

Monetary Policy as Bad Medicine: The Volatile Relationship between Business Cycles and Asset Prices

JEL Classification: B53 – Austrian Economics, E32 – Business Cycles, E44 - Financial Markets and the Macroeconomy, E58 - Central Banks and their Policies.

Abstract: Austrian business cycle theory has become an important point of focus in controversial mainstream discussions regarding the role of asset prices in monetary policy. In this article the relation between asset prices and the Austrian business cycle theory is examined. The analysis focuses on how central banking supports optimism, resulting in the redirection of entrepreneurial activity and knowledge via asset price bubbles. The crucial role of credit expansion for asset price booms is also analyzed. Following this analysis, the implications for monetary policy are deduced.

1. INTRODUCTION

Austrian business cycle theory [ABCT] has recently provoked renewed interest from the mainstream.¹ This interest stems from the mainstream debate on the role of asset prices for monetary policy. In this debate, the most contentious point is whether a restrictive monetary policy should be used to prick speculative asset price bubbles. The new chairman of the Federal Reserve System (the Fed), Ben Bernanke, along with Mark Gertler² are two well-known representatives of those economists who argue against a preventive pricking of asset price bubbles.³ According to these economists, asset prices should only play a role in monetary policy insofar as they are an indicator of future price inflation.⁴ The Bernanke view can be called the reactive view because the central bank watches the asset price bubble grow, and once the bubble bursts, recommends expansive monetary policy in order to stabilize asset prices.

However, there is an alternative mainstream view which opposes this reactive view. Opponents of reactivist measures recommend a proactive approach,⁵ arguing that it is, at least in some cases, appropriate to prick asset price bubbles. Proponents of a proactive approach hope that such a policy might help to prevent an asset price market crash, which might, without this intervention, destabilize the financial system. Following a crash of the stock, bond, or housing markets, balance sheets of banks and corporations might deteriorate and private households might reduce consumption. Enterprises then go bankrupt. This in turn can lead to further reduction of consumption and further deterioration of bank balance sheets. When banks begin turning to bankruptcy due to bad loans, systemic stability is at risk. The whole monetary system threatens to collapse. The proactive pricking of bubbles is therefore thought to prevent this danger to the stability of the financial system.

A sometimes mentioned second argument for a proactive strategy is the danger of misallocation of real resources caused by an asset price boom.⁶ In this context, the argument is attributed to the Austrian School of economics.⁷ However, extensive elaboration regarding

the complex relation between Austrian theory and the problem of asset prices is not provided. Most importantly, the Austrian school itself has not provided a systematic analysis of the problem of asset prices and the business cycle. On part of the Austrian school, Machlup (2002[1931]) has provided a general study of the stock market. Moreover, Mueller (2001), Koppl (2002), Callahan and Garrison (2003) and Huerta de Soto (2006) have written about bubbles. However, no exhaustive and systematic analysis exploring the connection between ABCT and asset prices has been undertaken.

In this paper, I examine what the ABCT can contribute to our understanding of asset price booms and busts. Such an analysis requires the development of a systematic Austrian perspective concerning asset prices. With this in mind, the paper is divided into three sections. The first section provides an analysis of the role of asset prices in the Austrian business cycle theory. The second section analyzes the importance of credit expansion for asset price bubbles. The third section discusses briefly the dilemma for monetary policy caused by bubbles, the dynamics of central banking and offers Austrian solutions.

2. ABCT AND ASSET PRICES

2.1 Asset prices and the business cycle

According to the ABCT⁸ developed by Ludwig von Mises, the business cycle is caused by an artificial reduction of the interest rate. This artificial reduction in the interest rate, in turn, is caused by the banking system via credit expansion.⁹ The interest rate is too low in comparison with the preferences of market participants. Due to the relative reduction of the interest rate, entrepreneurs are led to think that the amount of savings has increased. In turn, they engage in new investment projects, beginning more investment projects than can be finished with available means of production. Compared to projects of shorter time duration, longer-term projects will see a relative increase in their net present value due to the interest rate reductions. Therefore, many investment projects that take relatively longer to produce

consumer goods are undertaken. The crucial point is that investors are led to undertake more investment projects than otherwise, acting as if savings have increased, increasing the demand for producer goods.

When the owners of the factors of production get paid with the newly created money and spend their income in the old consumption-savings ratio (i.e., they do not increase their savings), there will be a relative increase in the demand for consumer goods. Moreover, the supply of consumer goods slows down. This is due to the undertaking of investment projects that yield consumer goods only after a longer time period than for projects that would have otherwise been undertaken. The relative increase in demand for consumer goods and the relative decrease in their supply allow the prices of consumer goods to rise. Consequently, the increase in the consumer goods prices increases profits in consumer goods industries in comparison to capital goods industries. Losses in capital goods industries may arise as well. It becomes evident that not all investment projects that were begun can be completed with the available means of production and a recession sets in. Mainly longer-term investment projects (i.e., in the higher stages of production) have to be abandoned and factors of production are then shifted back to less time-consuming projects, to the lower stages of production, which produce consumer goods more quickly and yield higher profits. The recession ends when the investment projects again align with the preferred consumption-savings ratio of the market participants.

What role do asset prices play in an artificial boom caused by an artificial reduction of the interest rate? There are several effects of the credit expansion on asset prices.¹⁰ First, the credit expansion has an effect on capital goods prices and therefore, on asset prices. As already mentioned, the credit expansion leads to a reduction of the interest rate in the loan market.¹¹ Entrepreneurs will use this lowered interest rate to discount the expected returns of the capital goods, which results in a higher net present value of the capital goods.¹² The net present value of stocks, bonds, and real estate, which represent capital goods, is increased by

the lowered interest rate as well. As a result, entrepreneurs will bid up the prices of stocks, bonds, and real estate to their new, higher net present value.

A second effect contributes to artificial increases in stock and real estate prices. Investment projects, which would have been unprofitable with a higher interest rate, now look profitable due to the interest rate reduction. In order to undertake these investment projects, capital goods are needed. Therefore, as new credit is created, additional capital goods are demanded. However, if savings do not increase, neither does the supply of capital goods. The increase in the demand for capital goods will meet a supply of capital goods that has not increased, and hence, the prices of these goods will be bid up. Consequently, the price of titles for capital goods and the price of their production facilities also increase.¹³ Stocks are property titles to capital goods and production facilities of capital goods. Houses are capital goods to the degree that their services are consumed in the future. Bond prices also depend on the market value of capital goods. When the market value of capital goods and of the company issuing the bonds increases, the perceived probability of the company meeting its bond obligations might also increase. Indeed, as Rothbard (2000: 51) states “bond-holders (long-term creditors) are just different types of owners” of the company. Hence, the prices of stocks, bonds, and real estate soar. An asset price boom begins.

2.2 Persistence of the boom: Optimism and herding

After the asset price boom has been triggered by a credit expansion, it is fueled with waves of optimism pervading the whole economy. This optimism, instead of fueling all asset prices simultaneously, might concentrate on one or more of these assets (e.g., stocks, bonds, or real estate). It is possible that the optimism is so enthusiastic that it is thought that a new era of never-ending growth has begun, often symbolized by new technologies.¹⁴ Those new technologies calm doubts about the sustainability of the boom. As Callahan and Garrison (2003: 74) assert, “every bubble needs a story”. Often theories of “new times of prosperity”

are developed *ex post* to justify the rise of asset prices. The new technologies and the “new times” lead to the expectation that future profits will increase strongly, which increases the expected net present value.

Later, optimism might be fed by three sources. First, the accounting profits will increase during the boom. As Ludwig von Mises points out (1998: 546):

If the annual depreciation quotas are determined in such a way as not to pay full regard to the fact that the replacement of worn-out equipment will require higher costs than the amount for which it was purchased in the past, they are obviously insufficient. If in selling inventories and products the whole difference between the price spent for their acquisition and the price realized in the sale is entered in the books as a surplus, the error is the same.

Hence, the illusionary gains of businesses seem to indicate not only that everything in the economy is fine, but also that there is a period of great prosperity and real growth. This further increases optimism. Therefore, due to the illusionary gains, people might invest more in asset price markets and thereby further contribute to the asset price boom.

Second, during this boom, the belief often spreads that credit expansion makes an increase in production possible without having to forego consumption.¹⁵ A euphoria diffuses through the economy as people assume that production can be increased without having to save in the first place. The rising security and housing prices seem to support this belief. Therefore, investors in the security and real estate markets continue speculating if credit expansion continues to flow and consumption does not need to be restricted.¹⁶

Third, the optimism is self-enforcing since the rising asset prices attract more investors to asset price markets. People might quit their jobs to dedicate themselves to asset price market speculation, where profits seem to be made automatically and in an easier way than in their old jobs. Entrepreneurial creativity and effort are shifted towards the asset price markets. As a consequence of the money flowing into these asset price markets, prices continue to soar, increasing the optimism even further.¹⁷ A specific example of the redirection of

entrepreneurial activity towards asset price markets is the increase in “day trading” during the dot-com boom when people quite their jobs to attempt earning money trading online from home.

An interesting characteristic of the boom is that over time, the asset price boom becomes ever more dependent on the optimism that feeds it. When asset prices are not inflated by credit expansion, changes in the psychology of market participants do not play an important or determining role in asset price fluctuation. More specifically, psychological changes by themselves do not cause a crash, but only reflect changes in expectations about the real economy. For example, when there is fear of war, prices are likely to collapse. In contrast, during periods of credit expansion and asset price booms the psychology of market participants *eo ipso* suddenly becomes important for the changes in asset prices. A small deterioration of the fragile euphoria of the “new times” can endanger the asset price boom, triggering a reinforcing downturn. This downturn can be triggered for almost any reason (e.g., losses in some industries, elections, political conflicts, or new government interventions). Such a downturn may stop only when asset prices return to net present values not distorted by credit expansion.

Optimism is not the only reinforcement for an increase in speculative prices. The boom can reinforce itself in another ways. This occurs when the asset price boom receives positive feedback from the credit expansion and thereby boosts further malinvestments both in the asset price markets and the real economy. There are two possible reasons for this feedback. First, the higher asset prices (i.e., higher security and housing prices), can be used by companies as a collateral for further credits.¹⁸ Moreover, there might be the illusion of an increase in real wealth by the increase in nominal asset prices.¹⁹ Under this illusion, market participants reduce savings and demand further credits. The bond market is a vivid example of this effect. When interest rates are artificially lowered by the credit expansion, the prices of bonds tend to rise. Market participants might get a false impression that their real wealth has

increased. Believing that the asset price markets somehow “save” for them, they reduce saving.²⁰ However, this is an illusion since the real amount of goods is not increasing. Since their nominal wealth seems to steadily and automatically increase they increase consumption at the cost of savings. Concerning stocks and real estate markets, Mises (1998: 546-47) makes the following observation:

If the rise in the prices of stocks and real estate is considered as a gain, the illusion is no less manifest. What makes people believe that inflation results in general prosperity is precisely such illusory gains. They feel lucky and become openhanded in spending and enjoying life. They embellish their homes, they build new mansions and patronize the entertainment business. In spending apparent gains, the fanciful result of false reckoning, they are consuming capital.

Why would one save if one becomes wealthier every year? Market participants might even go into more debt to invest in the bond market, buying seemingly no-risk assets such as government bonds, thereby increasing bond prices further. Hence, it can be concluded that the asset price boom tends to feed and reinforce itself with further credit expansion.

Besides the optimism, there can be another social phenomenon that can feed and enlarge the boom: herding behavior. The phenomenon of herding is made more probable by the existence of a central bank. This is so, because a central bank increases the uncertainty in the market. With a central bank that orchestrates credit expansion it is unknown how far the process of credit expansion will be taken. This makes herding a successful and profitable behavior as long as the central bank supports the boom. Roger Koppl’s Big player theory (2002) together with Scharfstein and Stein’s (1990) “share-the-blame-effect” can be used to demonstrate the herding phenomenon. Koppl explains that herding can be induced by a big player.²¹ Koppl (2002: 120) defines a big player with 3 characteristics: “He is big in the sense that his actions influence the market under study. He is insensitive to the discipline of profit and loss. He is arbitrary in the sense that his actions are based on discretion rather than any set of rules.” As Koppl and Mramor (2003: 256) state: “In asset markets, the presence of Big

Players can induce 'herding' or 'bandwagon effects' and therefore 'irrational bubbles.'” Obviously, a central bank with discretionary power fulfils all three characteristics and thus increases the uncertainty in the market.

Scharfstein and Stein (1990) argue that managers' reputations often depend on their relative performance to other managers. Managers will have an incentive to perform well if others are doing the same. In contrast, if other managers are performing badly, a manager might also get away with a bad performance. This is the sharing-the-blame-effect which can lead to herding. If signals about the fundamentals of assets are certain and reliable, then there is a strong counterweight to herding. The interventions of a big player, in our case the central bank, reduce this counterweight considerably. Thus, central banks increase the probability of herding and create the very instability of financial markets that they are, in mainstream discussions, presumed to solve. As Koppl and Mramor (2003: 258) state: “The Big Player creates an atmosphere in which it is sensible to follow trends and dangerous to buck them. This will create herding and aperiodic cycles.”

For example, if one investment fund manager becomes aware that other fund managers are increasing their purchases of stocks, resulting in an increase in the stock market, he does not know where the invested funds came from. The funds might have stemmed from the beginning of a credit expansion whose limit lies in the discretionary powers of the central bank. Hence, there might be a stock market boom underway that does not reflect itself in the fundamentals, but may be maintained by credit expansion.²² As a consequence, the investment fund manager is likely to follow the investment of the other managers because his performance in relation to the other managers is in danger if their performance increases as a result of a credit expansion.²³ As the stock market continues to rise other investment fund managers become aware of the process and follow the movement, thereby attracting even more managers. Thus, the process is self-reinforcing. Herding occurs. It is made possible and fed by the increase in liquidity.

2.3 Asset price booms, entrepreneurship and knowledge structure

It should be emphasized that the asset price boom also has an important effect on entrepreneurial culture, because a new type of entrepreneur will become successful in the boom. As Antony Mueller states (2001: 14):

With the continuation of such a boom, prudence diminishes, and new types of entrepreneurs appear, who neglect profits in favor of market share and who eagerly apply the latest standard of technology irrespective of a prudent evaluation of their economic merits. As money can be gained easily with speculation on asset price markets the entrepreneurial capacities are directed towards speculation and making fast profits at asset price markets.

While the optimism about new technologies and the booming economy spreads, it is possible that enterprises that maximize revenue and use new technology will experience extraordinarily soaring stock prices. Hence, short-term thinking is rewarded at the cost of long-term thinking and an associated prudent, conservative entrepreneurial culture. Seeing the possibility of quick profits, people become more present-oriented (i.e., their time preference increases). They begin to think, and are actually proven right during the boom, that no hard work or thought is necessary to make profits. All that is required is the picking of a stock and it is assumed that it will yield a profit. Entrepreneurial energy is dedicated to making fast profits in the asset price markets. Wanting to earn money as quickly as possible, people develop and acquire knowledge that helps them to participate in an asset price boom fueled by credit expansion. In particular, “a portion of entrepreneurial attention [will be diverted] away from more narrowly economic data onto aspects of the economic environment – actions of policymakers – that are inherently subject to unpredictable change.” (Koppl 2002: 120). Thus, people will become financial market experts that have knowledge about stocks, indexes, funds and central banks. They will invest time in weighing, analyzing (“Fed watching”)²⁴ and predicting the policy decisions of central bankers and politicians, as well as the effects of

those decisions (Horwitz 2000: 119), instead of concentrating their entrepreneurial attention on profit opportunities that arise in their immediate environment.

In other words, market participants must learn to play the game of credit expansion well. As Axel Leijonhufvud (1981:248) writes about the effects of inflation: “being good at real productive activities – being competitive in the ordinary sense – no longer has the same priority. Playing the inflation right is vital.” In the same way, playing the credit expansion right is vital and in a way more fundamental as a credit expansion tends to bring about price inflation. Thus, people will try to avoid the negative effects of inflation and credit expansion (Horwitz 2003). One way to avoid these effects is to spend more time analyzing the actions of monetary policy makers and developing knowledge that allows one to participate in an asset price boom. By participating in the asset price boom people achieve two ends. One is that they hedge against a possible future inflation. In the German hyperinflation of the 1920s, investors in real estate markets or stock markets did not suffer losses. Some even made spectacular gains while those who stayed out of asset price markets suffered catastrophic losses when their cash assets became devalued.²⁵ The other goal is to prevent losses relative to those people who play the credit expansion right and make money during the boom. When a successful investor proudly tells his neighbour, who has not invested in the stock market yet, about how much money he made last month in the stock exchange, the other neighbor is likely to try to acquire such knowledge as well and shift some of his savings into the stock market. Or the envious neighbor might hire a fund manager with the aim of not falling behind his successful neighbor.²⁶ As more participants begin seeking to maintain their relative returns, the herding behavior mentality will continue spreading through the market. This phenomenon will become self-propagating and more prevalent as the credit expansion process continues.

Furthermore, entrepreneurial creativity and knowledge is shifted toward political rent seeking during a period of inflation and credit expansion (Horwitz 2003). It becomes possible

to profit via artificial asset price booms from monetary policy decisions and regulations of the banking sector. Interest groups will form that either are profiting, or hope to profit, from the asset price boom. They will keep demanding lower interest rates and a deregulation of the banking sector with the hope of initiating or maintaining an asset price boom. Once the boom is underway they will lobby to maintain it as long as possible. Thus, the asset price boom shifts entrepreneurial activity into the political arena and erodes free market values.

In some sense the shift in the structure of knowledge or human capital during the asset price boom parallels the shift in non-human capital that has long been at the center of ABCT.²⁷ During the boom, the structure of human capital gets distorted and becomes unsustainable just as the structure of non-human capital does. Once the boom ends, this knowledge about certain stocks, indexes, monetary policy, characteristics and personalities of central bankers, etc. will become partly worthless, at least until the next credit expansion is initiated.²⁸ An example of unsustainable knowledge is the knowledge that many people (who later in disgust left the stock market forever) acquired during the “New Economy” boom regarding the the business plans and financials of dot.com stocks, many of which later went bankrupt.

There is, however, another important effect on entrepreneurship associated with bubbles. When the bubble unexpectedly bursts, the entrepreneurial culture and confidence of a whole generation will be severely damaged, demoralizing a whole generation. The increase in time preference rates will change the structure of production and have lasting social effects. More precisely, due to the increase in time preference rates the structure of production will be shortened and will become less capital intensive and productive.

3. CREDIT EXPANSION AND BUBBLES

3.1 Delay of malinvestments by a stock market boom²⁹

In addition to the points raised above, it is also possible that the new credits will not be given directly to entrepreneurs who will use them to engage in investment projects. Instead, the newly created money might first be used by those speculating in the stock market. Under this scenario, the newly created fiduciary media are first injected into asset markets and then, after some interval, they then begin to spread through the whole economy.

It is possible that the new credits flowing into the stock exchange would be used in a speculation chain. In other words, the credits would be used to buy stocks, and then the sellers of these stocks would also use this money to invest in the stock market and so forth. It is therefore conceivable that at least for some time the credit expansion is “absorbed” by the stock market.³⁰ In fact, as long as the illusion of “new era” persists, the credit expansion can accumulate in the stock market. Consequently, as long as the credit expansion is absorbed by the stock market, there is no intertemporal misallocation of resources and the business cycle is delayed, because there are no additional investment projects undertaken that cannot be ended with the available means of production.³¹ It is as if new money is being pumped into a casino. As long as the new money is used for ever newer games in the casino it is stored up there. Only indirectly, by changes in the perceived wealth, would the games in the casino have effects on the prices beyond its tables.

Moreover, not only can speculation in the stock market delay the recession, but it can even ease the recession. As stated above, a recession sets in when owners of the factors of production receive newly created money and spend that money according to the old consumption-savings ratio. Savings are too meager for the completion of the longer production processes. A stock market boom can increase savings and thereby ease and delay the recession. This attenuation becomes possible when the speculators do not increase their consumption but, due to the euphoria of the stock market, consume less, save more, and invest more of their income in the stock market.³² Due to the relative increase in savings, the

relative increase in consumer goods prices that introduces the recession is watered down. The adaptation in the recession is then smaller than it would have been otherwise. However, even though this attenuation might be theoretically possible, it is not necessarily probable in later stages of the boom. As our analysis of the “wealth effect” and “illusionary gains” has shown, consumption might actually increase in relation to savings due to the illusion that the asset price boom signifies higher real wealth. For example, the low savings rate in the U.S. indicates that recent asset price booms have stimulated consumption instead of savings.

It must be emphasized that even though the stock market boom might ease the recession and delay an artificial boom in the real economy, malinvestments are likely to occur. The boom-bust cycle is likely to set in, since the absorption of the newly created credits in the stock exchange cannot last forever.³³ Sooner or later, the credits leak from the stock exchange into real production. There are two reasons for this.³⁴

First, the rising stock prices will incite new issues of stocks as an inexpensive way to finance new investment projects as the costs of financial capital are reduced by the rising stock prices.³⁵ Second, entrepreneurs will be encouraged to sell their higher priced stocks in order to invest in new projects.³⁶ New investment projects will have become attractive since the credit expansion leads to relatively lower interest rates. As a result, investments will be greater than the available means of production needed to complete all of the initiated projects. The credit expansion in this case will have simply taken a detour around the stock market. This detour can greatly lengthen the period from the beginning of the credit expansion to the bust. Hence, the existence of temporarily absorbing asset price markets can account for the length of historical boom-bust cycles.

3.2 Credit expansion as a necessary condition for a sustained asset price boom – the central banking and asset price stabilization illusion cycle

In a free market economy, savings flow slowly and steadily to the stock market.³⁷ The incentives to liquidate and engage in stock market investments tend to balance. If the price of a stock is below its net present value, entrepreneurs will buy the stock, while they will sell it when it is above its net present value. Therefore, persistent security or real estate booms are normally not possible. For example, by itself, the “technology shock” cannot incite a persistent boom. It must be nourished and fed by credit expansion. Only a credit expansion facilitates a persistent and euphoric boom that affects all industries, including the consumer goods industries.³⁸

Without an ongoing credit expansion the stock market boom would soon end for two reasons. First, as stock prices increase above their expected net present value market participants, especially professional speculators, will dissolve their holdings. Stock prices will tend to fall back to their net present value. Second, entrepreneurs will exploit the high stock prices and issue new shares. The number of initial public offerings will increase, and the increasing supply of stocks will generate a tendency towards falling stock prices. But why do these two reasons not apply to a stock market boom fueled by credit expansion? More concretely, during a credit expansion why do professional speculators not immediately end an asset price boom by selling stocks or even short-selling the overvalued stocks? The answer is straight-forward: the problem for these speculators is that they do not know when the credit-driven boom will end.³⁹ Investors face a two-fold dilemma if they believe stocks are price above their net present value. If they short-sell stocks, they face a monetary loss if the expansion continues. If they sell their stocks outright, they may face a psychic loss as a result of their relative underperformance compared to the other market participants. This psychic loss is attributable to the herding behavior mentality that has entered into their decision making process. Furthermore, the downward pressure placed on stock price through the initial

public offerings will be offset by the absorption of the liquidity injected into the market through the credit expansion process.

For this reason, bubbles become possible only because the duration and the magnitude of the credit expansion are uncertain. Credit expansion, therefore, greatly increases the volatility of asset price markets. Credit expansion makes asset price bubbles and busts not only possible, but probable. Even professional investors, who normally have an equilibrating effect on price volatility, participate in the speculation, trying to guess when the credit expansion will end, making profits during the bull market and then exiting the market before it crashes.⁴⁰

However, while the uncertainty of the extent of the credit expansion might explain why professional investors participate in evolving bubbles, it does not explain why there are clusters of malinvestments in asset price markets in the first place. In particular, we must answer the following question: why do investors in asset price markets repeatedly commit clusters of errors which result in bubbles? The answer is simply a lack of theoretical knowledge.

A widespread belief exists that with the artificial reduction of the interest rate, unending growth in the real economy and asset price markets is possible. It is believed that the stabilization of asset prices by the central bank could be achieved and would actually be in the interest of all market participants. Hence, market participants do not see any reason why a superficially booming stock market or real economy might be endangered by credit expansion.⁴¹ They do not understand that they are facing an artificial credit-driven boom (i.e., they are not aware of the ABCT and its implications for asset price markets). Therefore, they invest in asset markets not realizing that they might be committing errors. The rising and bursting of the asset price bubbles might then also be called an asset price stabilization illusion cycle.

Even after asset prices crash, the illusion prevails that credit expansion and the central bank's managing of asset prices is in the interest of market participants. The propping up of asset prices by further credit expansion is thought to be especially beneficial. This illusion keeps the credit expansion, which was absorbed by the stock market, from being entirely wiped out in the recession. Stock prices might not fall back to their net present values since it is expected that the "beneficial" credit expansion will continue. As a result of this illusion, it is possible that with new cycles, a growing base of credit expansion remains absorbed in the asset price markets.

3.3 Ever increasing doses of credit to fuel the boom

As a credit expansion is necessary to start a bubble in the first place, ever higher doses of credit are necessary in order to keep the boom going. There are two main reasons for this. The first reason is that the credit expansion begins to flow into the real economy at some point, initiating a business cycle and raising consumer goods prices to levels that are higher than they would have been without the credit expansion. More specifically, consumer prices rise for several reasons.

First, consumer goods prices rise because the incomes of the owners of the factors of production rise due to the new money spent in new investment projects. The owners of the factors of production spend this new monetary income partly on consumer goods. Second, during the boom phase new investment projects are undertaken. These projects take longer to yield consumer goods than the projects that were undertaken before. Hence, the flow of consumer goods slows down, resulting in a tendency towards higher consumer goods prices. Third, due to the rising stock prices, people might be induced to sell their stocks and take delight in increased consumption, since they regard their real wealth as having been increased. As a result, profits in stock speculation might not be used for reinvestment but for consumption instead, leading to a consumption of capital.⁴²

The need for ever increasing doses of credit can be explained by the increase in consumer goods prices. If the social time preference rate does not change, stock market participants will not be willing to restrict consumption when consumer prices increase. They will not continue speculation and will sell their holdings to pay for the higher consumer goods prices. However, the stock market prices might be prevented from falling if the stock market participants receive additional money for speculation through additional loans.⁴³ This new credit expansion will lead to a further reduction in the amount of consumer goods and an increase in consumer goods prices, thus increasing the need for an even higher dose of credit to prevent a stock market collapse. It is important to emphasize that, as consumer prices continue to increase, higher – and not merely proportional – doses of credit are required. This is because, at some time, the newly created money is spent on a shrinking amount of consumer goods.

Yet, increasing the doses of credits *ad infinitum* is not possible without destroying the monetary system. As consumers become aware of the ongoing inflation and the fact that the availability of consumer goods is decreasing, they will rush to buy consumer goods. They will sell their stocks for money and sell their money to buy consumer goods. If the doses of credit expansion are increased continuously, the process will finally end in a runaway hyperinflation resulting in the break-down of the monetary system.⁴⁴

Another factor that can cause the stock market boom to collapse is an increase in the nominal interest rate. An increase in the nominal interest rate would endanger the stock market boom (and even more strongly the bond market boom) since the future earnings would have to be discounted at the higher rate. The gross market interest rate contains a premium for the expected price increase. As prices begin to increase, people will expect further price increases and, accordingly, the gross market interest rate will rise. Investors will tend to interpret this as a negative sign. A possible means of watering down this increase in the gross market interest rate is further credit expansion. Since prices will rise further as credit

expansion doses become higher, the doses of credit needed to avert an increase in the nominal interest rate must become even higher. Yet, the likelihood of watering down the increase in the gross market rate over a long period of time is dubious. This is because market participants will most likely not remain ignorant of the increased credit expansion. Anticipating this, they will increase their interest rate bidding.⁴⁵

The stock market boom requires a continually higher increase in amount of credit. When this does not happen, consumer goods prices increase, relative to producer goods prices leading the stock market participants to sell their holdings. The belief in a continuous stock market boom fueled by credit expansion is shaken and a bear market sets in. The distortions between real savings and investments that were caused by the credit expansion become apparent in the stock market where clusters of investment and speculation errors manifest themselves. The stock market is, therefore in a sense, a mirror of the real economy. As a mirror of the real economy, stocks of capital intensive enterprises will suffer higher losses than enterprises that produce consumer goods or goods that are relatively less capital intensive.

4. AUSTRIAN SOLUTIONS – IMPLICATIONS FOR MONETARY POLICY

As we have seen, the credit expansion generated by the central bank leads to boom and bust cycles. This credit expansion can also lead to bubbles in the asset price markets that pose virtually insurmountable problems and a “dilemma” for monetary policy makers. The asset price problem thus causes the debate in the mainstream, discussed in the Introduction, regarding the use of monetary policy in a proactive manner to prick an asset price bubble.⁴⁶

By not pricking the bubble, the bubble grows and endangers the future stability of the financial system and consumer goods prices. By pricking the bubble, however, the central bank endangers the current financial stability. This dilemma can also be illustrated by the “New Economy” bubble (Callahan and Garrison 2003). In 1996, Alan Greenspan spoke of the

“irrational exuberance” of the stock market investors when the economy seemed booming. So he obviously perceived an artificial boom in the stock market. But pricking the bubble with an interest rate hike could choke the boom, endanger financial stability and provoke a recession. Confronted with this dilemma, Greenspan sustained the stock market boom for three more years with further interest rate reductions whenever a stock market crash loomed. Finally, the inflationary pressure in the real economy forced him to increase interest rates and in 2000 the bubble burst.

It should be noted that central bankers, and the economists who provide them advice, find themselves in a classic case of the interventionist dynamic described by Mises (1996). Mises’ theory states that interventions are not stable but must either lead to further interventions or their abolition. The crucial point in Mises’ argument is that an intervention leads to unwanted results from the viewpoint of the interventionist, so that later he either retracts the initial intervention, or tries to fix the problem with subsequent interventions, thereby creating even more unwanted consequences.

The dilemma that asset prices pose for monetary policy is caused by such an interventionist dynamic. This is because the central bank’s monetary policy is an intervention into the monetary system. Additionally, the monetary policy of central banks increases the volatility of credit cycles. At some point these credit cycles lead to the unintended consequence of significant bubbles in asset price markets. Since an asset price crash could endanger the stability of a fragile financial system and put the central bank on the spot, subsequent interventions seem to be necessary. These interventions consist of further manipulations of the interest rate and the central bank’s continuous management of asset prices, combined with stricter regulation of financial markets and the banking sector.

However, as Mises (1996) and later Ikeda (1997) have shown, the dynamics of interventionism allow for an alternative to adding new interventions to solve the problem. This alternative consists in the elimination of the initial intervention that caused the problem.

For our case this would imply the elimination of the central bank. Thus there is a need for a serious consideration of alternatives to central banking. The same Austrian thinkers who have contributed to the ABCT have suggested at least two alternatives to central banking, which both would eliminate the dilemma for monetary policy and reduce to a great extent the danger of asset price bubbles. The first alternative as suggested for example by Selgin (1988), White (1989) and Horwitz (1992) is a system of free banking where the competing banks check each other's credit expansion. The threat to banks of losing reserves holds the potential for monetary inflation and, therefore, for bubbles within narrow limits. Thus, the dilemma for monetary policy disappears for two reasons. First, the possibility of inflation and consequently, of financial bubbles, is very limited. Second, the dilemma for monetary policy disappears as in a free banking system there is no central bank. The second alternative as suggested by Rothbard (1991), Block (1988) and Huerta de Soto (2006) is a 100 percent gold standard which eliminates the possibility for credit expansion altogether. Banks cannot inflate the money supply anymore by credit expansion, which makes the occurrence of financial bubbles highly unlikely. The proponents of the second alternative want to abolish the central bank as well, which rules out a dilemma for monetary policy from the beginning as the policy itself is eliminated..

5. CONCLUSION

ABCT offers important insights that help to explain the causes and effects of asset price booms. Real savings, investments, and consumption become dis-coordinated by the artificial reduction of the interest rate. These perverse effects are felt in the asset price markets as well. Further, in the context of asset markets, psychological phenomena like universal optimism and herding behavior play an important role. Further research, drawing on the insights of behavioral finance on the psychology of bubbles is necessary in order to supplement and enrich the study of ABCT and asset prices.

The error cycle of asset price booms and busts become possible because market participants do not know when the credit expansion has ended, and because market participants believe that credit expansion and central banking stabilization of asset prices are beneficial. Instead of intervening in asset price markets, Austrian theory shows a cleaner way to end the “dilemma” which confronts central bankers and economists who advise them. A free banking system, or a 100% reserve banking system, would solve the problem of asset prices for monetary policy as monetary policy would itself disappear.

Acknowledgments Thanks are due to Francesco Carbone, José I. del Castillo Martínez, Barbara A. Hinze, David Howden, Jörg-G. Hülsmann and an anonymous referee for many helpful comments and suggestions.

References

- Ahmed, E., Koppl, R., Rosser, J. B. Jr., & White, M.V. (1997). Complex Bubble Persistence in Closed-End Country Funds. *Journal of Economic Behavior and Organization*, 32 (1), 19-37.
- Bernanke, B. & Gertler, M. (2000). Monetary Policy and Asset Price Volatility, *NBER Working Paper*, No. 7559, February.
- Block, W. (1988). Fractional Reserve Banking. In *Man, Economy and Liberty: Essays in Honor of Murray N. Rothbard*. Walter Block and Llewellyn Rockwell, eds., Auburn, Ala.: The Ludwig von Mises Institute: 24-21.
- Bordo, M. & Jeanne, O. (2002). Monetary Policy and Asset Prices: Does “Benign Neglect” Make Sense?, paper presented at the conference: „Stabilizing the Economy: Why and How?“ on July 11.
- Bordo, M. & Wheelock, D. (2004). Monetary Policy and Asset Prices: A Look Back at Past U.S. Stock Market Booms. *Federal Reserve Bank of St. Louis Review*, November/December, 86 (6), 19-44, research.stlouisfed.org/publications/review/04/11/BordoWheelock.pdf.
- Borio, C. & Lowe, Ph. (2002). Asset prices, financial and monetary stability: exploring the nexus. *BIS working papers*, No. 114, July.
- Butos, W. (1993). The Recession and Austrian Business Cycle Theory. *Critical Review*, 7 (2-3), 277-306.
- Butos, W. & Koppl, R. (1993). Hayekian Expectations: Theory and Empirical Applications. *Constitutional Political Economy*, 4(3): 303-329.
- Callahan, G. & Garrison, R. (2003). Does Austrian Business Cycle Theory Help Explain the Dot-Com Boom and Bust? *Quarterly Journal of Austrian Economics*, 6 (2), 67-98.
- Carrilli, A. & Dempster, G. (2001). Expectations in Austrian Business Cycle Theory: An Application of the Prisoner’s Dilemma, *Review of Austrian Economics*, 14 (4), 319-330.
- Cecchetti, St. G.; Genberg, H.; Lipsky, J.; & Sushil, W. (2000). *Asset Prices and Central Bank Policy*. London, UK: International Centre for Monetary and Banking Studies.
- Conrad, Ch. & Stahl, M. (2002). Asset-Preise als geldpolitische Zielgröße – das Beispiel der USA. *Wirtschaftsdienst*, 82: 486- 493.
- Garrison, R. (2001). *Time and Money: The Macroeconomics of Capital Structure*. London: Routledge.
- Goodhart, Ch. & Hofmann, B. (2004). Deflation, Credit and Asset Prices, in: Burdekin, R. and P. Siklos (eds.), 2004. *Deflation*. Cambridge University Press, Cambridge: 166-188.
- Greenspan, A. (2002). Opening Remarks. Rethinking stabilization policy, *Federal Reserva Bank of Kansas City*: 1-10.
- Gruen, D.; Plumb, M. & Stone, A. (2003). How should monetary policy respond to asset-price bubbles? *ECB Research Discussion Paper*, November.
- Hayek, F. A. von (1934). The Maintenance of Capital. *Economica*, Vol. II, August, Reprinted in: Hayek, F. A. von, 1939. *Profits, Interest and Investment – and other Essays on the Theory of Industrial Fluctuations*, London, UK: Routledge: 83-134.
- Horwitz, St. (1992). *Monetary Evolution, Free Banking, & Economic Order*. Boulder: Westview Press.
- Horwitz, St. (2000). *Microfoundations and Macroeconomics: An Austrian perspectives*. New York: Routledge.
- Horwitz, St. (2003). The Costs of Inflation Revisited. *The Review of Austrian Economics*, 16 (1): 77-95.
- Huerta de Soto, J. (2003). Nota critica sobre la propuesta de reforma de las normas de contabilidad. *Actuarios*, No. 21, April/May 2003.
- Huerta de Soto, J. (2006). *Dinero, Crédito Bancario Y Ciclos Económicos*. Third Revised Edition, Madrid: Unión Editorial.
- Hülsmann, J.-G. (1998). Toward a General Theory of Error Cycles. *Quarterly Journal of Austrian Economics*, 1 (4), 1-23.
- Hughes, A. M. (1997). The Recession of 1990: An Austrian Explanation. *Review of Austrian Economics*, 10 (1), 107-123.
- Ikeda, St. (1997) *Dynamics of the Mixed Economy: Toward a theory of interventionsm*. London: Routledge.
- Keeler, J. P. (2001). Empirical Evidence on the Austrian Business Cycle Theory. *Review of Austrian Economics*, 14 (4), 331-351.
- Koppl, R. (2002) *Big Players and the Economic Theory of Expectations*. New York: New York University Press and London: Palgrave Press.
- Koppl, R. & Mramor, D. (2003). Big Players in Slovenia. *Review of Austrian Economics*, 16 (2/3), 253-269.
- Koppl, R. & Sarjanovic, I. (2003), Big Players in the 'New Economy'. In: Birner, Jack, ed. *Austrian Perspectives on the New Economy*, London: Routledge, 2003.
- Koppl, R. & Yeager, L. B. (1996). Big Players and Herding in Asset Markets: The Case of the Russian Ruble. *Explorations in Economic History*, 33(3), 367-383.

- Laidler, D. (2003). The price level, relative prices and economic stability: aspects of the interwar debate. *BIS working papers*, No. 136, September.
- le Roux, P., & Levin, M. (1998). The Capital Structure and the Business Cycle: Some Tests of the Validity of the Austrian Business Cycle in South Africa. *Journal for Studies in Economics and Econometrics*, 22 (3), 91-109.
- Levin, P. (1999). *Capital in Disequilibrium: The Role of Capital in a Changing World*. London: Routledge.
- Machlup, F. (2002[1931]). *Börsenkredit, Industriekredit und Kapitalbildung*. Reprint of the First Edition, Frankfurt: Frankfurter Allgemeine Buchverlag.
- Mises, L. von (1912). *Theorie des Geldes und der Umlaufsmittel*. Munich: Duncker & Humblot.
- Mises, L. von (1996). *A Critique of Interventionism*. Revised Edition, Irvington-on-Hudson: The Foundation for Economic Education.
- Mises, L. von (1998) *Human Action, Scholar's Edition*. Auburn: Ludwig von Mises Institute.
- Mueller, A. (2001) Financial Cycles, Business Activity, and the Stock Market. *Quarterly Journal of Austrian Economics*, 4 (1): 3-21.
- Rothbard, M. N. (1991). *The Case for the 100 Percent Gold Standard*. Second Edition, Auburn: Ludwig von Mises Institute.
- Rothbard, M. N. (2000) *America's Great Depression*. Fifth Edition, Auburn: Ludwig von Mises Institute.
- Rothbard, M. N. (2001[1962]). *Man, Economy and State*. Auburn: Ludwig von Mises Institute.
- Schnabl, G. & Hoffmann, A. (2007). Monetary Policy, Vagabonding Liquidity and Bursting Bubbles in New and Emerging Markets – An Overinvestment View. *CEifo working paper*, No. 2100, September.
- Selgin, G. (1988) *Theory of Free Banking: Money Supply under Competitive Note Issue*. Totowa, NJ: Roman and Littlefield.
- Skousen, M. (2005). *Vienna & Chicago: Friends of Foes?*. Washington, DC: Capital Press.
- Stucken, R. (1953) *Deutsche Geld- und Kreditpolitik 1914-1953*. Second Edition, Tübingen: J.C.B. Mohr (Paul Siebeck).
- Svensson, L. (2002). Monetary Policy and Real Stabilization. *Proceedings*, Federal Reserve Bank of Kansas City, 261-312, www.princeton.edu/~svensson/papers/jh02.pdf.
- Wainhouse, C. (1984). Empirical Evidence for Hayek's Theory of Economic Fluctuations. In: Siegel, B. (ed.) *Money in Crisis*, pp. 37-71. San Francisco: Pacific Institute for Public Policy Research.
- White, L. (1989). *Competition and Currency. Essays on Free Banking and Money*, New York: New York University Press.
- White, W. (2006). Is price stability enough? *BIS working papers*, No. 205, April.

Notes

¹ See, for instance, Borio and Lowe (2002), Laidler (2003), White (2006) or Schnabl and Hoffmann (2007).

² See Bernanke and Gertler (2000: 4).

³ Two proponents of this opinion are Svensson (2002: 289) and Greenspan (2002: 5).

⁴ See Bernanke and Gertler (2000:4) and Svensson (2002: 289).

⁵ This view includes Cecchetti et al. (2000), Bordo and Jeanne (2002), Borio and Lowe (2002).

⁶ See Gruen and Plumb and Stone (2002: 13); and Conrad and Stahl (2002: 490).

⁷ See Borio and Lowe (2002: 27), and Bordo and Wheelock (2004: 19); Conrad and Stahl (2002: 490). Skousen (2005: 286) states a growing interest on the Austrian view on asset prices.

⁸ For theoretical accounts of the Austrian business cycle theory see Mises (1912), Rothbard (2000), Horwitz (2000) or Garrison (2001). There has also been a growing literature of empirical studies on the empirical evidence for ABCT. See, for instance, Wainhouse (1984), Butos (1993), Hughes (1997), le Roux and Levin (1998), Keeler (2001) and Callahan and Garrison (2003).

⁹ Note that Austrians working in the monetary equilibrium tradition like Selgin, White or Horwitz would argue that not every increase in the money supply via credit expansion leads to an artificial reduction of the interest rate and causes the business cycle but only those that cause an “excess supply of money.” For the purpose of this paper, however, it is not necessary to settle this difference. The artificial reduction of the interest rate is decisive.

¹⁰ In this essay we focus on prices of financial assets like stocks, bonds and real estate. Investors buy financial assets to collect rent, interest, or dividends, or to sell them at a higher price later. It must be also noted, that as such raw materials can become financial assets at certain times. Accordingly, in the 1970s, for example, investors bought petroleum as a financial asset. Recently, raw materials seem to assume the role of financial assets again.

Bubbles can be initiated in any one of those markets depending on the particular circumstances. Of course, those markets are connected and bubbles (and their stored liquidity) can “swap” from one asset market into the other. For a discussion of the late 1990s see Callahan and Garrison (2003). See Butos (1993) for the real estate bubble in the 1980s.

¹¹ More precisely, the interest rates decline relatively (i.e., they will be lower than they would have been without credit expansion). Hence, the historic fact that in booms the nominal interest rate tends to increase does not affect the analysis. In the rest of this article, all changes should be regarded as relative. And again, the reduction of the interest rate is not necessary since entrepreneurs could anticipate the effect the credit expansion has on prices.

¹² See Huerta de Soto (2006: 278-279). However, future returns will be discounted by the interest rate that is thought to prevail at each respective point of time. The longer the fall in the interest rate is thought to last the stronger will be the effect on net present values. In the end, we are dealing with the illusion of the market participants that the interest rate can be lowered permanently by monetary policy, thereby making the bubble possible.

¹³ See Machlup (2002[1931]: 188).

¹⁴ Historical examples are the boom of the 1920s’ stock market (“New Plateau of Prosperity”) and the “New Economy” boom in the late 1990s where new technologies played a major role. In the 1920s commercially available electrical power and the radio, a new media device, represented the boom while in the late 1990 boom information technology and, more specifically, the internet, another communicational innovation, promised a new age. On the “New Economy” boom see Callahan and Garrison (2003).

¹⁵ See Huerta de Soto (2006: 280-281).

¹⁶ See Machlup (2002[1931]: 95).

¹⁷ In this article I focus on analyzing a closed economy. However, in the real world, the optimism can spread to other countries leading to another flow of purchasing power to the asset price markets stabilizing the exchange rate (which is psychologically important) in spite of deficits in the balance of trade.

¹⁸ See Huerta de Soto (2006: 362). The new international accounting standards (IFRS) greatly improve this feedback mechanism since assets have to be accounted for with their market value (instead of the purchase price) which increases during an asset price boom. The IFRS breaks with the prudence and caution of the institution of accounting practices that have evolved freely for more than a thousand years in the market. See also Huerta de Soto (2003).

¹⁹ This effect is sometimes called “wealth effect.” See, for example, Goodhart and Hofmann (2004: 175).

²⁰ On the “overconsumption” during the “New economy” boom see Callahan and Garrison (2003).

²¹ For the theory of big players see Koppl and Yeager (1996) and Butos and Koppl (1993) and Koppl (2002). For empirical studies on the theory of big players see Ahmed et al. (1997), Koppl and Sarjanovic (2003) and Koppl and Mramor (2003).

²² As Koppl (2002: 131) states about the actions of Big Players in general: “One day’s large price change may be imagined to be the result of the Big Player’s actions, or a movement to which the Big Player is likely to respond.”

²³ In fact, the manager faces a prisoner’s dilemma. If he does not follow his fellow managers, his relative performance will deteriorate. If he increases his investments as well, he will profit from the credit expansion during the boom. Thus, the best course of action for him is to increase investments even though he knows that he is participating in an artificial boom. See Carilli and Dempster (2001) for the prisoner’s dilemma faced by entrepreneurs and banks in a business cycle.

²⁴ For an empirical case study that emphasizes the prediction of investors on what the Fed would do next, see again Callahan and Garrison (2003).

²⁵ See Stucken (1953: 34-35).

²⁶ See on the higher probability of hiring financial managers during times of inflation also Horwitz (2003: 87).

²⁷ I am grateful to an anonymous referee for bringing this very good point to my attention.

²⁸ Concerning the illiquidity of human capital, see Lewin (1999: 187-89).

²⁹ The same analysis applies *mutatis mutandis* for a real estate, bond market, or raw materials boom.

³⁰ See Machlup (2002[1931]: 54).

³¹ However, market participants might perceive their wealth in a different manner and consequently change their time preference rate. In this case, the structure of production would be changed in a sustainable way. However, there would still be no artificial boom.

³² See Huerta de Soto (2002[1931]: 361).

³³ See Machlup (2002[1931]: 100).

³⁴ See Machlup (2002[1931]: 51-53).

³⁵ See on the IPO mania during the late 1990s stock market boom Callahan and Garrison (2003: 85).

³⁶ It is also conceivable that stocks are sold to finance current consumption. In this case, consumer goods prices rise and resources will be shifted from longer investment projects to the consumer goods industries. There is a tendency towards a shortening of the structure of production. This can induce the recession or limit the amount of further malinvestments.

³⁷ Again we concentrate on the stock market. But again, the analysis applies *mutatis mutandis* for the bond and real estate markets.

³⁸ A possible, but improbable, steady decline of time preference rates and a consequent increase in savings and decline of the interest rates would only enable a boom in capitalist goods industries. The increase in savings would be depressing for consumer goods industries. Of course, increases in the money supply, for instance, newly mined gold in a gold standard would increase stock market prices as well. However, this would hardly be considered a sustained stock market boom where stock prices increase relative to commodity prices. The only possibility imaginable is the occurrence of an irrational optimism of virtually all market participants, erring on future earnings and interest rates. The only possibility for such clusters of entrepreneurial errors seems to be caused by a credit expansion. For the problem of clusters of errors, see Hülsmann (1998).

³⁹ See Machlup (2002[1931]: 96).

⁴⁰ Professional investors are faced with a prisoner's dilemma. If they do not participate in the artificial asset price boom, they might miss considerable profits in the credit driven boom. Thus, they participate in the boom and fuel the boom. Professional investors can also cause an asset price boom, when they invest newly created money anticipating a credit driven asset price boom. See on the prisoner's dilemma and ABCT also Carilli and Dempster (2001).

⁴¹ For the role that illusion plays in error cycles, see Hülsmann (1998).

⁴² See Hayek (1934: 133).

⁴³ See Machlup (2002[1931]: 95).

⁴⁴ See Rothbard (2001[1962]: 875-877).

⁴⁵ The reasons why interest rates have not increased substantially in the last years, notwithstanding the credit expansion, might be twofold. First, the liberalization of the foreign trade of former communist or socialist countries China and India have led to an increase in the production of consumption goods. Second, are the mercantilistic policies of China and Japan which have increased their dollar reserves. The combination of both have led to relatively stable consumption good prices which otherwise would have increased less or even fallen otherwise. Hence, interest rates did not explode despite the credit expansion. The price premium was therefore somewhat "hidden" since the credit expansion was partly compensated by the above mentioned factors. I owe this insight to Guido Hülsmann. Productivity increases or growth can therefore hide the "price premium" and make long booms possible.

⁴⁶ This dilemma was recognized earlier. As Benjamin M. Anderson (1979 [first edition 1949]: 216) states about the Federal Reserve board in the late 1920s: "The Federal Reserve authorities from early 1928 on pursued an inconclusive policy based on *three partially conflicting motives*: (a) the desire to restrain the use of credit for stock market speculation; (b) the desire not to tighten money in foreign countries and not to pull in more gold from abroad; and (c) the desire not to let money grow tight in business uses at home. The conflict among these policies meant that the efforts at restraint were handicapped and inconclusive, and that the wild speculation ran on for a year and nine months after the restraining efforts began." (Italics added). Anderson (1979: 209-210) himself seems to propose a proactive stand as he critiques Gustav Cassel for arguing that the central bank should not take stock market booms into account and tighten credit in response to them: "We were troubled also in 1928-29 by the weird doctrine of Professor Gustav Cassel of Sweden (who had many American followers as well as wide vogue in Europe) that it was the business of central banks to maintain a fixed commodity price level, and that central banks must not concern themselves with the stock market and must not tighten credit to restrain stock market excesses because that would reduce commodity prices." See also Wicker (1966: 118, 129 and 131) for the different view within the Federal Reserve Board concerning a proactive or reactive stand towards the stock market speculation.