### THE POOREST IN THE WORLD PAYS FOR CRISIS

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#### **Abstract**

For centuries the mechanics of the money system have remained hidden from the prying eyes of the populace. Its impact, both on a national and international level, is perhaps unsurpassed. In fact, the monetary system provides the mainstay for international dominance and national control. Is hard without crisis to change economic or political system but often those who are set up to defend the interests of the people and state as a whole, authorities, reject what doesn't fit well with what they like. Today, as these mainstays are being shaken by crises, the need for open and honest dialogue on the future system is at its highest level.

Keywords: money system, bubbles, money creation, banking, loans

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### Introduction

An economic crisis is like a cancer. If you are just waiting, thinking that your health state is improving, cancer will be growing up fast and by the time it will be too late to treat it. Even if a government have no money and lives out of taxes, it has opportunities and obligations all along. Obviously, a state supports those theories that suit it. For this reason, it often denies the theory of crises. In order to better understand possible effects of a crisis, it is noteworthy to have a look at the most important ones (see table 1) and analysis of more recent (Gherbovet, 2016).

Table 1
Important financial crisis

| Period of time | Characteristics  |
|----------------|--|
| 1340           | Bankruptcy of England, due to "The one hundred years war" with France  |
| 1637           | Tulips crisis and its speculative bubble. Prices reached more than 10 times the annual income of an artisan and then suddenly collapsed.   |
| 1720           | The UK's "South Sea" bubble and the "Mississippi" bubble in France due to a financial pyramid. In both cases, the company assumed the national debt of the country (80-85% in the UK and 100% in France) and then exploded.  |
| 1772           | The credit (banking) crisis originated in London and spread to other parts of Europe such as Scotland and the Netherlands. Economic growth at that time was highly dependent on the use of credit, which relied heavily on people's trust in banks. Trust began to decline; a lot of people gathered at the banks and demanded repayment of the debt in cash or tried to withdraw their deposits. As a result, there were a dramatic rise in bankruptcy number and many other businesses have suffered.  |
| 1792           | The bank credit crisis, precipitated by credit expansion of the newly formed United States Bank and by the speculations of several known bankers (William Duer, Alexander Macomb and others). Duer, Macomb and their colleagues tried to increase the USA debentures and bank stock prices. When they broke down on loans, prices fell, causing a banking panic. The simultaneous tightening of credit by the United States Bank increased the initial panic. Alexander Hamilton, the secretary of the Treasury at that time, was able to manage the crisis by providing banks with dollars to make stock market acquisitions, which allowed stabilizing the market. |
| 1796-<br>1797  | First issues appeared in the US as a speculative bubble. The crisis deepened when the Bank of England suspended payments on February 25, 1797 under the 1797 Restriction Act. At the risk of the French invasion, withdrawal of deposits occurred. In combination with the collapse of the US real estate market, the crisis led to the collapse of many major commercial firms, as well as the deprivation of liberty of many US debtors.   |

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| 1813          | The Danish state bankruptcy, due to the war with England in 1807. This caused a financial   |
|---------------|---|
|               | crisis and, as consequence, Denmark were unable to honor its international financial obligations.   |
| 1819          | The US panic generated by global market changes as a result of the Napoleonic wars. The severity of the economic slowdown was due to the high speculation in the field of public land, fueled by the uncontrolled problem of paper money from banks and concerns in the business  |
| 1005          | environment.  |
| 1825          | A decline in the stock market, which began in the Bank of England, resulting in some measure from speculative investments in Latin America. The crisis led to the closure of many banks in England, but has also spread across the markets in Europe, Latin America and the US. The boom of the stock market became a bubble and the banks trapped in this euphoria gave risky loans. An infusion of gold reserves from Banque de France saved the Bank of England from complete collapse completely. |
| 1837          | Banks closed. Businesses failed. Profits, prices and incomes have fallen while unemployment has risen. Panic had internal and external causes. Western pecuniary lending practices, a strong decline in cotton prices, a collapsing real estate bubble, international cash flows and restrictive lending policies in the UK have been the cause of this panic in the US.  |
| 1847          | Panic began as a collapse of the British financial markets associated with the end of the 1840 railroad boom. Monetary inflation was caused by the Bank of England, which demanded the cancellation of the 1844 act. This act was fixing the maximum amount of money that might be in circulation, being guaranteed by gold and silver reserves. In addition, the act said that the money supply in circulation could only be increased when gold or silver reserves rose up proportionally.          |
| 1857          | Financial panic in the US caused by the decline of the international economy and the over-<br>expansion of the national economy. The First World Economic Crisis.   |
| 1866          | Britain's panic that has led to public agitation for political reforms and a sharp rise in unemployment to 8% and a subsequent drop in salaries.  |
| 1873-<br>1879 | Post-war inflation, speculative investments mainly in the railway sector, an important trade deficit, repercussions of the economic displacement in Europe resulting from the Franco-Prussian War (1870-1871), loss of properties in the fires occurred in Chicago (1871) and Boston (1872) generated drastic tensions on banking reserves that dropped drastically in New York.  |
| 1884          | The panic was due to the loss of confidence in Wall Street because the bankruptcy of two big companies caused bankruptcy in many companies.   |
| 1890          | Barings bank's bankruptcy in London, mainly due to excessive risk taking on investments in Argentina, had also effects in the US. A bank consortium had created a fund that helped to manage this bank crisis by avoiding an acute depression.  |
| 1893          | America's panic, similar to that occurred in 1873, was marked by the excess collapse in the railway construction and the fragile funding in this field, resulting in a series of bank failures.   |
| 1893          | The banking crisis in Australia. During the 1880s there was a speculative boom in the Australian real estate market. The Australian banks operated in a free banking system; there was no central bank or government deposit guarantee. Commercial banks have borrowed strongly, but after the collapse of asset prices in 1888, they went bankrupt.  |
| 1896          | A panic occurred in the United States. It was less serious than other panics of the era. It was precipitated by a fall in silver reserves and market concerns about the effects it would have on the gold standard. Commodity price deflation led the stock exchange to a new low in a trend that began to reverse only after William McKinley's election.  |
| 1901          | This panic was the first stock market crash in New York, caused by the struggles to hold the financial control of the North Pacific Railways.   |
| 1907          | The bankers' panic or Knickerbocker crisis, USA. The New York stock market fell by nearly 50%. Unregulated bets on the stock exchange, loss of depositor confidence, withdrawal of liquidity from the market led to cash withdrawals from banks and investment companies. J. P. Morgan saved the line by unlocking important resources to strengthen the banking system. The commission created to investigate the crisis led to the creation of the Federal Reserve System.                          |
| 1910-<br>1911 | A slight crisis as a result of the Sherman anti-trust law. It affected the stock market and the traders benefiting from the government's dissolution of the trusts.  The crisis of the Shanghai rubber boot market caused by bankers and stockholders who have overestimated rubber stocks. It led to bankruptcy.   |
| 1910          | Shanghai stock market crisis provoked by bankers and stockholders who overestimated rubber stocks. It has led to many bankruptcies.   |

| 1929  | Black Tuesday. The most devastating stock market collapse in the US history. The collapse marked the beginning of 10 years of crisis that affected all western industrialized countries.  |
|-------|---|
| 1973  | The oil crisis. Oil prices exploded, causing the collapse of the stock market, especially the UK one. The crash came after the collapse of the Bretton Woods system along with the "Nixon Shock" and the depreciation of the American dollar.   |
| 1973- | Banking crisis in the UK. Banks gave credit based on rising house prices. A sharp drop in   |
| 1975  | real estate prices coupled with spontaneous increases in interest rates made loans being secured by properties with a lower value than loans. The Bank of England saved the position.   |
| 1980  | The debt crisis in Latin America called the "lost decade" when the countries of Latin America reached a point where their external debt exceeded domestic possibilities.  |
| 1983  | Banking crisis. The actions of the four largest banks in Israel collapsed and were nationalized by the state.   |
| 1987  | Black Monday, the biggest drop in one day in the history of the stock market. The crash began in Hong Kong and spread to Western Europe and then to the US.   |
| 1989- | US Savings and Loan Crisis. Institutions have long-term loans at fixed rates using short-term   |
| 1991  | money. When interest has increased, it has been unable to attract adequate capital and many have entered into insolvency. Inventory strategies that seemed profitable were  |
| 1990  | invented, but in reality they recorded losses.  |
| 1990  | Japanese bubble at asset prices. Real estate and asset prices have increased greatly. Credit expansion. Then the prices collapsed, resulting in bad loans and thus difficulties for financial institutions.   |
| 1990  | The banking crisis in Scandinavia. In Sweden a financial and real estate bubble formed, fueled by a rapid increase in lending. A restructuration of the tax system combined with an international recovery caused the bursting of the bubble. The government took up over a quarter of its bank assets. In Finland, a systemic crisis of the entire financial sector occured after a few years of debt-based economic boom. |
| 1990  | The recession describes the economic slowdown that has affected much of the world's economies.  |

## **Description of the Problem**

Today the current system is inherently unstable as a result of the international power imbalance. Statistical analysis has found that every time an empire begins to near its own demise, its currency will be debased. There is no guide to how this whole system operates. Current reality is that most money is neither paper nor coins, but digital. This represents just numbers in a computer system. It's your Visa debit card. It's your electronic ATM card. It's a piece of plastic. It's all a big database and this digital money is what we are now using to make payments with. It's what we actually use to run the economy. Money in the current system means debt. It's created when the banks make loans. Consequently, the only way, in the current system, that we have to have money is to borrow it. Because economists have completely confused things, both in monetary policy terms, but also in economic thinking, and because most people still harbour the old fashioned view that you need savings before you can invest, that we have the today mess. As mentioned before, in current system we have to borrow in order to have an economy. We have to be in debt to the banks. That guarantees a massive profit to the banks. Even if you think the money belongs to you, somebody somewhere is paying interest on that money. The banking system has such a huge impact on the world, but only because it supplies our nation's money supply. We have to protect them. We have to subsidize them. We have to allow them to continue because the disaster of a bank collapse affects us all in a huge way.

# **Methodology**

Now, let's speak about bubbles (Campbell, J.Y. 2014). A bubble occurs when there is very high inflation in the price of a specific good or service over a short period of time. The first recorded bubble was the tulip bubble of 1637. This example is relevant to emphasize you the first ever financial bubble and crash. The craze for tulips - black tulips being a mythical ideal of what somebody could genetically engineer through cultivation after many generations -became a mania in the Netherlands in the 1630s. What they didn't realise was that many of the very rare patterns of tulips bulbs were caused by a virus and weren't genetic at all. But they traded them to the extent

that tulips were ten times worth then the average annual salary of a person working in the Netherlands.

There was a future market in tulip bulbs because obviously you plant them now but you don't know what's going to come out of the ground. As you can see, already, 400 years ago, that type of financial system existed. Unlike tulips, which are a disposable luxury, houses are both a necessity and a luxury. And as such, they are ideal as a vehicle for money and bubble creation (Engsted, T. 2016). A dwelling is perhaps the most prized possession of value most people aspire to. Inflating house prices in this way allows a nation to expand its money supply without affecting inflation data. The additional purchasing power created increases the perceived wealth in relation to other nations and thus it is creating a relative power. It is a way of increasing monetary power without investing in the productive growth of industry.

Certainly if you look at Britain and American outstanding examples, both of these are countries with very high rates of private home ownership so you've got a good base to try and perform this sort of policy off the back of. I think it was quite deliberate in the case of the US. Also is important to identify bubbles (Shi, S.P. and Song, Y. 2016) and testing for collapsing bubbles (Hall, S. and Sola, M. 1993). How to avoid inflation or deflation? Today inflation can be avoided if the amount of money that goes into the economy is regulated in a way without exceeding the actual activity that's happening in the economy. Now, the best way to do that, in my opinion, is to make sure that money is issued into the economy only for productive investment, for productive goods and services. By the way, money enters in order to help a small business to start up creating new jobs and additional purchasing power avoiding inflation.

During their history almost all central bank shave employed forms of direct credit regulation. The central bank will determine desired nominal GDP growth then calculate the necessary amount of credit creation to achieve this. And then allocate this credit creation both across the various banks and type of banks and across the industrial sectors. Unproductive credit was suppressed. Thus it was difficult or impossible to obtain bank credit for large scale, purely speculative transactions such as today's large scale bank funding to hedge funds. The World Bank recognised in a 1993 study that this method of intervention in credit allocation was at the core of the East Asian economic miracle. There're all sorts of things that governments have done in the past, very successfully in a number of cases.

The examples that spring to mind are South Korea and Japan. Often in East Asia, governments have targeted on how they're going to rebalance the economy, picking sectors and deciding where the investment should take place. You have to have a system where credit is put into productive avenues, building high speed rail links, building houses rather than giving people money to inflate the price of houses. Bank created currency allows the private banks to suck wealth from the economy and over time results in a gradual decrease in the standard of living. As people become poorer they become even more dependent on debt. People are getting poorer in real terms. It's because prices are always going up as new money is continuously being pumped into the system by the banks and they're creating it all as debt so at the same time as prices are going up and things are getting more expensive, we're getting further and further into debt and our wealth and the return that we get from actually working is getting less and less all the time.

You can't deal with poverty when you have a financial system and a money system that distributes money from the poor to the very rich. Any distribution that you try and do in the opposite direction is effectively pissing in the wind. If you look at issues like increasing inequality one obvious way to tackle inequality is to have a redistributive tax system. You tax the rich you give some money to the poor. You move a bit of money down the scale. That's all very well, but if you overlook the fact that there's another redistributive system which is taking money from the poor and giving it to the rich, then you're not really going to tackle this inequality and the way a debt-based money system works. That debt is typically going to end up with the poor, the lower-middle classes, those people end up with the debt and they end up paying interest on that money which then goes back to the banking sector. What this system does overall is it distributes money from the poor to the rich essentially. This is why in the event of a crisis the risk is transferred to the taxpayer. But even during normal times banks receive numerous guarantees and benefits beyond the right to create money.

No current Government is brave enough to tame banks. Perhaps they need a plan. The spending cuts agenda is an attempt by the government to shift debt from its account to that of the public. This is the Government's response to the bank bail outs. It is necessary in a debt based monetary system where increased purchasing power is the result of growing debt and where a diversification of debt provides overall stability and market confidence. Policies such as student fee increases and the privatization of public services, assets and industry follow the same model. The problem we're facing is that there is this transference from the public debt to private debt which is essentially a way of transferring risk. Thus individuals with most debt will be vulnerable. If there is another financial shock, the people who will pay the penalty are the poorest people in society. The poorest in the world pay for crises even when they've not benefited from the often reckless and speculative booms. Over the last 30 years we've seen high income differentials increase. The rich people become much richer while ordinary people haven't, they've stayed at the same level or they've got poorer. One of the ways that the economy was kept was by providing cheap credits, providing debt to people who couldn't really afford things anymore.

Consequently, they kept buying and when it collapses, that poor people have to pay once again. Moreover, the average people is being asked to pay more than ever to borrow on overdrafts and credit cards. Debts between the very wealthy or between governments can always be renegotiated and always existed throughout world history. They're not anything set in stone. It's generally speaking when you have debts owed by the poor to the rich. Suddenly debts became a sacred obligation more important than anything else. The idea of renegotiating them becomes unthinkable. That's the way to change what we have, take all power and all freedoms away from the people and collect everything into the hands of one small group with absolute power. From the people; without the people; against the people. What's been interesting out of all this is the question of democracy that's been opened up very starkly in Europe, that you have a government of bankers essentially imposed upon you. Bankers are more or less whose who got us into this mess to put it rather crudely, but that's a good first approximation and then you say that bankers are the people who therefore are going to get us out of it and incidentally there going to run your country now. The banking crisis drove people into poverty. The mortality statistics of people who go into poverty rise hugely for a whole range of reasons. So the banking crisis isn't just about becoming poorer. What really happened is that over years some countries had accumulated big trade deficits.

These countries were spending more than they've been earning so they've had to borrow from abroad and they've been doing this during a long period of time. These countries cannot go on and there are two ways in which this process can come to an end. Firstly, if they can't find new ways to become competitive, they will not be able to repay the debts. Secondly, it is important to put in place a framework to rebalance the economy. Currency war, also known as competitive devaluation, is a condition where countries compete against each other to achieve a relatively low exchange rate for their currency. As the amount needed to buy a particular currency falls, the real price of exports from that country does the same. Domestic industry receives a boost in demand both at home and abroad. If a country wants to export more it is sufficient to depreciate its currency. That makes its goods cheaper, everyone else buys them and it'll all be better off. The issue here is if you depreciate its like everyone else appreciates against you. Their stuff becomes more expensive so they're not happy about that. They also want to depreciate and this is where you can see a competitive round of devaluations breaking out.

To decrease the value of its national currency a national central bank sells reserve currency into the market. During the long phase of commodity money, the exchange rate would depend on the amount of gold, silver or copper contained in the coins of each country. Similarly after the advent of paper money and the gold standard, the exchange rate depended on the amount of gold the government promised to pay the holder of the bank notes. These amounts did not vary greatly during a short time and as such exchange rates between currencies were relatively stable. After the Second World War currencies were pegged to the dollar and the dollar was backed by gold, this system came to an end in 1971. As nowadays, we have a modern financial system where money is chaotically organized, there is no more exchange rate because there is no gold standard system to sustain it, thus we don't really need an exchange rate. In fact, we believe the market will resolve all the problems of exchange whether one currency should be more worth than a second one is a reflection of one economy relative to another and if one changes the currency, exchange rate must change and if we need that to happen it will happen magically by the efficiency of market

and profit seeking. A currency's value in relation to another currency is determined by the market. If more people want to buy a currency than sell it its value increases. If more people want to sell, its value decreases. The value is set by individual banks and central bank interventions as they buy and sell currencies they will adjust the exchange rate.

Many of the world's financial crises in the past thirty years have been caused by rapid withdrawals of one nation currency or the currencies of an entire region. This type of activity is often referred to as financial warfare. Some major institutions substantially benefited from it. Any large bank has done somewhat better out of this set of arrangements than it would have done in a far more regulated environment. It's made people very, very wealthy. It's allowed financial markets to enormously expand. Anybody involved in that is keen on seeing a deregulated world. That's the world as it is. It is making some people very rich. Reserves have become the way in which you can insure yourself against speculations, speculative attacks (Bernanke B S – Gertler. M, 2001), falling markets (Mishkin, F S – White, E N, 2003) or bubbles (Lopez M. , 2015) . When a country succumbs to a speculative attack, it is asked to deregulate its markets and adapt its financial system to the dominant one. The big problem that's faced by most developing countries that've entered into a debt crises is they are indirectly guided by the powerful ones. The International Monetary Fund, which in many ways governs the global financial system, indicates that the way to get out of debt is first of all to restructure your economy. Especially to increase your exports so you're earning more foreign currency and then you can pay off your debt.

Unfortunately several times that was proved to not be the case at all. Actually countries cut back their public spending to the bone so they stopped growing; they stopped having any potential for growth and what they produce is aimed to be exported. They were paying off their debts but they weren't developing their own economy at all. They were paying far more in debt repayments than they were spending on health or education or anything else and their debts just kept growing. The country becomes a vassal state allowing large corporations to exploit its natural resources and workforce. Expanding and maintaining imperial power through monetary dominance is not even a shadowy. During the last thirty years an idea emerged, labelled Neo-Liberalism. This idea implies floating exchange rates, weak regulation particularly of financial markets, minimal government interference or involvement in what the market does. There are also institutions - the outstanding one at this point is the IMF - that will actively try and enforce this state of affairs.

Consequently, it's not a great shadowy, that there are people behind the scenes somewhere trying to manipulate the world. For instance, when the IMF comes in, in order to try to solve countries debt problems, it imposes a set of conditions. In the 1980s and 90's they called that set of conditions a Structural Adjustment Programme and it tends to take similar forms wherever it happens. Indeed we can see structural adjustment programmes happening today in countries like Greece, Portugal and Ireland. These countries are instructed to decrease the amount they spend on the public sector, they are instructed to liberalise their trade market and their capital market, thus money can much more easily come in and out of their economy. The idea is that this will encourage investments to come in from richer parts of the world and that all of their problems will be solved from this investment. In fact this manner of dealing with debt problems is completely unfounded. Moreover, it destroys fledgling industries and capacities in these developing countries and developing countries become completely dependent on goods, services and capital from developed countries. Another thing, the IMF is very keen on is telling countries to lower the taxes that should be paid by multinational corporations, because it will encourage them to come in. Of course, what it also meant is the profit that multinational corporations made. In fact, the country itself doesn't benefit from this. Today many developing countries have got almost no tax base. Thus they're even more dependent on international capital markets, on the money markets, on creating debt. That's why you have so many countries in the world that have really been robbed of their sovereignty. It's very difficult to see how democratic societies can evolve or function when a government is more dependent on the diktats of the IMF and the money markets than it is on their own people.

#### **Results Obtained**

Sometimes agreement or international organizations are not working very well and is still work to be done as example fractional reserve requirements system that was changed by committee in Basel has an impact and some economist argue that produced Japanese crisis. While the financial

sector benefits enormously from the current monetary system, the system is neither stable nor fair. What the national banks do right now is that the cash they hold is backed up by government debt. The government can back up its promises by the fact that it can tax the public. So what they're implying is that cash is backed up by government debt, when government debt is backed up by the ability of the government to get cash from the public. Time and time again over the past thirty years private debts are being transformed into public debts, and ultimately the price of that debt is being paid by the public in the debtor country. This is why spending cuts are necessary. The system is designed to make certain people very rich at the expense of a nation's citizens and tax payers. The system lowers the standard of living of the majority and distributes this wealth amongst the privileged. So what we are left with is a financial system since the early seventies that has no fixed exchange rates that suddenly has increasingly open financial borders, that has central banks having to manage without having any control because there's nothing here where the gold used to be. Chaotically they have to ease quantitatively. They have to lend as a lender of last resort. Each economist is doing his own analysis in time of financial crisis, for example: supply and demand of currency, audit and analysis of banks, balance of payments analysis, public debt analysis etc. At the same time, a lot of information about interesting topics (i.e. semiparametric efficiency and robustness, high-dimensional inference, functional data analysis etc.) exists. How to parse too much information and make a proper analysis? A way of proposing models is not only formulas but cooperation of different experts. Circular economy models may have good answers for these challenges.

### **Conclusions**

The worst the economic situation of a country is, more the authorities try to control it. There is no country in the world that has changed its economic or political system without a crisis. To change an economic structure is mandatory to pass through a crisis, but too much regulation is also bad. A balance has to be found. Banks are the most heavily subsidised businesses in the world, specially protected by governments. Electronic money is convenient for everyone, but it's especially convenient for the private banks, since they own, run and control the entire digital money system, gambling on the financial markets and push house prices out of reach of ordinary people by pumping hundreds of billions into risky mortgages. This is exactly how the banks caused the financial crisis and now the rest of us are being asked to pay for it. If we can't afford to run hospitals and build schools, can we really afford to subsidise the financial industry? Should we have to live with less so the bankers can have more? The private banks can't be trusted to hold the reigns to our entire economy. It is noteworthy to mention that a bank has the choice to whom make a loan: to a small business assuming a high risk of loan failing and defaulting without getting anything back essentially or to somebody with some collateral, with a house behind them, like a mortgage. So there's a simple incentive for banks to prefer putting money into housing than into a small business. Now that's a real problem if you widen that out across a whole economy, because it means there's an incentive to put money into speculative rather than productive investment. Once again, we need to think about how we create our monetary system that is more balanced between those two kinds of speculative and productive investment. The government is showing enormous reluctance to regulate the housing market and to again regulate the amount of money that banks put into houses.

# **Future Directions to be Approached**

May be one direction is that banks can be allowed to fail. The system would actually be how people think it is - that when you put your money in the bank it's really safe - or at least they used to think perhaps before the 2008 crisis. There's a spectrum of opportunities there that we're just not exploring at the moment, that we're not even experimenting when we know that the system we have now is fundamentally flawed.

### **Bibliography**

Bernanke, B S – Gertler, M (2001) Should central banks respond to movements in asset prices? American Economic Review, Vol. 91, No. 2, 253–257.

Campbell, J.Y. (2014). Empirical Asset Pricing: Eugene Fama, Lars Peter Hansen, and Robert Shiller, Scandinavian Journal of Economic, vol. 116, iss. 3, pp. 593-634.

Engsted, T. (2016). Fama on bubbles. Journal of Economic Survey, vol. 30, iss. 2, pp. 370-376.

Gherbovet S. (2016), Prospect for triggering crisis and related investment opportunities, Financial and Monetary Economics, Annual International Scientific Conference, Second edition, Bucharest, NIER, 2016

Hall, S. and Sola, M. (1993) Testing for collapsing bubbles: an endogenous switching ADF test. Discussion Paper 15-93, London Business School.

Lopez, M. (2015). Asset price bubbles and monetary policy in a small open economy. Ensayos sobre Politica Economica, vol. 33, iss. 77, pp. 93-102.

Mishkin, F. S. – White, E N (2003) US Stock market crashes and their aftermath: Implications for monetary policy. Article in the book 'Asset Price Bubbles-the Implications for Monetary, regulatory, and International Policies' edited by Hunter, Kaufman and Pomerleano.

Shi, S. P. and Song, Y. (2016). Identifying Speculative Bubbles Using an Infinite Hidden Markov Model. Journal of Financial Econometrics, vol. 14, iss. 1, pp. 159-184.