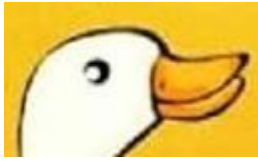


# Goosie Rules

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*Private Bitcoin-backed gold-pegged money*

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## Overview

When deployed as a standalone product or integrated into an existing crypto wallet or exchange the Goosie smart contract enables men and women to receive 51% of the value of their Bitcoin in the form of the gold-pegged Goosie coin. As there is no margin call this gives money to spend without putting the Bitcoin collateral at risk. The loan is interest free and can be repaid at any time.

## Private Bitcoin-Backed Gold-Pegged Money

Goosie is money as it should be:

- private - run as a club with no incorporated organisation or national jurisdiction
- pegged to gold
- issued not by government but by the men and women who use it
- backed by Bitcoin not by debt
- automated by a smart contract not by fallible humans

## Goosie Benefits

The open source Goosie protocol allows you to receive a loan based on the Bitcoin you deposit.

The loans are made in the Goosie coin. Goosie are pegged to gold. When you want to release your Bitcoin you repay the gold value of the Goosie you took out for your loan.

Goosie can be implemented as a standalone product or into existing crypto solutions such as a wallet or exchange.

Unlike other lenders you:

- pay no interest;
- repay the loan at any time;
- stay in control of your assets at all times;
- never take a loss by having your assets sold if their value falls below a given threshold (a margin call).

## Summary of Process

Bitcoin is deposited in the smart contract as collateral for the Goosie loan.

The value of the deposit is denominated in gold e.g. 1 oz of gold = 0.03 BTC.

The Goosie coin is pegged to gold at 1,000 Goosie = 1 oz of gold (1 Goosie = 0.001 ounce of gold).

Goosie is minted at 51% of the gold value of the BTC deposited.

BTC is redeemed by depositing the gold value of the **original** Goosie minted.

If Goosie are not currently trading at the peg value this means more or less Goosie are deposited to ensure the original gold value is returned.

Returned Goosie are withdrawn from circulation (burnt).

## How it Works - Overview

*Goosie enters the market as an over-collateralised loan backed by BTC.*

*BTC is redeemed by repaying the original gold value of the loan in Goosie.*

Men and women deposit Bitcoin into the smart contract. The smart contract automatically mints Goosie to 51% of the gold value of the BTC deposited.

50% of Goosie are sent to the Goosie blockchain and appear in the user's wallet as money to spend.

1% of the Goosie minted are sent to the Goosie blockchain as system compensation. Banks charge annual interest. Goosie loans are interest free and can be kept as long as you like. There is only the 1% charge for the system. This 1% is paid only when the Bitcoin collateral is redeemed.

Listed on exchanges Goosie can be sold for other crypto including stable coins. It can also be used as money with other men and women holding a Goosie wallet.

Eventually the goal is for Goosie to replace fiat and be accepted everywhere.

If the value of Bitcoin falls more than 51% of its gold value compared to when the Goosie were minted and the Goosie from that minting are no longer over-collateralised. This does not affect confidence in the coin as long as the market believes in the on-going appreciation of Bitcoin.

This is because the market is confident that at some point in the future, because of the continued appreciation of Bitcoin men and women are going to want the Bitcoin they have used as collateral back. This can only be done at the gold value of Goosie when originally minted, in other words at 51% of the gold value of BTC *at the time* of deposit into the smart contract.

It is this future obligation to redeem desired property (Bitcoin) at its original gold value that maintains the Goosie/gold peg. See more on how the peg works in the appendix below.

## Simple Example

You can play with the calculations of this example in the Build Rules spread sheet.

For example, using 1 Bitcoin to mint Goosie:

- 1 Bitcoin is deposited into the smart contract;
- The smart contract determines the current value of the deposit in gold, e.g. 1 Bitcoin = 27 ounces of gold;
- Therefore the smart contract issues  $(27 * 1,000) * 0.5 = 13,500$  Goosie for the man or woman and  $(27 * 1,000) * 0.01 = 270$  Goosie to maintain the system;
- In total the smart contract has issued 13,770 Goosie, or 51% of the gold value of the Bitcoin deposited.
- The 13,770 Goosie issued have a pegged value of 27 ounces of gold \* 0.51 = 13.77 ounces.

Summary for minting Goosie:

**BTC per ounce of gold \* 1,000 \* 0.51**

To release the Bitcoin collateral the smart contract checks the current market value of Goosie to determine how many are required.

For example:

- If Goosie are trading on the open market at their pegged value of 1,000 per ounce of gold then if 13,770 were originally issued the man or woman needs to deposit 13,770 Goosie to unlock their Bitcoin, i.e. the same amount as was originally issued. If they have insufficient Goosie themselves they can purchase the required amount from an exchange.
- However if Goosie are trading at 1,111 Goosie per ounce of gold (90% of the peg value) then the smart contract requests that  $13,770 / 0.9 = 15,300$  Goosie be deposited to redeem the Bitcoin where 0.9 represents Goosie currently trading at 90% of their pegged value. I.e. because Goosie are trading below their pegged value more Goosie need to be deposited to make up their original gold value at the time of minting.
- If Goosie are trading at 20% above their pegged value, or 833.3333 Goosie per ounce of gold the smart contract requests that  $13,770 / 1.2 = 11,475$  Goosie be deposited where 1.2 represents the 20% above the Goosie pegged value. I.e. because Goosie are now worth 20% more than their pegged value fewer need to be deposited to equal the gold value of the original Goosie minted.
- The redeemed Goosie are burnt by the smart contract removing them from circulation.

Summary for redeeming Bitcoin:

**(number of Goosie originally minted against the BTC to be withdrawn / current market value of Goosie relative to its peg) \* 1,000.**

## Functions of the Smart Contract - Overview

The Goosie smart contract performs a number of functions:

### To mint Goosie:

- Discover through a price oracle the current gold/Bitcoin price;
- Mint Goosie at 51% of the current gold value of the Bitcoin collateral deposited at the peg of 1,000 Goosie = 1 oz of gold (1 Goosie = 0.001 ounces of gold);
- Send Goosie minted to the Goosie blockchain, 50% to the man or woman's address and 1% to the pre-designated Goosie operations addresses.
- Pay relevant BTC and Goosie fees.

### To redeem Bitcoin:

- Discover through a price oracle the current gold/ Goosie market price;
- Communicate to the man or woman the Goosie required to redeem the requested Bitcoin;
- On receiving the required Goosie, send the Bitcoin to the address specified by the man or woman.
- Pay relevant BTC and Goosie fees.
- Display the man or woman's remaining BTC balance (if any);
- Burn the received Goosie.

### Notes:

- The BTC deposited into the smart contract remains discrete and under their sole control. I.e. Bitcoin deposits are not pooled with those of others.
- At inception the smart contract requires a gold/Goosie price oracle to redeem the BTC. In other words, an exchange with the gold/Goosie price or similar arrangement needs to be established before redemptions can begin.
- Liquidity is required in order for men and women to purchase Goosie to redeem their BTC. This can only come from men and women depositing BTC into the smart contract. I.e. consideration needs to be given as to who will be the initial liquidity provider.

## Smart Contract Calculations

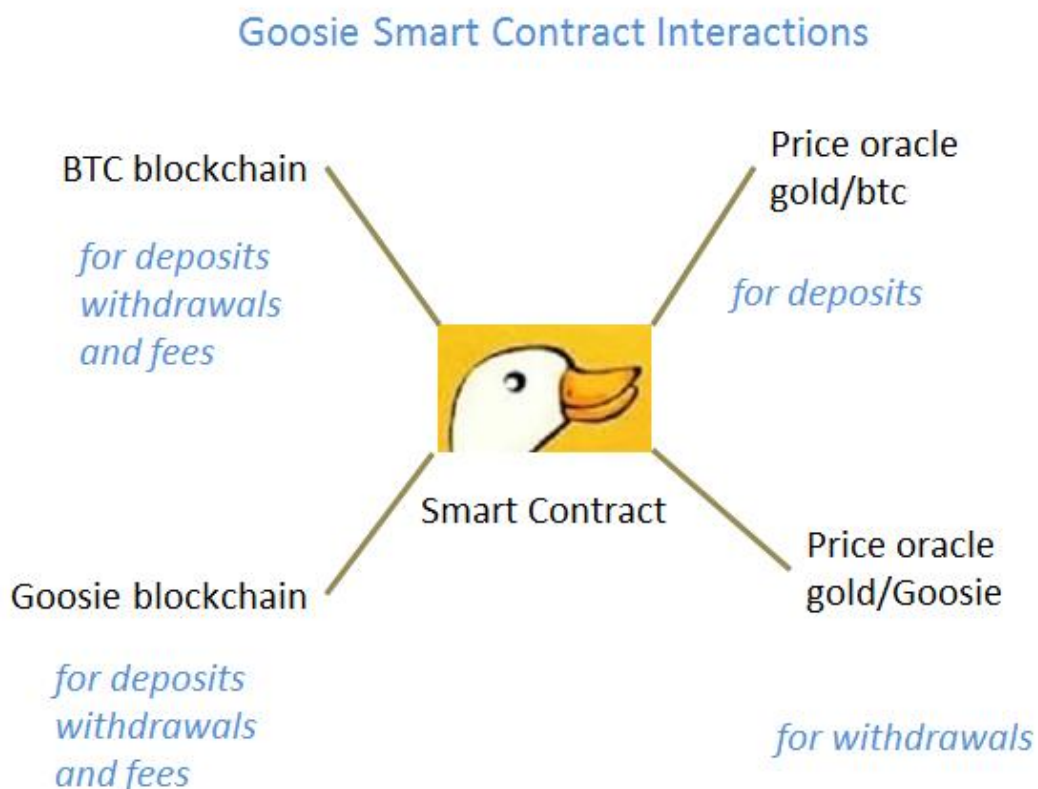
**To be read in conjunction with the Goosie Rules Excel spread sheet.**

The above examples assume a single deposit and withdrawal of BTC into the smart contract. In reality men and women are likely to make multiple deposits and withdrawals.

This section covers the **actual calculations** required by the smart contract.

Key features:

- Only two data points need to be stored in the smart contract: the volume and Weighted Average Price (WAP) in gold of Bitcoin in the contract.
- Two price oracles are required: the gold/BTC price (expressed as cost of 1 oz of gold in BTC), and the current gold/Goosie price (expressed as percentage of the peg value, e.g. 1 = Goosie trading at peg, 0.9 = Goosie trading at 90% peg, 1.2 = Goosie trading at 20% above peg).
- The method includes deductions for potential fees paid in BTC and/or Goosie. Other potential fees are external to the calculation.



## Deposit of BTC

(First example on the spread sheet)

I wish to deposit 0.5 BTC.

The gold/btc price oracle determines 1 oz of gold = 0.03 BTC

The smart contract already holds 2.64 BTC with a WAP of 0.039 BTC per ounce of gold.

The contract mints:  $(0.5/0.03) * 1000 * 0.51 = 8500$  Goosie

50%, or 8333 of the Goosie, less any fees paid in Goosie are sent to my wallet.

1% or 166 Goosie are sent to pre-defined system wallets.

The WAP is updated as per spread sheet and stored.

The amount of Bitcoin held in the smart contract is updated as per spread sheet and stored. This includes the deduction of any fees paid in BTC.

## Withdrawal of BTC

(Second example on the spread sheet.)

I wish to withdraw 0.06 BTC.

The gold/Goosie price oracle has Goosie trading at 0.9 (10% below the peg).

The current WAP for the BTC value of 1 ounce of gold is 0.037566879.

There are 3.07977 BTC currently held in the smart contract i.e. enough to cover the withdrawal request.

The WAP gives the value in gold of the BTC in the smart contract at time of deposit.

Thus the gold value of the amount of BTC to be withdrawn can be calculated as:

the amount of BTC to withdraw/the current WAP

namely  $0.06/0.037566879 = 1.597151577$  ounces of gold.

At the pegged value of 1,000 Goosie per ounce of gold the Goosie needed to redeem 0.06 BTC would be:  $(1.597151577 * 1,000 * 0.51) = 815$ .

However Goosie are currently trading 10% below the peg (0.9). This means that the Goosie needed to redeem 0.06 BTC is:  $815/0.9 = 905$ .

Any fees paid in Goosie are added to this total.

Once the Goosie are deposited the BTC is sent to the address I specify.



The smart contract updates the amount of BTC still held i.e. previous balance minus withdrawal and any BTC fees.

(With a withdrawal the WAP of the BTC held does not change.)

Goosie received are burnt.

## The Goosie Blockchain

Goosie requires a blockchain where ownership of Goosie is recorded. This should be a low fee high confirmation speed environment to enable Goosie to be used as money.

Men and women are able to hold Goosie with their own private keys without using the smart contract. The smart contract is only required for minting/burning Goosie.

END OF BUILD RULES

## Appendix: How Goosie Maintains its Peg to Gold

During the classic gold standard era the world's major currencies such as the US dollar and UK pound were pegged to gold at an official rate.

The Goosie coin is also pegged to gold at the value of 1,000 Goosie to 1 ounce of gold. How is this peg maintained?

The peg is based on two things:

1. the market's belief in the continued appreciation of BTC;
2. the need for men and women to redeem their BTC with the Goosie coin at 51% the **gold value of BTC when it was originally deposited**.

It works like this:

1. The peg to gold is based on the market's belief that the value of BTC, the collateral against which Goosie are minted, will continue to rise.
2. Because of this the market also expects men and women who have deposited their BTC into the Goosie smart contract to want their BTC back. The market is confident men and women are not going to abandon their BTC because even with BTC's downside volatility at some point the BTC will again be more valuable than 51% of its value when they deposited it into the smart contract. (Goosie are minted to 51% of the value of the BTC deposited.)
3. To provide the best measure of BTC value at the time of the loan it is denominated in gold, the world's most enduring measure of stable value. E.g. at the time of loan 1 ounce of gold may be worth 0.03 BTC.

4. When men and women come to get their BTC back they have to repay loan in Goosie.
5. The amount of Goosie required is 51% of the gold value of the Bitcoin at the time of the deposit, NOT the current gold value of Bitcoin which may be well above this value.
6. If Goosie are trading below the pegged value, they still have to repay the BTC/gold rate at the time of issue. Put simply, if they received a loan of 100 Goosie but Goosie are currently trading at 90% their pegged value, they need to deposit  $100/0.9 = 110$  Goosie to redeem their BTC.
7. Because men and women have to repay the full gold value of Goosie at the time of receiving their loan the market is confident that all Goosie entering the market do so at the pegged price they were issued at. This is what creates the peg to gold.
8. The peg works because if men and women sell their newly minted Goosie at less than the pegged value they take a loss when it comes to redeeming their BTC. I.e. it is not in their interest to sell Goosie into the market at below the pegged price.
9. For example, if a man or woman are issued with 100 Goosie, and they spend the Goosie at 80% of the pegged value, when it comes time to redeem their BTC they take a 20% loss as they have to repay the full gold value of their original Goosie i.e.  $100/0.8 = 125$  Goosie.  
 Note: As Goosie are minted to 51% of the value of the BTC deposited for a man or woman to be issued with 100 Goosie they would have deposited BTC worth 0.19 ounces of gold i.e.  $(100/1000)/0.51$ .

#### **What if demand for Goosie weakens (oversupply) and the Goosie price falls below the peg?**

In the classical gold standard era, if the value of a currency like the USD fell below its peg to gold men and women would go to the bank and buy gold at the pegged price. They would profit from the arbitrage between the weak value of the USD relative to its peg. The bank would destroy the USD it received and hence reduce the supply of the currency in the market. This would return the currency to its official peg with gold.

With Goosie, if Goosie weaken relative to its peg with gold this discourages men and women from minting more Goosie. They are not able to use their Goosie at the pegged value because they would take a loss when they came to redeem their BTC.

This has the effect of ending the expansion of supply until demand catches up and the peg is restored.

In the meantime, those who have minted Goosie are hesitant to transact at the weakened price because of the loss they also face when it comes time to redeem their BTC. They therefore either hoard their Goosie until the peg returns, or redeem their BTC by depositing the required amount of Goosie into the smart contract.

Hoarding ends the expansion of supply. Redeeming reduces supply and helps return Goosie to its peg.

In other words reducing supply to strengthen the value of a currency back to its peg with gold is used by both Goosie and the currencies of the gold standard era. Only the mechanisms for doing so differ.

Note: apart from shorting the coin, a fall in value below the peg removes the benefits of Goosie for the majority of men and women who use it.

For example those who mint Goosie are unable to spend their interest-free loan.

Those who buy and sell with Goosie are no longer able to use a coin without inflation or significant volatility.

The loss of these benefits suggest any decline from the peg is likely to be minimal and short lived as the majority of the market only benefit when exchanging at the pegged value.

### **What if Goosie become scarce (undersupply) and the coins strengthens against its peg?**

In the classical gold standard era if a currency became overvalued relative to its peg to gold men and women would sell their gold for the pegged value at the bank in return for the currency. In this way they profit from the arbitrage between the market and pegged value of the currency. By selling their gold more currency enters the market increasing supply. As the increase in supply again matches demand the peg is restored.

If Goosie becomes worth more than the gold-pegged value men and women have incentive to mint more Goosie by depositing more BTC into the smart contract.

If they have already minted Goosie they are have incentive to sell these in the market.

By doing either of these activities they profit from the arbitrage: they are able to sell Goosie at above the pegged price but only have to pay the pegged gold-value when they come to redeem their BTC.

In both cases more Goosie enter the market until the point when supply matches demand and the peg returns.

As before increasing supply to weaken the value of the currency is used by both Goosie and the currencies of the gold standard era to maintain the peg to gold.

### **What impact does a BTC bear market have on the peg?**

If the value of BTC falls 51% below the value of Goosie minted against it, men and women have little incentive to redeem their Goosie as they will have to pay more to redeem their BTC than the collateral is worth. Instead they are incentivised to wait until the value of their BTC is again worth more than the value of the Goosie minted against it.

This has the effect of reducing the removal of supply of Goosie from the market during this period. If there is an oversupply and the value of Goosie of weak, hoarding becomes the primary means of reducing supply and restoring the peg.

However it is worth noting:

1. Men and women mint Goosie at different values of BTC. Therefore there is no sudden BTC value that stops the removal of Goosie from the market during a BTC downturn.
2. Goosie are minted to 51% of the value of BTC deposited. Therefore, if BTC was deposited at a value of 10 ounces of gold, it's price would have to fall below 4.9 ounces of gold (a 51% drop) before it costs more to redeem BTC than the collateral is worth.

In other words, BTC's downside volatility is likely to have a negligible effect on the ability of Goosie to maintain its peg to gold.

Indeed as Goosie are over-collateralised with BTC for the vast majority of time the market is likely to use Goosie as a preferred means of exchange. This creates demand for the coin that raises its value above the peg. As this occurs the supply of Goosie increases as men and women are incentivised to take out further Goosie loans.

## Appendix: Additional Benefits of Goosie

### Reducing exposure to Bitcoin's downside volatility

Goosie are always minted at 51% of the value of the Bitcoin collateral deposited. 1% are for the system. 50% are for the man or woman to spend. This means by default 50% of a man or woman's Bitcoin held in the smart contract are protected from their downside volatility. Their Bitcoin may go down but they have secured the original deposit value by minting Goosie whose value, pegged to gold, remains relatively stable. This reduces the fall in their net worth due to Bitcoin's downside volatility while retaining its upside potential.

### Double Bitcoin ownership at no cost

By using Goosie minted to purchase more Bitcoin men and women can double the Bitcoin they own. Excluding fees and changes to the price of the coin, if they use their Goosie to purchase more Bitcoin eight times they will have doubled their ownership. Each time they deposit half the previous amount of asset and have half the amount of Goosie minted against them.

asset total	goosie minted
1.00	
1.50	50%
1.75	25%
1.88	13%
1.94	6%
1.97	3%
1.98	2%
1.99	1%
2.00	0%

Figure 1 Men and women can use Goosie minted by the protocol to double the Bitcoin they own no cost to themselves.

## **Money to spend**

The smart contract automatically issues Goosie as a self-loan to 51% of the value of the Bitcoin posted. Excluding the 1% given for the use of the system this immediately unlocks liquidity to 50% of the value of their Bitcoin to spend as they choose. Their Bitcoin is held securely in the smart contract over which they retain full control. No third party is involved. They release the asset at any time by repaying the gold value of the original Goosie they have lent to themselves.

## **Stable money**

Goosie is pegged to the value of gold. Gold remains the world's most enduring measure of stable value.

## **No margin call**

Other forms of lending require a margin call. This means that if the value of the asset a man or woman has deposited for a loan drops below a given threshold the asset is automatically sold in order for the lender to recoup the value of their loan.

As such margin calls present a significant risk for men and women seeking loans as they can lose some or all of the value of the asset deposited as collateral.

This risk is eliminated with Goosie as there are no margin calls.

## **No tax**

Crypto-currencies are treated in most jurisdictions as property. This means that the sale of the crypto coin is a taxable event if there has been an increase in its value. However men and women are not taxed on loans they take out from a legacy bank or DeFi lender.

Goosie are loans and hence the issue of Goosie is not a taxable event even though the man or woman gain new coins worth 50% of the value of the Bitcoin deposited.

## **No loss of Bitcoin's upside potential**

Using Bitcoin as money removes the opportunity to participate in its upside potential. By spending Goosie instead men or women retain the upside potential of their Bitcoin while having money to spend.

## **Interest free loans**

By using the protocol men and women receive money at zero interest. Their only costs are the 1% system contribution and transaction fees.

## **Secure**

Men and women using the protocol retain control of their Bitcoin at all times. There is no third party involved and their Bitcoin is not pooled with that of others.

## **No national jurisdiction**

By operating as a private club instead of an incorporated body, like Bitcoin itself Goosie is less vulnerable to regulatory changes.

## **Keep on earning**

Men and women can increase their liquidity in line with the rising value of their Bitcoin collateral by minting more Goosie.

END