

# Zen Trading System v1.7e

## System test: Dax Future (FDAX)

Version 1.7e

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### **Exemption from Liability**

The software product **Zen Trading System** generates trading signals concerning the trading of the german DAX Index instruments based on the implemented mechanical trading system and on price data input of the user. Results obtained in the past offer however no security for the future success of the system. Therefore no guarantee for a successful trading in the future can be taken using this software product. The user is fully responsible for his trading actions and his trading risk.

## Introduction

The **Zen Trading System v1.7e** is a professional software product for the generation of trading signals concerning the german Xetra Dax Index on the basis of available price data („end of day“). Beyond that the software has a “system tester”, which allows tests of different price data rows concerning the implemented trading system.

This expertise contains system test („back test“) results for daily Dax Future price data from 01/01/2000 to 12/31/2007. The EUREX Dax Future is the most popular trading instrument of the Dax Index.

Starting base were "not adjusted" and "reverse adjusted" intraday endless data contracts of the german Dax Future (1 min / minute data). These endless contracts were converted using the software **Zeniec v1.2e** to EOD data from 09.00 to 17.35 CET (or 03.00am to 11.35am ET), that is appropriate FDAX test data for the same period of the basic Dax Index. This test data sets are available on the vendor's website for free download.

These tests were accomplished without stops, with stops as well as with pyramiding. You should naturally consider using stop loss and trailing stop in the real trading is always dependent to the possibilities of the used trading platform and services!

## 1. Basic conditions for the system tests

The following basic conditions are valid for all system tests:

- Use of daily OHLC price data (“end of day“, EOD) of the german Xetra Dax Future (see introduction).
- The evaluation period is fixed from 01/01/2000 to 12/31/2007. Since the system needs 100 data records as advance to produce the first trading signal, the test data file contains data starting from in the middle of 1999.
- The transactions and position changes always take place at the tradable Dax Index close price (17.35 CET = 11.35am ET)
- Transaction costs (Slippage, spreads and fees) will be calculated with 1 Dax point for each roundturn (open position, close position).
- The position size is 1 Dax Future contract (leverage 25:1).
- The trading capital of the account is €100,000.

## 2. System test without stops (not adjusted data)

The first system test uses only the Long or Short signals of the system and trades without stop loss, trailing stop or pyramiding of the contract positions.

**Risk management:** not activated

**Money management:** position size of 1 Dax Future contract

**Zen Trading System v1.7e - System test**

Test data file:

Data format:  Data records/day:

no stop (loss)    
  absolute stop    
  relative stop (%)    
  Vola stop

Trailing stop    
     
     

Slippage/spreads/fees each half turn (points):

Currency value each point or leverage (\$, €, etc.):

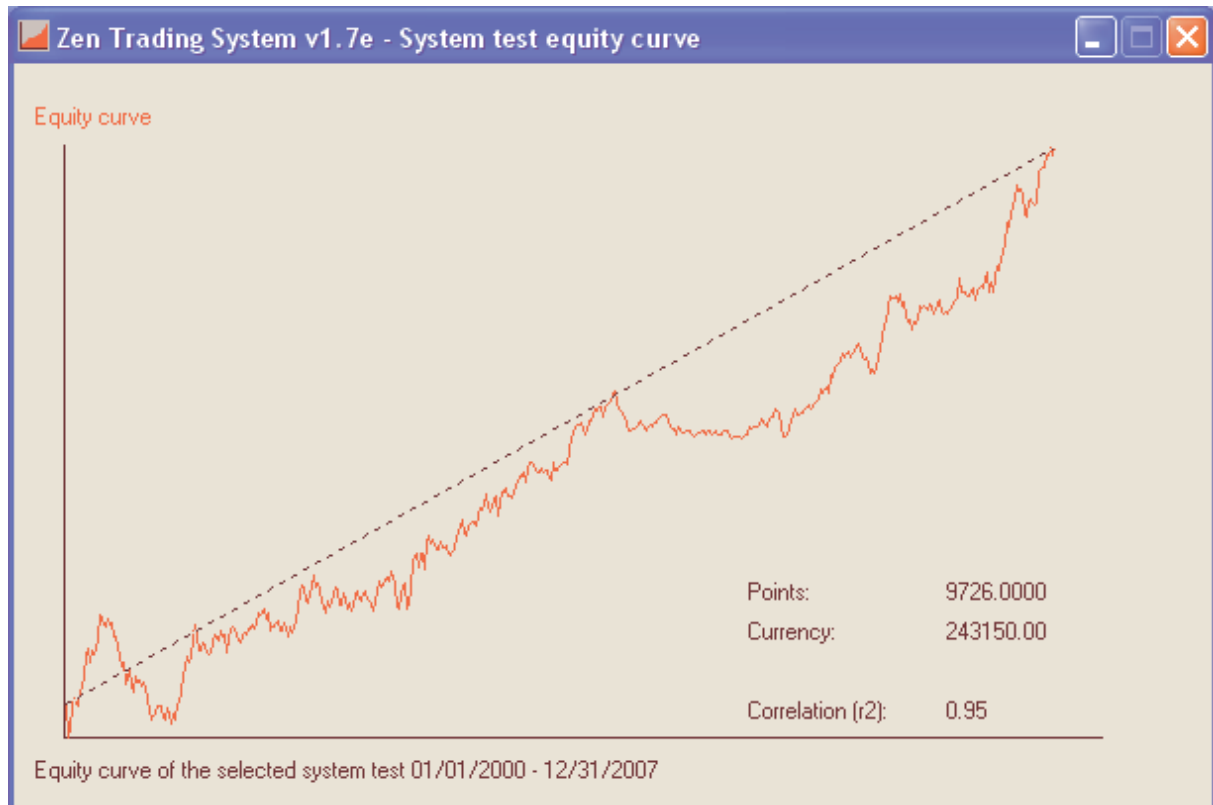
Number of contracts (or shares):   Pyramiding

Evaluation period, date (mm/dd/yyyy), from/to:

Trading capital (currency):

Number of price bars:	2034	Volatility:	1.95%
Number of winning trades:	483 (56.16%)	Number of losing trades:	377 (43.84%)
Average profit/trade:	82.1749	Average loss/trade:	-79.4814
Profit (points):	9726.0000	Max loss/trade:	-457.5000
Profit (currency):	243,150	Max DD (currency):	-47,788
Profit/year (currency):	30,125	Max consecutive losses:	7
Profit/month (currency):	2,510	MAR Ratio:	0.63
Performance/year:	+30%	Profitability:	1.32

The equity curve of this system test:



### Results:

- The system test results from 01/01/2000 to 12/31/2007 are **9,726 Dax points**.
- This corresponds to a total profit of €243,150 or an annual profit of €30,125 using the selected position size of 1 Dax Future contract.
- 56.16% of the trades were profitable
- Max. drawdown is (-€47,788).
- The **annual performance** concerning the initial capital of von €100,000 is **30%**.
- The profitability index or profit factor is 1.32
- MAR Ratio is 0.63

### 3. System test without stops (adjusted data)

The second system test uses “reverse adjusted” data.

**Risk management:** not activated

**Money management:** position size of 1 Dax Future contract

**Zen Trading System v1.7e - System test**

Test data file: C:\zenReal\fdax\Fdax\_test1735ra.txt [Select]

Data format: Format 01: Ticker,Date,O,H,L,C [v] Data records/day: 1

no stop (loss)     absolute stop     relative stop (%)     Vola stop

Trailing stop    50    5    4

Slippage/spreads/fees each half turn (points): 0.5

Currency value each point or leverage (\$, €, etc.): 1

Number of contracts (or shares): 25     Pyramiding

Evaluation period, date (mm/dd/yyyy), from/to: 01/01/2000    12/31/2007

Trading capital (currency): 100000

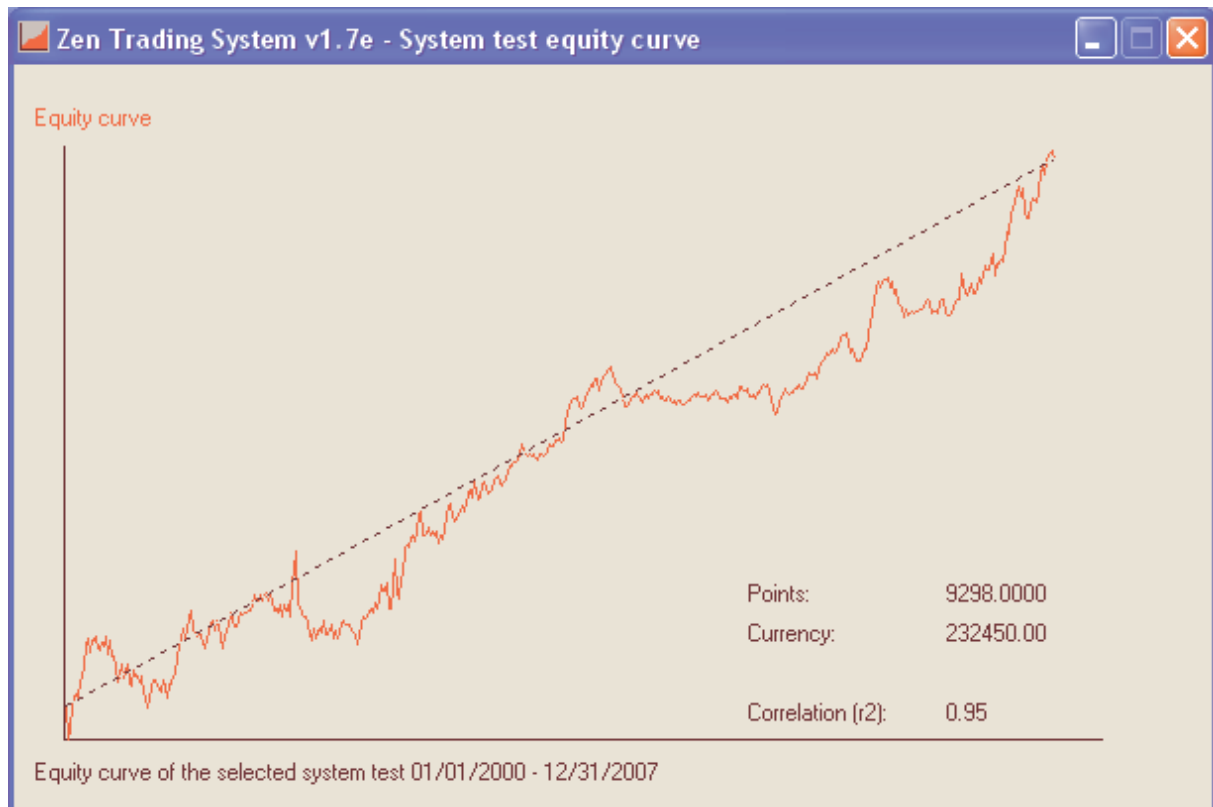
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Number of price bars:	2034	Volatility:	1.66%
Number of winning trades:	483 (56.23%)	Number of losing trades:	376 (43.77%)
Average profit/trade:	80.1046	Average loss/trade:	-78.1715
Profit (points):	9298.0000	Max loss/trade:	-671.5000
Profit (currency):	232,450	Max DD (currency):	-39,350
Profit/year (currency):	28,799	Max consecutive losses:	7
Profit/month (currency):	2,400	MAR Ratio:	0.74
Performance/year:	+29%	Profitability:	1.32

OK    Cancel    Protocol file    Help

## Zen Trading System: system test Dax Future (FDAX)

The equity curve of this system test:



### Results:

- The system test results from 01/01/2000 to 12/31/2007 are **9,298 Dax points**.
- This corresponds to a total profit of €232,450 or an annual profit of €28,799 using the selected position size of 1 Dax Future contract.
- 56.23% of the trades were profitable
- Max. drawdown is (-€39.350),
- The **annual performance** concerning the trading capital of €100,000 is **29%**.
- The profitability index or profit factor is 1.32
- MAR Ratio is 0.74

## 4. System test with stops (not adjusted data)

The following system tests used stops and trailing stops.

Please note that the practical implementation of these tests in real trading depends on the possibilities of the trading partner or services (e.g. EUREX conditions).

Because the data and tests are related to the trading time window of 09.00 to 17.35 CET (03.00am to 11.35am ET), stops that may be outside of this time window are not included in the test result!

These remarks apply to all subsequently documented system tests with stops.

For reasons of risk management, these tests are very important because such a powerful instrument like the Dax Future (with leverage of 25) shouldn't be traded in practise without a powerful stop strategy!

## Zen Trading System: system test Dax Future (FDAX)

Conditions of this test:

**Risk management:** volatility stop and trailing stop

**Moneymanagement:** position size of 1 Dax Future contract

**Zen Trading System v1.7e - System test**

Test data file: C:\zenReal\fdax\Fdax\_test1735na.txt Select

Data format: Format 01: Ticker,Date,O,H,L,C Data records/day: 1

no stop (loss)  absolute stop  relative stop (%)  Vola stop

Trailing stop 50 5 4

Slippage/spreads/fees each half turn (points): 0.5

Currency value each point or leverage (\$, €, etc.): 1

Number of contracts (or shares): 25  Pyramiding

Evaluation period, date (mm/dd/yyyy), from/to: 01/01/2000 12/31/2007

Trading capital (currency): 100000

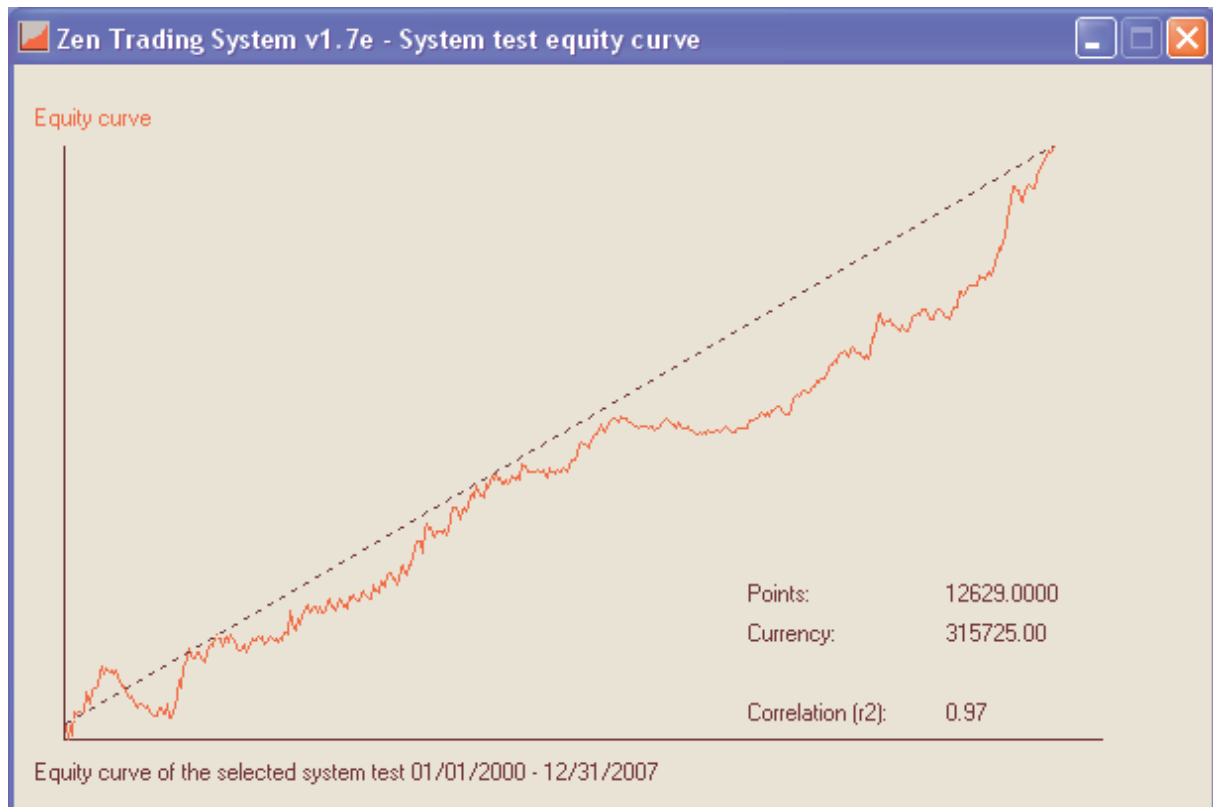
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Number of price bars:	2034	Volatility:	1.95%
Number of winning trades:	616 (43.08%)	Number of losing trades:	814 (56.92%)
Average profit/trade:	72.5170	Average loss/trade:	-39.3630
Profit (points):	12629.0000	Max loss/trade:	-183.0000
Profit (currency):	315,725	Max DD (currency):	-33,700
Profit/year (currency):	39,116	Max consecutive losses:	8
Profit/month (currency):	3,260	MAR Ratio:	1.16
Performance/year:	+39%	Profitability:	1.39

OK Cancel Protocol file Help

## Zen Trading System: system test Dax Future (FDAX)

The equity curve of this system test:



### Results:

- The system test results from 01/01/2000 to 12/31/2007 are **12,629 Dax points**.
- This corresponds to a total profit of €315,725 or an annual profit of €39,116 using the selected position size of 1 Dax Future contract.
- 43.08% of the trades were profitable, but the payoff ratio is far better than in test without stops!
- Max. drawdown is (-€33,700).
- The **annual performance** concerning the trading capital of von €100,000 is **39%**.
- The profitability index or profit factor is 1.39
- MAR Ratio is 1.16

## 5. System test with stops (adjusted data)

Conditions of this test:

**Risk management:** volatility stop and trailing stop

**Moneymangement:** position size of 1 Dax Future contract  
Summary of the conditions for this test:

**Zen Trading System v1.7e - System test**

Test data file:

Data format:  Data records/day:

no stop (loss)     absolute stop     relative stop (%)     Vola stop

Trailing stop           

Slippage/spreads/fees each half turn (points):

Currency value each point or leverage (\$, €, etc.):

Number of contracts (or shares):   Pyramiding

Evaluation period, date (mm/dd/yyyy), from/to:

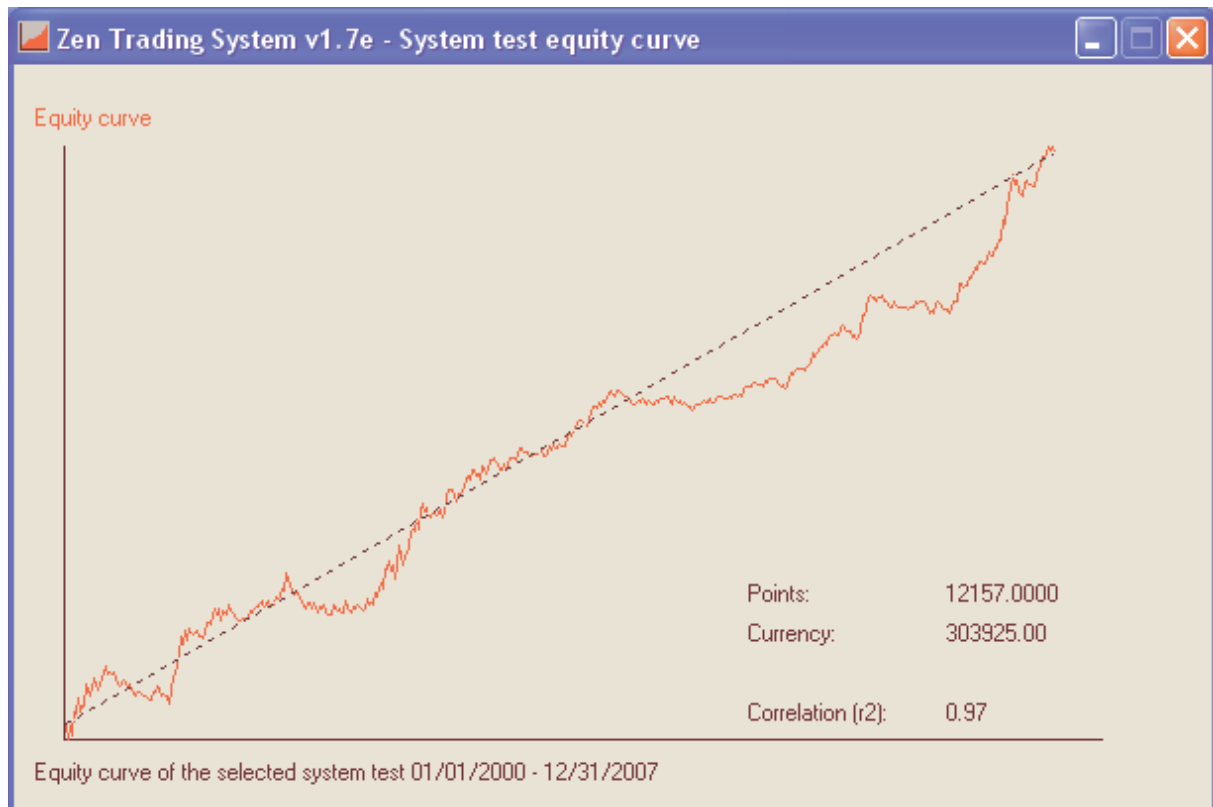
Trading capital (currency):

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Number of price bars:	<input type="text" value="2034"/>	Volatility:	<input text"="" type="text" value="608 (43.09%)"/>	Number of losing trades:	<input type="text" value="803 (56.91%)"/>
Average profit/trade:	<input type="text" value="71.7393"/>	Average loss/trade:	<input type="text" value="-39.1787"/>		
Profit (points):	<input type="text" value="12157.0000"/>	Max loss/trade:	<input type="text" value="-183.0000"/>		
Profit (currency):	<input type="text" value="303,925"/>	Max DD (currency):	<input type="text" value="-25,462"/>		
Profit/year (currency):	<input type="text" value="37,654"/>	Max consecutive losses:	<input type="text" value="9"/>		
Profit/month (currency):	<input type="text" value="3,138"/>	MAR Ratio:	<input type="text" value="1.49"/>		
Performance/year:	<input type="text" value="+38%"/>	Profitability:	<input type="text" value="1.39"/>		

## Zen Trading System: system test Dax Future (FDAX)

The equity curve of this system test:



### Results:

- The system test results from 01/01/2000 to 12/31/2007 are **12,157 Dax points.**
- This corresponds to a total profit of €303,925 or an annual profit of €37,654 using the selected position size of 1 Dax Future contract.
- 43.09% of the trades were profitable, but the payoff ratio (average profit per trade / average loss per trade) is far better compared to the tests without stops
- Max. drawdown is (-€25,462).
- The **annual performance** concerning the trading capital of von €100,000 is **38%.**
- The profitability index or profit factor is 1.39
- MAR Ratio is 1.49

## Summary

The **Zen Trading System v1.7e** for the trade of the german Xetra DAX Index on a daily basis is a very profitable mechanical trading system with a high performance.

These tests regarding the suitability of this system for the Dax Future (FDAX) show that the system with consistent implementation of the signals to the Xetra Dax Index Close price (usually against 17.35 CET or 11.35am ET) can be traded successfully also with the EUREX Dax Future product using risk management and a sufficient trading capital size ( $\geq$  €100,000).

In tests with stops we reached significantly better results compared to the tests without stop losses and especially the test with the "reverse adjusted" Dax Future price data showed a annual performance of 38% and a MAR ratio of 1.49 (MAR Ratio as a relation of performance to drawdown).

Because of the ex post construction of the "generated" endless data contracts used in these tests here it is only possible to analyse a basic suitability of the system for trading the Dax Future, but it is to assume that the Future can be traded successfully with the Zen Trading System using the above explained conditions.