resilience	$2.6bn
Oceanic and Atmospheric Research for Forecasting Weather & Climate	$0.2bn
Computing Capacity and Research for Weather, Oceans, and Climate	$0.2bn

Transportation

Clean Hydrogen	$13.2bn
Clean Vehicle Credits	$7.5bn
Extension of Incentives for Alternative Fuels	$5.6bn
Qualified Commercial Clean Vehicles	$3.6bn
Neighborhood Access to Equity Grants	$3.2bn
Other	$15.5bn

Other

Climate Pollution Reduction Grants	$5.0bn

Electricity

Production Tax Credit for Renewables	$51.1bn
Clean Electricty Investment Credit	$50.9bn
Zero-Emission Nuclear Production Credit	$30.0bn
Energy Investment Tax Credit	$14.0bn
Clean Electricity Production Credit	$11.2bn
Other	$28.3bn

Note: Based on the estimates of the Congressional Research Service and Committee for a Responsible Federal Budgets. See here and here for more details. Sector breakdowns only include top spending items per category, negative figures for Fossil Fuel Resources reflect revenue raised from tax increases on the sale of government-owned resources, data retrieved March 6, 2023. Sources: Congressional Research Service, Committee for a Responsible Budget.

TPG INSIGHTS

Interview with Maryanne Hancock

Maryanne Hancock is the **CEO of Y Analytics**, a public benefit LLC within TPG comprised of economists, analysts, and researchers responsible for impact assessment and ESG. Previously, Maryanne spent 20 years at McKinsey and Company where she was a senior partner. Below, she discusses the work of Y Analytics, TPG's approach to impact and ESG investing, and the latest developments in impact investing.

Q: What distinguishes TPG's approach to impact investing?

Maryanne Hancock: The premise of the Rise family of funds is that investment returns and impact are "collinear". By investing in companies whose actual products or services are driving impact, a virtuous cycle is created whereby increased sales lead to greater financial returns and also more impact as these businesses grow and scale. In this context, Y Analytics creates impact assessments in partnership with TPG to act as a decision tool in parallel to the financial case for a prospective investment. But returns and impact are also interconnected because the breadth of a company's impact is going to be in part a product of how many units they sell, the types of customers who purchase those units, and where their products or services are deployed.

This approach is a unique strategy that we offer clients and is demonstrably different from strategies where companies are deliberately avoided on the basis of certain characteristics or behaviors. Our strong belief is that building solutions to society's most challenging problems requires actively investing in companies whose products or services are directly tied to positive impact. In order to actually provide capital at the scale needed to deliver transformational change, it's critical to partner with institutional investors, which can only be achieved by providing competitive rates of return. For this reason, you simply cannot disconnect investment returns and impact. The two are intimately linked, which is core to how we think about impact investing.

Q: You've built Y Analytics to be TPG's impact assessment and ESG organization. How does Y Analytics engage with TPG on impact?

Maryanne Hancock: Y Analytics is critical to TPG's differentiated approach to impact investing. In the context of TPG's Rise platform, we bring rigorous analysis and third-party research to bear to carefully assess the environmental and social impact of companies' products and services. This analysis is then leveraged by TPG's investment professionals for what we call an "& test". That is, any new investment in TPG Rise has to be diligenced for both financial performance and impact considerations. Importantly, it's not sufficient, in our view, to simply say a sector is "good" and therefore investable on an impact basis. There has to be concrete, measurable evidence to support the thesis. But, at the same time, it's not enough for a company to only be impactful. It also has to be able to deliver financially because that's the only way to generate sustainable solutions at scale, and we've committed to delivering market-rate returns.

Q: How does Y Analytics assess impact?

Maryanne Hancock: Holistically. In particular, we start by looking at the specific "impact pathways" of an investment to better understand how it generates societal returns over time. These will differ somewhat by sector. A climate deal, for example, typically involves the reduction or avoidance of carbon emissions into the atmosphere relative to the counterfactual where the company didn't exist. But there's going to be a different set of impact pathways for an investment in education technology, including that students will have higher net income over their lifetimes as a result of increased learning.

So, identifying these pathways is critical, and we then quantify each in terms of the breadth of the impact, the depth for a given beneficiary, its estimated economic value, any risks associated with achieving the impact, and its likely longevity. This all feeds into what we call an "impact multiple of money" (IMM), which is an estimated monetary value of the social and environmental impact of an investment as a percent of the capital deployed. It's very important to us to think about these different impact variables in terms of return on invested capital. Otherwise, it's easy to just have a list of potential positive and negative impacts but little sense of their relative magnitudes.

> **In order to actually provide capital at the scale needed to deliver transformational change, it's critical to partner with institutional investors, which can only be achieved by providing competitive rates of return. For this reason, you simply cannot disconnect investment returns and impact.**

Putting a value on impact also enables us to assess the return on invested capital. To solve big challenges in the world, we're going to have to deploy capital efficiently, and monetizing how we measure impact helps to ensure that dollars are being directed towards the projects with the largest bang for our buck financially and socially. In all of these areas, the hallmark of our approach is a deep commitment to rigorous, evidence-based assessment.

Q: Why do LPs value TPG's approach to impact?

Maryanne Hancock: LPs want more than just good intent. They want to be confident that our work is rigorous, deeply thoughtful, and well executed. Impact investing is hard to do well frankly, and there are common pitfalls. But our practices are designed precisely to deliver this rigor and bring a substantial amount of external evidence to bear in the investment process. This all contributes to a confidence level among our LPs that they can achieve more both in terms of returns and impact than they might be able to elsewhere.

> **"LPs want more than just good intent. They want to be confident that our work is rigorous, deeply thoughtful, and well executed.**

Q: How has Y Analytics and TPG adapted its approach as the field of impact investing has continued to innovate and grow?

Maryanne Hancock: There are two main areas of evolution. First, from a sectoral perspective, the rise of climate companies at scale and their growing need for capital to continue to scale contributed to the birth of TPG Rise Climate in 2021. Even prior to then, the number of climate deals in the market was steadily increasing, and they were more often very physical, capex heavy types of investments with larger capital needs. With this in mind, we began to adapt our impact methodology to fit the timing of the impact and the size of the capital required for these projects, including by focusing more on a new metric that we call "Carbon Yield", which measures the amount of carbon reduction or avoidance generated by a project per $100 invested.

Second, we've also spent more time thinking about what we call the counterfactual, or the additional impact generated by a company's good or service above what would exist in its absence. In the context of ed tech, for example, Harvard did a randomized control trial involving one of our portfolio companies, DreamBox Learning, which quantified exactly how much more a student was learning via their adaptive learning programs relative to a scenario where they didn't have access to them. Estimating the counterfactual isn't always this easy, which is why we often have to rely on estimates from comparable studies. But if we're really serious about generating positive change, it's important to assess the size of our success against a reasonable baseline of what would have happened anyway if we hadn't put capital to work. So, we're constantly refining our approach to impact assessment based on the evolution of the market and the needs of our investment professionals and LP partners.

> **"If we're really serious about generating positive change, it's important to assess the size of our success against a reasonable baseline of what would have happened anyway if we hadn't put capital to work.**

Q: How does TPG assess and implement ESG principles?

Maryanne Hancock: We're focused on the factors that are financially material for a particular sector in which a company resides, which aligns with the framework of the Sustainability Accounting Standards Board (SASB). This keeps us focused on the things that are commercially relevant in terms of company performance, returns, and our fiduciary duty, while being cognizant of other factors our portfolio companies' stakeholders value. We also aim to consider ESG factors at multiple points throughout a fund's lifecycle, including in our initial diligence and during exit prep. Our portfolio companies often come to us looking for ESG-related support in various different domains, and so providing them with support as they assess their own performance is also critical to driving long-term value creation.

Q: Following the sizable shocks of 2022, have investors and LPs become less interested in impact and ESG-related investing?

Maryanne Hancock: No. If anything investor demand has only increased. We continue to see strong interest in climate investing as the social and environmental impacts of climate change have become a part of our everyday reality. We believe ESG consideration, with a focus on financial materiality, is also going to remain front and center because it's truly identifying risk factors and opportunities that are deeply impactful for companies financially. The foundation of each strategy is certainly different. Impact investing aims to grow and scale financially sustainable and impactful companies, while ESG consideration is geared towards making sure that companies understand the financially material environmental, social, and governance risks to their business and are taking steps to solve for them. But investors are still deeply engaged in both.

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Decision Tools for Assessing Impact: Climate

ESTIMATING CLIMATE IMPACT

Data Sources for Estimation

- Government and Policy Research
- Scientific Research
- Technology Assessments
- Commercial Case
- LCAs[1]

Company GHG Reduction Impact = **Breadth** × **Depth** × **Risk Adjustment** × **Duration**

- **Breadth**: The number of lower-emissions products sold or deployed by a company
- **Depth**: Evidence-based quantification of the emissions reduction effect relative to the counterfactual
- **Risk Adjustment**: Risk discount factor based on uncertainty of impact realization
- **Duration**: Adjusted longevity of impact for durable goods throughout their useful lifetime

$$\text{Carbon Yield} = \frac{\text{GHG Reduction Impact} \times \text{Fund Stake}}{\text{Capital Invested}}$$

KEY METHODOLOGICAL CONSIDERATIONS

- **Additionality:** We adjust for the additionality a company provides, based on the markets it operates in, number of direct competitors, and role of regulation in its sector.
- **Net impact:** The methodology also focuses only on net company impact – meaning we will subtract out any emissions generated by a company's operations beyond the counterfactual from the Carbon Yield calculation.
- **Multiple time horizons:** When non-CO2 greenhouse gases are emitted or averted by a company, we calculate a Carbon Yield using both GWP100 (100-year equivalent) and GWP20 (20-year) conversion factors, to account for the different Global Warming Potential and lifespans of various greenhouse gases in the atmosphere. We anchor decisions on GWP20 recognizing the criticality of the next few decades in avoiding planetary tipping points.
- **Tailored energy usage emissions factors:** When companies use or produce electricity, we apply context-specific energy emissions factors depending on the product or technology.
- **Risk adjustments:** All company outputs are risk-adjusted using a consistent set of risk discount rubrics to account for differences in technological viability and the likelihood of impact realization from the company's products.
- **Longevity:** Finally, when a company builds long-lasting, durable products with an expected useful lifetime, we attribute a portion of that lifetime impact back to the company.

[1] Life cycle assessment.

Note: These decisions and approaches are explained in more detail in the section titled "Methodological points of relevance in Climate" in the "Evidence-Based Impact in Climate" learning series paper. Y Analytics' methodology is based on substantial use of third-party evidence and research and rests on several key principles.

Source: "Evidence-Based Impact", Y Analytics Learning Series (June 2020), "Evidence-Based Impact in Climate", Y Analytics Learning Series (March 2022).

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