Contagion in Experimental Financial Markets*

Abstract

There are different channels of contagion. One of the possible channels is a news channel, according to which, news about a crisis in one market can be a contagion channel even if there are no links between market fundamentals. The news about a crisis in one market may affect the behavior of agents in another market and may be a trigger for the start of a crisis in the second market. I propose to conduct a laboratory financial market experiment testing conditions where contagion is possible. The experimental design will allow us to isolate the effect of the news of a crisis and to test whether the news can be a contagion channel. The news of a crisis itself may affect behavior of agents in another market in different channels. Different treatments of the proposed experiment will allow testing for two of possible channels in which the news of a crisis may affect the behavior of agents in another market. The proposed study will help us to understand contagion better, particularly in the cases when there is contagion between countries which do not seem to have economic links.

Keywords: asset market, contagion, experiment

JEL classification: C92, G12,

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1 Statement of Problem

With globalization, the health of each country's economy becomes more and more important for others. Globalization creates strong links between economies. These links increase global economic growth, but they may transfer negative shocks from one economy to another during economic downturns as well. This transfer of shocks from one economy to another is referred to as contagion in the economic literature (Masson, 1998). Contagion has high costs. A clear indication of these high costs is the fact that the IMF and the G8 governments gave the Mexican government $50 billion in 1995 to combat the crises in Mexico in order to contain a possible spillover to neighboring countries.

The high costs associated with contagion make contagion an important area for research. Following Mason (1998), I will distinguish between fundamental and non-fundamental causes of contagion. Fundamental causes arise because the economies are linked, for example by having common investors or by being a part of the same regional economic system.

In the first example, when markets share the same pool of investors and one market experiences a crisis, these investors may withdraw their investments from the other market as well, resulting in a spillover of crisis. This may have been the cause of contagion for the Asian crisis in 1997: large foreign investors had assets in several Asian countries, when a crisis started in Thailand it transferred to Indonesia, Malaysia, Philippines and South Korea as investors started withdrawing investments from the region. In the second example, countries are in one regional economic system and a crisis in one country may create doubts about the viability of the system. This may be the explanation for the recent

Eurozone crisis started in 2009 when a crisis in Greece spread to some other Eurozone countries.

The sole non-fundamental cause of contagion is the pure news effect of a crisis. Whenever a crisis breaks out in one market, other markets are always affected by the news about that crisis. News about a crisis in one market is a negative shock that may have effects on the behavior of agents in the other market even if there are no links between these markets. The cause of the effects of news is presently poorly understood. It may be that agents believe that markets are correlated (whether they are or not) (false beliefs effect), or that they believe that others believe so (strategic effect), or that the crisis in the other market functions as a sunspot.

While the news effect of a crisis may be an important cause of any crises featuring contagion, the topic has so far attracted relatively less attention, especially compared to the fundamental causes of contagion. One of the reasons for the neglect of the role of news in contagion may be that it is virtually impossible to study the effect of news in isolation as economies are generally tightly connected. However, there are cases of contagious crises that suggest news may have played an important role. For example, on the 20th of December 1994 a crisis started in Mexico which had a strong spillover effect on the Argentinean economy within days. The economies of Mexico and Argentina had, however, different fundamentals, they were not strongly linked, and the government of Argentina was successful in mitigating the crisis. These facts suggest that there may very well have been no fundamental reasons for the crisis to spill over to Argentina. It is therefore quit well possible that news about the crisis in Mexico changed the sentiments of agents in Argentina resulting in the crisis to spill over to Argentina. However, as it is impossible to

rule out that fundamental links between the countries also played a role (such as common investors) thus one cannot draw definitive conclusions about the role of news in contagion from this case.

The proposed research suggests using economics experiments to study the role of news of a crisis in contagion. To my best knowledge, this method has not been applied before. A financial market experiment is suggested where two assets are traded simultaneously and a crisis in one market may result in a crisis in the other market. The proposed design will allow us to isolate the effect of the news of a crisis and test whether it has a significant role in contagion. Further, four treatments of the experiment will allow us to differentiate among two possible channels through which news of a crisis may result in contagion.

2 Literature Review

Masson (1998) provides 3 reasons for the occurrence of a crisis in different markets simultaneously. First, crises may be caused by a common reason, for instance, a common shock. In this case, the crisis is not transferred from one market to another so it is not a case of contagion. Second, a crisis in one market may affect macroeconomic fundamentals of another market. Third, a crisis in one market may be a trigger for a crisis in another market for reasons that are not explained by the links among fundamentals. The second and the third cases are considered to be cases of contagion.

Several studies discuss contagion channels which are connected to the correlation among the fundamentals of countries (Kaminsky, 1998; Calvo, 1999; Kodres and Pritsker, 2002; Kyle and Xiong, 2001; Goldstein and Pauzner, 2004). Though according to Masson, there may be non-fundamental-based contagion, no study provides significant evidence which would prove its existence. This study aims to fill this gap in the literature by providing evidence from laboratory study.

Some studies tried to test whether news about a crisis may be a channel of contagion using empirical data. Calvo and Reinhart (1996) study the incidences of crises in Latin America and Asia after the Mexican crisis of 1994 and examine the possibility of contagion. They find co-movement between weekly returns of bonds in Latin American countries in the wake of the Mexican crisis. According to the authors, a possible explanation would be that the co-movement is caused by herding behavior. Calvo and Reinhart's explanation (1996) is in accordance with the hypothesis that the news about a crisis may be a contagion channel as herding behavior across countries may occur if agents

get news about market performance in the other countries. However, the authors argue that a contagion may also be caused by the decision of a few large investors to liquidate assets in different markets. Thus, the results of Calvo and Reinhart (1996) do not allow us to identify news about a crisis as a contagion channel.

Eichengreen, Rose and Wyplosz (1997) examine large panel data from 1959-1993 in order to find evidence for contagion. The authors control for macroeconomic fundamentals and still find that the incidence of crises in one country increases the probability of crises in another country. Thus, news about crises in other markets may be a contagion channel. However, Eichengreen, Rose and Wyplosz do not control for common shocks, which does not allow us to identify the effect of news of a crisis as a contagion channel.

Thus, few empirical studies which discuss whether news of a crisis may be a contagion channel do not provide enough evidence to conclude that it is. This is mainly because it is very difficult to control for all effects and isolate the effect of news of a crisis from others. That's why the proposed research suggests conducting laboratory experiment where it is possible to isolate the effect of news, furthermore, differentiate among two of possible channels in which news of a crisis may result in contagion. The two possible channels in which the news of a crisis may result in a contagion are bandwagon effect and strategic risk effect channels.

Calvo and Reinhart (1996) show that one way of how news about a crisis in one market may affect the behavior of agents in the second market is by a "bandwagon" effects in which agents mistakenly think that macroeconomic fundamentals of different markets are the same, and if a crisis occurs in one market, it is bound to happen in the second

market, as well. This may be interpreted also by saying that subjects have believe that markets are correlated and if a crisis happens in one market it should happen in the second one as well.

Ahnert and Bertsch (2013) show that news about crisis in one market may be a contagion channel. They argue that a currency crisis in one market is an incentive for agents in another market to be alert and acquire information about possible correlation between two markets. Ahnert and Bertsch show that acquiring information may lead to increased strategic risk about other agents' information. The increased strategic risk may change behavior of subjects in the second market resulting in contagion, even if agents learn that there is no correlation between markets.

The following section will discuss the experimental strategy that I propose in order to replicate real life contagion in laboratory. It will allow us to isolate the effect of news and further differentiate among two possible ways the news of a crisis may cause contagion that are considered above.

2.1 Experimental literature

There has been no experiment conducted with the same objectives as the proposed research to my best knowledge. There are some experiments which study contagion but they focus on the transfer of information from one market to another and they do not relate to the proposed research closely (Ackert, Mazzotta, Qi (2011), Qi and Ochs (2009)).

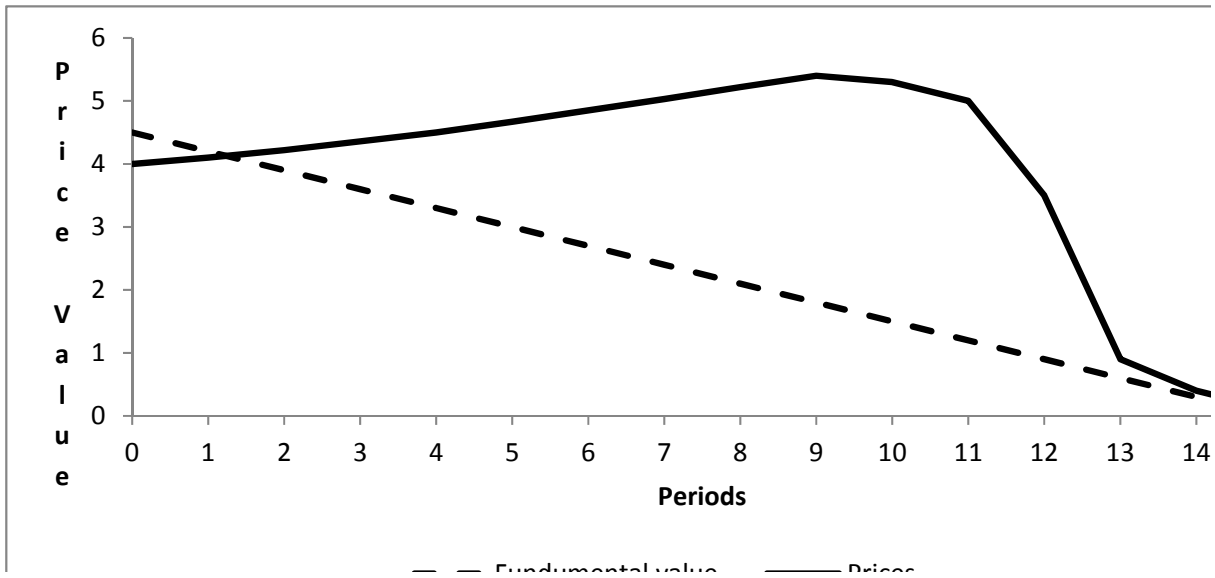
I suggest using a financial market experiment which will be a modification of Smith, Suchanek, Williams (1988) (SSW) financial market experiment to achieve the goals

of the proposed research. Though the proposed experiment will not be constructed to replicate the model of Calvo and Reinhart (1996) or Ahnert and Bertsch (2013), however, it will allow us to test whether the news of a crisis may cause a contagion in all possible channels and further it will allow to test for two of the possible channels considered by Calvo and Reinhart, and Ahnert and Bertsch. Important aspects of SSW experiment which may help to understand my experiment are given below.

SSW constructed an experiment of financial markets to test Efficient Market Hypothesis according to which prices in market should reflect all the available information. In the SSW experiment subjects are endowed with experimental assets and cash. Subjects trade the assets for cash for 15 periods. The asset gives dividend in the end of each period. The fundamental value of a asset at any period of trading is equal to the sum of expected dividends. Thus, the fundamental value of a asset is declining each period by the value of expected dividend as there are fewer periods left till the end of the trading. In Figure 1 the dashed line is the fundamental value of an asset which has expected dividend of 0.3 each period. The asset's fundamental value is 4.5=0.3*15 in the first period and it declines with 0.3 each period until it is equal 0 after the 15^{th} period.

Theory predicts that prices in each period should be equal to the fundamental value, which is easily seen by applying backward induction. In the last period nobody should buy a asset with price higher than the fundamental value of the asset because after the end of the last period the subject will get the fundamental value of the asset and will lose the difference between the price he paid and fundamental value. Similarly nobody should sell a asset with price lower then fundamental value in the last period as he will lose the difference between fundamental value and the price of the asset. We can see that the prices

should equal to the fundamental value in each period by applying backward induction. However, the results of the experiment of SSW show that prices have inverse U shape and they form a bubble. Figure 1 shows an example which is similar to the result SSW has got. The bold-curved line is the average of prices of each period trading. Prices increase above the fundamental value and start decreasing closer to the end of trading creating bubble.



SSW suggest that this pattern is due to strategic risk; the subjects know that the prices are higher than the fundamental value, however, they do not know if the other subjects know it. They try to speculate by buying asset with price higher then fundamental value in a hope that they can sell it in latter periods with higher price and gain capital profit.

Research that followed SSW[1] tries to explain why there are bubbles formed in the experiment, though the experimental design seems quite simple and the theory suggests that prices should equal fundamentals. There are two major explanations: First, though subjects

[1] Boening et al. (1993), Noussair et al. (2001) Kirchler (2012), Cheung (2012), Akijama, Hanaki, Ishikawa (2013)

may understand that prices are higher than fundamental value they do not know if other subjects understand it as well. As a result subjects have the incentive to speculate by trading with prices higher then fundamental value. This is the case of strategic risk. Second, the subjects may be confused, as they associate asset with increasing or at least stable value and in the SSW fundamental value is declining. The possibility of confusion among subjects is not desirable for the proposed research and the proposed experimental design will try to eliminate it.

A recent study of Kirchler (2012) argues that bubbles in SSW financial market experiments are purely a result of confusion connected with the declining nature of the fundamental value. He eliminates the confusion and finds that there are no bubbles. He concludes that bubbles are purely a result of confusion. However, the elimination of confusion means also elimination of strategic risk, because when the possibility of confusion is decreased for all the subjects and it is known to everybody there is less uncertainty about other subjects behavior, as a result there is less strategic risk which may lead to elimination of bubbles as well.

Cheung (2012) argues that bubbles are associated not purely with confusion but also with strategic risk. He eliminates confusion of subjects by training, however, so that it is not a common knowledge. The results show that mispricing is almost as large as without training at all. I will use the strategy implemented by Cheung to avoid confusion in my experiment, so I present important details of his experiment.

There are 4 treatments in Cheung's experiment. I'll give details for two of them. In the first treatment 20 participants all are trained about the fundamental value of the asset and everybody knows that everybody is trained. This is Public Knowledge (PK) treatment.

Further subjects are divided into 2 groups of 10 and trade in benchmark SSW experiment. The second treatment is Non Public Knowledge (NPK). In this treatment 20 subjects are gathered in lab, however only 10 get training. After training is over subjects are divided into 2 groups of 10, one group consisting of only trained and the other untrained subjects. However, the subjects in the group of trained subjects are not told that everyone in their group has been trained. The results show that mispricing in NPK is not significantly different from base treatment of SSW and PK is significantly different from SSW both with 5 percent significance. Also PK is different from NPK with 10 percent significance. Based on these results, Cheung et al. (2012) conclude that reducing individual confusion alone cannot account for observed mispricing but the uncertainty about how well others understand the nature of fundamental values does**.** Thus the bubbles in SSW are not only result of confusion but also they are result of strategic risk.

I will use the strategy of Chung et al. in my experiment to get rid of confusion. there will be training about fundamental value and the fact that everybody in the market had training will not be public knowledge.

3 Experimental Design

The main modification of the proposed experiment compared with SSW is that unlike SSW experiment there will be two asset markets traded simultaneously. The aim is to replicate a real case with possibility of contagion from one market to another. Both markets will operate for 20 periods and the trading will open and close simultaneously in each period. The computerized trading is designed in a way that subjects can observe prices of both markets. Thus, subjects in one market get news about trading in the other market by observing it. Prices in one of the markets are controlled by insider traders in such a way that there is a drastic drop which represents crisis in that market. We are interested in testing whether this drop of prices in one market has any effect on price development in the other market.

Controlling prices of one market: Insider traders

There are 12 participants in each session. 10 of them are normal subjects whose trading behavior we want to study and 2 of them are insider traders who control prices in one of the markets. The market where the prices are controlled by insider traders is called Originate market and the market where normal subjects trade is called Follower market (these names will not be kept in instructions for subjects). The logic behind these names is that we want to test whether the prices in the Follower market drop following the price drop in the Originate market. Only insider traders trade in the Originate market and only normal traders trade in the Follower market. There are no subjects trading in both markets.

The aim of controlling prices in one of the markets is to make it easier to identify possible contagion through news effect. The prices in the Originate market are controlled in such a way that there is a drastic drop. If we would not control prices in the Originate market we might not have significantly big drop of prices in each session in any of the markets and we would not be able to use the results of those sessions for testing our hypothesis.

The insider traders will trade so that the prices will replicate the price pattern of two of sessions of financial market experiment conducted by Bostian, Goeree, and Holt (2005) (BGH). Figure 2 shows price developments of those two sessions. In one of them there is drastic drop of prices in the 9^{th} period in the other the drop of prices is later in the period 14. The two price patterns are very similar before period 9.

The first price pattern with drop in the 9^{th} period will be used in three main treatments and the second price pattern with the drop of prices in the 14^{th} period will be used in the control treatment. In three main treatments the drastic drop of prices will represent a crisis in the Originate market. In the control treatment there will be no negative news effect in the 9^{th} period because prices of Originate market will drop in the 14^{th} period. The control treatment will be used to test whether prices in the Follower market have tendency of dropping after period 9.

The prices for the Originate market are chosen from BGH experimental results not only because of their suitable pattern for our experiment but also because the financial market in BGH experiment is substantially different from the Follower market in our experiment which is SSW type financial market. The differences between two market types will be used to test for significance of bandwagon and strategic risk effects.

Unlike SSW experiment in BGH cash holdings earn interest in the end of each period and assets have positive terminal value, so that the FV of a asset is same for each period and equal to the termination value. Furthermore, in BGH assets earn dividend from different distribution then in the follower market of our experiment. Because we want to test for the bandwagon effect the information about differences between SSW and BGH markets will be used in order to signal subjects that fundamentals of markets are different. In the control and one of the Main treatments subjects are not given any information about the Originate market and they may have beliefs that markets are similar. In the other two Main treatments subjects are given information about the Originate market so they will know that markets are different. Furthermore, in one of the later main treatments the information that everybody knows that markets are different is common knowledge and in the other one it is not common knowledge. Thus, in one market there is no strategic risk about others knowledge about the differences between markets and in the other market there is strategic risk about others knowledge about differences between markets.

Insider traders and deception

None of the subjects will trade in both markets, so the insider traders can not affect the earnings of normal subjects in any other way then through prices in the Originate market. Because the Prices in the Originate market are replication of results of BGH experiment, the insider traders are not making any decision and their actions do not affect normal subjects in any way. It would be possible simply to have one market and show traders the prices of BGH experiment; however, it might create experimenter demand effect. Furthermore, having insider traders creates feeling that the trading in markets is

going on in real time similar to real asset markets where different assets are traded simultaneously: the Z-tree screen of the experiment is also designed so that it might feel like real time trading (Instructions A, page 2). Besides, the presence of insider traders makes it possible to create strategic risk in the experiment which is important for the purposes of this research and is discussed in the Procedure section.

Follower market

The 10 normal subjects do not trade in the Originate market; therefore we give detailed description of the Follower market only (). Trading lasts 20 periods; each of the periods lasts 100 seconds. In the beginning of the first period each of the subjects is given a portfolio of assets and experimental currency units (ECU). In the end of the experiment the subjects get as a reward their ECU holdings which is converted to CZK with exchange rate 1ECU=0.18 CZK.

Each asset gives a dividend in the end of each period from distribution {0; 4; 14; 30} with equal probability. The fundamental values (FVs) of assets in any given period are equal to the sum of expected dividends across all remaining periods. The FV of the ***Follower*** assets in the first period are equal to the number of periods, 20, times the expected dividend, (0.25*0 + 0.25*4 + 0.25*14 + 0.25*30) =12. This is equal to 20*12=240. The FV decreases in each period by 12 and in the last 20^{th} period equals to 12*1=12.

There are three types of portfolios which have equal initial value of 1665 ECU but different composition of assets and ECU. The initial endowments are as follows:

- 3 subjects have 2 assets and 1185 ECU

- 4subjects have 4 assets and 705 ECU
- 3 subjects have 6 assets and 225 ECU

Treatments

There are four treatments, three main and one control. The three ***Main*** treatments are designed in order to differentiate among two different ways news may cause contagion. News in this context may affect subjects' decisions in different ways: First, subjects might be confused about the FV (Kirchler, 2012) and drop in prices in the ***Originate*** market may make them more careful and they may understand that fundamental is below prices. Second, subjects may think that markets are correlated; they may have prior belief that markets generally are correlated. Third, they may know that markets are not correlated and they may not be confused about the fundamental; however, they may think that decline in prices in the ***Originate*** market may affect other subjects' decisions; so it's better for them also to change their decisions. This case is when subjects' behavior is affected by strategic risks. Forth, decline of prices in the ***Originate*** market may be a sunspot which may change subjects' behavior. Fifth, decline of prices in the Originate market may increase risk aversion of participants in the follower market and result in decline of prices in the Follower market as well.

The first case is not interesting for the proposed research. The strategy of Cheung (2012) is used to avoid confusion among subjects; subjects are trained about the declining nature of the fundamental value in the all treatments but it is not a common knowledge. As a result there is strategic risk which is enough for bubbles to be formed.

The proposed research aims to test for the bandwagon and strategic risk effects. In order to do it in two of three main treatments subjects are given additional information about the originate market. The information shows that the markets are different and there is no reason to believe that the fundamentals of the markets are similar. In both treatments all the subjects will get additional information; thus there will not be bandwagon effect in these treatments. However, in one of those two treatments everybody knows that everybody has additional information and in the other treatment subjects do not know that everybody has additional information. In the later one there is strategic risk effect. Treatments in more detail are described below.

All four treatments have training about declining nature of FV, which is not public knowledge. So there is no confusion about in any of the treatments.

In all three **Main** treatments prices in the ***Originate*** market drop in period 9, and create negative news effect.

Main 1: Subjects are not given additional information about the Follower market and they may think that markets have same fundamentals. If there is any contagion it may be caused by any of the above discussed effects.

Main 2: Subjects are given additional information about the Follower market; as a result they know that markets have different fundamentals, so there is no Bandwagon effect. However, subjects do not know whether all the other subjects also have got the additional information, so there is strategic risk effect. The difference between Main 1 and Main 2 is that in Main 2 Bandwagon effect is eliminated.

Main 3: Subjects are given additional information about the Follower market; as a result they know that markets have different fundamentals, so there is no bandwagon effect.

Furthermore, subjects know that all the other subjects have got additional information, so there is neither strategic risk effect. The difference between Main 2 and Main 3 is that in Main 3 there Strategic risk effect is eliminated.

Control: The prices in ***Originate*** market increase till the 14th period, thus there is no negative news effect for subjects in ***FOLLOWER*** market in period 9. The difference between Main 3 and Control is that in Control there is no negative news effect at all.

Hypotheses

The objective is to test whether Price level (PL) of the ***Follower*** market after period 9 across treatments differs in the following manner:

$$\textbf{PL Main 1} \leq \textbf{PL Main 2} \leq \textbf{PL Main 3} \leq \textbf{PL Control}$$

Thus the proposed paper has three working hypothesis:

1. H0: PL Main 3 = PL Control

   H1: PL Main 3 < PL Control

   This hypothesis tests whether negative news effect is significant through any possible channel other then Bandwagon and strategic risk.

2. H0: PL Main 2 = PL Main 3

   H1: PL Main 2 < PL Main 3

   This hypothesis tests whether bandwagon effect is significant.

3. H0: PL Main 1 = PL Main 2

H1: PL Main 1 < PL Main 2

This hypothesis tests whether the strategic risk effect is significant.

The logic behind the hypothesis may be understood in the following way: As the number of possible channels in which the prices in ***Originate*** market may affect the prices in ***Follower*** market increases, the size of the effect itself increases, as well. For example, in treatment **Main 3** there is no strategic risk effect, while in treatment **Main 2** there is strategic risk effect. As a result price level in **Main 2** should be lower than in **Main 3**. Otherwise it would mean that strategic risk effect is not significant.

The hypotheses will be tested by Mann-Whitney U test. This is a nonparametric test which is used to test whether two samples are drawn from same distribution or not. Each treatment will be conducted 6 times, so each sample will have 6 observations.

Procedure

The group of 12 subjects including 10 normal subjects and 2 insider subjects are invited to experimental laboratory in LEE at VSE. Each of them picks his number of table randomly. They fill participation consent form. Afterwards, subjects are given 10 minutes for reading the first part of written instructions "Instructions A", which gives general information about the experiment and computerized trading. After reading Instructions A subjects have training period of trading for 200 seconds on computer screen. The trading during training is organized so that insider traders trade in the Originate market and the normal subjects trade in the Follower market in a way that already during training subjects

can observe trading in the other market. After training Instructions B is distributed and subjects are given 5 minutes for reading. Instructions B describes the Follower market where normal subjects are trading. After subjects read Instructions B the experiment continues on the computer screen.

On computer screen subjects are having training about fundamental value. On the screen they read that some of the subjects are having training and others not. 10 normal subjects are having training and 2 insider traders are not having training.

After having training about FV treatments continue differently:

1. In treatments Control and Main 1 subjects read on the screen information saying that all subjects are divided into two groups and one group trades in one market and the other in the other market. 10 normal subjects are assigned to one market and 2 traders are assigned to the other market and the trading starts.

Because the 10 normal subjects who trade in the Follower market know that only some of the subjects had FV training and they do not know who is trading with them in the same market, they do not know that everybody had FV training. Thus, there is strategic uncertainty about others knowledge about FV which is an important condition for having price bubbles in the market. The strategic uncertainty about others' knowledge about FV is present in all the treatments in similar way.

2. In treatments Main 2 and Main 3 subjects are given **additional information** about the originate market after which the trading in market starts.
    - In Main 2 treatment subjects read on screen that some of them are given additional information and others are not given additional information. 10

normal subjects are getting additional information and 2 insiders are not getting the additional information.

- In Main 3 treatment subjects read on screen that everybody gets additional information.

After getting additional information both in treatments Main 2 and Main 3 subjects are told that they are divided into two groups and that they will be told in which market they will trade. 10 normal traders are told that they trade in the market described in the Instructions B. However, they are not told who is trading with them. 2 insider subjects trade in the other market. Because in Main 2 treatment not all the subjects have additional information there is strategic risk about others' knowledge about differences between the Originate and the Follower markets.

After the end of trading in the 20th period subjects are given questioner for their feedback about the effect of prices in the other market on their decision making. After filling the questioner subjects get their rewords and experiment ends.

FV training

The FV training is about the FV of the Follower market asset. The training is done in all the four treatments and it minimizes possibility of confusion about fundamental value among subjects.

The training about FV is similar to the training done in Cheung (2012). The strategy of training subjects in the FV process consists of two sets of control questions: one framed from the perspective of buying an asset, and the other framed from the perspective of selling an asset. There are 5 questions in each frame

In the buyer frame subjects are asked, for t = {20; 16; 12; 8; 4}:

Suppose that you buy one stock in period t and that you keep it until the end of the market (i.e. until period 20). What is the average total dividend that you will receive from this stock?

Similarly, in the seller frame subjects are asked, for t = {19; 15; 11; 7; 3}:

Suppose that you sell one share in period t and that you do not buy it back. What is the average total dividend that you give up on this stock?

The questions are asked in descending order of periods.

Additional information about the Originate market

The objective of giving additional information about the Originate market is to let the subjects know that the markets are different and not correlated . In order to do it subjects are given the description of the Originate market. In the description it can be seen that the Originate market differs from the Follower market in 4 ways:

- The ECU holdings in the Originate market earn interest.
- The stocks in the Originate market have termination value.
- The Stocks in the Originate market give dividend from different distribution.
- The stocks in the originate market have fixed FV in each period.

Further, subjects are informed that dividend realizations are indipendant.

After subjects get acquainted with the details of the Originate market they are asked 8 questions about the two markets which stress differences between the two markets. For example, subjects are asked:

1. How much interest do cash holdings earn in the First market in each period? (The right answer is 0%)
2. How much interest do cash holdings earn in the Second market in each period? (The right answer is 20 %)

The answers to the two questions above show that two markets are different. The other 6 questions are composed in similar manner to indicate differences about terminal value, FV in each period, and correlation of dividend realization.

Results

10 experimental sessions have been conducted. The preliminary results indicate that there may be effect of news of a crisis. However, the number of observations are not enough to conclude whether the effect of news of a crisis is significant and whether the bandwagon and strategic risk effects are significant. Further experimental sessions are planned for Fall 2015.

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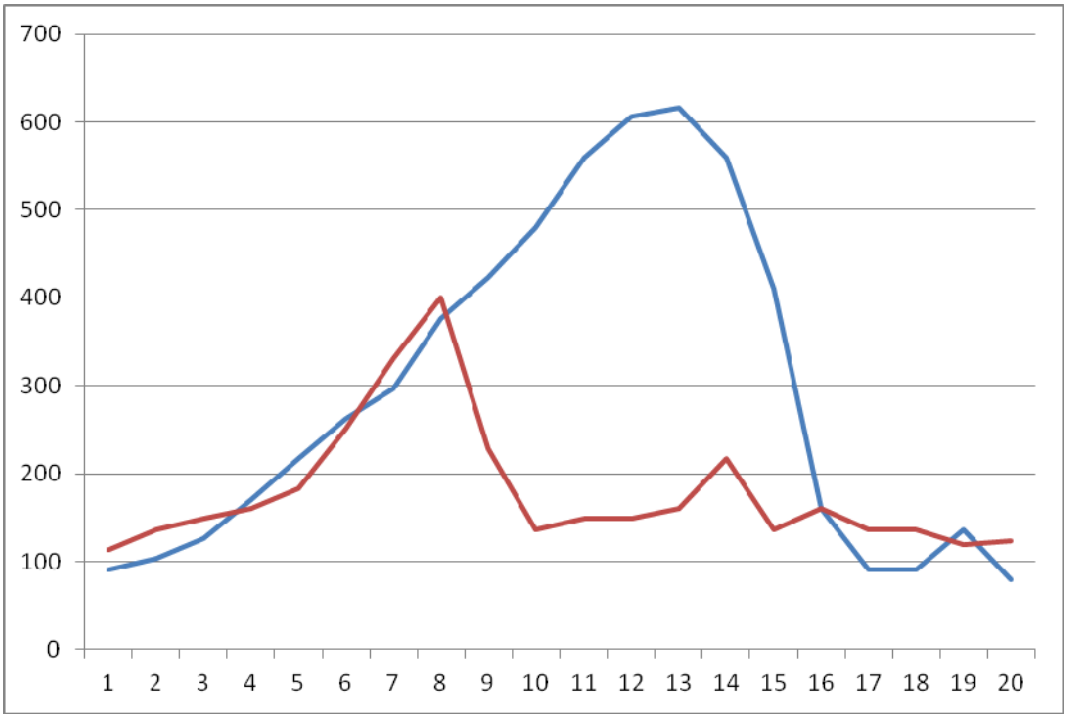
Figure 2: Prices in the Originate market. Bostian, Goeree, and Holt (2005).



Prices are taken from Bostian, Goeree, and Holt (2005). They are scaled up to match the parameters of our study.