# MSB and Lonza ink cell manufacturing deal Further validation of MSB's platform technology, in our view

## Action: MSB and LONN announce manufacturing deal

We have looked at comparable industry deals, and hence believe the likely size of investment by Lonza (LONN VX, unrated) to build and certify a commercial cell therapy manufacturing unit is in the order of A\$150mn.

# Catalyst: LONN already knows the MSB pipeline well

Lonza is one of the major global providers of biological manufacturing services. LONN would already be intimately aware of the details of MSB's Mesenchymal Precursor Cells (MPC) patent strength and ability for MSB's manufacturing processes to identify and expand MPCs to potentially necessary commercial requirements. We don't believe LONN would have committed to investing this level of capital without some expectation of certainty that MPCs could be produced in commercial quantities.

## Valuation: BUY maintained, PT unchanged at A\$10.15

As a part of this deal, Lonza remains MSB's contract manufacturing provider. In our view, the fact that MSB has kept manufacturing separate from its potential distribution partner (TEVA) gives it more protection and options. We have not changed our forecasts or PT on the back this news, as our current PT is based on probabilities of clinical trial success. But in our view, this deal increases the certainty of the ability of MSB to manufacture commercial quantities of MPCs, and goes some way to removing a major issue (ability to manufacture MPCs) for the stock. All-in-all, we consider this as further validation of MSB's platform technology. In addition, we think this deal significantly decreases the risk profile of the business. The next potential catalyst for MSB should be the results of its Congestive Heart Failure trial at a session of the AHA conference on November 14.

30 Jun	FY11		FY12F		FY13F		FY14F
Currency (AUD)	Actual	Old	New	Old	New	Old	New
Revenue (mn)	116	31	31	31	31	133	133
Reported net profit (mn)	91	-38	-38	-28	-28	42	42
Normalised net profit (mn)	91	-38	-38	-28	-28	42	42
Normalised EPS	41.79c	-13.50c	-13.50c	-10.08c	-10.08c	14.99c	14.99c
Norm. EPS growth (%)	na	-132.3	-132.3	na	na	na	na
Norm. P/E (x)	20.1	N/A	na	N/A	na	N/A	55.3
EV/EBITDA (x)	23.1	na	na	na	na	33.9	33.9
Price/book (x)	4.3	N/A	4.7	N/A	5.0	N/A	4.6
Dividend yield (%)	na	N/A	na	N/A	na	N/A	na
ROE (%)	32.7	-7.6	-7.6	-6.1	-6.1	9.0	9.0
Net debt/equity (%)	net cash						

Source: Nomura estimates

**Key company data:** See page 2 for company data and detailed price/index chart. **Rating:** See report end for details of Nomura's rating system.



September 27, 2011	
Rating Remains	Buy
Target price Remains	AUD 10.15
Closing price September 26, 2011	AUD 7.60
Potential upside	+33.6%

# Anchor themes

As the aged population is having more operations, we believe there will be more demand for treatments, which MSB can deliver.

## Nomura vs consensus

There is minimal consensus data available.

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See Appendix A-1 for analyst certification and important disclosures. Analysts employed by non US affiliates are not registered or qualified as research analysts with FINRA in the US.

Norm EPS (AUD)

DPS (AUD)

Fully diluted norm EPS (AUD)

Book value per share (AUD)

Source: Nomura estimates

# Key data on Mesoblast

# Income statement (AUDmn)

Year-end 30 Jun	FY10	FY11	FY12F	FY13F	FY14F
Revenue	0	116	31	31	133
Cost of goods sold	0	0	-2	-2	-3
Gross profit	0	116	29	29	130
SG&A	-11	-27	-58	-64	-74
Employee share expense					
Operating profit	-11	89	-29	-35	56
EBITDA	-11	89	-28	-34	62
Depreciation	0	0	-2	-1	-5
Amortisation	0	0	0	0	0
EBIT	-11	89	-29	-35	56
Net interest expense	1	5	8	7	7
Associates & JCEs					
Other income	-4	-2	0	0	0
Earnings before tax	-15	92	-22	-28	63
Income tax	0	-2	-16	0	-21
Net profit after tax	-15	91	-38	-28	42
Minority interests	0	0	0	0	0
Other items					
Preferred dividends					
Normalised NPAT	-15	91	-38	-28	42
Extraordinary items	0	0	0	0	0
Reported NPAT	-15	91	-38	-28	42
Dividends	0	0	0	0	0
Transfer to reserves	-15	91	-38	-28	42
Valuation and ratio analysis					
FD normalised P/E (x)	na	20.1	na	na	55.3
FD normalised P/E at price target (x)	na	25.5	na	na	70.3
Reported P/E (x)	na	19.1	na	na	53.2
Dividend yield (%)	na	na	na	na	na
Price/cashflow (x)	na	16.4	na	na	51.8
Price/book (x)	32.6	4.3	4.7	5.0	4.6
EV/EBITDA (x)	na	23.1	na	na	33.9
EV/EBIT (x)	na	23.1	na	na	37.2
Gross margin (%)	100.0	100.0	92.7	92.4	97.6
EBITDA margin (%)	-199,515.4	76.8	-90.0	-107.7	46.2
EBIT margin (%)	-202,302.4	76.6	-95.0	-112.2	42.1
Net margin (%)	-268,743.5	77.9	-122.1	-90.8	31.5
Effective tax rate (%)	na	1.8	na	na	33.3
Dividend payout (%)	na	0.0	na	na	0.0
Capex to sales (%)	1,583.9	0.4	5.0	4.5	4.1
Capex to depreciation (x)	0.8	3.4	1.0	1.0	1.0
ROE (%)	-46.4	32.7	-7.6	-6.1	9.0
ROA (pretax %)	-124.2	35.1	-5.9	-7.0	11.2
Growth (%)					
Revenue		2,113,948.2	-73.3	0.5	328.1
EBITDA	na	na	-131.3	na	na
EBIT	na	na	-133.1	na	na
Normalised EPS	na	na	-132.3	na	na
Normalised FDEPS	na	na	-132.7	na	na
Des alsons					
Per share	-10.51c	41.79c	-13.50c	-10.08c	14.00-
Reported EPS (AUD)	-10.510	41.790	-13.500	-10.080	14.99c

-10.51c

-10.51c

0.24

0.00

41.79c

39.78c

1.84

0.00

-13.50c

-12.99c

1.71

0.00

-10.08c

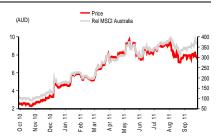
-9.71c

1.60

0.00

We forecast revenues for MSB to continue in FY12

Price and price relative chart (one year)



(%)	1M	ЗM	12M
Absolute (AUD)	-12.2	2.3	322.2
Absolute (USD)	-14.5	1.8	401.0
Relative to index	-8.6	11.3	327.6
Market cap (USDmn)	2,474.6		
Estimated free float (%)	55.0		
52-week range (AUD)	9.95/1.8		
3-mth avg daily turnover (USDmn)	6.31		
Major shareholders (%)			
Silviu Itescu	25.0		
Cephalon Inc	20.0		

14.99c

14.43c

1.74

0.00

# Cashflow (AUDmn)

Year-end 30 Jun	FY10	FY11	FY12F	FY13F	FY14F
EBITDA	-11	89	-28	-34	62
Change in working capital	-1	28	0	0	0
Other operating cashflow	3	-7	-8	7	-17
Cashflow from operations	-9	111	-36	-26	45
Capital expenditure	0	0	-2	-1	-5
Free cashflow	-9	111	-38	-28	39
Reduction in investments	4	5	0	0	0
Net acquisitions	0	3	0	0	0
Reduction in other LT assets	0	-22	0	0	0
Addition in other LT liabilities	0	217	0	0	0
Adjustments	-5	-201	0	0	0
Cashflow after investing acts	-10	113	-38	-28	39
Cash dividends	0	0	0	0	0
Equity issue	26	126	0	0	0
Debt issue	0	0	0	0	0
Convertible debt issue					
Others	0	-8	0	0	0
Cashflow from financial acts	26	118	0	0	0
Net cashflow	16	231	-38	-28	39
Beginning cash	17	32	263	226	198
Ending cash	32	263	226	198	237
Ending net debt	-32	-263	-226	-198	-237
Source: Nomura estimates					

# September 27, 2011

Notes We assume a successful Phase III bone marrow trial in our forecasts

# Balance sheet (AUDmn)

Cash & equivalents    32    263    226    198    237      Marketable securities    0	As at 30 Jun	FY10	FY11	FY12F	FY13F	FY14F
Accounts receivable    1    2    3    3    4      Inventories    0	Cash & equivalents	32	263	226	198	237
Inventories    0    0    0    0    0      Other current assets    0    0    0    0    0    0      Total current assets    34    265    228    201    241      LT investments    5    0    0    0    0      Fixed assets    0    1    1    1    1      Goodwill    0    110    110    110    110      Other intangible assets    0    366    366    366      Other LT assets    0    22    22    22    739      Short-term debt    0    0    0    0    0    0      Accounts payable    2    4    4    5    6      Other current liabilities    2    31    32    33    1      Long-term debt    0    0    0    0    0    0      Convertible debt	Marketable securities	0	0	0	0	0
Other current assets    0    0    0    0    0      Total current assets    34    265    228    201    241      LT investments    5    0    0    0    0      Fixed assets    0    1    1    1    1    1      Godwill    0    110    110    110    110    110      Other intangible assets    0    366    366    366    366      Other LT assets    0    22    27    7    7    7    7    7    7    7    7    7	Accounts receivable	1	2	3	3	4
Total current assets    34    265    228    201    241      LT investments    5    0    0    0    0      Fixed assets    0    1    1    1    1    1      Goodwill    0    110    110    110    110    110      Other intangible assets    0    366    366    366    366    366      Other LT assets    0    22    23    33    Long-tern tiabilities    0    0    0    0	Inventories	0	0	0	0	0
LT investments    5    0    0    0      Fixed assets    0    1    1    1    1      Goodwill    0    110    110    110    110      Goodwill    0    100    110    110    110    110      Other intangible assets    0    366    366    366    366    366      Other It assets    0    22    22    22    22    22      Short-term debt    0    0    0    0    0    0      Accounts payable    2    31    32    32    33    Long-term debt    0    0    0    0    0      Other current liabilities    2    31    32    32    33    Long-term debt    0 <td>Other current assets</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td>	Other current assets	0	0	0	0	0
Fixed assets    0    1    1    1    1    1      Goodwill    0    110    110    110    110    110      Other intangible assets    0    366    366    366    366      Other LT assets    0    22    22    22    22    22      Total assets    40    763    726    699    739      Short-term debt    0    0    0    0    0      Accounts payable    2    4    4    5    6      Other current liabilities    0    27    27    27    27      Total current liabilities    2    31    32    32    33      Long-term debt    0    0    0    0    0    0      Other LT liabilities    0    217    217    217    217      Total liabilities    0    0    0    0    0    0      Prefered stock    0    0    0    0 <td>Total current assets</td> <td>34</td> <td>265</td> <td>228</td> <td>201</td> <td>241</td>	Total current assets	34	265	228	201	241
Goodwill    0    110    110    110    110    110      Other intangible assets    0    366    362    322    333    303    100    00	LT investments	5	0	0	0	0
Other intangible assets    0    366    366    366    366    366      Other LT assets    0    22    7 <td>Fixed assets</td> <td>0</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td>	Fixed assets	0	1	1	1	1
Other LT assets    0    22    22    22    22      Total assets    40    763    726    699    739      Short-term debt    0    0    0    0    0    0    0    0      Accounts payable    2    4    4    5    6    6    6    0    27    27    27    27    7    27    7	Goodwill	0	110	110	110	110
Total assets    40    763    726    699    739      Short-term debt    0    0    0    0    0    0      Accounts payable    2    4    4    5    6      Other current liabilities    0    27    27    27    27      Total current liabilities    2    31    32    32    33      Long-term debt    0    0    0    0    0    0      Convertible debt     2    247    248    249    250      Minority interest    0    0    0    0    0    0    0      Preferred stock    0    0    0    0    0    0    0      Cother equity and reserves    6    4    4    4    4    4      Total shareholders' equity    38    516    478    450    489      Total equity & liabilities    40    763    726    699    739      Liquidity (x	Other intangible assets	0	366	366	366	366
Short-term debt    0    0    0    0    0    0      Accounts payable    2    4    4    5    6      Other current liabilities    0    27    27    27    27      Total current liabilities    2    31    32    32    33      Long-term debt    0    0    0    0    0    0      Convertible debt    0    217    217    217    217    217      Total liabilities    0    217    217    217    217    217      Total liabilities    0    0    0    0    0    0      Propresered stock    0    0    0    0    0    0      Common stock    88    477    477    477    477      Retained earnings    -56    35    -3    -31    8      Proposed dividends    0    763    726    699    739      Liquidity (x)    Current ratio    21.	Other LT assets	0	22	22	22	22
Accounts payable    2    4    4    5    6      Other current liabilities    0    27    27    27    27      Total current liabilities    2    31    32    32    33      Long-term debt    0	Total assets	40	763	726	699	739
Other current liabilities    0    27    27    27    27      Total current liabilities    2    31    32    32    33      Long-term debt    0    0    0    0    0    0    0      Other LT liabilities    0    217    217    217    217    217      Total liabilities    0    217    217    217    217    217      Total liabilities    0    0.17    217    217    217    217      Total liabilities    0    0.0    0    0    0    0    0      Minority interest    0    0    0    0    0    0    0      Other current liabilities    2    247    248    249    250      Minority interest    0 <td>Short-term debt</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td>	Short-term debt	0	0	0	0	0
Total current liabilities    2    31    32    32    33      Long-term debt    0	Accounts payable	2	4	4	5	6
Long-term debt    0    0    0    0    0    0      Convertible debt    0    217    217    217    217    217      Convertible debt    2    247    248    249    250      Minority interest    0    0    0    0    0    0      Preferred stock    0	Other current liabilities	0	27	27	27	27
Convertible debt    Convertible debt      Other LT liabilities    0    217    217    217    217      Total liabilities    2    247    248    249    250      Minority interest    0	Total current liabilities	2	31	32	32	33
Other LT liabilities    0    217    217    217    217    217      Total liabilities    2    247    248    249    250      Minority interest    0    <	Long-term debt	0	0	0	0	0
Total liabilities    2    247    248    249    250      Minority interest    0	Convertible debt					
Minority interest    0	Other LT liabilities	0	217	217	217	217
Preferred stock    0	Total liabilities	2	247	248	249	250
Common stock    88    477    477    477    477      Retained earnings    -56    35    -3    -31    8      Proposed dividends    0    6    4    4    4    4      Total shareholders' equity    38    516    478    450    489      Total equity & liabilities    40    763    726    699    739      Liquidity (x)      21.01    8.62    7.24    6.20    7.20      Interest cover    na    na    na    na    na    na    na      Leverage      450    9.720    7.24    6.20    7.20      Interest cover    na    na    na    na    na    na      Net debt/EBITDA (x)    na    net cash    net cash    net cash    net cash      Net debt/equity (%)    net cash    net cash    net cash    net cash    net cash      Days receivable    55,780.0    5.5    27.3	Minority interest	0	0	0	0	0
Retained earnings    -56    35    -3    -31    8      Proposed dividends    0ther equity and reserves    6    4    4    4    4      Total shareholders' equity    38    516    478    450    489      Total equity & liabilities    40    763    726    699    739      Liquidity (x)    Current ratio    21.01    8.62    7.24    6.20    7.20      Interest cover    na    na    na    na    na    na      Leverage    Net debt/EBITDA (x)    na    net cash    net cash <td>Preferred stock</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td>	Preferred stock	0	0	0	0	0
Proposed dividends      Other equity and reserves    6    4    4    4      Total shareholders' equity    38    516    478    450    489      Total equity & liabilities    40    763    726    699    739      Liquidity (x)	Common stock	88	477	477	477	477
Other equity and reserves    6    4    4    4    4      Total shareholders' equity    38    516    478    450    489      Total equity & liabilities    40    763    726    699    739      Liquidity (x)    Current ratio    21.01    8.62    7.24    6.20    7.20      Interest cover    na    na    na    na    na    na      Leverage	Retained earnings	-56	35	-3	-31	8
Total shareholders' equity    38    516    478    450    489      Total equity & liabilities    40    763    726    699    739      Liquidity (x)    Current ratio    21.01    8.62    7.24    6.20    7.20      Interest cover    na    na    na    na    na    na      Leverage    Net debt/EBITDA (x)    na    net cash    na    na    net cash    net cas	Proposed dividends					
Total equity & liabilities    40    763    726    699    739      Liquidity (x)	Other equity and reserves	6	4	4	4	4
Liquidity (x)    Zincent ratio    21.01    8.62    7.24    6.20    7.20      Interest cover    na    na <td< td=""><td>Total shareholders' equity</td><td>38</td><td>516</td><td>478</td><td>450</td><td>489</td></td<>	Total shareholders' equity	38	516	478	450	489
Current ratio    21.01    8.62    7.24    6.20    7.20      Interest cover    na    na    na    na    na    na    na      Leverage    Net debt/EBITDA (x)    na    net cash    na    na    net cash	Total equity & liabilities	40	763	726	699	739
Current ratio    21.01    8.62    7.24    6.20    7.20      Interest cover    na    na    na    na    na    na    na      Leverage    Net debt/EBITDA (x)    na    net cash    na    na    net cash	Liquidity (x)					
Interest cover na na na na na na Leverage Net debt/EBITDA (x) na net cash na na net cash Net debt/equity (%) net cash net cash Activity (days) Days receivable 55,780.0 5.5 27.3 32.5 9.1 Days inventory na na 0.0 0.0 0.0 Days payable na na 655.9 747.5 659.5 Cash cycle na na -628.6 -715.0 -650.4		21.01	8 62	7 24	6 20	7 20
Leverage    Net debt/EBITDA (x)  na  net cash  na  na  net cash    Net debt/equity (%)  net cash  net cash  net cash  net cash  net cash    Activity (days)						
Net debt/EBITDA (x)nananananet cashNet debt/equity (%)net cashnet cashnet cashnet cashnet cashnet cashActivity (days)Days receivable55,780.05.527.332.59.1Days inventorynana0.00.00.0Days payablenana655.9747.5659.5Cash cyclenana-628.6-715.0-650.4						
Net debt/equity (%)    net cash    net cash </td <td>Leverage</td> <td></td> <td></td> <td></td> <td></td> <td></td>	Leverage					
Activity (days)      Days receivable    55,780.0    5.5    27.3    32.5    9.1      Days inventory    na    na    0.0    0.0    0.0      Days payable    na    na    655.9    747.5    659.5      Cash cycle    na    na    -628.6    -715.0    -650.4	Net debt/EBITDA (x)	na	net cash	na	na	net cash
Days receivable    55,780.0    5.5    27.3    32.5    9.1      Days inventory    na    na    0.0    0.0    0.0      Days payable    na    na    655.9    747.5    659.5      Cash cycle    na    na    -628.6    -715.0    -650.4	Net debt/equity (%)	net cash				
Days receivable    55,780.0    5.5    27.3    32.5    9.1      Days inventory    na    na    0.0    0.0    0.0      Days payable    na    na    655.9    747.5    659.5      Cash cycle    na    na    -628.6    -715.0    -650.4	Activity (days)					
Days inventory    na    na    na    0.0    0.0    0.0      Days payable    na    na    655.9    747.5    659.5      Cash cycle    na    na    -628.6    -715.0    -650.4		55,780.0	5.5	27.3	32.5	9.1
Days payable    na    na    655.9    747.5    659.5      Cash cycle    na    na    -628.6    -715.0    -650.4		,				
Cash cycle na na -628.6 -715.0 -650.4						
	Source: Nomura estimates				-	

MSB had A\$263mn in cash at end FY11

# MSB inks cell manufacturing deal with Lonza

Mesoblast (MSB AU) and Lonza Group (LONN VX, unrated), one of the largest global biologic manufacturing companies, announced that they have entered into a strategic alliance for clinical and long-term commercial production of MSB's off-the-shelf (allogeneic) adult stem cell products. The alliance will provide MSB with increased capacity to meet long-term global supply of its proprietary Mesenchymal Precursor Cell (MPC) products.

In this note, we:

- Explain the deal between LONN and MSB;
- · Give an update on the timeline for release of results from MSB; and
- Describe what it means for MSB.

# 1. Background – the deal between LONN and MSB

#### What are MPCs?

Mesenchymal precursor cells (MPCs, also known as mesenchymal stem cells) are adult stem cells that have the ability to become solid organs and tissues such as bone, heart muscle and cartilage. They do not have immunological markers and will therefore cause no immune reaction when injected into a foreign host. This means MPCs can be harvested as a generic product for any recipient from any donor.

The proprietary technology being commercialised by MSB enables the efficient extraction, isolation and scale-up of MPCs. This technology has allowed for the potential application of commercial, off-the-shelf MPCs harvested from relatively few, non-specific donors in a wide range of serious medical issues. MSB aims to capitalise on its patents that relate to the identification, extraction and culture of adult mesenchymal precursor cells.

#### MPCs secrete a broad range growth factors

MPCs synthesize and secrete a broad spectrum of paracrine (secretions released by cells into the adjacent cells or surrounding tissue rather than into the bloodstream) growth factors and cytokines, which exert effects on cells in their vicinity. These factors have been postulated to:

- promote arteriogenesis (new artery formation),
- support existing, quiescent stem cells in various tissues; and
- protect against a lack of blood supply-related tissue injury.
- Many of these factors have also been demonstrated to exert beneficial effects on the heart, including new microvessel formation and slowing of ventricular wall thinning.

#### Existing relationship between LONN and MSB

MSB already uses Lonza to expand its stem cells and manufacture its product. Currently, Lonza has 10 stacks on which the product is developed. Donors go to Lonza to have their marrow extracted. The MPCs are then immunoselected to the standard operating procedure that has been lodged with the FDA. Lonza then expands the number of MPCs (via cytokines, growth factors, and a growth environment) and the final product is developed.

We note that one of MSB's major shareholders, Teva (TEVA IL, unrated) has a relationship with LONN. Teva is a 19.9% shareholder in MSB. In 2009, TEVA and LONN announced their agreement to establish a joint venture to develop, manufacture and market a portfolio of biosimilars. Teva and Lonza will cooperate to develop, manufacture and market a number of generic equivalents of a selected portfolio of biologic pharmaceuticals.

MSB and Lonza announced that they have entered into a strategic alliance for clinical and long-term commercial production of MSB's MPCs

MPCs synthesize and secrete a broad spectrum of paracrine growth factors and cytokines

#### Details of the agreement between MSB and LONN

Under the agreement:

- Lonza will supply MSB's clinical and commercial MPC product needs globally through to the end of Phase III clinical trials;
- MSB will have exclusive access to Lonza's Cell Therapy facilities in Singapore for the manufacture of allogeneic cell therapy products, subject to certain exceptions. We note that in some developing countries (including China and India) there is a requirement to build biologics manufacturing plants in the country in which the biologics are to be used. LONN would have to build these plants as required by MSB;
- Upon commercialisation of MSB's MPCs, MSB can trigger a process requiring Lonza to construct a purpose-built manufacturing facility exclusively for MSB's marketed products. This is likely to be triggered at least two years prior to MSB's requirement for large amounts of MPCs, given the time required to build and get regulatory signoff for a commercial-grade MPC manufacturing facility. In return, MSB will purchase agreed quantities of marketed products from the facility. Should MSB's Biologics Licence Application (BLA the final stage of regulatory approval) be approved, MSB management anticipate that they will likely use Lonza's Singapore plant for 12-18 months, as a purpose-built facility is being built for MSB's exclusive use;
- MSB can exercise its right to buy out this manufacturing facility at a pre-agreed purchase price two years after the facility receives regulatory approval;
- MSB will purchase MPCs from Lonza at a set price per MPC cell treatment units; and
- Lonza will utilize its proprietary intellectual property to facilitate reductions in MSB's manufacturing costs and help enable development of enhanced second-generation products. MSB and Lonza are incentivised to decrease COGS of MSB's MPCs.

#### Who are Lonza?

LONN is headquartered in Basel, Switzerland and is listed on the SIX Swiss Exchange. In 2010, the company had sales of CHF2.7bn. Lonza is one of the world's major suppliers to the pharmaceutical, healthcare and life science industries. Products and services provided by Lonza include research up to final product manufacture. Lonza provides:

- Production and support of active pharmaceutical ingredients, including biopharmaceuticals
- Cell-based research;
- · Endotoxin detection; and
- Cell therapy manufacturing.

LONN already have commercial relationships with a number of companies. This can be seen in the following figure.

#### Fig. 1: LONN have commercial arrangements with the following companies

-	<b>·</b> · · ·
Name of company	Bloomberg ticker
AplaGen	Unlisted
Biotest	BIO DE
California Peptide Research	Unlisted
Cytos	CYTN SW
Elusys	Unlisted
Genesis Biopharm	GNBP US
Genentech	DNA US
Medarex	MEDX US
Eisai	4523 JP
Osiris	OSIR US
Pasteuria Bioscience	Unlisted
Roche	ROG VX
Teva	TEVA IL

Source: Company data, Bloomberg

Lonza is one of the world's major suppliers to the pharmaceutical, healthcare and life science industries

#### **Comparable deals**

We have looked at comparable industry deals, and as a result believe that the likely size of the investment by LONN to build and certify a commercial cell therapy manufacturing unit is in the order of A\$150mn. For instance, in 2009, Genentech acquired a Singaporebased plant to manufacture the drug Avastin from Lonza for a maximum potential purchase price of US\$360mn (US\$290mn upfront, plus a maximum of US\$70mn in milestone payments). We believe this equated to an 18% IRR for Lonza, in line with industry standards for building commercial biologics manufacturing facilities.

In addition, in 2007:

- Genentech invested US\$140mn in Singapore to build a biologics plant to manufacture the eye disease drug Lucentis; and
- Eli Lilly built a \$150mn lab in Singapore to research cancer and type II diabetes therapies.

#### Nomura viewpoint

As a part of this deal, Lonza remains MSB's contract manufacturing provider. In our view, the fact that MSB has kept manufacturing separate from its potential distribution partner (TEVA) gives it more protection and options.

# 2. Timeline for release of MSB clinical trial results

MSB are in the midst of performing clinical trials in three types of ischaemic heart disease: chronic refractory angina, acute myocardial infarction (heart attack) and cardiac failure.

In 2009, MSB began a Phase IIa Congestive Heart Failure (CHF) Clinical Trial, with the aim of determining whether a single intra-myocardial injection of allogeneic MPC was useful in the treatment of CHF. The initial target for MSB's MPCs is those patients with the poorest prognosis, namely those with NYHA heart failure class III and IV. This is c40% of those with CHF. We expect MSB to release details of the final results of this trial at a special session of the American Heart Association conference on November 14.

The clinical stages for MSB's near-term opportunities are shown below.

#### Fig. 2: MSB - near-term clinical opportunities and trials

Trial stage	Preclinical	IND application	Phase II trials	Clinical III trials
General time until cashflow	7 years+	5-7 years	3-5 years	1-2 years
General probability of product getting to market	c10%	13%	21%	61%
Cost of trials	cUS\$3m	cUS\$5-10m	cUS\$20m	cUS\$50-100m
MSB products - indications and stages of de	evelopment			
Bone Marrow Transplant*				•
Congestive Heart Failure*				
Spinal Fusion				
Intervertebral Disc Repair				
Osteoarthritis knee				
Acute Myocardial Infarction (AMI)*			+>	

IND – Investigational New Drug Application \* - Phase IIb/III trials to be paid for by CEPH/Teva

Source: Company data

#### MSB's Phase II clinical trials in cardiac failure

This was a single-blinded, dose-escalation, randomised, multicenter clinical trial. Its Primary Endpoint was to evaluate the feasibility and safety of transendocardial injection of MPCs. Patients had a Class II-IV CHF with EF < 40%. Interim results were presented in January 2011. Patients were randomized in ratio of a 3 treatment to 1 control patients. The treatment arm received Mesenchymal Precursor Cells (MSB's Revascor product) at 25mn, 75mn, or 150mn cell doses. The cells were injected via a Johnson & Johnson (JNJ US, unrated) NOGA Myostar catheter. The interim clinical results from the trial demonstrated a sustained increase in ejection fraction.

The interim clinical results from the trial demonstrated a sustained increase in ejection fraction

p value

p=0.03

# Fig. 3: Responders to MPC treatment have sustained increase in EF relative to controls (EF < 40%)

	Control Ejection	Treated Ejection	
Timeline	fraction	fraction	p value
Baseline	30.5	27.8	0.05
plus 3 months	27.4	36.5	
plus 6 months	25.7	33.4	

Source: NYC Cardiac Cell Therapy Conference 2011

The interim Phase II CHF trial data is shown in the following figure. The trial now has >1.5 years of follow-up. Major and serious adverse cardiac events declined significantly compared to controls.

#### Fig. 4: MSB - Phase II CHF trial >1.5 years study follow-up

Event	MPC treatment (N=45)	Controls (N=15)	p value
	No. patients with event (%)	No. patients with event (%)	
Any Serious Adverse Cardiac Event (SAE)	20 (44.4%)	14 (93.3%)	0.001
Repeat SAEs	5 (11.1%)	5 (33.3%)	0.102
Any Hospitalization For Heart Failure	5 (11.1%)	3 (20.0%)	0.4
All Cause Deaths	2 (4.4%)	2 (13.3%)	0.26
Cardiac Deaths	0 (0.0%)	2 (13.3%)	0.059
Any Major Adverse Cardiac Event (MACE*)	3 (6.7%)	6 (40%)	0.005
MACE or Any Hospitalization for Heart Failure	6 (13.3%)	6 (40%)	0.056

Interim data analysis December 2010, after all patients have reached 6 months follow-up.

\*MACE defined as composite of MI, revascularization, or cardiac death

Source: NYC Cardiac Cell Therapy Conference 2011

MSB's MPC treatment also lowers the rate of serious adverse cardiac events over time. The major cardiac event rate per month declined by 84% during the trial (p=0.01).

Fig. 5: MPC treatment lowers rate of serious adverse cardiac events over time					
Parameter monitored	Percentage change				
Event rate - cardiac serious adverse event per month	54% reduction				
subject follow-up					
	0.40/ 1 /				

MACE event rate per month subject follow-up84% reductionp=0.01Cardiac Hospitalisation event rate per month subject48% reduction in rate of all cardiac hospitalisationsp=0.07up61% reduction in rate of heart failure hospitalisations (p=0.13)p=0.13

follow-up

Interim data analysis December 2010, after all patients have reached 6 months follow-up. \*MACE defined as composite of MI, revascularization, or cardiac death

"MACE defined as composite or MI, revascularization, or cardi

Source: NYC Cardiac Cell Therapy Conference 2011

We continue to believe that should this trial continue to demonstrate significant results, this would be a major positive for the stock. The clinical trial ended in June 2011. Should the final results be positive, then we expect that MSB and its partner will approach the US FDA regarding initiating a Phase III clinical trial in congestive cardiac failure. The hard end-points achieved to date will likely form the basis for the key primary end-points for an FDA Phase 3 trial in heart failure patients. We continue to forecast the start of US revenues for MSB from Revascor in FY15.

# 3. What does this deal mean for MSB?

Lonza is one of the major global providers of biological manufacturing services. Given the existing five-year relationship between MSB and LONN, LONN would already be intimately aware of the details of MSB's MPCs patent strength and ability for MSB's manufacturing processes to identify and expand MPCs to potentially necessary commercial requirements. We don't believe LONN would have committed to investing this level of capital without some expectation of certainty that MPCs could be produced in commercial quantities.

We have not changed our forecasts or PT on the back this news, as our current PT is based on probabilities of clinical trial success, but in our view, this deal increases the certainty of the ability of MSB to manufacture commercial quantities of MPCs, and goes some way to removing a major issue (ability to manufacture MPCs) for the stock. All-in-

MSB's MPC treatment also lowers the rate of serious adverse cardiac events over time

We have not changed our forecasts or PT on the back this news, as our current PT is based on probabilities of clinical trial success all, we consider this as further validation of MSB's platform technology. In addition, we think this deal significantly decreases the risk profile of the business.

Our risk-weighted valuations for the near-term valuations in the MSB pipeline are shown below.

#### Fig. 6: MSB – risk weighted valuation for the MSB product pipeline

Valuation of MSB R&D	Risk weighting of portfolio (in line				
portfolio	Risk-weighted valuation (A\$ps)	with Clinical Trial stage) (%)	Opportunity (A\$ps)		
Chronic refractory angina	\$0.57	21.4	\$2.66		
Acute myocardial infarction	\$2.67	21.4	\$12.45		
Congestive heart failure	\$4.17	61.2	\$6.82		
Bone marrow transplant	\$1.63	61.2	\$2.67		
Spinal Fusion	\$0.79	21.4	\$3.70		
Disc Repair	\$0.32	21.4	\$1.49		
Valuation	\$10.15		\$29.79		

Source: Nomura estimates, PubMed

#### Valuation and risks

We set our target price for MSB at A\$10.15 per share. Our DCF valuation uses a WACC of 16.05%. Our assumptions include:

- Equity beta due to its inherent risks, MSB will have a higher beta than most other industrial companies. We assume that the company's equity (and asset) beta is 1.80, in line with the average beta for higher-risk biotech opportunities.
- Nominal long-run growth rate given the potentially high growth rate of this business, and in line with those of other high-growth companies in the market, we assume a nominal long-run growth rate of 5% and a real long-run growth rate of 2.5%.

#### Risks to our investment view

There is still a good deal of uncertainty around MSB's viability in most of its prospective markets. Pre-clinical trials, although positive, give no firm indication of a product's true viability, and full foresight on future market conditions is difficult to obtain. In its favour, MSB's base product is found naturally in the body, and we see little reason to believe that injections of concentrated numbers would cause serious health issues or be relatively less effective in doing their natural job. Cancer concerns arising from the use of embryonic stem cells have not been mirrored in the use of adult stem cells. Problems associated with overgrowth of bones or tissue in sensitive areas are more likely, but less of a concern. If this becomes an issue, we believe that potentially it could be controlled by appropriate dosage and thus would affect the product's viability only marginally. To date, all preclinical and Phase II trials have shown good indications for the product's viability.

We believe that there is potential simply because no other product can directly rebuild the components of organs, tissue, bone, and muscle. As it stands, there have been no significant adverse effects or health issues and all Phase II or pre-clinical trials indicate a product with market viability. Its distinctive technology platform and clinical progress probably also places it in the strongest position for its markets relative to its stem-cell competitors. Therefore, we believe this is an attractive investment opportunity for investors with a higher risk appetite. We set our target price for MSB at A\$10.15 per share

# **Appendix A-1**

# **Analyst Certification**

I, David Stanton, hereby certify (1) that the views expressed in this Research report accurately reflect my personal views about any or all of the subject securities or issuers referred to in this Research report, (2) no part of my compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed in this Research report and (3) no part of my compensation is tied to any specific investment banking transactions performed by Nomura Securities International, Inc., Nomura International plc or any other Nomura Group company.

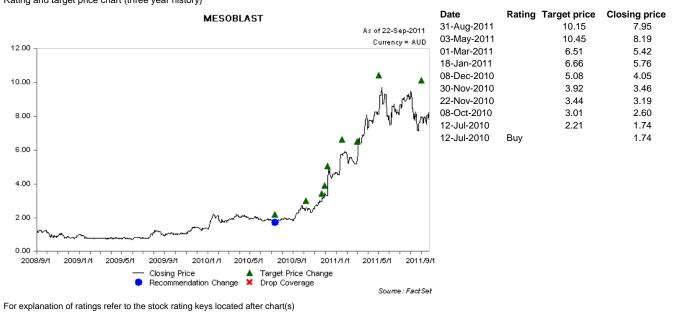
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Issuer name	Ticker	Price	Price date	Stock rating	Sector rating	Disclosures
Mesoblast	MSB AU	AUD 7.60	26-Sep-2011	Buy	Not rated	
Previous Rating						
Issuer name				Previous Rating		Date of change
Mesoblast				Not Rated		12-Jul-2010

AUD 7.60 (26-Sep-2011) Buy (Sector rating: Not rated)

#### Mesoblast (MSB AU)

Rating and target price chart (three year history)



**Valuation Methodology** We calculate that the NPV of the potential near-term opportunities developed by MSB is A\$29.79. We believe the probability of MSB getting its product onto market depends on its clinical trial stage. Hence, our risk-weighted valuation is A\$10.15.

**Risks that may impede the achievement of the target price** There is still a good deal of uncertainty around MSB's viability in most of its prospective markets. Pre-clinical trials, although positive, give no firm indication of a product's true viability and full foresight on future market conditions is difficult to obtain. In its favour, MSB's base product is found naturally in the body, and we see little reason to believe that injections of concentrated numbers would cause serious health issues or be relatively less effective in doing their natural job.

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Explanation of Nomura's equity research rating system for Asian companies under coverage ex Japan published from 30 October 2008 and in Japan from 6 January 2009

STOCKS

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#### STOCKS

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A 'Strong buy' recommendation indicates that upside is more than 20%.

A 'Buy' recommendation indicates that upside is between 10% and 20%.

A 'Neutral' recommendation indicates that upside or downside is less than 10%.

A 'Reduce' recommendation indicates that downside is between 10% and 20%.

A 'Sell' recommendation indicates that downside is more than 20%.

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