



Harnessing the Power of Financial Markets for the Public Good

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Derivatives Study Center

Derivatives: Friends or Foes of Capital Flows

Randall Dodd

Director, Financial Policy Forum

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www.financialpolicy.org

Derivatives and International Capital Flows

- Derivative markets are enormous and rapidly growing, even in developing countries. Measured by notional value, outstanding amounts are approaching \$400 trillion and trading volume on derivatives exchanges alone exceeds \$700 trillion. This is not intended for 'shock and awe.'
- Today, several of the world's largest derivatives exchanges for trading futures and options are located in developing countries.
- Their impact on international economic stability should be considered as important, or potentially importance, as that for foreign bank loans and portfolio investments. Derivatives also play a role in foreign direct investment.
- Despite their prominence, only recently have derivatives markets come to the fore as a concern for international policy makers.



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Derivatives and International Capital Flows

Policy concerns arising from growth of derivatives markets

- USE of derivatives for hedging and price discovery
 - Three Dimensions to this concern...
 - i. Does the ability to hedge encourage greater international investment in developing countries?
 - ii. Does hedging negate the benefits of international capital flows – i.e. does hedging activity generate equal amounts of capital outflows?
 - iii. Does the presence of derivatives markets strengthen or weaken the stability of financial systems so as to encourage or discourage international capital flows?
- 2. Misuse of derivatives for excess risk taking
- 3. Abuse of derivatives for....
 - fraud
 - manipulation
 - outflank prudential regulation
 - distort financial accounting and financial reporting
 - avoid taxation



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But first, what are these wild beasts?

A derivative is a financial contract whose price is *derived* from the value of some underlying asset, commodity or event. This is the simple economic meaning of a derivative. Most derivatives are economically simple (even if the math used to calculate their price is not), although they may be combined to make a more complicated transaction.

One example,

- Forward contracts: financial contract in which one party is obligated to buy (the other party to sell) a specified asset or commodity at a specific price, at a specific place and at a specific time in the future. In the case of non-deliverable forwards, the parties an equivalent amount of payments instead of exchanges the actual asset or commodity.

Others include

- Futures contracts
- Options
- Swaps



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But first again: Hedging and Speculation

There is too much value laden lamenting about the pernicious role of speculation. Why is it different than the rest of capitalism? Why should it receive less condemnation than greed, venality, acquisitiveness, usury and the like.

Economic distinction: hedging is the reduction of existing exposures to risk, and speculation is the opposite – increasing existing exposure to risk. Corn farmer who sells corn futures is hedging, corn farmer who buys corn futures is speculating (aka 'Texas hedge').



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USE of derivatives for hedging and price discovery

1. Risk Shifting used for hedging or speculation.

Speculation can ADD to existing risk in the financial system and can be used to facilitate excess risk taking.

2. Price Discovery

The price discovery process produces information on prices that is throughout the economy by effecting decisions on investment, consumption and commerce. Therefore the economic impact of the prices affects many people beyond those directly trading the derivatives.



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MISUSE of derivatives for excess risk taking

1. Externality of risk taking.

Sometimes risk taking affects people who were not involved in the investment decision making and who were not going to benefit from any successful results of the investment, but nonetheless suffer from a failure of the investment decision.

2. Inadequate Capital and Collateral Requirements

Some derivatives dealers have no capital requirements, and nearly all transactions in the OTC derivatives markets have inadequate arrangements for collateral.



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ABUSE of derivatives ...

1. Fraud and Manipulation.

Sometimes risk taking affects people who were not involved in the investment decision making and who were not going to benefit from any successful results of the investment, but nonetheless suffer from a failure of the investment decision.

2. Outflank existing prudential regulation

Regulatory arbitrage.

3. Distorting accounting rules and financial data

e.g. Enron, but also economic data no longer reflects actual developing country currency exposure

3. Avoiding taxation

Flexibility of derivatives facilitates moving income across borders or across time or converting between capital gains and ordinary income



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Return to issue of whether they are useful for international capital flows....

1. Does it encourage greater international investment?

Derivatives can promote greater international investment by improving asset pricing and facilitating risk management. This involves several elements:

1. Derivatives provide price discovery. Sometimes the underlying asset is not traded in markets that allow for transparent pricing or centralized pricing or benchmark pricing.

For example, farm products are often sold by their producers a many different and dispersed markets so that the prices established in these markets do not otherwise result in a national price or a benchmark price, e.g. 5,000 bushel lot of number 2 yellow corn. Futures markets can do this. Even bank loan rates might not be known nationally, but eurodollar futures are.



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1. Does it encourage greater international investment?

2. Price discovery also allows for the decomposition of the risks embodied in an asset or transaction to be broken down and priced separately.

For example, buying a Euro denominated corporate bond. This involves, at the least, foreign exchange risk, interest rate risk and credit risk.

Derivatives markets can price the dollar-euro exchange rate into the future, they can price the single currency (euro) interest rate risk, and credit derivatives can price the credit risk. Investors and speculators can then know the value of these risk components and then hedge or take risky positions in those components if desired.



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1. Does it encourage greater international investment?

3. Risk shifting gives new meaning to “from the haves to the have nots” – it involves the redistribution of risk from those who have and don’t want it to those more willing or able to bear it. This need not necessarily be viewed as safe versus reckless or prudent versus fearless. For example, a farmer hedges by selling corn futures while Kellogg’s cereal hedges by buying corn futures. If the farmer sells to Kellogg’s (who buys), then both reduce risk through the same transaction. This is not true in all cases; in other cases the party taking the risk holds it on speculation.



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1. Does it encourage greater international investment?

4. What affect does this have on international investment decisions? More efficient pricing of assets and the risk component of assets should encourage more foreign investment because they would be more confident that they are paying efficient prices and receiving market efficient rates of return on their investment (i.e. they are getting what they pay for).
5. Risk shifting should attract more foreign investment because investors who do not want all the various types of risks associated with owning a foreign asset can now make the investment with the reasonable expectation of being able to hedge away unwanted risk-components such as exchange rate risk or credit risk.



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2. Does hedging negate the benefit of capital inflows?

1. Derivatives markets in developing countries are often not like those in developed countries. Investors in developing countries, both foreign and domestic, need to hedge primarily against a fall in the value of the local currency. Almost no one wants to take additional long positions in the local currency, i.e. no one wants to hold pesos or rupees unnecessarily. This makes it hard to create derivatives markets because trading requires one party to take the long side and another to take the short side. (Long is what you own, short is what you owe. Long is what you buy, short is what you sell.)
2. So if investors want to hedge against a decline in the value of the local currency, what can they do? Who will take the long side? Or in other words, how can a derivatives market exist in local currency exchange rate risk?



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2. Does hedging negate the benefit of capital inflows?

3. If there are more short hedgers than long hedgers in a derivatives markets the only way for all the short sellers to find long buyers is for speculators or arbitragers to take positions in the market. And if no one want to speculate by holding the local currency risk outright? Keep in mind that market makers generally maintain a flat or nearly flat book of positions. They don't sell short unless they can offset the position by buying long. When there is no one to sell short to, then the dealer is reluctant to buy long. Then the trick is to create a synthetic short local currency position to lay off the risk of taking the long position in the derivatives market.
4. A synthetic short position is simple.
 - i. Borrow local currency through a bank loan
 - ii. Buy dollars with the local currency in the spot foreign exchange market
 - iii. Invest dollars in dollar asset
 - iv. This leaves the investor owing local currency and is thus short.



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2. Does hedging negate the benefit of capital inflows?

5. What this means is that the synthetic position generates a capital outflow as the investor takes a local currency loan and invests it abroad in a dollar asset. Thus if the foreign investor who is bring capital into the developing country (whether DFI or portfolio investment) tries to hedge the local currency risk, and the derivatives market requires the use of synthetic short positions in order to complete the market, then the act of hedging capital inflows will result in similar amounts of capital outflows. This would negate the effect of foreign capital inflows augmenting domestic savings as a source of investment.
6. In sum:
 - i. Hedging can negate the benefit of capital inflows to augment domestic savings (it might nonetheless transfer technology or have other collateral benefits or costs)
 - ii. Hedging will not negate the benefit of capital inflows if the derivatives market has equivalent amounts of short and long hedgers – or otherwise long speculators – so that the market can be completed without resorting to creating synthetic positions.



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3. Do derivatives improve financial stability?

1. This topic is more contentious, but it hinges on whether derivatives help or harm financial sector stability. More stability encourages greater capital inflows, while less stability does the opposite.

PRO. Some have argued that derivatives markets make a financial system more stable. Former Fed Chair Greenspan has repeatedly argued that large scale use of derivatives by banks has made the US financial system and the overall economy more stable. The basic point is that banks and key financial institutions use derivatives to improve their risk management. This allows them to avoid unwanted or unwarranted risks while pursuing their business activities and the result is an institution that is more safe and sound. Greenspan cites the lack of failure of financial institutions during the last US recession as evidence for this constructive role.



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3. Do derivatives improve financial stability?

CON. Others, including myself, have argued that the OTC derivatives markets do not operate according to safe and sound financial practices and that their large and growing economic role makes financial systems overall less stable.

Derivatives markets operate at lower prudential standards than traditional banking, securities or insurance markets.

- Greater leverage and cheaper exposure to market risk – this means that losses can rapidly compound and that rare events can have greater impacts than otherwise.
- Less capital – obvious
- Greater exposure to liquidity risk – OTC markets can dry up at the worst time as dealers withdraw from markets and other participants hesitate to trade with any dealer viewed to be “at risk”
- Greater exposure to operations risk – OTC markets have poor clearing and settlement arrangements.
- Absence of anti-fraud and anti-manipulation authority and market oversight
- Too many instances of use to dodge taxation and outflank regulation
- Credit derivatives transfer credit exposure from regulated financial institutions with capital requirements to hedge funds that do not.



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Conclusion

Derivatives have the potential to encourage international capital flows. They can improve pricing efficiency and provide means for investors to better manage their risks so as to encourage greater amounts of investment.

That potential may not be realized, and derivatives may actually hamper capital flows. This is apt to happen if markets are underdeveloped so that dealers generate capital outflows in order to create synthetic short positions to complete markets. This can occur because the presence of derivatives markets and trading can reduce the safety and soundness of the financial system.

In order to assure that derivatives market function to encourage international capital flows and not hinder them, they need appropriate regulatory measures that will promote their use and maintain prudential standards for safety and soundness.



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Policy Responses

Prudential measures to promote hedging and reduce instability

1. Registration and reporting requirements
2. Better management of credit risk
 - Netting
 - Collateral
3. Capital adequacy for dealers/ market-makers
 - Better provision of liquidity
 - Obligations on dealers to maintain bid-ask quotes
 - Real time price disclosure/ reporting
4. Orderly Market Rules
 - Require dealers to maintain quotes throughout trading day
 - Larger trader reporting requirements
 - Position limits
 - Clear, enforceable prohibitions on fraud and manipulation, and better policing of pricing function of market
5. Promote Multilateral trading facility
6. Take measure to promote the orderly creation and development of local derivatives markets



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