

MASTERSBALL

Player Acquisition Theory (PART I)

By Gary Jennison

With all of the cutting edge statistical techniques that the industry has unearthed over the last 5-10 years, one thing that has stayed fairly static has been the concept of valuation theory. I don't mean what Todd does, well, not exactly anyways, what I mean is the underlying concepts which affect how we value the players the way we do for draft and auction purposes. I prefer to call this Acquisition theory than valuation theory because well, we have the best of the best as it relates to technical valuation theory in Todd, and his area of expertise isn't really what I am after. A cousin, no doubt, but not valuation theory. We have to discuss it and truly understand it, but we're not looking to re-engineer it. Simply leverage it for our best purposes.

This series is going to be a somewhat meandering look at how we've gotten to the process we have today, the methods that exist, their strengths, their weaknesses, and hopefully in the end maybe a new way of doing business, or at least strengthen our understanding of the existing process.

The Current Player Acquisition Process

Whether one participates in a draft or an auction, they require some method for ranking the players they will select. In an auction we have bidding values and in a draft we have a ranking order.

For our purposes, whether or not one uses a particular valuation methodology (and I'd use the one practiced by this site), they all have a similar process in mind though they actually implement it differently. They use a series of calculations to determine a replacement level player at each position, and then calculate the amount of the statistics above and beyond that replacement level and evaluate all of the units to those statistics.

Why the replacement level adjustment? As you will find in other places on the site, we have to normalize the statistics between positions, based on the player pool at those positions.

Based on the way our values are created, one can create a draft list essentially from the dollar values provided from the site in descending order. That is to say, our players are ordered identically whether or not a league drafts or auctions its players. At a later time we will discuss the strategic implications of draft vs auction but this is an important thing to understand.

We have always maintained that leagues which use points instead of rotisserie categories have a much simpler valuation process, for obvious reasons. Determine replacement at each position, calculate the useful points, allocate them to the units available, each player has their value. Simple, easy, efficient.

So when you're creating a valuation methodology for a multi-category, multi-positional rotisserie league, the challenge of course is much harder. So what we do is more or less convert all of these categories into a points value, then allocate the units as per above. Again, the mechanics are different for every method, but this what they're all doing.

You're going to notice I've used one particular term repeatedly in this section – that is “replacement”. Replacement represents the last player drafted at each position – the \$1 player. It seems replacement is an extremely important part of this evaluation process. It drives everything we do from a player valuation and acquisition approach.

The Concept of Replacement Player

There are two reasons why the replacement player is such an obvious starting point for creating a valuation. One is completely quantitative, one completely qualitative.

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The qualitative reason for this is the practical one. At the end of the draft/auction, we will have acquired all of the players above and beyond these replacement ones. In a standard draft/auction, we will roster 23 players, and as such in plain English we are saying "I want my values to reflect a comparison between the player in question and the player I'd be stuck with if I waited until my last selection to draft that position". For the record, if you're shaking your head a little bit at that statement, well, that's why this series exists.

The quantitative reason for this makes sense if you've ever taken an algebra class. The teacher hands you your final exam. You're told that the replacement player at each position is worth 1 unit. You're told how many units there are in the entire economy. You're told the useful stats of each player. Then you're told to calculate a value for each player. Given those three pieces of information, you do the algebra, and the calculation does itself. Obviously in this static example, the methods the industry uses makes perfect sense.

Multi-Positional Adjustments

I am going to attempt to take a different approach to addressing the question of "Why are 20 HR from a C worth more than 20HR from an OF? I get 20 HR either way" This is posed all of the time on our boards, other places, etc.

I propose we respond to this question slightly differently. 20 HR from a C are worth more than from an OF because the entire player pool makes it such that I am forgoing more HR by taking the OF first and a different C later than by taking the C first and taking the OF later. It has nothing to do with the 20 HR themselves. It has to do with the opportunity cost of those 20 HR.

Opportunity Cost

From Wikipedia (because they explain this well):

"Opportunity cost is the value of the next-best choice available to someone who has picked between several mutually exclusive choices...A person who has \$15 can either buy a CD or a shirt. If he buys the shirt the opportunity cost is the CD and if he buys the CD the opportunity cost is the shirt. If there are more choices than two, the opportunity cost is still only one item, never all of them.

A person who invests \$10,000 in a stock denies herself or himself the interest that could have accrued by leaving the \$10,000 in a bank account instead. The opportunity cost of the decision to invest in stock is the value of the interest.

A person who sells stock for \$10,000 denies himself or herself the opportunity to sell the stock for a higher price in the future, inheriting an opportunity cost equal to future price minus sale price."

So back to our example above, the premiums we pay for "scarce" positions where replacement is weaker affect the value of the stats of those players.

The question here is whether or not our method does the best job possible of advising us which players to take and when and what to pay for them.

(Author's side tangent...I won't give this disclaimer again...our methodology is the soundest in the industry for the purposes of calculating a static value for players...this is a more advanced look at other concept as it relates to the process of acquiring players.)

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Baby Steps

Anyone who's been on the board knows Todd's example of a 2 player league, HR as the only category, 1 C, 1 MI with the following HR totals.

	<u>C</u>	<u>MI</u>
1	30	31
2	10	15

OF 1 has the most HR, so he's the best, right? Obviously not. If the first pick is OF1, the second pick is C1, then MI2, then C2. Team 1 gets 41 HR, team 2 gets 45, team 2 wins. So you create the adjusted values which look like:

	<u>C</u>	<u>MI</u>
1	20	16
2	0	15

And of course C1 becomes the first pick. Been there, done that. But now let's look at a slightly more complicated example.

Intermediate Baby Steps

Lets turn this into a 4 player, 4 position league (1 C, 1 MI, 1 CI, 1 OF) and look at the numbers again.

	<u>C</u>	<u>MI</u>	<u>CI</u>	<u>OF</u>
1	30	31	32	33
2	10	15	24	25
3	7	10	12	20
4	5	5	5	5

Using the approach listed above, here is the adjusted value schedule ranked 1-16.

<u>Player</u>	<u>#</u>
OF1	28
C11	27
MI1	26
C1	25
OF2	20
C12	19
OF3	15
MI2	10
C13	7
C2	5
MI3	5
C3	2
C4	0
MI4	0
C14	0
OF4	0

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What you'll find here is that the ranking goes in order of HR hit because I've intentionally set replacement player to be equal for each position.

So let's draft our teams. All four owners will select in the order listed above but obviously cannot select a player at a position they've already acquired.

The team totals:

<u>Team</u>	<u>HR</u>
1	65
2	67
3	67
4	70

Let's take team 3 as our example. The reason he doesn't finish first is for one reason – which is that he selects MI1 in the first round. When he gets to his third round pick, the highest HR total left is MI3, with 10 HR. The problem is he has already taken MI1 and therefore cannot roster the MI. He has to take C3 at a deficit of 3 HR. Team 4 then gets MI3 and wins. It really all comes down to that.

Regrouping A Bit

So let's break down the problem. Our system compares players across position based on one thing and one thing only – how they compare to the last player drafted. It ignores the fact that in the example above, the top 3 OF hit 78 HR between them whereas the top 3 C hit 47. There is so much less supply at catcher than at OF that the current process doesn't really take into account.

So I propose a different approach to the problem. We need a method which in some way measures the depth of the position player pool when determining the best player to select.

So what I did was take each player's adjusted value from above (total HR less replacement) and then calculate each player's percentage of the total adjusted value at his position. So the positional totals were as follows:

<u>Pos</u>	<u>Adj HR</u>
C	32
MI	41
CI	53
OF	63

So C1 ends up being 25 of the 32 total available adjusted HR in the pool, or 78%!

If you do the same for everyone available and then re-rank the list based on positional share, adjusted based on replacement (I multiply by 100 to get round numbers), the list re-ranks as such:

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	#2	NEW RK	OLD RK	CHG
C1	78	1	4	-3
MI1	63	2	3	-1
CI1	51	3	2	1
OF1	44	4	1	3
CI2	36	5	6	-1
OF2	32	6	5	1
OF3	24	7	7	0
MI2	24	8	8	0
C2	16	9	10	-1
CI3	13	10	9	1
MI3	12	11	11	0
C3	6	12	12	0
C4	0	13	13	0
MI4	0	14	14	0
CI4	0	15	15	0
OF4	0	16	16	0

You see the impact here – basically because of the strength of OF2 and OF3 compared to the other positions, the opportunity cost of not taking the C is highlighted in the values.

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If you re-run the draft, with Team 3 using the new method, the others drafting the old way, you get:

<u>Team</u>	<u>HR</u>
1	65
2	67
3	69
4	68

So for our introductory piece here, this is at least a start into another way to look at this.

Part 2 of this series will look at this basic approach but take it to the auction side of the game and address how we would apply all of this to our valuation theory.

Part 3 will be to look at our actual player pools for a MIX15 league and see how it would affect our draft/auction approach.

Later Parts will hopefully be driven by message board impact but will at least include strategic implications of what we discuss.

This is going to be my focus of offseason content for the site and I hope this has at least awakened your thought process a bit on all if this, if not by the end helping us become better at the draft/auction table.