EDAHN GOLAN
Diamond Research & Data

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Diamond Manufacturing Gross Margins

November 2015

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Commissioned by International Diamond Manufacturers Association (IDMA)

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Executive Summary

Purpose of Study

The goal of this study was to determine the level of margins in the diamond industry and the manufacturing centers in a range of popular rough diamond assortments. These goods mostly result in +1 carat, G-J color, VVS-SI clarity polished rounds. The report goes beyond these 4Cs to also include two instances of smaller goods, one instance of lower color I-M goods, and one of I clarity goods.

In terms of geography, the sample data represent diverse locales and the different cost of manufacturing associated with labor and other costs associated with particular locations. The data relates to January-July 2015.

Principal Findings

As suspected, the rough diamond assortments checked for this report have either proven to be borderline economical, on a gross margin basis, or uneconomical. Because many of the polished diamonds manufactured from the tested goods are later certified, especially those weighing one carat or more, we also examined the gross margin profitability after adding the cost of GIA certification. Under those circumstances, all of the tested polished diamonds were rated as uneconomical with one exception – the Commercial 2.5-4 carat box.

Before applying the cost of a grading report, the gross margin ranged from under 1% (Colored fine 2.5-4 cts) to 4% (Commercial 2.5-4 cts). In dollar terms, this ranged from $30 p/c to $176 p/c.

After applying the cost of certification, $105 per stone for 1.00-1.49 carats and $64 for 0.47-0.69 carats, the gross margin declined to range from as low as -8.5% to just 1.6%. In dollar terms, the gross margin ranged from a $491 p/c loss to $71 p/c gross profit.

If other considerations are added to the calculation, such as the cost of finance, depreciations on hardware and software, related administrative costs or travel, than all goods appear to result in a loss.

This analysis also took into account the geographic location of polishing and found some surprising results. India, a manufacturing location considered to be low cost due to lower labor costs, actually seems to be a rather expensive location. This was confirmed in an interview with a large Indian manufacturer with offices in Mumbai and Antwerp.

Lower abilities to maximize output from technology, inefficient production processes coupled with higher overall cost per polished carat among second-tier manufacturers, appear to result in lower margins.

Market Overview

The global diamond market is suffering from a long-lasting downturn. A slowdown in the Chinese consumer market, a lack of development in the Indian market, but most of all, a shift in interest by the American consumer created the first wave of problems. While both China and India represent growing markets, the US is the steady market, where dramatic changes rarely happen.

US Market Figures Untangled

While in the past a sharp decline in diamond jewelry consumption in the US went hand-in-hand with an economic decline, the current decline appears initially unconnected in this case, giving rise to the understanding that the current weakening in demand from retailers in the US market indicates a deterioration in consumer interest.

This may seem to stand in contrast to official US government figures that are reporting a growing expenditure on fine jewelry. However, the two are not entirely mutually exclusive. According to the latest US figures, fine jewelry sales increased from $65.2 billion in 2013 to $66.0 billion in 2014, a 1.2% rise. Fine jewelry sales in the US are currently forecasted to total $66.7 billion in 2015, or about a 1% increase in sales.

The figures for fine jewelry sales include sales of gold jewelry, jewelry set with semi-precious gems and other items that are well branded or higher priced. Within this category, it is very likely that diamond jewelry's share is declining, even though total sales of this category is rising. This would explain the decline in diamond jewelry sales while officially figures report a rise in fine jewelry sales.

Reasons for Decline

Conventional wisdom pins the decline in interest in diamond jewelry in the US on a lack of marketing. There is no doubt that this is a large contributing factor. According to American retailers, another issue was high polished diamond prices. Several retailers noted that since 2011 prices are too high, and consumers are exhibiting a preference for other jewelry items.

In the past year, there are growing indications that a social and cultural shift is another contributing factor in the US. A more casual dress code, for example, lends women to opt for more casual jewelry. In addition, the recent campaign by lab-made companies that emphasizes that their goods are more "ethical" may also harm interest in natural diamonds.

These factors combined with several others have led to a decline in consumer demand. Another primary research we conducted over the past two years found that many independent US specialty jewelers are managing their inventories in a less than optimal manner. We found that orders are not in sync with sales, indicating that orders are at times habit-based rather than based on shortages in needed goods. Further, in many

stores we see that some loose diamonds have lingered in the safe for years, tying up capital that would otherwise be used either for replenishing inventories or even marketing.

The collective result of these occurrences in the US retail market, from lack of category marketing to poor inventory balancing, has created a glut of goods among many retailers and a rise in inventory levels that has led to a decline in orders.

In China, the second largest diamond jewelry retail market, the rise in demand for diamond jewelry coincided with the growth in personal income, the creation of wealth and a growing middle class. Traditionally focused on gold and jade, Chinese consumers added diamond wedding rings to their common purchases.

Following the weakening of the Chinese economy in the past year and a firmer approach on corruption, personal expenditures on luxury items, including diamond jewelry, has diminished, further exasperating the crisis in the diamond industry.

Reverberation up the Pipeline

This decline in demand by retailers has naturally resulted in a decline in polished wholesale prices (PWP). In what could be described as a bullwhip effect, the inventory buildup moved up the pipeline and now includes polished diamond wholesalers, manufacturers and miners, and in the process has flushed out structural problems in the pipeline.

One such problem is the heavy leverage of many diamond companies in the mid-stream. As long as everything moves along and the tide is rising, leveraged companies can do well. If used wisely, the borrowed funds allow for development and expansion. However, when the economy ebbs, then it becomes a burden. The need to meet payments at any cost can result in distress sales, delayed payments to others and even insolvencies – all experienced in the diamond pipeline's mid-sector in recent months.

One could argue that heavily leveraged companies are allowing themselves to operate with very narrow margins to ensure a constant cash flow. Unfortunately, when this happens on a wide scale, it may drag down the entire market's wholesale prices, a practice and an outcome we have seen in the market.

Another aspect of being highly leveraged is rising competition for rough diamond supplies, also to detrimental results. This availability of borrowed funds drives up the cost of rough diamonds, both when sold by miners and when sold in the secondary market for exuberant premiums.

Combined – pushing down PWP and encouraging rising rough diamond prices – results in even slimmer margins.

One of the causes of competing for rough at rising costs was a certain understanding that refusing the goods from De Beers may have ramifications. Without dwelling on this reason, in the past several months, Sightholders have changed their tune, and are now far more willing to refuse and defer goods that don't meet their cost criteria.

Miners, especially since March of this year, have reduced prices of rough diamonds in response to continued pressure from Sightholders. However, these price reductions were too little and came too late. The response on the part of the miners lagged by many months behind the retail sector. When it did respond, it did so mainly because it was forced to do so by the market, pushing the mid-stream into a perilous position. Not only was the timing late, the depth of reductions did not meet the decline in PWP.

The reduced margins manufacturers experienced is an outcome of miners' slow and limited response. The slim gross profit margins that existed in 2014 were under even stronger pressure in the first half of 2015, as polished prices continued to decline. Hand-in-hand with the decline in PWP, overall demand for polished has fallen as well.

A Small Glimmer of Hope

Rough production, polished sales and retail activities for 2015 are not yet available; however, some indications already are. Rough diamond supply to the market is likely to decline by more than a third by volume as De Beers reduces production and sales, as ALROSA reduces sales while maintaining production and as the rest of the large and mid-size miners reduce sales and production.

The reduction in rough diamond prices has a positive impact on margins. Perhaps more importantly, the reduction in volume will allow manufacturers to reduce inventory and free up capital for future rough diamond purchases.

Fine jewelry retail sales in the US – including diamond jewelry, but not limited to it – is expected to grow by about 1% and reach $66.7 billion. Specialty jewelers, however, currently appear to have suffered a reduction in sales in 2015. In the first eight months of the year, their sales fell by 1.7% compared to 2014. Projected to the rest of the year, American specialty jewelers are set to generate $30 billion in sales this year, same as in 2014. The last time that their sales did not grow year-over-year was in 2009 and 2008.

In addition, De Beers announced plans to invest in generic marketing this holiday season, Rio Tinto is investing in marketing in India, Signet intends to increase advertising spend and Blue Nile stated it is considering to up its spend on marketing in the fourth quarter. Furthermore, the large producers are getting organized to promote diamonds jointly, although at this point, it looks like they will miss this season.

The near-term outlook remains challenging, however, collectively – the above signals a certain change that may result in a better than expected holiday season, and an improvement in 2016.

About this Research

Methodology

Data: Data were collected from Sightholders and non-Sightholders. Additional data were collected to backup rough diamond prices and manufactured goods output.

Gross Margin Calculation: Gross margin was calculated separately for each data entry line, with a data entry line defined as a single box per company. A flat 1.25% was added to the cost of all boxes to include cost of goods delivered with an average VAS and broker fee, insurance and freight. These costs were added across the board under the assumption that half of Sightholders pay VAS and brokers' fees and, as such, these should be considered as a standard part of cost.

There are probably different methodologies used by diamond manufacturers to calculate gross margins. For this analysis, the following formula was used to calculate cost and then gross margin: $\frac{R+M+V+B}{Y} = CM,$ The cost of rough p/c (R), plus the cost of manufacturing p/c (*M*), VAS (V) and Broker fee (B), divided by yield (*Y*) provided the cost of manufacturing (*CM*) p/c. The gross margin was calculated by subtracting cost of manufacturing from the achieved p/c price (*P*) of the resulting polished as reported by manufacturers: *P-CM=$GM*, and then converting this to percent gross margin (*%GM*). The entire calculation is:

$$\left(\left(P - \left(\frac{R + M + V + B}{Y}\right)\right) \div P\right) - 1 = \%GM$$

The data were compared on a per box basis and then averaged to create a single outcome cost per box. Another reason for averaging was to conceal specific company data.

The common output of the analyzed rough diamond assortments are one-carat polished diamonds and pointers weighing 0.58 carats and larger. Then, on top of the gross margin calculation, the cost of GIA certification was added.

Manufacturing Costs: includes direct manufacturing costs only, without adding indirect costs such as financing.

Cost of Certification: The common output of the analyzed rough diamond assortments are one-carat polished diamonds and pointers weighing 0.58 carats and larger. Then, on top of the gross margin calculation, the cost of GIA certification was added.

GIA costs were chosen because, in many ways, the diamond industry views GIA as a standard, although we recognize that other gemological laboratories are widely used and their costs may vary from GIA's.

De Beers' Boxes: De Beers' boxes were used because their assortments are recognized to be stable, an important qualification for long-term price comparison.

Qualifications

As feared at the outset, the response of the Sightholder community to disclosing its costs can be characterized as lukewarm. Many companies declined to participate, several agreed yet never submitted the filled collection form, and some stated that they stopped manufacture of many of the boxes because they are no longer profitable, preferring to buy polished goods on the market.

This resulted in less comparable data than originally intended. This is also why additional data was sourced from manufacturers that are not Sightholders.

Prices of rough diamonds were reduced at Sight 7 this year. Because of the large reduction, the cut-off point for this research was Sight 6. Without testing manufacturing with the reduced cost of rough, in this research, we are unable to assess the economic viability of manufacturing the tested boxes in the second half of the year.

Findings

Fine 2.5-4 carat

The Fine 2.5-4 carat box mainly generates 1.00-1.20 carat rounds, I-J color in VS qualities and better. Our sample data leaned closer to 1.10 carats, H-I colors and VS/VVS clarities. The cost of the box averaged $2,407 in the tested period.

Cost of manufacturing for this box varied widely, with costs in India being the highest. Costs by our sample ranged from $110 p/c to $146 p/c, averaging $128 p/c. Output averaged 1.09 cts and yield 46%. The variations in output were wide in average carat terms, especially considering that yield is the same. One possible explanation is changes in box compositions (assortments) coupled with different quantities purchased by our data suppliers.

The average cost, including rough, manufacturing, VAS and brokers' fees was $5,577 p/c. The average sell-through price was $5,256 p/c, a *5.8% loss*. The best performer, it must be noted, reported a 3.8% gross margin profit. With the additional cost of certifying the diamonds, $105 at GIA, the average cost of polished diamonds' output from the Fine 2.5-4 carat box was $5,682 p/c, bringing the average gross margin to -7.5%. For our star performer, the average stood at just 1.8%, a slim margin by all account.

Box	Fine 2.5-4 cts
Cost (2015 Sight 1-6 avg)	$2,407
VAS + Broker	1.25%
P/C Cost of manufacturing	$128
Polished output (cts)	1.20
% Yield	46%
Output shape	Round
Output color	H+
Output clarity	VVS/VS
Polished sell price p/c (2015 avg)	$5,256
Avg. cost price	$2,565.29
P/C Cost of polished	$5,577
GIA Cert.	$105
Cost w/GIA	$5,682
P/C $ Margin	($321)
P/C % Margin	**(5.8%)**
P/C Margin w/GIA $	($426)
P/C Margin w/GIA %	**(7.5%)**

Fine Z 4-8 grainer

The Fine Z 4-8 gr was a marginal profitable box, based on the supplied data. It generates mainly 0.3-0.79 carat, averaging 0.60 carats, round goods, many in G color, in VS-VVS clarities.

We received conflicting reports on the color of the resulting polished. One stated G-J, another G and better. From the reported achieved price, it would seem that a large percentage of the manufactured goods were G or one color up or down. Manufacturing took place mainly in China and India.

Another disparity was in the typical manufacturing costs. In China, manufacturing costs proved to be lower than in India. The difference in cost, more than 13%, is a recurring theme and raises questions about the reputation India has as the low cost center.

The average cost of the box in Sights 1-6 2015 was $1,051 p/c. The average cost of manufacturing was $64 p/c, which together with 1.25% VAS and brokers' fees brought the cost to $1,127.83. At a yield of 48%, total cost of the polished output was $2,355 p/c.

On average, the manufactured polished sold for $2,420 p/c, resulting in a 2.8% margin. Adding the $64 cost of certification, the margin drops to a breakeven 0.0%.

Box	Fine Z 4-8gr
Cost (2015 Sight 1-6 avg)	$1,051
VAS + Broker	1.25%
P/C Cost of manufacturing	$64
Polished output (cts)	0.60
% Yield	48%
Output shape	Round
Output color	G+
Output clarity	VVS/VS
Polished sell price p/c (2015 avg)	$2,420
Avg. cost price	$1,127.83
P/C Cost of polished	$2,355
GIA Cert.	$64
Cost w/GIA	$2,419
P/C $ Margin	$65
P/C % Margin	**2.8%**
P/C Margin w/GIA $	$1
P/C Margin w/GIA %	**0.0%**

Commercial 2.5-4 carat

The goods manufactured from the Commercial 2-4 carat box are typically rounds, 1-1.49 carats, mostly in G-J color range in qualities of VS-SI.

Once again, we saw a wide range of manufacturing costs, with India being the most costly alternative. The range in manufacturing costs, at least 35% with India being the higher priced center, is surprising.

The average cost of this box was $1,778 p/c. We used an average of $89 p/c as the cost of manufacturing and an average yield of 45%. The average cost of polished, including VAS, brokers' fees, cost of manufacturing and rough was $1,888.72. At a yield of 45%, the average cost per carat came to $4,230.

Sold at an average price of $4,456 p/c, this proved to be a profitable box, with the best margins of all the boxes we tested: 5.3%. The caveat came with the lab certification. With the added cost of certification, the margin fell to 2.8%.

Box	Commercial 2.5-4 cts
Cost (2015 Sight 1-6 avg)	$1,778
VAS + Broker	1.25%
P/C Cost of manufacturing	$89
Polished output (cts)	1.00
% Yield	45%
Output shape	Round
Output color	G-J
Output clarity	VS-SI
Polished sell price p/c (2015 avg)	$4,456
Avg. cost price	$1,888.72
P/C Cost of polished	$4,230
GIA Cert.	$105
Cost w/GIA	$4,335
P/C $ Margin	$226
P/C % Margin	**5.3%**
P/C Margin w/GIA $	$121
P/C Margin w/GIA %	**2.8%**

Spotted Z 2.5-4 carat

The Spotted Z 2.5-4 carat box yields goods from 0.50 to 1.20 carat, about a quarter is larger than one carat. Our survey found that a large portion of the box came out 1.00 carat and larger. Their color range is G-H and clarities are mainly first pique and lower, although according to the data submitted to us, SI1 can be manufactured from this box.

The cost of this box averaged $1,065 p/c during the first six Sights of 2015, mostly declining during this period. The cost of manufacturing this box was one of the lowest we saw in this survey, $50 p/c. The yield, however, was one of the lowest, averaging 42%.

The cost of resulting polished was $2,686 p/c. The average wholesale prices per carat achieved for this output was $2,749, resulting in a very thin 2.3% gross margin.

Acting under the assumption that, at the very least, the SI1 and SI2 goods are certified, they are likely to sell at a loss, while the pique goods may prove to have a positive gross margin, although a low one.

Box	Spotted Z 2.5-4 cts
Cost (2015 Sight 1-6 avg)	$1,065
VAS + Broker	1.25%
P/C Cost of manufacturing	$50
Polished output (cts)	1.00
% Yield	42%
Output shape	Round
Output color	GH
Output clarity	PI1/SI1
Polished sell price p/c (2015 avg)	$2,749
Avg. cost price	$1,128.31
P/C Cost of polished	$2,686
GIA Cert.	$105
Cost w/GIA	$2,791
P/C $ Margin	$63
P/C % Margin	**2.3%**
P/C Margin w/GIA $	($42)
P/C Margin w/GIA %	**(1.5%)**

Spotted Z 4-8 grainer

The spotted Z 4-8 gr yields pointers in a range resulting mostly in 0.3-0.79 carats. Our survey participants reported an average output of 0.58 carats at a yield of 48%, producing G-J color rounds in VS-SI clarities.

The spotted Z 4-8 grainer, with an average rough cost of $848 p/c, proved to be a relatively profitable box in the tested period.

The cost of polished goods from this box was an average $1,847 p/c and the average price $1,935 p/c, a 4.8% gross margin, making it the second best performing box in the survey. However, after applying the cost of GIA grading, our manufacturers' gross margin was a low 1.3%.

Box	Spotted Z 4-8 gr
Cost (2015 Sight 1-6 avg)	$828
VAS + Broker	1.25%
P/C Cost of manufacturing	$45
Polished output (cts)	0.58
% Yield	48%
Output shape	Round
Output color	G-J
Output clarity	VS-SI
Polished sell price p/c (2015 avg)	$1,935
Avg. cost price	$882.90
P/C Cost of polished	$1,847
GIA Cert.	$64
Cost w/GIA	$1,911
P/C $ Margin	$88
P/C % Margin	**4.8%**
P/C Margin w/GIA $	$24
P/C Margin w/GIA %	**1.3%**

Colored Fine 2.5-4 carat

Another marginal box is the Colored Fine 2.5-4 carat box that results in round shape, I-M color, VS-VVS polished in sizes ranging from 0.50-2 carats. Without a breakdown of goods in this box, we assumed a standard average polished output size of 1.20 carats.

The price of this box was often reduced during the period, with one major hike in March. However, these price reductions did not bring the output of the goods to any real profitability.

Rough costing an average of $1,798 p/c in the January-June period, the cost of manufacturing averaged $110 p/c and the yield 48%. The total average cost of manufacturing stood at $1,931, and the average cost of manufactured polished $4,048 p/c. The average reported price from selling the resulting goods was $4,130 p/c, an $82 margin, or 2%. Coupled with the additional cost of grading, the average margin fell to -0.6%, once again, a loss.

Box	Colored fine 2.5-4 cts
Cost (2015 Sight 1-6 avg)	$1,798
VAS + Broker	1.25%
P/C Cost of manufacturing	$110
Polished output (cts)	1.20
% Yield	48%
Output shape	Round
Output color	I-M
Output clarity	VS+
Polished sell price p/c (2015 avg)	$4,130
Avg. cost price	$1,930.91
P/C Cost of polished	$4,048
GIA Cert.	$105
Cost w/GIA	$4,153
P/C $ Margin	$82
P/C % Margin	**2.0%**
P/C Margin w/GIA $	($23)
P/C Margin w/GIA %	**(0.6%)**

Background & Additional Findings

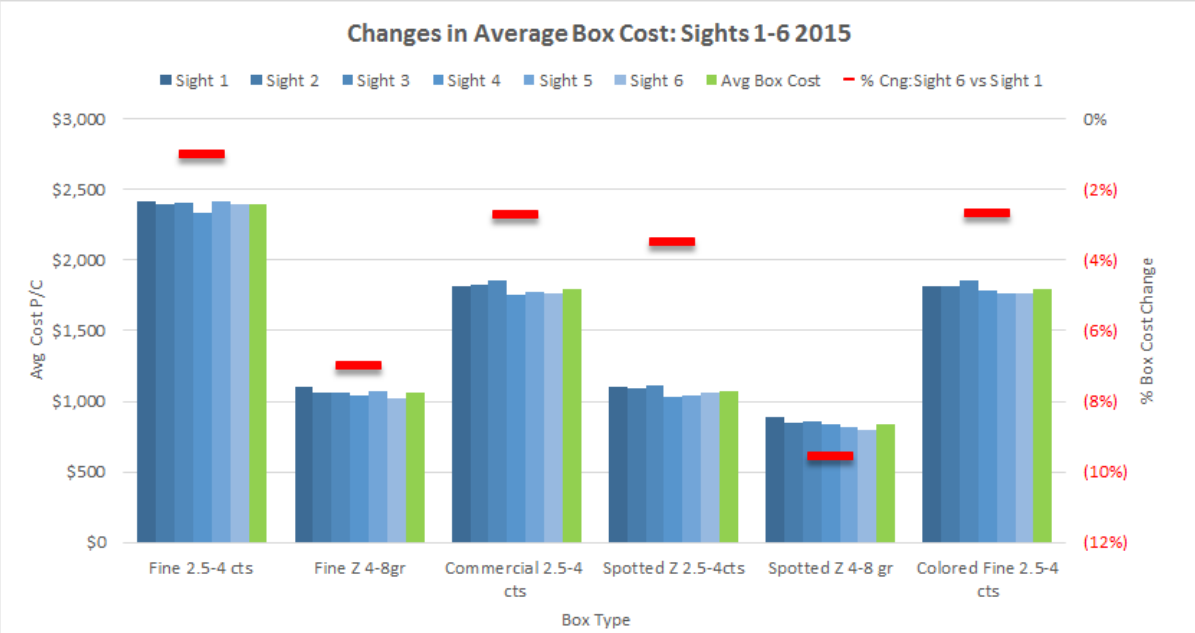
Rough Prices

In the years that followed De Beers relinquishing the custodian role, especially after it sold its very large inventory reportedly used to balance prices, prices of rough diamonds lost their stability. Today, the prices that fluctuate the most in the diamond pipeline are rough diamonds. Typically, the closer we get to retail, the less prices fluctuate, and the greater the stability.

The lack of stability in rough prices is a burden mostly for manufacturers. This group of diamond businesses have little to no control over the price of raw materials and lack the flexibility found in some other industries in which manufacturers can shop for other suppliers with the aim of reducing the cost of raw materials through competition between suppliers.

The following graph may indicate that prices are rather stable, with a downward trend – a dream come true for any manufacturer in any industry. However, prices in the first half of 2015 already reflected a deep crisis in the diamond economic sphere. As we know from previous years, prices, especially in the secondary market, tend to rise at times sharply, and rarely decline.

The graph shows that the cost of several goods were hiked by De Beers in March, which may have contributed to the mass refusal of some 50% at that Sight. It must be noted that any changes in the assortments, as much as they existed, were not taken into account in the above comparison. Some would argue that the refusals were made to a good degree as a protest.



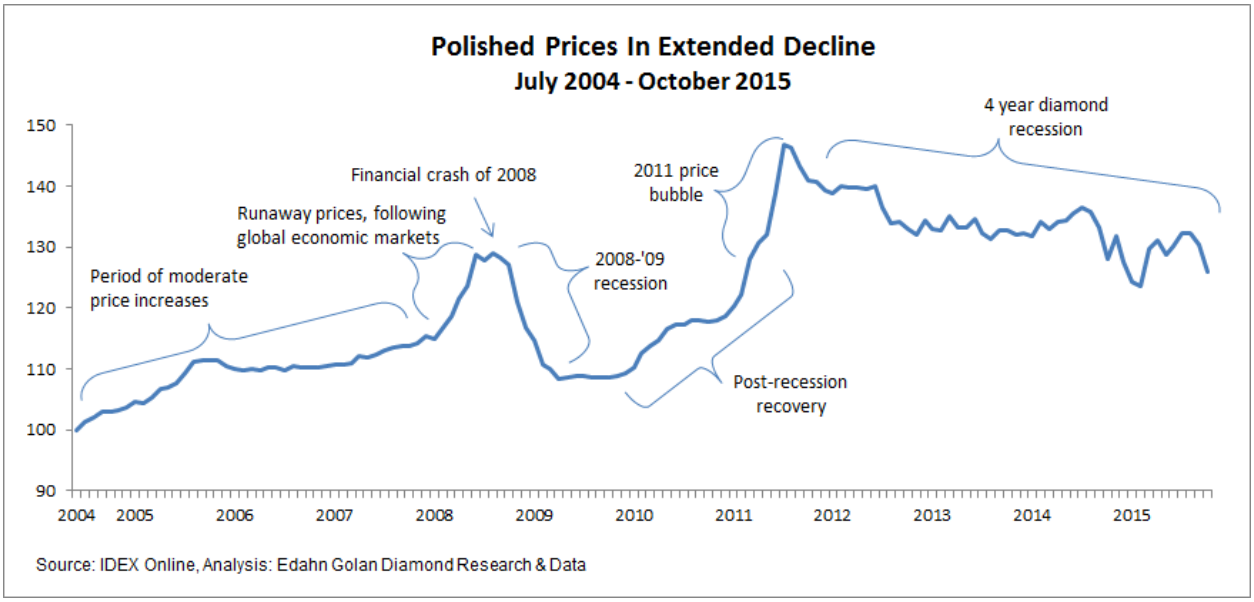
Source: Market, Edahn Golan analysis

The red lines in the above graph show the change in percent of price in Sight 6 compared to Sight 1, before the large price reduction at Sight 7. The Fine 2.5-4 carat box largely maintained its price, even though manufacturers' gross margins were only 2.5%. The Commercial 2.5-4 carat, found to be the most profitable box of those analyzed, benefited from a 2.7% price reduction.

The Spotted Z 4-8 gr, reduced by 9.5%, was another profitable box (3.6% before GIA grading). It seems that in some areas, De Beers' box prices were adjusted in accordance with market needs, while with some, it failed to catch up with declining polished prices (such as the case with the Fine Z 4-8 grainers, price was reduced by more than 7%, yet the manufactured polished remained marginally profitable).

Polished

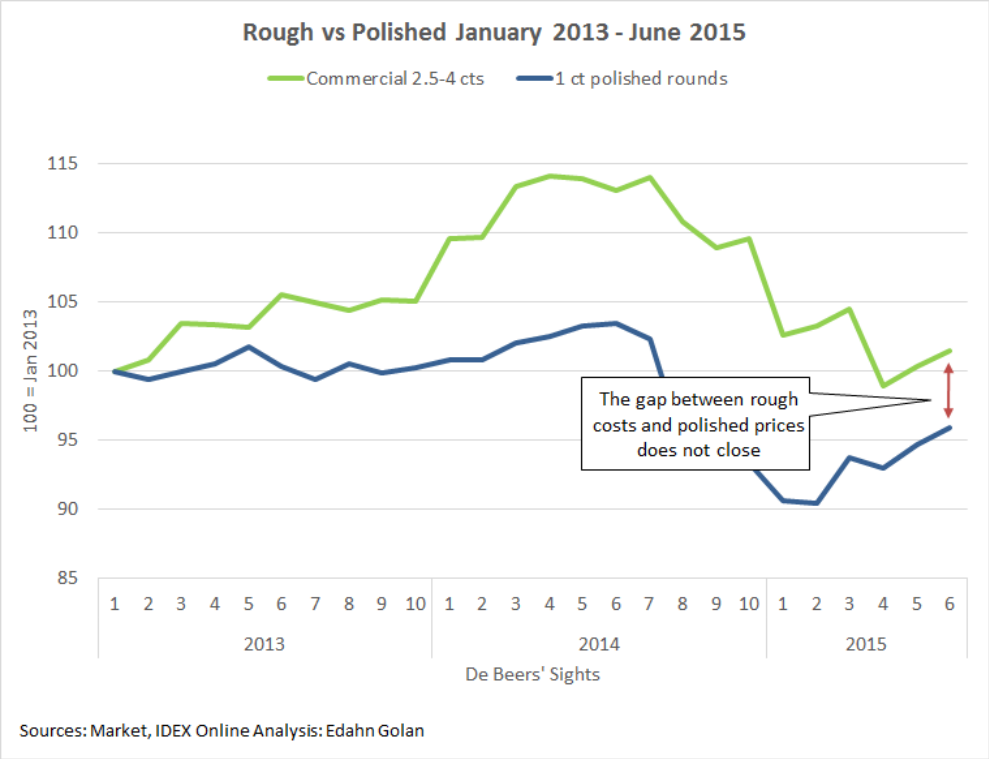
Overall, polished diamond prices have been exhibiting a declining price trend for more than four years. The downward movement started after the runaway price bubble burst in July 2011. For a while, the decline in price made sense as a correction. However, prices did not decline quickly to their previous trend, and are only now returning to the pre-runaway prices of March 2011.



The slow decline of polished prices may have been too slow, and in turn hurt consumer interest in diamond jewelry, resulting in the perception that diamonds were too pricy during this period. If true, this may at least partially explain the decline in consumer demand in the US.

Setting aside the question of why consumer demand is eroding, on a practical nuts and bolts basis, the four-year recession in polished diamond prices was not matched with a similar decline in rough diamond prices.

As the following graph shows, while the price manufacturers achieved for 1-carat polished round diamonds declined over the past two years, their costs in rough diamond purchases were out of tune, increasingly so in the past year. The graph compares the price of Fine 2.5-4 carat and Commercial 2.5-4 carat boxes to 1-carat rounds during a two-and-a-half-year period, from Sight 1, 2013 to Sight 6, 2015. It clearly demonstrates the growing gap between costs and return.



In this context, it is worth mentioning price lists. There is an ongoing debate in the diamond industry about the validity, impact and even usefulness of the existing price lists, which are based on asking prices in some way. Recently, there are growing efforts by several bodies to create price lists based on transaction prices. Such a list, likely presenting averages rather than high benchmark prices would, if adopted, provide more accurate pricing information to all in the pipeline. The impact of such data may influence rough diamond prices and mitigate to some degree the large discrepancies between rough and polished prices.

Another impending issue is lab-made diamonds. They are a growing reality and currently appear to be set to grab market share from natural diamonds. With their cost of production expected to decline while the quality of the output improves, their

attractiveness in the eyes of price-conscious consumers will only grow. This poses both a threat and an opportunity for the diamond industry.

Cost of Manufacturing – India

It is the common perception that one of India's main advantages as a manufacturing center is its lower cost of manufacturing. However, our analysis found that in all three instances where we compared p/c cost of manufacturing between India and other centers, polishing in India was clearly costlier.

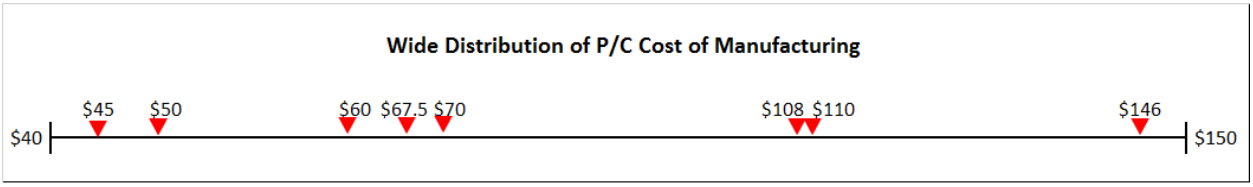
In this comparison, two different manufacturers in India were compared to manufacturers in China and Belgium. The Fine 2.5-4 carat box, which one of the manufacturers polishes in Belgium, is the biggest surprise. Without a breakdown of the specific elements that make up the costs, it is impossible to know why precisely the differences are there – and more importantly, why they are so large.

India - the high cost manufacturing alternative?

Box	% diff
Fine Z 4-8gr	13%
Fine 2.5-4 cts	33%
Commercial 2.5-4 cts	54%

Source: Edahn Golan analysis

To double check the figures, an Indian Sightholder with manufacturing in India and elsewhere, who asked not to provide data to this research, shared insight into manufacturing costs, stating that India today is a high cost center and not always the most economical choice. It is possible that manufacturers in India have additional hidden expenses not found elsewhere.



Source: Market, Edahn Golan research

Unfortunately, our sample size was not large enough to create a wider side-by-side comparison between manufacturing centers. Such a comparison would have the potential of mapping manufacturing centers by goods and costs.

The Impact of Certification

Sans the cost of grading the goods, on an average basis, all boxes resulted in a positive gross margin, even if of our data suppliers revealed some losses on an individual basis.

However, the addition of the cost of grading the polished goods brought three of the six tested boxes into the red.

Of course, this is not the fault of the labs. The fault is in the narrow margins that do not leave room for an extra $105 or $64 (at GIA) in costs. This is another issue that may need to be addressed when considering the cost of rough: just as the extra outlay for VAS and brokers' fees are taken into account, so should the cost of certification and grading.

Manufacturing Margins in Other Industries

Are 2%-5% margins high or low? We treat them here (and in the industry) as low. However, it is worth comparing gross margins in the diamond industry to other industries to see how, if at all, different margins are.

According to a 2013 Ernst & Young report on consumer product companies (*Margin Unlocked*), the average gross margin was 19.1% for the top 50 companies in 2012, and it averaged 18.7% in the preceding decade. Based on an analysis by Butler Consultants from 2009, wood manufacturers had a gross margin of 29.1%, equipment manufacturers 32%, clothing manufacturers 38.4%, food manufacturers 37.4% and beverage manufacturers as much as 57.1%.

Clearly, diamond manufacturers are not seeing these kinds of margins, nothing close to it. Diamond industry margins are by all accounts low by comparison, especially considering the high financing and inventory costs they incur and the limited differentiation, as well as the highly fragmented and competitive environment they are working in.

Car dealers, by the way, had a gross margin of 14.4%, according to Butler Consultants. It is interesting to note that car dealers' relatively lower gross margin was explained by large fixed costs, a large inventory and competition from other dealers.

Conclusion

We collected data on the price of six De Beers' rough diamond assortments (boxes), their cost of manufacturing and the realized price of the resulting polished diamonds.

The basis of the calculation was cost of rough, plus purchasing related costs, plus cost of manufacturing divided by yield. Because of the prevalence and importance of grading diamonds, the cost of grading was added to the calculation results.

All tested boxes, regardless of output, manufacturer or manufacturing location provided narrow gross margins of 2%-5%. As the type of polished manufactured from these goods are manly 0.50-1 carat in better clarities, they practically must be graded. With the added costs associated with grading, most of the goods become uneconomical, resulting in losses of 0.6%-7.5%.

A range in manufacturing costs is expected and normal; however, a difference of at least 13% with India being the higher priced center is surprising. Because we see this repeat itself in different goods and manufacturers, we can't help but conclude that this is more than just a random or limited occurrence. Considering the research findings and conducted interviews, it is reasonable to conclude that contrary to popular perception, with at least some goods, other manufacturing centers may provide better value to manufacturers.

Compared to the low- to mid-range double digit margins manufacturers in other industries are seeing, diamond manufacturers are suffering from very narrow margins hurting their ability to perform profitably.

In light of the above, issues such as the sustainability of the manufacturing sector of the diamond pipeline under the current financial structure should be reconsidered and addressed. The current low level of profitability is harmful if not detrimental in the long-term, affecting ability to invest in R&D or marketing, let alone serious corporate social responsibility projects that consumers and NGOs are constantly calling for.

The current stalemate should be dismantled while taking into account its intricacies.

Glossary of terms

Box – A colloquial term used to describe a defined assortment of De Beers' rough.

Gross margin – The percent of total sales revenue after incurring the direct costs associated with producing the goods sold – simply stated, net sales less the cost of goods sold. A company's gross margin is put towards paying off selling, general and administrative expenses, interest expenses and then paying shareholders.

P/C – per carat.

PWP – Polished Wholesale Prices.

Specialty jewelers – jewelry retailers whose main business is selling jewelry. This is as opposed to multi-item retailers in which jewelry is just one of many other items they offer. Other common offerings by specialty jewelers may include watches and repair services in addition to jewelry.