

The Behavior of Hedge Funds and the Theory of the Business Cycles

Gerhard Lechner
FH Joanneum, Graz, Austria

The paper aims to find whether there is a typical theoretical behavior of hedge funds with specific strategies in the different phases of the business cycle. There are only few papers which have analyzed the empirical behavior of hedge fund during the different phases of the business cycles. The method used in this paper is the construction of an ideal type which is based on the famous concept of Max Weber. The ideal type is composed of individual phenomena, some of which are diffuse and discrete and others of which do not even exist in reality. Viewpoints are accentuated one-sidedly and synthesized into a unified analytical construct. However, the conceptually pure ideal type cannot be found (exactly) anywhere in reality. The reason for a theoretical examination is that the empirical studies just show that there is a relationship between the variables, but do not have an explanatory character. The assumption is that, for many hedge funds strategies, an ideal type behavior of hedge funds exists for the different phases of the business cycles so that the behavior has definitely a cyclical aspect.

Keywords: hedge funds, business cycle, ideal type, financial cycles, hedge fund strategies

The behavior of the returns of equities and government bonds in the course of various economic cycles has been empirically shown very well. However, there are only a few empirical studies examining the performance of hedge funds in the respective economic cycles. From a theoretical perspective, only a few works can be found dealing with the connection of financial cycles and business cycles. The approach of Irving Fisher's (1933) debt-deflation theory and the financial instability hypothesis of Hyman P. Minsky (1979) are very famous.

The central research question of this paper is if there is a theoretical relationship between the behavior of hedge funds and the business cycle. Linked to this central question, there has to be an answer to the question of how financial cycles and business cycles are linked from a theoretical perspective.

There are two empirical studies by Racicot and Theoret (2013, 2016) dealing with the subject of cyclical development and hedge funds strategies. The two authors (Racicot & Theoret, 2013) discovered that there is a relationship between the variables of industrial production, unemployment rate, rate of vacancy, and the cyclical behavior of hedge funds. In the study conducted in 2012, the authors pointed out that there were no previous studies on this topic. The study also revealed that the alpha of hedge funds was responsive to the business cycle, which meant that alpha was increasing during expansion phases and decreasing during downturn phases.

Corresponding author: Gerhard Lechner, Ph.D., lecturer, Department of Banking and Insurance, FH Joanneum; research fields: international financial markets, financial economics, monetary policy, alternative investments, ethical banking and history of economic theory.

Additionally, the beta of hedge funds displays cyclical aspects. The remaining question for the authors is if hedge funds reinforce the amplitude of economic cycles. In a more recent study, Racicot and Theoret (2016) examined the behavior of hedge funds during phases of uncertainty and found out that the behavior was strongly asymmetric and the beta was decreasing during times of uncertainty. A new result of this study is that the procyclicality seems to have declined in the hedge fund sector during the last decade.

In addition, a paper by Ang, Gorovyy, and van Inwegen (2011) showed that the leverage of a hedge fund was related to the interest level and the asset prices. When the interest falls, the leverage increases. The same applies to increasing asset prices. Therefore, the leverage seems to exhibit a cyclical aspect.

The question is now why a theoretical examination of the cyclical behavior of hedge fund is needed, given the fact that the relationship has already been proved by empirical studies. The reason for a theoretical examination is that the empirical studies just show that there is a relationship between the variables, but do not have an explanatory character. The aim of the study is thus to theoretically explain the behaviour of hedge funds during the different periods of the business cycle. It will be shown that a correlation with the business cycle does actually not exist in all strategies. However, the most important strategies (global macro funds, long/short equity) definitely display a relationship to the business cycle from an ideal type perspective. Of course, this does not mean that managers exclusively base their strategies on economic expectations. A technical analysis (trend-following models) and other quantitative models also play a crucial role in these strategies. However, the trend is driven by economic factors.

The paper starts with the methodology used. As shown in the second part, the paper is mainly theoretical and only aims to represent a well-rounded train of thought. The ideal-type method especially attributed to Max Weber is applied, because it is the most suitable method to represent such a complex issue. The idea is to attempt to approach the paper's central question step by step. The third section examines the ideal-type business cycle and already includes the variable of the stock market, a variable that is central to international financial markets. The fourth part focuses on the behavior of monetary policy during the individual phases of the simple business cycle. The fifth part investigates the effect of the economic development and monetary policy on the leverage of hedge funds, since the leverage is of crucial importance to the development of hedge funds. The sixth part briefly introduces the most important hedge funds strategies, and the seventh part is dedicated to answering the research question of the influence of the economic development on the behavior of hedge funds.

Methodology

In order to explain the hedge fund strategies in the different phases of the business cycle, the concept of an ideal-type should be applied. Ideal types were used by famous economists and sociologists, like Joseph Alois Schumpeter, Max Weber, John Stuart Mill, and Karl Marx. Nowadays ideal type schemes are not often used in economics. Especially the mainstream rejects this method. Clarke (2015) recently wrote a paper in which he referred to the use of ideal types by Weber, Mill, and Marx. He distinguished between idealization and ideal types. Idealization is a mental process which is employed "in order to simplify and organize empirical information to enable the use of laws and models to explain that information". For him, ideal types have been particularly important in the methodology of social sciences and are associated with Max Weber.

The present paper tries to create such an ideal-type scheme to explain the theoretical behavior of hedge funds during the economic cycles. The question to answer is why this method has been chosen in this paper. In

order to understand the real causal relationships, an unreal causal relationship is constructed. The latter is the most important practical benefit of an ideal scheme. That means an ideal type scheme has an explanatory character concerning the causal relationship of economic aspects.

Callahan and Horwitz (2010) argued that an ideal type ought to have two sorts of adequacy: (1) an explanatory character; and (2) a causal adequacy. Causal adequacy means that there are cases in reality which are very similar to the ideal type scheme. This can be demonstrated through empirical studies. Fritz Machlup (1960), an Austrian economist, differentiated between ideal type and “realty pus”. The latter refers to a scheme which is much closer to reality than the ideal type.

Historically, ideal type schemes often improved the understanding of certain economic and sociological aspects where a theory is missing. An example is the “theory of economic development” of Schumpeter (2012). Shionoya (2005) showed that Schumpeter used the ideal type concept to develop his famous theory of economic development. The difference between an ideal-type scheme and an economic model is that a model is axiomatic. Kesting (1997) believed there was no difference in principle between an axiomatic approach (abstract-deductive approach) and an ideal type approach as both imply setting up general laws on the basis of assumptions. For Kesting (1997), the ideal-type is implicitly abstract-deductive, which means that it is something like a sketch of an abstract-deductive theory.

In his article *Die “Objektivität” sozialwissenschaftlicher und sozialpolitischer Erkenntnis*, Max Weber (1973) developed the ideal type. The ideal type is composed of individual phenomena some of which are diffuse and discrete and others do not even exist in reality. Viewpoints are accentuated one-sidedly and synthesized into a unified analytical construct. However, the conceptually pure ideal type cannot be found anywhere in reality. The ideal type is an analytical construct of relationships thought to be without contradiction, a utopia that is achieved through conceptual accentuation of certain elements of reality.

Max Weber (1973) also described the ideal type as a theoretical construct of an ideal limiting case. It departs from reality, yet, can be compared and referred to by reality. Ideal types create precise concepts and clear means of expression. They are used as terminological, classificatory, systematic, and heuristic. An ideal type is already present whenever one speaks of the essence of a thing. When it comes to essences, Weber (1973) spoke of “relative and problematic validity”, which, however, has a very high heuristic value.

The task now is to determine how close or how distant reality is to the ideal image in each individual case. It is precisely in social sciences that the form of the ideal type is subject to constant change. The basis for this is that any understanding of a subject is incomplete. All acts and results of thinking are only provisional, destined to be replaced by new empirical results. This means that, when an ideal type is empirically refuted, a new ideal type will or should gradually form. This is how change and progress occur in social sciences. Developments themselves can also be constructed as ideal types, and these constructions can have a very considerable heuristic value. However, a risk that ideal type and reality may be conflated does exist. Development is an important aspect for the paper, because the theory of the business cycle is a dynamic rather than a static concept.

The Business Cycle and Financial Cycles

Before the ideal type scheme of this paper is described, a short overview of business cycle theories seems to be appropriate. Over the years, several business cycle theories have been developed. Robert F. Mulligan (2013), for example, examined the difference among the Real Business Cycle Theory (RBC), the Austrian Business Cycle Theory (ABC), and Minsky’s (1979) Financial Instability Hypothesis (FIH). RBC attributes

business cycle to “random, unexplained, and unobservable, changes in factor productivity”. Business cycles are caused by productivity shocks. The most important representatives of that theory are Finn E. Kydland and Edward C. Prescott (1982). A basis for ABC is the works of Knut Wicksell (1936) and F. A. von Hayek (1966). The term natural rate of interest was coined by Wicksell (1936), who claimed that the natural rate of interest was compatible with an equilibrium in the economy. When interest rates fall below the natural rate of interest, inflation will be higher and vice versa. Wicksell’s (1936) theory was the basis for the works of Friedrich August von Hayek and Ludwig von Mises, who was also a representative of the ABC. For the ABC, changes in interest rates cause business cycles. The FIH of Minsky proceeds on the assumption that, during an expansion phase, the firms’ leverage increase, due to euphoria. This leads to bubbles on the asset markets which burst in the following downturn period. As a consequence of the bursting of the bubble, banks get very restrictive on credit, and the economy will suffer from de-leveraging. The government and central banks have to intervene to control the situation.

The business cycle theory of Schumpeter (1939) and Nikolai Kondratieff (2013) is very important for this paper. For Schumpeter and Kondratieff, business cycles were caused by exogenous innovations which induce long waves of expansion that consist of expansion periods and downturn and/or recession periods.

In addition to the theories described above, there are other important business cycle theories. These include the Keynesian and Post-Keynesian theories and the Monetarist theory. Yet, these theories are not so important for this paper, which is why they are not discussed here.

The ideal type scheme described in this paper can be interpreted as a synthesis of the theories of Schumpeter and Kondratiev, ABC, and the FIH of Minsky.

Some basic assumptions concerning the business cycle need to be given. Economists like Samuelson (2010) typically divided business cycles into the recession period and the expansion period, yet, there was no exact formula of how a business cycle might develop. This paper defines the ideal-type scheme of the business cycle as follows: recession phase, expansion phase, boom phase, and downturn phase.

Before the analysis of the ideal type scheme, three key definitions have to be made. The term real potential output growth plays a very important role in this simple ideal-type business cycle model and means that all economic resources are used with a given state of technology and population size. It is also assumed that it is in line with the long run average of actual real GDP (Gross Domestic Product) growth. The next term is optimal inflation, which is currently assumed by the major central banks at 2%. Finally, the definition of the NAIRU (Non-Accelerating Inflation Rate of Unemployment) plays a major role. The NAIRU corresponds to the unemployment rate which is reached when all resources of the economy are fully stretched.

The first phase in the ideal-type scheme is the recession phase. One definition of a recession is that real GDP growth declines for two consecutive quarters. When a recession occurs, the economy is typically far away from the potential output growth. The recession phase corresponds to high unemployment and low inflation. During the recession phase, the actual unemployment rate has risen much above the NAIRU and the actual inflation rate has fallen much below the optimal inflation rate. If the economy remains in an environment of high unemployment and low inflation for a very long time, a phase of depression in the business cycle could arise, though a depression does not happen very often. Therefore, a possible depression phase will not be considered within the scheme.

As a next step, it is assumed that an expansion phase follows the recession. In the first stage of an expansion phase, enterprises are receiving more orders and inventories are falling. The consequence of rising

business orders is an increasing business optimism of the entrepreneurs. The first variable typically reacting to rising orders and more business optimism are the financial markets, like equity markets, which tend to anticipate the expansion phase. There are many empirical studies about the relationship between equity markets and the economic cycle. For example, Duca (2007) found that nominal GDP can be influenced by equity prices. According to Duca's (2007) study, which tested very important economies like the US, Great Britain, France, Germany, and Japan from 1957 to 2005, equity markets can be regarded as a leading indicator for GDP. However, in that scheme rising equity markets are not regarded as a leading indicator for business orders and business optimism. But rising business orders are explained exogenously. That means equity markets are reacting immediately to the information that business orders are rising and not vice versa. From a theoretical perspective, it does not make sense to assume that equity markets are the leading indicator and business orders are explained endogenously. Based on their nature, business orders, business optimism, and financial markets are 6-12 months ahead of the real cycle. In other words, real GDP growth figures show the expansion phase 6-12 months later than equity markets are pricing in a recovery in the economy.

GDP growth is the next variable to be considered. In an expansion phase, actual real GDP growth accelerates at least to or even above potential output for many quarters, which means that the long run trend of actual real GDP growth is mean reverting to the long run trend of real potential GDP growth. The consequence for the variables of unemployment and inflation is the following: When GDP growth is at or above the potential output for many quarters, the actual unemployment rate starts to fall and actual inflation rate starts to rise. There is also a mean reversion process concerning these two variables, but with a certain lag in comparison to GDP growth.

The questions to be asked now are why the unemployment rate and inflation are lagging indicators. The entrepreneur is becoming more and more optimistic during the expansion phase and the capacities are utilized more strongly. At some point the entrepreneur has to hire more personnel to satisfy the rising orders, and the unemployment rate begins to fall. Inflation also starts to rise due to rising commodity prices and tighter labor markets. Despite the fact that the unemployment rate is falling and the inflation rate is rising, the unemployment rate is still above the NAIRU and the inflation rate is below the optimal inflation rate (which is around 2% according to the definition of the major central banks in the world) at the beginning of the expansion phase.

The next phase is the boom phase, in which the peak of the cycle is reached. During the boom phase, the economy still expands at or above potential output. However, the actual long run real GDP growth rises above the potential real GDP growth, the actual unemployment rate is falling below the NAIRU and the actual inflation rate is rising above optimal inflation. These assumptions are fully in line with the assumptions regarding the short-term Phillips curve. The upward trend on the equity markets is still intact during the boom phase.

The last phase in the cycle is the downturn phase. At the peak of the cycle, business orders start to decelerate or even fall and business optimism is worsening. Again the information of decelerating orders is immediately reaching the financial market participants. In this phase, equity markets are starting to fall and the market is remaining in a downturn trend until the cycle is reentering into an expansion phase. Later in the downturn phase, the actual GDP growth falls below the potential GDP growth rate and can even become negative. There is again a mean version of the long run average actual GDP growth. The unemployment rate and the inflation rate are reacting as the slowest of all variables. Yet, unlike in other phases, the unemployment

rate is rising and the inflation rate is falling during the downturn phase. In the advanced stage of the downturn phase, the actual trend of GDP growth is falling below the potential GDP growth rate. With a certain lag, the actual unemployment rate is rising above the NAIRU and the actual inflation is falling below the optimal rate. This process is in place until the bottom of the cycle is reached.

The goal of this simple ideal-type business cycle model is not to solve the problem of the causality of the business cycles. It is assumed that the different phases repeatedly appear without any reference to the explanations of the business cycles in the literature.

The Business Cycle and Monetary Policy

The first relevant issue concerns the neutral policy rate, called natural rate by Wicksell. The neutral policy rate is the interest rate given by an equilibrium in the economy. An equilibrium exists when all resources of the economy are utilized and when the natural output is reached. Ideally the current unemployment rate is equal to the NAIRU and the optimal inflation rate is assumed. "One often made claim is that, in the long run, the neutral rate should equal the sum of the growth rate of potential real GDP plus the target inflation rate" (Anderson, Buol, & Rasche, 2004). In other words, the neutral rate of monetary policy is approximately equal to the long run trend of nominal GDP growth.

The behavior of monetary policy during the different phases of the business cycle is regarded very important in this study. As a starting point, an economy below potential output, for example, in a recession period, is taken. The monetary policy will be expansive, which means that the current key interest rate of the national bank is much lower than the neutral rate. This condition could lead to better business optimism, which typically indicates a steep yield curve. Low interest rates could directly affect the economy via investment. However, as mentioned before, the causality or the drivers of the business cycle cannot be regarded as the major goal of that scheme.

Investment tends to increase in such an environment, firstly, due to improving business expectations and, secondly, because of low cost on investment. As a result, the economy will recover from recession and an expansion phase will be the consequence. The actual real GDP will be brought closer and closer to the long run potential level. As the actual unemployment tends to fall later in the expansion phase and inflation also tends to rise later, the monetary policy will stay expansive for a longer time. When the actual unemployment rate starts to fall, the tightening cycle of the Central Bank begins. Inflation and the unemployment rate are the major goals of the Central Bank, and therefore, a lag in the Central Bank policy can be observed.

At an advanced stage of the expansion phase or in the boom phase when actual trend of GDP growth is above potential GDP growth, the monetary policy will be tightened more aggressively. In the boom phase of the economy, monetary policy will turn restrictive. When the peak of the cycle is reached, the key interest rate will be much above the neutral level and the yield curve is inverse. Investment is now expensive, and the enterprises have overcapacities.

The downturn cycle starts with falling orders and worsening business expectations. With a certain lag, the actual trend of GDP growth starts to fall, and there is again a lag concerning the reaction of the unemployment rate and inflation rate. The Central Bank will ease its policy when the unemployment rate starts to rise and inflation starts to fall. Yet, when the economy is in a recession, the Central Bank is likely to react quickly and aggressively with rate cuts.

Hedge Fund Leverage and Monetary Policy

In this section, an ideal-type behavior of hedge funds concerning the leverage is created. Hedge funds increase their leverage when the funding costs are declining and the business optimism is rising. Business optimism is important because banks, which are the biggest creditors of hedge funds, will lend money to the hedge funds only when they are optimistic concerning the market development. The most widely used form of credit to hedge funds is the prime brokerage. The prime broker provides a form of margin financing, generally at either the position or portfolio level. The credit conditions could change immediately when the prime broker is not optimistic concerning the market development (Barbarino, 2009).

At the end of the downturn cycle, short term interest rates reach their lowest point. At this stage, hedge funds will start to increase their leverage significantly due to low funding costs and improving business expectations. This corresponds to rising market prices on the financial markets. When the upswing is proceeding and interest rates are hiked by the Central Bank, hedge funds will have to reduce their leverage due to rising costs and less business optimism. In the downturn phase, the willingness of the banks to lend money to hedge funds decreases, and as a consequence the leverage falls.

This ideal-type scheme has been confirmed by empirical studies on the behavior of hedge funds. The mentioned study of Racicot and Theoret (2013) showed that the alphas and betas of hedge funds were pro-cyclical, and another study of Ang et al. (2011) discussed the counter cyclical behavior of the leverage of hedge funds. According to the study of Ang et al. (2011), the hedge fund leverage tended to be predictable by economic factors. In particular, decreases in interest rates and rising market values predict increases in hedge fund leverage. The study of Racicot and Theoret (2013) revealed that the alpha of hedge funds was increasing during upswing cycles on the market. During downturn cycles the alpha is decreasing, which shows that there is a cyclical response of the hedge fund performance. However, a cyclical response to the performance must not be confused with a negative performance. It seems to be clear from these two studies that the leverage has implications for the performance.

Hedge Fund Strategies

This section gives a short overview of the most important hedge fund strategies: long/short strategies, event-driven strategies, global macro strategies, and multi strategies. Long/short strategies and multi strategies remain the most popular fund strategies, accounting for around 50% of the total number of funds within the sample. In general, there are two different types of strategies. First, some strategies are designed to be market neutral, which means a very low correlation to the overall market, and secondly some strategies are directional, which implies a strong correlation to movements on the overall market or on a specific market (Anderson et al., 2004). The hedge fund strategies, which are discussed below, also have an ideal type character. In reality, of course, hybrid forms can be found. It should also be mentioned that the selected strategies represent only an arbitrary choice.

Relative Value and Long/Short Strategies

The first strategy to be discussed is the long/short strategy, also called arbitrage strategy. Kaiser (2004) distinguished among fixed income arbitrage, convertible bond arbitrage, and other arbitrage. Garbaravicius and Dierick (2009), Connor and Woo (2004) and Eichengreen, Mathieson, and Sharma (1998) used very similar definitions for the mentioned hedge fund strategies.

The fixed income arbitrage can be regarded as the classical long/short strategy and can be divided further into credit spread arbitrage and yield-curve arbitrage. The fixed income arbitrageur wants to profit from price anomalies between similar interest rate securities (e.g. government bonds and corporate bonds). Most managers following long/short strategies trade globally with the goal of generating steady returns with low volatility. This category includes interest rate swap arbitrage, government bond arbitrage between different countries (for example developed countries versus emerging markets), forward yield curve arbitrage, government vs. corporate bonds and bank bonds arbitrage, Mortgage Backed Securities (MBS), and high-yield (companies with a non-investment-grade rating) arbitrage.

Corporate bond arbitrage involves making a bet on the evolution of the spread between a corporate bond or a corporate bond index (investment grade or high yield) and a government bond or a government bond index. The funds are, for example, long corporate bonds and short government bonds with the same maturity. In this case, the hedge fund manager believes that the spread will tighten.

With a yield-curve strategy, the manager of a hedge fund tries to profit from expected developments on the yield curve. The manager can, for example, be long with short-term maturities and short with long-term maturities if the manager believes in a steeper yield curve and vice versa. The strategy can also involve looking for price imperfections on the futures and cash markets. Hedge funds often have positions in the futures and swaps markets as an alternative to buying or selling bonds directly.

Long/Short Equity

Another strategy is the long/short equity. When using the long/short equity, managers are buying undervalued equities (long-strategy) and are selling overvalued equities (short-strategy). The long/short equity strategy can be divided into equity hedge, equity non-hedge, and short selling strategies.

With the equity hedge strategy, the manager seeks to hedge an equity portfolio with options, futures, and short selling. The portfolio as a whole could be net-long, net-short, or neutral. The net-position depends on the market environment. The manager will be net-long in equities where he/she expects an outperformance and net-short where he/she awaits an underperformance.

Managers of equity non-hedge strategies use a similar strategy to traditional equity managers with the additional possibility to use leverage. The managers of this strategy concentrate on stock picking.

Managers using short selling strategies try to profit from falling equity prices. He/she sells equities which he/she does not own and profit from falling prices. The short seller makes an agreement with a buyer of certain equities for a specific date and now hopes that the equity price will fall below the agreed price because then, he/she could buy the equities at a lower price on the expiration date. Besides, the short seller can earn interest when he/she holds the money as a position in cash or in government bonds. In many cases, the short seller has to hold the money for securing a credit.

Event-Driven Strategies

The event-driven strategies are also classified as special situation strategies. Hedge funds speculate on the fact that a special event will have an impact on the markets over a short period of time. Examples are mergers and acquisitions, financial restructuring of firms, spin offs, buybacks, earning surprises, and more. The portfolio of an event-driven manager may shift in majority between the merger arbitrage and the distressed securities. However, there are managers who may take a broader scope. The instruments used for this strategy are long and short, options, preferred stocks, and debt securities. Leverage is also used by some managers.

The distressed securities strategy focuses on the securities of companies, banks, or even governments experiencing financial difficulties. During the financial crisis, many bank securities and non-investment grade companies were distressed. The spreads of the subordinated and high yield markets rose to historical highs. The hedge fund managers now had the possibility to bet on lower spreads, because the aid programs of the governments could prove to be successful.

Hedge funds following a distressed security investment strategy are not limited to a particular asset type. There are some hedge funds focusing on distressed securities in the entire market. Other funds are specialized on more specific sectors. The hedge funds are active in bonds and equities, and they also use options and futures to go long and short. However, it is also conceivable that the hedge fund grants a credit to the distressed enterprise.

The second important event-driven strategy, the merger arbitrage, treats possible mergers or hostile takeovers of firms. The hedge fund manager aims to purchase shares of the firms facing a merger or a hostile takeover and sells shares where a merger or a takeover is targeted.

Global Macro Strategies

Global macro strategies are one of the oldest strategies in the hedge fund universe. Macro strategies include the carry trade strategy, currency macro strategy, investment in emerging markets, and market timing strategy. They have the aim to realize macroeconomic changes and to use these changes for a better positioning on the markets. The fund managers are analyzing macroeconomic forecasts and possible political developments.

In a currency macro strategy, the fund is invested in currencies which the manager expects to be undervalued or overvalued. The managers borrow money from a currency for which they await depreciation and buy the currency expected to appreciate. They buy, for example, government bonds with a fixed coupon. The most famous example of a currency macro manager was George Soros, who was responsible for the resignation of the Bank of England from the European Monetary System. Soros invested several billion USD (USA dollar) against the British Pound, which was overvalued according to macroeconomic data. As a consequence, the Bank of England quit from the European Monetary System and the British Pound depreciated sharply. Soros made a profit of around one billion USD.

Another global macro strategy is the investment in emerging markets. The managers bet on price developments in these markets via equities and/or bonds. They are forced to be long only because it is not possible to be short in most emerging markets. The managers follow a buy and hold strategy. The profit results from gains in the national currency and gains from rising equity or bond prices as well as a coupon or a dividend.

Hedge funds with a market timing strategy are often changing the markets and the asset classes. The strategy is to be overweighed in markets with an uptrend and to be undervalued in markets with a downtrend. These funds are frequently using trend following models with buying and selling signals. Typically they are changing between money market funds and investment funds. If there is a buying signal in a certain market, money goes from the money market funds to the investment funds and vice versa.

Global macro commodity funds are invested in commodities or in futures of commodities. Examples are oil, coffee, sugar, and metals. The funds have the possibility to be short or long in the whole market or for example long metals and short soft commodities. If the manager wants to be long or short in the whole commodity market, he/she can use a future of a broad commodity index.

Multi Strategies (Fund of Hedge Funds)

With multi strategies, the managers simply use two or more of the different strategies mentioned above. Multi strategies are mainly used by funds of hedge funds due to diversification deliberations. Funds of hedge funds follow either the dedicated strategy approach where the fund invests in specific funds strategies mentioned above or follow a diversified approach where the fund of funds combines different strategies. The majority of the fund of funds pursues the diversified approach.

Behavior of Hedge Funds During the Business Cycle

This chapter examines the ideal-type behavior of hedge funds during the various phases of the business cycle. First, the global macro fund, then the long/short equity strategy and the event-driven strategies, and finally the multi strategies are discussed with regard to the business cycle. The following remarks can be interpreted as the results of the ideal-type scheme.

Global Macro Strategies

The global macro fund will be long during a phase of an ideal-type upswing in economically sensitive markets, such as shares and raw materials. On the other hand, this fund will be short in risk-averse markets, such as government bonds of developed countries. For simplicity, it is assumed that non-risky assets are government bonds of developed countries. All other assets are risky assets. At the beginning of an upswing phase, the monetary policy is still very expansive, which is why this fund can incur debts favorably. This also means that the leverage will increase during an upswing phase. Hedge fund managers will generally tend to maintain this strategy until the boom phase of the business cycle (long risk and short risk averse products). This applies to both fundamentally oriented managers as well as trend followers (market timing strategy).

From an ideal-type point of view, the global macro fund tends to go long with government bonds and short with equities and commodities when the economy reaches the peak of the cycle. This corresponds to higher key interest rates. Hedge funds will also be forced to reduce the leverage. The managers of global macro funds immediately basing their strategies on macroeconomic considerations are directly dependent on the expectations concerning the business cycle. The managers of the market timing strategy follow the business cycle indirectly via the financial market development.

During the downturn phase or in a recession, the global macro fund remains as short risky assets until the Central Bank drops the key interest rates significantly under the neutral level. A steep yield curve as well as high unemployment and low inflation is a sign that the downturn cycle is finished. The funds change their positions again when business orders and business expectations improve again. Compared with the upswing phase, a downturn phase does not take long, because the monetary policy and fiscal policy possibly take drastic actions to keep the downturn phase as short as possible.

Special cases of global macro funds are funds that focus on emerging markets and currencies. It is simply assumed that emerging markets follow developed countries concerning the real cycle. However, the potential output growth will be higher because the growth opportunities are better in emerging countries. As a result, the neutral interest level of the Central Bank will be higher than in developed countries. The consequence is that emerging markets will have strong capital inflows in upswing periods and capital outflows in downturn or recession periods. The currencies of these markets are under appreciation pressure in upswing periods and

under depreciation pressure during downturn periods. In a downturn period, the manager will try to be long with government bonds of developed countries and if possible short with government bonds of Emerging markets. During upswing phase, the strategy will be long with emerging market bonds and short with bonds of developed markets. The manager thus relies on a tightening of the spread during an upswing phase and a widening of the spread in the downturn phase.

Concerning the currency macro strategy, it has to be noted that there is not necessarily a connection between the behavior of the hedge fund manager and the business cycle. At least when the currency strategy includes only currencies of developed countries. The connection of emerging market currencies and the behavior of hedge fund managers has already been discussed above.

Long/Short Equity

The strategy examined next with regard to the business cycle is the long/short equity strategies. In the equity hedge strategy, the fund manager will be in a net long position in an expansion phase. In addition, there is the increasing leverage, due to the favorable interest level. As soon as the business activity has reached its peak, the managers will shift their position to net short and will stay in this position until there is a prospect of a turning point in the business activity. The leverage will decrease during the downswing phase.

In the equity non-hedge approach, the managers try to achieve their performance through stock picking. Stock picking is very often an economically sensitive issue. In the case of an expansion, the manager tends to take a long position regarding economically sensitive shares from, for example, the industry and metals sectors.

In the strategy non-hedge approach, the managers can also strengthen their position in the upswing phase through leverage. This strategy gets more complicated, however, when it comes to the downturn phase. Firstly, the manager will reduce the leverage due to the increasing costs and will have to create a net short position in the overall portfolio. This mostly happens through future contracts on equity indices (Equinox Funds, 2015).

Empirical studies regarding the performance of long/short equity funds show that they exhibit a negative performance in strong bear markets. However, the volatility of these funds is generally lower than that of normal equity funds (Blackstone Private Wealth Management, 2013). Yet, it must be mentioned that the study just mentioned addresses all long/short equity funds. Specifically the equity non-hedge strategy should be closer to normal equity funds concerning its performance. The volatility should also be higher than for long/short equity in total.

The short selling strategy also exhibits a connection with the economic development. The manager of this strategy will be especially successful in downturn phases of the business cycle, because the short selling of shares is easier in downturn phases.

Relative Value and Long/Short Strategies

As a rule, relative value strategies, which are part of the long/short strategies, are characterized by a connection in the behavior of hedge funds with the business cycle. In the credit spread arbitrage strategy, the manager speculates on the credit spreads of banks, corporates, emerging markets, and Asset Backed Securities (ABS). The spreads between the developed markets and the emerging markets have already been discussed above.

Economic considerations play a major role in the spread between the risk-free government bonds and corporate bonds (investment grade, high yield). Assuming an actual long term trend of GDP growth that is far

below the long-term potential, the spread would ideally have to be very high because of higher default risk in the corporate sector.

During an economic expansion, a spread tightening occurs. Naturally, this happens due to the decreasing credit risk of the companies. The simplest case is that the hedge fund manager takes a long position with non-investment grade corporates and a short position with government bonds. In this case, long means that the manager buys a corporate bond or buys a long option on a corporate bond index. In addition to gaining on the spread tightening, there could be an income in form of a coupon. Naturally, the same applies to ABS and subordinated bank bonds.

During a downturn phase, the hedge fund managers have the advantage that they can assume undervalued government bonds. This means they change their position to long government bonds (either directly with bonds or with futures) and short corporate bonds. Over the past few years, more and more instruments have continuously been developed to enable a long and short positioning on corporate bond indices.

From an ideal-type perspective, there is also a connection between the yield curve and the economic development. Before an expansion phase starts, the yield curve will be very steep. This means that the Central Bank has aggressively reduced the interest rates at the short end during the downturn phase. However, the market braces itself for increasing interest in the future. This is why the yield curve is ideally steep in such a situation.

During the expansion phase, the yield curve tends to become flatter, and in the boom phase of the economy, the yield curve merges into an inverse form. The Central Bank gradually increases the key interest rates, and, at its peak, the key interest rate is above the neutral interest rate. Before a downturn phase, the market braces itself for falling interest rates again. For the hedge fund managers using a yield curve arbitrage strategy, this means that they will try to go short with the short maturities of government bonds (two to five years) and long with long maturities (as of six years) in the expansion phase. This is reversed, however, when it comes to the peak of the business activity (Rose & Marquis, 2009).

Event-Driven Strategies

The next hedge fund strategy to be analyzed in relation to the business cycle is event-driven strategies. With the merger arbitrage, there is typically no link between the economic development and the behavior of the hedge fund manager.

In an expansion phase, these merger and takeover transactions will increase significantly and decline sharply in a downturn phase. Saravia (2014) confirmed this argument, although he referred to the ABC theory, which assumed that changes in the interest rate caused economic fluctuations, and not to the ideal-type model used in this paper. However, the difficulty for the hedge fund manager is to find exactly these firms which plan a takeover or a merger. Therefore, a direct impact of the business cycle cannot be found. The manager only knows that, during an expansion period, the volume of takeovers and mergers will increase sharply and vice versa in the downturn phase.

The connection between the distressed securities strategy and the business cycle is also less strong, because the hedge fund manager cannot be sure that the distressed enterprise will survive regardless of whether the economy is in an expansion phase or not.

Multi Strategies (Fund of Hedge Funds)

Multi strategies or fund of hedge funds strategies feature a connection with business cycle that is less clear.

With a fund of funds that follows the dedicated strategy approach, the relationship is given in accordance with the respective strategy in most cases. For the most part, however, the fund of funds follows the diversified approach where the connection between the manager's behavior and the business cycle depends on the respective strategy in particular cases.

Commentary on the Current Cycle

At the moment the economy, monetary policy, and the dynamics on the financial markets are in a very interesting situation concerning the business cycle. The monetary policy has been very accommodative in the US, in Europe, and Japan for a very long period of time. However, the business cycle has been developing very differently in the US and in the Euro area. The monetary and fiscal stimulus was successful in the US but had only a moderate effect in the Euro area. The cycle on the financial markets has been bullish for more than six years now (with short interruptions 2012). When this real cycle is compared with the simple ideal-type model presented in this paper, it can be noted that the real cycle is far away from an ideal-type version. The question arising here is what has happened. The monetary policy has been far away from the neutral level for a very long time, which has probably led to bubbles on the financial markets but not in the economy. The classical Austrian Theory of Business Cycles would expect over-investment due to the too expansive monetary policy. The theory claims that a too strong credit expansion over a too long period associated with a strong expansion of monetary aggregates creates a boom and bust cycle. Yet, this time is different in so far as this cycle is more driven by investment in financial markets rather than investment in real products. This is especially true for the European markets where growth has been far below the levels of the US. Concerning the hedge fund industry and their strategies, the current development is favorable, because the costs of funding are minimal and a trend can be observed on nearly all individual markets. An exception is the government bond market which is not as obvious as other markets. However, hedge funds do not encounter problems because most of the strategies are likely to be long with growth (with the exception of commodities). Such a long period of stimulus is positive for the hedge fund industry. However, the question is now how hedge funds will react when the stimulus is removed.

Conclusions

There are no theoretical works concerning the interdependence of business cycles and hedge fund strategies. Establishing a connection between business cycles and hedge fund strategies can be regarded not easy, and this paper is a first step to find some theoretical evidence that some hedge fund strategies are related to the business cycle. Yet, the problem with ideal-type models is that not all assumptions are empirically falsifiable.

The ideal-type model has found a significant relationship with the business cycle when the hedge fund manager uses the global macro strategy (with the exception of currencies of developed countries), the long/short equity strategy, and the relative value strategy. However, no relationship can be found using event-driven and multi strategies.

Another important theoretical finding is that the leverage of hedge funds is dependent on the different phases of the cycle. In an upswing period, the leverage is supported by the low cost of funding for the hedge fund and the positive expectations of the whole financial industry. A hedge fund normally profits from a rising leverage and gets into trouble when credit is tight. Therefore, the performance of hedge funds can be regarded procyclical in so far as the performance is better in upswing periods than in downturn periods. However, there

is not necessarily a correlation between the economic cycles and the performance of hedge funds. Hedge funds can also perform well in a downturn phases or in recessions.

References

- Anderson, R. G., Buol, J. J., & Rasche, R. H. (2004). A neutral federal funds rate? *Economic Synopses*. Retrieved from <https://research.stlouisfed.org/publications/es/04/ES0428.pdf>
- Ang, A., Gorovyy, S., & van Inwegen, G. B. (2011). Hedge fund leverage. *Journal of Financial Economics*, 102(1), 102-126.
- Barbarino, F. (2009). *Leverage, hedge fund and risk*. Retrieved from http://www.nepc.com/writable/research_articles/file/09_07_nepc_leverage_hf_and_risk.pdf
- Blackstone Private Wealth Management. (2013). *Taking stock: Long/Short hedge funds and equity replacement*. Retrieved from http://www.nepc.com/writable/research_articles/file/09_07_nepc_leverage_hf_and_risk.pdf
- Callahan, G., & Horwitz, S. (2010). The role of ideal types in Austrian business cycle theory. In R. Koppl, S. Horwitz, and P. Desrochers (Eds.), *What is so Austrian about Austrian economics* (pp. 205-224). Wagon Lane: Emerald Group Publishing Limited.
- Clarke, S. (2015). Idealization, abstraction and ideal types. *International Encyclopedia of the Social and Behavioral Sciences*, 2, 516-520.
- Connor, G., & Lasarte, T. (2004). *An introduction to hedge funds strategies, introductory guide*. London: The London School of Economics, International Asset Management.
- Connor, G., & Woo, M. (2004). *An introduction to hedge funds, an introductory guide*. London: London School of Economics.
- Duca, G. (2007). The relationship between the stock market and the economy: Experience from international financial markets. *Bank of Valletta Review*, 36, 5-10.
- Eichengreen, B., Mathieson, D. J., & Sharma, S. (1998, May). Hedge funds and financial market dynamics. *Occasional Paper*, 166, 42-55.
- Equinox Funds. (2015). *The long and short of hedge equity investing*. Retrieved from http://equinoxfunds.com/sites/default/files/Insights_HedgedEquityInvesting.pdf
- Fisher, I. (1933). The debt-deflation theory of Great Depressions. *Econometrica*, 1(4), 337-357.
- Garbaravicius, T., & Dierick, F. (2009, August). Hedge funds and their implications for financial stability. *Occasional Paper Series*, 34, 8-10.
- Kaiser, D. G. (2004). *Hedgafonds, entmystifizierung einer anlageklasse, strukturen-chancen-risiken (Hedge funds, debunking of an asset class, risk and opportunity structure)*. Wiesbaden: Gabler Verlag.
- Keating, P. (1997). *Zwischen neoklassik und historismus: Das ökonomische werk Joseph A. Schumpeters aus methodologischer und theoriegeschichtlicher perspektive (Between the neoclassic and historical school: The economic works of Joseph A. Schumpeter from a methodological and historical perspective)*. Marburg: Press Metropolis.
- Kondratiev, N. (2013). *Die langen Wellen der konjunktur (The long waves of the business cycle)*. Moers: Marlon.
- Kydland, F. E., & Prescott, E. C. (1982). Time to build and aggregate fluctuations. *Econometrica*, 50, 1345-1370.
- Machlup, F. (1960). Idealtypus, wirklichkeit und konstruktion (Ideal-types, reality and construction). *Jahrbuch für die Ordnung von Wirtschaft und Gesellschaft (Annual for the Order of Economics and Society)*, 12, 21-57.
- Minsky, H. P. (1979). *The financial stability hypothesis: A restatement*. Roma: Confederazione Generale dell'Industria Italiana.
- Mulligan, R. F. (2013). New evidence on the structure of production: Real and Austrian business cycle theory and the financial instability hypothesis. *Journal of Economic Behavior & Organization*, 86, 67-77.
- Racicot, F. E., & Theoret, R. (2013). The procyclicality of hedge fund alpha and beta. *Journal of Derivatives & Hedge Funds*, 19(2), 109-128.
- Racicot, F. E., & Theoret, R. (2016). Macroeconomic shocks, forward-looking dynamics, and the behaviour of hedge funds. *Journal of Banking and Finance*, 62, 41-61.
- Rose, P. S., & Marquis, M. H. (2009). *Money and capital markets, financial institutions and instruments in a global marketplace* (10th ed.). New York: McGraw-Hill.
- Samuelson, P. A., & Nordhaus, W. D. (2010). *Economics* (10th ed.). New York: McGraw-Hill.
- Saravia, J. (2014). Merger waves and the Austrian business cycle theory. *Quarterly Journal of Austrian Economics*, 17(2), 179-196.

- Schumpeter, J. A. (1939). *Business cycles: A theoretical, historical and statistical analysis of the capitalist process*. New York/London: McGraw-Hill.
- Schumpeter, J. A. (2012). *The theory of economic development*. New Brunswick: Transaction Publishers. (Original work published 1934).
- Shionoya, Y. (2005). *The soul of the German historical school: Methodological essays on Schmoller, Weber and Schumpeter*. Boston: Springer.
- Von Hayek, F. A. (1966). *Monetary theory and the trade cycle*. New York: Kelley.
- Weber, M. (1973). *Aufsätze zur wissenschaftslehre (Essays on the theory of science)*. Tübingen: Mohr.
- Wicksell, K. (1936). *Interest rate and prices*. London: MacMillan and Co. Limited.