It is commonly agreed that banks' heavy reliance on debt financing had led to eruption and global spread of financial crisis of 2008 – 2009. From the banks' perspective, debt is cheaper than equity, inter alia because of tax deduction applicable to interest paid on debt ('tax shield'). Besides, it does not entail any dilution of shareholders rights. Debt allows to achieve exceptional financial results during prosperity, but on the other hand, it increases the risk of bankruptcy in times of financial stress. American investment bank Lehman Brothers is the most spectacular example. In 2007, a year before its shocking bankruptcy, it held equity worth only 3.3% of its balance sheet, while all the rest was financed by debt. This amount equity has proven to be far insufficient to absorb losses incurred by the bank, which eventually led to the bankruptcy.
In the aftermath of financial crisis, requirement to hold a higher ratio of equity has been imposed on financial institutions. When investors' trust to financial institutions is low, it is difficult to raise this additional regulatory capital. Therefore, these requirements must be imposed over time and they also need to recognize creation of different tiers of capital. Traditional ways to raise equity, i.e. issue of new shares or retaining earnings, were deemed to be too difficult. As a result, banks were required to raise their own funds, but simultaneously list of eligible financial instruments also was changed. Basel II Financial Accord already provided for three tiers of regulatory capital and new types of hybrid financial instruments that combine equity-like features (loss-absorption capacity) and debt-like ones (no dilution and tax shield). However, these instruments have failed to absorb losses in times of financial crisis.
Hence, Basel III aims to modernize financial instruments eligible for own funds purposes, equipping them in the new mechanism of contingent conversion or principal value write-down (whole or partial). Contingent conversion (or write-down) is triggered when common equity to risk weighted assets ratio drops to 5.125%. As a result, there has been developed a new class of loss-absorbing hybrid financial instruments referred to as 'CoCos' (contingent convertibles). These instruments must also contain certain clauses when it comes to deferral, principal write down, contingent conversion, callability, perpetuality, mechanism of coupon value change (i.e. fixed-to-float). Another level of new securities (so-called 'bail-in bonds') creation is Banking Union and Directive on Bank Resolution and Recovery (referred to as BRRD) that also has an impact on CoCo bonds.
Therefore, subject of the research has been chosen because of the following reasons:
1. Said instruments are the youngest hybrid financial instruments developed, combining features of debt instruments (bonds) and equity instruments (shares). Besides, they embed features of other, precedent hybrid instruments. No common theorem of such instruments behavior has been developed yet.
2. Evolution of financial instruments results in development of more and more complex hybrid financial instruments. Supranational regulators of financial institutions (banks and insurers) tend do be initiators of this development more often than market participants. Solutions made by these institutions demark new line of division between debt and capital. Exact shape of this line is getting more and more difficult to be defined, as it is not certain that it will be the same for accounting, corporate and tax purposes. Project research will enable to present the multidimensional nature of an instrument qualification as a debt one or equity one.
3. Hybrid financial instruments were developed to equip financial institution with a sufficient capital buffer and as a result – to decrease their bankruptcy risk. Holders of these instruments will bear the risk significantly higher than holders of 'typical' bonds, virtually equal to the one borne by shareholders. Therefore, it is necessary to asses the consequence of taking that risk, especially given the strong interconnectedness of financial system, resulting in its sensitivity for contagion effect. Project research will enable to quantify contagion risk, and as a result – efficiency of the hybrid financial instruments of a new generation as an item eligible for financial institution own funds.

Following basis research will be conducted in the course of the proposed Project:
1) Modeling of correlation between value of hybrid instruments and value of senior debt instruments, shares and share options,
2) Choice of a financial instrument as a financial institution financing tool and the issuers bankruptcy probability distribution – impact analysis.
3) Proposing and defining new securities, that has not been defined yet. Hybrid financial instruments (CoCos and bail-in bonds) market is growing rapidly, while simultaneously Jeremy Bullow (Stanford University) and Paul Klemperer (Oxford University) are currently working on new instruments (Equity Recourse Notes, ERNs), aimed to be an alternative for CoCos as an element of financial institution' own funds. Besides, Patrick Bolton and Frédéric Samama (Columbia University) propose another, different financial instrument (Capital Access Bond).
4) Proposing a pricing model for said financial instruments and a model to quantify risk associated with them. Issue of hybrid financial instruments and pricing of 'classic' instruments – impact analysis.