### Title
Taxinomy and dynamics of main alternative assets: evidence from short- and long-run price co-movements

### I want to submit an abstract for:
Conference Presentation

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### Keywords
Taxinomy, alternative assets, fine wine, real estate, commodities, price comovements

### Research Question
Can the a priori taxinomy of alternative assets be validated by looking at price comovements between fine wines, real estate and commodities?

### Methods
Short and long-run price comovements are investigated using VAR-ECM methodology

### Results
Our findings partially support the a priori taxinomy of assets used in finance but also suggest to use new categorization process (to be confirmed by new tests).

### Abstract
Over the past few decades, an increasing number of investors have been effectively using alternative assets to improve their risk/return profiles for their portfolios. Actually, alternative assets under management more than doubled between year-end 2003 and 2012, to $6.5 trillion (World Economic Forum 2015). This pace represents a compounded annual growth rate of 14 percent over the period, far outstripping traditional asset classes. Alternatives are moving quickly into retail investment portfolios. By 2015, retail alternative investments are expected to account for one-quarter of revenues and a majority of revenue growth (Mc Kinsey and company, 2012).

Alternative assets refer to all assets that are outside the mainstream and conventional asset types, such as stocks, bonds and money market instruments (Thune K., 2014). Among these alternative assets, one can
distinguish hard assets - or real assets- (real estate, commodities and collectibles) and institutional assets (private equity, funds of funds, manages futures investments, hedge funds…) (Sokolowska, 2016). In this paper, we focus on hard assets that share some financial properties as described by Baumol (1986) - illiquidity, transaction and holding costs, absence of basic value, information asymmetry - and for which investment opportunities have been discussed for a long time (e.g. Ziedins, 1986). This paper include three types of hard assets that are real estate, collectibles and commodities.

Each class of financial assets is generally depicted by a taxonomic structure (Bruner, 1957; Bailey, 1994) for grouping non-identical assets deemed equivalent and facilitating the exploration of their properties and the prediction of their returns. Nonetheless, no study is interesting in a taxonomy of hard assets, even if an a priori taxonomic framework was taken up in academic and professional literatures (Strong, 1989; Yau et al.2007; Sokolowska 2016), this one was never investigated.

Currently, our a priori taxonomic representation of the hard assets is based on the subjective and intuitive perception of the similarity of the objects, in line with causal inference categorization process. The different components of real estate are included in the same category because they are considered as outputs of a unique building and construction sector, while the commodities components are aggregated because they are all raw materials that go into producing goods and services (Siegel and Yacht, 2010). As Burton and Jacobsen (1999, p193) indicates, “collectibles are broadly defined as items that someone collects, barring real estate, precious metals, and gems on the grounds that they can be used as inputs in production processes”. Finally, this a priori taxonomic representation of the hard asset is founded on the functional statements of the objects in a production process. Furthermore, as Siegel and Yacht (2010) indicated, what is common to these three categories of hard assets (also the reason why they are subsumed in the same hard assets category) is their potential appreciation in value, “acting as a store of wealth” and their potential disadvantages as investment (high probability of mispricing, markets illiquidity, sometimes illiquid returns or no returns until the asset is sold, holding and transaction costs).

To the best of our knowledge, academic and professional financial literatures did not question the relevance of this taxonomic framework of hard assets. However, from an economic point of view, objects sharing similar attributes or properties are supposed to be (partially or totally) substitutable and their price movements should converge (Bose and McIlgorm, 1996, p. 145). Several empirical studies utilized this measure of substitution between differentiated commodities (for instance Lloyd et al., 2006, Lombardi et al. 2012). Hence, this paper attempts to validate the a priori taxonomy by investigating price co-movements between some exemplars of collectibles, commodities and real estate assets. Indeed, it would be surprising that taxonomy founded on hard assets substitution or price cointegration doesn’t reveal inclusion of items according to similar financial characteristics (liquidity, transaction times and costs, existence of basic value, investors’ profiles). This is the proposition we have to test using a VAR-ECM methodology for the period from 2003 to 2014.

According to these methodological choices, short-run co-movements indicate a causality link from conventional to alternative assets and strong causalities between them, justifying the existence of this alternative asset class. Furthermore, long-run co-movements seem to confirm the existence of groups of alternative assets: collectibles, real estate and probably commodities (gold). Causality links probably depend on a wealth effect from those of assets which produce cash-flows to the others and a diversification strategy of investors according to financial properties of assets (holding and transaction costs, liquidity, information…). These results support the validity of a priori taxonomy but also show that the properties of alternative assets (existence of basic value, liquidity, transaction costs) not only differentiate conventional from alternative assets but also differentiate between alternative assets themselves. Short-run relations emphasize that the a priori taxonomy is not sufficient to describe all categories of alternatives. These results suggest a relevant difference between highest-weight assets versus dynamic assets and we also noted that the causal links could appear between alternative assets when they were bought by the same type of investors.

Overall, these observations suggest that an operational taxonomy of alternative assets based on a categorization of objects according to their attributes is not sufficient, but must include other dimensions such as their weight in portfolios, the financial properties assets and the investment strategies of the actors.