

Nickel Price cycles anticipation

Outline of the presentation

I. Nickel Price

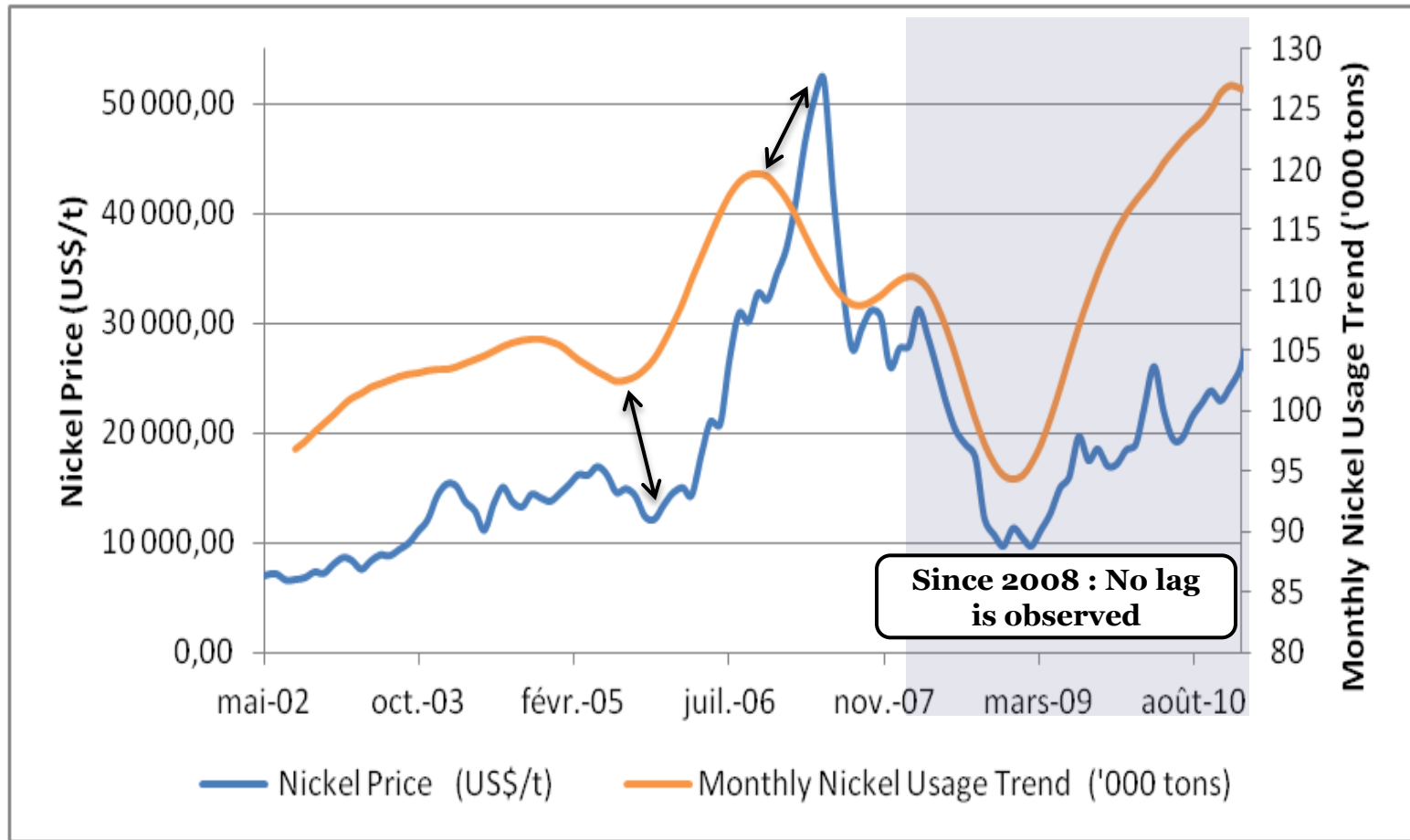
II. Anticipation of cycles

1. Principle of the anticipation method
2. Nickel Price
3. Apparent Supply

III. Conclusions

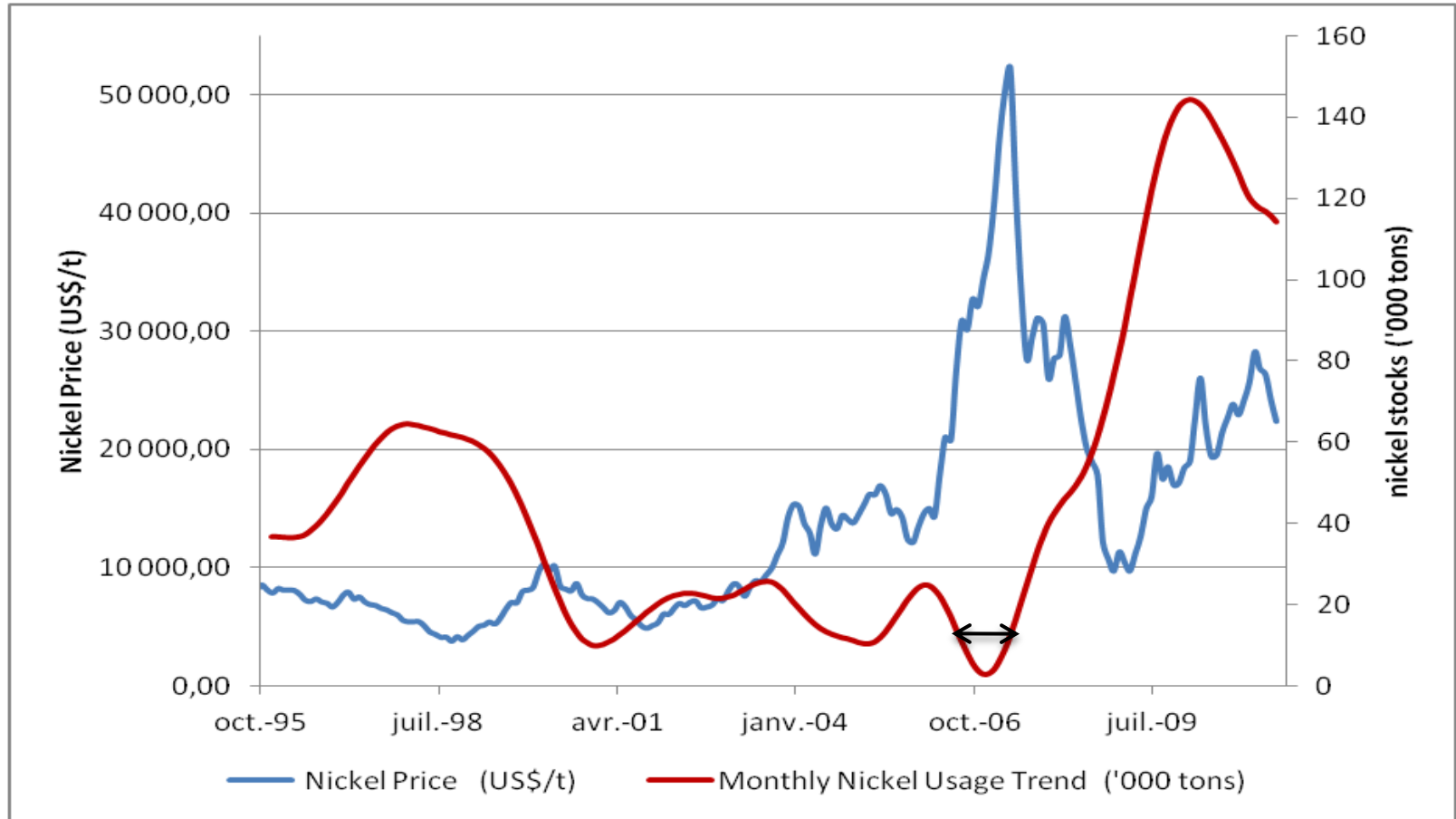
I. Nickel Price

1. Nickel Usage



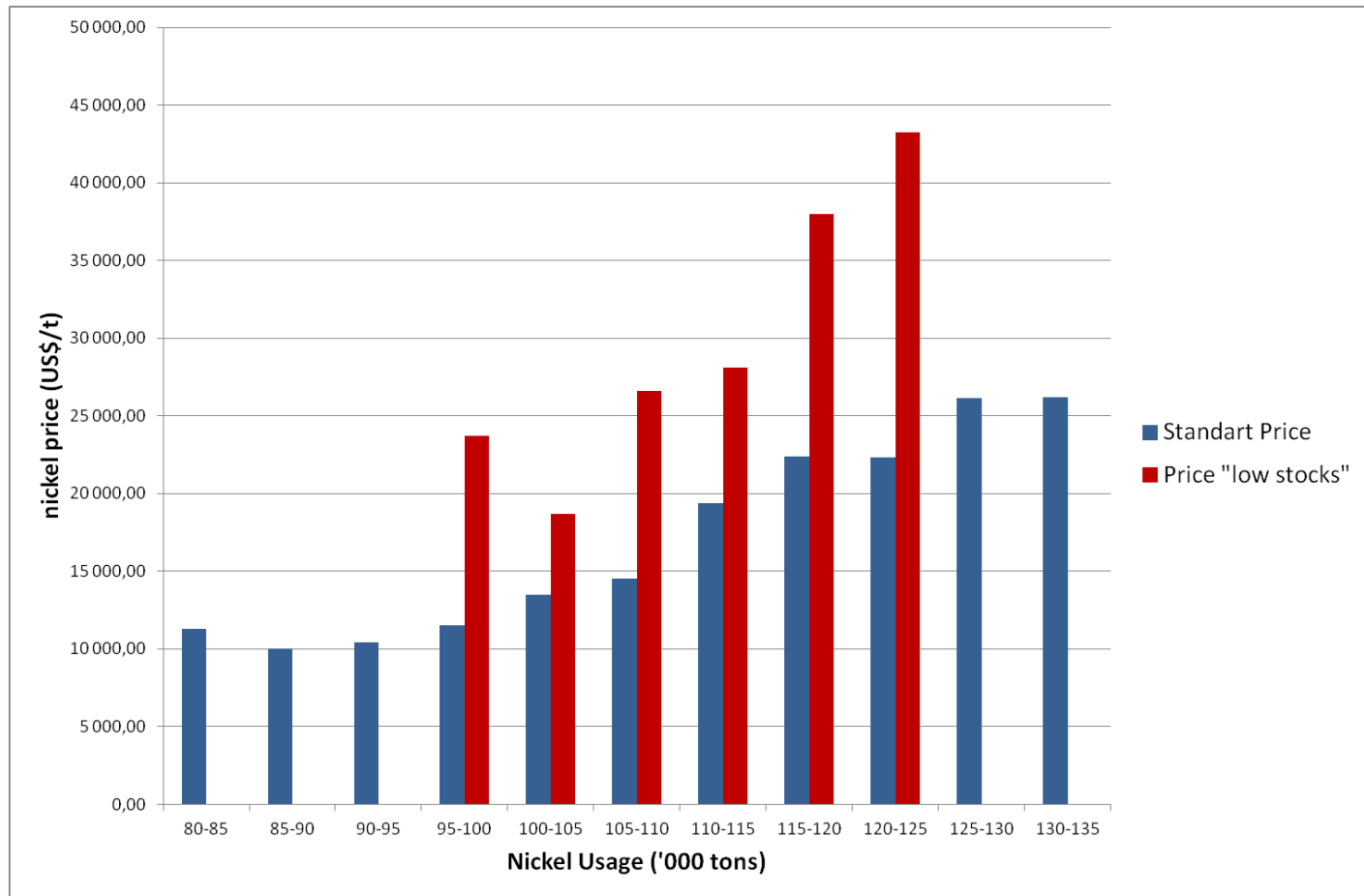
Nickel use cycles are ahead by 4 to 5 months compared with nickel price cycle.

2. Nickel Stocks : LME stocks



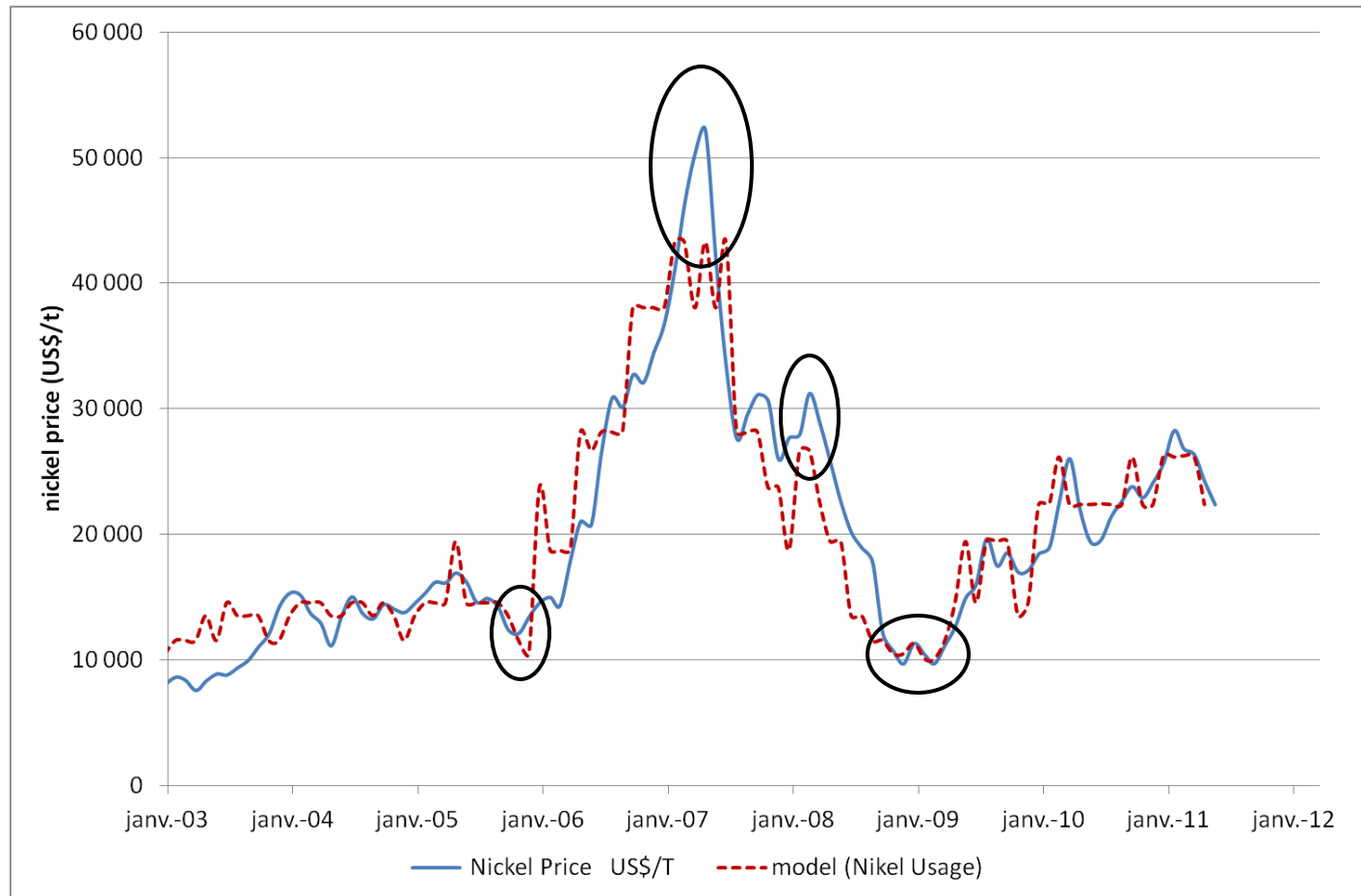
Stocks of the London Metal Exchange (LME) are lower than 10 000 T between July 2006 and July 2007

3. Probabilistic model with Nickel Usage

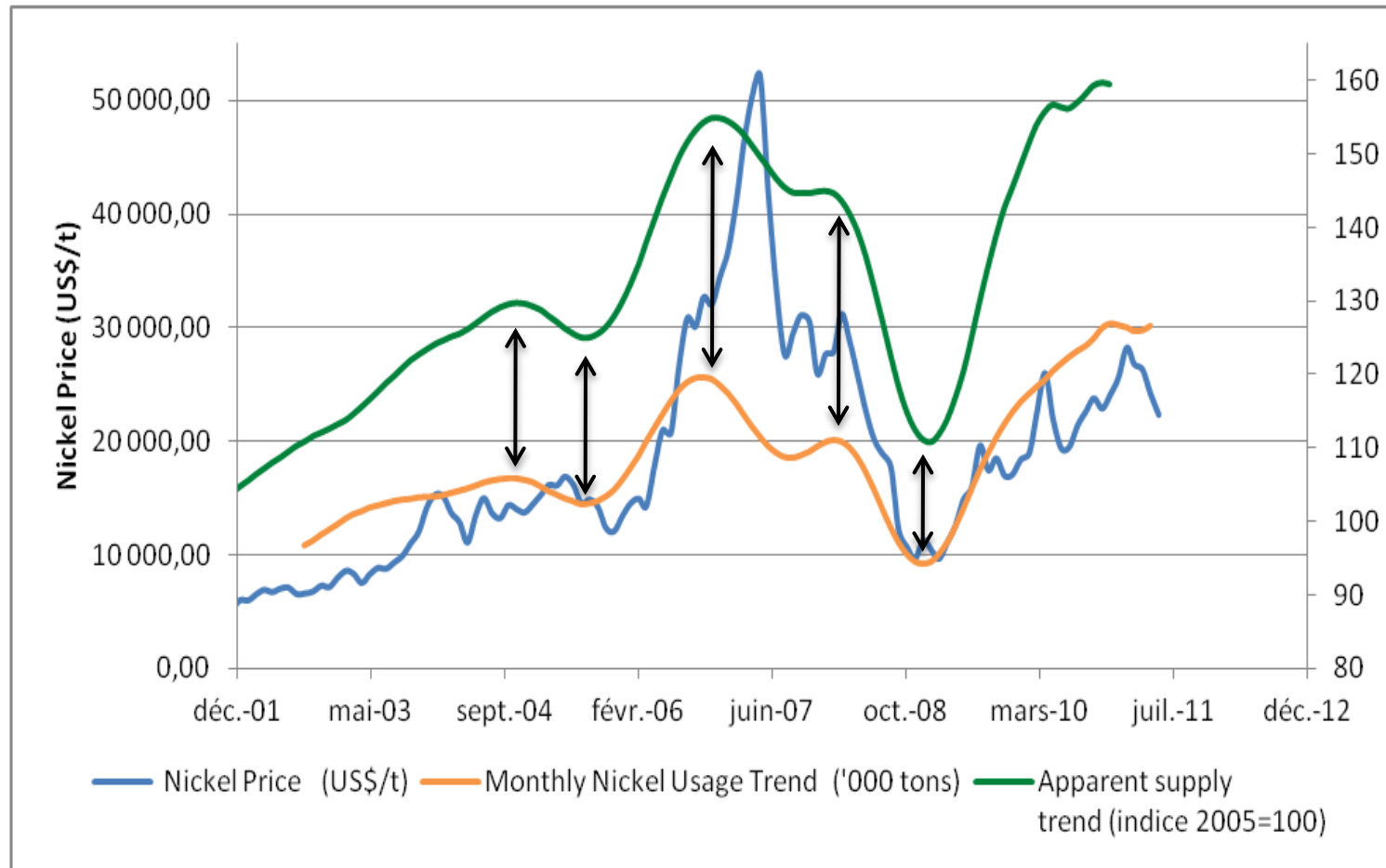


Expectations of the probability distributions of Nickel Price depending on Nickel Usage according to the level of LME stocks

3. Probabilistic model with Nickel Usage

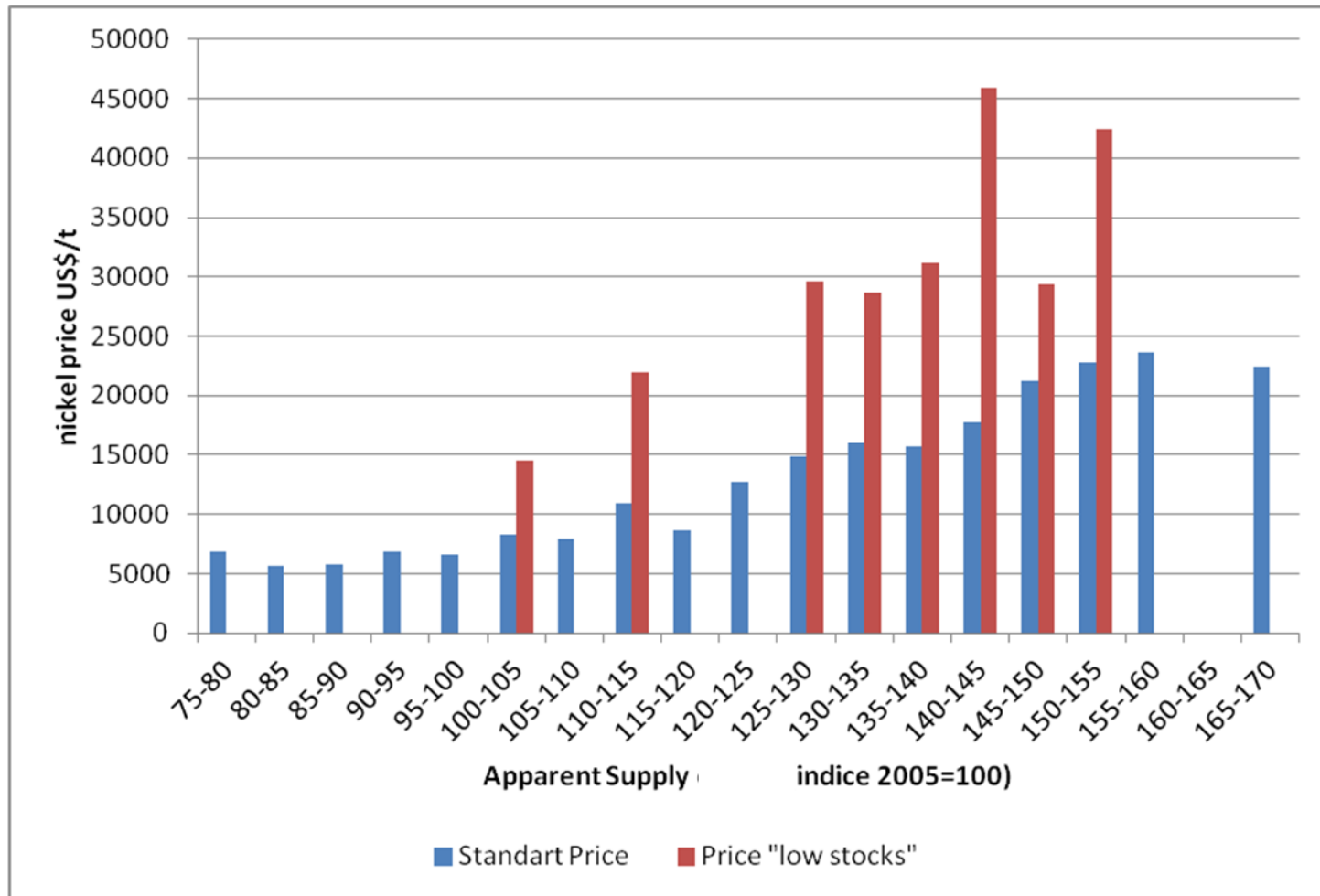


4. Apparent Supply



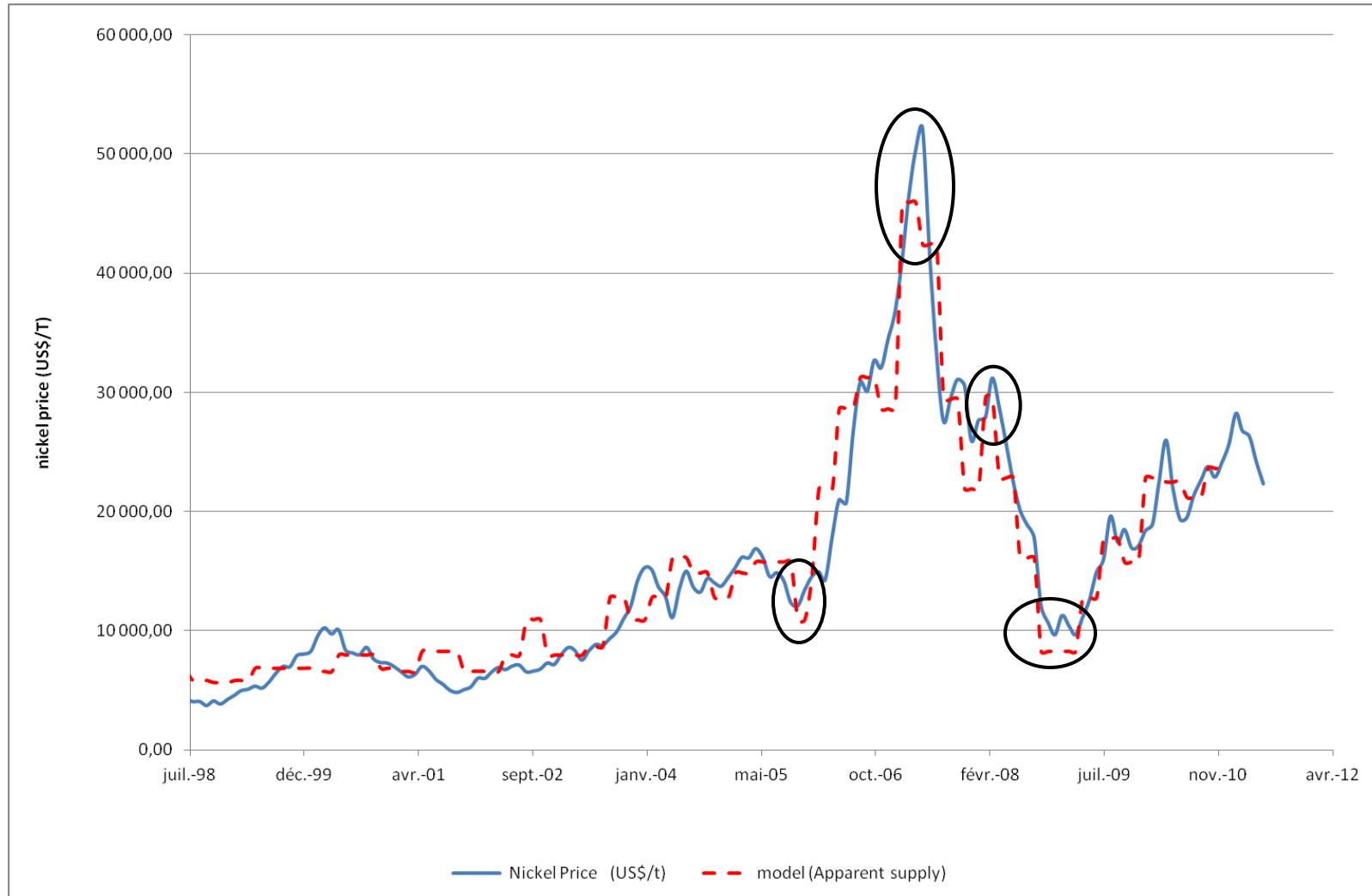
Nickel Usage and Apparent Supply cycles are simultaneous.

5. Probabilistic model with Apparent Supply



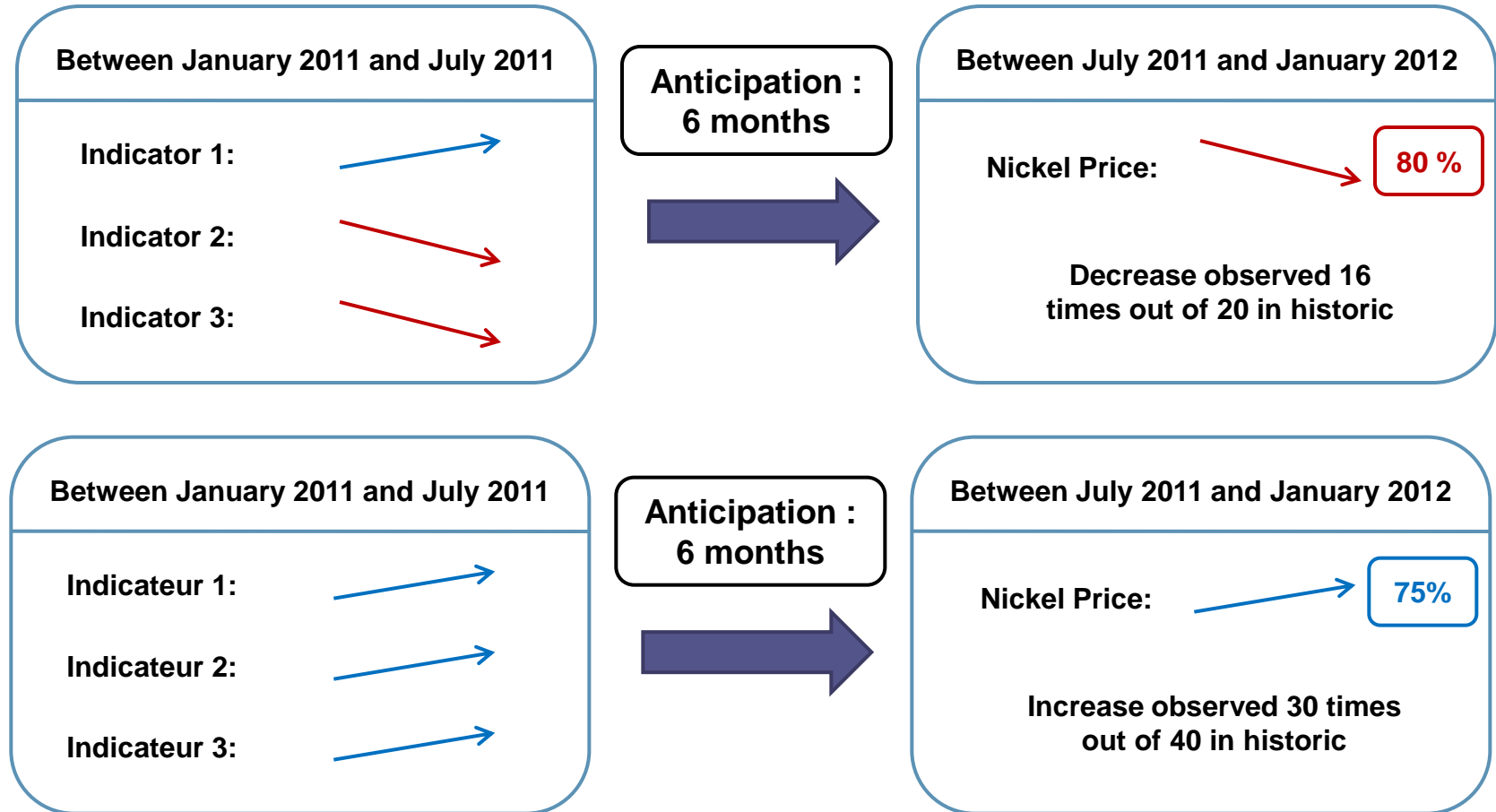
Expectations of the probability distributions of Nickel Price depending on Apparent Supply according to the level of LME stocks

5. Probabilistic model with Apparent Supply



II. Cycles anticipation

1. Principle of the anticipation method



For a triplet of indicators: eight combinations associated with an increase or decrease the price of nickel (with probability)

1. Principle of the anticipation method

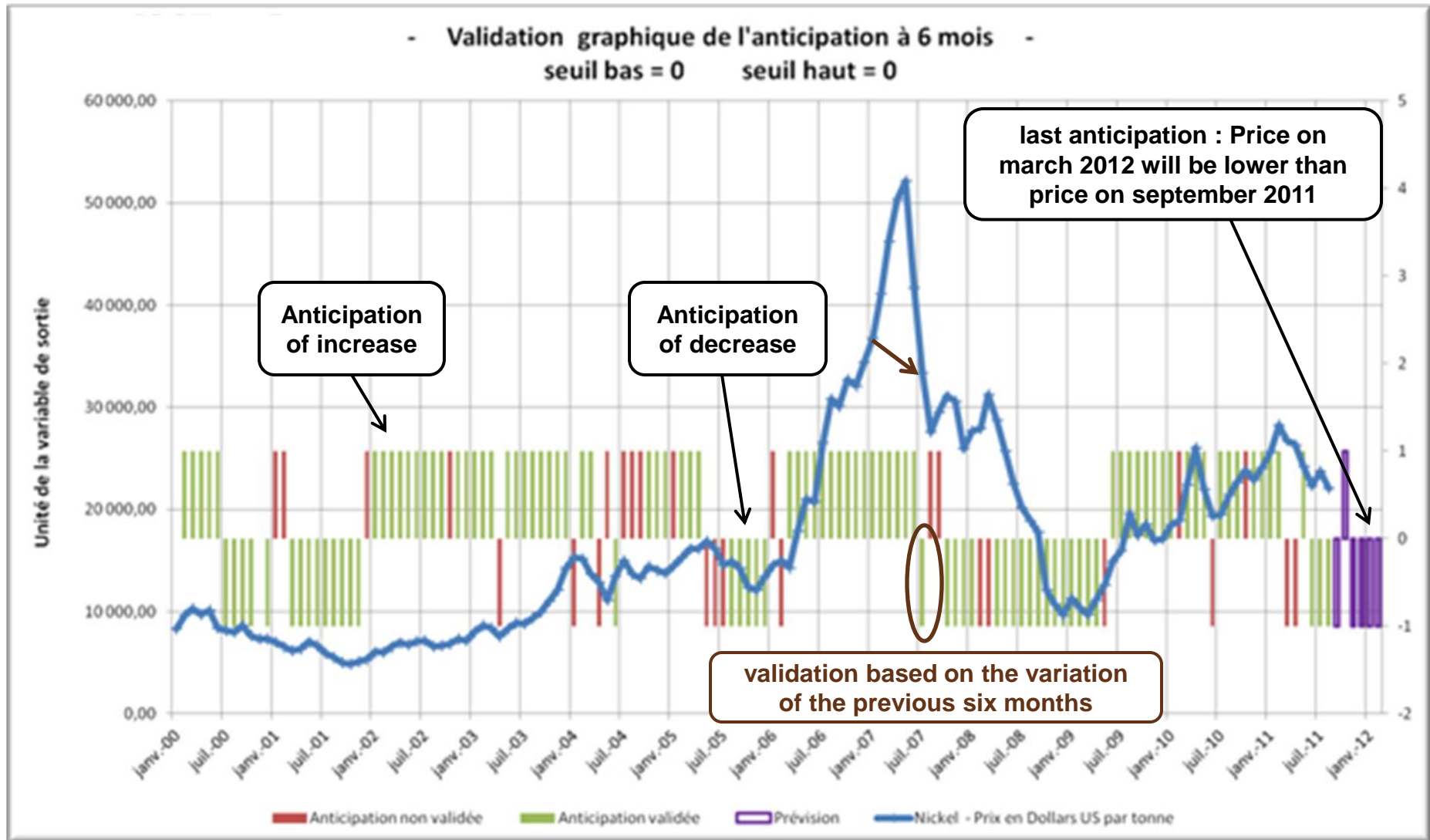
Data base :

- 571 macro-economic, industrial and financial indicators
- Sources : Bloomberg (data not available as open data)

Number of triplets :

- From 1991 to 2011 : 498 indicators → 20 460 496 triplets
- From 1996 to 2011 : 571 indicators → 30 865 405 triplets

2. Nickel Price anticipation (6 months)



2. Nickel Price Anticipation (6 months)

Triplet of indicators :

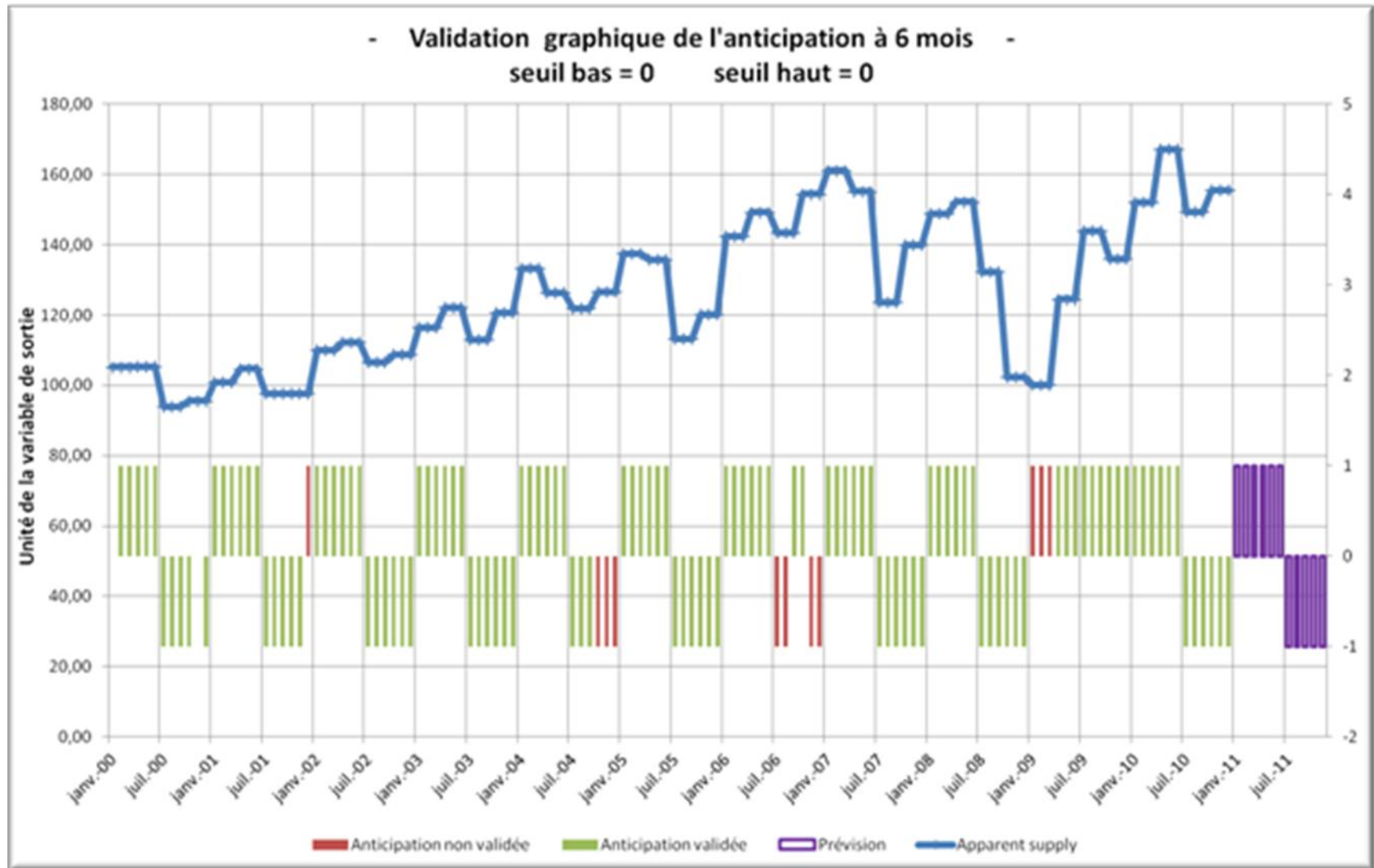
- Eurozone manufacturing confidence finished products stocks
- South Korea PPI S. Korea
- UK Retail sales Textile index (2005=100)

Conclusion :

- 81% of increase et 72% of decrease are detected
 - One of the indicators does not seem at all related to the nickel
- The robustness of the results is not optimal

Period of anticipation	% increases detected	% decreases detected
6 month	81	72
7 month	77	71
8 month	80	69
9 month	81	70
10 month	77	69
11 month	78	68
12 month	79	71

3. Apparent Supply anticipation (6 months)



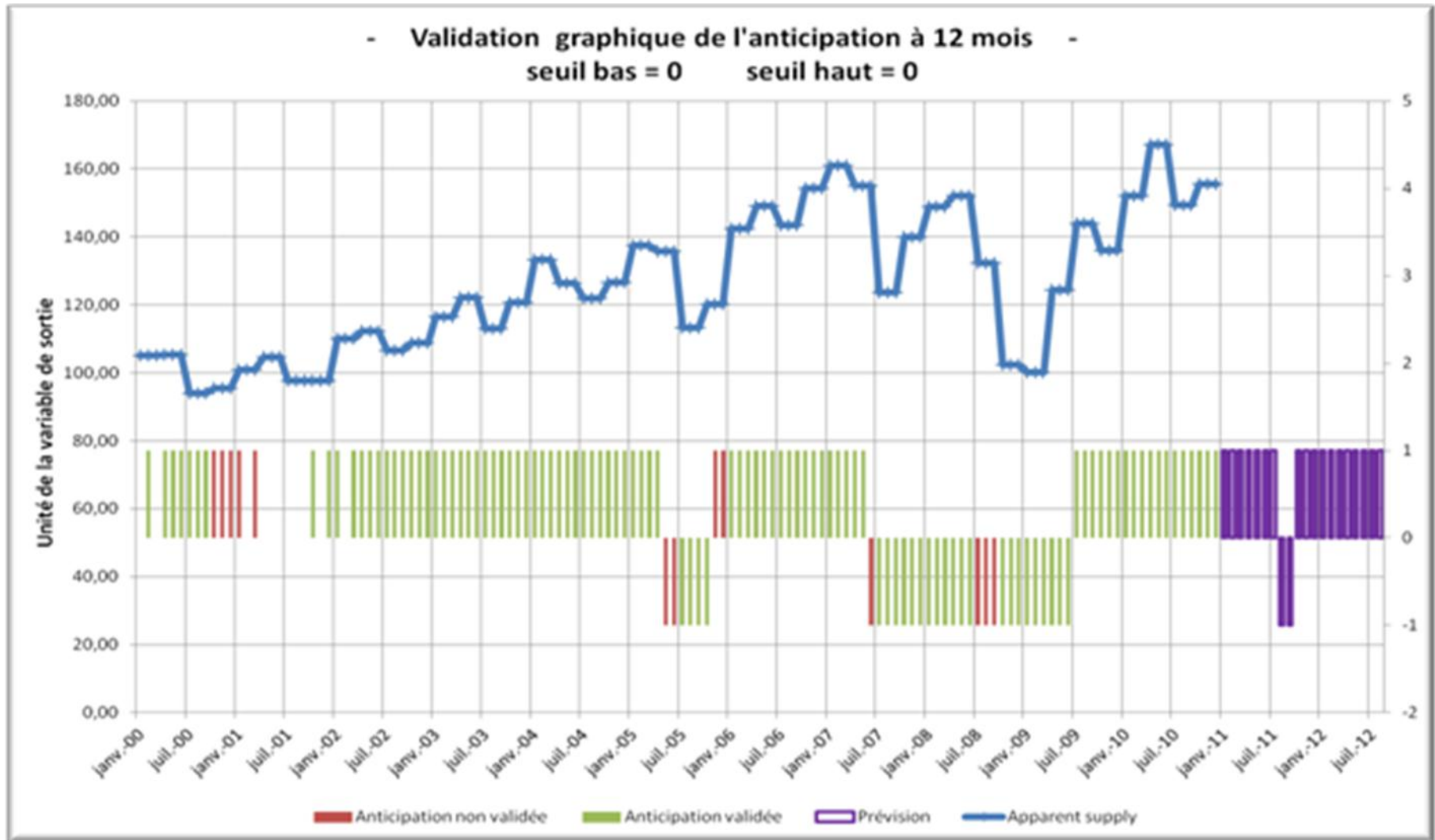
3. Apparent Supply anticipation (6 months)

Triplet of indicators :

- China export trade cumulative (Value-Bn USD)-Customs General Administration
- China export trade cumulative YoY(%) - Customs General Administration
- South Korea PPI - S.Korea

➤ **Results :** 93% of increases et 94% of decreases are detected

3. Apparent Supply anticipation (12 months)



3. Apparent Supply anticipation (12 months)

Triplet of indicators :

- Baltic dry index
- E&E Household Appliance S.A.-US durable goods inventories
- US import price index All commodities from Europe Union-Bureau of labor states

➤ **Results** : 90% of increases and 80% of decreases are detected

Period of anticipation	% increases detected	% decreases detected
6 month	93	94
7 month	88	68
8 month	87	69
9 month	91	59
10 month	90	70
11 month	94	68
12 month	90	80

IV. Conclusions

Conclusions

- Nickel Price can be explained by a probabilistic model based on Nickel Usage or on Apparent Supply
- Nickel Price anticipation is possible but not optimal
- Apparent Supply anticipation produces very good results at 6 and 12 months
- Nickel Price and Apparent Supply anticipations are realizable every month:

Warning : data not available on Internet