



Zheng Partners LLC
EMERGING MARKETS

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Worked Example of Mapping the Impact Opportunity Space (Extension of Section 6)

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PRICING IMPACT

Extending impact investing to price externalities and lower the cost of capital to impactful investments

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One of the advantages of a General Theory of Impact is that it enables us to map the Impact Opportunity Space (IOS). The IOS is a mapping of the potential of assets of all kinds to create a quantity of primary impact.

From this mapping we can develop insights into investor behavior, the relationship between financial return and impact, what is required to maximize total impact created and develop policy actions to improve the creation of impact.

The Impact Opportunity Space is described in detail in Section 6 of “Pricing Impact. Extending Impact Investing to Price Externalities and Lower the Cost of Capital to Impactful Investments”, hereafter referred to as “Pricing Impact”.

As a reminder, the IOS maps the opportunity to create gross primary impact rather than net primary impact as ESG issues are a separate part of the assessment of the impact characteristics of an asset – refer Chart 4 page 10 of “Worked Example of the Use of the General Theory to Rate the Ex-Ante Impact Potential of Assets (Extension of Section 7)”, hereafter referred to as “Extension of Section 7”..

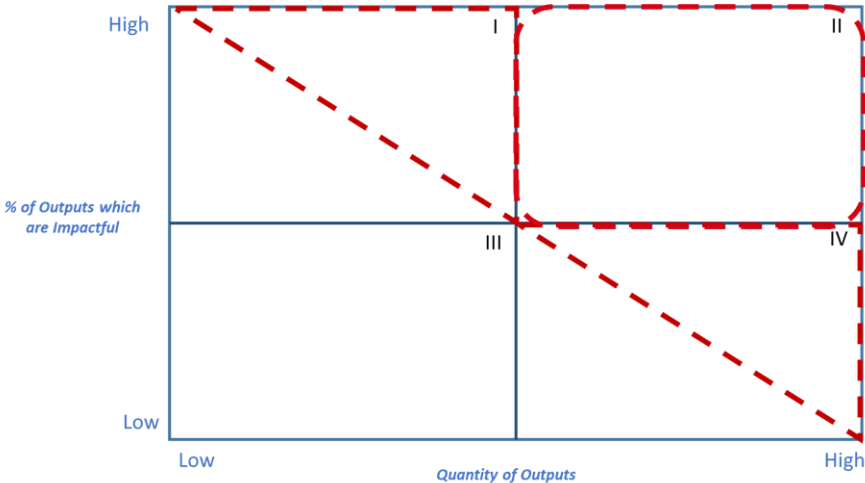
This note provides a worked example of creating a mapping of the Impact Opportunity Space.

The worked example in this note is an extension of the impact rating and portfolio construction worked example in “Extension of Section 7”, which should be read prior to reading this note.

Framing the Exercise

To map the IOS we need to reorganize the data in the Impact Quantity Rating Matrix (Chart 1) to create the mapping illustrated in Chart 2 (refer Chart 24 page 65 in “Pricing Impact”).

Chart 1 A Matrix Framework for Rating the Quantity of Impact



The starting point of this mapping exercise is the note “Extension of Section 7”. The tables developed in that note provide the information required to map the Impact Opportunity Space.

Chart 2 The Impact Opportunity Space

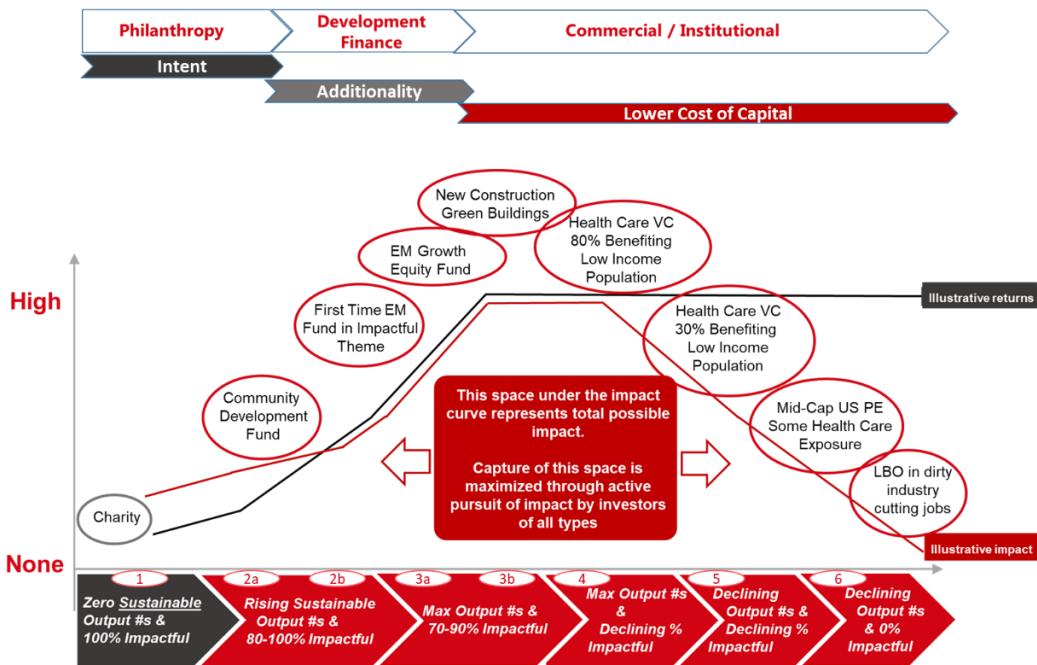


Table 1, below on page 4, is an Impact Quantity Rating Matrix. It is an operational worked example of Chart 1 and corresponds to Table 1 page 15 in “Extension of Section 7”.

For a full explanation of how Table 1 is created, refer to the note “Extension of Section 7”.

The x-axis of Table 1 is a score indicating the potential quantity of primary output such as access to education, carbon offset and jobs created that an asset can be expected to create. This score is a compound of two factors (i) the extent to which organic growth drives the financial return on an asset and (ii) the scale over which the organic growth is occurring. The score indicates only the quantity of outputs, with no implications for what percentage of the output is in fact impactful. The score is expressed as a percentage of the peak potential quantity of outputs, which has been estimated to occur at a revenue level of \$500-1000m (refer pages 5-6 of “Extension of Section 7”).

The y-axis of Table 1 is a score for the percentage of the outputs created by an asset which are impactful. For social impacts this score is a compound of two factors (i) the asset’s exposure to High Impact Themes (HIT) and (ii) the asset’s exposure to a Disadvantaged Population (DP) as consumers and/or employees. For environmental impacts the score is based on exposure to assets which benefit the environment (HIT) only.

The numbers populating the matrix are the multiples of the y-axis “percentage impactful” scores and the x-axis “quantity of output” scores. These are the Impact Quantity Ratings which indicate the potential quantity of impactful primary outputs such as additional jobs, additional access to education or additional carbon offset that an asset is capable of creating.

The green shaded area of the matrix represents areas of higher impact, where the percentage of outputs that are impactful is greater than average for any given level of output.

| Category | 100% exposure to both HIT and DP | 3.9% | 8.5% | 9.0% | 16.5% | 16.5% | 25.0% | 31.2% | 40.4% | 46.4% | 54.8% | 55.0% | 55.7% | 58.1% | 58.6% | 63.2% | 70.9% | 100.0% | |
|---|----------------------------------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| New Build Green Buildings and Conversion of land to sustainable use | 100% HT 90% DP / 90% HT 100% DP | 90% | 3.5% | 7.6% | 8.1% | 14.8% | 22.3% | 28.2% | 36.3% | 41.8% | 49.2% | 49.5% | 50.2% | 52.3% | 52.6% | 56.8% | 63.8% | 70.9% | 100.0% |
| | 90% HT 90% DP | 81% | 3.1% | 6.5% | 7.3% | 13.3% | 20.1% | 25.3% | 32.7% | 37.6% | 44.3% | 44.6% | 45.1% | 47.0% | 47.3% | 51.2% | 57.4% | 64.0% | 81.0% |
| | 100% HT 80% DP / 80% HT 100% DP | 80% | 3.1% | 6.8% | 7.2% | 13.2% | 19.8% | 25.0% | 32.3% | 37.1% | 43.8% | 43.8% | 44.6% | 46.5% | 46.7% | 50.5% | 56.7% | 63.0% | 80.0% |
| | 90% HT 80% DP / 80% HT 90% DP | 72% | 2.8% | 6.1% | 6.5% | 11.9% | 17.8% | 22.5% | 29.1% | 33.4% | 39.4% | 39.5% | 40.1% | 41.8% | 42.1% | 45.5% | 51.0% | 57.2% | 72.0% |
| | 100% HT 70% DP / 70% HT 100% DP | 70% | 2.7% | 5.9% | 6.3% | 11.5% | 17.3% | 21.9% | 28.3% | 32.5% | 38.3% | 38.5% | 39.0% | 40.7% | 40.9% | 44.2% | 49.6% | 55.5% | 70.0% |
| | 80% HT 80% DP | 64% | 2.5% | 5.4% | 5.8% | 10.5% | 15.9% | 20.0% | 25.8% | 29.7% | 35.0% | 35.2% | 35.7% | 37.2% | 37.6% | 40.4% | 45.4% | 51.0% | 64.0% |
| | 90% HT 70% DP / 70% HT 90% DP | 63% | 2.4% | 5.3% | 5.7% | 10.4% | 15.6% | 19.7% | 25.4% | 29.2% | 34.5% | 34.7% | 35.1% | 36.6% | 36.8% | 39.8% | 44.7% | 50.0% | 63.0% |
| | 100% HT 60% DP / 60% HT 100% DP | 60% | 2.3% | 5.1% | 5.4% | 9.9% | 14.9% | 18.7% | 24.2% | 27.8% | 32.8% | 32.9% | 33.4% | 34.8% | 35.0% | 37.9% | 42.5% | 48.0% | 60.0% |
| | 80% HT 70% DP / 70% HT 80% DP | 56% | 2.2% | 4.7% | 5.1% | 9.2% | 13.9% | 17.5% | 22.6% | 26.0% | 30.6% | 30.7% | 31.2% | 32.5% | 32.7% | 35.4% | 39.7% | 45.0% | 56.0% |
| | 90% HT 60% DP / 60% HT 90% DP | 54% | 2.1% | 4.6% | 4.9% | 8.9% | 13.4% | 16.9% | 21.8% | 25.1% | 29.5% | 29.6% | 29.7% | 30.1% | 31.4% | 34.1% | 38.3% | 43.0% | 54.0% |
| | 100% HT 50% DP / 50% HT 100% DP | 50% | 1.9% | 4.2% | 4.5% | 8.2% | 12.4% | 15.6% | 20.2% | 23.2% | 27.3% | 27.4% | 27.5% | 27.9% | 29.0% | 29.2% | 31.6% | 35.4% | 50.0% |
| | 80% HT 60% DP / 60% HT 80% DP | 49% | 1.9% | 4.1% | 4.4% | 8.1% | 12.1% | 15.3% | 19.8% | 22.7% | 26.8% | 26.9% | 27.3% | 28.5% | 28.6% | 30.9% | 34.7% | 39.4% | 49.0% |
| | 90% HT 50% DP / 50% HT 90% DP | 45% | 1.7% | 3.8% | 4.1% | 7.4% | 11.2% | 14.1% | 18.2% | 20.9% | 24.6% | 24.7% | 24.8% | 25.4% | 26.3% | 28.4% | 31.9% | 35.4% | 45.0% |
| | 70% HT 70% DP | 42% | 1.6% | 3.6% | 3.8% | 6.9% | 10.4% | 13.1% | 17.0% | 19.5% | 23.0% | 23.1% | 23.4% | 24.4% | 24.5% | 26.5% | 29.8% | 34.0% | 42.0% |
| | 100% HT 40% DP / 40% HT 100% DP | 40% | 1.5% | 3.4% | 3.6% | 6.6% | 9.9% | 12.5% | 16.1% | 18.6% | 21.9% | 21.9% | 22.0% | 22.3% | 23.2% | 25.3% | 28.4% | 32.0% | 40.0% |
| 90% HT 40% DP / 60% HT 60% DP | 36% | 1.4% | 3.1% | 3.2% | 5.9% | 8.9% | 11.2% | 14.5% | 16.7% | 19.1% | 19.2% | 19.3% | 19.5% | 20.3% | 22.1% | 24.8% | 28.0% | 36.0% | |
| 70% HT 50% DP / 50% HT 70% DP | 35% | 1.4% | 3.0% | 3.2% | 5.8% | 8.7% | 10.9% | 14.1% | 16.2% | 18.7% | 18.8% | 18.9% | 19.0% | 19.7% | 21.0% | 22.7% | 25.5% | 30.0% | |
| 80% HT 40% DP | 32% | 1.2% | 2.7% | 2.9% | 5.3% | 7.9% | 10.0% | 12.9% | 14.8% | 17.5% | 17.5% | 17.6% | 17.8% | 18.6% | 19.5% | 20.2% | 22.7% | 27.0% | |
| 100% HT 30% DP / 60% HT 50% DP / 50% HT 60% DP | 30% | 1.2% | 2.5% | 2.7% | 4.9% | 7.4% | 9.4% | 12.1% | 13.9% | 16.4% | 16.4% | 16.5% | 16.7% | 17.4% | 17.5% | 18.9% | 21.3% | 30.0% | |
| 70% HT 40% DP | 28% | 1.1% | 2.4% | 2.5% | 4.6% | 6.9% | 8.7% | 11.3% | 13.0% | 15.3% | 15.3% | 15.4% | 15.6% | 16.3% | 16.4% | 17.7% | 19.8% | 28.0% | |
| 90% HT 30% DP | 27% | 1.0% | 2.3% | 2.4% | 4.4% | 6.7% | 8.4% | 10.9% | 12.5% | 14.8% | 14.8% | 14.9% | 15.0% | 15.7% | 15.8% | 17.1% | 19.1% | 25.0% | |
| 50% HT 50% DP | 25% | 1.0% | 2.1% | 2.2% | 4.1% | 6.2% | 7.8% | 10.1% | 11.6% | 13.7% | 13.7% | 13.8% | 13.9% | 14.6% | 14.6% | 15.8% | 17.7% | 25.0% | |
| 80% HT 30% DP / 60% HT 40% DP | 24% | 0.9% | 2.0% | 2.2% | 4.0% | 6.0% | 7.5% | 9.7% | 11.1% | 13.1% | 13.1% | 13.2% | 13.4% | 13.9% | 14.0% | 15.2% | 17.0% | 24.0% | |
| 70% HT 30% DP | 21% | 0.8% | 1.8% | 1.9% | 3.5% | 5.2% | 6.6% | 8.5% | 9.7% | 11.5% | 11.5% | 11.6% | 11.7% | 12.2% | 12.3% | 13.3% | 14.9% | 21.0% | |
| 100% HT 20% DP / 50% HT 40% DP | 20% | 0.8% | 1.7% | 1.8% | 3.3% | 5.0% | 6.2% | 8.1% | 9.3% | 10.9% | 11.0% | 11.0% | 11.1% | 11.6% | 11.7% | 12.6% | 14.2% | 20.0% | |
| 90% HT 20% DP / 60% HT 30% DP | 18% | 0.7% | 1.5% | 1.6% | 3.0% | 4.5% | 5.6% | 7.3% | 8.4% | 9.8% | 9.9% | 9.9% | 10.0% | 10.5% | 10.5% | 11.4% | 12.8% | 18.0% | |
| 80% HT 20% DP | 16% | 0.6% | 1.4% | 1.4% | 2.6% | 4.0% | 5.0% | 6.5% | 7.4% | 8.8% | 8.8% | 8.8% | 8.9% | 9.3% | 9.3% | 10.1% | 11.3% | 16.0% | |
| 50% HT 30% DP | 15% | 0.6% | 1.3% | 1.4% | 2.5% | 3.7% | 4.7% | 6.1% | 7.0% | 8.2% | 8.2% | 8.3% | 8.4% | 8.7% | 8.8% | 9.5% | 10.6% | 15.0% | |
| 70% HT 20% DP | 14% | 0.5% | 1.2% | 1.3% | 2.3% | 3.5% | 4.4% | 5.7% | 6.5% | 7.7% | 7.7% | 7.7% | 7.8% | 8.1% | 8.2% | 8.8% | 9.9% | 14.0% | |
| 60% HT 20% DP | 12% | 0.5% | 1.0% | 1.1% | 2.0% | 3.0% | 3.7% | 4.8% | 5.6% | 6.6% | 6.6% | 6.7% | 7.0% | 7.0% | 7.6% | 8.5% | 9.5% | 12.0% | |
| 100% HT 10% DP / 50% HT 20% DP | 10% | 0.4% | 0.8% | 0.9% | 1.6% | 2.5% | 3.1% | 4.0% | 4.6% | 5.5% | 5.5% | 5.5% | 5.6% | 5.8% | 5.8% | 6.3% | 7.1% | 10.0% | |
| 90% HT 10% DP | 9% | 0.3% | 0.8% | 0.8% | 1.5% | 2.2% | 2.8% | 3.6% | 4.2% | 4.9% | 4.9% | 5.0% | 5.0% | 5.2% | 5.3% | 5.7% | 6.4% | 9.0% | |
| 80% HT 10% DP | 8% | 0.3% | 0.7% | 0.7% | 1.3% | 2.0% | 2.5% | 3.2% | 3.7% | 4.4% | 4.4% | 4.4% | 4.5% | 4.6% | 4.7% | 5.1% | 5.7% | 8.0% | |
| 70% HT 10% DP | 7% | 0.3% | 0.6% | 0.6% | 1.2% | 1.7% | 2.2% | 2.8% | 3.2% | 3.8% | 3.8% | 3.9% | 3.9% | 4.1% | 4.1% | 4.4% | 5.0% | 7.0% | |
| 60% HT 10% DP | 6% | 0.2% | 0.5% | 0.5% | 1.0% | 1.5% | 1.9% | 2.4% | 2.8% | 3.3% | 3.3% | 3.3% | 3.3% | 3.3% | 3.5% | 3.8% | 4.3% | 6.0% | |
| 50% HT 10% DP | 5% | 0.2% | 0.4% | 0.5% | 0.8% | 1.2% | 1.6% | 2.0% | 2.3% | 2.7% | 2.7% | 2.8% | 2.8% | 2.9% | 2.9% | 3.2% | 3.5% | 5.0% | |
| 0% DP | 0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | |

Quantity of Output

| Category | < \$5m | \$5-15m | \$26,000 | \$20,000 | \$15-30m | \$30-50m | \$16,000 | \$50-100m | \$50 | \$10,000 | \$8,000 | \$6,000 | \$4,000 | \$3,000 | \$2,000 | \$1,000 | \$500m | \$500m+ | |
|----------|--------|---------|----------|----------|----------|----------|----------|-----------|------|----------|---------|---------|---------|---------|---------|---------|--------|---------|--|
| 70.9% | | | | | | | | | | | | | | | | | | | |
| 52.6% | | | | | | | | | | | | | | | | | | | |
| 50.0% | | | | | | | | | | | | | | | | | | | |
| 21.9% | | | | | | | | | | | | | | | | | | | |
| 8.5% | | | | | | | | | | | | | | | | | | | |
| 7.1% | | | | | | | | | | | | | | | | | | | |
| 1.0% | | | | | | | | | | | | | | | | | | | |
| 0.0% | | | | | | | | | | | | | | | | | | | |

Step 1 Re-Arranging the Impact Quantity Rating Matrix

The first step in moving from the Impact Quantity Rating Matrix in Table 1 to a mapping of the Impact Opportunity Space is to re-arrange the x-axis of Table 1.

The x-axis of the Impact Quantity Rating Matrix in Table 1 is based on a low-to-high ordering of the Quantity of Output scores.

To map the IOS, the x-axis instead needs to be based on a low-to-high ordering of the levels of revenue that correspond to each Quantity of Output score.

This re-ordering of the x-axis is made in Table 2 on page 6.

The green area of the matrix, in which the percentage of assets which are impactful is above average for any given level of output, no longer forms a diagonal across the matrix. Suggestively, it now looks like an inverted version of the impact opportunity space.

| | 100% | 3.9% | 8.5% | 16.5% | 25.0% | 40.4% | 58.4% | 70.9% | 100.0% | 63.2% | 55.7% | 58.1% | 55.0% | 54.8% | 54.7% | 46.4% | 31.2% | 16.5% | 9.0% |
|--|------|-------|---------|----------|----------|---------|-------------|-------------|-------------|-------------|-------------|-------------|--------|---------|---------|----------|----------|----------|----------|
| 100% exposure to both HIT and DP | 90% | 3.1% | 7.6% | 14.8% | 22.3% | 36.3% | 51.6% | 63.8% | 90.0% | 56.8% | 50.2% | 52.3% | 49.5% | 49.3% | 49.2% | 41.8% | 28.1% | 14.8% | 8.1% |
| 100% HT 50% DP / 90% HT 100% DP | 81% | 3.1% | 6.9% | 13.3% | 20.1% | 32.7% | 47.5% | 57.4% | 81.0% | 51.2% | 45.1% | 47.0% | 44.6% | 44.4% | 44.3% | 37.6% | 25.3% | 13.3% | 7.3% |
| 50% HT 30% DP | 80% | 3.1% | 6.8% | 13.2% | 19.8% | 32.3% | 46.7% | 56.7% | 80.0% | 50.5% | 44.6% | 46.5% | 44.0% | 43.8% | 43.4% | 37.1% | 25.0% | 13.2% | 7.2% |
| 100% HT 80% DP / 80% HT 100% DP | 72% | 2.8% | 6.1% | 11.9% | 17.8% | 29.1% | 42.1% | 51.0% | 72.0% | 45.5% | 40.1% | 41.8% | 39.6% | 39.5% | 39.4% | 33.4% | 22.5% | 11.9% | 6.5% |
| 100% HT 80% DP / 80% HT 90% DP | 70% | 2.7% | 5.9% | 11.5% | 17.3% | 28.3% | 40.9% | 49.6% | 70.0% | 44.2% | 39.0% | 40.7% | 38.5% | 38.4% | 38.3% | 32.5% | 21.9% | 11.5% | 6.3% |
| 100% HT 70% DP / 70% HT 100% DP | 64% | 2.5% | 5.4% | 10.5% | 15.9% | 25.8% | 37.4% | 45.4% | 64.0% | 40.4% | 35.7% | 37.2% | 35.2% | 35.1% | 35.0% | 29.7% | 20.0% | 10.5% | 5.8% |
| 100% HT 70% DP / 70% HT 90% DP | 65% | 2.4% | 5.3% | 10.4% | 15.6% | 25.4% | 36.8% | 44.7% | 63.0% | 39.8% | 35.1% | 36.6% | 34.7% | 34.5% | 34.5% | 29.2% | 19.7% | 10.4% | 5.7% |
| 100% HT 60% DP / 60% HT 100% DP | 60% | 2.3% | 5.1% | 9.9% | 14.9% | 24.2% | 35.0% | 42.5% | 60.0% | 37.9% | 33.4% | 34.8% | 33.0% | 32.9% | 32.8% | 27.8% | 18.7% | 9.9% | 5.4% |
| 100% HT 60% DP / 60% HT 90% DP | 56% | 2.2% | 4.7% | 9.3% | 13.9% | 22.6% | 32.7% | 39.7% | 56.0% | 35.4% | 31.2% | 32.5% | 30.8% | 30.7% | 30.6% | 26.0% | 17.5% | 9.2% | 5.1% |
| 50% HT 40% DP / 40% HT 100% DP | 54% | 2.1% | 4.6% | 8.9% | 13.4% | 21.8% | 31.5% | 38.3% | 54.0% | 34.1% | 30.1% | 31.4% | 29.7% | 29.6% | 29.5% | 25.1% | 16.9% | 8.9% | 4.9% |
| 100% HT 50% DP / 50% HT 100% DP | 50% | 1.9% | 4.2% | 8.4% | 12.4% | 20.2% | 29.2% | 35.4% | 50.0% | 31.6% | 27.9% | 29.0% | 27.5% | 27.4% | 27.3% | 23.2% | 15.6% | 8.2% | 4.5% |
| 70% HT 40% DP | 49% | 1.9% | 4.2% | 8.1% | 12.1% | 19.8% | 28.6% | 34.7% | 49.0% | 30.9% | 27.3% | 28.5% | 27.0% | 26.9% | 26.8% | 22.7% | 15.3% | 8.1% | 4.4% |
| 80% HT 60% DP / 60% HT 80% DP | 48% | 1.9% | 4.1% | 7.9% | 11.9% | 19.4% | 28.0% | 34.0% | 48.0% | 29.8% | 26.8% | 27.9% | 26.4% | 26.3% | 26.3% | 22.3% | 15.0% | 7.9% | 4.3% |
| 50% HT 50% DP / 50% HT 90% DP 40% HT 90% DP | 45% | 1.7% | 3.8% | 7.4% | 11.2% | 18.2% | 26.3% | 31.0% | 45.0% | 28.4% | 25.1% | 26.1% | 24.8% | 24.7% | 24.6% | 20.9% | 14.1% | 7.4% | 4.1% |
| 70% HT 40% DP / 60% HT 70% DP | 42% | 1.6% | 3.6% | 6.9% | 10.4% | 17.0% | 24.5% | 29.8% | 42.0% | 26.5% | 23.4% | 24.4% | 23.1% | 23.0% | 23.0% | 19.5% | 13.1% | 6.9% | 3.8% |
| 100% HT 30% DP 60% HT 80% DP / 40% HT 80% DP | 40% | 1.5% | 3.4% | 6.6% | 9.9% | 16.1% | 23.4% | 28.4% | 40.0% | 25.3% | 22.3% | 23.2% | 22.0% | 21.9% | 21.9% | 18.6% | 12.5% | 6.6% | 3.6% |
| 90% HT 40% DP | 36% | 1.4% | 3.1% | 5.9% | 8.9% | 14.5% | 21.0% | 25.5% | 36.0% | 22.7% | 20.1% | 20.9% | 19.8% | 19.7% | 19.7% | 16.7% | 11.2% | 5.9% | 3.2% |
| 70% HT 30% DP / 50% HT 70% DP | 35% | 1.4% | 3.0% | 5.8% | 8.7% | 14.1% | 20.4% | 24.8% | 35.0% | 22.1% | 19.5% | 20.3% | 19.3% | 19.2% | 19.1% | 16.2% | 10.9% | 5.8% | 3.2% |
| 80% HT 40% DP | 32% | 1.2% | 2.7% | 5.3% | 7.9% | 12.9% | 18.7% | 22.7% | 32.0% | 20.2% | 17.8% | 18.6% | 17.6% | 17.5% | 17.5% | 14.8% | 10.0% | 5.3% | 2.9% |
| 100% HT 30% DP 60% HT 50% DP / 50% HT 60% DP | 30% | 1.2% | 2.5% | 4.9% | 7.4% | 12.1% | 17.5% | 21.3% | 30.0% | 18.9% | 16.7% | 17.4% | 16.5% | 16.4% | 16.4% | 13.9% | 9.4% | 4.9% | 2.7% |
| 70% HT 40% DP | 28% | 1.1% | 2.4% | 4.6% | 6.9% | 11.3% | 16.4% | 19.8% | 28.0% | 17.7% | 15.6% | 16.3% | 15.4% | 15.3% | 15.3% | 13.0% | 8.7% | 4.6% | 2.5% |
| 90% HT 30% DP | 27% | 1.0% | 2.3% | 4.4% | 6.7% | 10.9% | 15.8% | 19.1% | 27.0% | 17.1% | 15.0% | 15.7% | 14.9% | 14.8% | 14.8% | 12.5% | 8.4% | 4.4% | 2.4% |
| 50% HT 30% DP | 25% | 1.0% | 2.1% | 4.1% | 6.2% | 10.1% | 14.6% | 17.7% | 25.0% | 15.8% | 13.9% | 14.5% | 13.8% | 13.7% | 13.7% | 11.6% | 7.8% | 4.1% | 2.3% |
| 80% HT 40% DP | 24% | 0.9% | 2.0% | 4.0% | 5.9% | 9.7% | 14.0% | 17.0% | 24.0% | 15.2% | 13.4% | 13.9% | 13.2% | 13.2% | 13.1% | 11.1% | 7.5% | 4.0% | 2.2% |
| 70% HT 30% DP | 21% | 0.8% | 1.8% | 3.5% | 5.2% | 8.5% | 12.5% | 14.9% | 21.0% | 13.3% | 11.7% | 12.2% | 11.6% | 11.5% | 11.5% | 9.7% | 6.6% | 3.5% | 1.9% |
| 100% HT 20% DP 50% HT 40% DP | 20% | 0.8% | 1.7% | 3.3% | 5.0% | 8.1% | 11.7% | 14.2% | 20.0% | 12.6% | 11.1% | 11.6% | 11.0% | 11.0% | 10.9% | 9.3% | 6.2% | 3.3% | 1.8% |
| 90% HT 20% DP 60% HT 30% DP | 18% | 0.7% | 1.5% | 3.0% | 4.5% | 7.3% | 10.5% | 12.8% | 18.0% | 11.3% | 10.0% | 10.5% | 9.9% | 9.9% | 9.8% | 8.4% | 5.6% | 3.0% | 1.6% |
| 100% HT 20% DP | 16% | 0.6% | 1.4% | 2.6% | 4.0% | 6.5% | 9.3% | 11.3% | 16.0% | 10.1% | 8.9% | 9.3% | 8.8% | 8.8% | 8.8% | 7.4% | 5.0% | 2.6% | 1.4% |
| 50% HT 20% DP | 15% | 0.6% | 1.3% | 2.4% | 3.7% | 6.1% | 8.8% | 10.6% | 15.0% | 9.5% | 8.4% | 8.7% | 8.3% | 8.2% | 8.2% | 7.0% | 4.7% | 2.5% | 1.4% |
| 80% HT 30% DP | 14% | 0.5% | 1.2% | 2.3% | 3.5% | 5.7% | 8.2% | 9.9% | 14.0% | 8.8% | 7.8% | 8.1% | 7.7% | 7.7% | 7.7% | 6.5% | 4.4% | 2.3% | 1.3% |
| 70% HT 20% DP | 12% | 0.5% | 1.0% | 2.0% | 3.0% | 4.8% | 7.0% | 8.5% | 12.0% | 7.6% | 6.7% | 7.0% | 6.6% | 6.6% | 6.6% | 5.6% | 3.7% | 2.0% | 1.1% |
| 100% HT 10% DP 50% HT 20% DP | 10% | 0.4% | 0.8% | 1.6% | 2.5% | 4.0% | 5.8% | 7.1% | 10.0% | 6.3% | 5.6% | 5.8% | 5.5% | 5.5% | 5.5% | 4.6% | 3.1% | 1.6% | 0.9% |
| 90% HT 10% DP | 9% | 0.3% | 0.8% | 1.5% | 2.2% | 3.6% | 5.3% | 6.4% | 9.0% | 5.7% | 5.0% | 5.2% | 5.0% | 4.9% | 4.9% | 4.2% | 2.8% | 1.5% | 0.8% |
| 80% HT 10% DP | 8% | 0.3% | 0.7% | 1.3% | 2.0% | 3.2% | 4.7% | 5.7% | 8.0% | 5.1% | 4.5% | 4.6% | 4.4% | 4.4% | 4.4% | 3.7% | 2.5% | 1.3% | 0.7% |
| 70% HT 10% DP | 7% | 0.3% | 0.6% | 1.2% | 1.7% | 2.8% | 4.1% | 5.0% | 7.0% | 4.4% | 3.9% | 4.1% | 3.9% | 3.8% | 3.8% | 3.2% | 2.2% | 1.2% | 0.6% |
| 60% HT 10% DP | 6% | 0.2% | 0.5% | 1.0% | 1.5% | 2.4% | 3.5% | 4.3% | 6.0% | 3.8% | 3.3% | 3.3% | 3.3% | 3.3% | 3.3% | 2.8% | 1.9% | 1.0% | 0.5% |
| 50% HT 10% DP | 5% | 0.2% | 0.4% | 0.8% | 1.2% | 2.0% | 2.9% | 3.5% | 5.0% | 3.2% | 2.8% | 2.9% | 2.8% | 2.7% | 2.7% | 2.3% | 1.6% | 0.8% | 0.5% |
| 0% DP | 0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Zero Exposure to Environment or Disadvantaged Population | 0% | 4% | 8% | 16% | 25% | 40% | 58% | 71% | 100% | 63% | 56% | 58% | 55% | 55% | 55% | 46% | 31% | 16% | 9% |
| | | <\$5m | \$5-15m | \$15-30m | \$30-50m | 50-100m | \$100m-250m | \$250m-500m | \$500m-1000 | \$1000-2000 | \$2000-3000 | \$3000-4000 | \$4000 | \$6,000 | \$8,000 | \$10,000 | \$16,000 | \$20,000 | \$26,000 |

Quantity of Output (Ordered Low Revenue to High Revenue)

| | | | |
|---|-------|---|-------|
| 70.5% Environmental growth equity, 100% HT Rev \$250-500m | 58.4% | New build green buildings 100% HIT at moderate scale | |
| 52.6% Health Fund Growth Equity, 100% HT 90% DP Rev \$100-250m | 31.2% | Existing Green Buildings at larger scale | 51.0% |
| 50.0% Generalist Growth Equity 0% HT 100% DP Rev \$500-1000m | 25.0% | Existing sustainable farmland smaller scale | 35.0% |
| 21.5% Health Fund Larger Established Companies 100% HT 40% DP Rev \$8000m | 3.9% | New build low income housing, 100% HIT, 100% DP small scale | 6.0% |
| 20.2% Emerging Market Generalist Growth Equity, 0% HT 100% DP Rev \$50-100m | 40.0% | Mid sized listed company, 100% HIT, 40% DP Rev \$500-1000m | |
| 8.5% Growth Equity 100% HT, 10% DP Rev \$250-500m | 4.9% | Large Established listed company, 100% HIT 30% DP Rev \$20,000m | |
| 1.0% Growth Equity 50% HT 50% DP, Rev <\$5m | 1.6% | Large Established listed company, 10% HIT 20% DP Rev \$20,000m | |
| 0.0% LBO Fund, larger companies, 0% HT 0% DP Rev \$20,000m | | | |

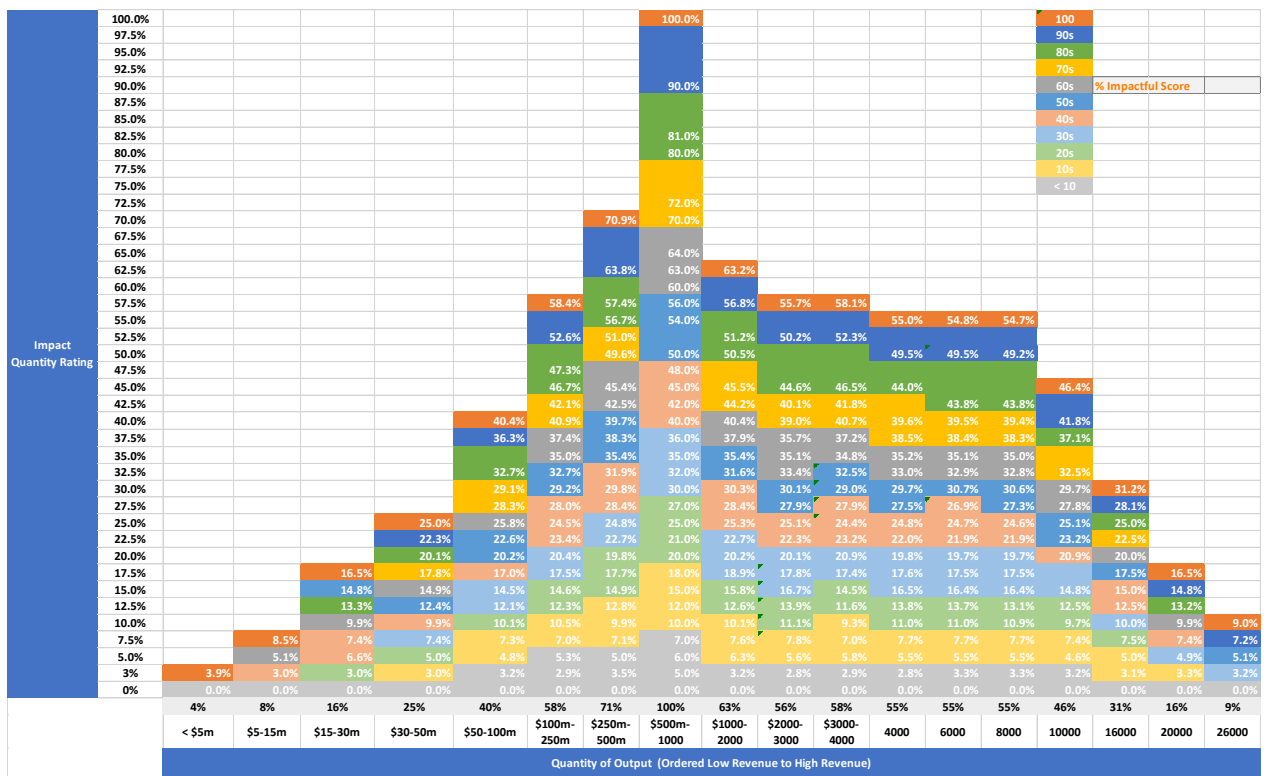
Step 2 Mapping from the Matrix to the Impact Opportunity Space

While the x-axis of the IOS is the same as that of Table 2, the y-axis of the IOS is the Impact Quantity Rating generated by the Impact Quantity Rating Matrix ordered low-to-high, from 0% to 100%.

The matrix in Table 2 is 39x18 = 702 data points. To map the IOS we re-position each of these data points within the new grid framed by, on the x-axis, the Quantity of Output indicators ordered by revenue and on the y-axis, the Impact Quantity Ratings ordered from 0% to 100%.

Table 3 shows the results of this re-positioning of the Impact Quantity Ratings within the two axis of the Impact Opportunity Space.

Table 3 Map of the Impact Opportunity Space



Step 3 Interpreting the Impact Opportunity Space

The curve of the IOS follows the curve in Chart 3 below, which corresponds to Chart 3 page 6 in “Extension of Section 7”. Chart 3 measures the potential of assets to create a quantity of primary outputs over a five year period, using job creation as an indicator.

The data behind Chart 3 suggest that the potential of an asset to create outputs such as jobs, access to education or carbon offset depends on a combination of (i) the contribution of organic growth to returns and (ii) the scale over which the organic growth is occurring, proxied by revenue.

The importance of organic growth is that it is the only one of the six strategies to create financial return which has a direct relationship to the creation of primary outputs such jobs or additional pupils in school. Refer to Table 1 on page 43 of “Pricing Impact” for a discussion.

The data behind Chart 3 also suggest that as revenue increases the contribution of organic growth to returns declines. The curve seen in both Chart 3 and Table 3 is due to (i) the positive effect of increasing scale initially off-setting the negative effect of the decline in the contribution of organic growth, resulting in increasing potential to create primary outputs, followed by a tipping point beyond which (ii) the negative effect of the decline in the contribution of organic growth off-sets the positive effect of increasing scale.

Chart 3 Estimated Jobs Created Over a Five Year Period



As we move from left-to-right in Table 3 the scale of activity increases while at the same time the contribution of organic growth to returns declines and returns are increasingly driven by a combination of the other five strategies for creating financial return, which create financial returns without creating primary outputs (refer Table 1 page 43 of “Pricing Impact”). This explains why the potential to create primary outputs such as jobs and additional patients treated is smaller at both ends of the curve and larger in the middle.

At the far left of the curve, very small scale limits the quantity of primary outputs which can be produced despite high organic growth.

At the far right of the curve, the small amount of organic growth limits the quantity of primary outputs which can be produced despite large scale.

The shape of the Impact Opportunity Space is determined by the relationship between scale and the contribution of organic growth to financial returns.

The area underneath the curve, within the IOS, represents the totality of opportunities to create primary impact.

The position of an asset within the IOS is determined by both the revenue band in which the asset is located and the percentage of the activity of the asset which is exposed to High Impact Themes and Disadvantaged Populations, as measured by the 'percentage impactful' scores on the y-axis in Table 2.

The colored bands running across the IOS in Table 3 correspond to the "percentage impactful" scores on the y-axis in Table 2.

Looking at the colored bands running across Table 3 we can draw inferences about the location of opportunities to create primary impact.

- The key determinant of the quantity of primary impact an asset is likely to create depends on both factors measured by the IOS: the Quantity of Outputs and the Percentage of Outputs which are Impactful. Neither dimension, by itself, is an accurate guide.
- The location of assets capable of creating a meaningful quantity of primary impact is very widely disbursed across the scale spectrum on the x-axis. No one part of the IOS has a monopoly on generating primary impacts with which to achieve the SDGs.
- Maximizing the total primary impact created depends on capturing all the opportunities to create impact within the Impact Opportunity Space. Achieving the SDGs will benefit greatly from capturing opportunities to create impact across the entire spectrum.
- The significant influence of the potential Quantity of Outputs on the quantity of primary impact created means that it is a mistake to focus only on those assets with a high exposure to High Impact Themes. There are many areas of Table 3 in which assets with 'percentage impactful' scores of less than 40% (the light blue band of squares and below) have higher or similar impact quantity ratings to assets with 'percentage impactful' ratings of 40% or more (the burnt orange band of squares and above).

Chart 4 (below) extends the interpretation of the Impact Opportunity Space by overlaying the impact quantity ratings of a variety of asset sub-types onto the IOS and by adding the descriptive headings from Chart 2.

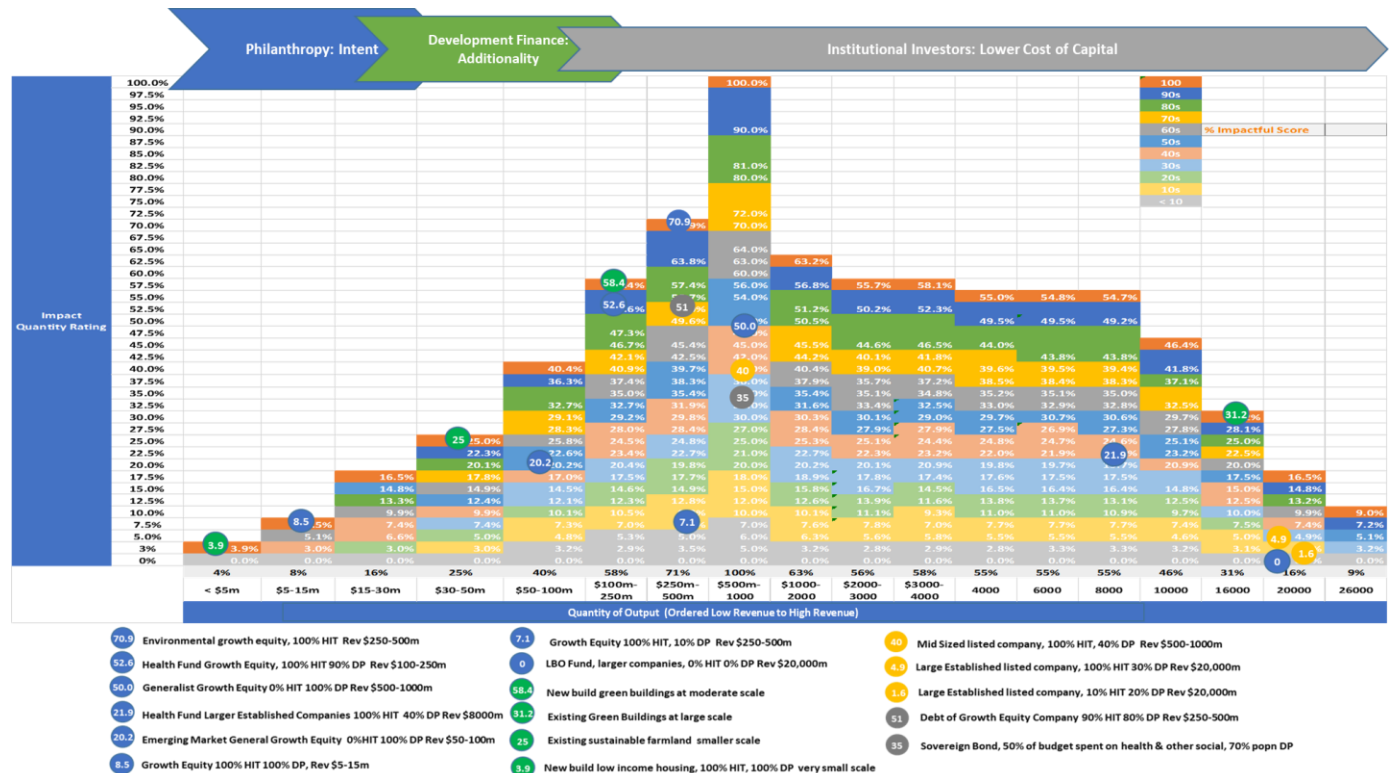
The descriptive headings are indicative of three interpretive points which are not directly discernable from the information in Chart 4. In addition to the two structural factors of (i) scale increasing from left-to-right and (ii) the contribution of organic growth declining from left-to-right, there are reasonable grounds for thinking that, in a less precise way, (iii) exposure to High Impact Themes and Disadvantaged Populations declines from left-to-right, (iv) financial risk declines from left-to-right over the initial few columns of the IOS before normalizing over the remainder of the IOS and (v) financial return increases from left-to-right over the initial few columns of the IOS before normalizing over the remainder of the IOS.

Confirming points (iii), (iv) and (v) will require empirical work to map large numbers of assets into the IOS to identify any patterns. However, experience leads me to believe that all three are likely to be true in a general sense.

Generally, it is easier to concentrate exposure to a single factor in a smaller asset than it is in a larger asset. Achieving larger and larger scale eventually necessitates diffusion of focus, especially in terms of exposure to Disadvantaged Populations.

Generally, smaller assets are the location of first time funds, start-up businesses, new ideas and innovative business models. As assets gain in size, they are generally moving from concepts to working models; from working models to proof of concept; from proof of concept to scalability; and from scalability to established corporatized businesses with both scale and full C-Suite functionality. As an asset moves through this progression, risk declines.

Chart 4 Map of the Impact Opportunity Space



Generally, quite small activities with limited scalability have sub-commercial returns. Potential return increases with scalability. Smaller activities with the potential to scale but lacking proof of concept have the potential to generate commercial returns, but also carry higher risk, so risk-adjusted the expected return may not be commercially attractive. Once activities have grown to the stage where there is proof of concept, returns begin to normalize around commercial levels.

Of the five transitions that occur as we move left-to-right across the IOS, transition (iii), the concentration in High Impact Themes and the Disadvantaged, has the most potential to cause the investable IOS to deviate from the conceptual IOS illustrated in Chart 4.

The IOS mapped in Chart 4 does not reflect the density of investable opportunities.

An empirical exercise to overlay the IOS with a map of the dollar value of investable opportunities in each space would be a very valuable exercise.

Given the expected decline in the concentration of focus on High Impact Themes and Disadvantaged Populations as one moves to the right in Chart 4 it may be the case that, for example, investable opportunities in the light orange through dark orange bands representing “percentage impactful” scores of 40%-100% are quite scarce in larger revenue brackets, causing the investable IOS and the ability to create meaningful quantities of primary impact to be more limited than Chart 4 suggests.

Moving left-to-right across Chart 4 the five transitions, of scale, contribution of organic growth, focus on high impact themes and the disadvantaged, financial risk and financial return, lead to the segmentation of the IOS into zones of preferred activity, which correspond to the mandates of different types of investors.

Philanthropic and mission-driven investors will have a preference for assets which require intent at the asset level. Such assets are in a high impact location and are important for the welfare of the affected community or the environment in a locality, but suffer from lack of scalability, leading to a sub-commercial return and risk profile. There is a concentration of assets with this profile in the initial, low revenue, segments of the IOS.

Development Finance organizations (DFIs) have a preference for assets which currently have a sub-commercial risk/return profile but which benefit the environment or the disadvantaged and which have the potential to achieve both scale and a commercial risk and return profile, in order to attract commercial funding for further scaling. By taking the additional risk, DFIs can meet their requirement for additionality. There is a concentration of assets with this profile in the segments in which the IOS has a steep growth curve, between about \$30-\$500m revenue.

Institutional investors have no constraints of intent or additionality and simply seek to maximize impact within the constraints of risk and return targets. Conceptually, this enables them to invest anywhere across the IOS as long as the asset combines with the portfolio in a way that is consistent with risk and return targets. In practice, institutional investors will find it difficult to invest in many assets in the preferred activity zones of philanthropies and DFIs for reasons of both risk, return and scale.

The three arrows at the top of Chart 4 give a rough indication of where these zones of preferred activity might lie.

The positioning of the blue dots representing types of private equity assets, the yellow dots representing types of public equity and the grey dot ‘51’ representing the debt of a type of growth equity company are all located consistently in relation to each other and consistent with the logic of the IOS. This consistency reflects the fact that the way in which these assets create a quantity of primary outputs is consistent with the logic of the x-axis – the combination of organic growth and scale.

The positioning of (i) the green dots representing different types of new construction, conversion of assets to impactful use and stocks of impactful assets which create no additional impact and (ii) the grey dot ‘35’ representing a sovereign bond, is less intuitive. The logic in rating these assets is explained in “Extension of Section 7”. The lack of an intuitive logic to their location in Chart 4 reflects the fact that the way in which these assets create a quantity of primary outputs is not fully aligned with the logic of the x-axis and more work is needed to calibrate them with the General Theory/IOS framework.

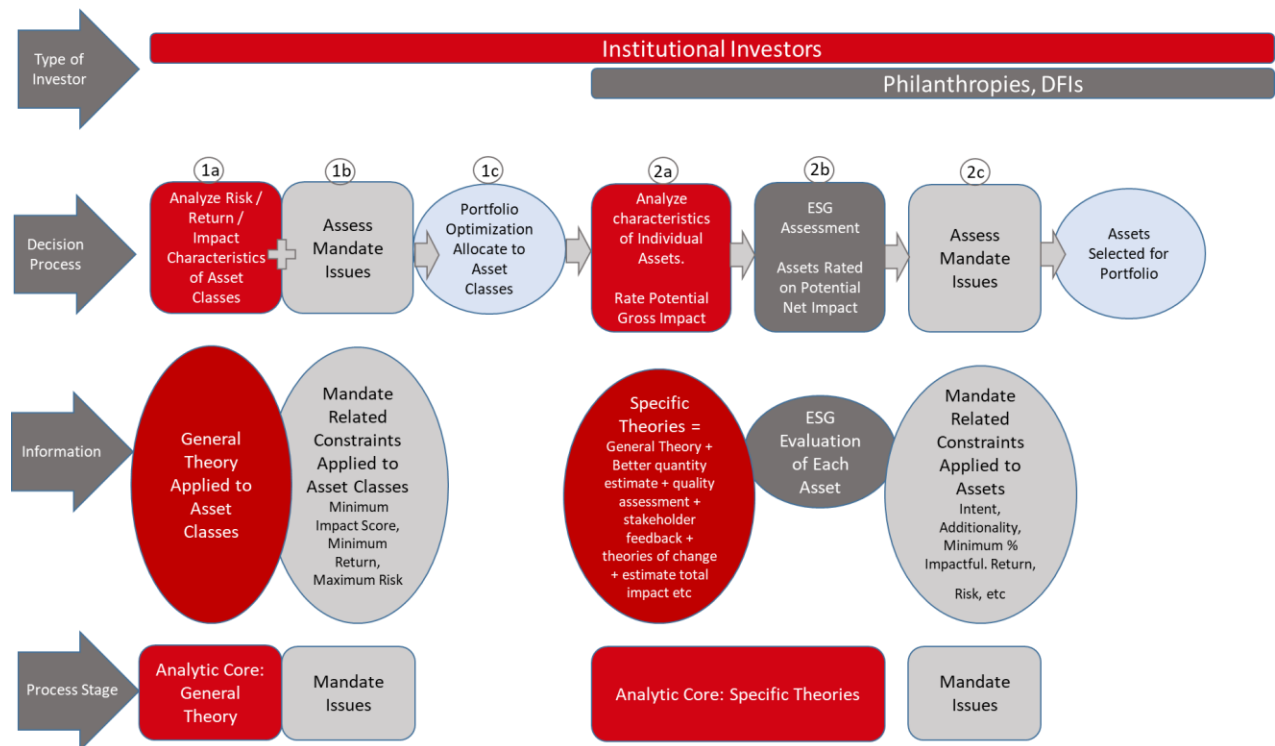
Step 4 Insights from the Impact Opportunity Space

Identifying the zones of preferred activity within the IOS which are consistent with the mandates of different types of investors helps us to understand the problems which occur when impact rating systems hardwire mandate factors into their ratings or definitions of impact.

Mandate factors are restrictions which assist investors to invest in a way which is consistent with their mandates, but which do not help to predict the attributes of an asset such as the quantity of impactful primary outputs, potential return or likely risk. For example, intent, additionality and requirements for a minimum “impactfulness” score, minimum target return and maximum risk level are all mandate factors.

Chart 5 (corresponds to Chart 23 page 63 in “Pricing Impact”) illustrates the process through which investors go to create a mission-compliant portfolio. Assessing the characteristics of classes of assets and of individual assets is quite separate from the application of mandate requirements.

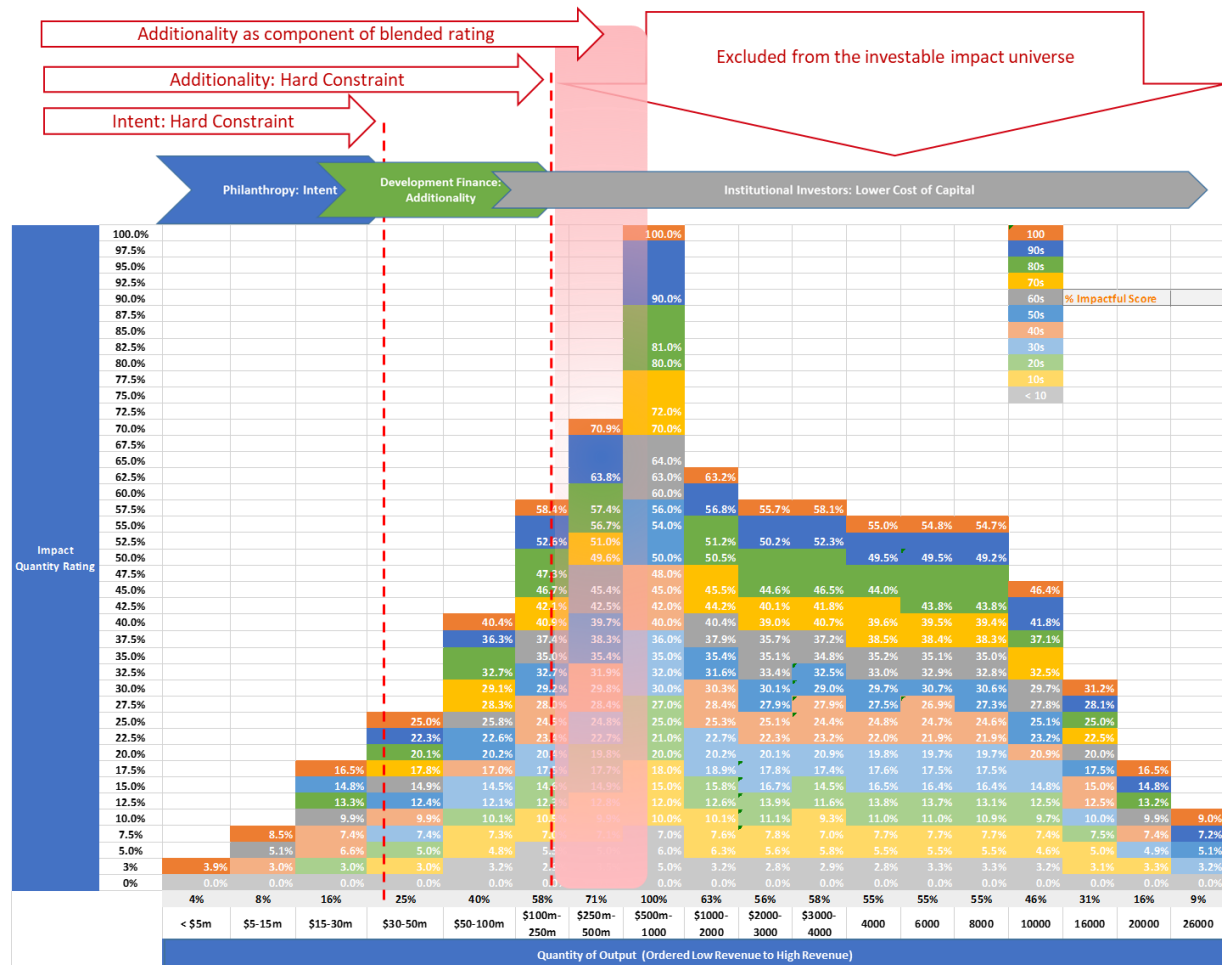
Chart 5 Constructing a Mission-Compliant Portfolio



When mandate requirements are blended into the assessment of the characteristics of assets, they become a binding constraint for all investors, regardless of whether or not they are relevant to the mandates of all investors.

The effect of blending mandate requirements into the impact ratings or assessment of assets is illustrated in Chart 6. Blending mandate requirements into impact ratings has the effect of excluding some part of the Impact Opportunity Space from consideration by investors. As maximizing total impact requires that all opportunities to create impactful outputs are captured – that we capture the total space under the IOS curve – eliminating parts of the space from consideration creates a barrier to maximizing total impact.

Chart 6 The Effect of Blending Mandate Factors into the Impact Ratings of Assets



Areas for Further Development

- *Finer delineation of the Impact Opportunity Space.* Limiting Chart 4 to eighteen revenue categories causes the IOS to have an angular profile with a sudden peak and decline rather than the contoured profile which is more likely.
- *Deeper and broader data to improve knowledge of the shape and size of the IOS.* The data on which Chart 3 is based comes from a smallish sample of around 500 companies and is limited to companies with mostly less than \$1 billion in revenue (refer to the note “Extension of Section 7” for more detail). A deeper and broader data set is required to obtain a better picture of the shape and size of the Impact Opportunity Space.
- *Overlaying the density of investible opportunities onto the IOS.* Some parts of the IOS may contain few investible opportunities, some many. Overlaying the conceptual IOS with empirical estimates of the value of investible opportunities in each space would enable both a better understanding of the ‘actionable IOS’ and help investors to identify where to find opportunities to improve the impact profile of their portfolios.
- *Fitting stocks of impactful assets into the framework.* The focus of the General Theory is the creation of additional primary impact as it is additional quantities of impact that are required to meet the SDGs. Existing stocks of impactful assets, for example a static portfolio of existing solar farms, do not create additional primary impact and yet are worth supporting in an impact investing strategy. More work is required to integrate existing stocks of impactful assets into the General Theory and the IOS.
- *Fitting new-build and conversion-to-impactful-use strategies into the framework.* In an accounting sense the return on project-type activities such as construction of new green buildings or conversion of farmland to sustainable use is driven not by organic growth but by the value of the newly constructed/converted asset. More work is required to integrate assets with this return profile into the General Theory and IOS.