

BloomBeans: A Peer-to-Peer Decentralized Global Financial System

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Abstract

A purely peer-to-peer version of a financial system can now be replicated using Blockchain technology without going through a centralized financial institution.

1 - A base layer of currency, with a well structured monetary policy.

2 - A decentralized version of all major financial products like: pensions, insurance, saving accounts, passive income and loans.

3 - Decentralized markets for peer-to-peer trading of these products, along with offering and obtaining P2P loans to be used as collateral.

4 - A specialized financial blockchain infrastructure that allows financial decentralized applications (DAPPs) and further trading with non-decentralized financial instruments like equity, commodities, real estate participations, art tokenization, mortgages, centralized insurance, etc.

Replacing centralization and oversight with an automated system can lead to large-scale financial cost reductions. But most important, it can safeguard the populace against wealth extraction, mitigate economic imperialism and combat widespread corruption in both finance and politics.

These significant advantages create an inherent demand, justifying the system's monetary growth while ensuring the stability of currency value.

The system's fairness is guaranteed by its open-access, impartiality and immutable code laws.

By anchoring the financial system in mathematical principles rather than power dynamics, there is a shift from an abusive system built on money lending privileges, uncertainty, debt and consumption, to one that fosters savings, long-term vision, predictability and integrity.

1 - Introduction

Centralized political power seems more dominant than ever, but the reverse is true.

The rise of the internet and the sharing of networked information and knowledge are gradually diminishing the influence of corporate mass media. Modern interconnectivity is now eradicating traditional propaganda methods.

Similarly, decentralized finance is revolutionizing the global economy. Efforts to control cryptocurrencies are likely to be ineffective, as economies that don't embrace this technology will become outdated.

In the coming decades, we will see societies evolve from rigid, power-centric hierarchies to fluid, organic networks. The combined strength of a globally connected consciousness and a globally integrated financial system will surpass any centralized decision-making entity.

The cryptosphere exemplifies one of these self-organizing networks. It evolves like a living organism, sharing code and evolving from previous developers' work as a cohesive whole. This will render decentralized cryptocurrencies unstoppable and ensure the economy — the lifeblood of society — flows freely and without blockages.

BloomBeans was founded on January 18th, 2024 in this context. Its mission is to aid the crypto community in building a pathway for the global populace to transition away from the current feudal financial system to a vibrant and healthy world, enabling societies to thrive like never before.

2 – BloomBeans

BloomBeans is a decentralized blockchain ecosystem featuring its own currency, markets, and a suite of the most familiar financial products. All tailored to facilitate the ideal financial environment for a healthy economy.

While Bitcoin introduced the world to a decentralized currency and acts primarily as a store of value, BloomBeans aims to usher in a holistic decentralized Financial System.

3 – Currency

Overview: The official currency of the BloomBeans System is called BEAN.

Initial Supply: The system is launched with an initial supply of 1,000,000 BEAN

Total Supply: A maximum of 21 Billion BEAN coins will ever be created. Reaching this cap will be a slow process spanning several centuries as the financial products minted by users continue to pay out rewards in BEAN currency.

Monetary Policy: The BloomBeans system starts with a 20% yearly Interest Rate. The higher the Interest Rate the bigger the financial product rewards. This currency growth, however, decreases each time a new milestone in the Total Amount of BEAN coins is reached. Then, a new Period starts with an Interest Rate reduced by 0.1% (see Monetary Policy Table below).

Monetary Growth: An early high Interest Rate allows the Financial System to start with a faster monetary growth and support high demand of new users in its early stages. Then, in its mid to late stages the system expansion will slow and be closer to natural economic growth.

Currency Stability: If users find value in the system and commit their assets for longer durations, BEAN's currency supply will rise more quickly and interest rates will drop faster. This decline in interest rates reduces BEAN rewards and the currency growth, resulting in a slower pace towards its 21 Billion coins.

Currency Value: The key to maintaining and increasing the BEAN's value lies in the demand for the currency, which is driven by its numerous benefits compared to traditional finance (points 6 and 7).

Optimizing Interest Rates: Mathematical simulations of standard product demand and commitment by users have shown the expected currency growth. Based on that, the Interest Rate has been set in a way that balances three main aspects: long-term duration of the system, appealing returns, and currency value stability.

Monetary Policy Table: The following table links the increasing Total Amount of Coins with the corresponding Interest Rate **R** which represents yearly interest of a product. The BloomBeans system calculations release interest on a monthly basis, so the Monthly Interest Rate **r** is calculated:

$$r = \left((1 + R)^{\frac{1}{12}} \right) - 1$$

For instance, if a Savings Account is created at period **0**, it will accumulate interest at a monthly rate of 1.530947% leading to an annual total of 20%, every year, throughout the product's lifetime.

PERIOD	TOTAL AMOUNT OF COINS	INTEREST RATE R	MONTHLY INTEREST RATE r
0	1.000.000	20,00%	0,01530947
1	20.000.000	19,90%	0,01523894
2	21.000.000	19,80%	0,01516835
3	22.000.000	19,70%	0,01509770
4	23.000.000	19,60%	0,01502701
5	24.000.000	19,50%	0,01495626
6	26.000.000	19,40%	0,01488545
7	28.000.000	19,30%	0,01481459
8	30.000.000	19,20%	0,01474368
9	32.000.000	19,10%	0,01467271
10	34.000.000	19,00%	0,01460169
11	36.000.000	18,90%	0,01453061
12	38.000.000	18,80%	0,01445948
13	40.000.000	18,70%	0,01438829
14	42.000.000	18,60%	0,01431705
15	44.000.000	18,50%	0,01424575
16	46.000.000	18,40%	0,01417440
17	48.000.000	18,30%	0,01410299
18	50.000.000	18,20%	0,01403152

19	52.000.000	18,10%	0,01396000
20	54.000.000	18,00%	0,01388843
21	56.000.000	17,90%	0,01381680
22	58.000.000	17,80%	0,01374511
23	60.000.000	17,70%	0,01367337
24	62.000.000	17,60%	0,01360158
25	64.000.000	17,50%	0,01352972
26	66.000.000	17,40%	0,01345781
27	68.000.000	17,30%	0,01338585
28	70.000.000	17,20%	0,01331382
29	72.000.000	17,10%	0,01324175
30	74.000.000	17,00%	0,01316961
31	76.000.000	16,90%	0,01309742
32	78.000.000	16,80%	0,01302517
33	80.000.000	16,70%	0,01295287
34	82.000.000	16,60%	0,01288051
35	85.000.000	16,50%	0,01280809
36	88.000.000	16,40%	0,01273561
37	91.000.000	16,30%	0,01266308
38	94.000.000	16,20%	0,01259049
39	97.000.000	16,10%	0,01251784
40	100.000.000	16,00%	0,01244514
41	104.000.000	15,90%	0,01237238
42	108.000.000	15,80%	0,01229956
43	112.000.000	15,70%	0,01222668
44	116.000.000	15,60%	0,01215374
45	120.000.000	15,50%	0,01208075
46	125.000.000	15,40%	0,01200770
47	130.000.000	15,30%	0,01193459
48	135.000.000	15,20%	0,01186143
49	140.000.000	15,10%	0,01178820
50	150.000.000	15,00%	0,01171492
51	160.000.000	14,90%	0,01164158
52	170.000.000	14,80%	0,01156817
53	180.000.000	14,70%	0,01149472
54	190.000.000	14,60%	0,01142120
55	200.000.000	14,50%	0,01134762
56	210.000.000	14,40%	0,01127399
57	220.000.000	14,30%	0,01120029
58	230.000.000	14,20%	0,01112654
59	240.000.000	14,10%	0,01105272
60	250.000.000	14,00%	0,01097885
61	260.000.000	13,90%	0,01090492
62	270.000.000	13,80%	0,01083093
63	280.000.000	13,70%	0,01075688
64	300.000.000	13,60%	0,01068277
65	320.000.000	13,50%	0,01060860
66	340.000.000	13,40%	0,01053437
67	360.000.000	13,30%	0,01046008
68	380.000.000	13,20%	0,01038573
69	400.000.000	13,10%	0,01031132
70	420.000.000	13,00%	0,01023684
71	450.000.000	12,90%	0,01016231
72	480.000.000	12,80%	0,01008772
73	510.000.000	12,70%	0,01001307
74	540.000.000	12,60%	0,00993835
75	570.000.000	12,50%	0,00986358
76	600.000.000	12,40%	0,00978875
77	630.000.000	12,30%	0,00971385
78	660.000.000	12,20%	0,00963889
79	690.000.000	12,10%	0,00956387
80	720.000.000	12,00%	0,00948879
81	760.000.000	11,90%	0,00941365
82	800.000.000	11,80%	0,00933845

83	840.000.000	11,70%	0,00926318
84	900.000.000	11,60%	0,00918786
85	960.000.000	11,50%	0,00911247
86	1.020.000.000	11,40%	0,00903702
87	1.080.000.000	11,30%	0,00896151
88	1.140.000.000	11,20%	0,00888593
89	1.200.000.000	11,10%	0,00881029
90	1.260.000.000	11,00%	0,00873459
91	1.320.000.000	10,90%	0,00865883
92	1.380.000.000	10,80%	0,00858301
93	1.440.000.000	10,70%	0,00850712
94	1.500.000.000	10,60%	0,00843117
95	1.560.000.000	10,50%	0,00835516
96	1.620.000.000	10,40%	0,00827908
97	1.680.000.000	10,30%	0,00820294
98	1.740.000.000	10,20%	0,00812674
99	1.800.000.000	10,10%	0,00805047
100	1.860.000.000	10,00%	0,00797414
101	1.920.000.000	9,90%	0,00789775
102	1.980.000.000	9,80%	0,00782129
103	2.040.000.000	9,70%	0,00774477
104	2.100.000.000	9,60%	0,00766818
105	2.180.000.000	9,50%	0,00759153
106	2.260.000.000	9,40%	0,00751482
107	2.340.000.000	9,30%	0,00743804
108	2.420.000.000	9,20%	0,00736120
109	2.500.000.000	9,10%	0,00728429
110	2.600.000.000	9,00%	0,00720732
111	2.700.000.000	8,90%	0,00713029
112	2.800.000.000	8,80%	0,00705319
113	2.900.000.000	8,70%	0,00697602
114	3.000.000.000	8,60%	0,00689879
115	3.100.000.000	8,50%	0,00682149
116	3.200.000.000	8,40%	0,00674413
117	3.300.000.000	8,30%	0,00666670
118	3.400.000.000	8,20%	0,00658921
119	3.500.000.000	8,10%	0,00651165
120	3.600.000.000	8,00%	0,00643403
121	3.700.000.000	7,90%	0,00635634
122	3.800.000.000	7,80%	0,00627858
123	3.900.000.000	7,70%	0,00620076
124	4.000.000.000	7,60%	0,00612287
125	4.100.000.000	7,50%	0,00604492
126	4.200.000.000	7,40%	0,00596690
127	4.300.000.000	7,30%	0,00588881
128	4.400.000.000	7,20%	0,00581066
129	4.500.000.000	7,10%	0,00573243
130	4.700.000.000	7,00%	0,00565415
131	4.900.000.000	6,90%	0,00557579
132	5.100.000.000	6,80%	0,00549737
133	5.300.000.000	6,70%	0,00541888
134	5.500.000.000	6,60%	0,00534032
135	5.700.000.000	6,50%	0,00526169
136	5.900.000.000	6,40%	0,00518300
137	6.100.000.000	6,30%	0,00510424
138	6.300.000.000	6,20%	0,00502541
139	6.500.000.000	6,10%	0,00494652
140	6.700.000.000	6,00%	0,00486755
141	6.900.000.000	5,90%	0,00478852
142	7.100.000.000	5,80%	0,00470942
143	7.300.000.000	5,70%	0,00463025
144	7.500.000.000	5,60%	0,00455101
145	7.750.000.000	5,50%	0,00447170
146	8.000.000.000	5,40%	0,00439232

147	8.250.000.000	5,30%	0,00431288
148	8.500.000.000	5,20%	0,00423336
149	8.750.000.000	5,10%	0,00415378
150	9.000.000.000	5,00%	0,00407412
151	9.250.000.000	4,90%	0,00399440
152	9.500.000.000	4,80%	0,00391461
153	9.750.000.000	4,70%	0,00383474
154	10.000.000.000	4,60%	0,00375481
155	10.250.000.000	4,50%	0,00367481
156	10.500.000.000	4,40%	0,00359474
157	10.750.000.000	4,30%	0,00351459
158	11.000.000.000	4,20%	0,00343438
159	11.250.000.000	4,10%	0,00335409
160	11.500.000.000	4,00%	0,00327374
161	11.750.000.000	3,90%	0,00319331
162	12.000.000.000	3,80%	0,00311282
163	12.250.000.000	3,70%	0,00303225
164	12.500.000.000	3,60%	0,00295161
165	12.750.000.000	3,50%	0,00287090
166	13.000.000.000	3,40%	0,00279012
167	13.250.000.000	3,30%	0,00270926
168	13.500.000.000	3,20%	0,00262834
169	13.750.000.000	3,10%	0,00254734
170	14.000.000.000	3,00%	0,00246627
171	14.250.000.000	2,90%	0,00238513
172	14.500.000.000	2,80%	0,00230391
173	14.750.000.000	2,70%	0,00222263
174	15.000.000.000	2,60%	0,00214127
175	15.250.000.000	2,50%	0,00205984
176	15.500.000.000	2,40%	0,00197833
177	15.750.000.000	2,30%	0,00189675
178	16.000.000.000	2,20%	0,00181510
179	16.250.000.000	2,10%	0,00173338
180	16.500.000.000	2,00%	0,00165158
181	16.750.000.000	1,90%	0,00156971
182	17.000.000.000	1,80%	0,00148777
183	17.250.000.000	1,70%	0,00140575
184	17.500.000.000	1,60%	0,00132365
185	17.750.000.000	1,50%	0,00124149
186	18.000.000.000	1,40%	0,00115925
187	18.250.000.000	1,30%	0,00107693
188	18.500.000.000	1,20%	0,00099454
189	18.750.000.000	1,10%	0,00091208
190	19.000.000.000	1,00%	0,00082954
191	19.200.000.000	0,90%	0,00074692
192	19.400.000.000	0,80%	0,00066423
193	19.600.000.000	0,70%	0,00058147
194	19.800.000.000	0,60%	0,00049863
195	20.000.000.000	0,50%	0,00041571
196	20.100.000.000	0,40%	0,00033272
197	20.200.000.000	0,30%	0,00024966
198	20.250.000.000	0,20%	0,00016651
199	20.300.000.000	0,18%	0,00014988
200	20.350.000.000	0,16%	0,00013324
201	20.400.000.000	0,14%	0,00011659
202	20.450.000.000	0,12%	0,00009995
203	20.500.000.000	0,10%	0,00008330
204	20.550.000.000	0,09%	0,00007497
205	20.600.000.000	0,08%	0,00006664
206	20.650.000.000	0,07%	0,00005831
207	20.700.000.000	0,06%	0,00004999
208	20.750.000.000	0,05%	0,00004166
209	20.800.000.000	0,04%	0,00003333
210	20.820.000.000	0,03%	0,00002500

211	20.840.000.000	0,02%	0,00001667
212	20.860.000.000	0,01%	0,00000833
213	20.880.000.000	0,001%	0,00000083
214	20.900.000.000	0,0001%	0,00000008
215	20.990.000.000	0,00001%	0,00000001
216	20.999.000.000	0,000001%	0,00000000
217	20.999.900.000	0,0000001%	0,00000000
218	20.999.990.000	0,00000001%	0,00000000

4 - Crypto Financial Assets

Overview: CFAs are a pioneering class of digital assets, merging the digital ownership features of non-fungible tokens (NFTs) with the wealth management capabilities of financial instruments.

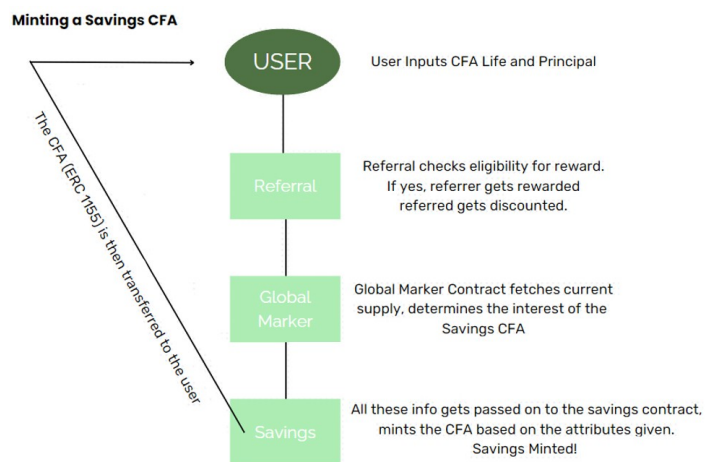
These instruments are similar to bonds or shares, they can be exchanged, used as collateral for a loan or simply used to obtain profits, just like any other financial product.

Product Families:

- Pensions
- Income Streams
- Savings Accounts
- Insurance
- Loans

CFA customization: CFAs can be personalized by modifying different properties such as the Product Type, Principal invested, Product Life Period, Payment Period, Amount of CFAs, and more.

Minting: Once the product properties and the amount of Principal BEAN to be invested are defined, the user can press the MINT button. This action prompts the connected crypto wallet to appear, allowing the user to confirm the transaction. Upon confirmation, the CFA is created.

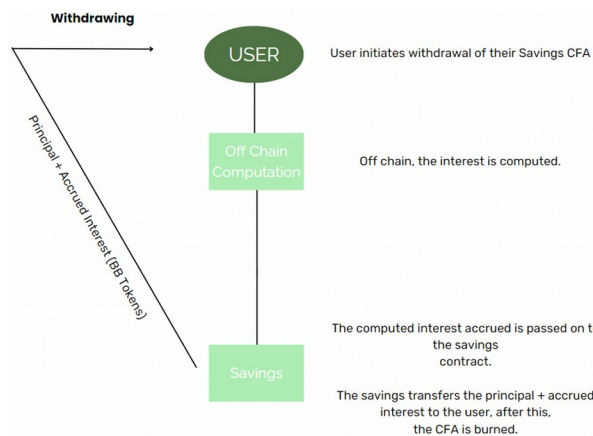


Pool: Upon minting a CFA, the BEAN invested is blocked and all coins due as payment are created and placed in the Pool. These coins are released to the CFA holder when the time is due. This method ensures every CFA will always be able to pay its scheduled amount of BEAN.

Total Amount of Coins: It comprises every BEAN in the pool, along with all BEAN held by users and available on the market.

The system keeps complete accountancy of the coins created and sets the Interest Rate, reducing it by 0,1 every time a new milestone in the Total Amount of BEAN is reached (see Monetary Policy Table).

Withdrawing Profits: The characteristics and evolution of every CFA product can be visualized in the BloomBeans financial garden. Upon maturing, users can proceed to mint profits. All profits are paid In BEAN currency



5 – Products

On the introductory version of the BloomBeans Financial System, we offer 12 CFA products across 5 product families, all built upon the principle of Interest.

- 5.1. Savings Account: Interest-compounding
- 5.2. Locked Savings Account: Interest-compounding
- 5.3. Linear Income Stream: Interest-awarding
- 5.4. Growing Income Stream: Interest-awarding ladder
- 5.5. Linear Pension: Interest-compounding + interest-awarding
- 5.6. Growing Pension: Interest-compounding + interest-awarding ladder
- 5.7. Insurance 10y: Full access, 3 interest-compounding steps
- 5.8. Insurance 5y : Full access, 6 interest-compounding steps
- 5.9. Insurance 2y : Full access, 15 interest-compounding steps
- 5.10. Insurance 1y : Full access, 30 interest-compounding steps
- 5.11. Insurance 3m : Full access, 120 interest-compounding steps
- 5.12. Loan: Halts interest

5.1 SAVINGS ACCOUNT

A decentralized version of the popular Savings Account banking product. This CFA is designed to accrue compound interest monthly on the principal amount for up to 30 years.

$$PX = P \times (1 + r)^{12n}$$

Where:

- **PX** is the compounded principal at the end of the product life.
- **P** is the principal amount of BEAN.
- **r** is the monthly interest rate, expressed as a decimal.
- **n** is the number of years.
- The term **(1+r)¹²ⁿ** represents the compound interest factor, accounting for monthly compounding over a period of n years.

It's important to note that during the chosen period, withdrawing profits in BEAN currency is not allowed. However, the Savings Account CFA can be traded or utilized as collateral when securing a Loan.

5.2 LOCKED SAVINGS ACCOUNT

Users can choose how many X to make on the Princial **P** investment from x2 to x200. The system provides the user with the number of months **n** required to reach a desired X depending on the Interest Rate period the system is in.

A Locked Savings Account offers higher returns compared to a regular Savings Account. Profits cannot be accessed, as they remain locked for the Life Period. Additionally, since the CFA is locked, it can't be sold or used as collateral for a Loan. This Fixed-Term Savings Account option is only accessible until Interest Rate Period 100.

INTEREST RATE PERIOD (from-to)	x2	x3	x5	x10	x15	x20	x25	x50	x75	x100	x150	x200
1 - 4	46	72	103	144	167	184	196	234	255	270	290	305
5 - 9	47	73	105	147	171	188	200	239	260	275	297	311
10 - 14	48	75	108	151	175	192	204	244	266	281	303	318
15 - 19	49	77	110	154	179	196	209	249	272	287	309	325
20 - 24	50	79	113	158	183	201	214	255	278	294	317	332
25 - 29	52	81	116	162	188	206	220	261	285	301	324	340
30 - 34	53	83	119	166	192	211	225	268	291	308	331	348
35 - 39	55	85	122	170	198	216	231	274	299	316	340	356
40 - 44	56	88	126	175	203	222	237	281	307	324	348	

45 - 49	58	90	129	180	208	228	243	289	315	333	357
50 - 54	60	93	133	185	214	235	250	297	323	342	
55 - 59	62	96	137	190	221	242	258	305	332	351	
60 - 64	64	99	142	197	228	249	265	314	342		
65 - 69	66	102	146	203	235	257	274	324	353		
70 - 74	68	106	151	210	243	265	283	334			
75 - 79	71	110	157	217	251	274	292	346			
80 - 84	74	114	163	225	260	284	302	357			
85 - 89	77	118	169	234	270	295	314				
90 - 94	80	123	176	243	280	306	326				
95 - 99	83	129	183	253	292	318	339				
100	87	135	192	264	304	332	353				

5.3 LINEAR INCOME STREAM

Linear Income Stream is an Interest-awarding product replicating a passive income producing asset like shares, bonds or rental property. Interest is released periodically and duration is from 1 year up to 50 years.

$$I = P \times \left((1 + r \times (1 + d)^{n-1})^A - 1 \right)$$

Where:

- **I** represents the interest payment received every **A** months.
- **P** is the principal amount.
- **r** is the monthly interest rate, expressed as a decimal.
- **A** is the number of months after which interest is paid out (1, 2, 3, 4, 6, or 12 months).
- **n** is the product Life Period, chosen between 1 and 50 years.
- **d** is the decrease-rate, set at -0.003, applied for each additional year of income received.

This CFA can be traded. Principal invested can be utilized as collateral when securing a Loan. Principal is returned at the end of the product's Life Period.

5.4 GROWING INCOME STREAM

This product is quite unique, it replicates a Certificate of Deposit Ladder. The principal amount is divided into the number of payments selected, with each of these payments undergoing Interest-compounding, ranging from 1 to 30 years.

The income for each year is calculated as follows:

For Year 1:

$$I_1 = \left(\frac{P}{A \times n} \right) \times (1 + r)^{12 \times Y_1}$$

For Year 2:

$$I_2 = \left(\frac{P}{A \times n} \right) \times (1 + r)^{12 \times Y_2}$$

...

For Year n:

$$I_n = \left(\frac{P}{A \times n} \right) \times (1 + r)^{12 \times Y_n}$$

The following formula sums up the interest calculations for each year, representing the total accumulated interest over **n** years with different interest calculations per year.

$$I_{\text{total}} = \sum_{i=1}^n \left(\frac{P}{A \times n} \right) \times (1 + r)^{12 \times Y_i}$$

Where:

- **I_{total}** is the total interest accumulated over **nn** years.
- **P** is the principal amount.
- **A** represents the number of payments per year.
- **n** is the total number of years the interest is calculated for.
- **r** is the annual interest rate, expressed as a decimal.
- **Y_i** is the year index (1, 2, ..., n), indicating the specific year for which the interest is calculated.
- **∑_{n i=1}** indicates the summation performed for each year from 1 to n and then sum all those values to get the total interest.

The compounded Principal is not returned at the end of the Life Period, as it has been incrementally paid out with interest.

This CFA is tradable and can serve as collateral for a Loan, except in its final year.

5.5 LINEAR PENSION

The BloomBeans decentralized Linear Pension is a product that allows users to receive periodic profits derived from a compounded principal. The lifespan of this product can extend up to 70 years.

It combines an Interest-compounding period lasting up to 20 years, and a Interest-awarding period lasting up to 50 years. Both periods utilize the Interest Rate set at the time the product is created.

Period 1. Interest-compounding:

$$PX = P \times (1 + r)^{12n_1}$$

Where:

- **PX** is the compounded principal.
- **P** = Principal amount
- **r** = Monthly interest rate
- **n1** = Number of years chosen for the principal to compound (from 1 to 20)
- **(1+r)¹²ⁿ¹** represents the compounding effect over the months for n1 years

Period 2. Interest-awarding:

$$I = PX \times \left((1 + (r \times (1 + d)^{n_2 - 1}))^A - 1 \right)$$

Where:

- **PX** is the compounded principal from phase 1
- **r** = Monthly interest rate
- **d** = Decrease rate per year of income received. Set at -0.003
- **n2** = Number of years chosen for receiving the linear income stream (1 to 50)
- **A** = The interval at which the income is received (every 1, 2, 3, 4, 6, or 12 months)

At the end of the product's life, users receive back their compounded principal PX.
The CFA can be traded or used as collateral for a Loan.

5.6 GROWING PENSION

This is a product that allows users to receive growing periodic profits derived from a compounded principal.

It combines an Interest-compounding period lasting up to 20 years, and a Interest-awarding ladder period lasting up to 30 years. Both periods utilize the Interest Rate set at the time the product is created.

Period 1. Interest-compounding:

$$PX = P \times (1 + r)^{12n_1}$$

Where:

- **PX** is the compounded principal at the end of the product life.
- **P** is the principal amount of BEAN.
- **r** is the monthly interest rate, expressed as a decimal.
- **n1** is the number of years.
- **(1+r)¹²ⁿ¹** represents the compounding effect over the months for n1 years

Period 2. Interest-awarding ladder:

$$I_{\text{total}} = \sum_{i=1}^{n_2} \left(\frac{P}{A \times n_2} \right) \times (1 + r)^{12 \times Y_i}$$

Where:

- **I_{total}** is the total interest accumulated over nn years.
- **P** is the principal amount.
- **A** represents the number of payments per year.
- **n₂** is the total number of years the interest is calculated for.
- **r** is the annual interest rate, expressed as a decimal.
- **Y_i** is the year index (1, 2, ..., n), indicating the specific year for which the interest is calculated.
- $\sum_{i=1}^{n_2}$ indicates the summation performed for each year from 1 to n and then sum all those values to get the total interest.

The compounded Principal is not returned at the end of the Life Period, as it has been incrementally paid out with interest.

The Growing Pension CFA is tradable and can serve as collateral for a Loan, except in its final year.

INSURANCE

BloomBeans represents a unique solution for a fully decentralized insurance. It incentivises users to retain their investment for an extended period and withdraw funds only when absolutely necessary.

Complete Access to Funds: Through an Insurance CFA, users enjoy total freedom over their capital. They can withdraw any amount of BEAN, at any time and as frequently as they wish, from both the principal amount invested and any accrued compound profits.

Incentivizing Minimal Withdrawals: The product is designed to motivate users to leave their BEAN untouched. By maintaining their investment, users benefit from continuous compounding over a 30-year period, resulting in significant rewards.

No Reinvestment: While users have the freedom to withdraw funds it is not possible to reinvest additional amounts. Only the remaining BEAN will continue to compound until the fixed Insurance Life period of 30-year concludes.

Diverse Options for Compounding: The Insurance product family offers five different levels of Interest-compounding, based on the user's commitment. The frequency of compounding and the amount of interest granted varies, impacting on the potential profit.

5.7 INSURANCE 10Y

The 10-Year Insurance implies the highest level of commitment. 10 years have to pass in order for the investment to compound, yet it promises the most substantial returns.

Y represents the interest accrued each period.

r is the Monthly Interest Rate at the time the Insurance CFA is established.

P indicates the Principal amount invested.

PX is the maximum profit achievable.

The structure is as follows:

- Total number of compounding intervals is 3.
- Frequency is once every 10 years.
- The interest applied to the remaining principal at each interval is calculated as:

$$Y = 2.7^{120r}$$

- The maximum profit that can be reached is determined by:

$$PX = P \times Y_1 \times Y_2 \times Y_3$$

5.8 INSURANCE 5Y

- Total number of compounding intervals is 6.
- Frequency is once every 5 years.
- The interest applied to the remaining principal at each interval is calculated as:

$$Y = 1.78^{90r}$$

- The maximum profit that can be reached is determined by:

$$PX = P \times Y_1 \times Y_2 \times Y_3 \times Y_4 \times Y_5 \times Y_6$$

5.9 INSURANCE 2Y

- Total number of compounding intervals is 15.
- Frequency is once every 2 years.
- The interest applied to the remaining principal at each interval is calculated as:

$$Y = 1.32^{60r}$$

- The maximum profit that can be reached is determined by:

$$PX = P \times Y_1 \times Y_2 \times Y_3 \dots \times Y_{15}$$

5.10 INSURANCE 1Y

- Total number of compounding intervals is 15.
- Frequency is once every 2 years.
- The interest applied to the remaining principal at each interval is calculated as:

$$Y = 1.25^{30r}$$

- The maximum profit that can be reached is determined by:

$$PX = P \times Y_1 \times Y_2 \times Y_3 \dots \times Y_{30}$$

5.11 INSURANCE 3M

This Insurance implies the lowest level of commitment. Users have to wait the shortest time before the principal invested starts compounding. It also offers the lowest profit.

- Total number of compounding intervals is 15.
- Frequency is once every 2 years.
- The interest applied to the remaining principal at each interval is calculated as:

$$Y = 1.10^{10r}$$

- The maximum profit that can be reached is determined by:

$$PX = P \times Y_1 \times Y_2 \times Y_3 \dots \times Y_{120}$$

5.12 Interest Free LOANS

The BloomBeans Loan System represents an outstanding financial innovation. It offers users liquidity with the advantage of zero interest, complete flexibility on repayment, and full ownership over the collateral used to secure the Loan.

This product halts the generation of interest on the collateralized CFA product until the loan is fully repaid in a single transaction. The collateral will remain 'frozen', yet it retains the ability to be traded like any other CFA product.

Key features of the System Loan include:

CFAs as Collateral: System Loans are accessible only by using any BloomBeans Crypto Financial Asset as collateral. These Loans are distributed in BEAN currency only.

Loan Value: Borrowers receive an automatic Loan amounting to 25% of the Principal and the Interest already compounded on their CFA.

Interest-Free Terms: There is no interest charged on these Loans. Borrowers are

required to repay only the quantity of the Loan.

Flexible Repayment: The Loan can be repaid at any point without any time constraints or additional fees. However, the repayment must cover the full amount that was originally credited.

Collateral Handling: During the Loan period, the CFA is frozen and non-operational. Once the Loan is fully repaid, the CFA is unfrozen and resumes its standard functionality.

Tradeability: Just like the other CFAs, Loan products are owned by the user and are fully tradable.

6 - The Economic Benefits

A fully decentralized, immutable and automatic Financial System provides significant benefits compared to the cumbersome system that currently exists.

Minimal running expenses: Between 70% and 90% of financial corporations' profits are allocated to cover operational expenses. BloomBeans eliminates the need for middlemen, operators, security, bureaucracy and huge buildings.

In BloomBeans, all those expenses, which amount to tens of trillions of dollars annually, become users' profit.

Ownership: Direct asset ownership is a compelling proposal. Decentralized blockchain allows for independent control and protection of assets, eliminating third-party intervention or mismanagement.

Billions of new users: With just an internet connection over 3 billion people outside the financial system can now gain access to avant-garde financial services and improve their lives and their society's economy.

Honesty: By establishing immutable and universal rules we can reduce corruption and manipulation, fostering trust and eliminating costly security bureaucracies.

Capital democratization: Decentralization of capital ownership will foster a new wave of innovative investment ideas, free from the constraints of credit, debt, or reliance on banks.

7 - The Social Benefits

Empowering the Real Economy: Financial structures have expanded to such an extent that they can control and manipulate many aspects of the real productive economy. These structures must downsize and evolve into simpler and more useful tools. With an automatic and decentralized system, we can bring stability and independence to the real economy, empowering workers, industry, and services.

Proper Incentive structure: BloomBeans savings-based system generates a socio-economic incentive structure that fosters delayed gratification, long-term thinking and direct asset ownership. Values that have demonstrably led to long-term prosperity.

Privacy, a basic Human Right: No authority has the right to spy on you, control your financial activities, or impose restrictive laws, even in the name of your safety or the "common good". Decentralized blockchain technology restores this fundamental human right to financial privacy.

Voluntarism: In the BloomBeans system, wealth cannot be forcibly extracted by any authority. Empowering individuals and entrusting them with the responsibility to supervise infrastructure maintenance and public institutions will lead society toward a more mature and sovereign citizenry.

Resilience to Imperialism: Today, governments possess the ability to forcibly extract wealth, indebt populations, impose economic sanctions, and dictate policies. These tools are utilized by both local and foreign powers to effectively control populations. BloomBeans puts an end to this, drastically increasing the resilience of people and institutions against Financial Imperialism.

8 - Blockchain details

Contracts Used: The Ethereum blockchain serves as the initial foundation for the first iteration of the BloomBeans system. The BEAN currency is deployed as a fungible ERC-20 token while CFAs are developed using non fungible ERC-1155 contracts.

CFAs can be minted only by using BloomBeans currency, the BEAN, which serves as the unifying code linking all elements of the system.

ERC-1155 tokens have been chosen because they enable efficient management of a diverse array of assets under a single contract, significantly lowering the transaction costs and complexities that typically arise from managing multiple token contracts.

Mathematical Basis: The BloomBeans Financial System has been developed using simple mathematical formulas that allow for transaction cost reduction and strong financial streamlining. Any user can visualize profit by applying the formulas to an Excel spreadsheet.

Security: For complete safety, code is always released audited and locked. No further modifications of the code can be made.

Evolution: Any system improvements, like the release of the BloomBeans proprietary blockchain, will be airdropped for free to the users of the previous system version.

9 - Conclusion

"Nothing is more powerful than an idea whose time has come" Victor Hugo

Inspired by Satoshi's vision and the principles of the cypherpunk movement, and after 14 years of development within the crypto community, we now possess a set of tools capable of replicating a financial system in a simple yet powerful way.

We are part of a global effort to provide decentralized solutions to today's oppressive corporate-political-banking oligarchical structures that are in fact burdening societies on the weight of their own incompetence and wasteful resource management.

With a new Financial System rooted on the eternal laws of mathematics, not in a perpetual power struggle, society will not only leave behind an unjust system, but also an antiquated mindset of scarcity, confrontation, selfishness, and personal and social irresponsibility.

Not everyone is ready; however, with each passing day, more and more people are opting out of the system.

Slowly but surely, we will achieve new levels of freedom and social well-being, all while witnessing the old guard of global power fade into irrelevance.

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