The Economics of \textit{[The Unregulated]} Shadow Banking, & its Inherent Risks.

Mohammad Fheili / AGM - Jammal Trust Bank
Complexity (=Shadow Banking) has been responsible for Financial markets Panics and Banking Crisis!

Financial Markets are prone to panics and runs;

Banking crisis have become all-too-regular occurrences in market economies.

If you can't explain it simply, you don’t understand it well enough.

– Albert Einstein
How Big Is The Shadow Banking System?

The Economics Of Channeling & Intermediation

The Collateralized Debt Obligations - CDOs

The Rating Agencies’ Pitfalls

The Regulator & Regulations: Blessing or Curse?

Closing Remarks
How Big is the Shadow Banking System?

The Interconnectivity and Complexity which Characterizes Shadow Banking Makes It Near Impossible to effectively size the problem. ... but here is what’s available.
L'activité du shadow banking dans le monde

Les pays les plus concernés
Un risque* essentiellement anglo-saxonn…

États-Unis 46 %
Royaume-Uni 23%
Les cinq grands pays de la zone euro 24 %
* Part de l'activité par zone en %

… mais concentré en Europe aux Pays-Bas et au Luxembourg

Pays-Bas 27,2 %
Luxembourg 22,2 %

Sources : The Economist

* The lure of shadow banking

JTB
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World Reserve Currency is no longer pegged to Gold

- Unregulated, Offshore, Off-Balance Sheet, OTC Securitization and Swaps Explodes.
- Shadow Banking fully emerges with protracted, historically low interest rates.
- Interest Rate and Currency Swaps grow by Trillions monthly.
The Economics of Channeling & Intermediation
Lenders

Surplus Spending Units - SSUs
- Individuals (Current Income is GREATER than Current Expenditures)
- Firms (Earnings in excess of what the firm needs currently)
- Government (Current Revenues are in excess of planned Expenditures)
- Financial Intermediaries (Funding is currently GREATER than investment)

Where to Warehouse the Surplus of Fund?

Borrowers

Deficit Spending Units - DSUs
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Where to Go to Fund My Ideas?

Local Pool of Loanable Funds

Decision is a function of:
- Motive
- Risk Aversion

Tapping into International Market for Loanable Funds

Firms, Governments, Fin. Institutions, Households

Channeling...
The Channeling of Funds Feeds and Fuels:
- Household Consumption
- Gross Private Domestic Investments
- Government Expenditures
- Exports and Imports.

It benefits the REAL ECONOMY (Real GDP).

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The Economics...
Regulated or Not ...

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**Regulation in this context indicate to:** Presence of Lender of Last Resort; Legal Reserve; Deposit Insurance; Capital Adequacy; etc.
**Lenders**

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**Shadow Banking Replicates “Intermediation” in the Banking Model But . . .**

With intermedation in Both

**Without Intermediation**
Three Critical Intermediations Activities Are Undertaken.

• **Maturity Transformation.** The use of short-term sources of funds (e.g., Deposits) to fund long-term loans. Traditional deposits are a bank’s liabilities, collected in the form of savings and checking accounts (pooled or decomposed) and redistributed as loans to consumers and businesses (i.e., part of assets). The risk associated with this Maturity Transformation is totally assumed by the Bank.

• **Liquidity Transformation.** A Bank’s assets are less liquid than its liabilities – The liabilities (i.e., Depositors’ Money) that fund the long-term assets are available on demand at any time. However, Banks extends loans in the amount in excess of what is required under the Legal Reserve System – i.e., Creating Money. In the case of massive withdrawals by depositors, the Bank runs the risk of insolvency.

• **Credit Transformation.** While any individual loan carries risk specific to that transaction, a bank diffuses its overall risk exposure by lending to a large number of borrowers. Despite this diversification, the riskiness of a Bank’s assets usually exceeds that of its liabilities. Taking on this Credit Risk is typically how banks earn a return above the cost of their liabilities, a concept known as Net Interest Margin.

In the Regulated Banking Landscape, “Deposit Insurance” mitigated Credit Risk of bank depositors, and the “Lender of Last Resort” addressed liquidity needs that can arise from bank loans that have longer maturity and less liquidity relative to liabilities.
Channels of Financial Intermediations

**Sources of Funds**

- **Financial Markets**
  - Individuals (With Money to warehouse)

- **Traditional Banking**
  - Households / Corporations (With Money to safe keep)

- **Shadow Banking**
  - Households / Corporations / Institutions / Securities Lenders / Pension Funds (With Money to Invest)

**Credit Intermediation**

*Credit Intermediation has become more market-based, and No Longer Institution-Based*

**Financial Markets: No Intermediation**

**Traditional Banking: “Originate and Hold Loans” Till Maturity. Institution-Based Intermediation.**

**Shadow Banking: “Originate-To-Sell” Multiple, Market-Based, and Layered Intermediation**

**Uses of Funds**

- Households/ Business Borrowings
Channels of Financial Intermediations

**Sources of Funds**

**Credit Intermediation**

*Credit Intermediation has become more market-based, and No Longer Institution-Based*

**Uses of Funds**

**Non-Intermediated**

- **Individuals** (With Money to warehouse)

**Direct Funding (No Intermediaries)**

**Traditional Banking (Institution-Based Intermediation)**

- **Households / Corporations** (With Money to safe keep)

  - Banks “Originate and Hold Loans” Till Maturity.

  - **Households / Business Borrowings**

**Shadow Banking (Multiple and Market-Based, and Layered Intermediations)**

- **Households / Corporations / Institutions / Securities Lenders / Pension Funds** (With Money to Invest)

  - **MMMF**
  - **Purchases**
  - **CP**
  - **ABCP**
  - **Repos, Etc.**

  - **ABS Intermediation**
  - **ABS Issuance**
  - **Loan Warehousing**
  - **Loan Origination**

  - **Household / Business Borrowings**

**Note:** MMF is Money Market Mutual Fund, CP is Commercial Papers, ABCP is Asset-Backed CP, Repos is Repurchase Agreements, and ABS is Asset-Backed Securities.
Just Like Money Creation... Collateral Intermediation Function.

The Potential For Excess Leverage through Securities Financing Transactions (SFT):

• The temporary transfer of securities by a lender to a borrower on a collateralized basis......

• Then these securities can be used to raise more fund......

• Then funds can, in turn, be used to buy more securities......

• Where these securities can be used as a collateral to raise more funds ... The higher the value of the collateral gets, the more fund can be raised (i.e., Pro Cyclicality)

• Etc.....

The Stock of Collateral and its velocity (the intensity with which it is re-used) are both fundamental to understanding the financial plumbing in the Shadow Banking World.
Intermediation is expanding into Un-Regulated Territories!

• The Shadow Banking System **De-Constructs** the familiar Credit Intermediation process of Deposit-Funded, Hold-To-Maturity lending by traditional banks into a more Complex, Wholesale-Funded, Securitization-Based Intermediation Chain.

• Shadow Banking functionally is similar to traditional banking maturity, liquidity, and credit transformation – BUT the financial flows occur in an Un-Regulated Landscape, and in Multiple steps rather than within one institution’s balance sheet.

At each step in the process of “Shadow Intermediation,”

• The true quality of the underlying collateral is further obscured.

• As more links are added to the chain, more loans are included (i.e., layered intermediation).

• The end buyer holds a very “small slice” of a very large number of loans. In theory, this diversifies risk because any single loan going bad will have little effect on the total pool’s value.

• However, this also complicates the evaluation of the quality of individual pieces, leaving investors to rely on aggregate data to assess the riskiness of assets.

• This Complexity leads to a decline in underwriting standards because the loan originator has little stake in the long-term performance of a loan that is quickly sold to be wholesaled, warehoused, and Repackaged in a Pool (e.g., Originate-To-Sell)
A Flavor of Complexity

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Shows the Flow of Funds from LENDERS to BORROWERS; not the reverse
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Shadow Banking: Decompose & Redistribute
Another Flavor of Complexity

Decompose & Redistribute: The Structure of a Simple Transaction has been Decomposed and the Risks has been Redistributed in a Complex, hard to assess manner.

A Long Term Corporate Bond could actually be sold to three separate ‘Market Participants’, of varying degrees of Risk Aversion, and using three distinct financial instruments:

• One would supply the money for the bond
• One would bear the interest rate risk
• One would bear the risk of default

By doing so, they’re lowering the price of Corporate Credit

Credit Default Swaps which is sold separately

Interest Rate Swaps which is sold separately

These two would not have to put up any capital for the bond, though they might have to post some sort of collateral
Collateralized Debt Obligations - CDOs
1. The Collateralized Debt Obligations - CDOs

- CDOs are a special type of derivatives. Like its name implies, a derivative are any kind of financial product that derives its value from another underlying asset (Housing Loan, Car Loan, Credit Card, …)

- CDOs turn individual loans into a portfolio in which a default by any single borrower is unlikely to have an enormous impact on the portfolio as a whole.

- By aggregating many different mortgages together into a CDO, investors can own a small percentage of many different mortgages, and therefore the CDOs losses as a result of borrowers defaulting on their obligations usually represent the statistical averages in the market as a whole.

- Typically, a pool of debt is divided into three tranches, each of which is a separate CDO. Each Tranche will have different maturity, interest rates and default risk. This allows the CDO creator to sell to multiple investors with different degrees of risk preference.

- This time of growth in CDOs is the era of “Quant Jocks”: Statistical experts whose job is to write computer programs that would model the value of the bundle of loans that made up a CDO.
2. The Collateralized Debt Obligations - CDOs

Banks sold CDOs to investors for three distinct reasons:

• The funds banks received gave them more cash to make new loans.

• It moved the loan’s risk of defaulting from the Bank to the Investor.

• CDOs gave banks new and more profitable product to sell, which boosted share prices and Managers’ Bonuses.

* MAXIMIZE PROFIT subject to:
  * RISK Constraints
  * REGULATORY Constraints

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Collateralized Debt Obligations (CDOs) Pooling, Decomposing, and Distributing Risks!

MBS

AAA Super Senior Tranche

AA

A

BBB

BB

B

Equity

Pool Of Mortgage Loans

Investment Grade

Lower Risk Lower Yield

Non-Investment Junk Grade

Higher Risk Higher Yield

Unrated

First Loss

Last Loss

Loan 1

Loan 2

Loan 3

Housing Loans with similar feature...

Loan 1

Loan 2

Loan 3
This depicts the process by which MBS pieces with lower credit quality (including some non-investment-grade tranches) are “Recycled” to create a CMO, . . .

This process can be repeated to create more structured credit products.
Yet another layer whereby the “True Risk” is being camouflaged …

This process can be repeated to create more structured credit products.
CDOs Camouflaged Risk

About the Underlying Asset.
• Housing prices became unrelated to their actual value.
• People bought homes simply to sell them.
• The easy availability of debt meant people charged too much for the asset.

About the Banks.
• CDOs allowed banks to avoid having to collect on them when they become due, since the loans are now owned by other investors.
• Less discipline in adhering to strict lending standards, so that many loans were made to borrowers who weren’t credit worthy (ensuring disaster)

About the CDOs.
• CDOs became so complex that the buyers didn’t really know the value of what they were buying.
• The sophisticated computer models based the CDOs value on the assumption that housing prices would continue to go up. When prices went down, the computers couldn’t price the CDOs.
• The Opaqueness and the complexity of CDOs created a market panic: Overnight the market for CDOs disappeared!
The Rating Agencies’ Pitfalls!
1. Induced Risk & Complexity ... but in the Shadow: Camouflaged By The Rating Agencies and Overlooked by The Regulators.

• Despite the good intentions, ratings agencies and regulators were significant contributors to the imbalances that culminated in financial crisis.

• The big three Rating Agencies’ (S & P, Moody’s, and Fitch) oligopoly prevailed –
  ✓ Without their ratings, companies could not sell debt instruments.
  ✓ An inherent conflict of interest arose; issuers paid the companies for ratings.
  ✓ Many investors depended on those evaluations when purchasing debt in lieu of a more thorough due-diligence review.
  ✓ Investors ran into further difficulties because the evaluations frequently lagged material market development.

• The Ratings Agencies were complicit in the growing complacency of investors leading up to the credit crisis.
  ✓ Large structured-product deals involving complex securities were very profitable for ratings agencies.
  ✓ Issuers had the ability to choose among potential raters, leading to “ratings shopping.”
  ✓ The rating agencies shift from an Investor-Pay to an Issuer-Pay business model degraded the value of the evaluations provided because the agencies faced little risk from inaccurate ratings.
• Regulatory Arbitrage
• Reserve Requirements imposed a disadvantage on banks
• Compliance
• Technological Innovations
• Erosion of Banks’ informational and transactions cost advantages
• Encouragement from the Regulator
• Financial Sector Productivity
• Appetite of Market Players for speculation
• Finance Know-How
• De-Banking became a plausible alternative.
• Etc …
2. Induced Risk & Complexity ... but in the Shadow: Camouflaged By The Rating Agencies and Overlooked by The Regulators.

• Because the Rating Agencies did not examine the underlying mortgages, they failed to see a shift in borrower behavior and mortgage terms.
  ✓ The emergence of speculative home purchases with 100% financing,
  ✓ The emergence of low- and no-documentation loans

  Meant that the environment was very different from the past, when homebuyers made significant down payments and lived in the houses they purchased.

• The Rating Agencies’ failings affected the Shadow Banking industry:
  ✓ Because many of these securitized products were rated AAA, assuming risk mitigation through diversification, they were perceived as the safest of the safe.
  ✓ These investment-grade products garnered significantly more demand than would have otherwise been the case.
  ✓ This sent broker-dealers into overdrive, producing more of these securities and fueling a flood of credit.
  ✓ Robust credit supply, in turn, led to declining underwriting standards to meet broker-dealer demand.
  ✓ The AAA ratings also allowed Shadow Banks to “lever up” because Repos counterparties required smaller discounts for higher-quality, investment-grade collateral.
  ✓ Lax Regulatory oversight compounded the issue as securitized instruments spread globally. Banks and Shadow Banks became increasingly intertwined.
  ✓ Regulations incentivized purchases of highly rated ABS by requiring banks to retain a smaller amount of capital in support of these assets.
Regulators & Regulations: Is it a Blessing or a Curse!
The Basel Accord: An Evolution or a Revolution!

Consultative Paper (CP1) in Nov 18, 1999, and CP3 in July 2003
In response to Financial Crisis which dawned on us in 2007: Sub-Prime Real Estate Lending

1986 proposed
1988 effective
Credit Risk

Debt Crisis

1993 proposed
1996 effective
Credit Risk
Market Risk

Financial Crisis

1999 proposed
2007 effective
Credit Risk
Market Risk
Operational Risk

Financial Innovations

2009 proposed
Kick Off in 2011
Credit Risk
Market Risk
Operational Risk
Capital Quality
Capital Buffers
Liquidity: LCR, NSFR

Back To Financial Crisis

1986 proposed
1993 proposed
1999 proposed
2009 proposed
2015 Anticipated
Kick Off in 20__?
Credit Risk
Market Risk
Operational Risk
Shadow Banking
Additional Buffers
(Primary response: increase capital requirements)

To Prevent Yet Another Financial Crisis

Response Quality: Pro-Active
ON The Banking Model: Regulators Induced a Very Demanding Model

- MAXIMIZE PROFIT subject to:
  - RISK Constraints
  - REGULATORY Constraints

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- RISK . . .
  - Default
  - Liquidity
  - Maturity
  - Other Types of Risks

- REGULATORY . . .
  - Basel I
  - Basel II
  - Basel III
  - Other Types of Regulations
  - Sanctions Rules
  - FATCA Requirements
  - AML, Etc.

Management .... For both regulated and unregulated financial institutions

Compliance . . . only for regulated with an additional cost of Compliance
ON Risks: Multi-dimensional and much more ...!

The higher the anticipated risks; the higher the expected return...

The higher the realized risks; the lower the realized return...

TOTAL Risks = Intentional (Speculative) + (Unintentional (Hazards))

The Risk reality in both regulated and unregulated Financial Institutions
ON Compliance: Shifted from a Regulatory Obligation to a Legal Obligation

Regulator Obligation:

Issues of non-compliance are handled inside closed doors at the Central Bank.

Legal Obligation:

- The Public at Large has the Right to Know! Where its impact on the Financial Institution’s Reputation and Performance is often severe. Profitability suffers, and it triggers immediate additional expenses for Damage Control.

De-Risking

De-Risking would have the effect of driving the development of alternative financial markets and payment mechanism – i.e., Shadow Banking.
Risk Management is a Decision & a Choice.

Compliance is a Task

You are suited to follow a well defined track!

You are geared up and equipped to travel through unchartered territories and be creative in avoiding danger (not Risk)
The Challenge for the Regulator is to be flexible and to allow innovation to occur, and to adopt standards and regulations to deal with threats and dangers but not at the expense of killing innovation.
1. The Potential Future of Shadow Banking

The Long-run equilibrium share of Shadow banking is

- Negatively related to information costs, and
- Positively related to
  - the absolute burden of bank reserve requirements
  - the relative burden of capital requirements on commercial versus shadow bank credit.

- The steps taken towards de-regulations
- The extent of Financial Innovations

Recent Financial crisis proved that Shadow Banking is Procyclical and vulnerable to Liquidity shocks.
2. The Potential Future of Shadow Banking

- Shadow Banking is likely to remain suppressed due to current regulatory climate (e.g., DFA); however, future financial innovations might create “New Shadows”.

- Regulatory arbitrage may occur on a Country-to-Country basis.

- Traditional Banks may consider funding alternatives as new regulations place constraints on Shadow Banking.

- Under New Regulatory Regimes, Banks will likely need to consider how exposed their counterparties are to the Shadow Banking System.

- More attention must be put in understanding of the linkages between the Shadow Banking and Traditional Banking Systems.

- The Complexity of financial innovations must push us to pay close more attention to financial activities regardless of institution... Focus on Bank Deposit Substitutes (Alternatives to traditional funding).
3. The Potential Future of Shadow Banking

- Regulatory Arbitrage can never be eliminated fully because of the Diversity of Regulators & Regulations, and the Creativity & Resourcefulness of Banks.
- The increasing Complexity of the Financial Landscape makes it impossible to effectively regulate the Shadow Banking System.
- If Banks can bypass Capital Regulation in an opaque shadow banking sector, it may be optimal to relax capital requirements so that liquidity dries up in the shadow banking system.
- Tightened capital requirements may spur a surge in shadow banking activity that leads to an overall larger risk on the Money-Like Liabilities of the formal and shadow banking institutions.
- If the liquidity in the Shadow Banking System is needed for stability in the overall financial system, an institutionalized guarantees for buyers of securitized assets to sit alongside guarantees for retail depositors – An FDIC type regime for the Securitization Market.
Thank You