A Real Market Financial Model of Diminishing Musharaka Property Finance

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A. Introduction:

It has been a great challenge for the Muslim Umma to return to the guided path from traditional Riba (interest) based financial system that has dominated the financial market influencing Islamic practices globally including countries those are believed to be Muslim nations and the rest alike.

In overcoming the challenge, a number of attempts have been made by the Islamic scholars worldwide however, it became evident that no process was able to overcome the pre-disposed traditional banking concept, process and influence of laws of the lands. Instead, the institutions developed only contractual documents and management processes compatible to Islamic Principles whilst keeping all financial transactions and calculation exactly same as the traditional banking system. These processes sometimes replace word "*interest*" with "*profit*" or "*rent*" or "*rental facility*" and so on, thus remain as pseudo approaches which have lots of deviations of opinions, blind trusts on scholar's fatwa and a poorer acceptance to the believers who is willing to understand the process themselves and try to relate to the real world factors.

In all of these pseudo Halal finances, the customers are charged with a rental which is significantly different from the real market rent of the asset, for example a property, or a profit which is not reflecting the profit that property would make when traded. This is purely because the pseudo Halal finances just use the traditional banking interest rate as the basis of calculation of the rent or profit whilst the banking interest rate may not have direct or reasonable relationship with the real world rental or profit potential of the property.

The Real Market Musharaka (partnered) (RMM) financial process presented in this article takes into consideration of the real world market potentials of a property and take that as the prime basis of the net return potential which then used to derive the schedule of net payments by the customer truly reflecting the real market.

The Real Market Musharaka (RMM) finance includes the following basic processes:

1. Purchase an asset (e.g. a property) with combined contribution from the financier and the financed customer.

2. Rent the property to the financed customer at an agreed rental value based on real market valuation by independent and certified valuer. The rental value can also be appreciated as the real world appreciation of rental potential with a rental growth rate. The rental and it's growth rate can be revaluated at a reasonable frequency as the parties find appropriate.

3. Parties agrees that the financed customer also purchases the financier's share over an agreed term period so that by the end of the term, the financed customer becomes the full owner of the property financially. Typically, the transactions occur monthly but other intervals can also be devised. This is called diminishing Musharaka process. The financed customer also acquires the shares at a pre-agreed price per unit. The purchase price is determined by the property value growth potential as an annual growth rate which is obtained through an independent evaluation using real world market data. Review of these growth rates (rental and price) occurs at a pre-agreed interval to reflect the real market.

4. Parties also share reasonable and determinable costs of ownerships of the property.

5. The financed customer is allowed to purchase additional shares at any time permissible by the agreement and the local law.

6. At the end of the term or when the financed customer completed purchasing all the shares from the financier, the property is handed over to the financed customer by the locally appropriate legal process and the financial contract is terminated.

7. Any dispute is managed through trust, contract and by the applicable local laws those are not contradicting with the Islamic Sharia practices.

8. The ownerships of the property shares are managed through the contract and through the compliance of the local legal process. For example, in Australia, the financier can either

chose to secure their share by registering the property in party's legal names or through contract and mortgage, depending upon which one is appropriate in the context of financial, local law and Sharia compliances. In Australian context registering financier name will require payment of duty twice, therefore, the latter process is found appropriate. In other countries, any other appropriate processes can be implemented to suite the local situations.

The above process is a simple description of the core financial process. Further details are worked out by the institutions depending upon their technical ability and compliances to local laws and Sharia principles. The financial calculation model used in the Real Market Musharaka (RMM) finance is described in the follow sections.

B. Financials of the Property Acquisition by the Parties:

This model is currently used by the Islamic Cooperative Finance Australia Limited (ICFAL) since 2005. The ICFAL name is mentioned throughout the article to reflect a financier.

Total Purchase Cost/Value including property price and agreed expense = P_v
Purchaser share of the property value (Purchaser Musharaka Units) = M_{sh}
ICFAL share of the property value (ICFAL Musharaka Units) = I_{sh}

C. Purchasers Monthly Payment Calculation:

Interval of the regular ICFAL Musharaka Unit purchase by the financed customer = Monthly
Total number of payments in the Term = T

C.1. Payment for ICFAL Unit purchase by the purchaser post acquisition:

Monthly number of ICFAL Musharaka unit purchased regularly, $P = \frac{I_{sh}}{T}$

Payment, P_n, for the purchase of ICFAL Musharaka Units, P, at the n^{th} month is

$$P_n = P\left(1 + \frac{g}{12}\right)^n$$

Where, g is the agreed annual rate of property appreciation based on valuation report set at the time of this agreement is executed.

Profit paid to ICFAL on purchase of Musharaka Unit in the n^{th} month, P_{fn}

$$P_{fn} = (P_n - P) = P\left\{\left(1 + \frac{g}{12}\right)^n - 1\right\}$$

ICFAL Musharaka Unit balance after the n^{th} month, $I_{sn} = (I_{sh} - nP)$

Purchaser's Musharaka Unit balance after the n^{th} month, $M_{sn} = M_{sh} + nP$

C.2. Additional share purchase by the purchaser during the term:

Payment, P_{n1} for the purchase of any ICFAL Musharaka Units, P_1, at the n^{th} month is

$$P_{n1} = P_1\left(1 + \frac{g}{12}\right)^n$$

Profit paid to ICFAL on purchase of additional Musharaka Unit in the n^{th} month

$$= (P_{n1} - P_1) = P_1\left\{\left(1 + \frac{g}{12}\right)^n - 1\right\}$$

ICFAL Musharaka Unit balance after this additional share purchase of P_1, $I_{sn} = I_{sn1} - P_1$, where I_{sn1} is the ICFAL balance of Units one-month prior to the n^{th} month.

Similarly, the purchaser's Musharaka Units after the additional share purchase of P_1, $M_{sn} = M_{sn1} + P_1$, where M_{sn1} is the Purchaser's balance of Units one-month prior to the n^{th} month.

C.3. Purchaser Ijarah (Rental / Lease) Payment:

Rental Payment for ICFAL share on the n^{th} month, $R_{In} = R_n \frac{52}{12} . \frac{Isn}{Isn+Msn}$

R_n is the agreed rental per week for the property on the n^{th} month, which is calculated as

$$R_n = R_0\left(1 + \frac{r}{12}\right)^n,$$

where R_0 is the agreed weekly rental and r is the agreed annual percent rental growth rate, set at the time of undertaking to rent the property by the purchaser or any change reviewed during the term as required to reflect market and scheduled in the financial plan. These values are determined by the independent valuation of the market. When no valuation is performed, by the agreement of the parties, the national CPI index can be taken as the basis for the rental growth rate.

C.4. Fixed cost share by ICFAL:

As per the Musharakah Agreement, the scheduled fixed and determinable cost items of property ownership are:

a. Council rates and charges as per the council bills
b. For strata property, the strata levy
c. Water and waste fixed service availability charges
d. Agreed property and public liability insurance/ Takaful

From actual bills, the total monthly cost of ownership is determined on the n^{th} month of the term as $F_n = \Sigma$ all items.

ICFAL share of the fixed cost items on n^{th} month, $F_{In} = F_n \frac{Isn}{Isn+Msn}$

ICFAL share of the fixed cost items over the entire Term, $F_{IT} = \sum_{n=1}^{T} F_{In}$.

C.5. Total Monthly Payment, P_{tn}:

Monthly payment by the purchaser on the n^{th} month of the term $P_{tn} = P_n + R_{In}$
Total monthly payment with additional share purchase on the n^{th} month, $P_{tn} = P_n + P_{n1} + R_{In}$.

C.6. Net Monthly Payment, P_{net}:

The net monthly payment after the fixed cost offset on the n^{th} month, $P_{net} = P_{tn} - F_{In}$

C.7. Total Payment for the entire Term, P_T:

The total payment the purchaser makes over the entire Term is calculated as below.

$P_T = \sum_{n=1}^{T} P_{tn}$, Where T is the total number of months in the entire term.

C.8. Net Payment for the entire Term, P_{Tnet}:

The net payment by the purchaser over the entire term $P_{Tnet} = P_T - F_{IT}$

D. ICFAL equivalent net rate of return (the rate, *k*)

The ICFAL equivalent net rate of return (the *rate*) is calculated as the Internal Rate of Return (IRR) based on the ICFAL initial Musharaka Unit value I_{sh} and the series of regular unequal monthly scheduled payments (rental, Musharaka unit purchase and fixed cost share offset) received from the Purchaser over the entire Term as annuity. This is then annualised to determine annualised percent rate (of return).

The actual rate depends on the actual transactions including payments for regular Musharaka Unit purchase, additional Musharaka Unit purchase, renal and the fixed cost offset during the Term. This is typically less than the scheduled rate because of reduction of ICFAL unit equity due to additional share purchase ahead of the scheduled regular purchase.

Two alternative methods are used to simplify the calculation.

D.1. Considering average net monthly payment as annuity

$$P_{av} = \frac{P_T - F_{IT}}{T}$$

$$I_{sh} = P_{av}\left[\frac{1-\left(1+\frac{k}{12}\right)^{-T}}{\left(\frac{k}{12}\right)}\right]$$

Where *k* is the equivalent rate per year. The value *k* is derived from iteration of the above equation using project I_{sh}, P_{av} and T.

This method is approximate enough when the variation of payment is low and for not additional Musharaka Unit purchase occurs. Accuracy deviates when additional unit purchase takes place.

D.2. Considering the series of regular monthly net payments as annuity

$$I_{sh} = \sum_{n=1}^{T} \frac{P_{tn} - F_{In}}{\left(1+\frac{k}{12}\right)^{n}}$$

Where *k* is the equivalent rate per year. The value *k* is derived from iteration of the above equation using project I_{sh} and T values and P_{tn} is series of actual monthly total payment for n^{th} month including regular and any additional payment for Musharaka Unit purchase and F_{In} is the share of the fixed cost refunded by ICFAL to the Purchaser.

E. Example of a Real Financial Plan:

The schedule inserted in the below section is prepared with typical real values but calculated for a very short Term of 60 months.

E.1. Input Data Block

Sample Member 92888888	Number and Name of Membership (The purchaser)
5	Term of Finance (Years), *T/12*
$250,000	Total ICFAL Contribution, I_{sh}
$100,000	Total Purchaser's Contribution, M_{sh}
1-Sep-15	Property Acquisition Settlement Date
$600.00	Administrative Fee
1	Rental and Growth Review Interval, years
Torense Title Home	Type of property
$350.00	Agreed Current Weekly Rental (R0)
1.00%	Evaluated Annual Rental Growth Rate, *r*
2.00%	Evaluated Annual Rate of Property value gain, *g*
$200.00	Evaluated Monthly fixed costs, F_n
0.00	ICFAL Share end of the term (< $0.50)

E.2. Output Data Block and the Example Financial Schedule

Financial Plan (Rental and Musharaka Unit Purchase Schedule)

ICFA Ltd	**Vs.**	**Sample Member 92888888**						
			Finance Term					**05.0 years**
			Total Cost of Acquisition of the Property:					**$350,000**
			Agreed weekly Rental to be shared by ICFAL and member					**$350**
			Monthly Payments for Rental and Musharaka Unit Purchase are varying with an average					**$4,945.9**
			First Regular Payment:	**1-Oct-15**			Last Regular Payment:	**1-Sep-20**
			Administrative charges to be deducted from Member's a/c with 1st regular payment.					**$600**
			Agreed Rental and Growth review interval					**1.00 years**

ICFA Returns and Members Payment Summary

$46,752.93	ICFA Total Profit
$4,357.14	ICFA Total Fixed Cost Share, F_{IT}
$42,395.78	Total Net Profit at completion of term
$4,873.26	Average Net Monthly Payment, P_{av}
6.34%	Annualised net Rate of Return (average method - D1), *k*
6.48%	Annualised net Rate of Return (series method - D2), *k*
$296,752.93	Member's Total Payment for entire Term, P_T
$292,395.78	Member's Total Net Payment for entire Term, P_{Tnet}

Date	Member Actual payment ($P_{tn} = P + R_{In} + P_{fn}$)	Member's purchase of Musharaka Units (P)	Share of Rental		ICFAL Profit on Musharaka Unit sell (P_{fn})	Balance of Musharaka Units		ICFAL balance unit target sell Price (a)	Member balance unit target sell Price (b)	Property Target Net Sell Price (a+b)
			ICFAL (R_{In})	Member		ICFAL (I_{sn})	Member (M_{sn})			
1-Sep-15	Property Musharaka Settlement			-		250,000	100,000			
1-Oct-15	5257.85	4,166.67	1,084.2	433.7	6.94	245,833	104,167	246,243	104,340	350,583
1-Nov-15	5247.62	4,166.67	1,067.1	452.1	13.90	241,667	108,333	242,473	108,695	351,168
1-Dec-15	5237.38	4,166.67	1,049.8	470.6	20.87	237,500	112,500	238,689	113,063	351,753
1-Jan-16	5227.12	4,166.67	1,032.6	489.1	27.85	233,333	116,667	234,893	117,446	352,339
1-Feb-16	5216.84	4,166.67	1,015.3	507.7	34.84	229,167	120,833	231,083	121,844	352,926
1-Mar-16	5206.54	4,166.67	998.0	526.2	41.84	225,000	125,000	227,259	126,255	353,515
1-Apr-16	5196.22	4,166.67	980.7	544.8	48.85	220,833	129,167	223,423	130,681	354,104
1-May-16	5185.89	4,166.67	963.3	563.5	55.88	216,667	133,333	219,572	135,122	354,694
1-Jun-16	5175.54	4,166.67	946.0	582.1	62.92	212,500	137,500	215,709	139,576	355,285
1-Jul-16	5165.17	4,166.67	928.5	600.8	69.97	208,333	141,667	211,832	144,046	355,877
1-Aug-16	5154.78	4,166.67	911.1	619.5	77.03	204,167	145,833	207,941	148,529	356,470
1-Sep-16	5144.38	4,166.67	893.6	638.3	84.10	200,000	150,000	204,037	153,028	357,065
1-Oct-16	5133.96	4,166.67	876.1	657.1	91.19	195,833	154,167	200,119	157,541	357,660
1-Nov-16	5123.51	4,166.67	858.6	675.9	98.28	191,667	158,333	196,188	162,068	358,256
1-Dec-16	5113.06	4,166.67	841.0	694.7	105.39	187,500	162,500	192,243	166,610	358,853
1-Jan-17	5102.58	4,166.67	823.4	713.6	112.51	183,333	166,667	188,284	171,167	359,451
1-Feb-17	5092.08	4,166.67	805.8	732.5	119.64	179,167	170,833	184,311	175,739	360,050
1-Mar-17	5081.57	4,166.67	788.1	751.5	126.79	175,000	175,000	180,325	180,325	360,650
1-Apr-17	5071.04	4,166.67	770.4	770.4	133.94	170,833	179,167	176,325	184,926	361,251
1-May-17	5060.49	4,166.67	752.7	789.4	141.11	166,667	183,333	172,311	189,542	361,853
1-Jun-17	5049.92	4,166.67	735.0	808.5	148.29	162,500	187,500	168,283	194,173	362,456
1-Jul-17	5039.34	4,166.67	717.2	827.5	155.48	158,333	191,667	164,242	198,819	363,060
1-Aug-17	5028.73	4,166.67	699.4	846.6	162.68	154,167	195,833	160,186	203,480	363,666
1-Sep-17	5018.11	4,166.67	681.5	865.7	169.90	150,000	200,000	156,116	208,155	364,272
1-Oct-17	5007.47	4,166.67	663.7	884.9	177.13	145,833	204,167	152,033	212,846	364,879
1-Nov-17	4996.81	4,166.67	645.8	904.1	184.37	141,667	208,333	147,935	217,552	365,487
1-Dec-17	4986.14	4,166.67	627.9	923.3	191.62	137,500	212,500	143,823	222,273	366,096
1-Jan-18	4975.44	4,166.67	609.9	942.6	198.88	133,333	216,667	139,698	227,009	366,706
1-Feb-18	4964.73	4,166.67	591.9	961.8	206.16	129,167	220,833	135,558	231,760	367,317
1-Mar-18	4954.00	4,166.67	573.9	981.2	213.45	125,000	225,000	131,403	236,526	367,930
1-Apr-18	4943.25	4,166.67	555.8	1,000.5	220.75	120,833	229,167	127,235	241,308	368,543
1-May-18	4932.48	4,166.67	537.8	1,019.9	228.06	116,667	233,333	123,052	246,105	369,157
1-Jun-18	4921.70	4,166.67	519.6	1,039.3	235.38	112,500	237,500	118,855	250,917	369,772
1-Jul-18	4910.89	4,166.67	501.5	1,058.7	242.72	108,333	241,667	114,644	255,744	370,389
1-Aug-18	4900.07	4,166.67	483.3	1,078.2	250.07	104,167	245,833	110,418	260,587	371,006
1-Sep-18	4889.23	4,166.67	465.1	1,097.7	257.43	100,000	250,000	106,178	265,446	371,624
1-Oct-18	4878.37	4,166.67	446.9	1,117.2	264.80	95,833	254,167	101,924	270,320	372,244
1-Nov-18	4867.49	4,166.67	428.6	1,136.8	272.19	91,667	258,333	97,655	275,209	372,864
1-Dec-18	4856.59	4,166.67	410.3	1,156.4	279.59	87,500	262,500	93,371	280,114	373,485
1-Jan-19	4845.68	4,166.67	392.0	1,176.0	287.00	83,333	266,667	89,073	285,035	374,108
1-Feb-19	4834.75	4,166.67	373.7	1,195.7	294.42	79,167	270,833	84,761	289,971	374,731
1-Mar-19	4823.79	4,166.67	355.3	1,215.4	301.86	75,000	275,000	80,433	294,923	375,356
1-Apr-19	4812.82	4,166.67	336.9	1,235.1	309.30	70,833	279,167	76,092	299,890	375,982
1-May-19	4801.83	4,166.67	318.4	1,254.9	316.76	66,667	283,333	71,735	304,873	376,608
1-Jun-19	4790.83	4,166.67	299.9	1,274.7	324.24	62,500	287,500	67,364	309,872	377,236
1-Jul-19	4779.80	4,166.67	281.4	1,294.5	331.72	58,333	291,667	62,977	314,887	377,865
1-Aug-19	4768.76	4,166.67	262.9	1,314.4	339.22	54,167	295,833	58,577	319,918	378,494
1-Sep-19	4757.69	4,166.67	244.3	1,334.2	346.73	50,000	300,000	54,161	324,964	379,125
1-Oct-19	4746.61	4,166.67	225.7	1,354.2	354.25	45,833	304,167	49,730	330,027	379,757
1-Nov-19	4735.51	4,166.67	207.1	1,374.1	361.79	41,667	308,333	45,285	335,106	380,390
1-Dec-19	4724.39	4,166.67	188.4	1,394.1	369.33	37,500	312,500	40,824	340,200	381,024
1-Jan-20	4713.25	4,166.67	169.7	1,414.1	376.89	33,333	316,667	36,348	345,311	381,659
1-Feb-20	4702.10	4,166.67	151.0	1,434.2	384.47	29,167	320,833	31,858	350,437	382,295
1-Mar-20	4690.92	4,166.67	132.2	1,454.2	392.05	25,000	325,000	27,352	355,580	382,932
1-Apr-20	4679.73	4,166.67	113.4	1,474.4	399.65	20,833	329,167	22,832	360,739	383,571
1-May-20	4668.52	4,166.67	94.6	1,494.5	407.26	16,667	333,333	18,296	365,914	384,210
1-Jun-20	4657.28	4,166.67	75.7	1,514.7	414.88	12,500	337,500	13,745	371,106	384,850
1-Jul-20	4646.03	4,166.67	56.8	1,534.9	422.52	8,333	341,667	9,178	376,313	385,492
1-Aug-20	4634.76	4,166.67	37.9	1,555.1	430.17	4,167	345,833	4,597	381,537	386,134
1-Sep-20	4623.48	4,166.67	19.0	1,575.4	437.83	-	350,000	-	386,778	386,778
n/a	0.00	-	-	-	-	-	-	-	-	-
Total	**296,753**	**250,000**	**33,618**	**59,734**	**13,135**			**-**	**-**	**-**
Date	Member Actual payment (Ptn = P + RIn + Pfn)	Member's purchase of Musharaka Units (P)	Share of Rental		ICFAL Profit on Musharaka Unit sell (Pfn)	Balance of Musharaka Units		ICFAL balance unit target sell Price (a)	Member balance unit target sell Price (b)	Property Target Net Sell Price (a+b)
			CFAL(RIn)	Member		ICFAL (Isn)	Member (Msn)			

Note - 1 Unless otherwise reviewed upon request from any party after the completion of the 1st year from the Musharaka Settlment, this finacial plan will remain firm for the full term.

Note - 2 The Balance of Musharaka Units are at the original unit price. At the early termination or when purchase of additional units has to occur, the sell price of ICFAL Musharak units will be as per the column "ICFAL Units Sell Price". If a sell has to occur prior to the finance term is complete, the target sell price of the property is to be determined by the value listed as "Property Net Sell Price" after all selling expenses.

Note - 3 The purchaser agreed to purchase ICFAL Musharaka Units at nominal annual property value growth rate of 2.00%. Agreed annual average Rental growth rate is 1.00%. All the profits on unit sale and Rental to be paid to ICFAL over the entire term as scheduled without any additional unit purchase will equate to an Equavalent Annualised Rate of 6.34%.

Note - 4 An estimated average monthly fixed cost of $200.00 covering council rates, water and sewerage service and insurance will be shared in proportion to the balance of units at the middle of billing period by ICFAL. This may equate to approximately $4,357 over the entire finance period during when ICFAL share diminishes from 71.43% to 0.00%. Actual amount will differ from this estimate based on actual bills.