

Two Roads Diverged: Trading Divergences

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*Two roads diverged in a wood, and I—
I took the one less traveled by,
And that has made all the difference.*
Robert Frost (1874 – 1963)

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Table of Contents

[How to Work with This Book](#)

[Free Updates & the Honor Code](#)

[Review of Tools](#)

[A Bullish Divergence: A Basic Definition](#)

[What is NOT a Bullish Divergence](#)

[A Bearish Divergence: A Basic Definition](#)

[What is NOT a Bearish Divergence](#)

[Reader Exercises](#)

[Entries, Stops, and Profit Targets](#)

[Additional Points on Divergences](#)

[Divergences in Other Indicators](#)

[Divergences in Multiple Timeframes](#)

[Scanning for Divergences](#)

[The Next Step: MACD Semi-Automatic](#)

[Conclusion](#)

[Thanks](#)

[Sources](#)

[About the Author](#)

To find the truth, look below the surface!

What you see on the surface is often deceptive – in trading, as well as in life. A trend may appear strong, while below the surface it may be weak and ready to reverse.

We have indicators that measure the internal power of a trend. At times they confirm an uptrend and tell you it's OK to hold or add to your positions. At other times they signal that the trend is suspect: it is better to exit, take profits, and even consider switching from long to short or vice versa.

A divergence is a disagreement between the patterns of indicators and prices. We find bullish divergences near market bottoms and bearish divergences near market tops. Many traders use these words very loosely – I want to make these important terms very clear. The purpose of this book is to help you ride price trends with greater confidence and recognize upcoming reversals before they hit the crowd.

Needless to say, I hold no monopoly on wisdom. I've learned my craft from those who went before me and still consider myself a student in the graduate school of hard knocks. If you think you see an error in this book, please [write](#) to me and let me know.

How to Work with This Book

We'll begin by reviewing basic definitions and then look at many examples. I'll invite you to take several reader exercises. We'll review divergences in different indicators. We'll explore divergences in different timeframes – from investing to day-trading.

Keeping good records is the keystone of successful trading. Please stop for a moment before you do any exercises in this book. Open your word processor and create a file "Working with divergences." Write down the number and the name of each exercise and your reasons for answering Yes or No. By the time you get to the end of this e-book you will have a nice learning file. It will help you master the topic and trade divergences with greater confidence.

An important reminder: successful trading is based on three M's: Mind, Method, and Money (psychology, tactics, and risk management.) All three are essential for your success. This book focuses on only one M – Method. You may use this book as a guide to market analysis and tactics, but remember to implement the other two Ms, discussed in my previous books, into every trading decision.

[Return to the Top](#)

Free Updates & the Honor Code

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I put several hundred hours of work into writing. Please reciprocate my trust in you by sending your friends the above link rather than pirating the book.

And now, let's embark on our journey.

Dr. Alexander Elder

New York City

January 2012

[Return to the Top](#)

Review of Tools

To profit from divergences you must have a basic understanding of technical analysis. There are many sources, including John Murphy's magisterial *Technical Analysis of Financial Markets* as well as my own [Trading for a Living](#).

Here we will glance at few key definitions, but if anything is unclear, please refer to the above books.

PRICE, MOVING AVERAGE, SUPPORT & RESISTANCE

- Each price is a momentary consensus of value among the mass of market participants.
- Since each price is a snapshot of current consensus, a moving average is a composite photograph, reflecting an average consensus of value during its time window. A rising moving average shows that the market is optimistic – bullish; a falling moving average shows that the market is pessimistic – bearish.
- We draw support and resistance lines across the edges of congestion zones. The extreme highs and lows reflect only the panic among the weakest market participants, while the edges of congestion zones show where the mass of traders changed direction.
- I use bar charts because I learned to trade using them. I have nothing against candlesticks, which came later; all examples in this book could have been rendered using candles.

MACD

- Moving Average Convergence-Divergence (MACD), invented by Gerald Appel, is a popular market indicator. It combines trend-following features (MACD Lines) with those of an oscillator (MACD-Histogram). MACD-Histogram tracks the difference between MACD Lines. Warning: some software packages plot this indicator incorrectly. For example, Metastock instead of plotting the difference between the lines as a histogram, simply plots one of the lines as a histogram. For years I have been telling the folks at Metastock that their plot is incorrect – to no avail. In the interest of accuracy, our elder-disk for Metastock contains a correct plot.
- In this book I'll use standard **MACD values of 12-26-9**, but I encourage you to experiment with these numbers, making each of them slightly larger or smaller. It is a good idea to use indicator settings as individual as you are. There are no magic numbers – only the numbers you've tested and come to trust.
- We will look at a few examples of divergences using other indicators. Please feel free to apply the concepts of this book to other indicators you like.

TIME

- Remember that markets move in multiple timeframes simultaneously. We all have our preferred periods, for example the daily or a 5-minute chart, but one timeframe is not enough.
- The Triple Screen trading system requires you to begin your analysis by examining the timeframe one order of magnitude longer than the one you like to trade. **If your favorite is the daily chart, begin by looking at the weeklies. Make your strategic decision there to be a bull or a bear and then return to the daily chart to make tactical decisions on entries and exits.**

Chart parameters in this book:

Weekly: 26- and 13-week exponential moving averages (EMAs).

Daily: 22- and 13-day EMAs, some include Autoenvelopes centered around the slower EMA.

Intraday: same as above, only 22-bar and 13-bar EMAs.

MACD is 12-26-9 on all charts.

[Return to the Top](#)

A Bullish Divergence: a Basic Definition

In the first chart I will show you my favorite example of a bullish divergence. It has two great features: first, it is technically flawless, and second, it was hugely timely. It gave a major buy signal within a week of the historic 2009 bear market bottom, auguring in a new bull market. Not all patterns are this perfect, and we will deal with more difficult cases later in this book. Remember this rule: when trying to find a divergence, first look at the pattern of an indicator and later at the pattern of prices.

Trading for a Living offers this definition: “A bullish divergence occurs when prices trace a bottom, rally, and then sink to a new low. At the same time, MACD-Histogram traces a different pattern. When it rallies from its first bottom, that rally lifts it above the zero line, ‘breaking the back of the bear.’ When prices sink to a new low, MACD-Histogram declines to a more shallow bottom. At that point, prices are lower, but the bottom of MACD-Histogram is higher, showing that bears are weaker and the downtrend is ready for a reversal. MACD-Histogram gives a buy signal when it ticks up from its second bottom.”



Figure 01 DJIA weekly, bullish divergence (chart by TC2000.com)

In **area A** the Dow appeared in a free fall, as Lehman Brothers went bust and waves of selling hit the market. The record low A of MACD-H indicated that bears were extremely strong and that the price bottom A was likely to be retested or exceeded.

In **area B** MACD-H rallied above its centerline, 'breaking the back of the bear.' Notice that the brief price rally reached the 'value zone' between the two moving averages. This is a fairly common target for bear market rallies. The concept of the value zone is explained in all of my books, including [To Trade or Not to Trade: A Beginner's Guide](#).

In **area C** the Dow slid to a new bear market low, but MACD-H traced a much more shallow low. Its uptick completed a bullish divergence, giving a strong buy signal.

Notice that **breaking of the centerline between two indicator bottoms** is an absolute must for a true divergence. MACD-Histogram has to cross above the zero line before sinking to its second bottom. If there is no crossover, then there is no divergence.

Another key point: MACD-H gives a **buy signal when it ticks up from the second bottom**. It does not have to cross above the centerline for the second time. The buy signal occurs when MACD-H, still below zero, simply stops declining and traces out a bar that is less negative than its preceding bar.

This divergence signal was reinforced when MACD Lines traced a bullish pattern between the bottoms A and C, with the second bottom of MACD-Lines more shallow than the first. Such patterns of MACD Lines are rarely seen. They indicate that the coming uptrend is likely to be especially strong (but we cannot call them divergences because there is no zero line). The rally that began in 2009 lasted almost a year before the first meaningful correction.

Let's review another example of a bullish divergence, this one on a daily chart.

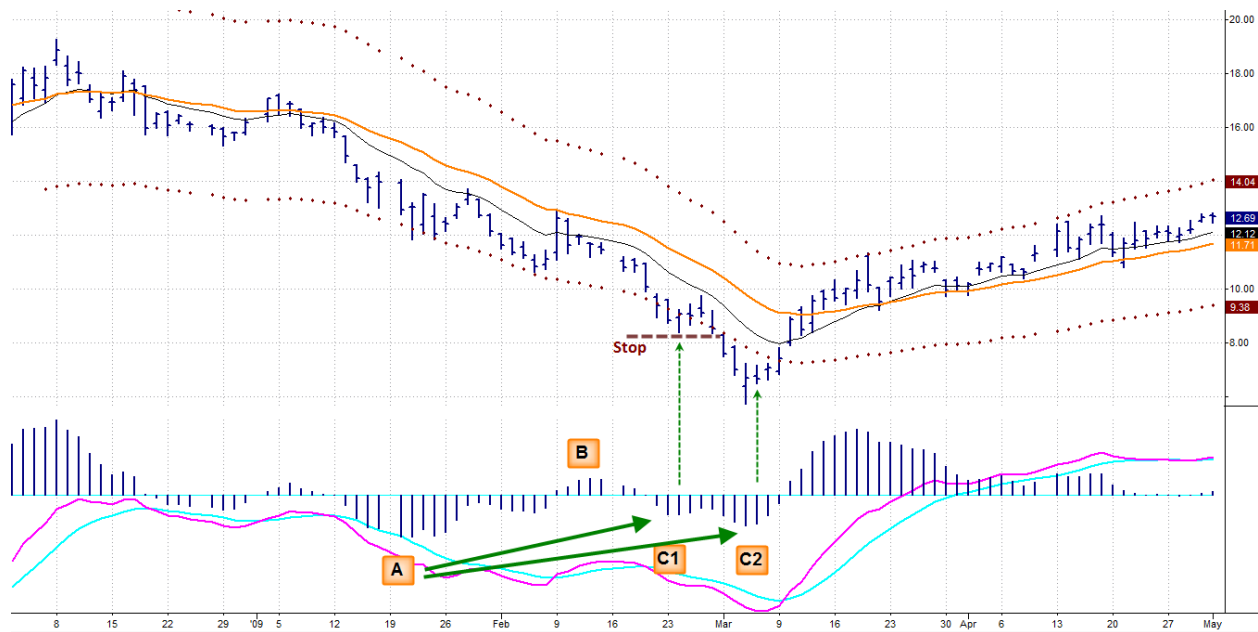


Figure 02 GE daily, bullish divergence (chart by TradeStation).

I began tracking GE after seeing news reports that Warren Buffett invested in it in October 2008, when its price was near \$18. In **area A** MACD-Histogram fell to a new low A, marking a new extreme of bearish power. In **area B** MACD-H rallied above its centerline, 'breaking the back of the bear.' Notice that the brief rally topped out in the value zone between the two moving averages. In **area C** GE slid to a new bear market low, but MACD-H traced a much more shallow low. When it ticked up, it completed a bullish divergence and gave a buy signal. GE rallied for a day, but then reversed and hit a stop.

In **area c2** MACD-Histogram ticked up again, renewing its buy signal. This one worked out perfectly, with the stock price doubling in the next few months.

One of the key differences between amateurs and pros is that when a beginner gets stopped out, he feels disgusted and moves on to another stock. Professionals, on the other hand, often attempt multiple entries, using fairly tight stops. One big success, such as the second purchase of GE, will more than cover several small losses.

Notice also that there was no bullish pattern of MACD Lines. Those occur infrequently, and many good trades start out without them.

We live in an imperfect world, where even the best signals occasionally fail. All we can do is bet on probabilities and use protective stops. Placing stops is a challenge that deserves its own book. A general idea is to place your stop in the vicinity of the latest low. Expect to take an occasional small hit – and have the confidence to act when the signal you are trying to trade repeats itself.

[Return to the Top](#)

What Is NOT a Bullish Divergence

Readers of my books occasionally send me charts of potential trades, based on divergences. When I look at those charts, however, I often see no divergences.

Remember that for a bullish divergence to occur, we need to see a sequence of two discreet price bottoms, separated by a rally, with the second bottom lower than the first. A simple drift of prices does not create a divergence. At the same time, there have to be two bottoms of an indicator, with the second more shallow than the first, and the two separated by a rally above the zero line. If any single one of these conditions is missing, there is no divergence. Let's review one such example.

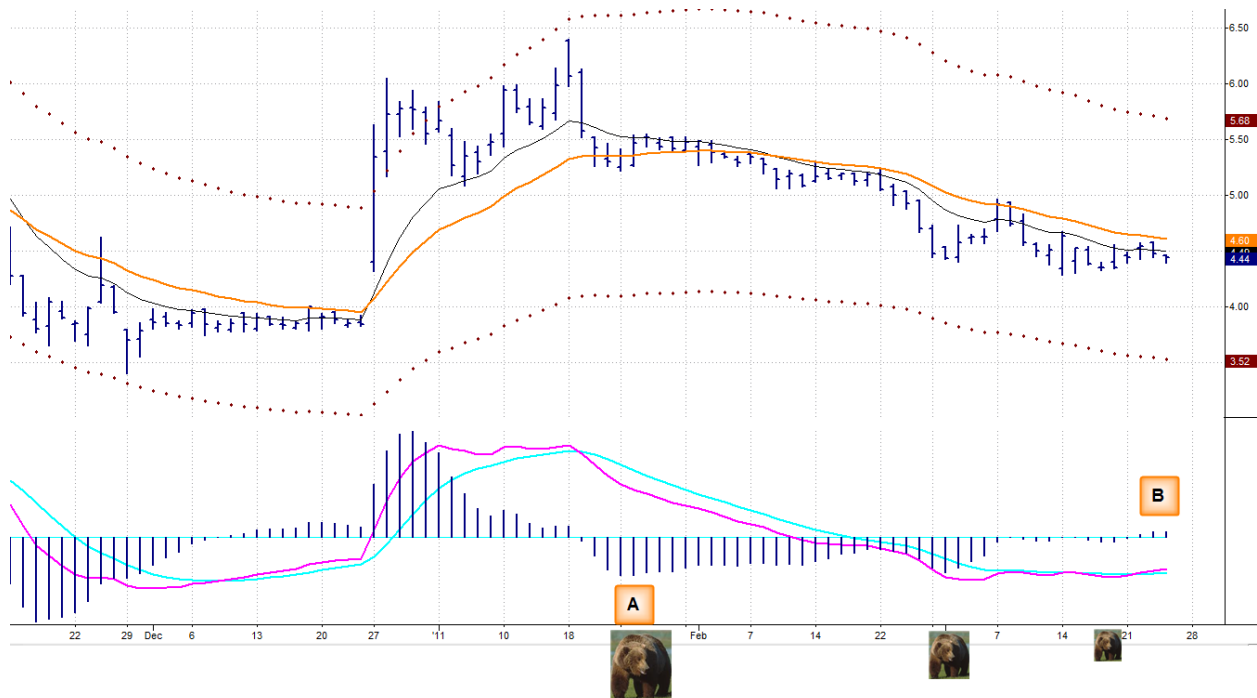


Figure 03 GU daily, no bullish divergence (chart by TradeStation).

Gushan Environment Energy Ltd (GU) was one of many US-listed Chinese stocks whose prices dropped in 2011, following revelations of massive accounting misconduct in that country. People who remembered them as recent high-flyers kept stepping up and buying, hoping for a renewed upswing. Several imagined that they saw bullish divergences – do you see one in this picture?

In **area A** MACD-Histogram fell below zero, marking a new extreme of bearish power for the latest downmove. The subsequent bottoms were more shallow – but at no point did MACD-H cross above its centerline. The bear was getting older and weaker – but the bear was still in charge! Only in **area B** did MACD-Histogram cross above zero, signaling that the back of the bear was broken. Now and only now may we begin looking for a bottom C of this indicator. If that bottom turns out to be more shallow than the bottom A, that will create a bullish divergence, giving a buy signal.

When MACD-Histogram grows more shallow during a price slide, it simply indicates that the downtrend is becoming less intense – but it is not a true divergence. Remember that trends have a lot of inertia. As Peter Lynch aptly put it in his book *One Up on Wall Street*, “Trying to catch a bottom is like trying to catch a falling knife: you invariably grab it in the wrong place.” I want to see a real bullish divergence, with a positive crossover between the two bottoms before I lay my money on a long trade near the lows.

[Return to the Top](#)

A Bearish Divergence: a Basic Definition

The first chart in this book featured a striking bullish divergence at the 2009 stock market bottom. Now, for a similarly striking illustration of a massive bearish divergence, let’s roll back the clock and examine the 2007 bull market top.

Bearish divergences occur near market tops, where they identify dangerous cracks in seemingly happy uptrends. *Trading for a Living* offered this definition: “A bearish divergence occurs when prices rise to a new high, decline, then rise to a higher peak. MACD-Histogram gives the first sign of trouble when it breaks below its zero line during the decline from its first peak. When prices reach a higher high, MACD-

Histogram rises to a much lower high. It shows that bulls are weaker, prices are rising simply out of inertia and are ready to reverse.”

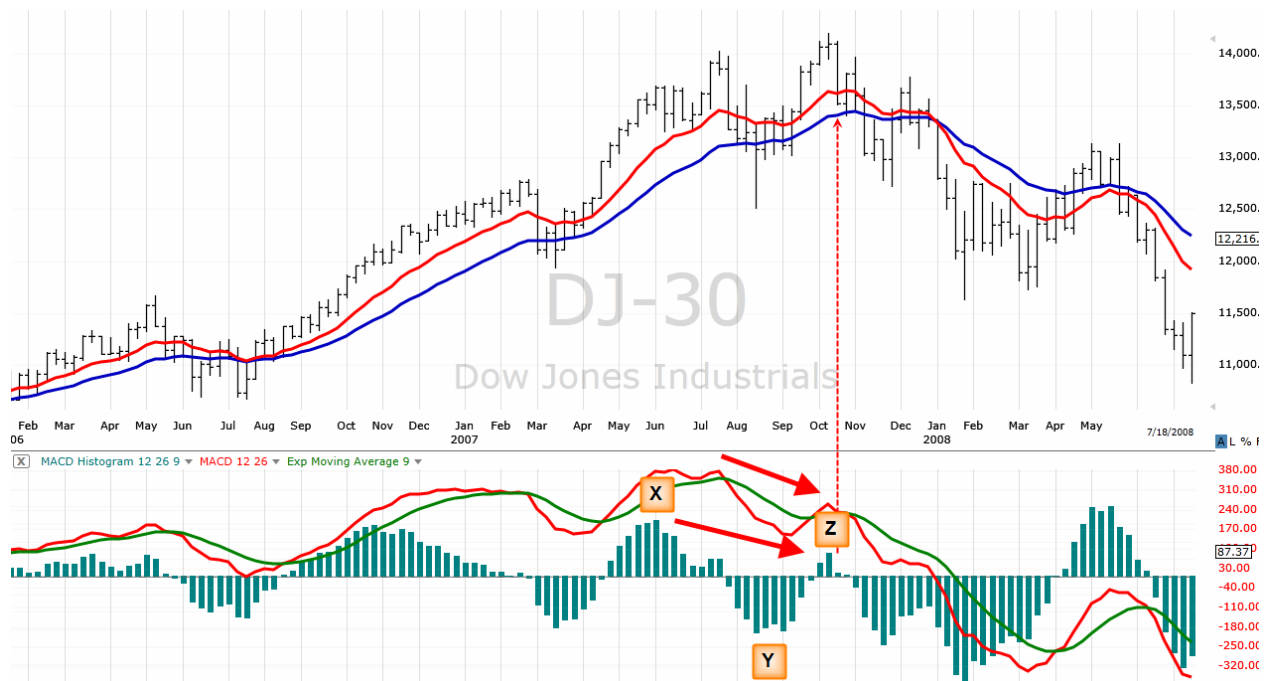


Figure 04 DJIA weekly, bearish divergence (chart by TC2000.com).

Remember that when tracing a divergence, we first look at the pattern of MACD, followed by the pattern of prices. Keep in mind as well that the indicator has to cross and re-cross its centerline in order to mark a valid divergence.

In **area X** the Dow rallied to a new bull market high and MACD-Histogram rallied with it, rising above its previous peak and showing that bulls were extremely strong. This indicated that the price peak X was likely to be retested or exceeded. In **area Y**, MACD-H fell below its centerline, ‘breaking the back of the bull.’ Notice that prices punched below their value zone between the two moving averages. This is a fairly common target for bull market breaks. In **area Z**, the Dow rallied to a new bull market high, but the rally of MACD-H was feeble, reflecting the bulls’ weakness. Its downtick from peak Z completed a bearish divergence, giving a strong sell signal, auguring in one of the nastiest bear market in decades.

Notice that **breaking of the centerline between two indicator tops** is an absolute must for a true divergence. MACD-Histogram has to drop below its zero line before rising to the second top. **If there is no crossover, then there is no divergence.**

Another key point: MACD-H gives a **sell signal when it ticks down from the second top**. We do not need to wait for it to cross below the centerline again. The sell signal occurs when MACD-H, still above zero, simply stops rising and traces out a bar that is shorter than the preceding bar.

The message of this bearish divergence was reinforced by MACD Lines tracing a bearish pattern between the tops A and C. The second top of MACD Lines was more shallow than the first, confirming the bearish divergence of MACD-H. Such patterns of MACD Lines tell us that the coming downtrend is likely to be especially strong.

[Return to the Top](#)

What Is NOT a Bearish Divergence

A true divergence follows a classical pattern, described above. If a pattern deviates from the norm, it may be bullish or bearish – but not a true divergence. When we aim to trade true divergences, we must be very clear about our definitions. A good example of what looks like a divergence but in fact is not can be seen in the following example. It came up in a [webinar](#) I taught, where several participants asked whether there was a bearish divergence in the area marked by a red arrow.

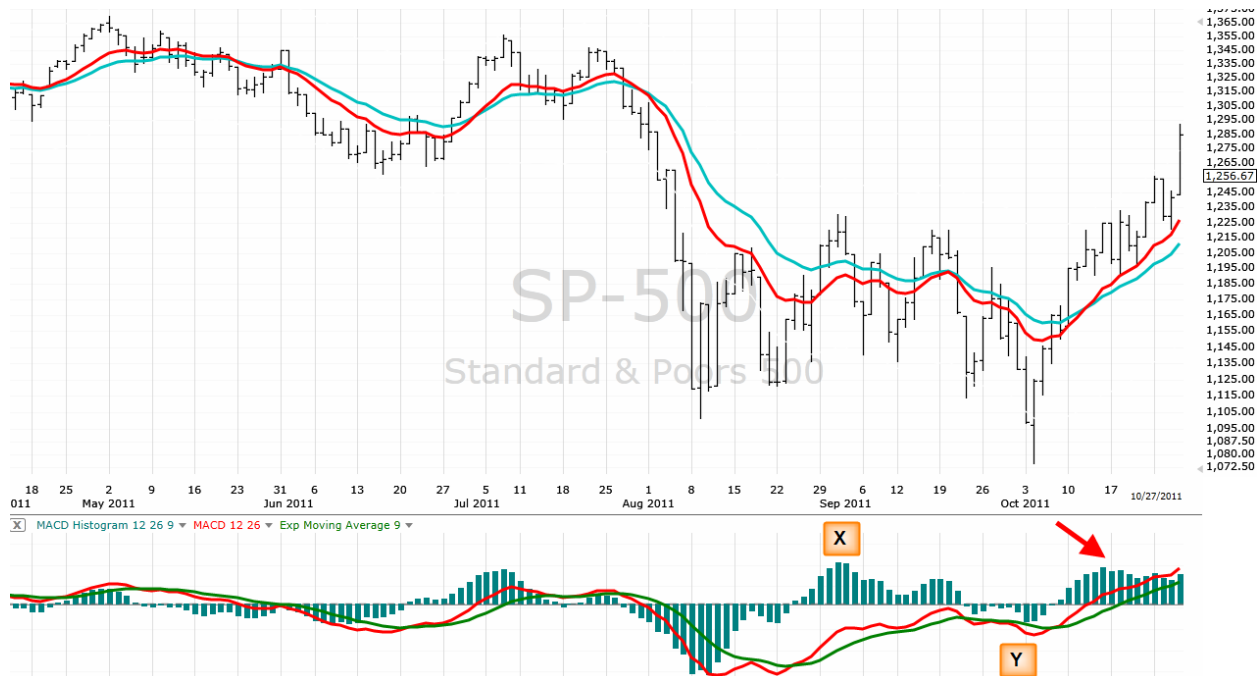


Figure 05 S&P daily, **no** bearish divergence (chart by TC2000.com).

The peak of MACD-Histogram which is marked by a diagonal red arrow was about equal in height but more massive than peak X. An equal or peak of the indicator confirms the price rally – there is no divergence. A higher peak of MACD-H says that the latest price peak is likely to be retested or exceeded. Remember that for a bearish divergence to occur you must see both of these patterns:

- A higher price at the second peak with a lower indicator peak
- A break below the centerline between the two indicator peaks

And now **a question for you**: is there *any* divergence in Figure 05? Please scroll up to it and study the chart above before looking below for an answer...

... look up first ...

... look up first ...

... look up first ...

... look up first ...

... look up first ...

... look up first ...

... look up first ...

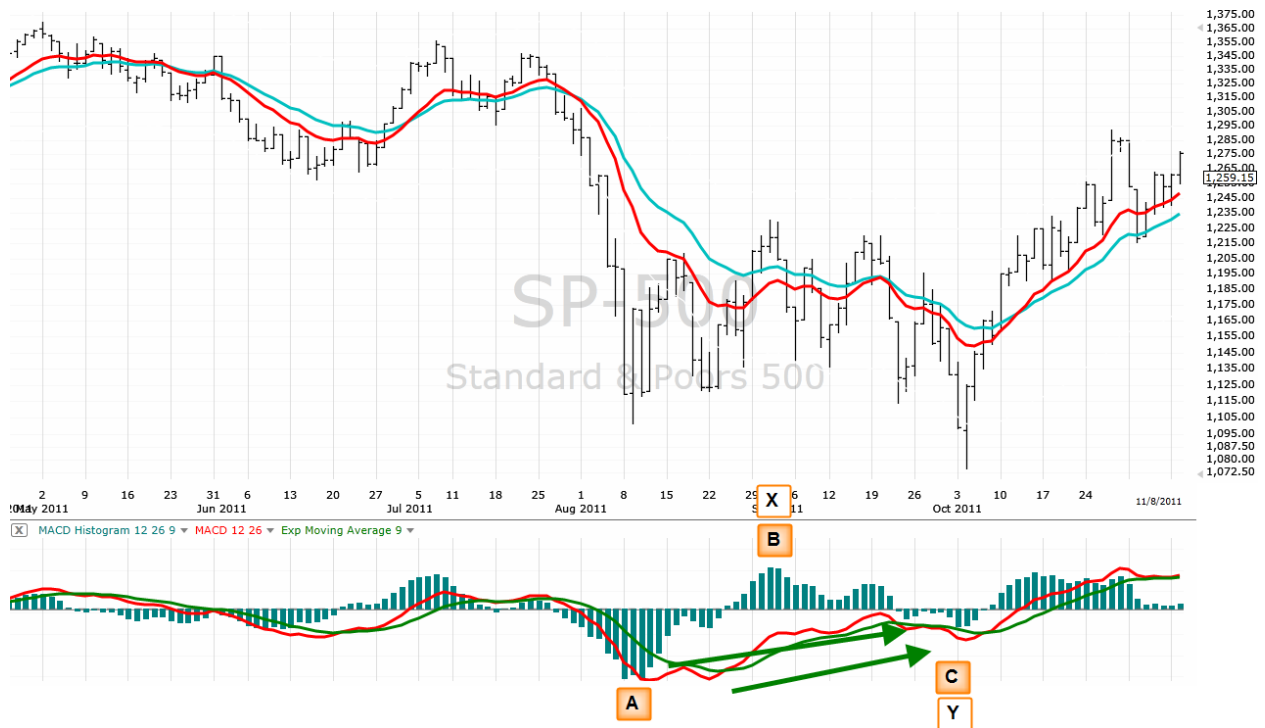


Figure 06 S&P daily, bullish divergence (chart by TC2000.com).

In **area A** MACD-Histogram fell to a new low, confirming the power of bears. It suggested that the price bottom A was likely to be retested or exceeded. In **area B**, MACD-H rallied above its zero line, 'breaking the back of the bear.' In **area C**, MACD-H fell below zero, traced a shallow bottom and then ticked up, completing a bullish divergence. It was confirmed by a bullish pattern of MACD Lines as well as a false downside breakout of prices in area C. This bullish trifecta preceded a very sprightly rally.

[Return to the Top](#)

Reader Exercises

Whenever you examine a chart, **begin by focusing on its left edge**, then let your eyes glide slowly from left to right, tracing the development of chart patterns. Each stock has a personality, and knowing your stock's history will help you make a better decision at the right edge. Most traders make the mistake of immediately jumping to the right edge, denying themselves an opportunity to learn how their stock got to where it is today.

Each exercise will show you a chart and ask you to make a decision at its right edge. Afterwards click on the Answer link, and the system will take you down into the answers area. Examine the chart illustrating your answer, read any comments, and then click on a Return link to come back to the main text.

Do not linger in the Answers area because if you do, you'll see other charts, with answers to other questions, and that will spoil your educational experience. Remember: just look up your answer, and then click to return to the deck, and proceed to the next exercise.

Fig.	Ticker	Question	YES	NO	Correct?	Comment
7	AMP	a bullish divergence?				
8	AMZN	a bearish divergence?				
9	BBBY	a bearish divergence?				
10	Goog	a bullish divergence?				

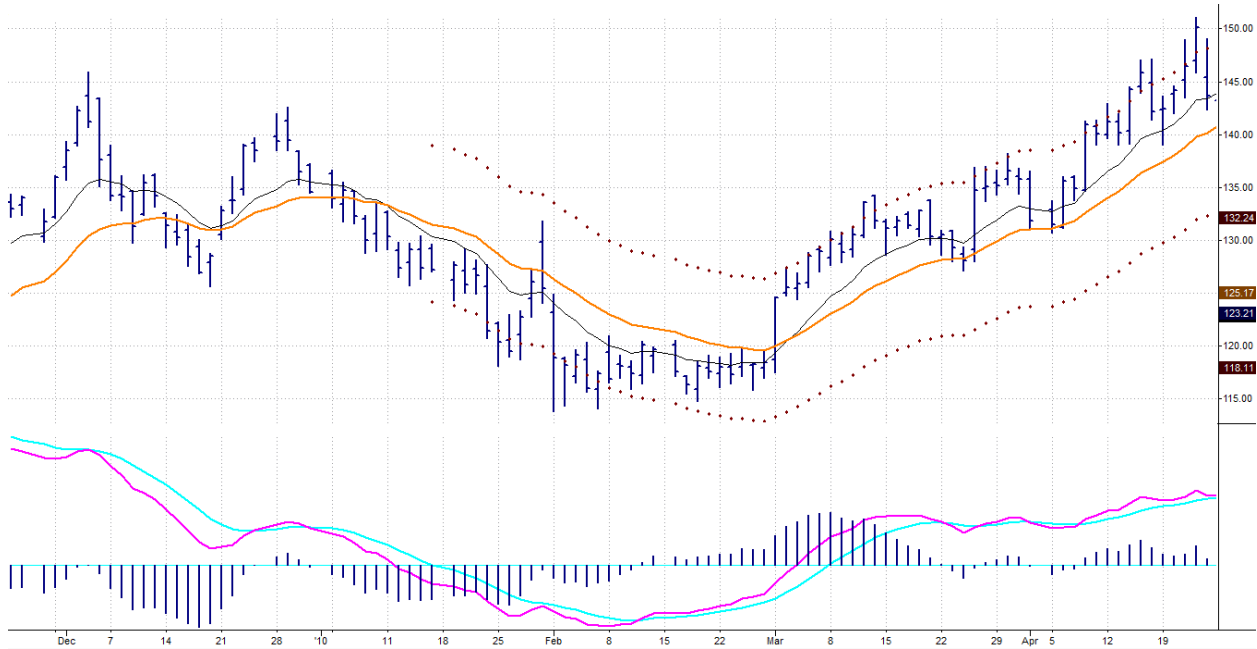


Figure 08 AMZN daily. Question: is there a bearish divergence at the right edge of the chart?

[Go to AMZN answer](#)

Exercise C – is this a bearish divergence?

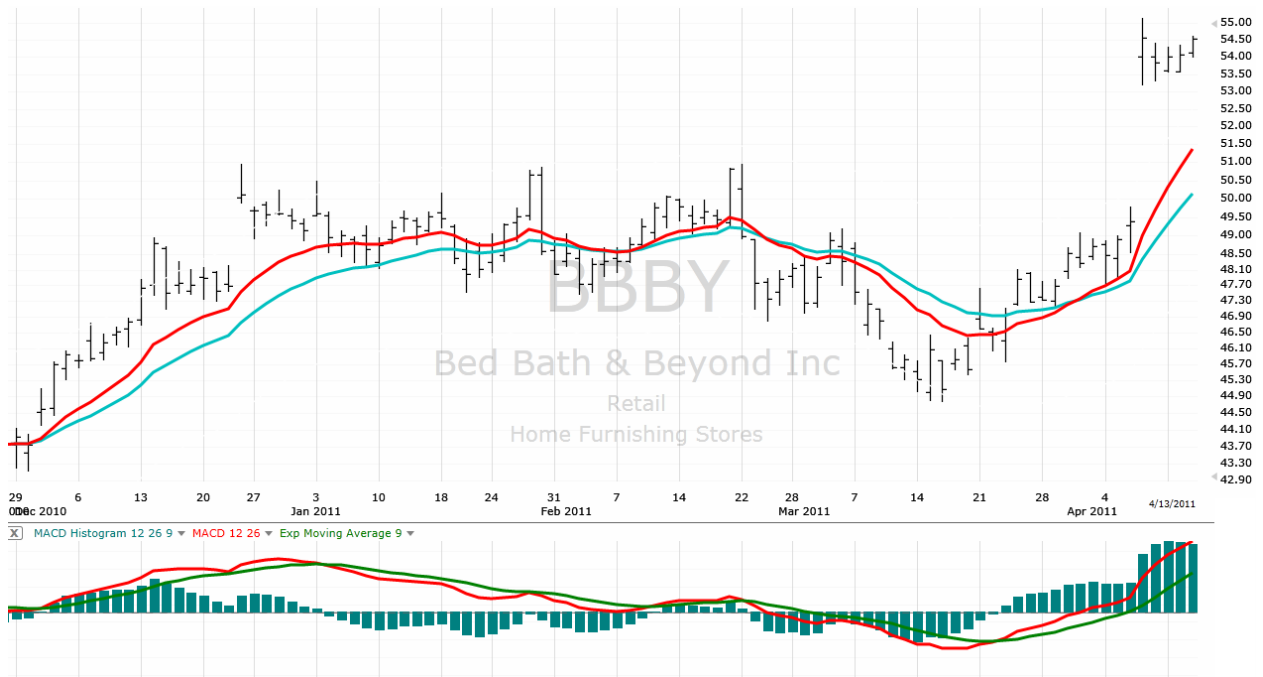


Figure 09 BBBY daily. Question: is there a bearish divergence at the right edge of the chart?

[Go to BBBY answer](#)

Exercise D – is this a bullish divergence?

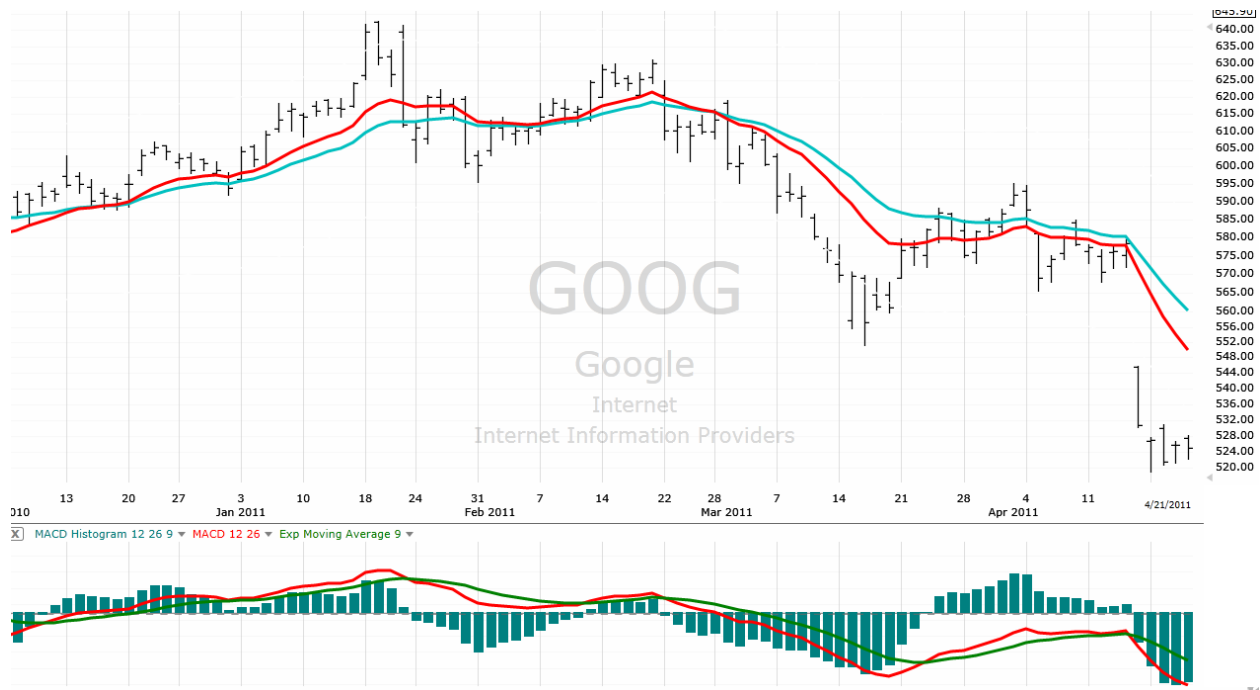


Figure 10 GOOG daily. Question: is there a bullish divergence at the right edge of the chart?

[Go to GOOG answer](#)

[Return to the Top](#)

Entries, Stops & Profit Targets

You must remember that the markets can move in conflicting directions in different timeframes. A stock may be flat on the weekly chart, falling on the daily, but rising on an hourly chart. You need to take more than one timeframe into account when planning to buy or sell because a move in a neighboring timeframe can impact your trade.

An in-depth discussion of multiple timeframes is outside the scope of this book. My approach, called the Triple Screen, is described in all of my books, starting with [Trading for a Living](#). In a nutshell, when swing-trading, I make my strategic decisions to go long, short, or stand aside on the weekly charts; afterwards I turn to the daily charts for tactical decisions about entries and exits. In day-trading, I make my strategic decisions to go long, short, or stand aside on a 25-minute chart and finesse my entries and exits using a five-minute chart. You are welcome to select different timeframes, but the principle is the same: strategic decisions on a long-term chart and tactical on a shorter-term chart; the ratio of the periods should be about five to one. Successful traders tend to analyze markets using multiple timeframes.

Divergences produce very powerful signals – so strong in fact that a divergence on a daily chart may override the message of a weekly chart. Still, you get the best result when the two timeframes are not in conflict: for example, a neutral weekly and a bullish daily or a neutral 25-minute chart and a bearish 5-minute chart.

Whenever you plan a trade, remember to write down three essential numbers: your entry, profit target, and the protective stop. These three numbers create a realistic framework for every trade; without them, it is not a trade but merely a gamble. You are allowed to finesse and change these numbers while in a trade, with one exception: you may never move your stop to increase your risk. You may move it only to reduce risk or protect a bigger slice of your profit.

With these principles in mind, let's review the basic rules for setting entries, profit targets and stops when trading divergences:

Bullish divergences:

- Buy when MACD-H ticks up from its second bottom.
- Place your profit target in the vicinity of the upper channel line in the same timeframe as the divergence. Keep in mind that divergences tend to give very strong signals, and such targets are often exceeded. Still, the quickest and most reliable gains tend to occur during the initial explosion from the second bottom of MACD-Histogram.

- Place your protective stop in the vicinity of the latest low. You may give your trade some extra room by placing this stop a few ticks below that low, unless the bottom was a 'kangaroo tail' in which case place your stop about two thirds of the way down from the top of the tail bar.

Bearish divergences:

- Sell short when MACD-Histogram ticks down from its second top.
- Place your profit target in the vicinity of the lower channel line in the same timeframe as the divergence.
- Place your protective stop either with a wide margin above the latest high or slightly below that high, in which case you must be prepared to re-enter if stopped out. Shorting tops is harder than buying bottoms because of their higher volatility.

Let's review several examples of entries and exits following bullish and bearish divergences.

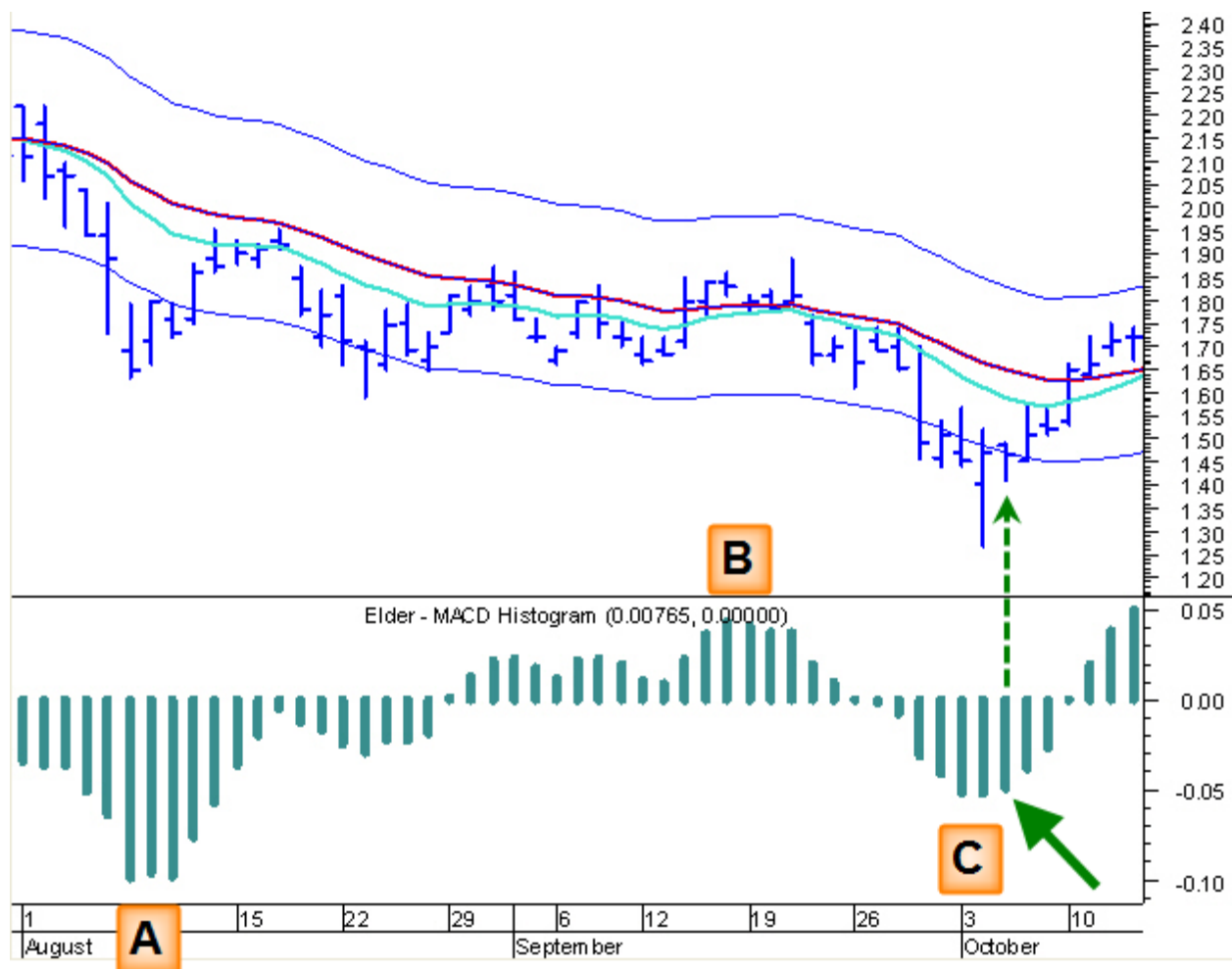


Figure 11 SRI daily. Entry, stop and target following a bullish divergence (chart by Metastock).

SRI declined to a new low in **area A**, and MACD-Histogram also hit a new low, confirming the power of bears. MACD-H rallied above its zero line in **area B**, breaking the back of the bear, and then sank below zero again. That's where an attentive trader would start watching that stock like a hawk. MACD-Histogram ticked up from below zero in **area C**, at a point marked by a slanted green arrow, giving a buy signal.

If you saw that signal in the evening, after the close, you'd have to buy the following day and place a protective stop in the vicinity of the latest low. That low was a 'kangaroo tail,' and I usually put my stop half-way or two thirds down the tail. If a bear starts chewing the tail, I do not want to hang around until

the last bite. A reasonable placement of a profit target is near the upper channel line. Channels are described in all of my books, including the most recent [To Trade Or Not to Trade](#).

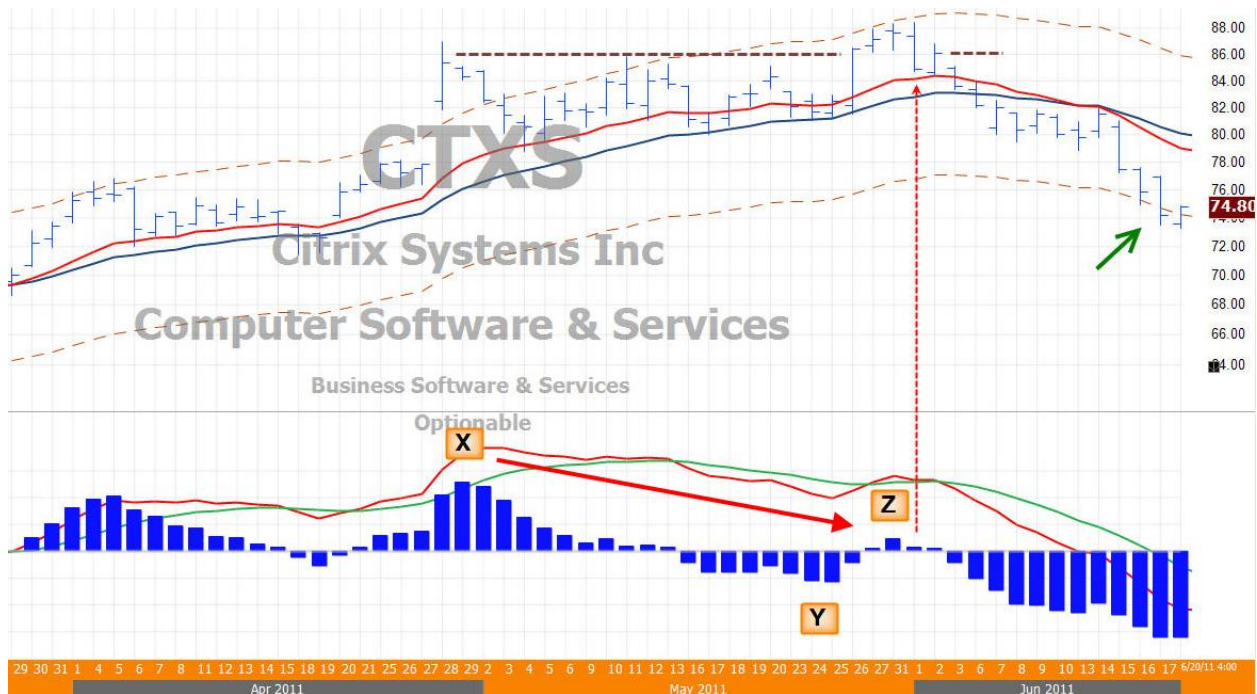


Figure 12 CTXS daily. Entry, stop and target following a bearish divergence (chart by StockFinder).

The rally of CTXS in **area X** was confirmed by MACD-Histogram rallying to a new high. This indicator fell below zero in **area Y**, breaking the back of the bull. It staged a feeble rally in **area Z**, topping out considerably below the peak X, even though prices marched higher. When the histogram ticked down from the second top, it gave a signal to sell short (marked with a vertical red arrow). One could enter short the following day, with a profit target near the lower channel line (green arrow).

There is one major difference in stop placement at tops and bottoms. Bottoms tend to be fairly sharp affairs: when buying a bullish divergence it makes sense to place your stop fairly close to the latest low. Tops, on the contrary, tend to be much more volatile. We often see false upside breakouts, triggering tight stops. You have a choice: either use a wider stop or place a tight stop but be prepared to keep re-entering if stopped out prematurely. Let's review the example of XLNX.



Figure 13 XLNX daily. A bearish divergence and a false upside breakout (chart by StockFinder).

The rally of XLNX was fully confirmed in **area X**, where MACD-Histogram rallied to a new high. In **area Y** the back of the bull was broken when the indicator fell below zero. The stock rallied again in **area Z**, but MACD-H rose to a lower high. Its first downtick, marked with a vertical red arrow, completed a bearish divergence. Had you gone short the next day, you'd have to deal with the price breakout to a new high two days later. Had you placed a tight stop, you'd be taken out just before the bear reasserted itself and prices collapsed.

This volatility, so common at market tops, forces you to choose between two methods of placing stops: make them wide and risk more money or make them tight and be prepared to re-enter if you get stopped out. How you answer this question depends on your trading style.

[Return to the Top](#)

Additional Points on Divergences

Several questions tend to come up when dealing with divergences:

- Should I wait to enter during the next bar or enter intra-bar?
- How to trade triple divergences?
- What is a 'missing right shoulder'?
- How to match divergences with one's trading style?

ENTER DURING THE DIVERGENCE BAR OR WAIT FOR THE NEXT BAR?

This question comes up especially often among day-traders. Imagine hovering in front of a live screen: as prices tick up and down on a five-minute chart, MACD-Histogram keeps changing direction, only to reverse again a few minutes later. Should you wait until the end of that 5-minute bar to confirm a divergence and enter during the next bar – or jump in as soon as MACD changes direction?

Entering during the current bar allows you to capture a better price, but you run the risk of that change reversing a few moments later, cancelling the signal. Waiting for the next bar provides a more reliable signal, but the entry price is likely to be not quite as good.

Your choice depends on your risk tolerance.

I use Triple Screen, and make strategic decisions in a longer timeframe, in this case a 25-minute chart. If the 25-minute chart allows me to go long, and all I need before buying is an uptick of MACD on a 5-minute chart, I will enter as soon as a signal flashes during a bar. If the longer timeframe looks good, I'll enter intra-bar on a shorter timeframe, otherwise I'll wait for the next bar.

Less experienced traders should wait for the bar to close. While this may reduce your gain, it is a cleaner signal. As you gain experience, you will know when to loosen this rule.

HOW TO TRADE TRIPLE DIVERGENCES?

There is no perfect signal in technical analysis. Even normally reliable divergences can fail. Prices may fail to rally following a bullish divergence, but sink instead, hitting our protective stop. Whenever that

happens, I continue to watch MACD-Histogram; as long as it does not fall below the level of its first bottom, I consider a divergence intact and will aim to buy again when MACD-H ticks up from its next bottom.

I wrote in *Trading for a Living*: “Occasionally, the second bottom is followed by a third. This is why traders must use stops and proper money management. There are no certainties in the markets, only probabilities. Even a reliable pattern, such as a divergence of MACD-Histogram, may fail occasionally, which is why we must exit if prices fall below their second bottom. We must preserve our trading capital and re-enter when MACD-Histogram ticks up from its third bottom, as long as it is higher than the first.”

Triple bearish divergences occur when prices start falling from a bearish divergence but then turn up again. We saw this pattern on Figure 08. As long as the latest top of MACD-H is below the original first top, I will short a downtick from the latest top – as I did in the trade shown in Fig. 08.

If you trust your signals and use good risk management, you’ll have the courage to re-enter.

MISSING RIGHT SHOULDER

This is a rare version of a divergence, first described in [The New Sell & Sell Short](#). It occurs when the second top Z of MACD-H fails to clear the zero line while building a bearish divergence. It often precedes vicious declines.

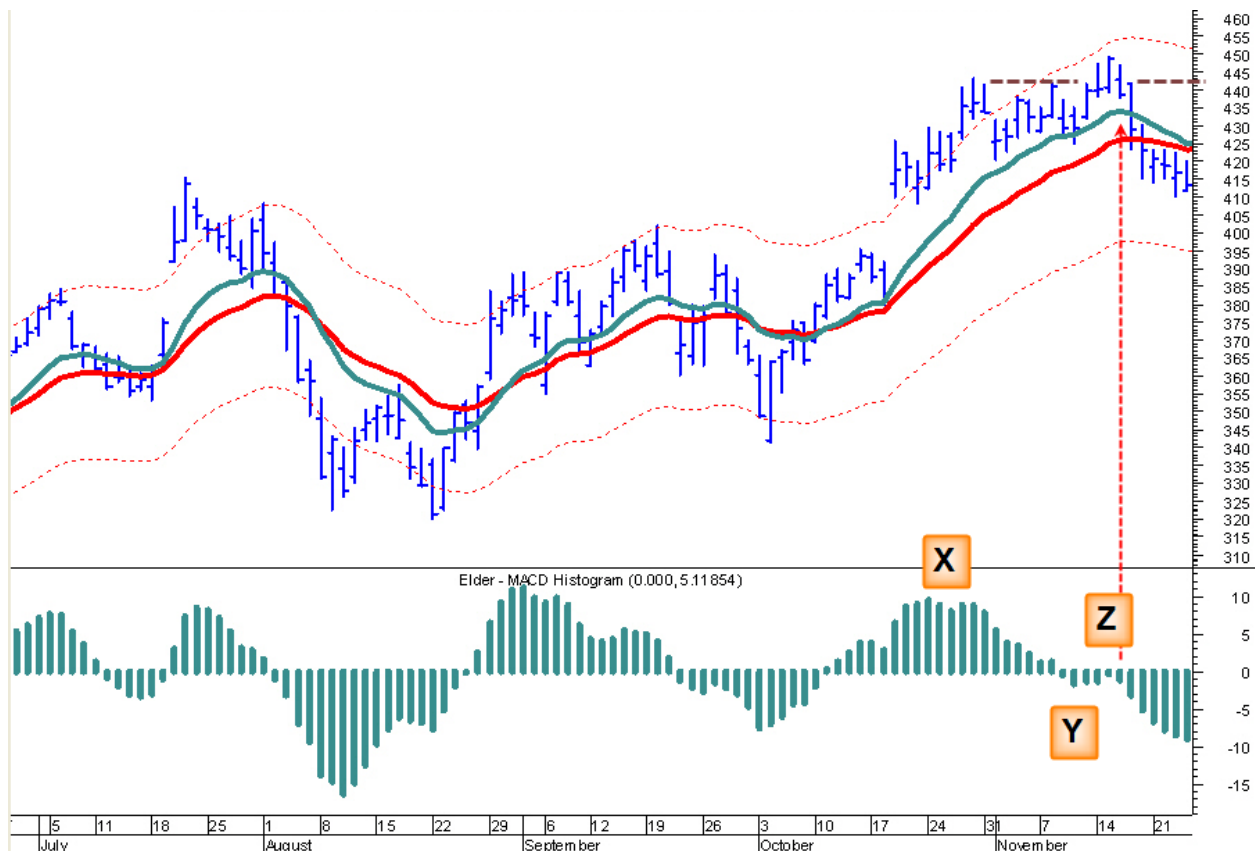


Figure 14 ISRG daily. A ‘missing right shoulder’ bearish divergence (chart by MetaStock).

Here you can see how ISRG, a leading medical technology company, rallied in **area X**. MACD-Histogram rallied to a new peak, while prices blew out of their channel. They pulled back to value in **area Y** and rallied again at **Z**, breaking out to a new high but unable to reach the upper channel line. MACD-Histogram ‘broke the back of the bull’ in **area Y**, but its rally in **area Z** could not rise above the zero line. When it ticked down (marked by a vertical dashed arrow), it completed a bearish divergence of a missing right shoulder type.

The mirror images of such divergences may occur at market bottoms. Beginning traders should not trade such ‘missing right shoulder’ divergences. Beginners are better off trading classical patterns and leaving more unusual patterns for more experienced traders.

DIVERGENCES AND YOUR TRADING STYLE

Some of us like to trade trends, others prefer looking for reversals. Some like to “go with the flow,” while others look for a change. This is seldom a conscious choice, as we tend to follow our instincts.

Divergences are especially useful for reversal traders. You can build your entire trading method on divergences. Just be sure to have risk management down cold. Reversal trading is a fascinating but risky business. Be sure to use protective stops.

Trend traders can also benefit from divergences. Remember that divergences are among the strongest signals in technical analysis. If you recognize a bullish divergence on a weekly chart, you should have greater confidence to ride the uptrend on the daily chart. You can see a good example of this in Figure 01 at the start of this book. Additionally, the appearance of a divergence against a position is a sign to exit or at the very least to tighten your stop.

Any trading method is only as good as the person who uses it. Become aware of your style and build your method around it. To quote Shakespeare’s Hamlet, ‘To thine own self be true.’

[Return to the Top](#)

Divergences in Other Indicators

All charts we’ve reviewed so far featured MACD-Histogram, but divergences occur in many other indicators. The only requirement is that those indicators must oscillate around a zero line. This is why MACD-Histogram can have a divergence while MACD Lines cannot – because MACD Lines do not oscillate around a zero line.

In order for a classic divergence to emerge, an indicator has to cross its zero line between the two bottoms or tops. If there is no crossover, there is no divergence. This is why we called the patterns of MACD Lines in Figures 1 and 7A bullish, but we could not call them divergences – MACD Lines have no zero line. Neither could we call the patterns of MACD Lines in Figures 4 and 8B bearish divergences. Since the construction of MACD Lines does not include a zero line, it cannot have a bullish or a bearish divergence. It may have a bullish or a bearish pattern to be sure, but not a classical divergence.

Because of this rule, the concept of a bullish or a bearish divergence cannot be applied to many popular indicators, such as RSI or Stochastic. Sure enough, there are instances when higher prices are accompanied by a series of lower tops in RSI or Stochastic, indicating a weakening trend. You may well pay attention to such developments and use them in your trading – but you cannot call them divergences.

For a bullish divergence to occur, there have two indicator bottoms with a bullish upswing across the zero line between them. For a bearish divergence, an indicator must have two upswings, and between them a break below the centerline. This is why we can apply the concept of a divergence only to those indicators that oscillate around a zero line.

Let us maintain the clarity of our concepts. The market is muddled enough as it is, and we must think clearly and be disciplined in order to be successful. There is no room for fuzzy definitions in market analysis.

To apply the concept of divergences to other indicators, let's review two examples. One of them is the Force Index and the other is the New High – New Low Index, since both are built to oscillate around a zero line.

Force Index is described in all of my books, starting with its first public introduction in *Trading for a Living*. I consider it the best tool for tracking volume in the markets. Volume serves as the essential engine of price trends, and Force Index tracks its changes much more clearly than any volume chart.

Working with Force Index, I never use its raw values but smooth it with a moving average. I use a 2-day EMA for catching very short-term trends and a 13-day EMA for intermediate trends, such as the ones shown above. Divergences in the 13-bar EMA of Force Index are especially valuable.

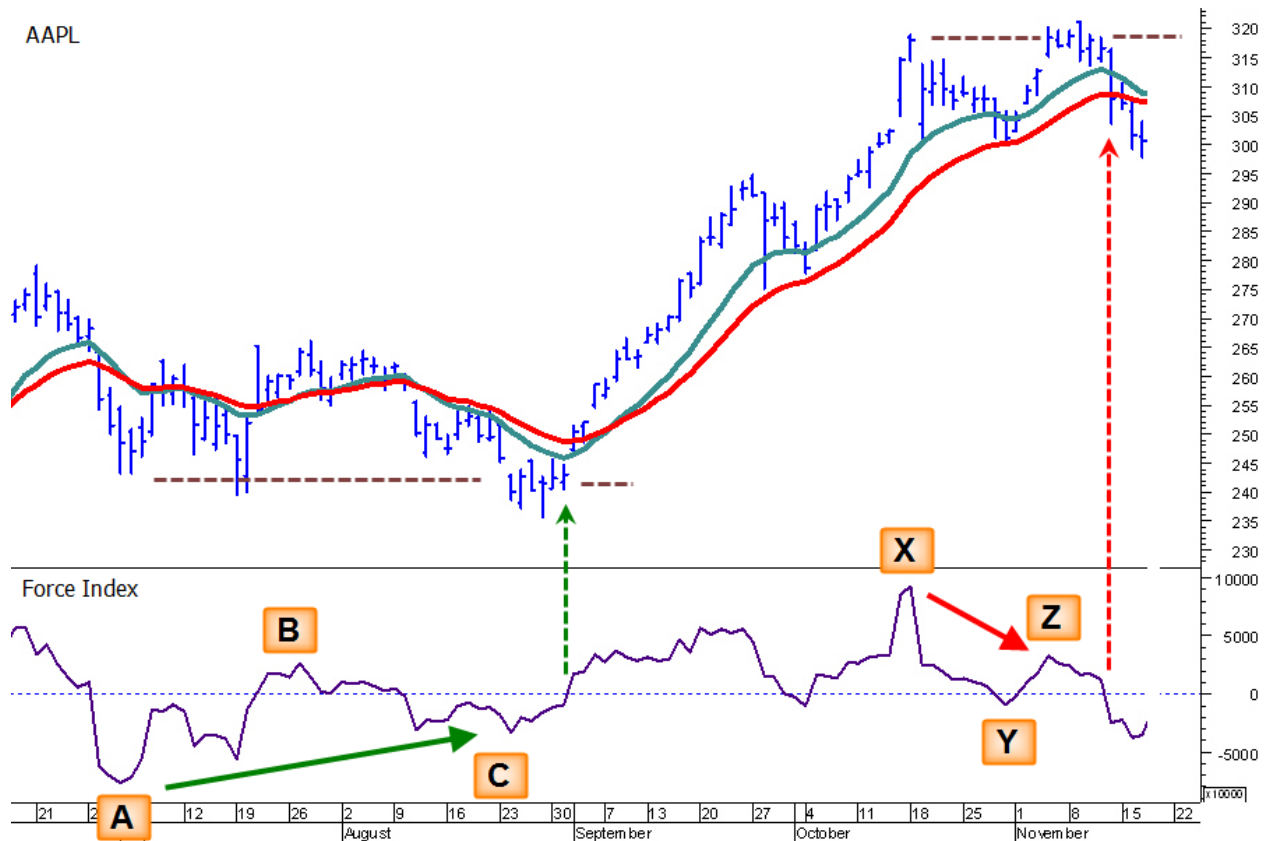


Figure 15 AAPL daily with a 13-day EMA of Force Index with bullish and bearish divergences (chart by MetaStock).

In **area A** Apple Computer (AAPL) fell to a new low and Force Index grinded down to a new low as well, confirming the power of bears. Prices dropped even lower, but the Force Index trended higher, crossing above its zero line in **area B**, ‘breaking the back of the bear.’ Prices dropped to a new low in **area C**, but Force Index traced out a much more shallow low, completing a bullish divergence. It gave a buy signal by crossing above the zero line, and then AAPL was off to the races.

Force Index reached a new high in **area X**, dropped below zero in **area Y**, breaking the back of the bull, then rallied again in **area Z**, where a bearish divergence occurred. That signal was reinforced by a false upside breakout, and that combination preceded a sharp downmove.

Another important indicator that oscillates around its zero line is the New High – New Low Index (NHNL). I consider it the best leading indicator of the stock market. There is a chapter dedicated to it in

Trading for a Living and I am currently working on an e-book about NHNL together with Kerry Lowvorn, my friend and partner in [SpikeTrade](#).

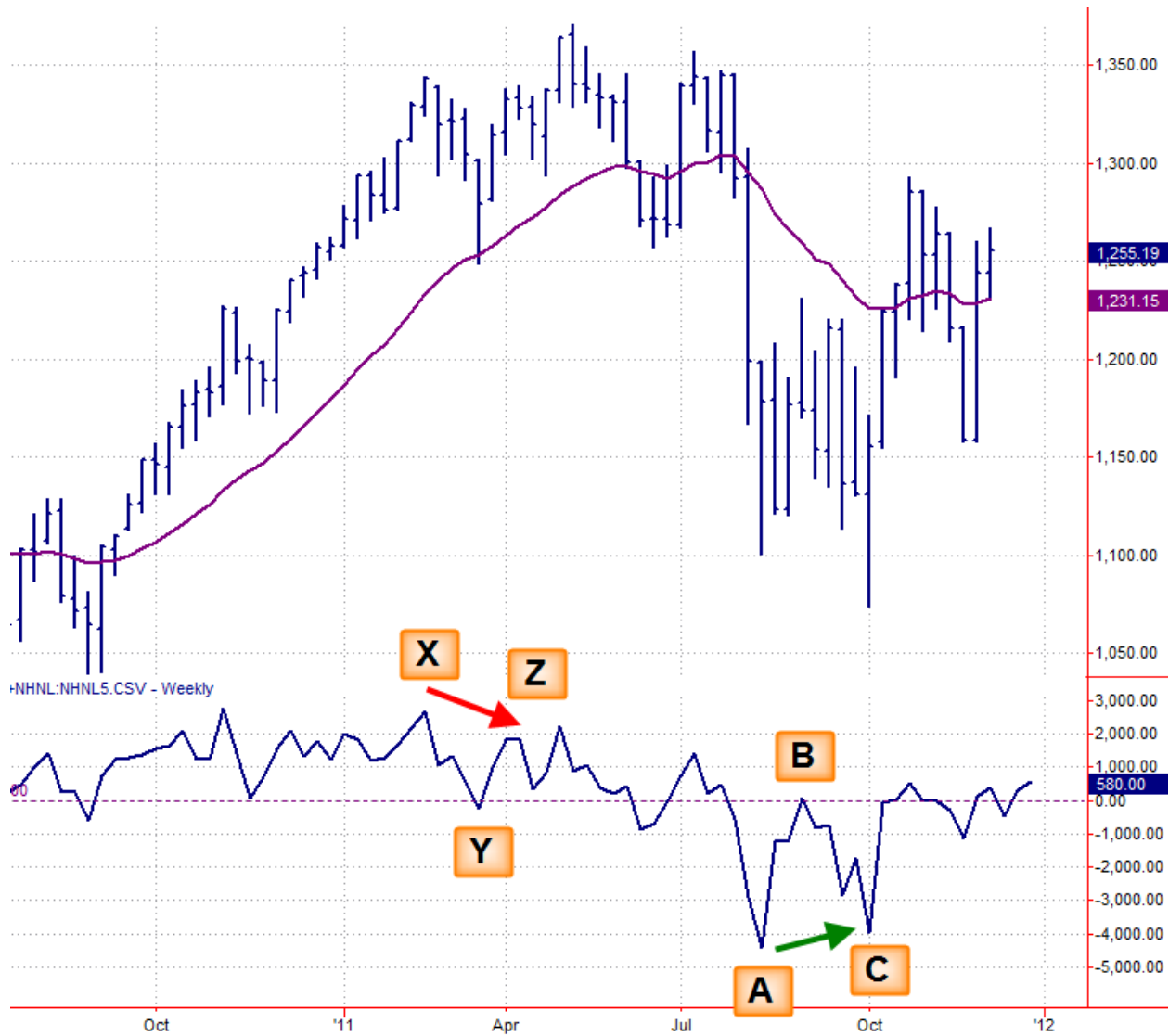


Figure 16 S&P500 weekly with a weekly NHNL. A bearish and a bullish divergence (chart by TradeStation).

In March 2011 the stock market rallied to its new post-2009 peak. NHNL confirmed the power of bulls by rising to a new high in **area X**, telling us to expect even higher prices ahead. When prices dropped into their value zone, NHNL briefly dipped below zero in **area Y**, 'breaking the back of the bull.' When the stock market rallied to a new bull market high in May in **area Z**, NHNL traced out a much lower peak, completing a bearish divergence and giving a sell signal.

After the market had a nasty decline, mass bullishness evaporated and the public was gripped by bearishness. That's when NHNL traced out a bullish divergence **A-B-C**, telling savvy traders not to panic and get positioned for a rally. The value of NHNL is so great that we publish nightly updates and comments on this indicator at www.spiketrade.com

We can find examples of divergences in many other indicators – as long as they include a zero line. Just remember these sequences:

For a **bullish divergence** (bullish divergences occur at market bottoms):

- Prices fall to a new low, attempt to rally, but then drop to a new low
- An indicator falls to a new low, rallies above zero, then falls again, but to a more shallow low, and the ticks up

For a **bearish divergence** (bearish divergences occur at market peaks):

- Prices rally to a peak, decline, then rally to a higher peak
- An indicator rallies to a peak, drops below zero, then rallies to a lower peak, and then ticks down

Keeping these rules in mind will help you find powerful bullish and bearish divergences in many markets, using many indicators.

[Return to the Top](#)

Divergences in Multiple Timeframes

While writing the first draft of this chapter, I was keeping an eye on the quote screen where my day-trade was going on, driven by bearish divergences. They occur on intraday charts much more often than on the dailies. The moves are not as large as on the dailies, but the opportunities are much more frequent.

Keep in mind that the extent of any price move is in direct proportion to its timeframe. For example, looking at the S&P500 and its trading vehicle, the e-mini futures, a divergence on the weekly chart may lead to a move of over a hundred points, a divergence on a daily chart may precede a move of a couple of dozen points, while a divergence on a five-minute chart may result in a move of only a few points. A divergence on a weekly chart of a stock tends to occur once every few years, while on the daily chart it may occur a few times per year, but on intraday charts you can catch one several times a week.

You must remember that markets move at the same time in multiple timeframes. I keep running into day-traders who keep staring at a five- or ten-minute chart to the exclusion of everything else. Invariably, they get sideswiped by moves that erupt from slightly longer timeframes. A serious day-trader must follow the principles of Triple Screen. With this caveat, let's review several examples of divergences on intraday charts.

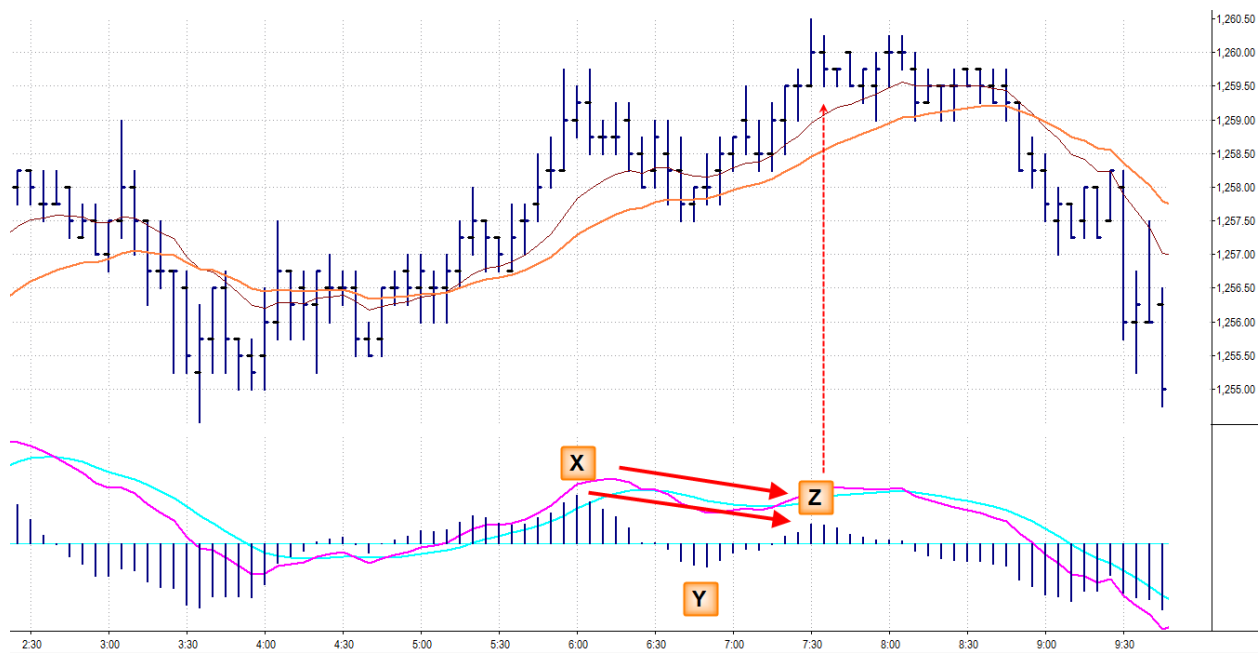


Figure 17 S&P e-mini futures, 5-minutes with MACD-Histogram and MACD Lines. A bearish divergence (chart by TradeStation).

S&P rallied into **top X**, retreated, they rallied to a higher high in **area Z**. MACD-Histogram traced a massive **top X**, and then broke the back of the bull in **area Y**, by falling below its zero line. It then rallied

to a much lower **top Z**. When MACD-H ticked down, it completed a bearish divergence and shoved prices down into a steepening decline.

An intraday chart behaves just like a daily chart. Once you learn to trade divergences, you'll be able to trade them in any timeframe. Just remember that day-trading gives you no time to think – your actions must be nearly automatic. This make day-trading not suitable for beginners.

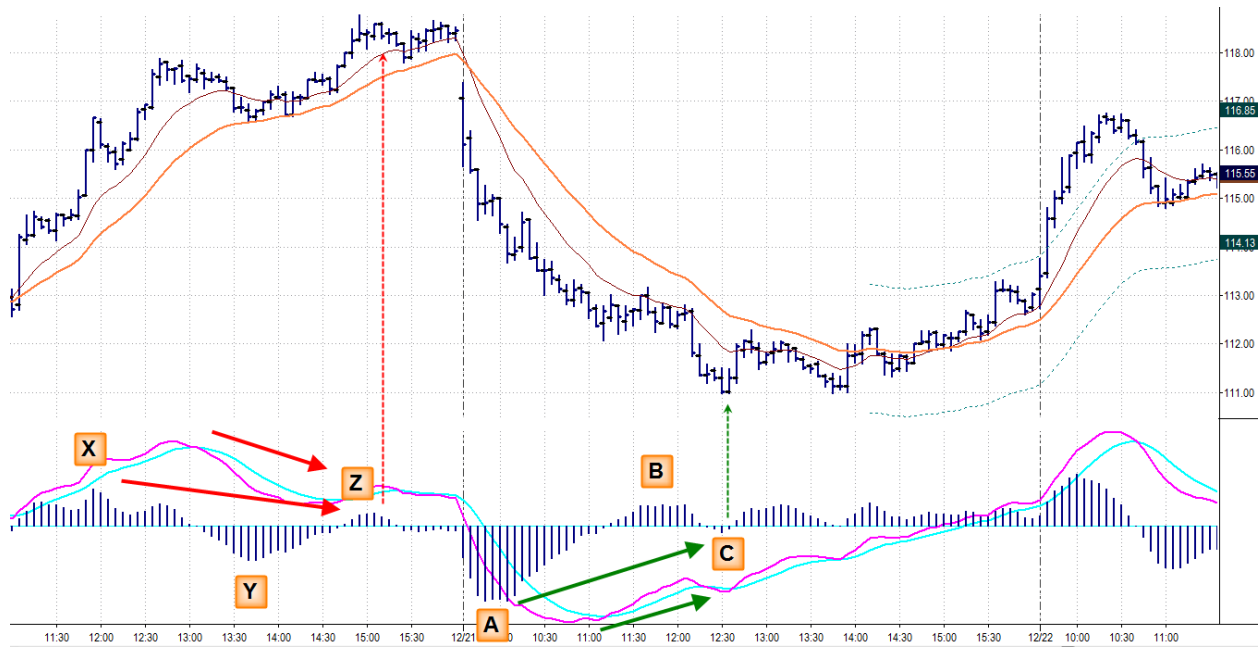


Figure 18 BIDU 5-minutes with MACD-Histogram and MACD Lines. Bearish and bullish divergences (chart by TradeStation).

At the time I write this, Baidu, Inc, (BIDU) is one of the favorite stocks among day-traders. Its wide swings provide many opportunities for nimble operators. In this example, BIDU rallied to a new peak, creating a bearish divergence X-Y-Z shortly before the close (a vertical grey line). The next day it slid down from the opening bell, carving out a bottom before noon in **area A**, with the new low of MACD-Histogram confirming the power of bears. BIDU went flat around lunchtime, with MACD-Histogram rising above zero in **area B**, breaking the back of the bear. The stock broke to a new low in **area C** – but MACD-Histogram refused to confirm that decline. Markets run on a two-party system – when bears become weak, it is time to bet on the bulls. This bullish divergence gave a buy signal just before an

explosive upmove. Profits could be taken near the upper channel line. They absolutely should be taken when prices stall above their upper channel line.

This chart has several other important features. Notice a bullish pattern of MACD Lines in area C and of course the false downside breakout at bottom C. A false breakout occurs when prices break below support but cannot follow through and rally above the line of support, giving a buy signal.

We could have filled hundreds pages with examples of bullish and bearish divergences on intraday charts – hourly, half-hourly, 10-minute, 5-minute, you name it. Perhaps you can do that in your own trading diary. Just keep in mind that the concept of divergences applies to all timeframes.

[Return to the Top](#)

Scanning for Divergences

Facing a huge universe of stocks, some traders feel tempted to create an automated scan and use it to look for divergences. The problem is that while divergences tend to leap at you when you look at a chart, they are surprisingly difficult to pick up via a scan.

Several expert programmers have told me that writing a divergence scan was their hardest challenge. None of them has achieved results that were entirely satisfactory. All automatic scans I've seen had massive numbers of false positives and negatives. False negatives miss perfectly good divergences, while false positives flag charts that have no divergences. Together they lead to a colossal waste of time and missed opportunities.

I have not yet figured out what causes this problem. A divergence pattern easily seen by an experienced trader becomes extremely hard to catch with an automatic scan.

Still, it is very tempting to create a scan that would race through a universe of stocks – say all stocks in the S&P500 – and flag those with bullish or bearish divergences. Keep in mind that a scan should eliminate low volume stocks as well as very cheap stocks. For example:

- omit stocks that trade fewer than a million or at least half a million shares a day

- do not look for bullish divergences in stocks cheaper than \$3
- do not look for bearish divergences in stocks cheaper than \$10

It pays to eliminate low-volume stocks from a scan because low volume reflects low public participation. This undermines the entire principle of technical analysis – reading mass psychology of the markets. If the volume is low, there is not enough to read. Low-priced stock can experience huge volatility. This is great when it goes your way but can be bone-crushing when it swings against you – I tend to avoid this risk.

[Return to the Top](#)

The Next Step: MACD Semi-automatic

In the process of writing this book, I found a new solution to the challenge of scanning for divergences (one of the reasons I teach and write is that it challenges me to expand my mind). I am currently testing this method, which I named “MACD Semi-automatic.”

As we have seen, a bullish divergence consists of two bottoms, A and C, with a top B between them. This scan detects when the bottom A and top B have been traced and the bottom C just begins to form. At that point the automatic mode ends and the manual begins. It now becomes a trader’s job to identify the bottom C and trade it.

A scan for **bullish divergences** performs the following steps, in this sequence:

1. MACD-Histogram drops to the lowest low of 100 bars (you may change this number). This identifies bottom A of the potential A-B-C bullish divergence.
2. MACD-Histogram crosses above the zero line, ‘breaking the back of the bear.’ This identifies top B of a potential bullish divergence pattern.
3. With the stock hitting new 100-day lows, MACD-Histogram crosses below its zero line again – and at this point the scan flags the stock. Now it is the time to switch from using a computer to relying on your eyes, as you hunt for the potential bottom C, completing the bullish divergence and giving a buy signal.

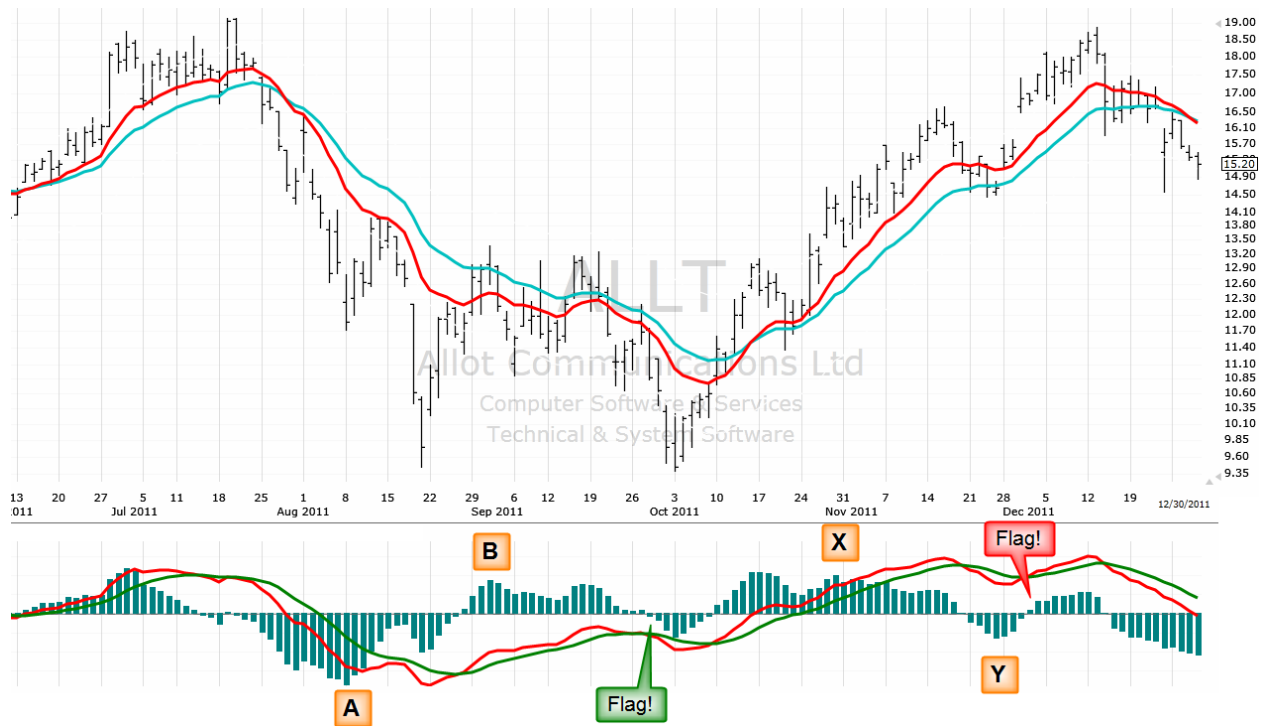


Figure 19 ALLT daily with MACD-Histogram and MACD Lines. MACD Semi-automatic alerts (chart by TC2000).

Bullish and bearish patterns here tend to mirror one another. In **area A** both the Allot Communications (ALLT) and MACD-Histogram fall to a new low. The stock works its way down even lower, while MACD-H remains below zero, tracing out a broad bottom. A rally in **area B** breaks the back of the bear. When the indicator sinks below zero following the top B, the semi-automatic scan flags this trading vehicle. At this point a trader can start following it visually on a daily basis.

In **area X**, the stock and the indicator both rally to a new peak. The stock continues even higher, while the indicator traces a broad top. MACD-H cracks in **area Y**, breaking the back of the bull. When MACD-Histogram rallies above its zero line again, the semi-automatic scan flags the stock as a potential short in the near future. It is time to begin watching it on a daily basis, ready to trade a more severe price break.

A scan for **bearish divergences** helps catch market tops. A bearish divergence consists of two tops, X and Z, with a break Y between them. This scan detects when the top X and bottom Y have been traced

and the top Z begins to form. At that point the automatic mode ends and the manual begins. It now becomes a trader's job to identify the top Z and trade it. These are the steps:

1. MACD-Histogram rises to the highest high of 100 bars (you may change this number). This identifies top X of a potential bearish divergence pattern.
2. MACD-Histogram crosses below its zero line. This identifies bottom Y, 'breaking the back of the bull.'
3. With the stock rising to new 100-day highs, MACD-Histogram crosses above its zero line – at this point the scanner flags the stock. Now is the time to switch from using the computer to using your eyes, hunting for the potential top Z.

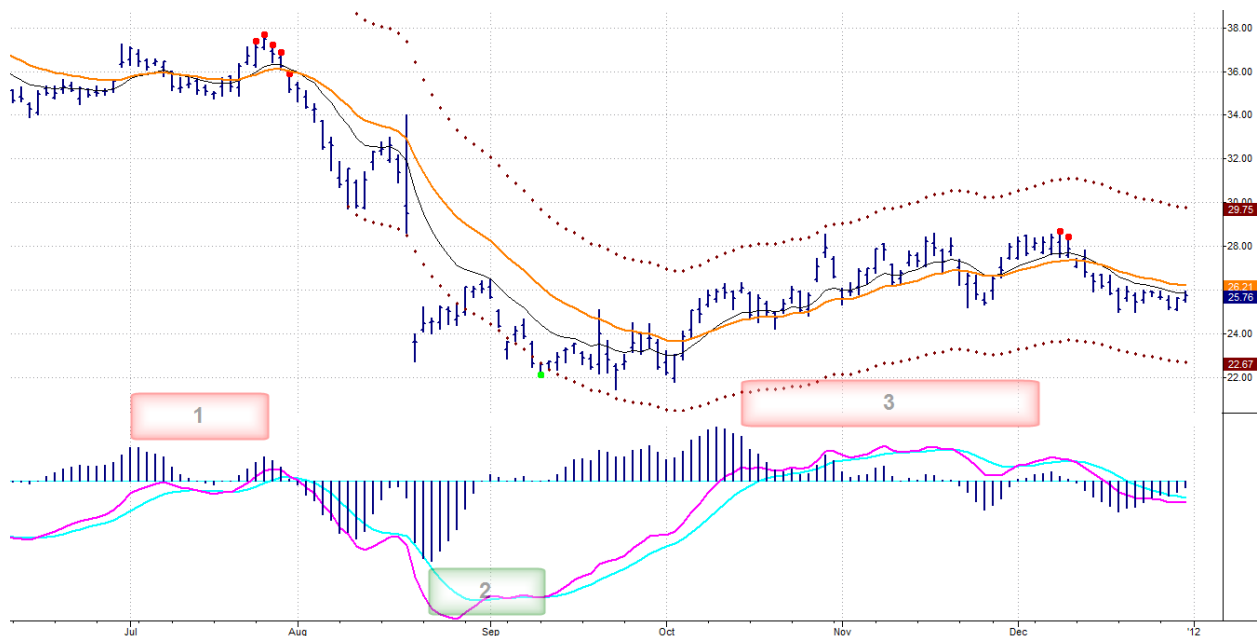


Figure 20 HPQ daily with MACD Semi-automatic (chart by TradeStation).

In zones 1 and 3, potential bearish divergences are signaled by red dots as the top Z is starting to emerge. When the scan detects a higher price peak accompanied by a lower MACD-Histogram, it starts putting red dots above the plot, warning of the possibility of a bearish divergence. In zone 2 this scan warns of an approaching bullish divergence by flashing a green dot when prices sink to a new low C, while MACD-H, while falling, is still above its bottom A.

This semiautomatic scan is a work in progress. I continue to work on this project and began using it in my trading. I will update my findings in the next edition of this e-book, which will be sent as a courtesy to all readers whose e-mails we have.

[Return to the Top](#)

Conclusion

Bullish and bearish divergences are among the most powerful trading signals. Use these sharp tools carefully, keeping in mind several principles and rules:

1. A bullish divergence consists of two price bottoms separated by a rally, with the second bottom lower than the first. At the same time an indicator traces a similar pattern, crossing above the zero line between two bottoms, only its second bottom is higher than the first.
2. A bearish divergence consists of two price tops separated by a break, with the second top higher than the first. At the same time an indicator traces a similar pattern, breaking below its zero line between two tops, and its second top is lower than the first.
3. Bullish as well as bearish divergences follow well-defined patterns. If you see a pattern that deviates from the norm, the safest thing to do is to skip that stock and move on to another one. Do not bend the rules and force yourself to trade. The markets provide a wealth of opportunities and private traders have the luxury of freedom as we wait for a clear signal to emerge. An institutional trader must trade every day, but as a private trader you have one advantage – to trade only when everything lines up right. Do not throw away this advantage.
4. Remember that markets live in multiple timeframes. If you see a bullish divergence on a daily chart, it is important to know what the weekly is doing. It's good if it is hitting support, reinforcing the bullish case. If, on the other hand, it is falling like a knife, one must be doubly cautious trading a bullish divergence on the daily chart – skip it or trade a smaller size.

Thank you for having joined me on this journey into a fascinating and rewarding area of technical analysis. Do your homework, keep good records, and apply risk management rules to become a winner.

Best wishes for successful trading,

Dr. Alexander Elder

New York City

January 2012

[Return to the Top](#)

Thanks

I feel grateful to a group of loyal friends who kindly contributed to this book. In drawing my charts I relied on technical tools implemented by a brilliant programmer named John Bruns. Since graduating from my Traders' Camp years ago, he has developed a set of Elder-disks which implement my tools into several popular charting programs. All charts in this e-book were drawn using Elder-disks.

Jeff Parker, a distinguished member of SpikeTrade, gave the manuscript a serious reading and made several suggestions and corrections. Kelly Clement of Equis.com drew several charts using MetaStock, while Patricia Liu drew several charts using StockFinder. Kerry Lowvorn helped with the jacked design. Carol Keegan Kayne performed the final copy-edit – no book is complete without her signing off on it.

My great thanks to all of you.

[Return to the Top](#)

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[Return to the Top](#)

About the Author

Alexander Elder, M.D., is a professional trader and a teacher of traders. He is the author of *Trading for a Living*, considered a modern classic among traders. First published in 1993, this international best-seller has been translated into more than a dozen languages and is being used to educate traders around the world. His *Come into My Trading Room: A Complete Guide to Trading* was named a 2002 Barron's Book of the Year. His *Entries & Exits: Visits to 16 Trading Rooms* was named a 2007 SFO Magazine Book of the Year. His latest book is *The New Sell & Sell Short: How to Take Profits, Cut Losses, and Benefit from Price Declines (2011)*.

Dr. Elder was born in Leningrad and grew up in Estonia, where he entered medical school at the age of 16. At 23, while working as a ship's doctor, he jumped a Soviet ship in Africa and received political asylum in the United States. He worked as a psychiatrist in New York City and taught at Columbia University. His experience as a psychiatrist provided him with unique insight into the psychology of trading. Dr. Elder's books, articles, and reviews helped make one of today's leading teachers of trading.

Dr. Elder is the originator of Traders' Camps—week-long classes for traders. He is the founder of the SpikeTrade group, whose members are professional and semi-professional traders. They share their best stock picks each week in competition for prizes. Dr. Elder continues to trade and is a sought-after speaker at conferences worldwide.

Readers of this book are welcome to request a free subscription to his electronic newsletter by contacting his office:



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[Return to the Top](#)

Answers to Questions (The Engine Room)

Read the answer to your question and return to Reader Exercises. Do not read other answers!

Exercise A – AMP Answer

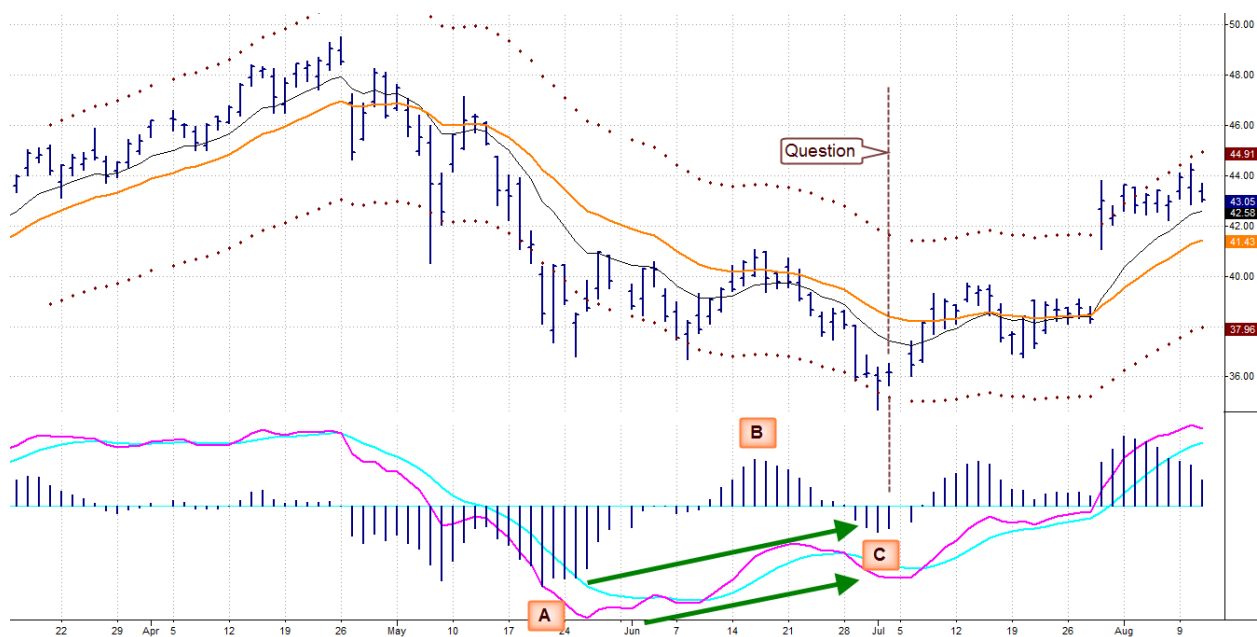


Figure 07a AMP daily. Answer: a bullish divergence signals a rally (chart by TradeStation).

When prices dropped in **area A**, the new low of MACD-Histogram confirmed the downtrend.

A rally in **area B** lifted MACD-H above its zero line, ‘breaking the back of the bear.’ That’s where a serious trader should begin closely watching his stock, to see whether a bullish divergence will form.

Notice that in area B prices have rallied slightly above their value zone, showing that bulls were getting

stronger. Prices fell to a new low in **area C**, but MACD-H traced out a much more shallow low. It completed a bullish divergence and gave a buy signal when it ticked up from that bottom. Notice two additional bullish signals in area C – a bullish pattern of MACD Lines and a ‘kangaroo tail’ – a price bar that protruded down from a tight weave of prices. It showed that AMP tested lower prices but rejected them.

[Return to AMP question](#)

Exercise B – answer AMZN

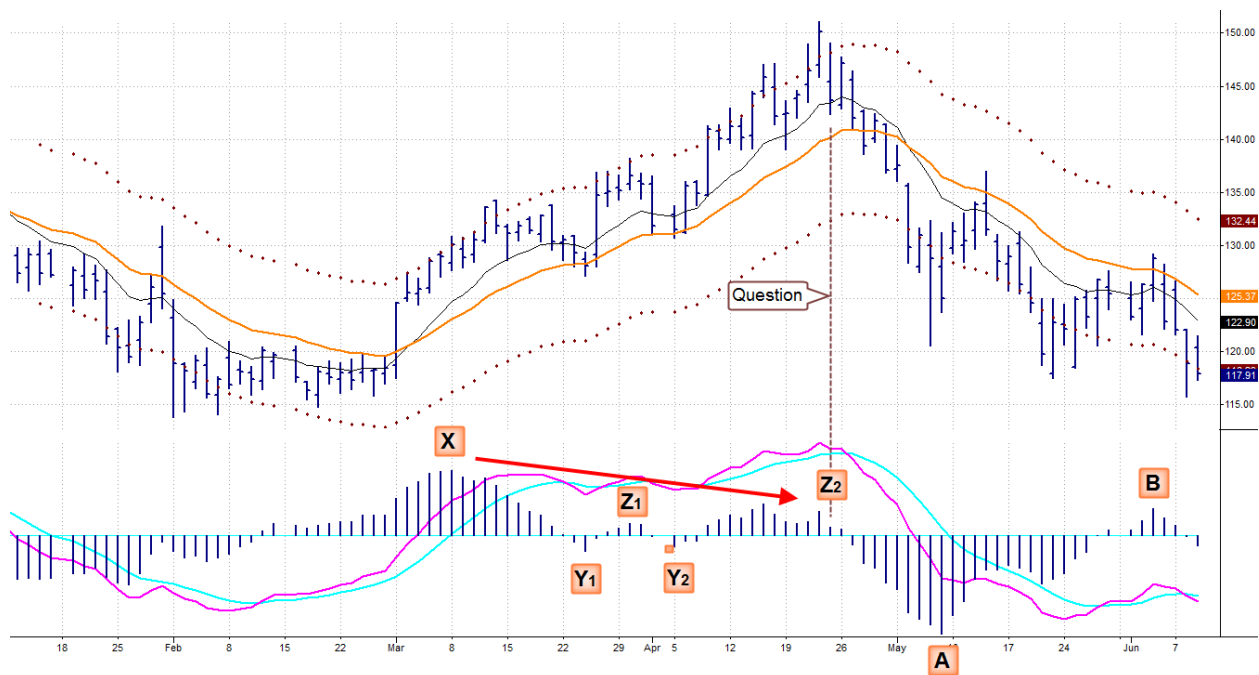


Figure 08a AMZN daily. Answer: a bearish divergence calls for a decline (chart by TradeStation).

In April 2010 I flew for a long weekend in the Caribbean. I wasn't paying much attention to the market during that trip, but on Friday morning, while reading my emails under a poolside umbrella I received a message from Kerry Lovvorn, my friend and partner in SpikeTrade. He sent me a chart of AMZN with a few arrows and a question mark. A bearish divergence X – Y₂ – Z₂ leapt at me from the chart. I had missed previous divergences in AMZN, but I was not going to miss this one! I immediately shorted this stock, placing a stop near its recent peak, then closed my laptop and took my wife for a walk on the

beach. The trade was profitable from day one. I cashed out the following week, when prices appeared to stall below their value zone.

I had not taken full advantage of that decline, but the power word in trading is 'Enough.' I got enough and was happy with it.

Let us stay with this chart for a little longer. You can see a deep bottom A, where MACD-H marked the point of the maximum power of the bears. At point B the back of the bear was broken. Now, at the right edge of the chart, you should be watching AMZN with your index finger on the trigger. As soon as MACD-H, currently below zero, ticks up, it'll complete a bullish divergence and give a buy signal.

Stocks have personalities and their patterns tend to repeat. Some stocks tend to have divergences often, others rarely or never. AMZN likes having divergences, and another striking bearish divergence is marked on the chart 8b, below. Examine it, moving slowly from left to right – and see whether you can find one more, unmarked bearish divergence.

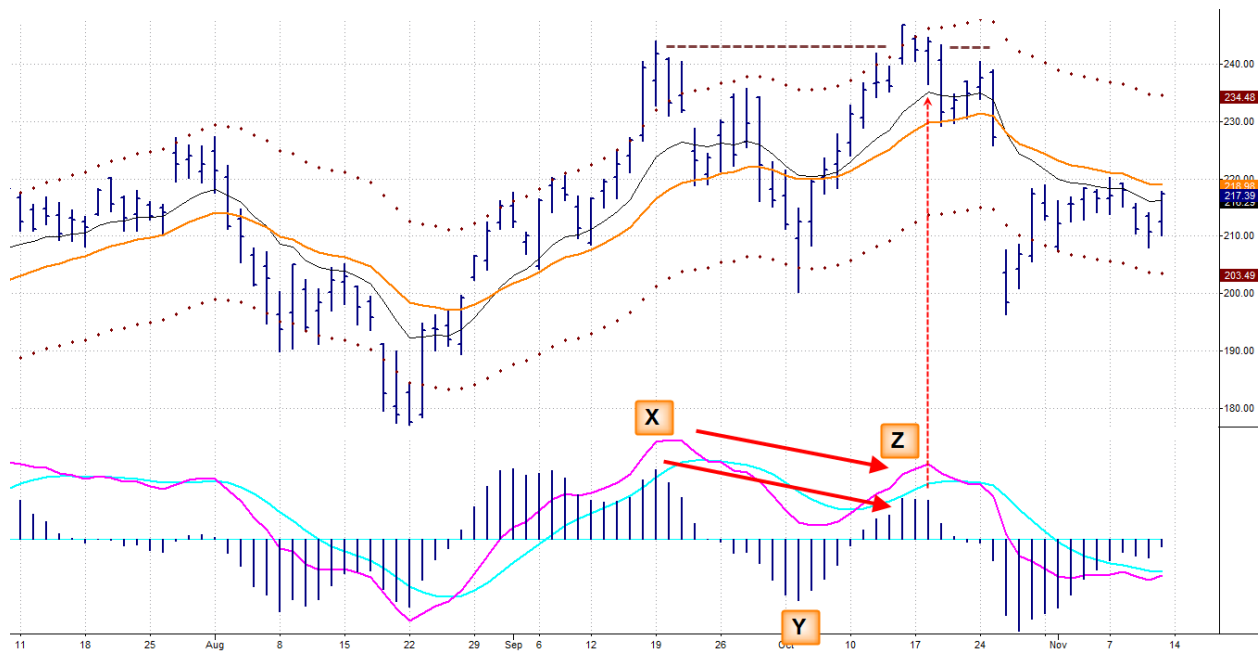


Figure 08b AMZN daily follow-up. Two more bearish divergences in 2011.

The divergence X-Y-Z was accompanied by a false upside breakout.

Hint: the unmarked bearish divergence is near the left edge of the chart.

[Return to AMZN question](#)

Exercise C – answer BBBY

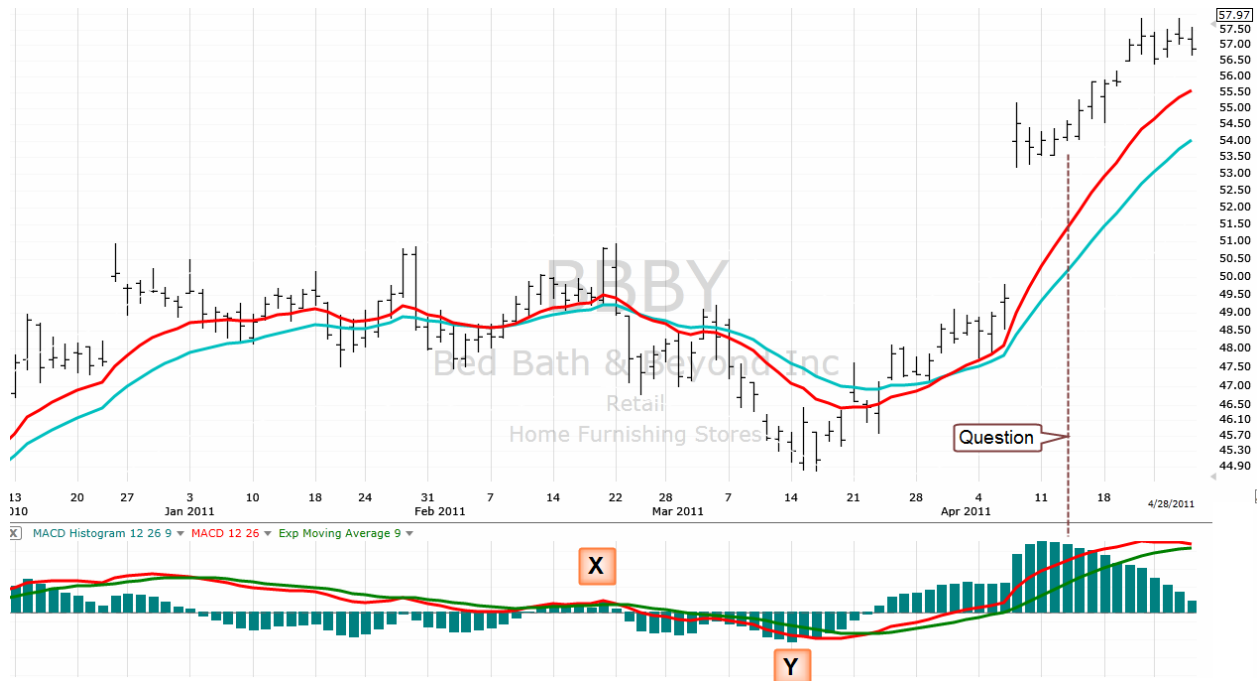


Figure 09a BBBY daily (chart by TC2000.com).

Answer: the second peak of MACD-H is higher than the previous one, meaning there is no bearish divergence.

BBBY is rising, and the peak of MACD-Histogram near the right edge is higher than its previous peak in the middle of the chart. In **area X** MACD-Histogram rallied above zero, confirming price rally. In **area Y** MACD-H fell below zero, breaking the back of the bull. It rallied near the right edge of the 'Question' chart (marked here by a vertical line) and appeared to stall. Notice that the latest peak of MACD-H was higher than peak X – meaning there was no divergence. For a valid bearish divergence to occur, the second peak of the indicator must be lower than the first.

[Return to BBBY question](#)

Exercise D – answer GOOG

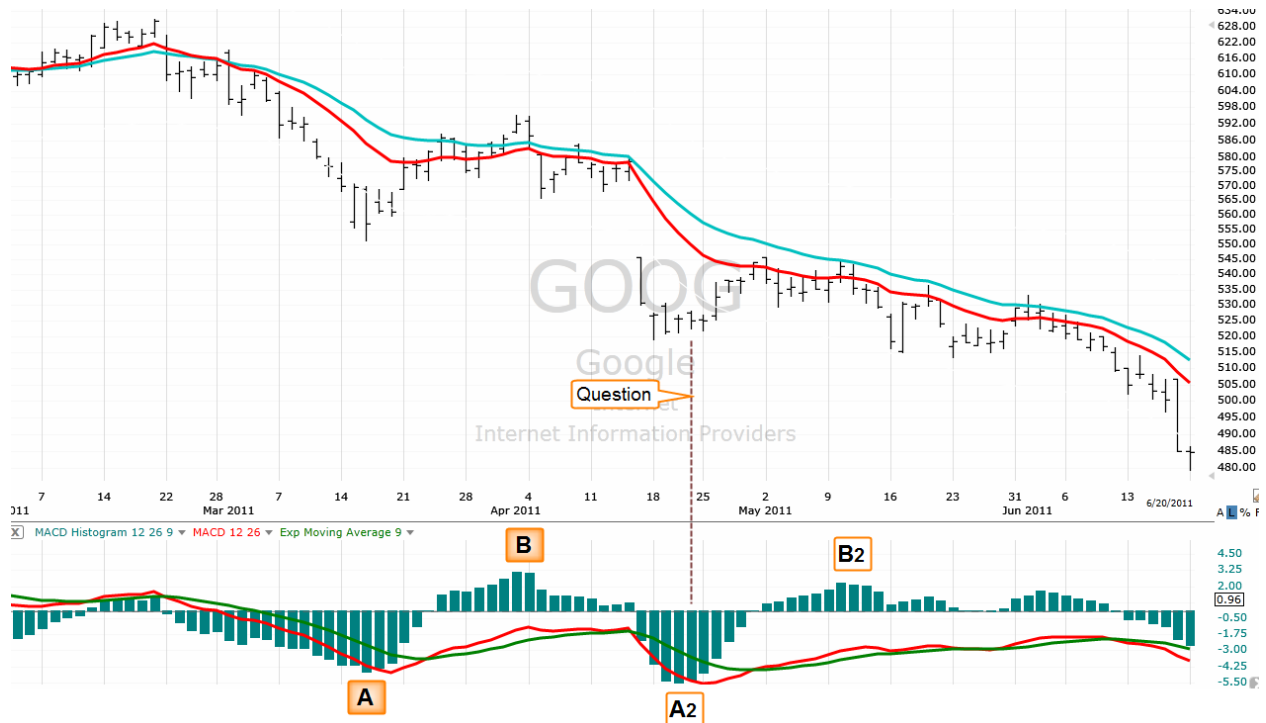


Figure 10a GOOG daily (chart by TC2000.com).

Answer: the second bottom of MACD-H is lower than the previous one, meaning no bullish divergence.

In **area A** MACD-Histogram fell to a new low, confirming the decline. In **area B** it rallied above zero, breaking the back of the bear. Near the right edge of the 'Question' chart (marked here by a vertical line) MACD-H fell to a lower low – and that meant there was no bullish divergence. For a valid bullish divergence to occur, the second bottom of MACD-H must be shallower than the first.

A trader who bought near the right edge of the Question chart could have avoided a loss or even taken a bit of profit by quickly moving his or her protective stop slightly above the breakeven level. But this sort of fancy dancing is a hard game. Professional traders do not look for challenges in the markets – we look for more reliable setups. Markets are harsh and unforgiving, and it is safer to wait until a clear signal emerges on your screen.

PS: watch GOOG like a hawk at the right edge of the screen. MACD-Histogram fell to a new low A_2 , then rallied to a top B_2 , breaking the back of the bear. It lingered above zero for several weeks before sinking near the right edge of the chart. If it ticks up from a more shallow level than A_2 , it will create a bullish divergence and give a buy signal.

[Return to GOOG question](#)