The Role and Evaluation of Derivatives in Finance

"*Derivatives are financial weapons of mass destruction.*" **-Warren E. Buffett**

WHAT ARE DERIVATIVES?

- An asset that *derives* its value from another asset.
- These contracts are used to protect against risk
- We can split derivatives into two: OTC or exchange-traded

VALUE OF OTC DERIVATIVES (2022):

$632 TRILLION

WHAT TYPES ARE THERE?

FUTURES
A futures contract is an agreement to buy or sell an asset at a future date.

FORWARD
A futures contract, but not traded on an exchange

OPTION
The right to buy/sell the stock at the given time and strike price

SWAP
Exchanging financial instruments, cash, or payments for a given time

With this in mind...

I set out to research if derivatives are allies or adversaries to economic agents.

CASE STUDY I - METALLGESELLSCHAFT AG

MG was one of Germany's largest industrial firms before their investing group, MGRM, lost **$1.5bn** in a derivatives disaster.

MGRM placed forward contracts for up to 10 years on oil and heating products.

MGRM placed forward guarantees on 180 million barrels of petrol.

If oil prices rise, then they have to pay more to fulfil their contracts, causing losses.

To offset this commodity risk, MGRM built a very large, short-term position in oil futures.

This counter-strategy, known as a 'hedge' outgrew the original position.
Now, if oil prices fall, then their losses will be greater than if oil prices rise.

Despite this incredible loss, my research concluded that this was a failure of regulation and misuse, not the innate nature of derivatives.

CASE STUDY II – 2007–2008 FINANCIAL CRISIS

The GFC was the most severe economic crisis following the Great Depression. Many banks failed due to overexposure to toxic assets, culminating in the bankruptcy of Lehman Brothers.

U.S. and European banks

...lost more than $1 trillion.

Mortgage-backed securities a security that derives its value from an individual being able to back their debt, were pooled into collectivized debt obligation (CDO) securities.

... creating a derivative of a derivative.

Investors were not aware that these mortgages were sub-prime (the homeowner is likely not going to pay.

Despite this risk, credit rating agents rated these Synthetic CDOs as AAA - the safest possible investment.

Credit default swap-options (CDS) were also added to the CDO, insuring the holder against a default, creating a Synthetic CDO.

... a derivative of a derivative, of a derivative.

It is easy to blame the nature of derivatives for creating the crisis.

This is untrue - this was a product of fraud, systemic misuse and greed.

"Ultimately, derivatives are neither inherently good nor evil. They constitute powerful financial tools which can either effectively manage risk or dangerously conceal it".

With prudent regulation, derivatives can be a net benefit to all agents by the transferring of risk.