Zacks Small-Cap Research

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CombiMatrix Corporation (CBMX-NASDAQ)

CBMX: Solid Q1. Reimbursement Very Strong, Could Be At Inflection

We use a 10-year DCF model to value CBMX. We model revenue to grow from $10.1M in 2015 to $20M in 2019. Other key inputs into our DCF include a 9% discount rate and 2% terminal growth rate. Based on our DCF model, CBMX is valued at approximately $20/share.

Current Price (05/06/16)	$2.86
Valuation	**$20.00**

OUTLOOK

Molecular diagnostics company CBMX has offered a variety of genetic tests for various indications but just recently shifted the majority of its focus for growth on chromosomal microarray analysis (CMA) in the prenatal setting. A relatively novel genetic testing method, CMA has gained more attention due to two recent NEJM-published studies and a recommendation from an influential trade association supporting its use in prenatal analysis. CBMX is positioning itself to exploit an industry shift away from the current standard testing method towards CMA by expanding distribution, beefing up their sales force, launching new products, entering into key partnerships and leveraging competitive advantages. Recent favorable insurance coverage decisions, new product launch and additional positive recommendations from industry associations could fuel additional growth.

SUMMARY DATA

52-Week High	**$26.84**
52-Week Low	**$2.73**
One-Year Return (%)	**-88.32**
Beta	**0.19**
Average Daily Volume (sh)	**90,334**
Shares Outstanding (mil)	**1**
Market Capitalization ($mil)	**$3**
Short Interest Ratio (days)	**N/A**
Institutional Ownership (%)	**99**
Insider Ownership (%)	**3**
Annual Cash Dividend	**$0.00**
Dividend Yield (%)	**0.00**
5-Yr. Historical Growth Rates	
Sales (%)	**22.5**
Earnings Per Share (%)	**N/A**
Dividend (%)	**N/A**
P/E using TTM EPS	**N/A**
P/E using 2016 Estimate	**N/A**
P/E using 2017 Estimate	**N/A**
Zacks Rank	**N/A**

Risk Level	**High,**
Type of Stock	**Small-Value**
Industry	**Instru-Scientfc**

ZACKS ESTIMATES

Revenue
(in 000s of $)

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2015	2329 A	2549 A	2526 A	2684 A	10088 A
2016	2970 A	2927 E	3070 E	3190 E	12159 E
2017					14519 E
2018					16944 E

EPS

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2015	-$2.24 A	-$1.91 A	-$2.00 A	-$1.82 A	-$7.95 A
2016	-$3.63 A	-$1.81 E	-$1.55 E	-$1.47 E	-$6.51 E
2017					-$2.32 E
2018					-$1.69 E

Zacks Projected EPS Growth Rate - Next 5 Years % **N/A**

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WHAT'S NEW….

Q1: Solid Qtr w/ Very Strong Miscarriage Pricing. Is This A Reimbursement Inflection Point?

CBMX reported financial results for the first quarter ending March 31. Results were what we would characterize as very good in general and even more compelling on the reimbursement side, particularly in miscarriage testing. Q1 could prove to be an inflection point of sorts on the reimbursement and insurance coverage fronts. Investors familiar with CBMX know how susceptible the company's financial performance can be to levels of reimbursement and related policies of insurers - which in the past have been somewhat variable and sometimes not particularly favorable.

Miscarriage analysis…
The potential reimbursement inflection relates to what may be coverage decisions which affect average per-test payment rates that may not only be stabilizing, but possibly begin exhibiting more consistent growth. And while this still remains just a supposition and one which will need some more supporting history before we will make a more determined commitment (our model reflects a positive move in that direction) the big jump in average miscarriage reimbursement and management's comments on the Q1 call related to potential continued growth in reimbursement have us encouraged.

Miscarriage set records on volume and revenue in the quarter. Miscarriage analysis generated $1.6M in revenue in Q1 on 995 tests sold – this compares to $1.1M (+43%) and 882 (+13%) tests in Q1 2015 and $1.4M (+19%) and 939 (+6%) tests in Q4 2015. Average pricing was $1,630 – while not a record, it was the highest since Q4 2013 ($1,640) when reimbursement rates began a downward trend.

While miscarriage testing had already been a major catalyst to the company's growth, with it now accounting for 50%+ of total revenue and volumes growing in the double digits and already carrying one of the highest average payment rates, the recent supporting industry fundamentals and CBMX's plan to dedicate an even greater focus on this area could result in an ever-steepening revenue curve. And similar to Q1, which posted a gross margin of almost 52% and the highest since at least Q1 2012 (in fact the next closest since then was 49.6% in Q4 2012), growing reimbursement rates and favorable coverage decisions will benefit the company's margins and profitability. The next few quarters could be telling of whether Q1 was more of a flash-in-the-pan in that regard or more of an inflection point.

IVF (CombiPGS, Multi-PGS, PGD)…
While CombiPGS (IVF test) volume slipped from 202 in Q4 of last year to 167 (-17%) in the most recent quarter, total PGS revenue was an identical $222k in both of those periods. That's because, similar to miscarriage testing, it also experienced a nice jump in average pricing – moving from an average of $1,145 in 2015 (including $1,099 in Q4) to $1,329 in Q1 of this year. And similar revenue on lower volume but higher pricing should benefit margins due to less processing costs. And despite the 17% sequential (i.e. Q4 2015 – Q1 2016) drop in PGS volume, indications are that demand remains strong for the test now that the market has had a chance to kick the tires on it and the bump in average pricing seems to support that.

CBMX's IVF business could also soon see incremental benefit from their recently launched multi-cycle PGS offering as well as the more recently introduced PGD test. PGD tests an embryo for specific genetic disorders or genetic abnormalities based on the genetic status of the parents (which may be carriers of certain genetic abnormalities). Similar to PGS, CBMX will offer customers the opportunity to purchase PGD on a per-embryo or multicycle basis. If PGD receives a similarly warm welcome as PGS has, it will be needle-mover for CBMX – this will be something to keep on eye on. And with all of these tests being cash pay, CBMX avoids being at the mercy of insurers' coverage decisions, making cash flow and collections more predictable.

Prenatal…
Prenatal had slipped fairly consistently over the course of 2015 – going from 324 tests sold in Q1 to just 228 in Q4. Volume ticked back up on a sequential basis to 264 in the most recent quarter and was largely inline with our 259 estimate but was down almost 19% on a yoy basis. We suspect that the major issue since early 2015 may have been CBMX's distribution partner, Sequenom, driving a push of their NIPT tests (although NIPT testing continues to be plagued by high rates of false-positives). Management noted on the Q1 call that another issue has recently arisen - that being the Q3 2015 closing of one of CBMX's largest prenatal account practices. Average pricing of prenatal has also been waning as of late – moving down in the low single digits last year and coming in at Q1 about 6% lower than the 2015 full-year average.

But while CBMX's prenatal business has not been a particular highlight as of late, there are compelling reasons to believe this could turn around. This includes the recent updated recommendations from ACOG and SMFM (discussed below) supporting the use of CMA for prenatal diagnosis and additional recent clinical evidence highlighting the significant accuracy issues (i.e. susceptibility to high rates of false-positive and false-negative results) of NIPT.

Pediatric…

Pediatric volume growth was flattish in 2015. In Q1 2016 volume fell to 452 from Q1 467 (-3%) and 493 (-8%) in Q4 2015. But due to a favorable move up in pricing, on a revenue measure pediatric performed much better, generating $500k in Q1 2016 – flat from the same period in 2015 and down only 6% from Q4. Despite the softer Q1, we continue to think pediatric has some room for incremental volume growth.

Non-array…

While not considered CMBX's bread-and-butter focus, non-array has and continues to be an important contributor. Non-array volume and revenue grew 51% and 69%, respectively, in 2015 accounting for almost 10% of total revenue. Q1 2015 saw sequential and yoy volume growth of non-array of 15% and 10%, respectively. But, despite the strong growth of the segment, non-array pricing, while fairly stable, remains at roughly 25% of CBMX's average microarray tests. As such, while still meaningful contributor to revenue, we don't expect this segment to be much of a driver of the top-line or of margins.

Totals…

- Billable tests:
    - Volume: there were 2,648 total billable tests recorded in Q1 – up 13% from Q1 and 3% from Q4 of last year.
    - Revenue: up from $2,287k in Q1 and $2,649k in Q4 2015 to $2,930k in Q1 2015 (+28% yoy, +11% sequential)

- Reproductive Health: this is CBMX's major area of focus.
    - Volume: total billable Reproductive Health tests grew from 1,206 in Q1 (PGS launched in Q2) and 1,369 in Q4 to 1,426 in Q1 2015 (+18% yoy, +4% sequential)
    - Revenue: up from $1,554k in Q1 and $1,878k in Q4 2015 to $2,165k in Q1 2015 (+39% yoy, +15% sequential)

	Q1 '15	Q4 '15	Q1 '16
Number of tests			
Prenatal yoy growth	*50.0%*	*-17.7%*	*-18.5%*
Prenatal tests	324	228	264
Miscarriage yoy growth	*69.3%*	*10.6%*	*12.8%*
Miscarriage analysis tests	882	939	995
CombiPGS yoy growth	*# DIV/0!*	*# DIV/0!*	*# DIV/0!*
CombiPGS	0	202	167
Total Reproductive Hlth	**1,206**	**1,369**	**1426**
prenatal as %of total microarray tests	72%	74%	76%
YOY Growth	*63.6%*	*21.6%*	*18.24%*
Pediatric Microarray	467	493	452
pediatric as %of total microarray tests	28%	26%	24%
YOY Growth	*-9.5%*	*-8.0%*	*-3.21%*
Total Microarray tests	1,673	1,862	$1,878
microarray %of total tests	71%	73%	71%
YOY Growth	*22.2%*	*12.0%*	*12.25%*
Non-microarray tests	672	701	770
non-microarray %of total tests	29%	27%	29%
YOY Growth	*121.1%*	*12.0%*	*14.58%*
Total Billable tests	**2,345**	**2,563**	**2,648**
YOY Growth	*40.2%*	*12.0%*	*12.92%*
Pricing per test			
Prenatal microrray	$1302	$1285	$1216
Miscarriage analysis	$1283	$1452	$1630
CombiPGS	$0.000	$1.099	$1.329
Total Reproductive Hlth	**$1.289**	**$1.372**	**$1.518**
Pediatric	$1.069	$1.085	$1.106
All microarrays	$1.226	$1.296	$1.419
Non-microarrays	$0.351	$0.337	$0.34
Total	**$ 0.975**	**$ 1.034**	**$ 1.106**
Total revenue per test			
Prenatal microrray	$422	$293	$321
Miscarriage analysis	$1,132	$1,363	$1,622
CombiPGS	$0	$222	$222
Total Reproductive Hlth	**$1,554**	**$1,878**	**$2,165**
YOY Growth	*38.5%*	*32.6%*	*39.32%*
Pediatric Microarray	$499	$535	$500
YOY Growth	*0.2%*	*-4.3%*	*0.20%*
All microarrays	$2,051	$2,413	$2,665
YOY Growth	*19.7%*	*22.1%*	*29.94%*
Non-microarrays	$236	$236	$265
YOY Growth	*210.5%*	*12.9%*	*12.29%*
Total	**$ 2,287**	**$ 2,649**	**$ 2,930**
YOY Growth	*27.8%*	*21.2%*	*28.12%*
Diagnostic Svcs	$2,287.0	$2,649.0	$2,930.0
YOY Growth	*27.8%*	*21.2%*	*28.12%*
Royalties	$42.0	$35.0	$42.0
YOY Growth	*31.3%*	*12.9%*	*0.00%*
Total Revenues	$2,329.0	$2,684.0	$2,972.0
YOY Growth	*27.8%*	*21.1%*	*27.6%*
Cost of Services	$1,230.0	$1,416.0	$1,419.0
Gross Income	$1,099.0	$1,268.0	$1,553.0
Services Margin	*46.2%*	*46.5%*	*51.6%*

Relative strength in pricing, particularly in miscarriage and IVF, pushed service margin up to 51.6% which was well ahead of our 46.1% estimate and, as noted, is the widest margin since at least Q1 2016. Service margin in the comparable periods were 46.2% in Q1 2015 and 46.5% in Q4 2015. The recent big jump in margin, coupled with strong pricing on miscarriage and industry fundamentals which could catalyze more robust payment policies and reimbursement rates have prompted us to make upward revisions to our service margin estimates. We note, however, that while positive industry fundamentals and CBMX's focus towards their higher potential reproductive health segment are encouraging, we are not yet ready to commit to anticipating that the level of the Q1 service margin is repeatable in subsequent periods of 2016. However, we do expect to see relatively consistent growth in margin going forward and currently model a 300bp widening from 2015 to 2016 and forecast this to expand further in 2017. Like all of our assumptions, our margin estimates are subject to updating. The next few quarters could be informative relative to how sticky the recent margin expansion may be.

Q1 OpEx was $3.0M, a hair ahead of our $2.9M estimate on an aggregate basis but better than our number of a perctnage of sales basis (101% A vs. 105% E). Noteworthy is that Q1 witnessed the greatest leverage in operating expenses that CMBX has experienced on not only a percentage of sales basis, but due to the very strong service margin, even more so on a percentage of gross income basis. Operating expenses were 1.94x gross income in Q1

2016 – this compares to 2.37x in all of 2015, 2.76x in 2014 and 3.16x in 2013. This highlights how the growth in test volume and improvement in pricing and margins is moving CBMX closer to profitability.

CBMX exited Q1 with $2.5M in cash. Subsequent to quarter-end they raised ~$7.2M (net) via the sale of convertible preferreds with attached warrants. Management believes the current cash balance is sufficient to fund operations for at least the next 12 months. Cash could also potentially be used for strategic purposes. The company publicly noted that they are seeking potential strategic opportunities (potentially in the form of products, bolt-ons, technologies, whole companies) and have engaged life sciences focused Torreya Capital to assist them in that regard. They also recently brought on an experienced Scientific Advisory board which, along with facilitating with procurement of additional reimbursement contracts, may also be involved with identifying potential outside opportunities.

Several Recent Events Could Catalyze Additional Revenue Growth Including; Updated Prenatal Testing Guidelines, Beneficial Revisions to Insurers' Coverage Policies and Launch of New IVF Test…

Several events over the last few weeks have the potential to make a meaningful contribution to steepening and elongating CBMX's revenue curve, two of which relate to additional recognition of the benefits of prenatal and miscarriage CMA testing. Other recent significant events were policy updates by insurers to include coverage for miscarriage analysis and CMBX's launch of a new IVF-related test.

Perhaps the most significant recent event in terms of potential positive effect for CBMX were the updates to the Practice Bulletins of the American College of Obstetricians and Gynecologists (ACOG) and the Society for Maternal-Fetal Medicine (SMFM). Practice Bulletins summarize current clinical evidence to provide up-to-date information for the clinical management of obstetrics and gynecology and are used by clinicians to guide diagnosis and treatment decisions.

ACOG / SMFM Updated Recommendations Provide Further Support for Use of CMA
On March 1, 2016 ACOG and SMFM released two Practice Bulletins; *Prenatal Diagnostic Testing for Genetic Disorders*, which replaces a December 2007 Bulletin, and *Screening for Fetal Aneuploidy*, which replaces a January 2007 Bulletin. The updated information provides greater clarity on the potential risks of chorionic villous sampling (CVS) / amniocentesis and updated recommendations for the use of CMA as well as for confirmatory testing following a positive result from a screening test (such as NIPT).

For prenatal testing, amniocentesis and CVS sampling involves inserting a needle or thin catheter into the uterus where a sample of amniotic fluid or placental tissue is taken. These samples are then analyzed for chromosomal abnormalities using techniques such as CMA and karyotyping. While sampling directly from amniotic fluid and placental tissue provides greater and more accurate information compared to less invasive techniques such as NIPT which analyze cell-free fetal DNA (cfDNA) from the mother's blood, the invasive nature comes with risks - the most significant of which is pregnancy loss (i.e. miscarriage). Given the risk of miscarriage, some clinicians have recommended that amniocentesis or CVS only be considered for women older than 35 years of age or those that are otherwise at higher risk of having a baby with aneuploidy.

While there has not been a consensus from national governing bodies in terms of the degree of risk of pregnancy loss due to amniocentesis and CVS, it has been believed to be as high as 1.5% or more. However, a recent meta-analysis (*Procedure-related risk of miscarriage following amniocentesis and CVS: a systematic review and meta-analysis)* by R. Akolekar et al. published in the journal Ultrasound in Obstetrics and Gynecology which looked at studies aggregating a total of almost 43k women who underwent amniocentesis and almost 9k who underwent CVS, found the risk of pregnancy loss was much lower than previously believed. The meta-analysis found that "the added procedure-related risks of miscarriage following amniocentesis and CVS are in the region of 0.1% and 0.2%, respectively". The authors also note that, "It may be that these risks are unrelated to the invasive procedure, but instead may reflect the pregnancy characteristics of the women undergoing invasive testing. It is essential that pregnant women should be provided with accurate estimates of procedure-related risks associated with invasive testing to allow them to make appropriate choices rather than provide them with exaggerated risks based on historical data, which may unnecessarily deter women from testing." [1]

This study and the lowered risk of amnio/CVS-related miscarriage are cited in the updated ACOG and SMFM Practice Bulletins as is a recommendation that all pregnant women be offered prenatal assessment for aneuploidy

[1] R. Akolekar et al. Procedure-related risk of miscarriage following amniocentesis and chorionic villus sampling: a systematic review and meta-analysis. Ultrasound Obstet Gynecol 2015; 45: 16–26

by screening or diagnostic testing regardless of age. Given that risk of miscarriage has been the most significant concern associated with amnio and CVS procedures, findings from this study and subsequent recognition by ACOG and SMFM of substantially less risk than previously believed could result in facilitation of greater use of CMA confirmatory testing, including that offered by CBMX. The Bulletins also recommend pre- and post-test counseling be offered to patients – which has been a focus for CBMX in an effort to help drive adoption of CMA as well as to differentiate themselves from competing CMA providers.

And other recommendations in the Practice Bulletins also support the use of CMA as the most definitive technology to identify aneuploidy. The benefits of CMA, as noted in the Bulletins include;

- "chromosomal microarray analysis can be performed either directly on uncultured tissue or on cultured cells" (while karyotyping requires samples to be cultured)
- "chromosomal aberrations that are smaller than the resolution of conventional karyotype also can result in phenotypic anomalies; these copy number variants can be detected in the fetus using chromosomal microarray analysis"
- "when structural abnormalities are detected by prenatal ultrasound examination, chromosomal microarray will identify clinically significant chromosomal abnormalities in approximately 6% of the fetuses that have a normal karyotype. For this reason, chromosomal microarray analysis should be recommended as the primary test (replacing conventional karyotype) for patients undergoing prenatal diagnosis for the indication of fetal structural abnormality detected by ultrasound examination"
- "chromosomal microarray analysis has been found to detect a pathogenic (or likely pathogenic) copy number variant in approximately 1.7% of patients with a normal ultrasound examination and a normal karyotype, and it is recommended that a chromosomal microarray analysis be made available to any patient choosing to undergo invasive diagnostic testing"

In regard to cfDNA screening tests, the Bulletins note their potential for false-positive and false-negative results (the risk of which has been widely cited in numerous studies) and therefore;

- cfDNA should not be used as a substitute for diagnostic testing (i.e. CMA)
- "all women with a positive cfDNA test result should have a diagnostic procedure [such as CMA] before any irreversible action, such as pregnancy termination, is taken"
- "women whose cfDNA screening test results are not reported, are indeterminate, or are uninterpretable should receive further genetic counseling and be offered comprehensive ultrasound evaluation and diagnostic testing because of an increased risk of aneuploidy"
- women with a positive screening test result for fetal aneuploidy should be offered further detailed counseling and testing"

Insurers Revise Policies to Define CMA as 'Medically Necessary' for Recurrent Pregnancy Loss

Since the beginning of this year at least eight six insurers have revised their policies to include coverage of recurrent pregnancy testing. This includes major and mid-tier payers. CBMX recently cited Cigna Health Services, BC/BS of North Carolina, Premera BC/BS and Life Wise of Oregon as revising their medical policies to include CMA as 'medically necessary' for the evaluation of pregnancy loss. 'Medically necessary' essentially means that there is no ambiguity in terms of whether the procedure will be covered. If this trend continues with other insurers revising policies for specific coverage of CMA for pregnancy loss, it would almost certainly be a meaningful benefit to CBMX and demand for their miscarriage analysis tests. The company's strong Q1 results, including record sales volume of miscarriage tests, suggests that these recent favorable policy decisions may already be making an impact.

We also note that spotty or otherwise inconsistent insurance coverage has been somewhat of a headwind and was one of the reasons why CBMX expanded their portfolio to include products such as the CombiPGS IVF test which is cash-pay and unaffected by insurers policy decisions. It was also a reason why CBMX picked their spots geographically – focusing on areas of the country where insurance coverage was more favorable. So anything that improves the third-party payor environment as it relates to CMA and reproductive health has the potential to have a direct and positive benefit on CBMX and demand for their products.

CombiPGD Looks to Build On Success of CombiPGS

CBMX launched CombiPGS (IVF – preimplantation genetic screening test) last year in order to grow and diversify revenue and not be so beholden to insurers' coverage decisions. By all measures the test has been a success, growing from 30 tests processed in the quarter of launch (Q2) to 127 in Q3 and 202 in Q4. CombiPGS contributed $371k in revenue in the second half of 2015, more than 7% of total diagnostic services revenue in that period and $222k in the most recent quarter, equal to 8% of total diagnostic services revenue. And that's just after only a very brief period in marketing the product. We expect PGS to be a much more significant revenue catalyst throughout 2016.

Management is clearly looking to build on the success of PGS with the introduction of CombiPGD – launch of which they announced in April. Both PGS and PGD test embryos prior to IVF implantation in order to minimize chance of selecting an embryo with a genetic disorder and increase the chance of a successful pregnancy. While PGS is a screen – testing for aneuploidy (i.e. abnormal number of chromosomes), which is the most common cause of genetic disorders, PGD is a diagnostic - testing the embryo for specific genetic disorders or genetic abnormalities based on the genetic status of the parents (which may be carriers of certain genetic abnormalities). Similar to PGS, CBMX will offer customers the opportunity to purchase PGD on a per-embryo or multicycle basis. If PGD receives a similarly warm welcome as PGS has, it will be needle-mover for CBMX – this will be something to keep on eye on.

Scientific Advisory Board Formed And Tasked With Facilitating Growth Opportunities
To help implement CBMX's growth plans, including bringing additional products to market, expand adoption and entry into new markets, procuring new reimbursement contracts and leverage new opportunities the company brought on a scientific advisory board consisting of five physicians/academics, all with significant experience in the reproductive health segment.

OUTLOOK / VALUATION

OUTLOOK

Our 2016 revenue growth, including +20% from reproductive health services testing, is driven from the recent expansion and increasing productivity of the sales force, new payor contracts, more insurers starting to cover recurrent pregnancy loss testing, increasing number of billable customers, greater awareness of the benefits of CMA analysis, improved pricing and some incremental growth from new products. Relative to the sale force, management has noted increased productivity per rep, which they think will continue to help drive revenue higher – we think as additional add-to-the-bag products come online there will be even more room for productivity gains.

Average pricing is one variable that could be particularly influential to updates to our model – including through the remainder of 2016. As noted, Q1 saw very strong pricing in miscarriage and the IVF businesses. And while as a result, we made some upward revisions to our revenue and margins following Q1, our updated numbers could still very well prove conservative (as an example, we currently assume service margin does not repeat at the Q1 level through the remainder of 2016). We will feel more comfortable making further upward revisions if and when there is more 'proof' of the stickiness in certain pricing, payor policies and testing demand.

Beyond 2016 we think contribution from the additional, aforementioned, catalysts begin to make a more substantial impact. We also think it is not unreasonable to believe that additional future studies and publications will provide further insight into the human genome, soften certain current headwinds to adoption of CMA (i.e. - provide more knowledge related to variants of unknown significance) and provide support for the utility of chromosomal microarray analysis in the prenatal space. These catalysts should result in steepening of the rate of adoption of chromosomal microarray analysis. This, coupled with the company's competitive positioning and our assumption that CBMX continues to grow their distribution footprint, provide what we believe will be a position of strength for CBMX in terms of being able to increase penetration of their target prenatal markets and grow revenue over the long-term. Additional new product launches could prompt an upward revision to our forecast, particularly as it relates to our out-years.

VALUATION

We use a 10-year DCF model to value CBMX. We model revenue to grow from $10.1M in 2015 to $20M in 2019. We believe our revenue estimates are reasonable, particularly as out our out-year number assumes just less than 13% penetration of the estimated prenatal chromosomal microarray analysis market at that time. We also do not incorporate contribution from any new products that CBMX may potentially bring to market through the term of DCF - new product launches, higher rates of revenue growth, markedly better pricing and lower operating expenses (relative to our assumptions) are all potential items that could provide some upside to our numbers and associated calculated valuation.

Other key inputs into our DCF include a 9% discount rate and 2% terminal growth rate. Based on our DCF model, CBMX is valued at approximately $20/share.

FINANCIAL MODEL

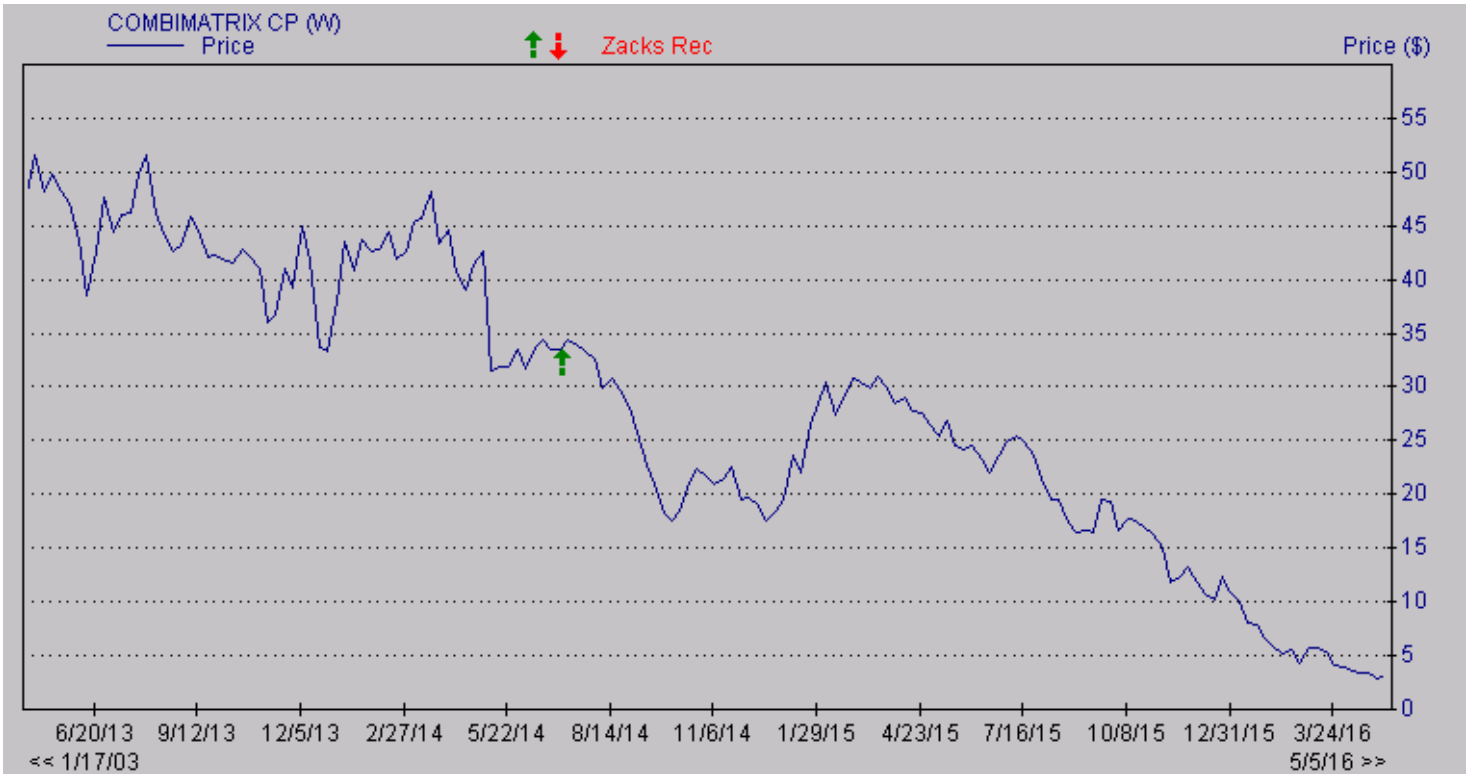
CombiMatrix Corporation

	2015 A	Q1A	Q2E	Q3E	Q4E	2016 E	2017 E	2018 E	2019 E
Diagnostic Svcs	$9,941.0	$2,930.0	$2,884.7	$3,028.3	$3,148.2	$11,991.2	$14,349.2	$16,772.0	$19,800.9
YOY Growth	*25.95%*	*28.12%*	*14.3%*	*22.1%*	*18.8%*	*20.62%*	*19.66%*	*16.88%*	*18.06%*
Royalties	$147.0	$42.0	$42.0	$42.0	$42.0	$168.0	$170.0	$172.0	$176.0
YOY Growth	*-1.34%*	*0.00%*	*68.0%*	*-6.7%*	*20.0%*	*14.3%*	*1.2%*	*1.2%*	*2.3%*
Total Revenues	$10,088.0	$2,972.0	$2,926.7	$3,070.3	$3,190.2	$12,159.2	$14,519.2	$16,944.0	$19,976.9
YOY Growth	*25.4%*	*27.6%*	*14.8%*	*21.5%*	*18.9%*	*20.5%*	*19.4%*	*16.7%*	*17.9%*
Cost of Services	$5,444.0	$1,419.0	$1,543.3	$1,592.9	$1,646.5	$6,201.7	$6,988.1	$7,949.9	$8,969.8
Gross Income	$4,644.0	$1,553.0	$1,383.4	$1,477.4	$1,543.7	$5,957.5	$7,531.1	$8,994.1	$11,007.1
Services Margin	*46.0%*	*51.6%*	*46.5%*	*47.4%*	*47.7%*	*49.0%*	*51.3%*	*52.6%*	*54.7%*
R&D	$466.0	$143.0	$122.0	$140.0	$125.0	$530.0	$628.0	$667.0	$738.0
% R&D	*4.6%*	*4.8%*	*4.2%*	*4.6%*	*3.9%*	*4.4%*	*4.3%*	*3.9%*	*3.7%*
SG&A	$10,519.0	$2,862.0	$2,874.3	$2,927.0	$2,995.6	$11,658.8	$12,299.6	$13,016.2	$14,383.4
% SG&A	*104.3%*	*96.3%*	*98.2%*	*95.3%*	*93.9%*	*95.9%*	*84.7%*	*76.8%*	*72.0%*
Patent amort. & royalties	$100.0	$25.0	$25.0	$25.0	$25.0	$100.0	$110.0	$110.0	$0.0
Goodwill impairment	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Operating Income	($6,441.0)	($1,477.0)	($1,637.9)	($1,614.6)	($1,601.9)	($6,331.4)	($5,506.5)	($4,799.1)	($4,114.3)
Operating Margin	*-63.8%*	*-49.7%*	*-56.0%*	*-52.6%*	*-50.2%*	*-52.1%*	*-37.9%*	*-28.3%*	*-20.6%*
Total Other income	($63.0)	($14.0)	($15.0)	($15.0)	($15.0)	($59.0)	($125.0)	($150.0)	($150.0)
Pre-Tax Income	($6,601.0)	($1,491.0)	($1,652.9)	($1,629.6)	($1,616.9)	($6,390.4)	($5,631.5)	($4,949.1)	($4,264.3)
Taxes	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Tax Rate	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
Preferred Dividends	$890	$1,643	$0	$0	$0	$0	$0	$0	$0
Net Income	($7,491.0)	($3,134.0)	($1,652.9)	($1,629.6)	($1,616.9)	($6,390.4)	($5,631.5)	($4,949.1)	($4,264.3)
YOY Growth	*-14.0%*	*18.0%*	*2.5%*	*-3.4%*	*5.2%*	*-14.7%*	*-11.9%*	*-12.1%*	*-13.8%*
Net Margin	*-74.3%*	*-105.5%*	*-56.5%*	*-53.1%*	*-50.7%*	*-52.6%*	*-38.8%*	*-29.2%*	*-21.3%*
EPS	($9.02)	($3.63)	($1.81)	($1.55)	($1.47)	($6.51)	($2.32)	($1.69)	($1.35)
YOY Growth	*-23.8%*	*7.5%*	*-5.3%*	*-22.2%*	*-19.2%*	*-27.9%*	*-64.4%*	*-26.9%*	*-20.1%*
Diluted Shares O/S	831	864	915	1,050	1,100	982	2,430	2,920	3,150

Brian Marckx, CFA

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