

Monetary and Financial Architectures

Fiat Lux – Freshmen Seminar

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UCLA

Introduction

What is Finance?

- **Definition (Scientific Discipline):** subfield of economics that studies assignments and structures of property rights (assets and liabilities) and the possible real economic transactions that result from their exchange.
- **Definition (Financial Activities):** exchange of property rights (assets and liabilities).

What is an Asset?

- **Definition (Asset):** (**pure**) property rights over a physical object and/or the goods or services associated with it or (**derivative**) property rights over some existing or future asset.
- **Definition (Liability):** (**derivative**) property rights owned by third parties over an asset owned by an individual.
- **Definition (Money):**
 - **Special asset:** +, medium of exchange, unit of account, legal tender
 - **Examples of Money**

What is Money?

- **Definition (Outside Money):** any form of money that is not a liability of the private sector.
- **Definition (Inside Money):** any form of money which is a liability of the financial sector.

Areas of Study of Finance?

- **Definition (Asset Pricing):** area of finance discipline that studies how different assets are valued.
- **Definition (Corporate, Household Finance):** area of finance that studies the design of design asset and liability structures by and individual or corporation.
- As scientific disciplines, both areas have a theory and empirical subfields.

Two Solid Benchmarks

- **Asset Pricing Benchmark:** theoretical model where underlying economic structure is efficient. Asset prices are a result of efficient allocations.
- **Corporate Finance Benchmark:** Asset structure of firms (and households) efficient and independent of liability structure.
- All modern field of finance, rooted in benchmarks:
 - Either studies violations to benchmarks,
 - Or studies it's implications

Value Creation from Finance

Today

- What is the social value of finance?
- How does finance enable transactions?
- How does the banking system create money and how does this enable transactions?

Accounting Principles

Equity

Debt

Liquid Assets

Money

Illiquid Assets

Service Goods

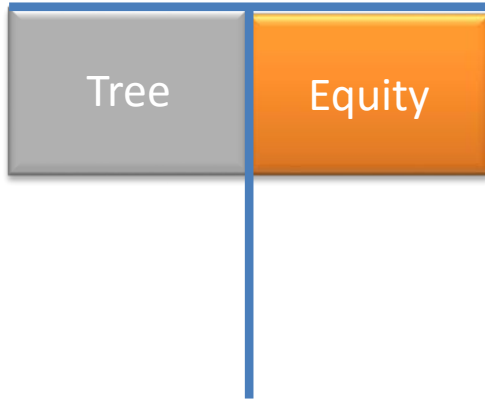


A fictitious world, where only transactions are carried out with *inside* money...

Essential: Bank Transactions

Morning Before Loan Contract

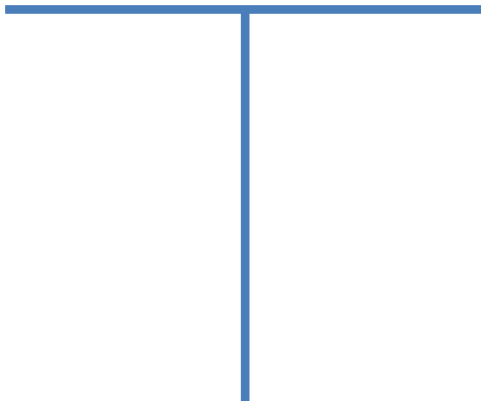
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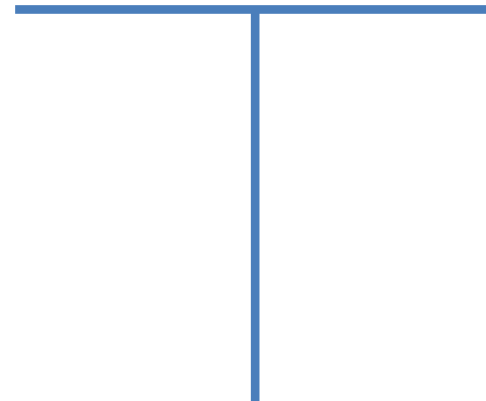
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Bank

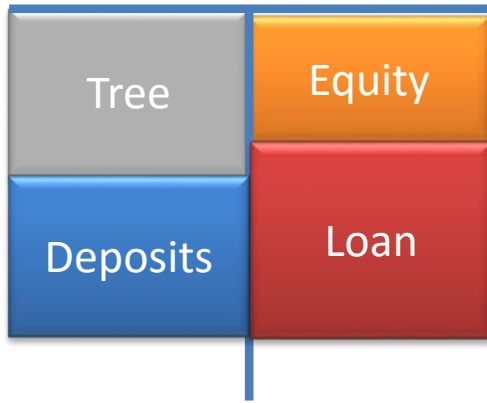


Bank Owner

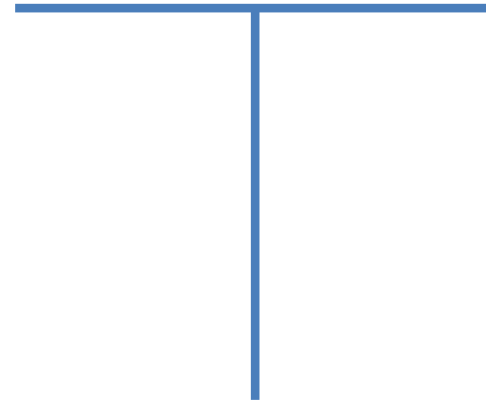


Morning After Loan Contract

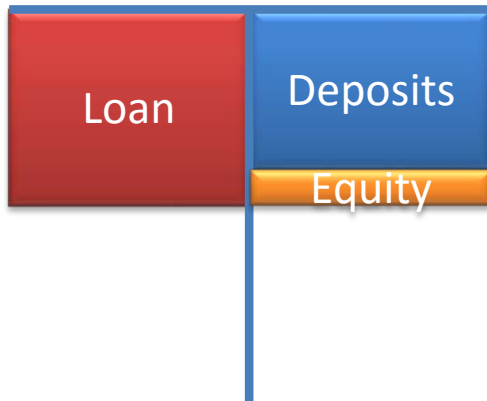
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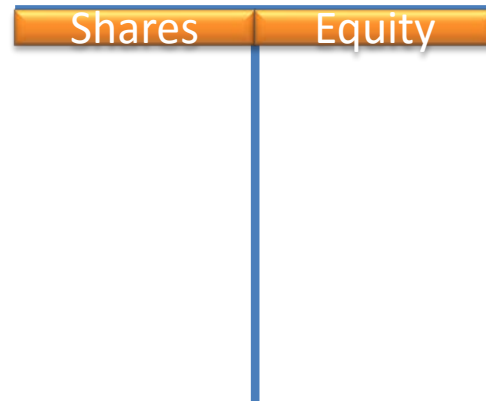
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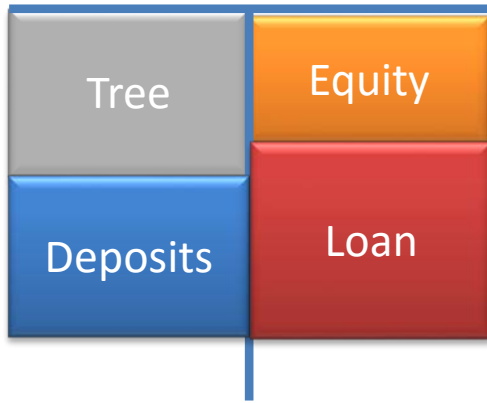


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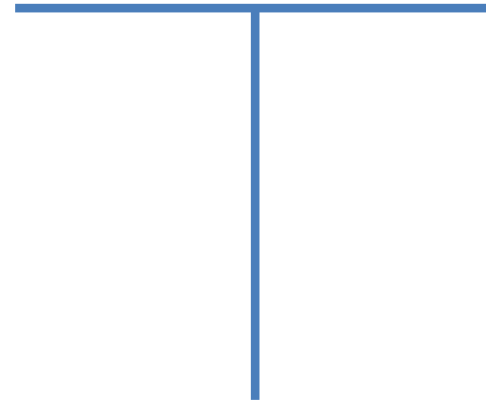


Afternoon Hours Trade

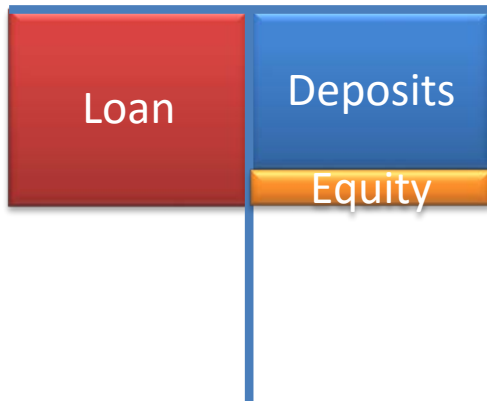
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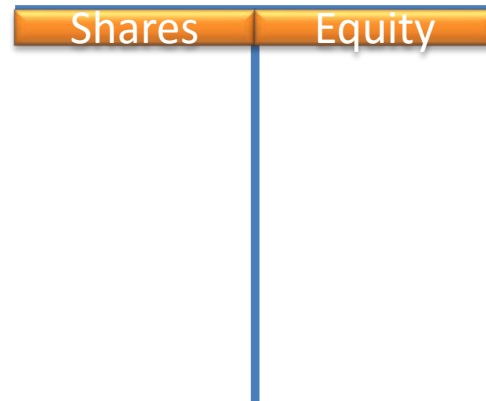
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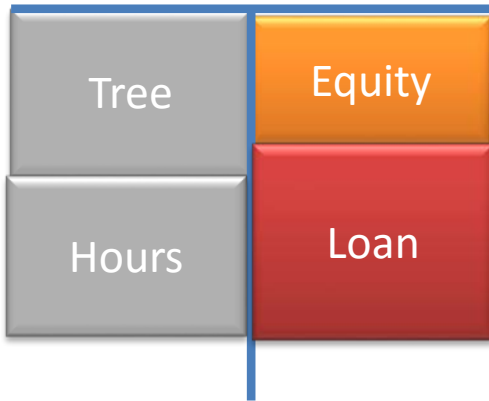
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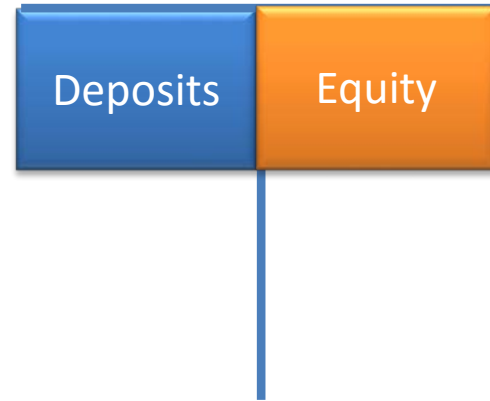
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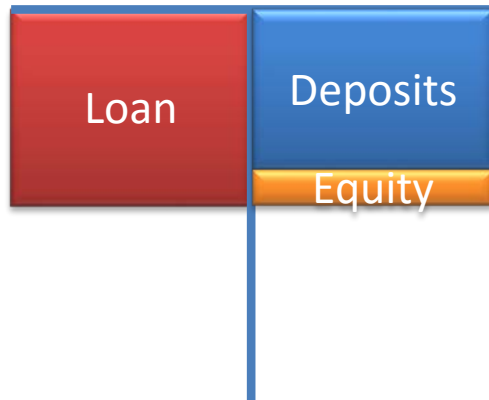
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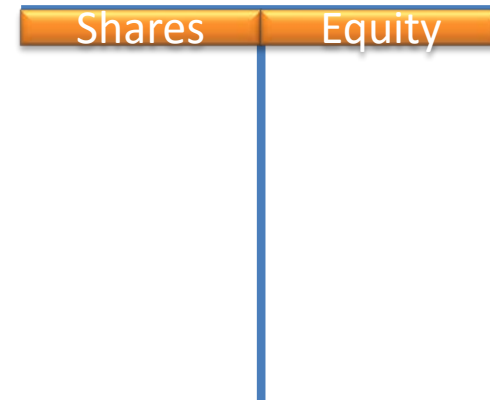
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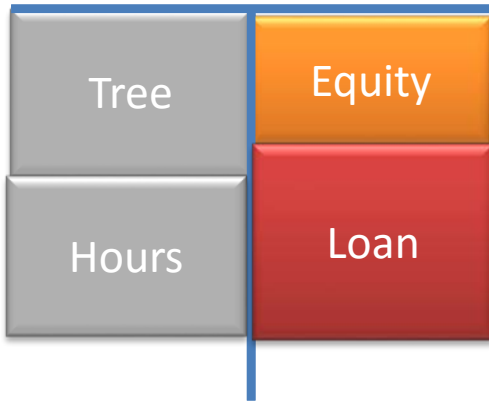


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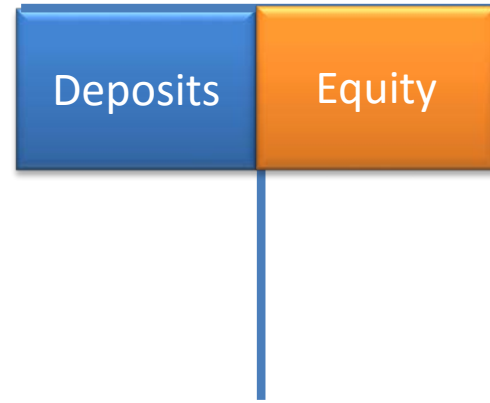


Afternoon Bank Dividends

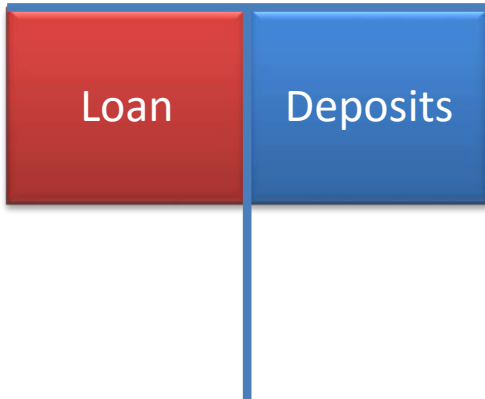
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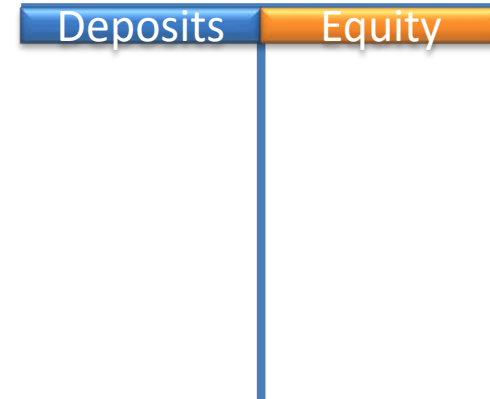
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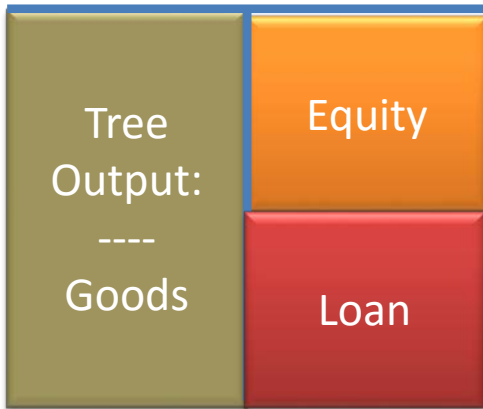


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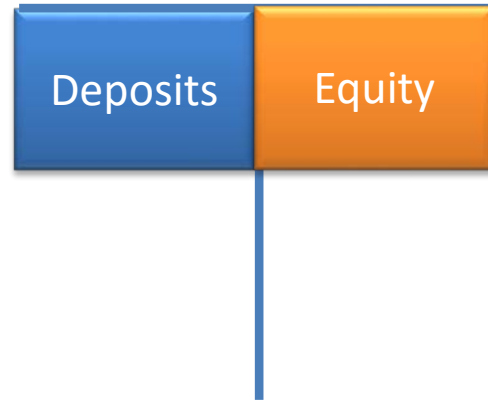


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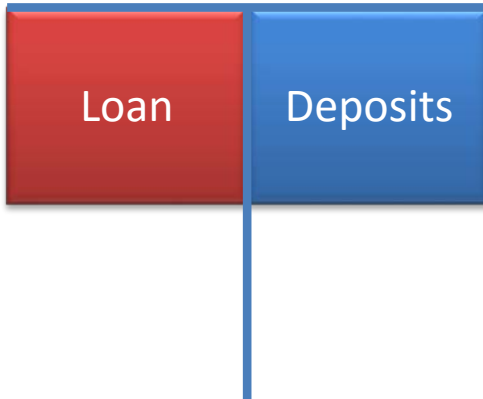
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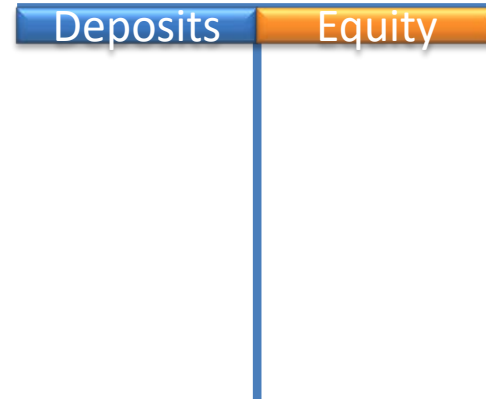
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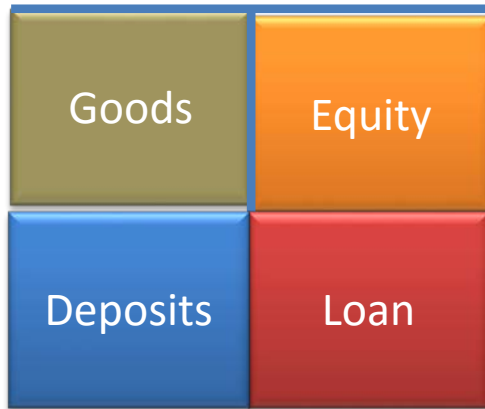


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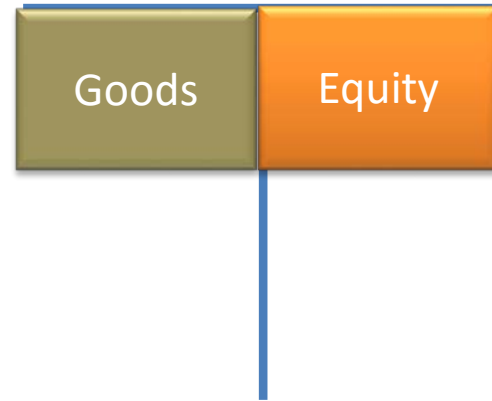


Afternoon Goods Trade

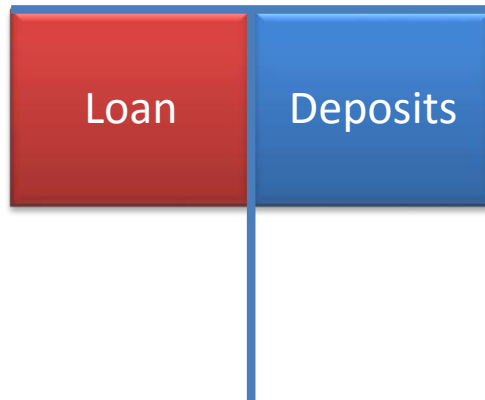
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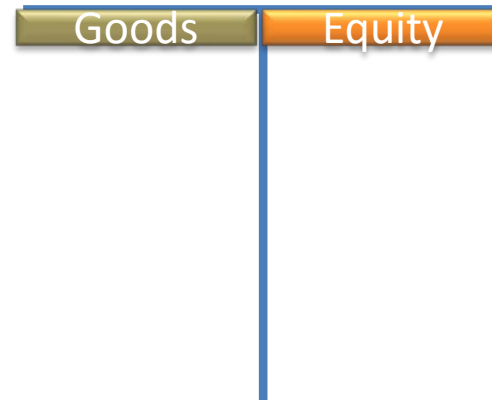
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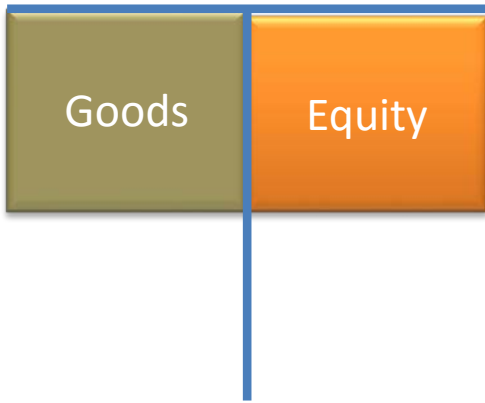


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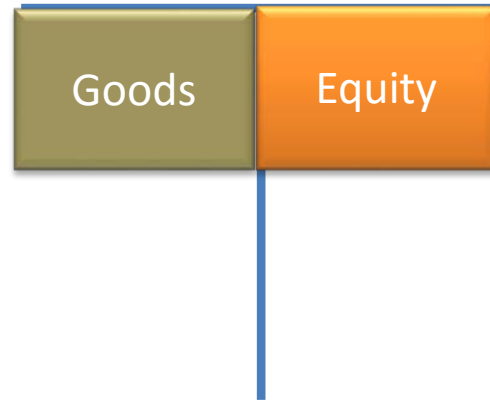


Debt Settlements

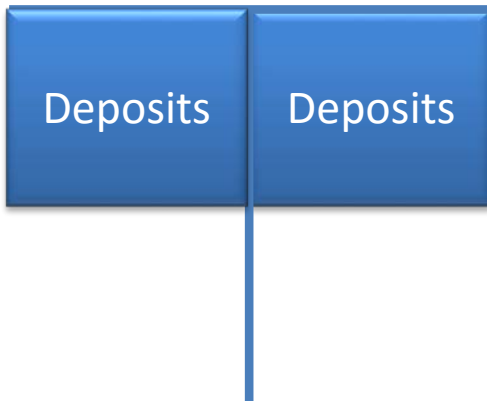
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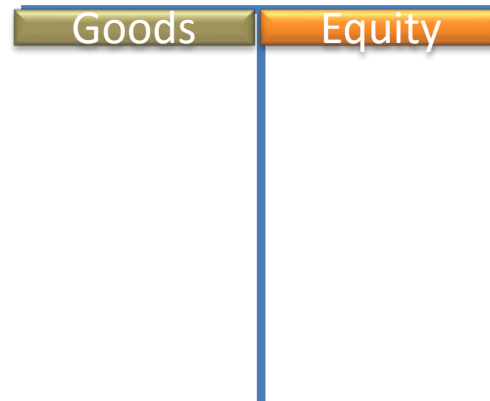
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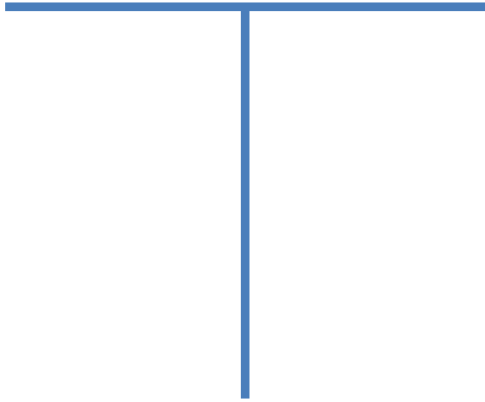


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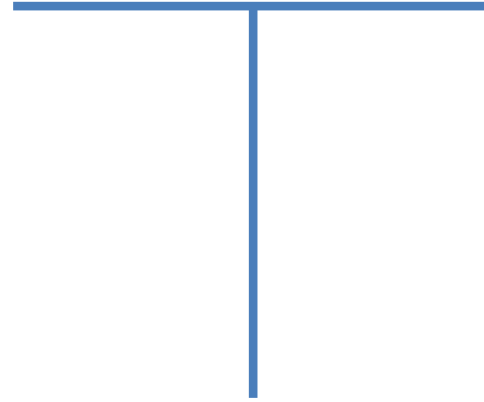


After Consumption

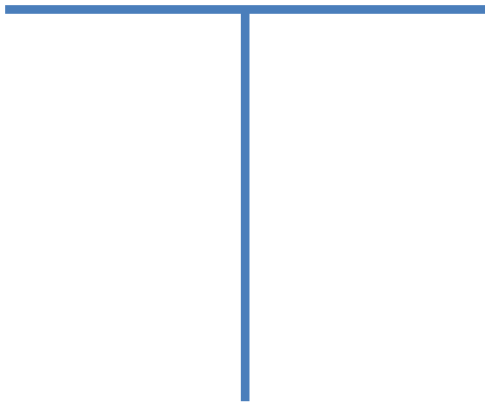
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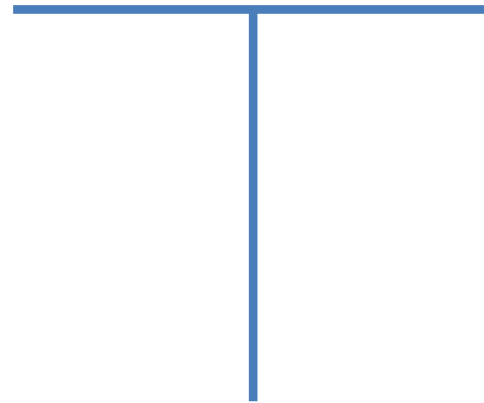
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Bank

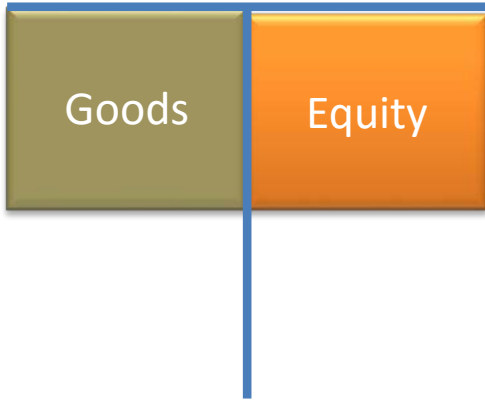


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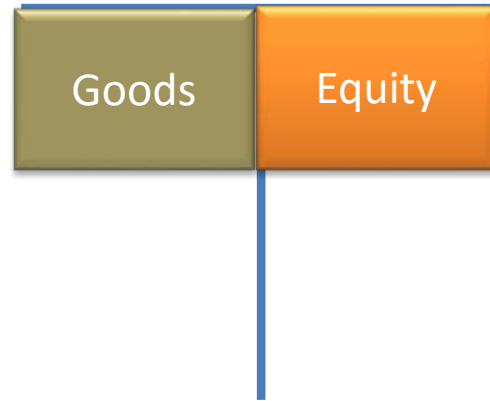


...if something is invested
(if some seeds are planted...)

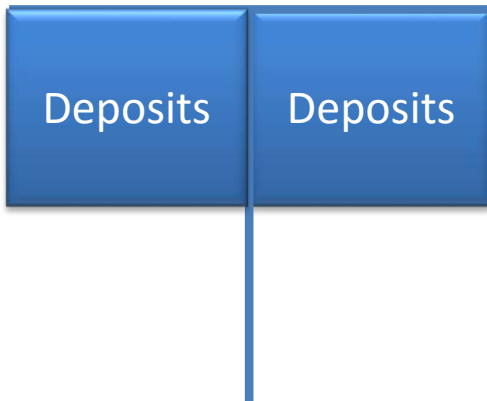
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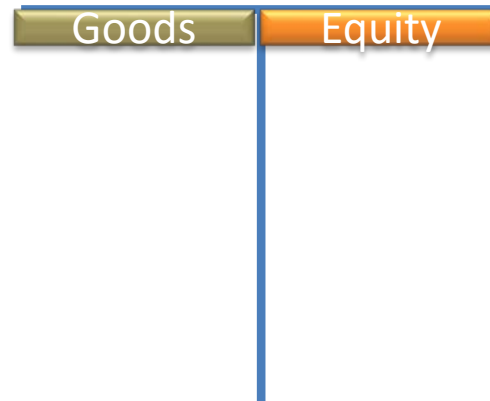
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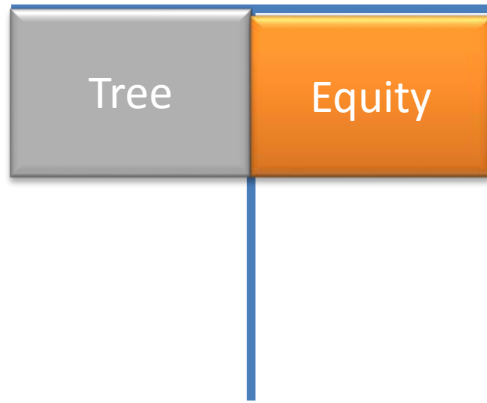
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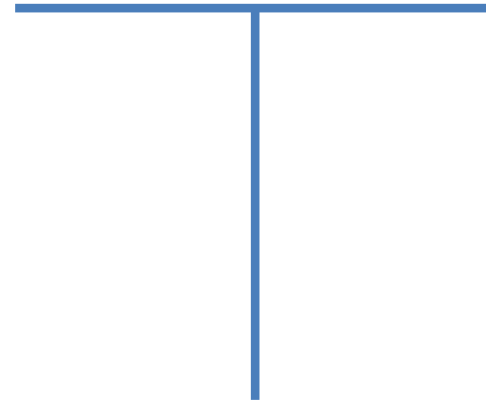
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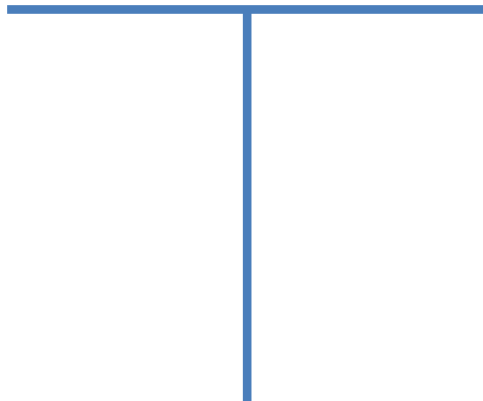
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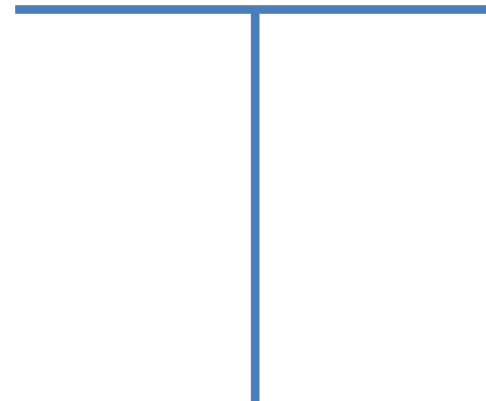
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Bank



Bank Owner

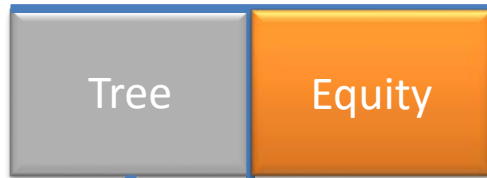


...but the world isn't that simple!

There is **risk** in the economy, and not all debts (liabilities) can be honored...

Some property rights are extinguished...

Asset Value

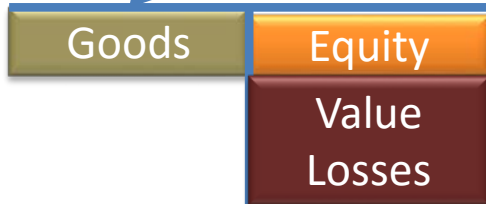


Things Going Wrong

Things are OK

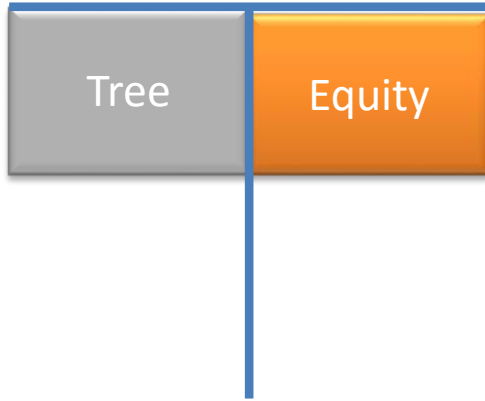
Asset Value

Asset Value



Morning Before Loan Contract

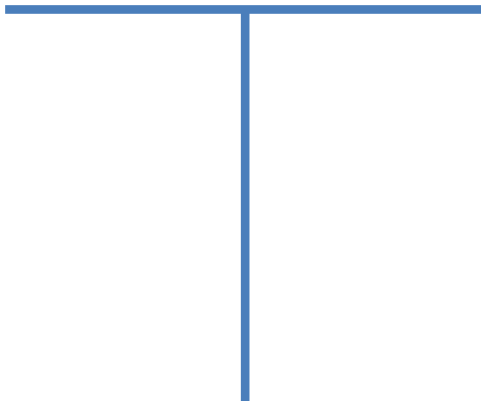
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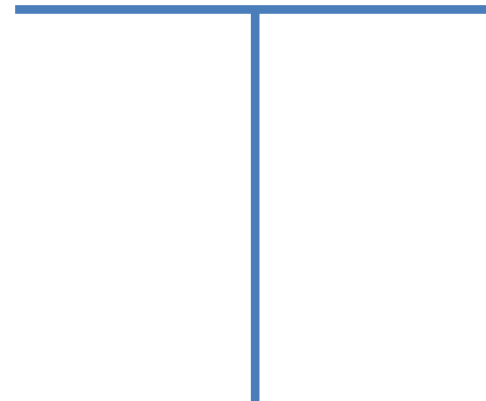
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Bank

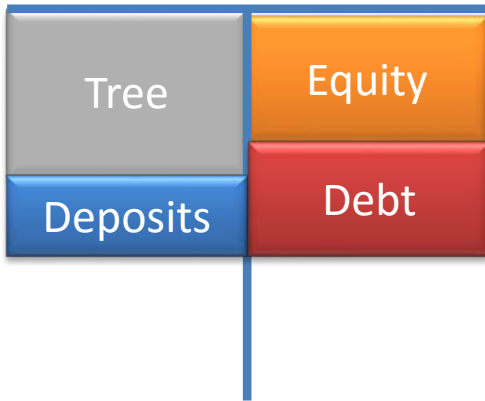


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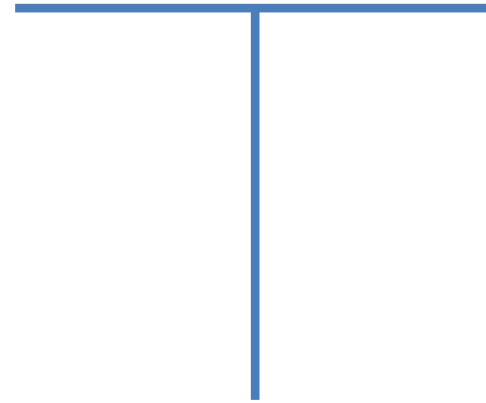


Morning After Loan Contract

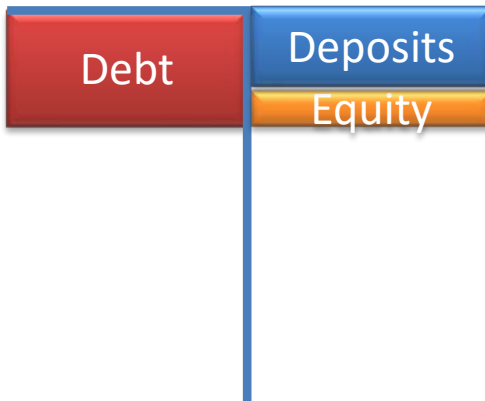
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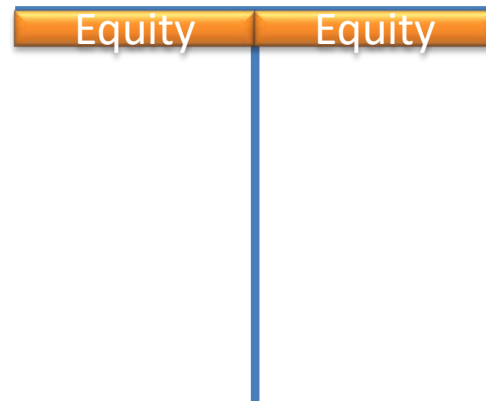
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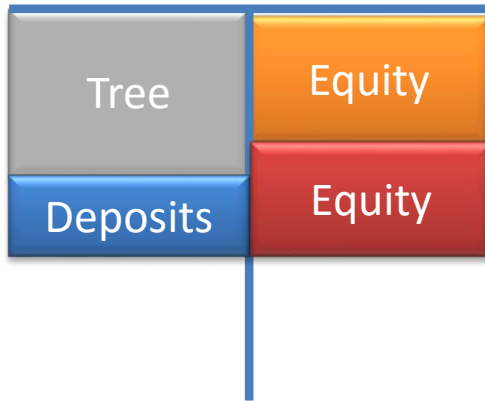
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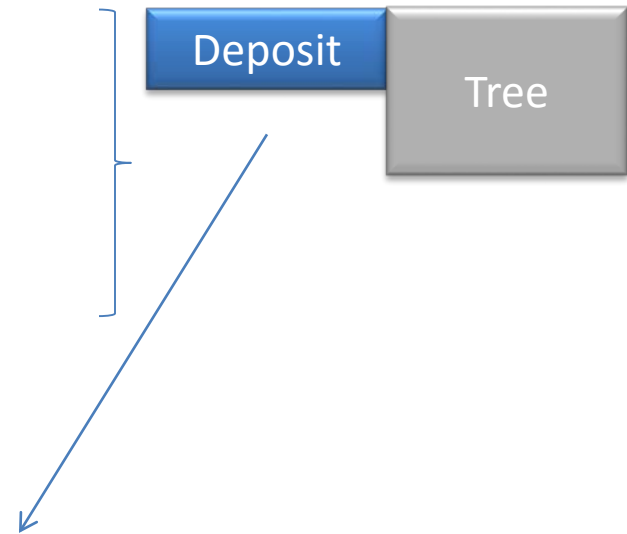
Bank Owner



Producer



Loan-to-Value

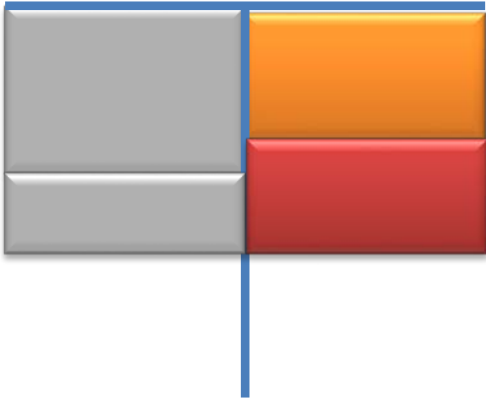


Special Properties as
function of contract!

-> important to determine
how much economy loses!

Afternoon Hours Trade

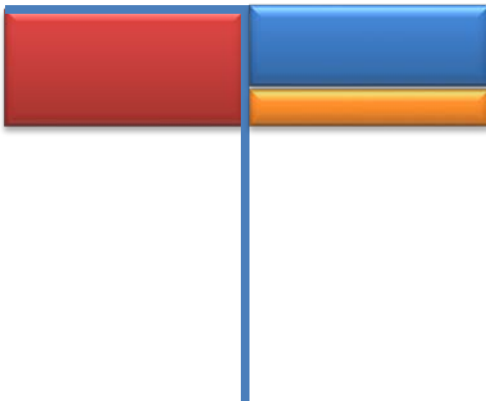
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Worker



Bank

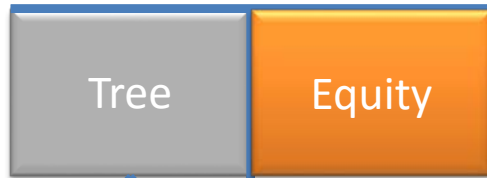


Bank Owner



Output Created

Asset Value

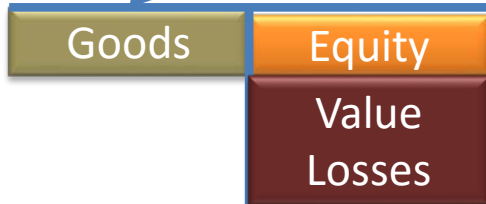


Things Going Wrong

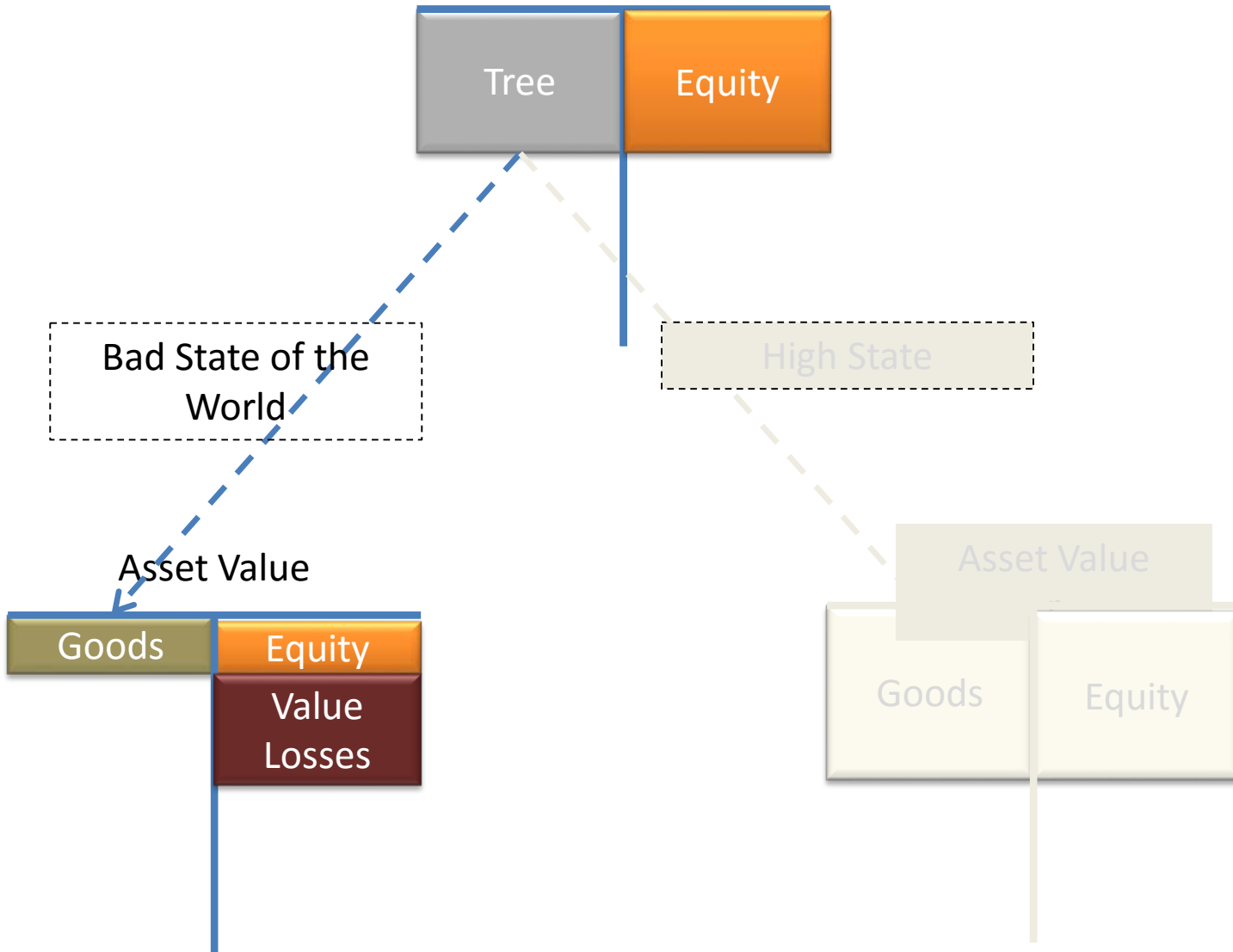
Things are OK

Asset Value

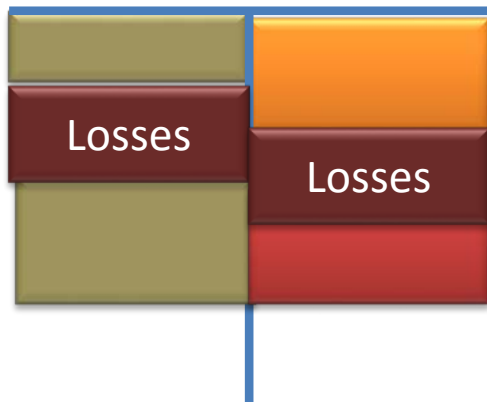
Asset Value



Asset Value



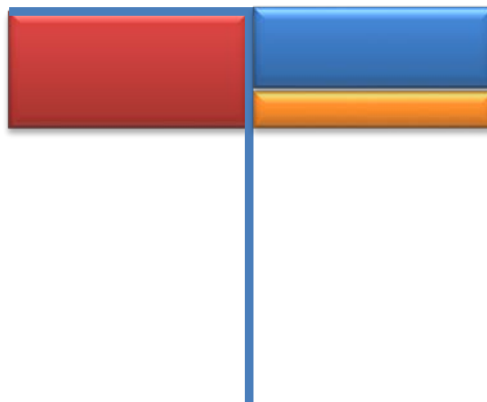
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Worker



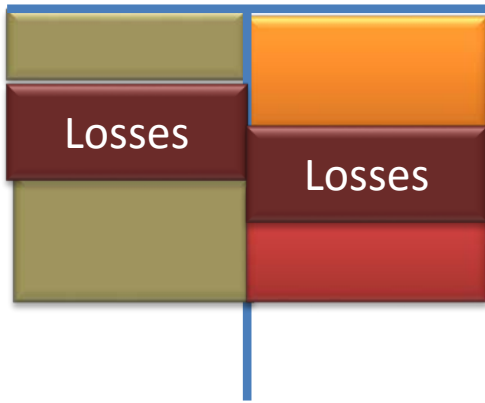
Bank



Bank Owner



Producer



Worker



Bank



Bank Owner



Producer

$R(H)$	$R(H) - iD(H)$
Losses	$+(r(h) - 1)q$
$r(h) * q$	Losses
	$D(H)(1+i)$

Worker

Losses $D(H)$	Losses $D(H)$
------------------	------------------

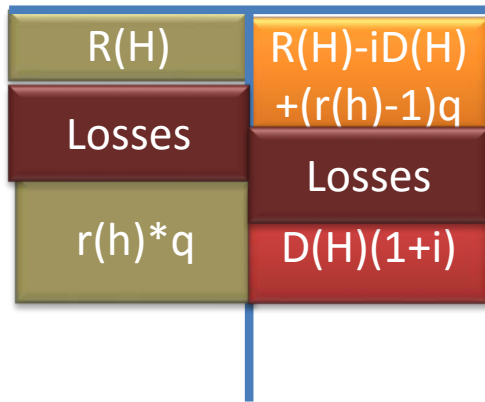
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Losses $D(H) + i$	$D(H)$
	Losses

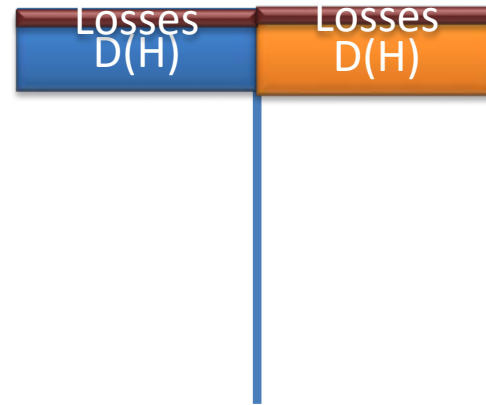
Bank Owner

Losses	Losses
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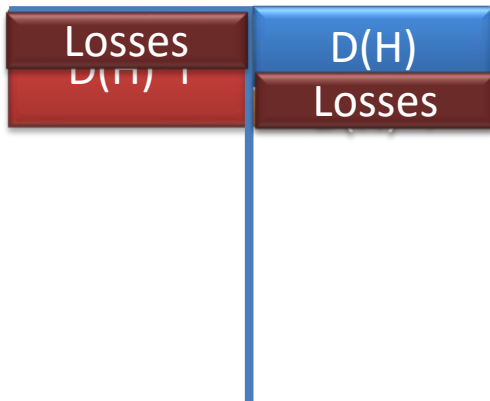
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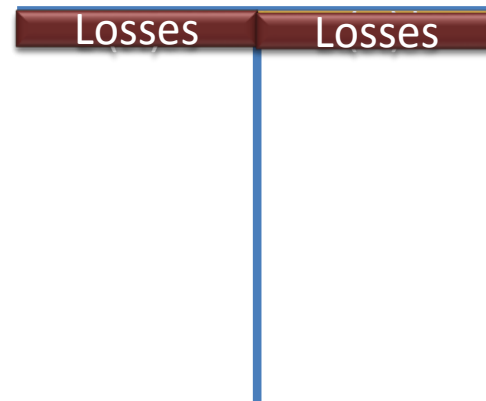
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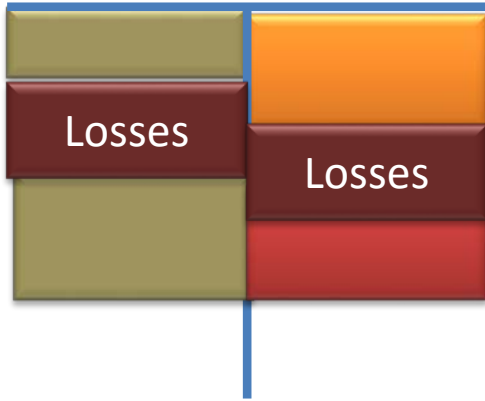
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Bank Owner



Producer



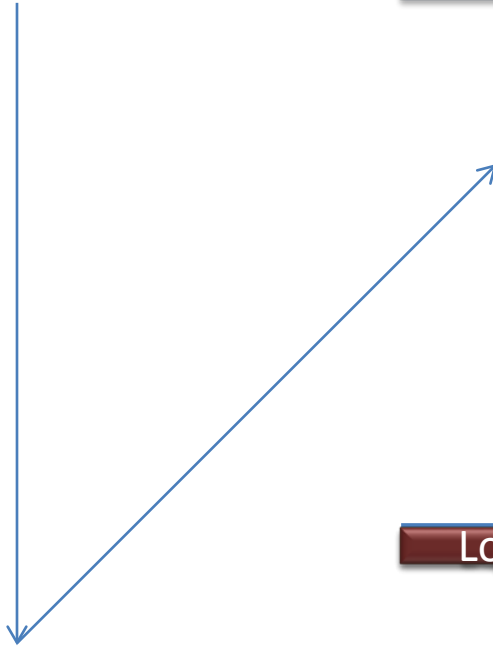
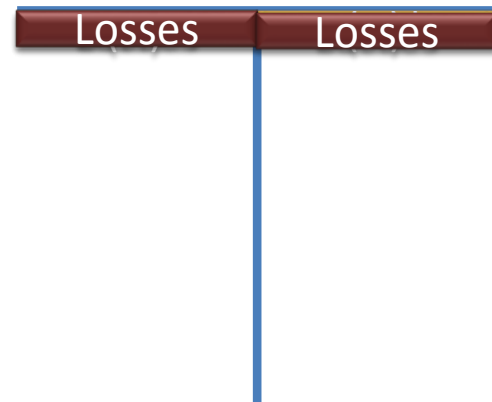
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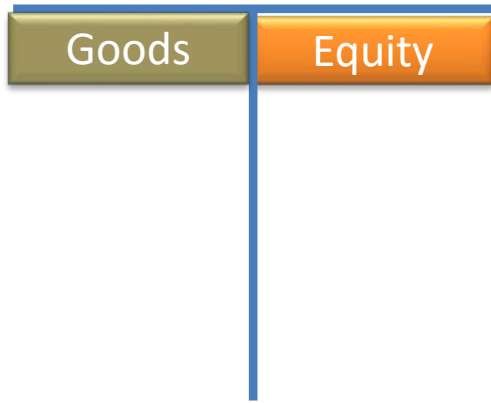
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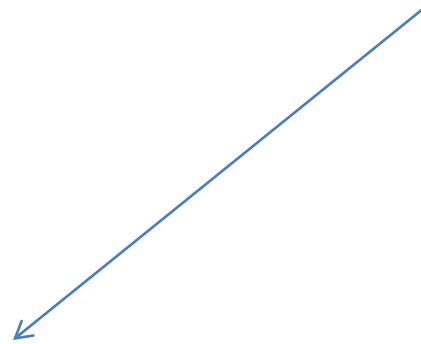
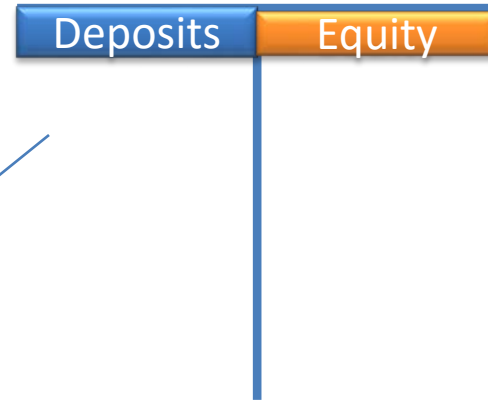
Bank Owner



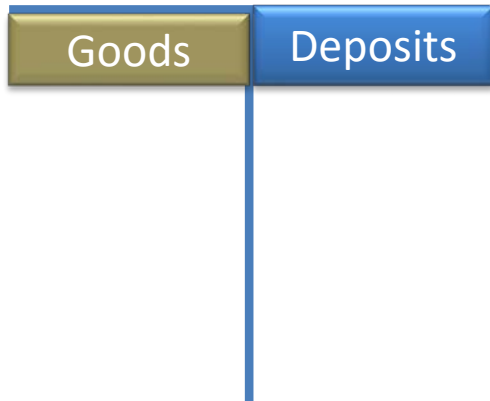
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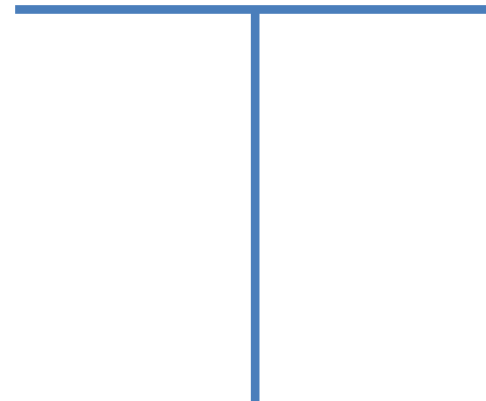
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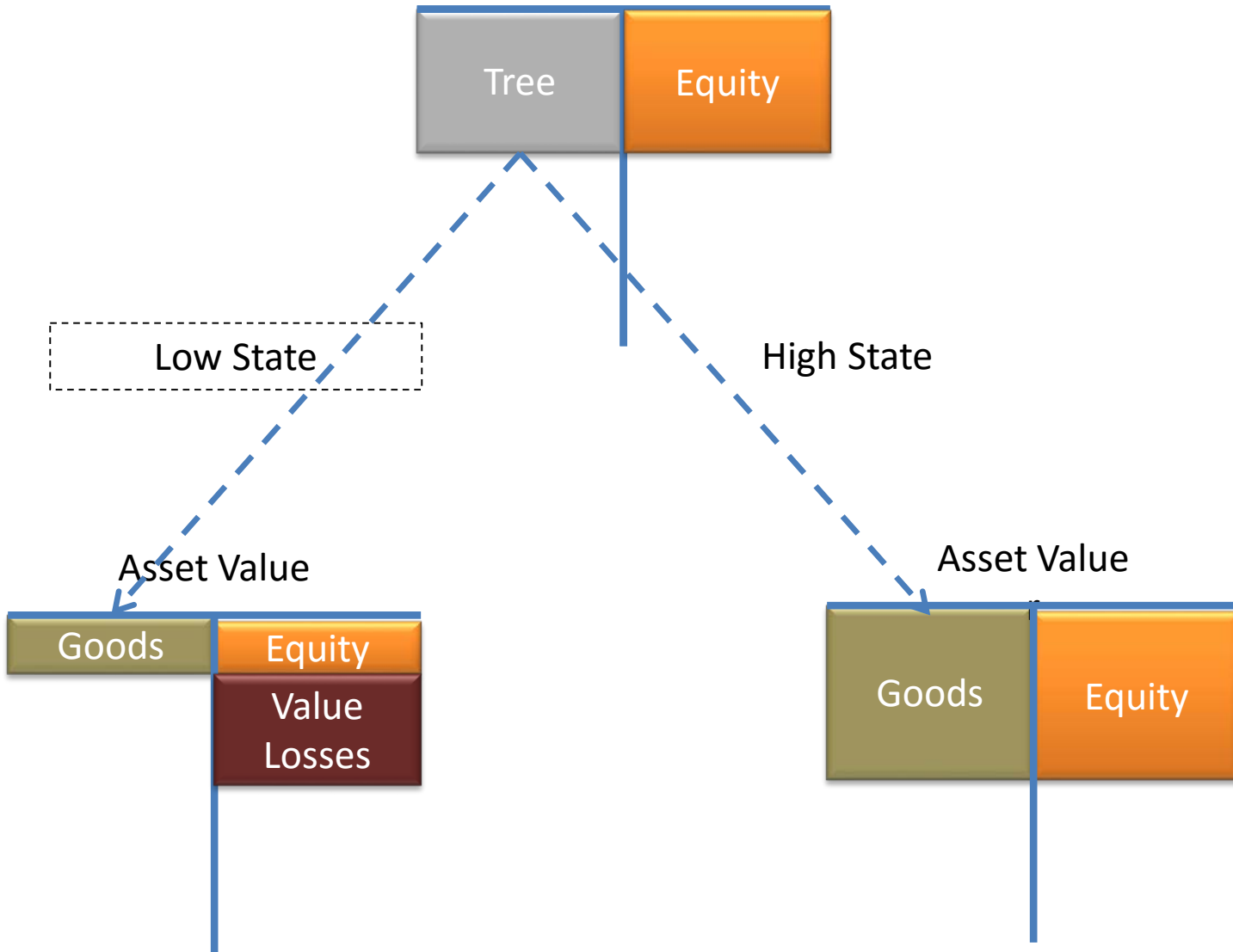
Bank



Bank Owner



Asset Value



What are the Consequences of these events?

- Let's write down a list!
- For the next 20 minutes, pair in groups...
- Write a list of all the consequences of this possible chain of events and let's discuss them!