

# NIP-66 Bill of Exchange

---

*For use with Mutual Credit, Promissory Notes, IOU's, Loans, Multi-Sigs, and Time-Locks*

## PREAMBLE

---

Almost all money currently on the planet is **bank money** (yes there is a small percentage of government money (notes and coins), and some commodity money (typically bullion))

Bank Money is **debt**, created out of **nothing** on the strength of a **claim on assets** or labour, charging **compounding interest**. It is this interest (usury, neshech, riba) on money creation<sup>1</sup> that sucks the vitality out of the economy, and forces more and more borrowing to stave off inevitable bankruptcy, which is the realization of those claims, and the transfer of assets, **dispossessing** borrowers for no reason other than needing money to transact

**Governments** do not have a printing press. They borrow national currency from **private corporations** called banks, at compounding interest, putting up our national assets, pensions, land, and infrastructure as collateral

Since they have to keep borrowing (issue bonds) more and more to pay interest, they inevitably default which is not "cleaning the slate", but handing over pensions, land, infrastructure, etc., ie. asset-stripping nations (typically chronically, often acute)

**Finance capitalism** is ravaging the planet in search of assets to **financialize**, and labour to indebt to feed rehypothecation, and the compounding interest that gorges resources, pollutes (externalizing costs) the planet, and dispossesses and impoverishes people, cities, states, and nations, accelerated by **business cycles** caused by artificial **credit contraction**

## MMT

If private corporations called banks can create money out of nothing, why not governments?

Well, currently we see all governments overspending and going into more and more debt despite risking national assets and having to pay interest. How much more will they inflate the currency (a tax on wages and savings) if there was only benefits (to governments)?

# NIP-66 BILL OF EXCHANGE

*For use with Mutual Credit, Promissory Notes, IOU's, Loans, Multi-Sigs, and Time-Locks*

## INTRODUCTION

---

Mutual Credit (MC) is simply frictionless bookkeeping without interest

Using MC focuses economic activity on providing goods and services rather than scrambling to service debt. What gives Mutual Credit its value are the products and services provided

### PERSISTENCE

In the spirit of Nostr, **clients** to not maintain a ledger of bookkeeping transactions (and therefore can be run in a browser), but make use of (private) **relays** for this purpose

### KINDS

Typically, an acquisition process would be a chain of documents such as Quote, Order, Delivery, Invoice, Payment, Returns, etc., but to simplify this NIP we propose only:

- **Invoice** and,
- **Payment** kinds (please see structure below)

### TAGS

e – Event ID of Invoice (if Payment), or previous correspondence  
p – Pubkey of corresponding partner  
i – Internet ID of corresponding partner  
r – Reference number (typically from bookkeeping application)

### NIPS

- 01 – Basic protocol
- 02 – Contact names (esp. Internet ID (05))
- 03 – Timestamp
- 04 – Encrypt the content of an event
- 05 – Internet ID
- 25? – Reputation
- 42 – Authentication of client to relay (since it is storage of transaction history)
- 56 – Reporting (such as outstanding invoices, part payments, payment terms, etc.)

### RELAY

A private relay persisting only MC events, would perhaps be more efficient than requesting reports from a public relay with all sorts of events

## NIP-66 BILL OF EXCHANGE

*For use with Mutual Credit, Promissory Notes, IOU's, Loans, Multi-Sigs, and Time-Locks*

### PAYMENT

---

While gold and bitcoin have intrinsic value from mining, this proposed payment uses the legal construct of a Bill-of-Exchange, which has (like gold) been used (and tested) for centuries

- **Bill of Exchange** – This is a written order binding one party to pay a fixed sum to another on demand or at a predetermined date. They are similar to checks and promissory notes, and are usually transferable by endorsement<sup>2</sup>
  - A bill of exchange is a written order binding one party to pay a fixed sum of money to another party on demand or at some point in the future.
  - A bill of exchange often includes three parties—the drawee is the party that pays the sum, the payee receives that sum, and the drawer is the one that obliges the drawee to pay the payee.
  - While a bill of exchange is not a contract itself, the involved parties can use it to specify the terms of a transaction, such as the credit terms and the rate of accrued interest.
- **Promissory Note** - A promissory note is a written promise by one party to pay another party a specified sum of money either on demand or at a specified future date. It is commonly used in business as a means of short-term financing<sup>3</sup>.

For example, when a company has sold some products but not yet collected payments for them, it may ask its creditors to accept a promissory note that can be exchanged for cash at a future time (or eg. an IOU to overcome coincidence of wants in barter<sup>4</sup>).

- **Mutual Credit** – Bookkeeping and settlement (without the banks, bureaucrats, or blockchains) of credits granted to partners for goods and services provided

# NIP-66 BILL OF EXCHANGE

*For use with Mutual Credit, Promissory Notes, IOU's, Loans, Multi-Sigs, and Time-Locks*

## STRUCTURE

---

Initial proposed structure in the payload of an encrypted direct message

Kind-xx, Bill of Exchange (BoE), NIP-66

1. **Document:** <integer> Sequential document number from drawee (The Bill is issued by the drawee)
2. **Date:** <date> The date when the bill is issued
3. **Payee:** <Internet ID> The person or organization who will receive the payment
4. **Drawer:** <Internet ID> Entity issuing the bill, and who is responsible for making the payment
5. **Drawee:** <Internet ID> Entity ordered to make the payment (could be same as Drawer)
6. **Amount:** <decimal> The amount of money that is being paid
7. **Currency:** <currency code> The currency in which the payment is being made
8. **Due date:** <date> The date on which the payment is due
9. **Endorsement:** <signature> The signature of the payee approving payment to another party
10. **Reference number:** <varchar(40)> An optional field for the purpose of tracking and record-keeping
11. **Acceptance:** <signature> The signature of the drawee
12. **Hash:** <hash> Running hash of this transaction plus previous running hash

## NIP-66 BILL OF EXCHANGE

*For use with Mutual Credit, Promissory Notes, IOU's, Loans, Multi-Sigs, and Time-Locks*

### Product or service

13. **Quantity:** The quantity of product or service rendered
14. **UoM:** Unit of Measure
15. **SKU:** Product number
16. **Delivery:** Delivery terms, shipping method, payment of shipping (FoB, CoD)
17. **Warranty:** Length, coverage
18. **Score:** A reputation (satisfaction) score per transaction

### Settlement terms (might not be relevant if the Nostr client settles immediately)

19. **Payment:** Payment terms, due days from invoice (eg. net30)
20. **Late:** Late payment penalties or rates
21. **Discount:** Discount on early payment
22. **Payment:** Payment method required, CC, BTC, wire

### Bookkeeping

23. **Debit:** Account number debited
24. **Credit:** Account number credited
25. **Cost:** Cost collection account
26. **Description:** Explain the performance delivered and payment agreed on

## COMMUNICATION

---

### Client known

To present an invoice, one would typically already have the client's Internet ID (or public key), to send to and receive payment back

### Not corresponding

Perhaps at a counter, one has not been corresponding, then a QR code or NFC might serve to present the invoice, and introduce oneself, in order to accept payment

# NIP-66 BILL OF EXCHANGE

*For use with Mutual Credit, Promissory Notes, IOU's, Loans, Multi-Sigs, and Time-Locks*

## BOOKKEEPING

---

The idea with Mutual Credit is netting transactions so that each person is left with a single balance, positive or negative

However, we need to keep accounting records of transactions, at least until included in a balance-carried-forward at the end of the period, or consumed by expenditure (analogous to UTXOs)

Since participants can go negative, in other words receiving “mutual credit” from the group, limits, or interests might be decided by participants. By using a Bill-of-Exchange, we have legal precedent for recourse, endorsement, etc.

The client software of the Payee (entitled to receive payment), might for example request the balance (or zk-SNARK confirmation) from the Drawee (obliged to pay) before accepting payment

### Possible process

Messaging between the software clients might follow the following process:

1. **Quotation:** Payee quotes for services proposed, as well as checking the Drawee's balance (and possibly obtains a commitment of funds)
2. **Delivery:** The Drawee approves the work, and signs and delivery note
3. **Invoice:** The delivery note is used to create an invoice by the Payee
4. **Payment:** Drawee pays the invoice with an IOU (Bill-of-Exchange)

Mutual Credits can perhaps appear on conventional bookkeeping packages as another currency

Determination of the debtor's ability to pay could perhaps be done at each transaction, or a credit value could be agreed on in the usual way of doing analyzing creditworthiness

But we are not interested in writing a bookkeeping package, but offering a way to make payments that does not involve **debt at compounding interest**

## NIP-66 BILL OF EXCHANGE

For use with Mutual Credit, Promissory Notes, IOU's, Loans, Multi-Sigs, and Time-Locks

### DISCUSSION

---

Currently, we have to buy money to be able have money to use for daily living, whether BTC, Gold, or local currencies bought with fiat, or Bank Money with collateral, labour, and interest

As we know bank money, which makes up pretty much all money we, use is created out of nothing by private corporations called banks, who require collateral (your stuff) or enslavement (mortgage), and then charge compounding interest

In their books, your promissory note, mortgage, or collateral appears as an asset, while your account (called a "deposit") is the liability entry

Understand this, after a lender leaves the bank, the bank has a *claim on assets* (collateral), or labour (mortgage), and an *income stream* of compounding interest payments

Note that this interest is not created with the loan but has to be fought for from others who also need to pay interest, leading to more borrowing, and inevitable forfeiture and asset-stripping

The same applies to governments who also go to those same private banks to create \$trillions of **national** currency out of nothing against claims on national assets at interest. The largest single expense at all levels of government is this debt serving in a perpetual struggle to fend off asset-stripping the nation

Banks not only control the interest rates (and thus the amounts payable), but cause boom and bust business cycles by *credit contraction*, bankrupting and dispossessing people and nations

When typing about interest (riba, neshach, usury) we mean *interest on money creation*, not revenue earned from investing in productive assets and businesses at risk

## NIP-66 BILL OF EXCHANGE

For use with Mutual Credit, Promissory Notes, IOU's, Loans, Multi-Sigs, and Time-Locks

### Barter

Another view of mutual credit could be as a way to clear IOUs

To overcome the coincidence of needs in barter<sup>5</sup>, some Sumerian clay tablets were records of farmers purchasing goods with a promise to pay in crops when harvested. The clay tablet would be destroyed on settlement

Let's imagine an economy where payments are done with IOUs (vouchers). For eg. an egg farmer might pay a carpenter who repaired chicken coops with IOUs for eggs. These IOUs could be used to purchase bread, since the baker could then use the IOUs to obtain eggs from the farmer, who then destroys the IOU

Another scenario could be an entrepreneur wishing to build a watermill, (partly) paying for material and contractors with IOUs for flour. These IOUs could be used to purchase bread from the baker, and other vendors. Anchor suppliers such as utilities (electricity) could also (partly) pay staff with IOUs

With mutual credit, we don't have multiple different IOUs that are only withdrawn when settled at the original issuer, but rather only one currency for all types of IOUs, products, and services

### Commodity currency

BTC, Gold, or even long-lasting food like wheat or rice, can serve as a *medium of exchange* due to their widespread acceptance. They also fulfill the second function of money, namely the *storage of value*

### Mutual Credit

However, with mutual credit we argue that money is simply a *unit of measure* (ie. bookkeeping), that should frictionlessly enable commerce without cost



# NIP-66 BILL OF EXCHANGE

*For use with Mutual Credit, Promissory Notes, IOU's, Loans, Multi-Sigs, and Time-Locks*

## SECURITY

---

Some security considerations that client implementors might want to consider:

### **Identity**

Disposable identities (keys) would let someone go negative, and simply dispose their ID (NIP05)

### **Privacy**

Commercial transactions are private (NIP-04)

### **Message authenticity**

NIP-01 (and NIP-26) provide for signing

NIP-42 Authentication of clients to relays

### **Confirm correspondent**

During the handshake, we need to verify the correspondent. Perhaps we could consider a comparison of hashed past transactions, along with checking the individual signatures

### **Tamper-proof ledger**

We could have a running hash (like a Merkle tree) that is passed to the corresponding partner

The partner uses that hash plus the new transaction to arrive at a new running hash passed back along with the transaction

The handshake would then be able to check the running hash of the correspondent

# NIP-66 BILL OF EXCHANGE

*For use with Mutual Credit, Promissory Notes, IOU's, Loans, Multi-Sigs, and Time-Locks*

## LEDGER

---

Rather than nodes (clients) maintaining their own ledger of transactions, perhaps we could consider using a private relay<sup>6</sup>, that already has the functionality of event storage, to keep a record of mutual credit transactions

## REPUTATION

---

We might want to consider a satisfaction score with the delivery of each transaction (product or service) in order to have an additional way to rate members other than account balance

Gossip (over Nostr) could compliment adherence to norms

## ENDNOTES

---

<sup>1</sup> This is interest on money creation, not revenue (interest) from investing in productive activity at risk

<sup>2</sup> <https://www.investopedia.com/terms/b/billofexchange.asp>

<sup>3</sup> <https://www.investopedia.com/video/play/promissory-note/>

<sup>4</sup> <https://www.geeksforgeeks.org/what-is-barter-system-and-double-coincidence-of-wants/>

<sup>5</sup> an economic phenomenon where two parties each hold an item that the other wants, so they exchange these items directly without any monetary medium

<sup>6</sup> <https://nostr.how/en/relays>