ON THE ROAD COMPANIES

Calculating the Value of an Investment in On the Road

Finance professionals commonly use analytical tools to estimate value. While it is easy to do with assets like real estate or operating companies, it is harder to develop a quantitative approach to valuation when it comes to societal and environmental impact organizations. The On the Road Companies include several triple-bottom-line initiatives working together to build prosperity for America's working families. These initiatives generate financial, social, and environmental returns. As the enterprise has grown larger and more complex, with investors contemplating impact investments of potentially hundreds of millions of dollars, it has become necessary to provide tools that help them compare this opportunity against others competing for those same dollars.

The "Impact Multiple of Money" is a methodology created by Rise and Bridgespan that is designed as a forward-looking tool to evaluate the potential impact of a prospective investment in a project. This framework is outlined in an article in the Harvard Business Review's Economics and Society Series, called "Calculating the Value of Impact Investing."[1] We have followed this framework herein with some additional consideration to the approach outlined by the International Finance Corporation in its "Anticipated Impact Measurement and Monitoring System."[2] The AIMM approach looks at impact among two dimensions – project outcomes, which consider the net incremental direct effects on all stakeholders; the direct, indirect, and induced effects on the economy and society overall (including externalities and spillovers by the project's linkages to the economy); and the effects on the environment. We have considered all of these herein. Their second dimension considers market outcomes – the project's potential for generating systemic, sector-wide changes that enhance market competitiveness (lower product cost or process innovation), resilience (from shocks of all forms), integration (physical or financial connectivity), inclusiveness, and environmental sustainability. We will address this second dimension in another paper.

The process to calculate an IMM in an investment-selection process consists of six steps:

[1] Addy, Chris, et al, "Calculating the Value of Impact Investing," Harvard Business Review, January-February 2019.
[2] IFC.org/wps/wcm/connect/Topics_Ext_Content/IFC_External_Corporate_Site/Development+impact/aim/

Assess the Relevance and Scale

Because capital is not unlimited, investors seek to support initiatives with the greatest impact. In a limited view, this gets translated into the number of beneficiaries served, but that isn't a sufficient measure because it fails to capture the depth of impact to the direct stakeholders, as well as the broader, indirect, or induced impact to others or society at large. It is also not just about the people touched, but the improvement made. A good example is one of a food bank, where a large gift might provide meals to a large number of people, but they will need to eat again in four hours. *While many were served, hunger was not solved.*

Identify Target Social or Environmental Outcomes and their Economic Value

On the Road has tracked financial, social, and environmental outcomes since it was founded nearly ten years ago. We include herein the metrics we have observed. For each of these we have sought evidence-based indicators from scholarly studies or governmental data that provides a net incremental value associated with these metrics. Each of these are referenced in the notes that follow, along with relevant information about how they are calculated. IMM refers to these as "anchor studies," which give an investor reassurance that these outcomes are achievable and measurable.

Adjust for Risks

In the business world, returns are typically "risk-adjusted." While the anchor studies have shown that the benefits of the project can be monetized, some adjustment may need to be made for the probability of an outcome being achieved, or said another way, the probability of 100% of beneficiaries achieving the stated outcome. There may also be a need to assess the comparability of the anchor study findings with the population served by our project. To the greatest extent possible, we have sought data that is specific to the region in which the majority of our beneficiaries are based (the North Texas or DFW region). We have also blended the data where needed to reflect the composition of the beneficiaries – income levels, family size, demographics, etc. – so that the linkages are as direct as possible. Academic research that utilizes randomized control trials have a high degree of confidence.

Estimation of Terminal Value

When investors consider making a real estate purchase, they project cash flows forward for a specified holding period – how long they expect to own the property – and calculate a terminal value, which usually consists of the net operating income in the final year, capitalized at a specific "terminal rate," which approximates what they would get for the property if they sold it

at that time. They discount this income stream using a rate that reflects their certainty of the likelihood of the scenario unfolding as they see it.

A similar approach is done here. We have outlined where we are today (Time Zero) with the beneficiaries served to-date and the outcomes we have observed. We have projected forward five years, considering potential rates of change over these five years, and the numbers of beneficiaries for each of those five years. To estimate a terminal value, we have asked ourselves if we believe the impact is sustainable for an additional five years. We have taken the impact number in Year Five and assumed the same number for a subsequent five years, discounted and totaled to derive the terminal value. If we believe there is a high probability of continued social impact and output (people served), we use a low discount rate of 5%. If we believe there is a lower probability, we use a discount rate of 25%.

Calculate Social Return on Dollars Invested

The cash flows can be analyzed using a discounted cash flow analysis to generate an internal rate of return or the value created can be divided by the total investment to get a multiplier. In either case, an investor will need to look at their contribution to this value creation if there are other investors who are also involved in the creation of the benefit.

In the analysis herein, the net present value of future impact of On the Road is as follows:

Direct Beneficiary Impact = $1,024,353,463
Indirect/Induced Societal Impact = $1,260,645,093
Environmental Impact = $6,994,206
Total Impact = $2,291,992,762

To-date On the Road has created $272,792,224 of impact. The investment to-date (grants and capital) has been $31,413,135, ***which has yielded a social return on investment of 8.7x***.

Impacts to the market through systemic benefits have yet to be measured. We expect a bond issuance of $109 million, $15 million in near-term grants, and new $50 million in loan fund capital, within the next twelve months. At greater scale, there are opportunities to influence the subprime auto lending space, more efficient use of government transportation dollars, CDFI lending to consumers, and a greater understanding of the role that transportation plays in prosperity.

PROJECT OUTCOMES

STAKEHOLDER EFFECTS

	Beneficiary	Outcome Metric	EBP Value (net incremental)	Unit of Measurement	Rate of Change	Relevant UN SDG	Probability of Outcome Occurrence	# Beneficiaries Impacted to-date (Time Zero)	Future Year One Output	Future Year Two Output	Future Year Three Output	Future Year Four Output	Future Year Five Output
1	Clients receiving financial coaching	Greater financial literacy may lead to better planning for the future and increased wealth.	$ 10,000	3-month cushion	1% next 2 years and 3% thereafter	1, 5, 9, 10	50%	8,000	5,000	5,500	6,050	6,655	7,321
2	Clients/families receiving car loans	Asset-creation (costs avoided, value realized, specifically to this car purchase)	21,500	at loan payoff	1% next 2 years and 3% thereafter	1, 5, 9, 10	80%	1,000	1,000	1,100	1,210	1,331	1,464
3	Clients/families receiving car loans	Increased earnings due to accessibility to better jobs	20,000	annual increase in earnings based on average client income of $40,000 and average increase of 50%	2.1%	1, 5, 9, 10	80%	1,000	1,000	1,100	1,210	1,331	1,464
4	Clients/families receiving car loans	Job retention/continuity of benefits	6,000	Cost to society avoided as a proxy for cost to family avoided - Assumes uncompensated care for family of four for one year.	0.5%	1, 3	75%	1,000	1,000	1,100	1,210	1,331	1,464
5	Clients/families receiving car loans	Increased creditworthiness leads to greater purchasing power long-term (irrespective of inflation dynamics) by bringing down the financing costs of major items.	6,000	50% reduction in car payment on future car purchases (saves $200/month) and 25% reduction in housing costs (saves $300/month).	0.0%	1, 2, 5, 9, 10	75%	1,000	1,000	1,100	1,210	1,331	1,464
6	Clients/families receiving car loans	Improved access to better healthcare during working years leads to greater wealth in older age.	18,125	annual wealth gain for better health	0.0%	1, 3	90%	1,000	1,000	1,100	1,210	1,331	1,464
7	Clients/families receiving car loans	Improved access to healthier food and ability to purchase in bulk (not possible without a car) versus high cost convenience stores (and smaller sized products for easier carrying).	6,588	Annual savings	0.0%	1, 2, 3	90%	1,000	1,000	1,100	1,210	1,331	1,464
8	Clients/families receiving car loans	Improved access to education	1,337	Per student per year; assumes average of 3 children x 80% families	0.0%	1, 4	80%	2,400	2,400	2,640	2,904	3,194	3,514
9	Employers	Avoided Turnover Costs	4,000	Incremental annual cost to attract hourly worker post-pandemic	5% years 1- 2, 3% thereafter	1, 8	70%	1,000	1,000	1,100	1,210	1,331	1,464
10	Apprentices receiving training	High wages in high-growth, recession-proof industry	35,000	Starting incremental increase post-apprenticeship	10.0%	1, 4, 5, 8	100%	30	60	60	90	120	150
11	Apprentices avoid student debt	Technical college education versus OJT apprenticeship	132,000	Four years technical school debt versus zero for OJT	8.0%	1, 4, 5, 8, 9	100%	20	40	40	60	80	100

INDIRECT/INDUCED SOCIETAL EFFECTS

	Societal Benefit	Outcome Metric	EBP Value (net incremental)	Unit of Measurement	Rate of Change	Relevant UN SDG	Probability of Societal Impact	# Beneficiaries Impacted to-date (Time Zero)	Future Year One Output	Future Year Two Output	Future Year Three Output	Future Year Four Output	Future Year Five Output
12	Spillover contribution to GDP increased purchasing power	Wages created due to increased demand for goods or services	$ 31,200	1 job created per $13,170 in consumer expenditures annually	1.0%	1, 9	100%	342	342	376	413	455	500
13	Increased resilience/lack of need for social safety net	Increased financial literacy leads to avoided vulnerability to predatory lending and catastrophic impact to society	$ 10,000	Per adult per year cost of lack of financial literacy impact on society post-Great Recession	0.0%	1, 3, 5, 8, 10	100%	8,000	5,000	5,500	6,050	6,655	7,321
14	Better educated children	Avoidance of lost learning (as a proxy for better education options)	$ 1,337	Estimated impact per person/society of lost education value from COVID-related remote learning	0.0%	1, 4, 10, 11	100%	2,400	2,400	2,640	2,904	3,194	3,514
15	Socialization benefit of extracurricular activities	Avoidance of major depressive disorders from greater ability to participate in sports and after-school activities	$ 18,629	Annual cost to society of one person with major depressive disorders	3.0%	1, 4, 10, 11	100%	2,400	2,400	2,640	2,904	3,194	3,514
16	Gain in productive use of time	Contribution to GDP - time spent producing or consuming rather than four hours spent commuting on mass transit	$ 15,600	annual increase in purchasing power	0.0%	1, 10	100%	1,000	1,000	1,100	1,210	1,331	1,464
17	Avoidance of Accidents - Advanced Driver Assistance Systems on newer vehicles	Greater economic throughput due to reduction in wasted time for all due to accidents	$ 904	per vehicle per year costs to society from accidents	3.0%	9, 11	100%	1,000	1,000	1,100	1,210	1,331	1,464
18	Continuity of benefits/avoidance of emergency care	Less use of social safety net	$ 1,462	per person per year cost to care for uninsured	3.0%	1, 3, 10	100%	1,000	1,000	1,100	1,210	1,331	1,464
19	Improved educational and skills attainment	Positive externalities to a region and spillover to companies of educated and trained workforce, gains in regional GDP for additional educated/trained worker	$ 681	per person per year gain regional GDP	3.0%	1, 4	100%	3,430	3,460	3,800	4,204	4,645	5,128

ENVIRONMENTAL EFFECTS

	Green Bond Principles Category	Sub-category & Outcome Metric	EBP Value (net incremental)	Unit of Measurement	Rate of Change	Relevant UN SDG	Probable Environmental Impact	# Beneficiaries Impacted to-date (Time Zero)	Future Year One Output	Future Year Two Output	Future Year Three Output	Future Year Four Output	Future Year Five Output
20	Clean Transport	Carbon Reduction - 38% carbon reduction from prior vehicle emissions (based on carbon credit pricing)	$ 126.75	Savings per driver per year	2.0%	7, 11, 12, 13, 14, 15	100%	1000	1,000	1,100	1,210	1,331	1,464
21	Green Buildings	Carbon Reduction - 35% carbon reduction post-green retrofit over prior or baseline	$ 591.41	Annual per person in DFW	2.0%	7, 11, 12, 13, 14, 15	100%	2	4	12	12	12	12
22	Resource Efficiency & Management	Energy Consumption - 40% reduction in energy consumption post-green retrofit over prior or baseline	$ 8,523.68	Annual per person in DFW	2.0%	7, 11, 12, 13, 14, 15	100%	2	4	12	12	12	12
23	Clean Transport	Energy Consumption - 30% greater fuel efficiency by vehicles over prior; based on fuel costs and average mpg).	$ 427.44	Savings per driver per year	2.0%	7, 11, 12, 13, 14, 15	100%	1000	1,000	1,100	1,210	1,331	1,464
24	Clean Transport	Alternative Energy Infrastructure - installation of EV charging stations and EV repair services	$ 8,000	Annual benefit	2.0%	7	100%	2	4	12	12	12	12
25	Climate Change Adaptation	Avoidance of runoff - 30% of available land surfaced with permeable pavers	$ 807	Annual	0.0%	6, 11, 13	100%	2	4	12	12	12	12
26	Pollution Prevention & Control	Waste diversion and minimization of air /water pollutants - 100% of buildings retrofitted with water-based paint booths with heat recycling and 60% landfill waste diversion	$ 1,305	Annual wages created through waste recycling and diversion	0.0%	12, 13	100%	2	4	12	12	12	12
27	Biodiversity and Conservation	Preservation of biodiversity and native ecosystems through tree planting, xeriscaping, and ecological restoration activities	$ 9	Annual benefit of preservation of biodiversity	0.0%	13, 14, 15	100%	2	4	12	12	12	12

	Outcome Metric		To-Date (Time Zero)	Year 1	Year 2	Year 3	Year 4	Year 5	Terminal
DIRECT BENEFICIARY IMPACT	1	Beneficiaries	8000	5000	5500	6050	6655	7321	
		Inflator	1	1.01	1.01	1.03	1.03	1.03	
		Value/period*prob	$ 40,000,000	$ 25,250,000	$ 27,775,000	$ 31,157,500	$ 34,273,250	$ 37,703,150	
	2	Beneficiaries	1000	1000	1100	1210	1331	1464	
		Inflator	1	1.01	1.01	1.03	1.03	1.03	
		Value/period	$ 17,200,000	$ 17,372,000	$ 19,109,200	$ 21,436,360	$ 23,579,996	$ 25,936,224	
	3	Beneficiaries	1000	1000	1100	1210	1331	1464	
		Inflator	1	1.021	1.021	1.021	1.021	1.021	
		Value/period	$ 16,000,000	$ 16,336,000	$ 17,969,600	$ 19,766,560	$ 21,743,216	$ 23,915,904	
	4	Beneficiaries	1000	1000	1100	1210	1331	1464	
		Inflator	1	1.005	1.005	1.005	1.005	1.005	
		Value/period	$ 3,000,000	$ 3,015,000	$ 3,316,500	$ 3,648,150	$ 4,012,965	$ 4,413,960	
	5	Beneficiaries	1000	1000	1100	1210	1331	1464	
		Inflator	1	1.00	1.00	1.00	1.00	1.00	
		Value/period	$ 4,500,000	$ 4,500,000	$ 4,950,000	$ 5,445,000	$ 5,989,500	$ 6,588,000	
	6	Beneficiaries	1000	1000	1100	1210	1331	1464	
		Inflator	1	1.00	1.00	1.00	1.00	1.00	
		Value/period	$ 16,312,500	$ 16,312,500	$ 17,943,750	$ 19,738,125	$ 21,711,938	$ 23,881,500	
	7	Beneficiaries	1000	1000	1100	1210	1331	1464	
		Inflator	1	1.00	1.00	1.00	1.00	1.00	
		Value/period	$ 5,929,200	$ 5,929,200	$ 6,522,120	$ 7,174,332	$ 7,891,765	$ 8,680,349	
	8	Beneficiaries	2400	2400	2640	2904	3194	3514	
		Inflator	1	1.00	1.00	1.00	1.00	1.00	
		Value/period	$ 2,567,040	$ 2,567,040	$ 2,823,744	$ 3,106,118	$ 3,416,302	$ 3,758,574	
	9	Beneficiaries	1000	1000	1100	1210	1331	1464	
		Inflator	1	1.05	1.05	1.03	1.03	1.03	
		Value/period	$ 2,800,000	$ 2,940,000	$ 3,234,000	$ 3,489,640	$ 3,838,604	$ 4,222,176	
	10	Beneficiaries	30	60	60	90	120	150	
		Inflator	1	1.10	1.10	1.10	1.10	1.10	
		Value/period	$ 1,050,000	$ 2,310,000	$ 2,310,000	$ 3,465,000	$ 4,620,000	$ 5,775,000	
	11	Beneficiaries	30	40	40	60	80	100	
		Inflator	1	1.08	1.08	1.08	1.08	1.08	
		Value/period	$ 3,960,000	$ 5,702,400	$ 5,702,400	$ 8,553,600	$ 11,404,800	$ 14,256,000	
			$ 113,318,740	$ 102,234,140	$ 111,656,314	$ 126,980,385	$ 142,482,336	$ 159,130,837	$ 635,363,291
	0.05	Discount Factor	1.00	0.95238095	0.90702948	0.86383760	0.82270247	0.78352617	0.74621540
		Discounted Impact		$ 97,365,848	$ 101,275,568	$ 109,690,431	$ 117,220,571	$ 124,683,175	$ 474,117,870
		NPV	**$ 1,024,353,463**						

INDIRECT/INDUCED SOCIETAL IMPACT	12	Beneficiaries		342		342		376		413		455		500	
		Inflator		1		1.01		1.01		1.01		1.01		1.01	
		Value/period	$	10,660,592	$	10,767,198	$	11,843,918	$	13,028,310	$	14,331,141	$	15,763,178	
	13	Beneficiaries		8000		5000		5500		6050		6655		7321	
		Inflator		1		1.0		1.0		1.0		1.0		1.0	
		Value/period	$	80,000,000	$	50,000,000	$	55,000,000	$	60,500,000	$	66,550,000	$	73,210,000	
	14	Beneficiaries		2400		2400		2640		2904		3194		3514	
		Inflator		1		1.0		1.0		1.0		1.0		1.0	
		Value/period	$	3,208,800	$	3,208,800	$	3,529,680	$	3,882,648	$	4,270,378	$	4,698,218	
	15	Beneficiaries		2400		2400		2640		2904		3194		3514	
		Inflator		1		1.0		1.0		1.0		1.0		1.0	
		Value/period	$	44,709,600	$	46,050,888	$	50,655,977	$	55,721,574	$	61,286,057	$	67,426,175	
	16	Beneficiaries		1000		1000		1100		1210		1331		1464	
		Inflator		1		1.0		1.0		1.0		1.0		1.0	
		Value/period	$	15,600,000	$	15,600,000	$	17,160,000	$	18,876,000	$	20,763,600	$	22,838,400	
	17	Beneficiaries		1000		1000		1100		1210		1331		1464	
		Inflator		1		1.0		1.0		1.0		1.0		1.0	
		Value/period	$	904,000	$	931,120	$	1,024,232	$	1,126,655	$	1,239,321	$	1,363,160	
	18	Beneficiaries		1000		1000		1100		1210		1331		1464	
		Inflator		1		1.0		1.0		1.0		1.0		1.0	
		Value/period	$	1,462,000	$	1,505,860	$	1,656,446	$	1,822,091	$	2,004,300	$	2,204,579	
	19	Beneficiaries		3430		3460		3800		4204		4645		5128	
		Inflator		1		1.0		1.0		1.0		1.0		1.0	
		Value/period	$	2,335,830	$	2,426,948	$	2,665,434	$	2,948,812	$	3,258,142	$	3,596,933	
			$	158,880,822	$	130,490,814	$	143,535,687	$	157,906,090	$	173,702,938	$	191,100,643	$ 773,414,247
	0.05	Discount Factor				0.952380952		0.907029478		0.863837599		0.822702475		0.783526166	0.746215397
		Discounted Impact			$	124,276,966	$	130,191,099	$	136,405,217	$	142,905,837	$	149,732,354	$ 577,133,619
		NPV	**$**	**1,260,645,093**											

ENVIRONMENTAL IMPACT												
	20	Beneficiaries		1000	1000	1100	1210	1331	1464		
		Inflator		1.0	1.02	1.02	1.02	1.02	1.02		
		Value/period	$	126,750	$ 129,285	$ 142,214	$ 156,435	$ 172,078	$ 189,273		
	21	Beneficiaries		2	4	12	12	12	12		
		Inflator		1.0	1.02	1.02	1.02	1.02	1.02		
		Value/period	$	1,183	$ 2,413	$ 7,239	$ 7,239	$ 7,239	$ 7,239		
	22	Beneficiaries		2	4	12	12	12	12		
		Inflator		1.0	1.02	1.02	1.02	1.02	1.02		
		Value/period	$	17,047	$ 34,777	$ 104,330	$ 104,330	$ 104,330	$ 104,330		
	23	Beneficiaries		1000	1000	1100	1210	1331	1464		
		Inflator		1.0	1.02	1.02	1.02	1.02	1.02		
		Value/period	$	427,440	$ 435,989	$ 479,588	$ 527,546	$ 580,301	$ 638,288		
	24	Beneficiaries		2	4	12	12	12	12		
		Inflator		1.0	1.02	1.02	1.02	1.02	1.02		
		Value/period	$	16,000	$ 32,640	$ 97,920	$ 97,920	$ 97,920	$ 97,920		
	25	Beneficiaries		2	4	12	12	12	12		
		Inflator		1.0	1.00	1.00	1.00	1.00	1.00		
		Value/period	$	1,614	$ 3,228	$ 9,684	$ 9,684	$ 9,684	$ 9,684		
	26	Beneficiaries		2	4	12	12	12	12		
		Inflator		1.0	1.00	1.00	1.00	1.00	1.00		
		Value/period	$	2,609	$ 5,218	$ 15,655	$ 15,655	$ 15,655	$ 15,655		
	27	Beneficiaries		2	4	12	12	12	12		
		Inflator		1.0	1.00	1.00	1.00	1.00	1.00		
		Value/period	$	18	$ 36	$ 108	$ 108	$ 108	$ 108		
			$	592,661	$ 643,586	$ 856,737	$ 918,917	$ 987,315	$ 1,062,497	$	4,242,241
	0.05	Discount Factor		1.00	0.952380952	0.907029478	0.863837599	0.822702475	0.783526166		0.746215397
		Discounted Impact			$ 612,939	$ 777,086	$ 793,795	$ 812,267	$ 832,494	$	3,165,626
		NPV	**$**	**6,994,206**							

Specific Data by Metric

1. Financial literacy: The Social Security Administration has aggregated research on the economic impact of financial literacy.[3] We have also reviewed several studies on the impact of the Great Recession ten years later attributable to lack of financial knowledge, referenced elsewhere. We have calculated the net incremental benefit as the accumulation of three months of savings at an average OTR client income of $40,000, which equates to $10,000.
2. Asset creation – This number is calculated by a case study of an actual OTR client using the cost avoidance between their market interest rate and what they pay for their loan with OTR, avoidance of fees, reduction of maintenance, reduction of fuel costs, and residual value of their vehicle at the end of the five-year loan period. This information is supported by the S&P Subprime Auto Index.
3. Increased earnings – This average 50% increase in earnings, based on an average income of $40,000 has been observed through client surveys since inception. Gains in income and annual average increase in median household income is derived from data compiled by the Pew Charitable Trusts.[4]
4. Benefit continuity – The Kaiser Family Foundation finds that the cost to society of providing care for the uninsured in the 2014 – 2017 time period was $42.4 billion annually.[5] Their data indicates that 29 million were uninsured as of 2019.[6]
5. Greater purchasing power – Increased creditworthiness leads to greater purchasing power long-term (irrespective of inflation dynamics) by bringing down financing costs. We have used a 50% reduction in car payments, which saves an average of $200/month and a 25% reduction in housing costs, which saves $300/month, based on our typical client profile, which equates to $6,000 per year.
6. Health and wealth – Data for this metric is taken from a study in the Journal of the Economics of Ageing which studied gains in assets/wealth in old age by health in young adulthood as contrasted with those who were less healthy.[7]
7. Costs of poor diets – The reviewed research from the National Institutes of Health which found that Americans' poor diet costs $50 billion annually.[8] We used data from the USDA and the grocery purchasing site, "Instacart," to compare the costs of items purchased in small containers/sizes from convenience stores versus larger quantity/bulkier items purchased at grocery stores, including milk, diapers, and laundry detergent. Without a car, buying larger/heavier items is much harder because they are

[3] www.ssa.gov/policy/docs/ssb/v72n2/v72n2/39.html

[4] www.pewresearch.org/social-trends/2020/01/09/trends-in-income-and-wealth-inequality
[5] www.kff.org/uninsured/issue-brief/sources-of-payment-for-uncompensated-care-for-the-uninsured/
[6] www.kff.org/policy-watch/millions-of-uninsured-americans-are-eligible-for-free-aca-health-insurance/
[7] www.sciencedirect.com/science/article/pii/S22128X16300020
[8] www.nhlbi.nih.gov/2019/americans-poor-diet-drives-50-billion-year-health-care-costs

difficult to carry.[9] We applied the average reduction in cost for purchasing in bulk to the blended average food cost (based on our clients' income ranges) of data by the USDA of $4,400 in average food costs for the lowest quintile and $13,987 in average food costs for the highest quintile, creating a blended food cost for our beneficiaries of $8,235.[10]

8. Improved access to education – While not a perfect analogy, lost classroom structure due to COVID is used as a proxy for the adverse impact to earnings of a child whose education is disrupted by chronic lateness or absences due to their parents' inability to get them there timely each day. Brookings calculated the present value loss at $33,464 and we assume the value gain to be similar. We assumed three children per family and that 80% of the beneficiaries had children.[11]
9. Avoided turnover costs – Pre-pandemic, it cost an employer $3,500 on average to replace an $8.00/hour worker.[12] Post-pandemic, after government stimulus and unemployment benefits induced lower-skilled workers to not return to work, major employers like Wal-Mart and Amazon are offering signing bonuses and/or higher wages.[13] We have used here an increment cost of $2.00/hour. At a 40-hour workweek and 52 weeks per year, the incremental cost is $4,000 per worker.
10. Wages and apprenticeships – After on-the-job-training through a registered apprenticeship for a body technician, starting compensation is $75,000, with the potential to increase to $150,000 annually.[14]
11. Student debt in trade schools – The average annual cost is $33,000 and four years are required.[15]
12. Wages created due to spillover GDP contribution from increased purchasing power - BLS says that there has never been a study that directly quantifies the impact of consumer spending on job creation, but states that personal consumption expenditures contributed 1.8 out of 2.6 total GDP and projects that employment based on consumption in 2022 will be 94.6 million out of a total of 149.8 million. Therefore 63% of all nonagricultural jobs are related to personal consumption expenditures. Employment tends to lag output from recovery from recessions. BLS says that Total GDP in 2022 will be $17,584.2 billion, of which $12,380.1 billion will be from personal consumption and there will be 94.65 million jobs related to consumer expenditures, meaning that $13,170 in personal consumption equates to 1 job. By comparison, in 2011, consumer spending of $11,360 generated one job related to consumer spending. Some element of these differences is due to sensitivities to business cycles. For this

[9] www.ams.usda.gov/sites/default/files/media/RetailMilkPrices.pdf
[10] www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/food-prices-and-spending/

[11] www.brookings.edu/blog/education-plus-development/2020/04/29/the -covid-19-cost-of-school-closures
[12] Society of Human Resource Management, March 2013
[13] Morath, Eric, Wall Street Journal, "Millions are unemployed. Why can't companies find workers? May 6, 2021
[14] Collision Repair Education Foundation, "State of the Industry" survey, 2019
[15] BestColleges.com, "The Value of Trade Schools," April 29, 2020

analysis, we assume that each $13,170 spent by consumers generates one $15.00/hour job, or $31,200 in wages, growing at 1% annually. [16]

13. Increased economic resilience from financial literacy – The Federal Reserve Bank of San Francisco says that the lifetime loss in income from every person due to the Great Recession was $70,000.[17] Many analysts suggest that lack of financial literacy has broad consequences for society and attribute much of the Great Recession to lack of awareness among subprime borrowers of the conditions of the mortgages they purchased.[18]
14. Better education – Because of the recency and uniqueness of the circumstances, we have estimated the impact to society of education by looking at lost learning from the COVID school shutdown. The article in this source draws upon decades of research of the aftermath of World War II and draws comparisons to estimates of the long-term price that young people may pay in terms of future earnings due to COVID's impact on education, estimated at $1,337 per student per year.[19] We have used this statistic as a proxy for the value of education.
15. Benefit of sports and after-school activities – We focused on research around sports versus after-school programs because the research on the programs varies widely in evaluated effectiveness, whereas sports has been found to have more consistent benefits in terms of socialization and health. A great deal has been made of the depression among adolescents that is occurring due to lack of their normal routine and engagement in activities, such as sports, that brought them joy and a sense of fulfillment. The value of the metric used herein was taken from a study of the cost of major depressive disorders on society and further indicated that 47% of the people diagnosed with MDDs were adolescents or young adults. As a proxy for benefit (cost avoidance), the cost to society is $18,629 per person per year.[20]
16. Gain in productive use of time -- Based on comparison of travel time for P. Burch, OTR client, on Dallas Area Rapid Transit route (actual stops and distances per DART) versus by private vehicle, verified by Google Maps comparison of modes of travel. Four incremental hours gained by car versus lost to mass transit (total trip was 30 minutes each way by car, but 2.5 hours each way by bus and train). Calculated at $15.00/hour, 5 days weekly, and 52 months per year. Net incremental income correlated to increased purchasing power.
17. Economic impact of Advanced Driver Assistance Systems -- Traffic fatalities are 4.3x greater for low-income people than others due to driving older cars not equipped with safety features. The economic cost of accidents is almost $1 trillion on lost productivity,

[16] www.bls.gov/opub/mlr/2014/article/consumer-spending-and-us-employment-from-the-recession-through-2022.htm
[17] Merle, Renae, The Washington Post, "A Guide to the Financial Crisis – 10 Years Later," September 10, 2018
[18] www.investopedia.com/articles/investing/100615/why-financial-literacy-and-education-so-important.asp

[19] Psacharopoulos, George, "The COVID-19 cost of school closures," Brookings, April 29, 2020
[20] Greenberg, Paul, "Major Depressive Disorders have an enormous economic impact," Scientific American, May 5, 2021

injury, death, and impeded economic throughput. ADAS could reduce nearly 30% of traffic accidents and save $250 billion annually. (Trends in Socioeconomic Inequalities in Motor Vehicle Accidents Deaths in the US 1995-2010; US DOT National Highway Transportation Safety Administration, May 2015: "Economic and Societal Impact of Motor Vehicle Crashes, 2010" and BCG, 9/29/15, "A Roadmap to Safer Driving with Advanced Driver Assistance Systems." 276.5 million registered highway vehicles (passenger, trucks, and motorcycles) in 2019. Used $904/vehicle.

18. Less use of social safety net due to continuity of benefits and avoidance of emergency care – See the Kaiser Family Foundation data reported elsewhere.
19. Positive externalities for educational attainment and training – The economic benefit here of $681 per person per year is based firstly on a study from the Economics of Education on the impact to cities of universities, which found a 0.04% GDP contribution.[21] We reviewed data from the St. Louis Fed about the DFW area GDP[22] and population data for the DFW area to estimate the incremental increase to GDP of one person educated per year. Rates of growth were taken from EPI.[23]
20. Clean Transport – Carbon Reductions -- EPA = 24.9 average miles per gallon in 2020 and 356 grams per mile of emissions; average commuting distance OTR clients = 24 miles, so 17,088 grams of CO2 emitted daily x 5 days a week = 85,440 weekly x 52 weeks per year = 4,442,880 over one year = 4.44 metric tons. The IMF places a social benefit/value of reduction of greenhouse gas emissions at $75/ton, which equates to $126.75 and is used herein.[24]
21. Green buildings – carbon reduction – Uses the GDP impact of increased energy efficiency ranging from 0.1% to 2.0% (we've used 1%) and Local GDP of $472.33 billion in North Texas in 2019 and per person of $49,041. A 1% = $590.[25]
22. Reduction in energy consumption in buildings/Resource Efficiency Management – Calculated based on KWHs used each month under the former owner of the Irving property (22197 average x 12 = 266,364 per year). We used a 40% reduction, although our experience has actually been 48%. This results in an incremental difference of 106,546 KWHs at an average charge of $0.08/KWH, which equates to $8523.68
23. Clean Transport – Energy Consumption -- AAA Texas – June 2021, Dallas area cost per gallon of unleaded = $2.74. Average of 24 miles each way to work equates to two gallons used per day, 5 days per week, and 52 weeks per year = $1,425 per year. A 30% reduction (our portfolio experience) equates to savings of $427.44 per client per year
24. Clean Transport – Alternative Energy – This is based on the cost to install EV charging stations at each property as a proxy for value.

[21] Valero, Anna and John Van Reenen, "The economic impact of universities: Evidence from across the globe," Economics of Education Review, February 2019

[22] https://fred.stlouisfed.org/series/NGMP19100

[23] www.epi.org/publication/states-education-productivity-growth-foundations/

[24] www.imf.org/external/pubs/ft/fandd/2019/12/the-true-cost-of-reducing-greenhouse-gas-emissions-gillingham.htm

[25] www.iea.org/reports/multiple-benefits-of-energy-efficiency/economic-benefits-2

25. Avoidance of runoff – climate change adaptation – Savings is based on a study of stormwater capture in urban locations.[26]
26. Pollution Prevent and Control – This accounts for waste diversion (recycling/repurposing of parts and cardboard) and minimization of air/water pollutants through retrofit of all buildings with water-based paint booths that recycle 95% of heat. We recycle 20 tons per year, which generates $65,230 in wages per 1000 tons, as defined by the EPA.[27]
27. Preservation of biodiversity – This is attributable to tree planting, xeriscaping, and ecological restoration activities – The World Economic Forum says $9 of benefit is derived from every $1 spent on conservation.

[26] "Economic evaluation of stormwater capture and its multiple benefits in California," published March 24,2020 in PLOS Climate Journal

[27] www.epa.gov/smm/recycling-economic-information-rei-report